AN

HISTORICAL MISCELLANY

OF THE

CURIOSITIES AND RARITIES

IN

NATURE AND ART.

RARE BOOK
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COMPRISING

NEW AND ENTERTAINING DESCRIPTIONS

OF THE MOST SURPRISING

VOLCANOS, CAVERNS, CATARACTS, WHIRLPOOLS, WATER-FALLS, EARTHQUAKES, THUNDER, LIGHTNING,

AND OTHER WONDERFUL AND [redacted]OUS

PHENOMENA OF NATURE.

FORMING A RICH AND COMPREHENSIVE VIEW OF ALL THAT IS INTERESTING AND CURIOUS

IN EVERY PART OF THE HABITABLE WORLD.

VOLUME THE THIRD.

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CONTENTS.

CUSTOMS and Manners of the Ruſſians, - - page 1
Remarkable Inſtance of the Force of Eloquence, - 11
View of the State of Learning in Europe, - - 12
Curious Obſervations on the Poſition of the Earth, - 20
Phenomena of the Ignis Fatuus, - - - 27
Deſcription of the Sandpu of India, - - - 32
Origin of the Fine Arts, - - - - 33
Italian Method of reckoning the Hours, - - 34
Obſervations on Inſanity, - - - - 36
Perſepolis, the Capital of Perſia, - - - 38
The Aurora Borealis, or Northern Lights, - - 40
Deſcription of the Iſland of Metelin, - - - 50
The Sentiments of the Soul, - - - 54
Of the Diet of the Egyptians, - - - 60
The Bird-catcher and Canary, an affecting Anecdote, from Pratt's Gleanings, - - - - 61
Deſcription of the Boſhies Men at the Cape of Good Hope, 66
Deſcription of the Atmoſphere, - - - 70
Deſcription of Peterſburg, - - - 88
Anecdotes of Dr. Dee, the Aſtrologer, - - 92
Hiſtory of the Jews in England, - - - 96
Art of producing and preparing Silk, - - 104
Of the Riſe and Progreſs of Society, - - - 120
On Spectres, - - - - 132
Directions for the Cultivation of early Cucumbers, - 137
Deſcription of the Iſle of Angleſey, - - - 143
Of Animal Flowers, - - - - 150
Remains of a large Foreſt near Liverpool, - - 154
Hiſtory of the Antediluvian World, - - - 157
Eulogy on Tails, particularly thoſe worn by the Human Species, 166
On the Art of Swimming, - - - - 169
On Sympathy, - - - - 174
On the Pairing of Birds, - - - - 177
On the Migration and torpid State of Swallows, - 178
Deſcription of Snowdon, - - - 186
Reflections on the Change of Seaſons, - - 188
Of the Cultivation and Preparation of Sugar, - - 190
On Suicide, - - - - 208
Oſymandes, King of Egypt, - - - 216
Deſcription of the Peak in Derbyſhire, - - 217
Origin of Surnames, - - - - 236
Cauſes of the Surf and the Swelling of the Sea, - 238
The Lake and Cave of Avernus, - - - 239
Art of Playing the Game of Back-Gammon, - 240
Method of raiſing Wheat for a Series of years on the ſame Land, 248
On the Influence of Cold upon the Health of the Inhabitants of London, - - - - 250
Ill Effects of too great Number of public Houſes in London, 252
Some Account of Dartmoor, with general Thoughts on cultivating and improving it, - - - 255
Letter from a French Officer in Corſica, - - 257
Deſcription of the Fountain-tree, - - 263
Singularities of the late Mr. Howard, - - 265
Deſcription of a Surinam Planter, - - 272

CONTENTS.

Art of Playing the Game of Chefs, - - page 274
Of the Flute-player; Chefs-player, and other Automaton Figures, - - - - 280
Account of Albert Azo II. Marquis of Efte, - 285
On Dwarfs and Giants, - - - 288
On Literary Fame, - - - - 293
On the Mythology and Worfhip of the Serpent, - - 297
Relation between Vegetables and Animals - - 302
Dr. Black's Theory of Heat, Fire, and Fluidity, - - 303
Imitation of the Tyrrhena Regum progenies, &c. of Horace, 304
Of the Frauds practifed in London, - - 305
Of the Eftbonian and Ruffian Baths, in a Letter from a Traveller, 313
Account of a Volcano in the Crimea, - - 321
Defcription of the American Iflands, - - 321
Ceremonies of a public Baptifm, - - 325
Cruelties exercifed on Slaves in Surinam, - - 327
Solomon and Sheba, - - - - 328
Idlenefs and Induftry, a childifh Story, - - 329
Character of St. Antony the Monk, - - 345
Romantic Scenes in Scotland, - - - 352
On the Education and Studies of Women, - - 356
Runic Mythology, - - - - 360
Dr. Fordyce's Remarks on the Humane Society, with their Mode of Treatment in different Cafes, - - 362
Life of Antoine Laurent Lavoifier, - - 369
Plan of the Odeon, a new dramatic Inftitution at Paris, 373
The Philofopher, - - - - 376
State of Manners and Civilization in Surinam, from Stedman's Expedition to Surinam, - - - 382
Sagacity of a Savage Dog, - - - 384
Prefent State of Printing and Bookfelling in America, - 386
Natural Affection of Animals, - - - 389
Account of the Lead Mines in Derbyfhire, - - 391
Defcription of the Copper Mines in Anglefea, - 393
Hiftorical View of Portuguefe Literature, - - 395
Prefent State of Literature in Italy, - - - 402
Village Memoirs, - - - - 405
Anecdotes of various Jugglers, - - - 406
On the various Claffes of nominal Chriftians, - - 409
Receipt to make Hens lay all the Winter, - - 412
Literary Anecdotes, by Dr. Warton, - - - 412
On the Utility of Work-houfes, - - - 418
New Method of preparing artificial Yeaft, - - 422
Defcription of the Turkifh Seraglio, - - - 423
Origin and Hiftory of the Methodifts, - - - 428
Allegories, - - - - - 442
Remarkable Change of an African's Complexion, - 445
Literary Character of the Nobility and Gentry of Ireland, 447
On the Phenomena of the Water-Spout, - - 448
Remarks on the Poetry of Spain and Portugal, - - 450

DIRECTIONS TO THE BINDER.

The Copper-plate View of the Peak in Derbyfhire, is to face the Title, by way of Frontifpiece to the Volume.

HISTORY

HISTORY

OF THE

CURIOSITIES AND RARITIES

IN NATURE AND ART.

CUSTOMS AND MANNERS OF THE RUSSIANS.

THE empire of Russia is so widely extended, that, notwithstanding the number of nations which it comprehends, it must be considered as by no means populous. At the last revision it was found to contain twenty-six millions of souls; but it is to be observed, that the nobility, clergy, land as well as sea forces, different officers, servants belonging to the court, persons employed under government in civil and other offices; the students of different universities, academies, seminaries, and other schools; hospitals of different denominations; likewise all the irregular troops, the roving hordes of different tribes, foreigners and colonists, or settlers of different nations—are not included in the above-mentioned number: but with the addition of all these, the population of Russia, of both sexes, may be supposed to come near to twenty-eight millions.

To such a vast variety of people, nations, and languages, it is needless to observe, that no general character can with truth be applied. The native Russians are stigmatized by their neighbours as ignorant and brutal, totally resigned to sloth, and addicted to drunkenness, even in the most beastly excess; nay, they are accused of being arbitrary, perfidious, inhuman, and destitute of every social virtue. There is not a phrase in their language analogous to ours, "the manners or the sentiments of a gentleman;" nor does gentleman with them express any thing moral. Indeed they have no such distinction. Cunning is professed and gloried in by all; and the nobleman whom you detect telling a lie is vexed, but not in the least ashamed. In the whole reglement of the marine by Peter the Great, there is not one word addressed to the honour, or even to the probity, of his officers. Hopes of reward, and the constant fear

of detection and punishment, are the only motives touched on. In every ship of war, and in every regiment, there is a fiscal or authorized spy, a man of respectable rank, whose letters must not be opened but at the risk of the great knout; and he is required by express statute to give monthly reports of the behaviour of the officers and privates.

Such regulations we cannot think well adapted to improve the morals of the people; yet we believe they have been improved by the care, assiduity, and example, of some of their late sovereigns. Certain it is, the vice of drunkenness was so universally prevalent among them, that Peter I. was obliged to restrain it by very severe edicts, which, however, have not produced much effect. They numbered in the city of Moscow no fewer than 4000 brandy-shops, in which the inhabitants used to sot away their time in drinking strong liquors and smoking tobacco. This last practice became so dangerous, among persons in the most beastly state of intoxication, that a very severe law was found necessary to prevent the pernicious consequences, otherwise the whole city might have been consumed by conflagrations. The nobility were heretofore very powerful, each commanding a great number of vassals, whom they ruled with the most despotic and barbarous authority: but their possessions have been gradually circumscribed, and their power transferred in a great measure to the czar, on whom they are now wholly dependent. At present there is no other degree of the nobility but that of the boyars: these are admitted to the council, and from among them the waivodes, governors, and other great officers, are nominated, and their ranks with respect to each other are regulated by the importance of their respective offices.

Alexis, who introduced this order of precedency, abhorred the personal abasement of the inferior classes to their superiors, which he would not accept of when exhibited to himself; and it may appear surprising that Peter, who despised mere ceremonials, should have encouraged every extravagance of this kind. In a few years of his reign, the beautiful simplicity of designation and address which his father had encouraged was forgotten, and the cumbersome and almost ineffable titles which disgrace the little courts of Germany were crowded into the language of Russia. He enjoined the lowest order of gentlemen to be addressed by the phrase, *your respectable birth*; the next rank, by *your high good birth*; the third, *your excellence*; the forth, *your high excellence*; then came *your brilliancy* and *high brilliancy*. *Highness* and *majesty* were reserved for the great duke and the czar.

These titles and modes of address were ordered with all the regularity of the manual exercise; and the man who should omit any of them when speaking to his superior might be lawfully beaten by the offended boyar. Before this period, it was polite and courtly to speak to every man, even the heir apparent, by adding his father's name to his own, and to the great duke, Paul Petrovitz was perfectly respectful, or a single word signifying *dear father*, when he was not named. Though pompous titles were unknown among them before the era of Peter, the subordination of ranks was more complete than in any other European nation; but with this simplicity peculiar to them and the Poles, that they had but three ranks, the sovereign, the noblesse or gentry, and the serfs. It was not till very

very lately that the mercantile rank formed any diſtinction; and that diſtinction is no more than the freedom of the perſon, which was formerly a transferable commodity belonging to the boyar. Notwithſtanding this ſimplicity, which put all gentlemen on a level, the ſubſcription of a perſon holding an inferior office was not *ſervant*, but *ſlave*; and the legal word for a petition in form was *tchelobitii*, which ſignifies, "a beating with the forehead," i. e. ſtriking the ground with the forehead; which was actually done. The father of Alexis aboliſhed the practice; but at this day, when a Ruſſian petitions you, he touches his forehead with his finger; and, if he be very earneſt, he then puts his finger to the ground.

The Ruſſian nobles formerly wore long beards, and long robes with ſtrait ſleeves dangling down to their ancles: their collars and ſhirts were generally wrought with ſilk of different colours: in lieu of hats, they covered their heads with furred caps; and, inſtead of ſhoes, wore red or yellow leathern buſkins. The dreſs of the women nearly reſembled that of the other ſex; with this difference, that their garments were more looſe, their caps fantaſtical, and their ſhift-ſleeves three or four ells in length, gathered up in folds from the ſhoulder to the fore-arm. By this time, however, the French faſhions prevail among the better ſort throughout all Muſcovy.

The common people are in general tall, healthy, and robuſt, patient of cold and hunger, inured to hardſhips, and remarkably capable of bearing the moſt ſudden tranſition from the extremes of hot or cold weather. Nothing is more cuſtomary than to ſee a Ruſſian, who is over-heated and ſweating at every pore, ſtrip himſelf naked, and plunge into a river: nay, when their pores are all opened in the hot bath, to which they have daily recourſe, they either practice this immerſion, or ſubject themſelves to a diſcharge of ſome pailfuls of cold water. This is the cuſtom of both men and women, who enter the baths promiſcuouſly, and appear naked to each other, without ſcruple or heſitation.

A Ruſſian will ſubſiſt for many days upon a little oatmeal and water, and even raw roots: an onion is a regale; but the food they generally uſe in their journeys is a kind of rye-bread, cut into ſmall ſquare pieces, and dried again in the oven: theſe, when they are hungry, they ſoak in water, and eat as a very comfortable repaſt. Both ſexes are remarkably healthy and robuſt, and accuſtom themſelves to ſleep every day after dinner.

The Ruſſian women are remarkably fair, comely, ſtrong, and well-ſhaped, obedient to their lordly huſbands, and patient under diſcipline: they are even ſaid to be fond of correction, which they conſider as an infallible mark of their huſband's conjugal affection; and they pout and pine if it be with-held, as if they thought themſelves treated with contempt and diſregard. Of this neglect, however, they have very little cauſe to complain; the Ruſſian huſband being very well diſpoſed, by nature and inebriation, to exert his arbitrary power. Some writers obſerve, that, on the wedding-day, the bride preſents the bridegroom with a whip of her own making, in token of ſubmiſſion; and this he fails not to employ as the inſtrument of his authority. Very little ceremony is here uſed in match-making, which is the work of the parents. Perhaps the bridegroom never ſees the woman till he is joined to her for life. The marriage being propoſed and agreed to, the lady is examined,

quite naked, by a certain number of her female relations; and, if they find any bodily defect, they endeavour to cure it by their own skill and experience. The bride, on her wedding-day, is crowned with a garland of wormwood, implying the bitterness that often attends the married state. When the priest has tied the nuptial knot at the altar, his clerk or sexton throws upon her head a handful of hops, wishing that she may prove as fruitful as the plant thus scattered. She is muffled up, and led home by a certain number of old women, the parish-priest carrying the cross before; while one of his subalterns, in a rough goat-skin, prays all the way that she may bear as many children as there are hairs on his garment. The new-married couple, being seated at table, are presented with bread and salt; and a chorus of boys and girls sing the epithalamium, which is always grossly obscene. This ceremony being performed, the bride and bridegroom are conducted to their own chamber by an old woman, who exhorts the wife to obey her husband, and retires. Then the bridegroom desires the lady to pull off one of his buskins, giving her to understand, that in one of them is contained a whip, and in the other a jewel or a purse of money. She takes her choice; and, if she finds the purse, interprets it into a good omen; whereas, should she light on the whip, she construes it into an unhappy presage, and instantly receives a lash as a specimen of what she has to expect. After they have remained two hours together, they are interrupted by a deputation of old women, who come to search for the signs of her virginity: if these are apparent, the young lady ties up her hair, which before consummation hung loose over her shoulders, and visits her mother, of whom she demands the marriage portion. It is generally agreed that the Muscovite husbands are barbarous even to a proverb; they not only administer frequent and severe correction to their wives, but sometimes even torture them to death, without being subject to any punishment for the murder.

The canon law of Muscovy forbids the conjugal commerce on Mondays, Wednesdays, and Fridays; and whoever transgresses this law, must bathe himself before he enters the church-porch. He that marries a second wife, the first being alive, is not admitted farther than the church-door; and, if any man espouses a third, he is excommunicated: so that, though bigamy is tolerated, they nevertheless count it infamous. If a woman is barren, the husband generally persuades her to retire into a convent: if fair means will not succeed, he is at liberty to whip her into condescension. When the czar, or emperor, has an inclination for a wife, the most beautiful maidens of the empire are presented to him for his choice.

The education of the czarovitz, or prince royal, is intrusted to the care of a few persons, by whom he is strictly kept from the eyes of the vulgar, until he hath attained the fifteenth year of his age: then he is publicly exposed in the market-place, that the people, by viewing him attentively, may remember his person, in order to ascertain his identity; for they have more than once been deceived by impostors.

Such is the slavery by which the Muscovites of both sexes are kept by their parents, their patrons, and the emperor, that they are not allowed to dispute any match that may be provided for them by these directors, however disagreeable or odious it may be. Officers of the greatest rank in the army, both natives and foreigners, have

have been saddled with wives by the sovereign in this arbitrary manner. A great general some time ago deceased, who was a native of Britain, having been pressed by the late czarina to wed one of her ladies, saved himself from a very disagreeable marriage, by pretending his constitution was so unsound, that the lady would be irrepairably injured by his compliance.

In Russia, the authority of parents over their children is almost as great as it was among the ancient Romans, and is often exercised with equal severity. Should a father, in punishing his son for a fault, be the immediate cause of his death, he could not be called to account for his conduct; he would have done nothing but what the law authorized him to do. Nor does this legal tyranny cease with the minority of children; it continues while they remain in their father's family, and is often exerted in the most indecent manner. It is not uncommon, even in St. Petersburgh, to see a lady of the highest rank, and in all the pomp and pride of youthful beauty, standing in the court-yard with her back bare, exposed to the whip of her father's servants. And so little disgrace is attached to this punishment, that the same lady will sit down at a table with her father and his guests immediately after she has suffered her flogging, provided its severity has not confined her to bed.

The Muscovites are fond of the bagpipe, and have a kind of violin, with a large belly like that of a lute: but their music is very barbarous and defective. Nevertheless there are public schools, in which the children are regularly taught to sing. The very beggars ask alms in a whining cadence, and ridiculous sort of recitative. A Russian ambassador at the Hague, having been regaled with the best concert of vocal and instrumental music that could be procured, was asked how he liked the entertainment? he replied, "Perfectly well; the beggars in my country sing just in the same manner." The warlike music of the Russians consists in kettle-drums and trumpets: they likewise use hunting horns; but they are not at all expert in the performance. It has been said, that the Russians think it beneath them to dance, and that they call in their Polish or Tartarian slaves to divert them with this exercise in their hours of dissipation. Such may have been the case formerly, or may be so now in the distant and most barbarous provinces of the empire; but at St. Petersburgh dancing is at present much relished, and a minuet is no where more gracefully performed in Europe, than by the fashionable people in that metropolis.

The Russian language is a dialect of the Sclavonic, and the purest perhaps that is now any where to be found; but they have nothing ancient written in it, except a translation of Chrysostom's offices for Easter, which are at this day good Russian, and intelligible to every boor, though certainly no less than eight hundred years old. There is no Russian poetry more than two hundred years old; and the oldest translation of the Scriptures into that language is but a late thing, and came to them from Koningsberg. Science has made but a very small progress among them; and the reputation of the imperial academy at St. Petersburgh has been much supported by the exertions of foreigners. For antiquarian research they have as little relish as for scientific investigation. Every thing, to please, must be new; and the only elucidations which we have of their antiquities are the performances of Germans and other foreigners, such as professors

professors Bayer, Muller, and Gmelin. One native has indeed shewn some desire to recover and preserve what he can of their most ancient poetry; but in his researches, he seems more indebted to an exquisitely nice ear than to any erudition. Erudition indeed they hold in the most sovereign contempt. No gentleman is ever taught Latin or Greek; and, were a Russian stranger in company to give any hint of his possessing such knowledge, every man with a sword would draw away his chair, and set him down for a charity-boy. Peter the Great and the present empress have done what sovereigns could do to dispel these clouds of ignorance, by instituting schools and colleges, and giving the masters and professors military rank; but all in vain. One of the most accomplished scholars of the age, after having made himself extremely agreeable to a company of ladies, by means of his taste in music, and a sword at his side, was instantly deserted by them upon some person's whispering through the room that he was a man of learning; and, before his fair companions would be reconciled to him, he was obliged to pretend that he was a lieutenant-colonel, totally illiterate.

The two first sentences of Prince Shtcherbatoff's dedication of his History of Russia, which was printed in three volumes quarto, in 1770, afford an admirable specimen of Russian literature: "The history of the human understanding (says this dedicator) assures us, that everywhere the sciences have followed the progress of the prosperity and the strength of kingdoms. When the Grecian arms had overthrown the greatest monarchy then in the world, when they had the famous generals Miltiades, Themistocles, Aristides, Conon, and Alcibiades, at the same time flourished among them Anaximander, Anaxagoras, Archytas, Socrates, and Plato. And when Augustus had conquered the world, and had shut the gates of the temple of Janus, and the proud Romans, under his happy government, cheerfully obeyed his commands, then did Titus Livius, Thucydides, Virgil, and Horace, adorn his court, and celebrate his glory."—A passage so replete as this with blunders and anachronisms it would surely be difficult to find in any other author.

The Russians were converted to the Christian religion towards the latter end of the tenth century. Since that period they have confessed the articles of the Greek church, mingled with certain superstitious ceremonies of their own. They do not believe in the pope's infallibility or supremacy, or even hold communion with the see of Rome: they use auricular confession, communicate in both kinds, adopt the Athanasian creed, and adhere to the established liturgy of St. Basil. They worship the Virgin Mary, and other saints; and pay their adorations to crosses and relics. They observe four great fasts in the year, during which they neither taste fish, flesh, nor any animal production: they will not drink after a man who has eaten flesh, nor use a knife that has cut meat in less than twenty-four hours after it has been used; nor will they, even though their health is at stake, touch any thing in which hartshorn or any animal substance has been infused. While this kind of Lent continues, they subsist upon cabbage, cucumbers, and rye-bread, drinking nothing stronger than a sort of small-beer called quassi. They likewise fast every Wednesday and Friday. Their common penance is to abstain from every species of food and drink, but bread, salt, cucumbers, and water. They are ordered to bend their bodies, and continue in that

that painful posture, and between whiles to strike their head against an image.

The Muscovites at all times reject as impure horse-flesh, elk, veal, hare, rabbit, ass's milk, mare's milk, and Venice-treacle, because the flesh of vipers is an ingredient; also every thing that contains even the smallest quantity of musk, civet, and castor: yet they have no aversion to swine's flesh; on the contrary, the country produces excellent bacon. They celebrate fifteen grand festivals in the year. On Palm-sunday there is a magnificent procession, at which the czar assists in person and on foot. He is apparelled in cloth of gold; his train is borne up by the prime of the nobility, and he is attended by his whole court. He is immediately preceded by the officers of his household, one of whom carries his handkerchief on his arm, lying upon another of the richest embroidery. He halts at a sort of platform of free-stone, where, turning to the east, and bending his body almost double, he pronounces a short prayer: then he proceeds to the church of Jerusalem, where he renews his devotion. This exercise being performed, he returns to his palace, the bridle of the patriarch's horse resting upon his arm. The horse's head, being covered with white linen, is held by some nobleman; while the patriarch, sitting sidewise, and holding a cross in his hand, distributes benedictions as he moves along: on his head he wears a cap edged with ermin, adorned with loops and buttons of gold and precious stones: before him are displayed banners of consecrated stuff, in a variety of colours. Above five hundred priests walk in the procession; those who are near the patriarch bearing pictures of the Virgin Mary, richly ornamented with gold, jewels, and pearls, together with crosses, relics, and religious books, including a copy of the Gospels, which they reckon to be of inestimable value. In the midst of this procession is borne a triumphal arch; and on the top an apple-tree covered with fruit, which several little boys inclosed in the machine endeavour to gather. The lawyers and laity carry branches of willow; the guards and the spectators prostrate themselves on the ground while the procession halts; and, after the ceremony, the patriarch presents a purse of one hundred rubles to the czar, who perhaps invites him to dine at his table. During the season of Easter, the whole empire is filled with mirth and rejoicing: which, however, never fails to degenerate into heat and debauchery; even the ladies may indulge themselves with strong liquors to intoxication without scandal. When a lady sends to inquire concerning the health of her guests whom she entertained over-night, the usual reply is, "I thank your mistress for her good cheer: by my troth, I was so merry that I don't remember how I got home." During these carnivals, a great number of people, in reeling home drunk, fall down and perish among the snow. It is even dangerous to relieve a person thus overtaken; for, should he die, the person who endeavoured to assist him is called before the judge, and generally pays dear for his charity.

The Muscovite priests use exorcisms at the administration of baptism. They plunge the child three times over head and ears in water, and give it the sacrament of the Lord's Supper in one species, until it hath attained the age of seven; after which the child is indulged with it in both kinds. They likewise administer the sacrament to dying persons, together with extreme unction; and, if this be

be neglected, the body is denied Christian burial. Soon as the person expires, the body is deposited in a coffin, with a lunchion of bread, a pair of shoes, some few pieces of money, and a certificate signed by the parish-priest, and directed to St. Nicholas, who is one of their great patrons. They likewise hold St. Andrew in great veneration, and ridiculously pretend they were converted by him to Christianity. But next to St. Nicholas, they adore St. Anthony of Padua, who is supposed to have sailed upon a mill-stone through the Mediterranean and Atlantic, and over the lakes Ladoga and Onega, as far as Novogorod. Every house is furnished with an image of St. Nicholas, carved in the most rude and fantastic manner; and, when it becomes old and worm-eaten, the owner either throws it into the river with a few pieces of coin, saying, "Adieu, brother;" or returns it to the maker, who accommodates him with a new image for a proper consideration. The good women are very careful in adorning their private St. Nicholases with rich clothes and jewels; but on any emergency these are resumed, and the saint left as naked as he came from the hand of the carpenter.

There are monasteries in Russia; but neither the monks nor the nuns are subject to severe restrictions. The friars are either horse-jockeys, or trade in hops, wheat, and other commodities; the sisters are at liberty to go abroad when they please, and indulge themselves in all manner of freedoms. Heretofore liberty of conscience was denied, and every convicted heretic was committed to the flames; but, since the reign of Peter, all religions and sects are tolerated throughout the empire. Roman Catholics, Lutherans, Calvinists, Armenians, Jews, and Mahometans, enjoy the free exercise of their respective forms of worship; though it was not without great difficulty, and by dint of extraordinary solicitation from different powers, that the Romish religion was allowed. Peter knowing the dangerous tenets of a religion that might set the spiritual power of the pope at variance with the temporal power of the emperor, and being well acquainted with the meddling genius of its professors, held out for some time against the intercession of Germany, France, and Poland; and, though at length he yielded to their joint interposition, he would by no means suffer any Jesuit to enter his dominions.

The government of Russia is mere despotism. The whole empire is ruled by the arbitrary will and pleasure of the sovereign, who is styled the czar or tzar, a title which is probably a corruption of Cæsar. Heretofore he was styled Grand Duke of Muscovy: but since the reign of Peter, he is dignified with the appellation of Emperor of Russia; and the present sovereign is styled Empress of all the Russias. The emperor is absolute lord, not only of all the estates in the empire, but also of the lives of his subjects: the greatest noblemen call themselves his slaves, and execute his commands with the most implicit obedience. The common people revere him as something supernatural; they never mention his name, or any thing immediately belonging to him, without marks of the most profound respect and awful veneration. A man asking a carpenter at work upon one of the czar's warehouses, what the place was intended for? was answered, "None but God and the czar knows."

All the peasants in the empire are considered as immediate slaves belonging to the czar, to the boyars, or to the monasteries. The value

value of eſtates is computed, not by the extent or quality of the land, but from the number of thoſe peaſants, who may be ſold, alienated, or given away, at the pleaſure of their maſters. The number of theſe huſbandmen, whether living in villages or in the open country, being known, the czar, by requiring a certain proportion of each lord or proprietor, can raiſe three hundred thouſand men in leſs than forty days.

The adminiſtration is managed by a grand council, called dumnoy boyaren, or "council of the boyars," who are the grandees of the empire, and act as privy counſellors. To this are ſubſervient ſix inferior chambers and courts of judicature, provided each with a preſident. The firſt regulates every thing relating to ambaſſadors and foreign negociations; the ſecond takes cognizance of military affairs; the third manages the public revenues of the empire; the buſineſs of the fourth is to encourage, protect, and improve, trade and commerce. The two laſt hear and determine in all cauſes, whether civil or criminal.

Peter divided the empire into the eight governments of Moſcow, Archangel, Aſoph, Caſan, Aſtracan, Chioff and the Ukraine, Siberia, Livonia, comprehending Ingria, Pleſcow, and Novogorod, Smolenſko, and Veronitz. The governors or waivodes were veſted with power to diſpoſe of all employments civil and military, and receive the revenues. They were directed to defray all expences in their reſpective governments, and ſend a certain yearly ſum to the great treaſury. In a word, they enjoyed abſolute power in every thing but what related to the regular troops, which, though quartered in their juriſdiction, were neither paid nor directed by them, but received their orders immediately from the czar or his generals.

In 1775 the preſent empreſs made a complete new-modelling of the internal government in a form of great ſimplicity and uniformity. By that reglement ſhe divided the whole empire into forty-three governments, placing over each, or where they are of leſs extent over two contiguous governments, a governor-general with very conſiderable powers. She ſubdivided each government into provinces and diſtricts; and for the better adminiſtration of juſtice erected in them various courts of law, civil, criminal, and commercial, analogous to thoſe which are found in other countries. She eſtabliſhed likewiſe in every government, if not in every province, a tribunal of conſcience, and in every diſtrict a chamber for the protection of orphans. Amidſt ſo many wiſe inſtitutions a chamber for the adminiſtration of her imperial majeſty's revenues was not forgotten to be eſtabliſhed in each government, nor a tribunal of police in each diſtrict. The duty of the governor-general, who is not properly a judge, but the guardian of the laws, is to take care that the various tribunals in his government diſcharge their reſpective duties, to protect the oppreſſed, to enforce the adminiſtration of the laws; and, when any tribunal ſhall appear to have pronounced an irregular ſentence, to ſtop the execution till he make a report to the ſenate and receive her majeſty's orders.—It is his buſineſs likewiſe to ſee that the taxes be regularly paid; and, on the frontiers of the empire, that the proper number of troops be kept up, and that they be attentive to their duty.

This reglement contains other inſtitutions, as well as many directions for the conducting of law-ſuits in the different courts, and the

administration of justice, which do her majesty the highest honour; but the general want of morals, and what we call a sense of honour, in every order of men through this vast empire, must make the wisest regulations of little avail. Russia is perhaps the only nation in Europe where the law is not an incorporated profession. There are no seminaries where a practitioner must be educated. Any man who will pay the fees of office may become an attorney, and any man who can find a client may plead at the bar. The judges are not more learned than the pleaders. They are not fitted for their offices by any kind of education; nor are they necessarily chosen from those who have frequented courts and been in the practice of pleading. A general, from a successful or an equivocal campaign, may be instantly set at the head of a court of justice; and, in the absence of the imperial court from St. Petersburgh, the commanding officer in that city, whoever he may be, presides *ex officio* in the high court of justice. The other courts generally change their presidents every year. Many inconveniences must arise from this singular constitution; but fewer, perhaps, than we are apt to imagine. The appointment to so many interior governments makes the Russian nobility acquainted with the gross of the ordinary business of law-courts; and a statute or imperial edict is law in every case. The great obstacles to the administration of justice are the contrariety of the laws and the venality of the judges. From inferior to superior courts there are two appeals; and in a great proportion of the causes the reversal of the sentence of the inferior court subjects its judges to a heavy fine, unless they can produce an edict in full point in support of their decision. This indeed they seldom find any difficulty to do; for there is hardly a case so simple, but that edicts may be found clear and precise for both parties; and therefore the judges, sensible of their safety, are very seldom incorruptible. To the principle of honour, which often guides the conduct of judges in other nations, they are such absolute strangers, that an officer has been seen sitting in state and distributing justice from a bench to which he was chained by an iron collar round his neck, for having the day before been detected in conniving at smuggling. This man seemed not to be ashamed of the crime, nor did any one avoid his company in the evening.

Few crimes are capital in Russia: murder may be atoned by paying a sum of money; nay, the civil magistrate takes no cognizance of murder, without having previously received information at the suit of some individuals. Criminals were punished with torture and the most cruel deaths till the reign of the illustrious Catharine I. when a more merciful system took place, and which the present empress has since confirmed by law.

With respect to the revenue of Russia, it continually fluctuates, according to the increase of commerce or the pleasure of the czar, who has all the wealth of the empire at his disposal. He monopolizes all the best furs, mines, minerals, and the trade by land to the East Indies; he farms out all the tobacco, wine, brandy, beer, mead, and other liquors; the inns, taverns, public houses, bath, and sweating-houses. The customs upon merchandize, the imposts upon corn, and toll exacted from cities, towns, and villages, are very considerable. He possesses demesnes to a very great value; inherits the effects of all those that die intestate, or under accusation of capital crimes; derives a duty from all law-suits; and, to sum up the whole,

whole, can command the fortunes of all his subjects. All these articles produce a revenue, estimated at upwards of 40,000,000 rubles, or 6,333,333l. 6s. 8d. sterling; but then the intrinsic value of money is at least three times greater in Russia than in Britain. The expences in time of peace never exceed 38,000,000 rubles: the remainder is not treasured up, but is employed by her imperial majesty in constructing public edifices, making harbours, canals, roads, and other useful works, for the glory of the empire and the benefit of her subjects.

The standing army of Russia is computed at 250,000 men; besides these, the Russians can assemble a body of 40,000 irregulars, Calmucks, Cossacks, and other Tartars, who live under their dominion. But the number may be doubled on any emergency. The czarina has likewise a considerable fleet in the Baltic, and a great number of formidable galleys, frigates, fire-ships, and bomb-ketches.

REMARKABLE INSTANCE OF THE FORCE OF ELOQUENCE.

POLEMO, who succeeded Xenocrates in the direction of the academy, was an Athenian of distinguished birth, and in the earlier part of his life a man of loose morals. The manner in which he was reclaimed from the pursuit of infamous pleasures, and brought under the discipline of philosophy, affords a memorable example of the power of eloquence employed in the cause of virtue. His history is thus related by Dr. Enfield:—"As he was, one morning about the rising of the sun, returning home from the revels of the night, clad in a loose robe, crowned with garlands, strongly perfumed, and intoxicated with wine, he passed by the school of Xenocrates, and saw him surrounded with his disciples. Unable to resist so fortunate an opportunity of indulging his sportive humour, he rushed without ceremony into the school, and took his place among the philosophers. The whole assembly was astonished at this rude and indecent intrusion, and all but Xenocrates discovered signs of resentment. Xenocrates, however, preserved the perfect command of his countenance; and with great presence of mind turned his discourse from the subject on which he was treating to the topics of temperance and modesty, which he recommended with such strength of argument, and energy of language, that Polemo was constrained to yield to the force of conviction. Instead of turning the philosopher and his doctrine to ridicule, as he at first intended, he became sensible of the folly of his former conduct; was heartily ashamed of the contemptible figure which he had made in so respectable an assembly; took his garland from his head; concealed his naked arm under his cloak; assumed a sedate and thoughtful aspect; and, in short, resolved from that hour to relinquish his licentious pleasures, and devote himself to the pursuit of wisdom. Thus was this young man, by the powerful energy of truth and eloquence, in an instant converted from an infamous libertine to a respectable philosoper. In such a sudden change of character it is difficult to avoid passing from one extreme to another. Polemo, after his reformation, in order to brace up his mind to the tone of rigid virtue, constantly practised the severest austerity and most

hardy fortitude. From the thirtieth year of his age to his death he drank nothing but water. When he suffered violent pain, he shewed no external sign of anguish. In order to preserve his mind undisturbed by passion, he habituated himself to speak in an uniform tone of voice, without elevation or depression. The austerity of his manners was, however, tempered with urbanity and generosity. He was fond of solitude, and passed much of his time in a garden near his school. He died, at an advanced age, of a consumption. Of his tenets little is said by the ancients, because he strictly adhered to the doctrine of Plato."

VIEW OF THE STATE OF LEARNING IN EUROPE.

IN comparing the present century with those immediately preceding, it will not be found, that so much has been done toward the improvement of science as may be imagined by superficial observers, and might have been expected from progressive experience. The philologists, orators, poets, historians, and novelists, of the 16th and 17th centuries, were by no means inferior, and were in some respects superior, to those of the eighteenth. In mixt mathematics, particularly in astronomy, some valuable, at least curious, discoveries have been made from the great improvement of telescopes and other instruments of observation. Mechanics have been carried to a much greater degree of perfection; and natural and experimental philosophy have acquired a certitude and accuracy, beyond what they had in any prior period; pharmacy has also been purified from the dregs of former times; anatomy and chirurgery have been eagerly and successfully cultivated; and the principles of the healing art have been simplified and better arranged.

Such are the parts of science, with respect to which our age can boast some sort of superiority: for, with regard to the fine arts, as they are termed, we apprehend they are rather languishing than acquiring vigour. A partial or local improvement, in some of them, may have taken place, and has, no doubt, taken place in this nation; but we greatly mistake, if, on the whole, they have not lost more than they have gained.

Whether in political, moral, or religious, knowledge, we are a whit wiser than our forefathers, appears to us a problem, that may be disputed with equal plausibility on both sides of the question. It is true, the general principles of social compacts and civil institutions have been more thoroughly canvassed, and perhaps better understood; the natural rights of man more clearly ascertained and more strongly asserted; the various sorts of government better discriminated and more impartially appraised: but how far these fine theories are compatible with practice, or are likely to be attended with permanent blessings to society, is yet to be seen.

New systems of ethics have likewise been created, and bases of various forms have been contrived for the statue of virtue; yet we think it must be confessed that the goddess is not more sincerely worshipped, nor her votaries more numerous, than in the days of our predecessors; we fear the reverse is true.

As to theology, or the science of religion, it has certainly undergone some considerable changes within these fifty years, and is apparently on the eve of still greater alterations: but whether these

these alterations will produce a more genuine religion, that is, a more exalted idea of the Supreme Being, a greater respect for his behests, and a more humble submission to his will, in short a more fervent and disinterested piety, seems to us highly problematical: Time, the greatest instructor, will shew how far our mistrust is grounded.

One thing, however, may be advanced as true: religion in general wears a more amiable face; intolerantism is no more her inseparable companion; and mankind seem willing to go to heaven without justling one another on the road. The principles of religion too have been more minutely examined; many inveterate prejudices exploded; revelation grounded upon more rational motives of credibility; a number of various corruptions eliminated from the sacred volumes with which the hand of time had tarnished them; and biblical criticism established on such principles, and guided by such rules, as must necessarily tend to its perfection. This, therefore, is all well: yet if all this conduce not to meliorate the heart of man, to inspire him with a greater degree of the love of God and of his neighbour; what will religion profit by it?

On the other hand, it is but too true, that irreligion has made great strides during the same period. The metaphysics of Hume, the eloquence of Bolingbroke, the learning of Freret, the wit of Voltaire, and the fascinating logic of Rousseau, (not to mention a numerous but less formidable tribe of inferior writers,) have inflicted severe wounds on Christianity, and spread the contagion of infidelity far and wide: even atheism, who before lurked in corners, and covered his face with a deceitful veil, has recently shewn himself without disguise; and Hammonds and Dantons have appeared, who boldly dared the Deity to punish them for disbelieving his existence. And this is called "The age of reason!"

Having thus given a short view of the present state of literature in general, we will next, in as few words as possible, and we flatter ourselves with strict distributive justice, assign to the different nations of Europe their respective shares; and begin by

ITALY.

Every one knows that, on the revival of letters, Italy was their first foster-mother; and the golden age of Leo will ever be accounted a remarkable æra in the history of human knowledge. For a century, at least, it retained its superiority; and, although it has since been visibly sinking in the public scale, yet it still holds a considerable rank in every branch of science, where religion is not directly or indirectly concerned. It has produced excellent historians, most ingenious poets, and some tolerable orators; it has greatly embellished its fine melodious language, and was the first modern nation that had a good lexicon. In mathematics and experimental philosophy, it is now below its neighbours; and it has always been deemed the best school for music, painting, and sculpture. Divinity alone (and philosophy in as far as it is connected with divinity) has been bound in fetters by monachism, superstition, and inquisitorial tribunals. But these fetters will probably soon be shaken off by that ingenious people: God grant they may not at the same time shake off religion herself, under the idea that she had forged their chains: this is no uncommon process in national revolutions. Some change in the religious creed of Italy appears to be

be inevitable. The scriptures are more generally studied, and have been translated into the vulgar tongue; the bishops of particular dioceses, supported by their respective sovereigns, begin to exercise a jurisdiction independently of Rome; papal infallibility is scouted every where, save in the papal territories, and even there feebly defended, perhaps not believed; superstitious rites and usages are daily diminishing, and freedom of thought pervades all ranks of men who have had any sort of liberal education. What may we not augur from such symptoms?

SPAIN AND PORTUGAL.

Although these nations have, for almost two centuries, made very little figure in the field of science, it is not hence to be concluded that this has been owing to want of capacity: they are naturally a thinking and acute people, and, in the sixteenth century, held a respectable rank among the nations of Europe; but here the inquisition, more rigid and bloody than that of Italy, has stifled every spark of genius that has come within its reach, and plunged the inhabitants into an ignorance hardly to be credited. The time, however, seems to approach, when that diabolical tribunal must be abolished; and, to do justice to this and the last reign, its power has already been greatly curtailed: still, however, it has power enough to prevent a general dissemination of knowledge; and few, comparatively, are the works of value that have yet been written on the other side of the Pyrenées. Yet the Spanish language seems peculiarly formed for fine composition, whether in prose or verse; and they have now a national dictionary that vies with any in Europe.

FRANCE.

Unhappy France! Thou wast once a nation of learned men. Although thou didst not embrace the muses so early as thy southern neighbour, thou receivedst them with not less tenderness, and cultivatedst them with more industry. In what species of writing (Epic poetry excepted) didst thou not excel? what art or science didst thou not improve and adorn? what charms didst thou not give to one of the most barbarous tongues in the universe? Thy Gothogallic jargon, embellished by the skill of thy grammarians and orators, became the language of the world, and the vehicle of knowledge to the ends of the earth. "Ah! how are the mighty fallen, and the weapons of learning perished!"

Reader, we mean not, by this apostrophe, to debase the French nation, nor to throw any slur upon their late exertions to shake off the yoke of despotism, and vindicate their just rights; we are only penetrated with sorrow and regret, that the vindication of those rights should be attended with consequences so fatal to learning, and we fear to liberty itself, at least for a long portion of time. But is France at present without learned men? are the arts and sciences there totally neglected?—Neither the one nor the other! But, alas! the number of truly-learned men in France, at this moment, are like the gleanings of the field; old age, exile, or the guillotine, has swept the great harvest away; and it will yet be a long, long, winter, before such another crop can appear. The arts and sciences are not altogether extinct; but they shed only a faint light: the rays of which serve chiefly to shew what vandalic devastation has been made among their best productions. Let us turn our eyes from so dismal a prospect, and cherish a hope, that the

the genius of France may yet trim his withered bays, and rise to his former renown.

GERMANY, HOLLAND, &c.

A petulant French jesuit once made it a question, Whether a German was capable of wit? And not less petulant was the observation of an Englishman, that the Dutch carried their genius on their backs. Odious assertions! The German Luther had at least as much wit as Father Bouhours; and the Colloquies of Erasmus of Rotterdam contain more attic humour than can be collected from the whole mass of English writers from Chaucer to Swift.

That the French, a vain and jealous nation, should contemn German literature, is not much to be wondered at. They have sometimes affected to despise their masters, the Italians. But that we, a Saxon colony, should join in the affront, is certainly a matter of surprise. The truth is, that although the German be the parent of our own tongue, or at least a sister-dialect, we have not, until very lately, paid any attention to German books, unless they were written in Latin. Yet Germany has, in the course of the present century, produced as many good works in German as any country in the world. We know not if it be saying too much, to affirm, that more German books are annually published than in one half of the world besides: they are not all excellent, to be sure, but most of them are good, and few intolerable; and there is not a branch of science which is not highly cultivated, especially in the protestant universities. Formerly, the Germans wrote in various dialects, as numerous as their various provinces; and still there are shades of difference in the languages of Berlin, Leipsic, and Vienna. But having now an excellent lexicon, and several good grammars, they seem to aim at some sort of uniformity, both in style and phraseology. Their poetry is greatly improved, and every day improving; in novel-writing, they are more natural than we; of their oratory we cannot say so much; in mathematics, natural history, physic, experimental philosophy, they are second to none; in rational theology, they have made great progress; and in biblical criticism, hold the very first rank.

What we have said of Germany, is more or less applicable to Holland, Sweden, Denmark, and the other northern regions that border on Germany, and speak Teutonic dialects. To them the German has been chiefly the great vehicle of knowledge, which they have generally transfused into their own tongues; but, in Sweden, of late, many very learned men have arisen, who, in philology, and every species of critical knowledge, are not inferior to the Germans; and they have one of the best translations of the bible that have been made into modern languages.

The literature of Holland is, in some measure, peculiar to itself. Although their language be a German dialect, it has not been much written in; their principal works are in Latin or French. This latter was imported by the French refugees who fled from the persecution of Louis XIV. and, through them, soon become familiar to the Dutch themselves: almost as many French works have issued from the presses of Amsterdam, Rotterdam, and the Hague, as from those of Paris and Lyons. We speak not at all of the Netherlands, because we know no works of any great merit in the Flemish dialect. It has, for many years, been giving place to

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the French, which now bids fair to extinguish it. The language of Lisle is become the language of Brussels; and, in half a century more, perhaps there will be no other dialect spoken on this side the Rhine.

It might be expected, that we should say something of Polish and Russian literature; but, we confess, we are little acquainted with either, unless through the medium of German reviews. We know only that the Russian language has been improved in latter times, and is said to be copious and harmonious: if any works of great importance shall appear in it, we will endeavour to get an account of them. We have seen some Polish publications, but their number is not great; and now, we imagine that unfortunate nation will be taught to lisp in the respective languages of its new masters.

On the 7th of last December (1795), a new academy of arts and sciences was opened at Paris. Benezech, the minister for the home department, attended the meeting. The decrees were read, and preliminary speeches made. The decree was to the following purport: "The academy of arts and sciences belongs to the whole republic, and Paris is its place of residence. Its employment is to aim at bringing all arts and sciences to the utmost perfection of which they are capable. It is to notice every new attempt, and all new discoveries, and to keep up a correspondence with all foreign literary societies. And, by the particular orders of the executive directory, its first studies are to be directed to those subjects, which more immediately tend to the reputation and advantage of the French republic." The academy is to consist of two hundred eighty-eight members, half of whom are to reside in Paris, the other half in the departments; and to them is to be added a certain number of foreigners, as honorary members, confined at present to twenty-four. The academy is divided into three classes, each class into sections, each section to contain twelve members. For each class a particular room in the Louvre is appropriated. No one can be a member of two classes at the same time, but a member of one class may be present at the meetings of any other. Each class is to print, yearly, an account of its transactions. Four times a year, there are to be public meetings. On these occasions, the three classes meet together. At the end of each year they are to give a circumstantial account to the legislative body of the progress made in that year in the arts and sciences. The prizes given yearly by each class are to be publicly notified at certain times. The sums requisite for the support of the institution are to be decreed yearly by the legislative body, upon a requisition made by the executive directory. Each class is to have, at its place of meeting, a collection of the products both of nature and art, and a library, according to its particular wants. The regulations of the institution, with respect to the times of meeting, and its employments, are to be drawn up by the body at large, and laid before the legislative assembly.

On the first of December, the College Royal was again opened, under the name of the College of France. As many of the former professors have disappeared, the remaining members are to fill up their places, with the approbation of the executive directory. At the opening of the college, Bouchaud, formerly member of the academy of inscriptions, read, as professor of the law of nations, the

the plan of his future lectures. Portal gave an account of the epidemic fever in the Vendée, and of the opening of the body of Lalande's nephew, who loſt his life by this diſeaſe. Lalande gave his hiſtory of Aſtronomy for the year 1795; the plan of the new board of longitude, and a ſketch of the plan to meaſure a meridional line from Dunkirk to Barcelona. Riviere, profeſſor of Hebrew, explained many places in Homer, which he eſteemed as Hebraiſms. Cauſſin, profeſſor of Arabic, read a tranſlation of a little Arabic poem, of the ſixth century: and ſeveral other profeſſors read their eſſeys on the parts of knowledge or literature in their reſpective branches.

Two great national inſtitutions.—The muſeum of paintings, or conſervatory of the arts, and the library, promiſe to be eminently beneficial to the world. Each of them has been greatly enriched by the acquiſitions of the republic. The firſt, by a vaſt collection of paintings from Holland and the Low Countries, and continual contributions, promiſes to draw to Paris (as Italy formerly did) the artiſts of all nations. Several changes have been made in the national library. It is now under the direction of a committee of ſix perſons, with equal powers. De Praet has the care of the printed books. Langles the eaſtern manuſcripts, Duthell, the Greek and Latin manuſcripts. Le Grand d'Auſſy, the manuſcripts in modern languages. Barthelemy, the medals and antiques; and Joly the copper-plates.

From the decree of the legiſlative body, and the preparations in conſequence of it, the French begin to flatter themſelves, that they ſhall ſoon make a conſiderable progreſs in the eaſtern languages. According to this decree, a public ſchool is to be erected in the national library, for the learning of eaſtern languages, particularly of thoſe which may be uſeful in political or commercial ſpeculations. This ſchool is to have the following maſters: one for the ancient and modern Arabic; one for the Turkiſh and Tartarian; and another for Perſian and Malayan. The teachers are to inſtruct their ſcholars, not only in the languages, but in the political and commercial relations of the nations ſpeaking thoſe languages, to the French. Their inſtructions muſt be given in the French language; and be open to the inquiries of the committee for public inſtruction, to which are committed the erecting and ſuperintendance of this ſchool.

GREAT BRITAIN.

Having thus made the grand tour as rapidly as moſt of our modern travellers, we return with pleaſure to our native ſoil; and are happy in the thought that it has not been leſs productive of every ſort of knowledge than climes that enjoy a warmer ſun. Monteſquieu was wont to ſay, "That England was a country to think in;" and this conceſſion from a French writer is no ſmall eulogy. In fact, we are a thinking, more than an ingenious, nation: we have ſeldon been guilty of invention; but we are bold and perſevering imitators, and have generally perfected what had been invented by others: of this, our various manufactures are a ſenſible and ſtriking proof. "*Vos machines ſont mieux montées,*" ſaid to us an intelligent Frenchman, whom we met ſome years ago at Birmingham; and this is pure truth. The employers of our artiſts ſpare no coſt; and our artiſts, patient and well paid, leave nothing unfiniſhed in their various operations, from the mill that grinds the ſugar-cane to the ſcrew that

draws a cork. Hence the great demand for our wares all over the globe. If our learning and science had but kept pace with our mechanics, we should have been the most learned and enlightened people under the sun: as it is, we have no reason to blush. Let us see what we have done in the lapse of an hundred years.

In the first place, we have considerably polished, and, at the same time, perhaps, enervated, our language; we write more grammatically, but not more forcibly nor eloquently; we have a good dictionary of our language, but far from being a perfect one, or even equal to those of some other nations, though we are sometimes apt to boast the contrary. Its defects are great and numerous; and we cannot but lament, that a gentleman, who has long laboured to improve it, and supply its deficiencies, has not met with that encouragement to which he had a claim; and without which he could not carry on so expensive an undertaking.

On oratory and elocution, several useful tracts and lectures have appeared, but there is very little new in them. Dr. Cambell's Philosophy of Rhetoric, and Mr. J. Walker's Melody of Speaking delineated, are the only works of the kind that possess orginality, yet they have been little read. History has had a better fate. We have many good historians; but Hume shines among them like the moon among inferior stars. From history to novels the transition is short; and here, if number prevail, we are invincible. Since the fertile pen of Richardson poured forth its sentimental torrent, a thousand streamlets have emulated its course, and purled away, with an uniform similarity, through the enchanted plains. An inundation of pretty poetry has also deluged the land; but the grand, the sublime, the Shakesperian, and the Miltonic, seem beyond the grasp of modern bards. Two or three good comedies have graced the stage; but the Tragic Muse has been in deep lethargy for many years. Natural history and experimental philosophy, more especially botany and chemistry, have made great progress among us; but the Swedes and Germans led the way. The chair of Newton has not been refilled; and this is no matter of astonishment, since academical honours have been made the reward and badge of a party. Politics have been cultivated with uncommon ardour, especially since the French revolution; and some new ingenious systems have been broached, which have not yet received the sanction of public approbation. We avoid mentioning names, that we may escape the imputation of partiality.

In theology, a wonderful revolution has happened in this country.—The principles of Calvin, which were once common to Presbyterians and Episcopalians, are now exploded by both; and Arminianism has had a complete triumph over the gloomy system of Gomarus. There were some few Socinians in the days of Charles II. and in every succeeding reign; but they were individuals, who had no public conventicles, nor ostensible communion. At present, they are a numerous and respectable body; and are daily increasing.—The acrimonious opposition, which they have met from the established church, and the obstinate refusal of government to repeal the test and corporation acts, have not a little contributed to this increase. *Sangui martyrum semen Sanctorum*, is an axiom that will always be found to be true, whatsoever be the principles of the persecuted.—We say persecuted; because we are thoroughly

thoroughly convinced, that every sort of restraint, in matters merely religious, is a species of persecution; although it be not persecution unto death. This latter, indeed, is happily abolished; or, at least, gone gradually unto disuse. We no longer hang a popish priest for saying mass; nor bore the tongue of an Unitarian with a hot iron for denying the Trinity.—The times will not bear such severities; yet we have no hesitation in asserting, that as long as a single Briton is, on account of his religious tenets, excluded from any place which he is capable of filling, genuine liberty he does not enjoy. The statute of Elizabeth is still unrepealed which makes it perpetual imprisonment and forfeiture of goods, to speak or write against the Trinity. To oblige men, by penal laws, to think alike, is to renew the bed of Procrustes; which philosophy ought to have broken in pieces for ever. Difference in opinion is as natural as difference in complexion; and one may be as justly persecuted for being black, brown, or fair, as for being of this or that religious persuasion. Theological knowledge is promoted by divisions; every party exert their talents and sagacity, to seek and draw, from the common arsenal of controversy, arms to support their own cause; and, from the clash of arms meeting arms, some sparks of unquestionable truth are now and then elicited. In one point of divinity, we seem almost agreed, namely, that the scriptures, our common rule of faith, have not been handed down to us in their original purity; and both the orthodox and dissenter have acknowledged the expediency of correcting them by the canons of sound criticism. The collation of the MSS. of the New Testament by Mills, and of the Old Testament by Kennicott, does honour to the university of Oxford; and, from the same seminary of learning, we expect with avidity, a collection of the MSS. of the most ancient and valuable Greek version, known by the name of the Septuagint. No doubt the other more ancient versions, particularly the Syriac and Latin Vulgate, will, in time, be also collated; and each of these collations will contribute to remove from the sacred Books, the grubs and straws, that have stuck to their amber in the course of time.

The fine arts have flourished in England, since the commencement of this century; and particularly since the institution of the royal academy. The late president, both by precept and example, inspired our painters with a spirit of emulation, which has produced as many good artists, as, perhaps, any other nation during the same period. We have also sculptors, who do honour to the nation; and our engravers are equal to any that France or Italy has produced. Many of these are now employed in furnishing a new and invaluable set of ENGRAVINGS for the ENCYCLOPÆDIA LONDINENSIS, a Work which has most deservedly received the Patronage of his Majesty, and the approbation of all mankind.

Except the above, there is rather a dearth of important publications; but this, we trust, like the dearth of provisions, is only a temporary evil. The fierce Bellona has ever been at variance with the gentle Muses; although she has often been the subject of their song. But the flame of war cannot rage for ever; and learning and science must again revive in the fostering lap of Peace. Ah! may *she soon unfold that lap, and may science and learning acquire new* vigour in her warm embraces!

CURIOUS OBSERVATIONS ON THE POSITION OF THE EARTH.

IT is remarkable that the three great capes or promontories of the earth, viz. Cape Horn, the Cape of Good Hope, and that of Diemen's Land (New Guinea), should be turned to the south. The points of the three great continents thus directed make me suspect, that immense volumes of water have rolled with violence from the south to the north; and that they have made breaches, wherever the soft and sandy soils have given way to the impulse of the ocean.

The most distinguished capes, after those just mentioned, have much the same direction; such as, Cape Comorin, in Asia; that of Malacca, in the peninsula of that name; St. Mary, in Madagascar; those of the peninsula of Kamscatka, of Nova-Zembla, of the great island of Jeso, of Greenland, of California, and of Bahama in Florida. These objects, seen in the great, make it unnecessary to regard those little points which advance into the sea in other parts, and which, though called capes, are nothing more than salient angles, formed by particular accidents or sinuosities of the coast. The three great promontories of the Mediterranean, those of Calabria, the Morea, and the Crimea, are likewise turned toward the south.

The greatest irruption of waters into our continent appears between Africa and New-Holland to Cape Comorin, which, being formed of vast impenetrable rock, divided the currents from the south. One of these currents, turned out of its course, seems to have formed the Red Sea, of which the Adriatic Gulph is, in my opinion, a continuation; and that the same force which carried the waters into the land at Babel-Mandel impelled them on to the neighbourhood of Venice, surmounting the isthmus of Suez, which is since dried up, either by the retreat of the Mediterranean, or by the diminution of the Red Sea.

As to the Persian gulph, it seems to have been produced by the same irruption and tendency of the ocean toward the north pole. The ancients thought that the Caspian sea was a prolongation of this gulph; in passing over the space between them, in a line between the 71st and 72d degrees of longitude, one falls on manifest vestiges of the sea's ancient bed, a wide champaign country of moving sands, mixed with fragments of shells, and of marine substances. Beyond these plains, now dry, is the great desert of sand, 120 miles north of Ispahan; in the depth of this solitude, enormous mountains of salt spread over the surface for many leagues every way: this canton is called at this day by the inhabitants, the Salt Sea, and in our maps, Mare Salsum. On the right of this region of salt runs a line of sandy hills, which the winds have heaped together. In advancing under the same meridian beyond Couchestan, the earth inclines, and continues sloping perceptibly to Ferrabat; the course, probably, by which the ocean retreated, after a temporary residence in the region first described.

I have observed with astonishment, that there is much more dry land on our side of the equator than on the other; the supposition, that there must be a balance in the south to the weight of the earth in the north, is contradicted by the experience of all modern navigators, who,

who, from the 55th degree of latitude on our hemisphere to the 60th on the opposite, have not fallen in with any great continent. I observe, with equal surprise, that almost all the parts of the globe placed directly under the equator are covered by the ocean; which cannot be reconciled with the elevation it is said the earth must have at the equator; it being the nature of fluids to find their own level. To this the Newtonians will answer, that the axis of the equator, being longer than that of the poles, the motion of the earth must be greater under the line; and that the waters follow the greater movement: if so, it only remains for them to prove, that this increase of motion is sufficient to surmount the natural tendency of water to an equilibrium.

Navigators have reached to the 80th degree of north latitude, but have not been able to get beyond the 60th of southern, owing to the extreme cold, and opposition of ice: this confirmst he prevalency of water over earth in the south; it being admitted, that air passing over water is much colder than that which passes over dry land, which militates strongly against the supposition of a great southern continent. M. Buffon supposes that the great masses of ice in the South Seas are formed by rivers descending from the Austral lands; but, admitting the existence of those lands, this does not remove the difficulty, the question not being how these bodies of ice are formed, but why they should dissolve in summer in the 80th degree of our latitude, and never melt in any season in the 60th of the opposite.

If a force from the south has driven the waters to the north, those of the north must have taken a direction to the south, to supply the waste, and restore the equilibrium; the observations of the Swedish naturalists confirm the supposition, by marking the retreat of the sea from the northern coasts in the proportion of four feet six inches in a century. If this be the case, the retreat of the northern ocean should bear some proportion to the advances of the southern, but this is not so; the former being slow and gradual, the latter impetuous and greatly predominant. Authors refer this to a certain periodical motion in nature yet unknown;—this is no uncommon way, though very unsatisfactory, of solving the difficulties of natural history, which must for ever abound in difficulties, as we know nothing of the principles on which the great Author of nature has acted. We often hear of the superiority of the modern over the ancient naturalists; owing, we are told, to the wisdom of the former in abandoning analogy, and conjecture from the reason of things, the favourite practice of the ancients; and trusting intirely to investigation by experiment: yet the ancients did not neglect, so much as has been supposed, this mode of investigation; witness, the celebrated —*I have found it* of Archimedes, not unlike, though of less eclat, to that divine stroke of Newton, by which his prism brought out at once the whole secret of colours. As to the great advantages which have been derived from this adherence to experiment, we may form a judgment of them, in part, from the following statements:

"If it be asked what are the discriminative characteristics of minerals, vegetables, and animals, as opposite to one another, I plainly answer, that I do not know any, either from natural history or chemistry, which can wholly be relied on." Again: "Every one thinks that he knows what an animal is, and how it is contradistinguished from a vegetable; and would be offended at having his

his knowledge questioned thereupon. A dog or a horse, he is truly persuaded, are beings as clearly distinguished from a herb or a tree, as light is from darkness; yet as in these, so in the productions of nature, the transition from one to the other is effected by imperceptible gradations." And again: "If, rejecting spontaneous motion and figure as very inadequate tests of animality, we adopt perception in their stead, no doubt, he would be esteemed a visionary in philosophy, who should extend that faculty to vegetables; and yet there are several chemical, physical, and metaphysical, reasons, which seem to render the supposition not altogether indefensible."

If the diminution of the sea be perceptible in the northern regions, it should take place in some degree in the Mediterranean; and so it has been found to do from age to age. The sediment from running waters is not so considerable as the appearance of those waters indicates. The waters of any river, however thick or muddy, do not contain quite sixty grains of earth in one hundred and twenty pounds of water. On setting some water of the Nile in a glass tube, the sediment was found to have only the eighth of a line in a volume of water which seemed to have fifty times more mud than was obtained by precipitation: it is absurd, therefore, to account for the land's gaining on the sea, by supposing that the bottom of the Mediterranean has been raised by the sand and mud carried into it by the currents of rivers; for, were this the case, the entire soil of Egypt must have been swept away by the Nile into the Mediterranean:—Or rather the Nile, by its overflowings, must have raised the surface of Egypt out of the reach of its own inundations.

No history or tradition has taken notice of any memorable catastrophe occasioned by earthquakes between the 52d and 61st degrees of north latitude: it is only when we advance towards the Pole or the Line, in the heart of the continent, that earthquakes become both frequent and terrible. Another observation, no less interesting, is, that the greater part of the volcanos on our hemisphere are situated on islands, or very near the sea, as Hecla, in Iceland; Etna, in Sicily; and Vesuvius, &c. Among the great volcanos are, the Parannucah in the isle of Java, Conopy in that of Banda, and Balaluan in Sumatra. There are also volcanos in the islands of Ferando, &c. in short, in all those that compose the great empire of Japan, as well as in the Manilla isles, Azores, Cape Verd, and above all that of Del Fuego. The prevalence of volcanos in islands, or in the neighbourhood of the sea, makes me suspect that sea-water is necessary to produce the inflammation of sulphureous and ferruginous pyrites, the principal aliment of volcanos: it is certain that these pyrites never burn but when in contact with water, or in a moist atmosphere, which may be attributed to the property in iron of decomposing sulphur by the aid of water. By the lavas discovered in the Pyrenees, the Alps, the mountains of Auvergne, Provence, &c. it is concluded, that all these places have anciently been volcanos. But why are the furnaces, found at this day on the Terra-Firma, extinct? The cause, in my opinion, is, that the sea having retreated from their vicinity, the fire has ceased, because the decomposition of the pyrites can no longer take place in the bowels of the earth for want of a sufficient quantity of water.

To attribute the extinction of volcanos on the continent to the phlogistic matter being exhausted, is a manifest error. Why should

it fail there, and not in islands, or on the sea coasts? Vesuvius has burnt for more than 3000 years. In the excavations of Herculaneum, the pavement of the streets and foundations of houses are found to consist of square pieces of lava of the very same quality with that now thrown out from Vesuius. Now, Herculaneum was built by the Ausonians and Arrunci before the first colonies from Greece settled in Italy; this could not be later than 1330 years before our æra. Etna too had burnt many years before the birth of Homer and Hesiod. If the combustible matter of these two has not been drained in all this time, what reason is there to suppose that it should have failed in the volcanos of our continent?

Whatever has been written hitherto on the formation of mountains, is subject to insuperable difficulties, since it is known that the highest mountainous points are in no part of the world covered with marine remains; such as shells, dendrites, or other petrifications, under whatever name they may be distinguished. The sea, then, has never surmounted those heights, as is advanced by so many naturalists. I can never believe that it is by the sea that those rocks have been formed, whose beds of the same sort of stone we see prolonged for a space of many leagues. How should the waters assemble so many substances of one kind, and deposit them in another place; at the same time excluding all mixture of heterogeneous matter in the moment of the cohesion of these lapidific particles? It is not at all strange that fragments of shells should be found in marbles, because all marbles are nothing more than coagulations; but it has never been found, nor ever will be, that there are any shells in rock-stone, which proves to a certainty, that this stone, of which entire mountains consist, has never been decomposed or recomposed by the waves of the sea; but is an homogeneous substance, primitive and coeval with the world.

Those who would account for the formation of mountains, do not distinguish between them and the great convex elevation of Oriental Tartary, proved by the vast rivers descending from it in every direction towards the cardinal points. Switzerland is, in miniature, to Europe, what the region of Thibet is, in the great, to Asia; with this difference, that Switzerland has mountains much more elevated than any to be met with on the great convex of Tartary, found to be much higher than the highest tops of the Swiss mountains. If the elevation of Thibet proceeds, as some have advanced, from the crumbling of mountains,—let it be considered how many millions of ages it would take up to convert the pyramidal form of Switzerland into an uniform convex elevation.

Mountains, of whatever height they might be, could not serve as a retreat to the inhabitants of a country overwhelmed by inundations; because such mountains, being more dry and sterile in proportion to their altitude, could not furnish the alimentary vegetables necessary to the sustenance of families and herds of cattle: ten individuals could not live ten days on the summit of Mount Jura. It is on such convexities as that of Tartary, that the remains of the human race might hope to find an asylum against the crush of elements, and the fury of inundations.

If the tribes of Tartars had not, in their wars with each other, destroyed the libraries formed by the learned of Thibet; if a vile emperor of China had not caused to be burnt all the books and manuscripts

nuſcripts that could be found in Upper Aſia; we might, without doubt, collect many facts which would throw light on the hiſtory of our globe, ſo modern, when we conſult the monuments of men; ſo ancient, when we appeal to the indications of nature.

The deſtruction of records in China; the burning of the library of Alexandria in that romantic—rather ſcuffle than—war by Julius Cæſar; and a ſecond time, after it had been in part re-eſtabliſhed, condemned to the flames by the Caliph Omar; the deſtruction of ancient Greek authors by Pope Gregory; to which we may add the prodigous number of volumes defaced by ignorant monks, to make way, by the raſure of the original text, for their miſerable homilies and compoſitions; have been the moſt ſorrowful events in the hiſtory of human kind: they have deprived us of treaſures of knowledge which can never be recovered: the archives of the world were loſt. Yet our chronologiſts boldly determine the epocha of the origin of all nations. To obſerve the arrogance with which they offer their vain calculations, one would imagine that they had read all the books and manuſcripts deſtroyed in China, Thibet, Egypt, and Rome, the very titles of which are unknown to them.

Of all the attempts to calculate the age of the world, the ſyſtem of petrifactions is the moſt unphiloſophical; it being impoſſible to aſcertain a proceſs depending on the quality and quantity of lapidific juices, and other circumſtances, varying ad infinitum in different places, according to the nature of earths, waters, and air; and even of the poſitions of the bodies on which the experiments are made.

We are told by Bochart, that the Hebrew was the eldeſt of nations. Abraham, who lived 600 years before the Trojan war, on his paſſing into Egypt, found it a great and flouriſhing kingdom; the Jews do not pretend to trace their origin, as a people, higher than Abraham. As to Bochart's ſecond aſſertion, that the Egyptians borrowed their arts and ſciences from the Jews, it will be ſufficient to obſerve, that, at the time of Abraham's viſit, the great pyramid was ſtanding; this pyramid exhibits a preciſe meridian, the diſcovery of an aſtronomer far advanced in the ſcience; and the building itſelf could not have been raiſed without a conſummate knowledge of mechanics. The facility with which the Egyptians raiſed thoſe obeliſks which formed avenus to their temples, and which of courſe left little room for the working of engines, brings to ſhame the complicated machinery employed by Fontana in erecting the obeliſk before the church of St. Peter at Rome.

Among the proofs of antiquity, great and early advances in the ſciences, particularly in aſtronomy, are the moſt deciſive. The Egyptians knew, at a very early period, that the ſun was fixed, a common centre to the earth and planets which move round it. They gave the firſt hint of the ſublime idea of every ſtar being a ſun to a ſyſtem like our own. Nor did they ſtop ſhort of the inveſtigation of comets, which they held to be planets, moving in orbits ſimliar but eccentrical to our ſyſtem. Seneca the naturaliſt, ſpeaking of comets, obſerves, "Deprehendi propter raritatem eorum curſus adhuc non poteſt; nec explorari an vices ſervent, et illos ad ſuum diem certus ordo producat." Has not the ſame uncertainty prevailed with us till within this century; and are there not even ſome doubts touching the ſolitary prediction of the comet of 1759? As to that, which, according to Newton, is to make its appearance

ſome time in the preſent century, and to ſweep away in its vortex the ſun, planets, and our whole ſyſtem, it is to be hoped that there is a flaw in his calculation; and we are encouraged in this hope by the conſideration, that, at the time of his publiſhing this alarming prediction, Sir Iſaac was deeply engaged in writing a commentary on the Revelations of John.

It is admitted that the Jews, on their coming out of Egypt, 1500 years before our æra, brought with them the Egyptian year of twelve lunar months, of 30 days each. A year of 360 days muſt have produced great confuſion in the ſucceſſions of ſeaſons; accordingly, it is known that ſo early as the Trojan war, the Egyptians had a year of 365 days; this fell ſhort of true time twenty-five days in a century, corrected in the Julian calendar by adding a day to every fourth year.

Though the Egyptians gave to the vulgar year no more than 365 days, yet they knew that the true year was ſix hours longer. This the prieſts explained in ſecret to Eudoxus and Plato, but kept the uſe they made of it among the arcana of the college; this uſe conſiſted in adding the fourth of a day to every year, calling the firſt year the firſt quarter, and ſo on to the fourth, which formed the luſtrum of four years, borrowed from them by Eudoxus, according to Strabo and Pliny. This ſecret Julius Cæſar learnt during his ſtay at Alexandria, and this led him to the reform of the Roman calendar. It is to the honour of ſcience to obſerve, that, of all the events of Cæſar's life, this bids the faireſt for immortality; for, ſuch is the nature of the thing, that time itſelf muſt be loſt before this can be forgotten.

Should it be aſked, why did not the prieſts apply their luſtrum to the vulgar calendar? I anſwer, for a double reaſon; they were rulers and politicians, as well as prieſts, and thought that, in both caſes, the vulgar were to be governed, as certain fowl are beſt fattened, by being kept in the dark. By their excluſive knowledge of true time, they alone could predict with exactneſs the annual inundations of the Nile, the ſtages of its increaſe and retreat; they alone could fix the preciſe time for obſerving the religious feaſts, moſt of which had their origin in the changes of the ſeaſons; on theſe two articles depended the natural and political exiſtence of an Egyptian. Hence it was, that the prieſts were ſo tenacious of the power this ſecret gave them over the people, that they obliged their kings, at their inauguration, to take an oath that they would never ſuffer the calendar to be corrected.

Having animadverted on the policy of the prieſt, it is but fair to do juſtice to the ſcience of the philoſopher. The vulgar year loſing ſix hours every year, or twenty-five days in a century, it follows that in 1465 years things muſt come right again, and the year begin where it had done at the commencement of the period; of this the aſtronomer took a moſt ingenious advantage, by converting the period of 1465 years, thence called a Cycle, into a meaſurement of time to be applied to the prodigious age he attributed to the world.

It has been demonſtrated by modern aſtronomers, that the cycle was right in the 139th year of the Chriſtain æra; conſequently, the preceding cycle muſt have begun with the Egyptians 1456 years before, and been thence carried back to the meaſurement of an aſcending period of prodigious antiquity;—but here our orthodox aſtrono-

mers interpose, and, for reasons obvious enough, will not allow that the Egyptians carried these cycles higher:—strange, that a sensible people, who knew the value of time, should throw it away in forming a period of which they meant not to make use more than twice or thrice. Happily we live in an age in which men are not to be governed by assertions, in direct opposition to the reason of things.

The notion that the first men were placed on the highest grounds, in order to put them out of the reach of inundations, supposes the necessity of a deluge, and that universal. Let us hear what the learned Freret has thought proper to say on this subject.

"The supposition, that the Egyptian, Greek, Indian, Chinese, and even American, fables, were borrowed from the Mosaic history, is founded on forced conjectures, and absurd systems. At the most brilliant æra of the kingdom of Juda, the Jews had not cultivated astronomy, geometry, or philosophy. The deluges of Ogyges and Deucalion are not mentioned by Homer or Hesiod; yet the latter was of Bœotia, in which both are said to have taken place. Herodotus speaks of Deucalion, but says nothing of a deluge. Plato, Aristotle, Apollodorus, &c. assert, in direct terms, that the deluges of Ogyges and Deucalion took place only in parts of Greece. According to Plato, the Egyptian priests told Solon, that they had in their annals accounts of those deluges; but that such things could not have taken place in Egypt, because it never rains there.

Berosus, the Chaldean historian, 144 years before Christ, asserts an universal deluge, agreeing in every point with the Mosaic account, and therefore suspected to have been borrowed from it. Plutarch and Lucian mention the circumstance of the bird let out of the ark of Deucalion in order to discover land; manifestly borrowed from Berosus, or his copyists. The indentity of Noah with Deucalion, supposed by some, is contradicted by the most learned of the Greek and Latin Christians. Noah's deluge was 2376 years before Christ, that of Ogyges 500 years later. The deluge of Deucalion, about the time of Moses, was 1500 years before Christ.

Grotius, and other defenders of the authenticity of the sacred annals, not content with marking the agreement between Moses and Berosus, quote Ovid, Plutarch, and Lucina. Strange authorities on such a subject! As to Ovid, he would have embraced the *omnia pontus erat*, merely for the conceit in—*deerant quoque litora ponto*. If at any one time the sea was all, it never could at any other time become less than all. How, then, are we to account for the first idea of an universal deluge? There is no difficulty in the matter. It was natural for men, ignorant of the extent and condition of our globe, to take, to take the utmost that they knew for the whole, and to apply the title of Universe to their own horizon. The greatest surprise of the Americans, on first seeing the Spaniards, was to find that there were regions beyond their's, and other people than themselves:—a circle of a few yards is to the emmet a world.

That a tradition of this kind, once set on foot, should keep its ground, and preserve its credit with men after they had become more enlightened, will not seem extraordinary, when we consider, that exaggeration in the idea, and a consequent intemperance in the use of words, have been in all times characteristics of the Orientals: this is not the only instance in which the hyperbole of the east hath imposed on the simplicity of the west and north.

PHENOMENA

PHENOMENA OF THE IGNIS FATUUS.

THAT luminous appearance which goes by the name of ignis fatuus, to which the credulous vulgar ascribe very extraordinary and mischievous powers, is most frequently observed in boggy places and near rivers, though sometimes also in dry places. By its appearance benighted travellers are said to have been sometimes misled into marshy places, taking the light which they saw before them for a candle at a distance; from which seemingly mischievous property it has been thought by the vulgar to be a spirit of a malignant nature, and been named accordingly Will with a Whisp, or Jack with a Lanthorn; for the same reason also it probably had its Latin name ignis fatuus.

This kind of light is said to be frequent about burying places and upon dung-hills. Some countries are also remarkable for it, as about Bologna in Italy, and some parts of Spain and Ethiopia. Its forms are so uncertain and variable that they can scarcely be described, especially as few philosophical observers ever had the good fortune to meet with it. Dr. Derham, however, happened one night to perceive one of them, and got so near that he could have a very advantageous view of it. This is by no means easy to be obtained; for, among other singularities of the ignis fatuus, it is observed to avoid the approach of any person, and fly from place to place as if it were animated. That which Dr. Derham observed was in some boggy ground betwixt two rocky hills; and the night was dark and calm; by which means, probably, he was enabled to advance within two or three yards of it. It appeared like a complete body of light without any division, so that he was sure it could not be occasioned by insects as some have supposed; the separate lights of which he could not have failed to distinguish, had it been occasioned by them. The light kept dancing about a dead thistle, till a very slight motion of the air, occasioned as he supposed, by his near approach to it, made it jump to another place; after which it kept flying before him as he advanced. M. Beccari endeavouring to procure all the intelligence he could concerning this phenomenon, by inquiring of all his acquaintance who might have had an opportunity of observing it. Thus he obtained information that two of these lights appeared in the plains about Bologna, the one to the north, and the other to the south, of that city, and were to be seen almost every dark night, especially that to the eastward, giving a light equal to an ordinary faggot. The latter appeared to a gentleman of his acquaintance as he was travelling; moved constantly before him for about a mile; and gave a better light than a torch which was carried before him. Both these appearances gave a very strong light, and were constantly in motion, though this was various and uncertain. Sometimes they would rise, sometimes sink; but commonly they would hover about six feet from the ground; they would also frequently disappear on a sudden, and appear again in some other place. They differed also in size and figure, sometimes spreading pretty wide, and then contracting themselves; sometimes breaking into two, and then joining again. Sometimes they would appear like waves, at others they would seem to drop sparks of fire: they were but little affected by the wind; and in

wet and rainy weather were frequently observed to cast a stronger light than in dry weather: they were also observed more frequently when snow lay upon the ground, than in the hottest summer; but he was assured that there was not a dark night throughout the whole year in which they were not to be seen. The ground to the eastward of Bologna, where the largest of these appearances was observed, is a hard chalky soil mixed with clay, which will retain the moisture for a long time, but breaks and cracks in hot weather. On the mountains, where the soil is of a looser texture, and less capable of retaining moisture, the ignes fatui were less.

From the best information which M. Beccari was able to procure, he found that these lights were very frequent about rivers and brooks. He concludes his narrative with the following singular account. "An intelligent gentleman travelling in the evening, between eight and nine, in a mountainous road about ten miles south of Bologna, perceived a light which shone very strangely upon some stones which lay on the banks of the river Rioverde. It seemed to be about two feet above the stones, and not far from the water. In size and figure it had the appearance of a parallelopiped, somewhat more than a foot in length, and half a foot high, the longest side being parallel to the horizon. Its light was so strong, that he could plainly discern by it part of a neighbouring hedge and the water of the river; only in the east corner of it the light was rather faint, and the square figure less perfect, as if it was cut off or darkened by the segment of a circle. On examining it a little nearer, he was surprised to find that it changed gradually from a bright red, first to a yellowish, and then to a pale, colour, in proportion as he drew nearer; and, when he came to the place itself, it quite vanished. Upon this he stepped back, and not only saw it again, but found that, the farther he went from it, the stronger and brighter it grew. When he examined the place of this luminous appearance, he could perceive no smell nor any other mark of fire." This account was confirmed by another gentleman, who informed M. Beccari, that he had seen the same light five or six different times in spring and autumn; and that it always appeared of the same shape, and in the very same place. One night in particular, he observed it come out of a neighbouring field to settle in the usual place.

A very remarkable account of an ignis fatuus is given by Dr. Shaw in his Travels to the Holy Land. It appeared in the valleys of mount Ephraim, and attended him and his company for more than an hour. Sometimes it would appear globular, or in the shape of the flame of a candle; at others it would spread to such a degree as to involve the whole company in a pale inoffensive light, then contract itself, and suddenly disappear; but in less than a minute would appear again; sometimes, running swiftly along, it would expand itself at certain intervals over more than two or three acres of the adjacent mountains. The atmosphere from the beginning of the evening had been remarkably thick and hazy; and the dew, as they felt it on the bridles of their horses, was very clammy and unctuous.

Lights resembling the ignis fatuus are sometimes observed at sea, skipping about the masts and rigging of ships; and Dr. Shaw informs us, that he has seen these in such weather as that just mentioned when he saw the ignis fatuus in Palestine. Similar appear-

ances

ances have been observed in various other situations; and we are told of one which appeared about the bed of a woman in Milan, surrounding it as well as her body entirely. This light fled from the hand which approached it; but was at length entirely dispersed by the motion of the air. Of the same kind also, most probably, are those small luminous appearances which sometimes appear in houses or near them, called in Scotland elf-candles, and which are supposed to portend the death of some person about the house. In general these lights are harmless, though not always; for we have accounts of some luminous vapours which would encompass stacks of hay and corn, and set them on fire; so that they became objects of great terror and concern to the country people. Of these it was observed, that they would avoid a drawn sword, or sharp-pointed iron instrument, and that they would be driven away by a great noise; both which methods were made use of to dissipate them; and it was likewise observed, that they came from some distance, as it were on purpose to do mischief.

Several philosophers have endeavoured to account for these appearances, but hitherto with no great success; nor indeed does there seem to be sufficient data for solving all their phenomena. Willoughby, Ray, and others, have imagined that the light was occasioned by a number of shining insects; but this opinion was never supported in such a manner as to gain much ground. The ignis fatuus seen by Dr. Derham above mentioned, as well as all the other instances we have related, seem to demonstrate the contrary. Sir Isaac Newton calls it a vapour shining without heat; and supposes that there is the same difference between the vapours of ignis fatuus and flame that there is between the shining of rotten wood and burning coals. But, though this seems generally to be the case, there are still some exceptions, as had been instanced in the vapours which set fire to the stacks of corn. Dr. Priestley supposes that the light is of the same nature with that produced by putrescent substances; and others are of opinion, that the electrical fluid is principally concerned; but none have attempted to give any particular solution of the phenomena.

From the frequent appearance of the ignis fatuus in marshes, moist ground, burying places, and dunghills, we are naturally led to conclude, that putrefaction is concerned in the production of it. This process, we know, is attended with the emission of an aqueous steam, together with a quantity of fixed, inflammable, phlogisticated, and alkaline, airs, all blended together in one common vapour. It is likewise attended with some degree of heat; and we know that there are some vapours, that of sulphur particularly, which become luminous, with a degree of heat much less than that sufficient to set fire to combustible bodies. There is no inconsistency, therefore, in supposing that the putrid vapour may be capable of shining with a still smaller degree of heat than that of sulphur, and consequently become luminous by that which putrefaction alone affords. This would account for the ignis fatuus, were it only a steady luminous vapour arising from places where putrid matters are contained; but its extreme mobility, and flying from one place to another on the approach of any person, cannot be accounted for on this principle. If one quantity of the putrid vapours becomes luminous by means of heat, all the rest ought to do so likewise; so that, though we may allow

allow heat and putrefaction to be concerned, yet of neceſſity we muſt have recourſe to ſome other agent, which cannot be any other than electricity. Without this it is impoſſible to conceive how any body of moveable vapour ſhould not be carried away by the wind; but, ſo far is this from being the caſe, that the ignes fatui deſcribed by M. Beccari were but little affected by the wind. It is beſides proved by undoubted experiment, that electricity always is attended with ſome degree of heat; and this, however ſmall, may be ſufficient to give a luminous property to any vapour on which it acts ſtrongly; not to mention, that the electric fluid itſelf is no other than that of light, and may therefore by its action eaſily produce a luminous appearance independent of any vapour.

We have a ſtrong proof that electricity is concerned, or indeed the principal agent, in producing the ignis fatuus, from an experiment related by Dr. Prieſtley of a flame of this kind being artificially produced. A gentleman, who had been making many electrical experiments for a whole afternoon in a ſmall room, on going out of it, obſerved a flame following him at ſome little diſtance. This, we have no reaſon to doubt, was a true ignis fatuus, and the circumſtances neceſſary to produce it were then preſent, viz. an atmoſphere impregnated with animal vapour, and likewiſe ſtrongly electrified. Both theſe circumſtances undoubtedly muſt have taken place in the preſent caſe; for the quantity of perſpiration emitted by a human body is by no means inconſiderable; and it as well as the electricity would be collected by reaſon of the ſmallneſs of the room. In this caſe, however, there ſeems to have been a conſiderable difference between the artificial ignis fatuus and thoſe commonly met with; for this flame followed the gentleman as he went out of the room; but the natural ones commonly fly from thoſe who approach them. This may be accounted for, from a difference between the electricity of the atmoſphere in the one room and the other; in which caſe the flame would naturally be attracted towards that place where the electricity was either different in quality or in quantity; but in the natural way, where all bodies may be ſuppoſed equally electrified for a great way round, a repulſion will as naturally take place. Still, however, this does not ſeem to be always the caſe. In thoſe inſtances where travellers have been attended by an ignis fatuus, we cannot ſuppoſe it to have been influenced by any other power than what we call attraction, and which electricity is very capable of producing. Its keeping at ſome diſtance is likewiſe eaſily accounted for; as we know that bodies poſſeſſed of different quantities of electricity may be made to attract one another for a certain ſpace, and then repel without having ever come into contact. On this principle we may account for the light which ſurrounded the woman at Milan, but fled from the hand of any other perſon. On the ſame principle we may account for theſe miſchievous vapours which ſet fire to the hay and corn ſtacks, but were driven away by preſenting to them a pointed iron inſtrument, or by making a noiſe. Both theſe are known to have a great effect upon the electric matter; and by means of either, even lightning may occaſionally be made to fall upon or to avoid particular places, according to the circumſtances by which the general maſs happens to be affected at that time.

On the whole, therefore, it ſeems moſt probable, that the ignis fatuus is a collection of vapour of the putreſcent kind, very much affected

affected by electricity; according to the degree of which, it will either give a weak or strong light, or even set fire to certain substances disposed to receive its operation. This opinion seems greatly to be confirmed from some luminous appearances observed in privies, where the putrid vapours have collected themselves into balls, and exploded violently on the approach of a candle. This last effect, however, we cannot so well ascribe to the electricity, as to the accension of the inflammable air which frequently abounds in such places.

In the appendix to Dr. Priestley's third volume of experiments and observations on air, Mr. Warltire gives an account of some very remarkable ignes fatui, which he observed on the road to Bromsgrove, about five miles from Birmingham. The time of observation was the 12th of December 1776, before day-light. A great many of these lights were playing in an adjacent field, in different directions; from some of which there suddenly sprung up bright branches of light, something resembling the explosion of a rocket that contained many brilliant stars, if the discharge was upwards, instead of the usual direction, and the hedge and trees on each side of the hedge were illuminated. This appearance continued but a few seconds, and then the jack-a-lanterns played as before. Mr. Warltire was not near enough to observe if the apparent explosions were attended with any report.

Cronstedt gives it as his opinion, that ignis fatuus, as well as the meteors called falling stars, are owing to collections of inflammable air raised to a great height in the atmosphere. But, with regard to the latter, the vast height at which they move evidently shows that they cannot be the effect of any gravitating vapour whatever; for the lightest inflammable air is one-twelfth of that of the common atmosphere: and we have no reason to believe, that at the distance of 40 or 50 miles from the earth, the latter is near $\frac{1}{12}$ of its weight at the surface. From the account given by Mr. Warltire, we should be apt to conclude, that there is a strong affinity betwixt the ignes fatui and fire-balls, insomuch that the one might be very easily converted into the other. From this then we must ascribe an electrical origin to the one as well as the other. Electricity, we know, can assume both of these appearances, as is evident in the case of points; or even when the atmosphere is violently electrified, as round the string of an electrical kite, which always will appear to be surrounded with a blue flame in the night, if the electricity be very strong.

On the whole, it appears, that electricity acting upon a small quantity of atmospherical air, with a certain degree of vigour, will produce an appearance resembling an ignis fatuus; with a superior force it will produce a fire-ball; and a sudden increase of electrical power might produce those sparks and apparent explosions observed by Mr. Warltire. The only difficulty therefore is, Why does electricity exert its power upon one portion of the atmosphere rather than another, seeing it has an opportunity of diffusing itself equally through the whole? To this it seems impossible to give any other reason than that we see the fact is so; and that in all cases where there is a quantity of electrified air or vapour, there will be an accumulation in one part rather than another. Thus, in the experiment already related, where the gentleman perceived a blue flame following

following him, the whole air of the room was electrified, but the greatest power of the fluid was exerted on that which gave the luminous appearance.

With regard to the uses of the ignes fatui in the system of nature, we can only say, that they seem to be accidental appearances resulting from the motion of the electric fluid, and are, no doubt, like other meteors, subservient to the preservation of its equilibrium, and thus are useful in preventing those dreadful commotions which ensue when a proper medium for so doing is deficient.

DESCRIPTION OF THE SANDPU OF INDIA.

SANDPU, or Sanpoo, is the vulgar name of one of the most mighty rivers in the world. The name it generally goes by, and by which it is best known, is that of Burrampooter. Of this most majestic body of waters we have the following very animated account in Maurice's Indian Antiquities.

An object equally novel and grand now claims our attention; so novel, as not to have been known to Europeans in the real extent of its magnificence before the year 1765, and so awfully grand, that the astonished geographer, thinking the language of prose inadequate to convey his conception, has had recourse to the more expressive and energetic language of poetry: but

———Scarce the Muse herself
Dares stretch her wing o'er this enormous mass
Of rushing waters; to whose dread expanse,
Continuous depth, and wond'rous length of course,
Our floods are rills.

This stupendous object is the Burrampooter, a word which in Shanscrit signifies the Son of Brahma; for no meaner origin could be assigned to so wonderful a progeny. This supreme monarch of Indian rivers derives its source from the opposite side of the same mountain from which the Ganges springs, and taking a bold sweep towards the east, in a line directly opposite to the course of that river, washes the vast country of Tibet, where, by way of distinction, it is denominated Sanpoo, or The River. Winding with a rapid current through Tibet, and, for many a league, amidst dreary deserts and regions remote from the habitations of men, it waters the borders of the territory of Lassa, the residence of the grand Lama; and and then, deviating with a cometary irregularity from an east to a south-east course, the mighty wanderer approaches within two hundred miles of the western frontiers of the vast empire of China. From this point its more direct path to the ocean lay through the gulph of Siam; but, with a desultory course peculiar to itself, it suddenly turns to the west through Assam, and enters Bengal on the north-east quarter. Circling round the western point of the Garrow mountains, the Burrampooter now takes a southern direction; and for sixty miles before it meets the Ganges, its sister in point of origin, but not its rival in point of magnitude, glides majestically along in a stream which is regularly from four to five miles wide, and, but for its freshness, Mr. Rannel says, might pass for an arm of the sea. About forty miles from the ocean these mighty rivers unite their streams; but that gentleman is of opinion that their junction was formerly higher up, and that the accumulation of two such vast bodies

bodies of water, scooped out the amazing bed of the Megna lake. Their present conflux is below Luckipoor; and by that confluence a body of fresh running water is produced, hardly equalled, and not exceeded, either in the old or the new hemisphere. So stupendous is that body of water, that it has formed a gulph of such extent as to contain islands that rival our Isle of Wight in size and fertility; and with such resistless violence does it rush into the ocean, that in the rainy season the sea itself, or at least its surface, is perfectly fresh for many leagues out.

ORIGIN OF THE FINE ARTS.

THE Egyptians, Chinese, and Asiatics, universally delight in simple and contrasted colours; they have no knowledge of mixed tints; accordingly, we never hear amongst the ancients of an Egyptian painter, though Plato assures us that they cultivated the art ten thousand years before his time. As to the Chinese, we know, that they are strangers at this day to the first rudiments of design. The statuaries of Egypt were confined by the priests to certain forms and modes of representation: hence Plato observes, that they were, in his time, just where they were at their first setting out. The style of drawing was improved under the Ptolemies.

The statuaries of Egypt were compelled to represent their gods—*junctis pedibus, brachiis in latera demissis*—this was to preclude, at once, all ideas of grace: accordingly the Graces had no place among the Egyptian deities: it was reserved for the Greeks to give them a station, by bestowing divinity on their own feelings. Was not this the general origin of the worship paid by heathens to the moral virtues, as likewise to their several predilections in the pursuits of life? So that this becomes a test of the characters of nations. It is remarkable, that, with the Graces, the Egyptians gave an exclusion to Neptune; they detested the sea; and yet, with a strange inconsistency, they made their Nephthis, or Venus, to spring out of its froth,—whence the Aphrodite of the Greeks.

Almost all the names of the gods (says Herodotus) came out of Egypt into Greece. The Greeks changed the names, and made the gods their own. We are often surprised at the extreme ignorance of the Greeks, touching ancient history, and the origin of things: the case was, determined by their vanity to make every thing of importance originate with themselves, they gave themselves no farther trouble about them. Immediately after the above quotation, Herodotus adds, "For this information I am indebted to the barbarians."

Is it not ridiculous, it will be said, to hear him call those very people barbarians, whom in the moment, he acknowledges to be better informed than himself? I answer, No;—if the opinion of some learned critics be founded, that, in the use of the word barbarian, the Greeks often meant, simply, a stranger. After such examples of the candour and simplicity of Herodotus, in what light shall we consider the attacks made by Plutarch on his veracity? This invective, for such it is, is the work of a heavy writer in a violent passion; of a thick-witted Beotian, who, mistaking rancour for spirit, and anger for argument, thought fit to enter the lists with the father of history, and one of the finest spirits of antiquity.

In China, a great belly is a beauty in the men, the reverse in the women—in direct opposition to the fine forms of nature: the Chinese artist will chicane on the words beauty and nature. Be it so, your figure has beauty; now plant it; let the parts rest and depend on one common center: in this, nature is universal, and has but one law; ignorant of this, you are but a bungler. Have we not too often occasion to apply this censure at home? Intent on the contouring of the Lombard school, we slip over the drawing of the Roman: it expired with Vandyke. We write metaphysical dissertations on the principles of painting, but cannot make an arm grow out of the shoulder, or set a man on his legs.

All the princes of Asia, the Emperor of China included, have had from the earliest times manufactures and fabrics of their own—fatal to the arts; which should belong to the public, not to the prince. Hence the arts fell to decay under the emperors of Constantinople. The supposed legislator Justinian could not write his own name; yet he certainly superintended the compilation of the code which bears his name. Mahomet could neither read nor write; yet the style of the Koran is allowed to be beautiful; nay, he rested on this beauty the proof of its being inspired.

The Egyptians excelled in works of glass; cast large plates, but stopt short of the mirror: they cast statues of coloured glass, and counterfeited the murine vases: it is now unknown what those vases were; but supposed to be of the nature of the onyx. No statues in China are older than the age of Confucius, contemporary with Herodotus, who saw statues in Egypt many thousand years old.

The Egyptian priests banished music from their temples; they sang their sacred hymns without accompaniment. As they presided in matters of taste, as well as of science, we may judge from hence of the low state of their music. The pipe and drum are the favourite instruments in all hot climates; the Orientals hardly know any other.—It should seem that, as in colours, so in sounds, their organs are formed for simple and contrasted impressions. It is affirmed, that there is not a man in all Asia who can paint the foliage of a tree.—I should conclude from this, that there is not an ear in all Asia that can feel the blended sounds, the compound harmony, of European music.

ITALIAN METHOD OF RECKONING THE HOURS.

A PRACTICE generally beheld by foreigners in a false point of view, is the method observed by the Italians in counting the hours. It perplexes every new comer; and, as the greatest part of travellers every where chuse to follow their own way, and to adhere to their own rules and customs, so it is natural for them to find it a hardship, if all at once a considerable portion of their actions are entirely dislocated.

The German princes have already introduced into their Italian territories the method of counting the hours that prevails with us. The French dial, as it is called, which, to the comfort of foreigners, has long been placed on the Trinita di Monte, will soon point out to travellers, both within and without side St. Peter's, their customary hours. Our way of reckoning will therefore gradually become more common; though it will continue to meet with great opposition on the part of the populace; and certainly they lose by it a proper national

tional cuſtom, an hereditary mode of repreſentation, and an extremely ſuitable habit.

How often do we hear travellers praiſing the beautiful country, the happy climate, the clear blue ſky, the breathing gales, and the balmy air, of Italy; and all this is for the moſt part true, and not exaggerated. But thence it follows, that all who can paſs their time in the open air, chuſe to do ſo, and enjoy in pleaſure or in buſineſs the genial breath of heaven. How many workmen of various kinds are employed in the ſtreets and high-ways? how many have ſhops quite open on all ſides? how many ſtand out with their articles of trade in the markets, the ſquares, and in the courts? That, with ſuch a way of life, the moment when the ſun ſets and the night comes on ſhould be more diſcriminate than with us, where it often happens that there is but little daylight the whole day long, is eaſily ſeen. The day is actually at an end; all buſineſſes of a certain kind ſhould likewiſe be ended, and this point of time, as is fitting it ſhould with a ſenſible people, has the ſame mark from one end of the year to the other. It is now night [notte], for the twenty-fourth hour is never uſed in ſpeech, as in France they ſay noon [midi], and not twelve o'clock. The bells ring, every one ſays a ſhort prayer, the ſervants light up the lamps, bring them into the room, and wiſh *feliciſſima notte*, a happy night.

From this epocha, which always returns at ſun-ſetting, till the next ſun-ſetting, the time is divided into twenty-four hours; and as every one now, by long habit, knows as well when it is day as in what hour noon and midnight fall, ſo all kinds of reckonings are preſently made, in which the Italians ſeem to find a pleaſure and a ſort of amuſement. There is a natural conveniency in this way of counting the hours, in all affairs that have the ſmalleſt reference to day and night; and one eaſily perceives how time came to be thus divided by a large body of people.

Thus, we find all work-ſhops, ſchools, public offices, banks, open at all ſeaſons of the year, till night; and every perſon may tranſact his affairs till then. Has he leiſure time upon his hands, he may continue his promenades till ſun-ſet, then repair to certain circles, and concert with them the amuſements of the ſucceeding day. From half paſt one till two in the night, all flock to the theatres. And thus a man ſeems to live, from the firſt day of the year to the laſt, in the ſame time, becauſe he performs all that relates to day and night in the ſame ſucceſſion; without giving himſelf the ſmalleſt concern, whether, according to our mode of computation, it be early or late.

By this means, the great concourſe of paſſengers, both on foot and in carriages, which are ſeen in all the great towns in Italy, eſpecially on Sundays and holidays, in the principal ſtreets and ſquares; and thus at the Corſo of Rome, and at the Carnival, an enormous multitude of intractable people, by this mode of reckoning the hours, are guided and managed, as it were, by a ſtring. Nay, by dividing day and night ſo diſtinctly from each other, certain bounds are ſet to luxury, which ſo readily confounds day and night together, and uſes the one for the purpoſes of the other.

I grant that the Italian might lead the ſame courſe of life, and yet compute the hours after our method; but the inſtant that ſeparates day and night, is to him, under his propitious ſky, the moſt im-

portant epoch of the day. It is even sacred to him, as the church always enjoins the vespers according to this point of time.

I took notice, both at Florence and Milan, that several persons, though the public clocks are all marked with figures in the manner of ours, yet continued their watches and regulated their domestic economy in the old mode of computation. From all this, to which I might add a great deal more, it will be readily acknowledged, that this method of computing time, which, to astronomers, with whom noon is the most important point of the day, may appear contemptible, and to the northern stranger inconvenient, is yet very well calculated for a nation who live conformably to nature, under a happy temperature of climate, and would fix the main epochs of its time in the most determinate and striking manner.

OBSERVATIONS ON INSANITY.

IN maniacal cases, false perception, and consequently confusion of ideas, is always a leading circumstance: as far as I could ever learn from maniacs, surrounding objects appear to them to be on fire, at the beginning of their disorder; and, like wild animals, they are sometimes disagreeably affected by particular colours, which excite their indignation to a violent degree. In consequence of these sensations, added to their own hurry, and confusion of thought, they are by turns timid and outrageous. When a lunatic attempts to strike, it is generally by surprise, or when he expects no resistance; a determined opposition disarms him.

The confusion of thought may be traced in all its degrees, in different cases, from a want of the common power of concluding, to an inability of completing a single sentence. In many maniacal cases, the disease seems to consist in incitation, and, as it were, inflammation of thought, so that the mind is not allowed leisure to form any judgment concerning the ideas presented. A similar state of the faculties is experienced on the morning succeeding a debauch in wine. In other cases, every past idea is recollected with great accuracy, and the patient repeats long trains of occurrences, or of arguments, either is soliloquy, or in reply to something said by the attendants. I have often witnessed astonishing exertions of memory, carried on in this manner, for several hours without interruption. There appears, in such cases, little more incoherence than would be found in the discourse of a rational person, if he were to utter all his ideas aloud, without reserve.

There are inferior degrees of mania, in which the patient preserves a strong command over himself, though disposed to use violence against individuals. I have seen a maniac, after committing a single outrage, master himself so completely, that no signs of his disorder could be detected during six months confinement; but, from the moment that a sally of passion threw him off his guard, he became furious and ungovernable.

Even in the frantic state, attention and memory are not always abolished; a furious maniac will sometimes throw out a smart retort upon those who address him, which proves that he knows his own situation, and that of his attendants.

The obstinacy of false perception, once admitted, is incorrigible. A maniac, confined in a house situated on a small brook, fancied

himself the owner of several vessels which were daily expected in port. Though he saw patients, who were allowed more liberty, step over the brook many times in the day, he always rose when the moon shone, to see whether his ships had entered the river. Upon similar occasions, persons unaccustomed to lunatics expect to do some service by trying to convince them of their error; but the attempt is always unavailing; the patient will even admit some distinction, yet recur to his favourite idea. A gentleman now under my care, believes himself to be of a royal extraction; when I accost him by name, he says, that to his physician he is indeed Mr. ———, but to all others he is the prince-royal of Spain, and from them he expects the ceremonies due to his birth.

When lunatics attempt to write, there is a perpetual recurrence of one or two favourite ideas, intermixed with phrases which convey scarcely any meaning, either separately or in connection with the other parts. It would be a hard task for a man of common understanding to put such rhapsodies into any intelligible form, yet patients will run their ideas in the very same track for many weeks together.

If the violence of any passion has been among the immediate causes of insanity, that passion is brought into action with great fury, at some period of the disease, and pride, anger, or love, becomes a distinguishing feature. Fear produces an immediate expression of the strongest kind, deprives the maniac of speech, and renders his countenance a hideous caricature.

The contrary state to false perception, is an intensity of idea, which constitutes melancholy. The maniac, as Mr. Locke has observed, reasons justly, though, from false premises, being deceived in his first impressions: the melancholic, on the contrary, perceives not wrongly, but too intensely regards some objects, which induces him to grant them an exclusive attention, and leads him to reason improperly, even concerning his truest perceptions.

A melancholy patient, despairing of his circumstances, without foundation, was persuaded with much difficulty, to draw up a short statement of his affairs, which he did with great accuracy. He placed his debts in one column, and his property in another, opposite. But no arguments nor intreaties could prevail upon him to compare the columns, by which it would have appeared, that he was master of a considerable sum: his attention was wholly occupied with the list of his debts, and he obstinately averted him eyes from the other column.

There is a case in which melancholics appear to have false perceptions, but I think it resolvable into intensity. This is when such patients accuse themselves of murder, or some other enormous crime, which they have not committed. This may happen in two ways: 1. Many cases of insanity consist of a mixture of mania and melancholy, in their commencement; in this state of the disease, visions are common, which are referred to the prevalent ideas in the patient's mind, and are remembered as real occurrences, when pure melancholy has predominated. 2. Even in cases purely melancholic, the patient may mistake a dream for a real event.

Melancholics are always apt to impute their uneasy feelings, especially those arising from flatulence, to demoniacal action, and they will form the most extravagant suppositions, to account for the entrance of the demon into their bowels. Upon this subject it is vain

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to reaſon, and whoever attempts to ridicule the patient, loſes his confidence entirely.

One of the moſt unhappy ſtates of melancholy is that in which the patient ſuſpects an intention to poiſon him.

With this impreſſion, he obſtinately refuſes every kind of nourifhment, and, unleſs managed by ſkilful attendants, dies of famine. I once ſaw a patient, who had paſſed a fortnight without food, and who died of mere inanition: he reſiſted, to the laſt, every attempt to force a little wine into his mouth.

PERSEPOLIS, THE CAPITAL OF PERSIA.

PERSEPOLIS, formerly the capital of Perſia, is now in ruins, but is remarkable for the moſt magnificent remains of a palace or temple that are to be found throughout the world.—This city ſtood in one of the fineſt plains in Perſia, being 18 or 19 leagues in length, and in ſome places two, in ſome four, and in others ſix, leagues in breadth. It is watered by the great river Araxes, now Bendemir, and by a multitude of rivulets beſides. Within the compaſs of this plain, there are between 1000 and 1500 villages, without reckoning thoſe in the mountains, all adorned with pleaſant gardens, and planted with ſhady trees. The entrance of this plain on the weſt ſide has received as much grandeur from nature, as the city it covers could do from induſtry or art. It conſiſts of a range of mountains ſteep and high, four leagues in length, and about two miles broad, forming two flat banks, with a riſing terrace in the middle, the ſummit of which is perfectly plain and even, all of native rock. In this there are ſuch openings, and the terraces are ſo fine and ſo even, that one would be tempted to think the whole the work of art, if the great extent, and prodigious elevation thereof, did not convince one that it is a wonder too great for aught but nature to produce. Undoubtedly theſe banks were the very place where the advanced guards from Perſepolis took poſt, and from which Alexander found it ſo difficult to diſlodge them. One cannot from hence deſcry the ruins of the city, becauſe the banks are too high to be overlooked; but one can perceive on every ſide the ruins of walls and of edifices, which heretofore adorned the range of mountains of which we are ſpeaking. On the weſt and on the north this city is defended in the like manner: ſo that, conſidering the height and evenneſs of theſe banks, one may ſafely ſay, that there is not in the world a place ſo fortified by nature.

The mountain Rehumet, in the form of an amphitheatre, encircles the palace, which is one of the nobleſt and moſt beautiful pieces of architecture remaining of all antiquity. Authors and travellers have been exceedingly minute in their deſcriptions of thoſe ruins; and yet ſome of them have expreſſed themſelves ſo differently from others, that, had they not agreed with reſpect to the latitude and longitude of the place, one would be tempted to ſuſpect that they had viſited different ruins. Theſe ruins have been deſcribed by Gercias de Silva Figueroa, Pietro de la Valle, Chardin, Le Brun, and Mr. Francklin. We ſhall adopt the lateſt deſcription, as being exceedingly diſtinct, and given by a traveller intelligent and unaſſuming. The aſcent to the columns is by a grand ſtaircaſe of blue ſtone containing 104 ſteps.

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The first object that strikes the beholder on his entrance, are two portals of stone, about 50 feet in height each; the sides are embellished with two sphinxes of an immense size, dressed out with a profusion of bead-work, and, contrary to the usual method, they are represented standing. On the sides above are inscriptions in an ancient character, the meaning of which no one hitherto has been able to decypher.

At a small distance from these portals you ascend another flight of steps, which lead to the grand hall of columns. The sides of this staircase are ornamented with a variety of figures in basso relievo; most of them have vessels in their hands: here and there a camel appears, and at other times a kind of triumphal car, made after the Roman fashion; besides these are several led horses, oxen, and rams, that at times intervene and diversify the procession. At the head of the staircase is another basso relievo, representing a lion seizing a bull; and close to this are other inscriptions in ancient characters. On getting to the top of this staircase, you enter what was formerly a most magnificent hall: the natives have given this the name of *chehul minar*, or forty pillars; and, though this name is often used to express the whole of the building, it is more particularly appropriated to this part of it. Although a vast number of ages have elapsed since the foundation, fifteen of the columns yet remain entire: they are from seventy to eighty feet in height, and are masterly pieces of masonry; their pedestals are curiously wrought, and appear little injured by the hand of time. The shafts are fluted to the top, and the capitals adorned with a profusion of fret-work.

From this hall you proceed along eastward until you arrive at the remains of a large square building, to which you enter through a door of granite. Most of the doors and windows of this apartment are still standing; they are of black marble, and polished like a mirror: on the sides of the doors, at the entrance, are bas-reliefs of two figures at full length; they represent a man in the attitude of stabbing a goat: with one hand he seizes hold of the animal by the horn, and thrusts a dagger into his belly with the other; one of the goat's feet rests upon the breast of the man, and the other upon his right arm. This device is common throughout the palace. Over another door of the same apartment is a representation of two men at full length; behind them stands a domestic holding a spread umbrella; they are supported by large round staffs, appear to be in years, have long beards and a profusion of hair upon their heads. At the south-west entrance of this apartment are two large pillars of stone, upon which are carved four figures; they are dressed in long garments, and hold in their hands spears 10 feet in length. At this entrance also the remains of a staircase of blue stone are still visible. Vast numbers of broken pieces of pillars, shafts, and capitals, are scattered over a considerable extent of ground, some of them of such enormous size, that it is wonderful to think how they could have been brought whole, and set up together. Indeed, every remains of these noble ruins indicate their former grandeur and magnificence, truly worthy of being the residence of a great and powerful monarch.

These noble ruins are now the shelter of beasts and birds of prey. Besides the inscription above mentioned, there are others in Arabic, Persian, and Greek. Dr. Hyde observes, that the inscriptions are very

very rude and unartful; and that some, if not all of them, are in praise of Alexander the Great; and therefore are later than that conqueror.

THE AURORA BOREALIS, OR NORTHERN LIGHTS.

THE aurora borealis is a kind of meteor appearing in the northern part of the heavens, mostly in the winter-time, and in frosty weather. It is now so generally known, that no description is requisite of the appearance which it usually makes in this country. But it is in the arctic regions that it appears in perfection, particularly during the solstice. In the Schetland islands, the merry dancers, as they are there called, are the constant attendants of clear evenings, and prove great reliefs amidst the gloom of the long winter-nights. They commonly appear at twilight near the horizon, of a dun colour, approaching to yellow; sometimes continuing in that state for several hours without any sensible motion; after which they break out into streams of stronger light, spreading into columns, and altering slowly into ten thousand different shapes, varying their colours from all the tints of yellow to the obscurest russet. They often cover the whole hemisphere, and then make the most brilliant appearance. Their motions at these times are most amazingly quick; and they astonish the spectator with the rapid change of their form. They break out in places where none were seen before, skimming briskly along the heavens; are suddenly extinguished, and leave behind an uniform dusky track. This again is brilliantly illuminated in the same manner, and as suddenly left a dull blank. In certain nights they assume the appearance of vast columns, on one side of the deepest yellow, on the other declining away till it becomes undistinguished from the sky. They have generally a strong tremulous motion from end to end, which continues till the whole vanishes. In a word, we, who only see the extremities of these northern phenomena, have but a faint idea of their splendour and their motions. According to the state of the atmosphere, they differ in colours. They often put on the colour of blood, and make a most dreadful appearance. The rustic sages become prophetic, and terrify the gazing spectators with the dread of war, pestilence, and famine. This superstition was not peculiar to the northern islands; nor are these appearances of recent date. The ancients called them Chasmata, and Trabes, and Bolides, according to their forms or colours.

In old times they were extremely rare, and on that account were the more taken notice of. From the days of Plutarch to those of our sage historian Sir Richard Baker, they were supposed to have been portentous of great events, and timid imagination shaped them into aerial conflicts:

> Fierce fiery warriors fight upon the clouds
> In ranks and squadrons and right form of war.

Dr. Halley tells us, that, when he saw a great aurora borealis in 1716, he had begun to despair of ever seeing one at all; none having appeared, at least in any considerable degree, from the time he was born till then. Notwithstanding this long interval, however, it seems that in some periods the aurora borealis had been seen much

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more frequently; and perhaps this, as well as other natural phenomena, may have ſome ſtated times of returning.

The only thing that reſembles a diſtinct hiſtory of this phenomenon, is what we have from the learned Dr. Halley, Phil. Tranſ. No. 347. The firſt account he gives, is of the appearance of what is called by the author burning ſpears, and was ſeen at London January 30, 1560. This account is taken from a book intitled, A Deſcription of Meteors, by *W. F.* D. D. and reprinted at London in 1654. The next appearance, on the teſtimony of Stow, was on October 7, 1564. In 1574 alſo, according to Camden, and Stow above-mentioned, an aurora borealis was obſerved two nights ſucceſſively, viz. on the 14th and 15th of November, with much the ſame appearances as deſcribed by Dr. Halley in 1716, and which we now ſo frequently obſerve. Again, the ſame was twice ſeen in Brabant, in the year 1575, viz. on the 13th of February and 28th of September. Its appearances at both theſe times were deſcribed by Cornelius Gemma, profeſſor of medicine in the univerſity of Lovain, who compares them to ſpears, fortified cities, and armies fighting in the air. After this, Michael Mæſtlin, tutor to the great Kepler, aſſures us, that at Baknang in the county of Wurtemberg in Germany, theſe phenomena, which he ſtyles chaſmata, were ſeen by himſelf no leſs than ſeven times in 1580. In 1581, they again appeared in an extraordinary manner in April and September, and in a leſs degree at ſome other times of the ſame year. In 1621, Sept. 2d, this phenomenon was obſerved all over France, and deſcribed by Gaſſendus, who gave it the name of aurora borealis: yet neither this, nor any ſimilar appearances poſterior to 1574, are deſcribed by Engliſh writers till the year 1707; which, as Dr. Halley obſerves, ſhews the prodigious neglect of curious matters which at that time prevailed. From 1621 to 1707, indeed, there is no mention made of an aurora borealis being ſeen by any body; and, conſidering the number of aſtronomers who during that period were in a manner continually poring on the heavens, we may very reaſonably conclude that no ſuch thing did make its appearance till after an interval of eighty-ſix years. In 1707, a ſmall one was ſeen in November; and during that year and the next, the ſame appearances were repeated five times. The next on record is that mentioned by Dr. Halley in March 1715—16, the brilliancy of which attracted univerſal attention, and by the vulgar was conſidered as marking the introduction of a foreign race of princes. Since that time thoſe meteors have been ſo common, that no accounts have been kept of them.

It was for a long time a matter of doubt whether this meteor made its appearance only in the northern hemiſphere, or whether it was alſo to be obſerved near the ſouth pole. This is now aſcertained by Mr. Forſter; who in his late voyages round the world along with Captain Cook, aſſures us, that he obſerved them in the high ſouthern latitudes, though with phenomena ſomewhat different from thoſe which are ſeen here. On Feb. 17, 1773, as they were in lat. 58 ſouth, "A beautiful phenomenon was obſerved during the preceding night, which appeared again this and ſeveral following nights. It conſiſted of long columns of a clear white light, ſhooting up from the horizon to the eaſtward, almoſt to the zenith, and gradually ſpreading on the whole ſouthern part of the ſky. Theſe columns were ſometimes bent ſidewiſe at their upper extremities; and, though

in most respects similar to the northern lights of our hemisphere, yet differed from them in being always of a whitish colour, whereas ours assume various tints, especially those of a fiery and purple hue. The sky was generally clear when they appeared, and the air sharp and cold, the thermometer standing at the freezing-point."

Dr. Halley observed that the aurora borealis described by him arose to a prodigious height, it being seen from the west of Ireland to the confines of Russia and Poland on the east; nor did he know how much farther it might have been visible; so that it extended at least 30 degrees in longitude, and from lat. 50° north it was seen over all the northern part of Europe; and what was very surprising, in all those places where it was visible, the same appearances were exhibited which Dr. Halley observed at London. He observes, with seeming regret, that he could by no means determine its height, for want of observations made at different places; otherwise he might as easily have calculated the height of this aurora borealis as he did of the fiery globe in 1719. To other philosophers, however, he gives the following exhortation: "When therefore for the future any such thing shall happen, all those that are curious in astronomical matters are hereby admonished and intreated to set their clocks to the apparent time at London, for example, by allowing so many minutes as is the difference of meridians; and then to note, at the end of every half-hour precisely, the exact situation of what at that time appears remarkable in the sky; and particularly the azimuths of those very tall pyramids so eminent above the rest, and therefore likely to be seen farthest: to the intent that, by comparing these observations taken at the same moment in distant places, the difference of their azimuths may serve to determine how far these pyramids are distant from us." This advice of Dr. Halley seems to have been totally neglected by all the philosophical people in his country. In other countries, however, they have been more industrious. Father Boscovich has determined the height of an aurora borealis, observed on the 16th of December, 1737, by the Marquis of Poleni, to have been eight hundred and twenty-five miles high; the celebrated Mr. Bergman, from a mean of thirty computations, makes the average height of the aurora borealis to be seventy Swedish, or upwards of four hundred and sixty English, miles. Euler supposes it to be several thousands of miles high; and Mairan also assigns them a very elevated region. In the 74th volume of the Philosophical Transactions, Dr. Blagden, when speaking of the height of some fiery meteors, tells us, that the "aurora borealis appears to occupy as high, if not a higher region above the surface of the earth, as may be judged from the very distant countries to which it has been visible at the same time." The height of these meteors, however, none of which appear to have exceeded or even arrived at the height of a hundred miles, must appear trifling in comparison of the vast elevations above mentioned. But these enormous heights, varying so exceedingly, shew that the calculators have not had proper data to proceed upon; and indeed the immense extent of space occupied by the aurora borealis itself, with its constant motion, must make it infinitely more difficult to determine the height of it than of a fiery globe, which occupies but a small portion of the visible heavens. The most certain method of making a comparison betwixt the aurora borealis and the meteors already-mentioned, would be, if a

ball

ball of fire should happen to pass through the same part of the heavens where an aurora borealis was; when the comparative height of both could easily be ascertained. One instance of this only has come under our observation, where one of the small meteors, called falling stars, was evidently obscured by an aurora borealis; and therefore must have been higher than the lower part of the latter at least. A singularity in this meteor was, that it did not proceed in a straight line through the heavens, as is usual with falling stars, but described a very considerable arch of a circle, rising in the north-west, and proceeding southward a considerable way in the arch of a circle, and disappearing in the north. Its edges were ill-defined, and five or six corruscations seemed to issue from it like the rays painted as issuing from stars. The aurora borealis was not in motion, but had degenerated into a crepusculum in the northern part of the hemisphere. Indeed in some cases this kind of crepusculum appears so plainly to be connected with the clouds, that we can scarcely avoid supposing it to proceed from them. We cannot, however, argue from this to the height of the aurora borealis when it moves with great velocity, because it then may, and very probably does, ascend much higher. Dr. Blagden, indeed, informs us, that instances are recorded, where the northern lights have been seen to join, and form luminous balls, darting about with great velocity, and even leaving a train like the common fire-balls. It would seem therefore, that the highest regions of the aurora borealis are the same with those in which fire-balls move.

With regard to the cause of the aurora borealis, many conjectures have been formed. The first which naturally occurred was, that it was occasioned by the ascent of inflammable sulphureous vapours from the earth. To this supposition Dr. Halley objects the immense extent of such phenomena, and that they are constantly observed to proceed from north to south, but never from south to north. This made him very reasonably conclude, that there was some connection between the poles of the earth and the aurora borealis; but, being unacquainted with the electric power, he supposed, that this earth was hollow, having within it a magnetical sphere, which corresponded in virtue with all the natural and artificial magnets on the surface; and the magnetic effluvia passing through the earth, from one pole of the central magnet to another, might sometimes become visible, in their course, which he thought was from north to south, and thus exhibit the beautiful corruscations of the aurora borealis. Had Dr. Halley, however, known that a stroke of electricity would give polarity to a needle that had it not, or reverse the poles of one that had it before, he would undoubtedly have concluded the electric and magnetic effluvia to be the same, and that the aurora borealis was this fluid performing its circulation from one pole of the earth to the other. In fact, this very hypothesis is adopted by S. Beccaria; and by the supposed circulation of the electric fluid he accounts for the phenomena of magnetism and the aurora borealis in a manner perfectly similar to that of Dr. Halley, only changing the phrase magnetic effluvia for electric fluid. The following is the account give us by Dr. Priestley of Beccaria's sentiments on this matter.

"Since a sudden stroke of lightning gives polarity to magnets, he conjectures, that a regular and constant circulation of the whole mass

of the fluid from north to south may be the original cause of magnetism in general. That this ethereal current is insensible to us is no proof of its non-existence, since we ourselves are involved in it. He had seen birds fly so near a thunder-cloud, as he was sure they would not have done had they been affected by its atmosphere. This current he would not suppose to arise from one source, but from several, in the northern hemisphere of the earth; and he thinks that the aurora borealis may be this electric matter performing its circulation in such a state of the atmosphere as renders it visible, or approaching the earth nearer than usual. Accordingly very vivid appearances of this kind have been observed to occasion a fluctuation in the magnetic needle."

A direct disproof of this circulation, however, is furnished by the observation of Mr. Forster already-mentioned; with which, though neither Dr. Halley nor S. Beccaria could be acquainted, they might have thought of it as a final proof either of the truth or falsehood of their hypothesis.—If the aurora borealis is no other than the electric fluid performing the above-mentioned circulation, it ought to dart from the horizon towards the zenith in the northern hemisphere, and from the zenith to the horizon in the southern one: but Mr. Forster plainly tells us, that the columns shot up from the horizon towards the zenith as well in the southern hemisphere as in the northern; so that, if the aurora borealis is to be reckoned the flashings of electric matter, its course is plainly directed from both poles toward the equator, and not from one pole to the other.

Concerning the cause of this phenomenon, Mr. Canton has the following query: "Is not the aurora borealis the flashing of electrical fire from positive towards negative clouds at a great distance, through the upper part of the atmosphere where the resistance is least? But to this we must reply in the negative; for in this case it would flash in every direction according to the position of the clouds, as well as from north to south. Besides this query, he conjectures, that when the needle is disturbed by the aurora borealis, that phenomenon proceeds from the electricity of the heated air; and supposes the air to have the property of becoming electric by heat, like the tourmalin. But neither does this hypothesis appear at all probable; because, in such a case, the aurora borealis ought to be most frequent in summer when the air is most heated, whereas it is found to be the reverse. Lastly, with these electrical hypotheses we shall contrast that of Mr. Mairan, who imagined this phenomenon to proceed from the atmosphere of the sun, particles of which were thrown off by its centrifugal force acquired by his rotation on his axis; and that these particles falling upon the atmosphere of the earth near its equatorial parts, were from thence propelled by the diurnal motion of the earth towards the polar regions where they formed the aurora borealis. This hypothesis, besides its being a mere supposition unsupported by one single appearance in nature, is liable to the objection already-mentioned; for in this case the light should dart from the equator to the poles, and not from the poles to the equator: or, if we should suppose this matter to be gradually accumulated at each of the poles, we must then make other suppositions equally vague and ill-founded, concerning its getting back with such surprising rapidity in direct opposition to the power which once brought it thither.

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The first person that seems to have endeavoured to find any positive proof for the electrical quality of the aurora borealis, is Dr. Hamilton of Dublin. He observes, that, though this phenomenon is commonly supposed to be electrical, yet he had not seen any attempt to prove that it is so; but the only proof he himself brings is an experiment of Mr. Hawksbee, by which the electric fluid is shewn to put on appearances somewhat like the aurora borealis, when it passes through a vacuum. He observed, that, when the air was most perfectly exhausted, the streams of electric matter were then quite white; but, when a small quantity of air was let in, the light assumed more of a purple colour. The flashing of this light therefore from the dense regions of the atmosphere into such as are more rare, and the transitions through mediums of different density, he reckons the cause of the aurora borealis, and of the different colours it assumes.

Dr. Hamilton's proof, then, of the electricity of the aurora borealis, consists entirely in the resemblance the two lights bear to one another; and if to this we add, that, during the time of an aurora borealis, the magnetic needle hath been disturbed, electric fire obtained from the atmosphere in plenty, and at some times different kinds of rumbling and hissing sounds heard, we have the sum of all the positive evidence in favour of the electric hypothesis.

Were the aurora borealis the first natural phenomenon the solution of which had been attempted by electricity, no doubt the proofs just now adduced would be very insufficient: but when it is considered, that we have indisputable evidence of the identity of the phenomena of thunder and of electricity; when we also consider, that the higher parts of our atmosphere are continually in a strongly electrified state; the analogy becomes so strong that we can scarcely doubt of the aurora borealis arising from the same cause. The only difficulty is, to give a good reason why the electricity of the atmosphere should be constantly found to direct its course from the poles towards the equator, and not from the equator to the poles; and this we think may be done in the following manner.

1. It is found that all electric bodies, when considerably heated, become conductors of electricity; thus hot air, hot glass, melted rosin, sealing-wax, &c. are all conductors, till their heat is dissipated, and then they again become electrics.

2. As the converse of every true proposition ought also to be true, it follows from the above one, that, if electrics when heated become conductors, then non-electrics when subjected to violent degrees of cold ought to become electric. In one instance this has been verified by experience; water, which is a conductor when warm or not violently cooled, is found to become electric when cooled to 20° below 0 of Fahrenheit's thermometer. With regard to metallic substances, indeed, no experiments have as yet been made to determine whether their conducting power is affected by cold or not. Very probably we might not be able to produce such a degree of cold as sensibly to lessen their conducting power; but still the analogy will hold; and, as we are by no means able to produce the greatest degree of cold possible, reason will always suggest to us, that if a certain degree of cold changes one conductor into an electric, a sufficient degree of it will also change all others into electrics.

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3. If cold is sufficient to change conducting substances into electrics, it must also increase the electric power of such substances as are already electric; that is to say, very cold air, glass, rosin, &c. provided they are dry, will be more electric than when they are warmer. With regard to air, which is most to our present purpose, this is rendered extremely probable, by considering that clear frosty weather is of all others the most favourable for electric experiments. They may be made indeed to equal advantage almost in any state of the atmosphere, provided sufficient pains are used, but in dry hard frosts they will succeed much more easily than at any other time.

These three axioms being allowed, the cause of the aurora borealis is easily deduced from them. The air, all round the globe, at a certain height above its surface, is found to be exceedingly cold, and, as far as experiments have yet determined, exceedingly electrical also. The inferior parts of the atmosphere between the tropics, are violently heated during the day-time by the reflection of the sun's rays from the earth. Such air will therefore be a kind of conductor, and much more readily part with its electricity to the clouds and vapours floating in it, than the colder air towards the north and south poles. Hence the prodigious appearances of electricity in these regions, shewing itself in thunder and other tempests of the most terrible kind. Immense quantities of the electric fluid are thus communicated to the earth; and the inferior warm atmosphere having once exhausted itself, must necessarily be recruited from the upper and colder region. This becomes very probable from what the French mathematicians observed when on the top of one of the Andes. They were often involved in clouds, which, sinking down into the warmer air, appeared there to be highly electrified, and discharged themselves in violent tempests of thunder and lightning; while in the mean time, on the top of the mountain, they enjoyed a calm and serene sky. In the temperate and frigid zones, the inferior parts of the atmosphere, never being so strongly heated, do not part with their electricity so easily as in the torrid zone, and consequently do not require such recruits from the upper regions: but, notwithstanding the difference of heat observed in different parts of the earth near the surface, it is very probable that at considerable heights the degree of cold is nearly equal all round it. Were there a like equality in the heat of the under part, there could never be any considerable loss of equilibrium in the electricity of the atmosphere: but as the hot air of the torrid zone is perpetually bringing down vast quantities of electric matter from the cold air that lies directly above it; and, as the inferior parts of the atmosphere lying towards the north and south poles do not conduct in any great degree, it thence follows, that the upper parts of the atmosphere lying over the torrid zone will continually require a supply from the northern and southern regions. This easily shews the necessity of an electric current in the upper parts of the atmosphere from each pole towards the equator: and thus we are also furnished with a reason why the aurora borealis appears more frequently in winter than in summer; namely, because at that time the electric power of the inferior atmosphere is greater on account of the cold than in summer; and consequently the abundant electricity of the upper regions must go almost wholly off to the equatorial parts, it being impossible for it to get down to the earth: hence also the aurora borealis appears

very

very frequent and bright in the frigid zones, the degrees of cold in the upper and under regions of the atmosphere being much more nearly equal in these parts than in any other. In some parts of Siberia particularly, this meteor appears constantly from October to Christmas, and its corruscations are said to be very terrifying. Travellers agree, that here the aurora borealis appears in greatest perfection; and it is to be remarked, that Siberia is the coldest country on earth. In confirmation of this, it may also be observed, that, from the experiments hitherto made with the electrical kite, the air appears considerably more electrical in winter than in summer, though the clouds are known to be often most violently electrified in the summer time; a proof, that the electricity naturally belonging to the air is in summer much more powerfully drawn off by the clouds than in the winter, owing to the excess of heat in summer, as already observed.

A considerable difficulty, however, still remains from the upright position which the streams of the aurora borealis are generally supposed to have; whereas, according to the hypothesis above-mentioned, they ought rather to run directly from north to south. This difficulty occurred to Dr. Halley: but he answers it by supposing his magnetic effluvia to pass from one pole to another in arches of great circles, arising to a vast height above the earth, and consequently darting from the places whence they arose almost like the radii of a circle; in which case, being sent off in a direction nearly perpendicular to the surface of the earth, they must necessarily appear erect to those who see them from any part of the surface, as is demonstrated by mathematicians. It is also reasonable to think that they will take this direction rather than any other, on account of their meeting with less resistance in the very high regions of the air than in such as are lower.

But the greatest difficulty still remains: for we have supposed the equilibrium of the atmosphere to be broken in the day-time, and restored only in the night; whereas, considering the immense velocity with which the electric fluid moves, the equilibrium ought to be restored in all parts almost instantaneously; yet the aurora borealis never appears except in the night, although its brightness is such as must sometimes make it visible to us did it really exist in the day-time.

In answer to this it must be observed, that, though the passage of electricity through a good conductor is instantaneous, yet through a bad conductor it is observed to take some time in passing. As our atmosphere therefore, unless very violently heated, is but a bad conductor of electricity; though the equilibrium in it is broken, it can by no means be instantaneously restored. Add to this, that, as it is the action of the sun which breaks the equilibrium, so the same action, extending over half the globe, prevents almost any attempt to restore it till night; when flashes arise from various parts of the atmosphere, gradually extending themselves with a variety of undulations towards the equator.

It now remains to explain only one particularity of the aurora borealis, namely, that its streams do not always move with rapidity; sometimes appearing quite stationary for a considerable time, and sometimes being carried in different directions with a slow motion. To this indeed we can give no other reply, than that weak electric lights have been sometimes observed to put on the same appearance at the

surface

ſurface of the earth; and much more may we ſuppoſe them capable of doing ſo at great heights above it, where the conductors are both fewer in number and much more imperfect. When M. de Romas was making experiments with an electric kite in Italy, a cylinder of blue light about four or five inches diameter was obſerved ſurrounding the ſtring. This was in the day-time; but, had it been night, he imagined it muſt have been four or five feet in diameter; and, as the ſtring was ſeven hundred and eighty feet long, it would probably have ſeemed pyramidal, pointing upwards like one of the ſtreams of the aurora borealis. A ſtill more remarkable appearance, Dr. Prieſtley tells us, was obſerved by Mr. Hartman. He had been making electrical experiments for four or five hours together in a very ſmall room; and upon going out of it, and returning with a light in his hand, walking pretty quick, he perceived a ſmall flame following him at about three feet diſtance. Being alarmed at this appearance, he ſtopped to examine it, upon which it vaniſhed. This laſt inſtance is very remarkable, and ſingular in its kind: from both, however, we are ſufficiently warranted to conclude, that ſmall portions of our atmoſphere may by various cauſes be ſo much electrified as to ſhine, and likewiſe be moved from one place to another without parting with the electricity they have received for a conſiderable time.

The corona, or circle, which is often formed near the zenith by the aurora borealis, is eaſily accounted for in the ſame manner. As this corona is commonly ſtationary for ſome time, we imagine it would be a very proper mark whereby to determine the diſtance of the meteor itſelf. If an aurora borealis, for inſtance, were obſerved by two perſons, one at London, and the other at Edinburgh; by noting the ſtars among which the corona was obſerved at each place, its true altitude from the ſurface of the earth could eaſily be determined by trigonometry.

The aurora borealis is ſaid to be attended with a peculiar hiſſing noiſe in ſome very cold climates; Gmelin ſpeaks of it in the moſt pointed terms, as frequent and very loud in the north-eaſtern parts of Siberia; and other travellers have related ſimilar facts. Gmelin's account is very remarkable. "Theſe northern lights (ſays he) begin with ſingle bright pillars, riſing in the N. and almoſt at the ſame time in the N. E. which, gradually increaſing, comprehend a large ſpace of the heavens, ruſh about from place to place with incredible velocity, and finally almoſt cover the whole ſky up to the zenith. The ſtreams are then ſeen meeting together in the zenith, and produce an appearance as if a vaſt tent were expanded in the heavens, glittering with gold, rubies, and ſapphires. A more beautiful ſpectacle cannot be painted; but whoever ſhould ſee ſuch a northern light for the firſt time, could not behold it without terror. For, however fine the illumination may be, it is attended, as I have learned from the relation of many perſons, with ſuch a hiſſing, cracking, and ruſhing, noiſe throughout the air, as if the largeſt fireworks were playing off. To deſcribe what they then hear, they make uſe of the expreſſion, *Spolochi chodjat*, that is, The raging hoſt is paſſing. The hunters, who purſue the white and blue foxes in the confines of the Icy Sea, are often overtaken in their courſe by theſe northern lights. Their dogs are then ſo much frightened, that they will not move, but lie obſtinately on the ground till the noiſe has

passed. Commonly, clear and calm weather follows this kind of northern lights. I have heard this account, not from one person only, but confirmed by the uniform testimony of many, who have spent part of several years in these very northern regions, and inhabited different countries from the Yenesei to the Lena; so that no doubt of its truth can remain. This seems indeed to be the real birth-place of the aurora borealis."

The hissing or rushing noise above described, Dr. Blagden is inclined to attribute to small streams of electric matter running off to the earth from the masses or accumulations of electricity by which the northern lights are supposed to be produced.

An account was presented to the royal society by Mr. Winn, in 1772, wherein he says that the appearance of an aurora borealis is a certain sign of an hard gale of wind from the south or south-west. This he never found to fail in twenty-three instances; and even thinks, that from the splendour of the meteor, some judgment may be formed concerning the ensuing tempest. If the aurora is very bright, the gale will come on within twenty-four hours, but will be of no long duration; if the light is faint and dull, the gale will be less violent, and longer in coming on, but will also last longer. His observations were made in the English channel, where such winds are very dangerous; and by attending to the auroræ, he says he often got easily out of it, when others narrowly escaped being wrecked. This is an exceeding useful observation for sailors: but it cannot be expected that the winds succeeding these meteors should in all places blow from the south-west; though no doubt a careful observation of what winds succeed the aurora borealis, and other meteors, in different parts of the world, might contribute in some measure to lessen the dangers of navigation.

That the aurora borealis ought to be succeeded by winds, may be easily deduced from the hypothesis last mentioned. If this phenomenon is occasioned by the vast quantity of electric matter conveyed to the equatorial parts of the earth, it is certain that the earth cannot receive any great quantity of this matter at one place without emitting it at another. The electricity, therefore, which is constantly received at the equator, must be emitted nearer the poles, in order to perform its course, otherwise there could not be a constant supply of it for the common operations of nature. It is observed, that electrified bodies are always surrounded by a blast of air, which is sent forth from them in all directions; hence, if the electric matter find a more ready passage through one part of the earth than another, a wind will be found to blow from that quarter. If therefore one of these places happens to be in the Atlantic ocean near the coast of France, or in the bay of Biscay, the electric matter which has been received at the equator during an aurora borealis will be discharged there some time after, and consequently a wind will blow from that quarter, which will be from the south-west to those ships which are in the English channel. It cannot be imagined, however, that all the matter can be discharged from one place; and therefore according to the different situations of those electrical vents, winds may blow in different directions; and thus the same aurora borealis may produce a south-west wind in the English channel, and a north-west one in Scotland.

DESCRIPTION OF METELIN.

IN the Irish Philosophical Transactions for 1789, we have a description of this island by the Earl of Charlemont, in which he speaks with raptures of its beauties. "The mountains, whose rugged tops exhibit a pleasing interspersion of rocks and fine groves, have their green sides, for many miles along the coast, covered with olives, whose less agreeable verdure is corrected, embellished, and brightened, by a lively mixture of bays and laurels aspiring to the height of forest-trees, of myrtles and pomegranates, of arbutes rich at once in blossom and in berry, of mulberries growing wild and laden with fruit, &c. Winter is here unknown, the verdure is perpetual, and the frequency of evergreens gives to December the colour of June. The parching heat of summer is never felt; the thick shade of trees, and thousands of crystal springs which every where arise and form themselves into unnumbered rivulets, joined to the refreshing sea-breeze the constant corrective and companion of noon tide heat, qualify the burning air, and render the year a never-ending May. The houses are constructed in such a manner as to have the best view of these natural beauties. Each is a square tower neatly built of hewn stone, so high as to overtop the trees, and to command a view of the sea and neighbouring islands. The lower stories are granaries and storehouses; and the habitable apartments are all at the top, to which you ascend by a stone stair, built for the most part on the outside, and surrounding the tower; so that from the apartment the trees are overlooked, and the whole country is seen, while the inhabitants themselves, which are very numerous, peering above the groves, add life and variety to the enchanting prospect, and give an air of human population to these woodlands, which might otherwise be supposed the region of Dryads, of Naiads, and of Satyrs."

The most remarkable thing, however, in this island, is a custom by which the women have here openly usurped those rights of sovereignty which in other countries are supposed to belong essentially to the men. Contrary to the usage of all other countries, the eldest daughter here inherits; and the sons, like daughters every where else, are portioned off with small dowers, or, which is still worse, turned out pennyless to seek their fortune. If a man has two daughters, the eldest, at her marriage, is intitled to all her mother's possessions, which are by far the greater part of the family estate, as the mother, keeping up her prerogative, never parts with the power over any portion of what she has brought into the family, until she is forced into it by the marriage of her daughter; and the father also is compelled to ruin himself by adding whatever he may have scraped together by his industry. The second daughter inherits nothing, and is condemned to perpetual celibacy. She is styled a *kalogria*, which signifies properly a religious woman or nun, and is in effect a menial servant to her sister, being employed by her in any office she may think fit to impose, frequently serving her as waiting-maid, as cook, and often in employments still more degrading. She wears a habit peculiar to her situation, which she can never change; a sort of monastic dress, coarse, and of a dark brown. One advantage, however, she enjoys over her sister, that whereas the elder, before

before marriage, is never allowed to go abroad, or to see any man, her nearest relations only excepted, the calogria, except when employed in domestic toil, is in this respect at perfect liberty. But, when the sister is married, the situation of the poor calogria becomes desperate indeed, and is rendered still more humiliating by the comparison between her condition and that of her happy mistress. The married sister enjoys every sort of liberty; the whole family-fortune is hers, and she spends it as she pleases; her husband is her obsequious servant, her father and mother are dependent upon her, she dresses in a most magnificent manner, covered all over, according to the fashion of the island, with pearls and with pieces of gold, which are commonly sequins; thus continually carrying about her the enviable marks of affluence and superiority, while the wretched calogria follows her as a servant, arrayed in simple homespun brown, and without the most distant hope of ever changing her condition. Such a disparity may seem intolerable, but what will not custom reconcile? Neither are the misfortunes of the family yet at an end. The father and mother, with what little is left them, contrive by their industry to accumulate a second little fortune; and this, if they should have a third daughter, they are obliged to give to her upon her marriage; and the fourth, if there should be one, becomes her calogria; and so on through all the daughters alternately. Whenever the daughter is marriageable, she can by custom compel the father to procure her a husband; and the mother, such is the power of habit, is foolish enough to join her in teasing him into an immediate compliance, though its consequences must be equally fatal and ruinous to both of them. From hence it happens, that nothing is more common than to see the old father and mother reduced to the utmost indigence, and even begging about the streets, while their unnatural daughters are in affluence; and we ourselves have frequently been shewn the eldest daughter parading it through the town in the greatest splendour, while her mother and sister followed her as servants, and made a melancholy part of her attendant train.

The sons, as soon as they are of an age to gain a livelihood, are turned out of the family, sometimes with a small present or portion, but more frequently without any thing to support them; and thus reduced, they either endeavour to live by their labour, or, which is more usual, go on-board some trading vessel as sailors or as servants, remaining abroad till they have got together some competency, and then return home to marry and to be henpecked. Some few there are who, taking advantage of the Turkish law, break through this whimsical custom, who marry their calogrias, and retain to themselves a competent provision; but these are accounted men of a singular and even criminal disposition, and are hated and despised as conformists to Turkish manners, and deserters of their native customs; so that we may suppose they are few indeed who have the boldness to depart from the manners of their country, to adopt the customs of their detested masters, and to brave the contempt, the derision, and the hatred, of their neighbours and fellow-citizens.

Of all these extraordinary particulars I was informed by the French consul, a man of sense and of indisputable veracity, who had resided in this island for several years, and who solemnly assured me that every circumstance was true: but indeed our own observation left us without the least room for doubt, and the singular appearance

and deportment of the ladies fully evinced the truth of our friend's relation. In walking through the town, it is easy to perceive, from the whimsical manners of female passengers, that the women, according to the vulgar phrase, *wear the breeches*. They frequently stopped us in the streets, examined our dress, interrogated us with a bold and manly air, laughed at our foreign garb and appearance; and shewed so little attention to that decent modesty which is or ought to be the true characteristic of the sex, that there is every reason to suppose they would, in spite of their haughtiness, be the kindest ladies upon earth, if they were not strictly watched by the Turks, who are here very numerous, and would be ready to punish any transgression of their ungallant laws with arbitrary fines. But nature and native manners will often baffle the efforts even of tyranny. In all their customs these manly ladies seem to have changed sexes with the men. The woman rides astride, the man sits sideways upon the horse; nay, I have been assured that the husband's distinguishing appellation is his wife's family name. The women have town and country houses, in the management of which the husband never dares interfere. Their gardens, their servants, are all their own; and the husband, from every circumstance of his behaviour, appears to be no other than his wife's first domestic, perpetually bound to her service, and slave to her caprice. Hence it is that a tradition obtains in the country, that this island was formerly inhabited by Amazons; a tradition, however, founded upon no ancient history that I know of. Sappho indeed, the most renowned female that this island has ever produced, is said to have had manly inclinations; in which, as Lucian informs us, she did but conform with the singular manners of her country-women: but, I do not find that the mode in which she chose to shew these inclinations is imitated by the present female inhabitants, who seem perfectly content with the dear prerogative of absolute sway, without endeavouring in any other particular to change the course of nature; yet will this circumstance serve to shew, that the women of Lesbos had always something peculiar, and even peculiarly masculine, in their manners and propensities. But, be this as it may, it is certain that no country whatsoever can afford a more perfect idea of an Amazonian commonwealth, or better serve to render probable those ancient relations which our manners would induce us to esteem incredible, than this island of Metelin. These lordly ladies are for the most part very handsome in spite of their dress, which is singular and disadvantageous. Down to the girdle, which as in the old Grecian garb is raised far above what we usually call the waist, they wear nothing but a shift of thin and transparent gauze, red, green, or brown, through which every thing is visible, their breasts only excepted, which they cover with a sort of handkerchief; and this, as we were informed, the Turks have obliged them to wear, while they look upon it as an encumbrance, and as no inconsiderable portion of Turkish tyranny. Long sleeves of the same thin material perfectly shew their arms even to the shoulder. Their principal ornaments are chains of pearl, to which they hang small pieces of gold coin. Their eyes are large and fine; and the nose, which we term Grecian, usually prevails among them, as it does indeed among the women of all these islands. Their complexions are naturally fine; but they spoil them by paint, of which they make abundant use; and they disfigure

their

their pretty faces by ſhaving the hinder part of the eyebrow, and replacing it with a ſtraight line of hair neatly applied with ſome ſort of gum, the brow being thus continued in a ſtraight and narrow line till it joins the hair on each ſide of their face. They are well made, of the middle ſize, and for the moſt part plump; but they are diſtinguiſhed by nothing ſo much and ſo univerſally as by a haughty, diſdainful, and ſupercilious, air, with which they ſeem to look down upon all mankind as creatures of an inferior nature, born for their ſervice, and doomed to be their ſlaves; neither does this peculiarity of countenance in any degree diminiſh their natural beauty, but rather adds to it that ſort of bewitching attraction which the French call *piquant*.

His lordſhip has been at great pains to inveſtigate the origin of ſuch a ſingular cuſtom; but is unable to find any other example in hiſtory than that of the Lycians, who called themſelves by the names of their mothers, and not of their fathers. When aſked by their neighbours who they were? they deſcribed themſelves by their maternal genealogy. If a gentlewoman ſhould marry a ſlave, the children by that marriage were accounted noble; but, ſhould the firſt man among them marry a foreign woman, the children would be accounted ignoble. This cuſtom is mentioned by ſeveral ancient authors. A difficulty of no little magnitude occurs, however, in accounting for the derivation of the inhabitants of Leſbos from the Lycians. This is ſolved in the following manner:—In times of the moſt remote antiquity, the iſland of Leſbos was peopled by the Pelaſgi, who, under their leader Xanthus, the ſon of Triopas king of Argos, firſt inhabitated Leſbos: previous to that time they had dwelt in a certain part of Lycia, which they had conquered; and in this country we may ſuppoſe they had learned the cuſtom in queſtion. But though this might readily be granted, as we know ſo little of the origin of ancient nations, yet the queſtion ſtill recurs, Whence did it originate among the Lycians? Here we are ſtill more difficulted than before; and the only thing we have to help us out is an obſcure tradition concerning Bellerophon, viz. that the hero having deſtroyed a boar which waſted the territory of Xanthus a city of Lycia, the inhabitants were ſo ungrateful as to return him no thanks for ſo great a favour; upon which, by his prayers, he cauſed the curſe of barrenneſs to fall upon them, but was at length prevailed upon, by the intreaties of the women, to intercede with his patron Neptune to pardon them. On this account it was decreed, that the people of Xanthus ſhould be called by the names of their mothers, and not of their fathers. Plutarch relates alſo, that Bellerophon not only freed the Lycians from an invaſion of pirates, but from the Amazons alſo, whom he drove out of their country; "ſo that there may be ſome reaſon (ſays his lordſhip) to ſuppoſe, that the Lycian women, by an intercourſe with the Amazons, who had, it ſhould ſeem, dwelt among them, were already previouſly prepared for the introduction of thoſe cuſtoms, which were finally eſtabliſhed in conſequence of their patriotic merit in deprecating the wrath of Bellerophon, and in averting its fatal conſequences."

This is the ſubſtance of what his lordſhip advances as to the origin of this extraordinary cuſtom. He owns, that the traces are very obſcure; and though he is conſcious that ſuch a ſpeculation may be liable to ridicule, and he is aware "of ſome objections not eaſy to be

be answered, the coincidence will notwithstanding be allowed to be curious and very remarkable. The well known pertinacious adherence to ancient manners among the eastern nations, may in some measure excuse our credulity; and we may still add to our authority, by supposing that this same Xanthus may probably have given his name to the Lycian city of that denomination; and consequently must have inhabited that very part of Lycia where, according to Plutarch, he is supposed more immediately to have flourished."

THE SENTIMENTS OF THE SOUL.

THAT emotion which excites our laughter is an affection of the mind or of human reason; that which dissolves us into tears, is a sentiment of the soul. Not that I would make of the mind, and of the soul, two powers of different nature; but it seems to me, as has been already said, that the one is to the other, what sight is to the body; mind is the faculty, and soul is the principle of it: the soul is, if I may venture thus to express myself, the body of our intelligence. I consider the mind, then, as an intellectual eye, to which may be referred the other faculties of the understanding, as the imagination, which apprehends things future; memory, which contemplates things that are past; and judgment, which discerns their correspondencies. The impression made upon us by these different acts of vision, sometimes incites in us a sentiment which is denominated evidence; and, in that case, this last perception belongs immediately to the soul; of this we are made sensible by the delicious emotion which it suddenly excites in us; but, raised to that, it is no longer in the province of mind; because, when we begin to feel, we cease to reason; it is no longer vision, it is enjoyment.

As our education and our manners direct us toward our personal interest, hence it comes to pass, that the mind employs itself only about social conformities, and that reason, after all, is nothing more than the interest of our passions; but the soul, left to itself, is incessantly pursuing the conformities of nature, and our sentiment is always the interest of mankind.

Thus, I repeat it, mind is the perception of the laws of society, and sentiment is the perception of the laws of nature. Those who display to us the conformities of society, such as comic writers, satyrists, epigrammatists, and even the greatest part of moralists, are men of wit: such were the Abbé de Choisy, La Bruyere, St. Evremont, and the like. Those who discover to us the conformities of nature, such as tragic and other poets of sensibility, the inventors of arts, great philosophers, are men of genius: such were Shakespeare, Corneille, Racine, Newton, Marcus Aurelius, Montesquieu, La Fontaine, Fenelon, J. J. Rousseau. The first class belong to one age, to one season, to one nation, to one junto; the others to posterity and to mankind.

We shall be still more sensible of the difference which subsists between mind and soul, by tracing their affections in opposite progresses. As often, for example, as the perceptions of the mind are carried up to evidence, they are exalted into a source of exquisite pleasure, independently of every particular relation of interest; because, as has been said, they awaken a feeling within us. But when

we go about to analyze our feelings, and refer them to the examination of the mind, or reasoning power, the sublime emotions which they excited in us vanish away; for in this case, we do not fail to refer them to some accommodation of society, of fortune, of system, or of some other personal interest, whereof our reason is composed. Thus, in the first case, we change our copper into gold; and in the second, our gold into copper.

Again, nothing can be less adapted, at the long-run, to the study of nature, than the reasoning powers of man; for though they may catch here and there some natural conformities, they never pursue the chain to any great length; besides, there is a much greater number which the mind does not perceive, because it always brings back every thing to itself, and to the little social or scientific order within which it is circumscribed. Thus, for example, if it takes a glimpse of the celestial spheres, it will refer the formation of them to the labour of a glass-house; and, if it admits the existence of a creating power, it will represent him as a mechanic out of employment, amusing himself with making globes, merely to have the pleasure of seeing them turn round. It will conclude, from its own disorder, that there is no such thing as order in nature; from its own immortality, that there is no mortality. As it refers every thing to its own reason, and seeing no reason for existence when it shall be no longer on the earth, it thence concludes, that, in fact, it shall not in that case exist. To be consistent, it ought equally to conclude, on the same principle, that it does not exist now; for it certainly can discover, neither in itself, nor in any thing around, an actual reason for its existence.

We are convinced of our existence by a power greatly superior to our mind, which is sentiment, or intellectual feeling. We are going to carry this natural instinct along with us into our researches respecting the existence of the Deity, and the immortality of the soul; subjects, on which our versatile reason has so frequently engaged, sometimes on this, sometimes on the other, side the question. Though our insufficiency be too great to admit of launching far into this unbounded career, we presume to hope, that our perceptions, nay, our very mistakes, may encourage men of genius to enter upon it. These sublime and eternal truths seem to us so deeply imprinted on the human heart, as to appear themselves the principles of our intellectual feeling, and to manifest themselves in our most ordinary affections, as in the wildest excesses of our passions.

The sentiment of innocence exalts us toward the Deity, and prompts us to virtuous deeds. The Greeks and Romans employed little children to sing in their religious festivals, and to present their offerings at the altar, in the view of rendering the gods propitious to their country, by the spectacle of infant innocence. The sight of infancy calls men back to the sentiments of nature. When Cato of Utica had formed the resolution to put himself to death, his friends and servants concealed his sword; and upon his demanding it with expressions of violent indignation, they delivered it to him by the hand of a child: but the corruption of the age in which he lived, had stifled in his heart the sentiment which innocence ought to have excited.

The gospel recommends us to become as little children: we call them innocents, *non nocentes*, because they have not injured any one.

But,

But, notwithstanding the claims of their tender age, and the authority of the Christian religion, to what barbarous education are they not abandoned!

The sentiment of innocence is the native source of compassion; hence we are more deeply affected by the sufferings of a child than by those of an old man. The reason is not, as certain philosophers pretend, because the resources and hopes of the child are inferior; for they are, in truth, greater than those of the old man, who is frequently infirm, and hastening to dissolution; whereas the child is entering into life: but the child has never offended; he is innocent. This sentiment extends even to animals, which, in many cases, excite our sympathy more than rational creatures do, from this very consideration, that they are harmless.

The sentiment of innocence developes, in the heart of man, a divine character, which is that of generosity. It bears, not on the calamity abstractedly considered, but on a moral quality, which it discerns in the unfortunate being who is the object of it. It derives increase from the view of innocence, and sometimes still more from that of repentance.

Man alone, of all animals, is susceptible of pity; and this, not by a secret retrospect to himself, as some enemies of the human race have pretended: for, were that the case, on stating a comparison between a child and an old man, both of them unfortunate, we ought to be more affected by the misery of the old man, considering that we are removing from the wretchedness of childhood, and drawing nearer to that of old age: the contrary, however, takes place, in virtue of the moral sentiment which I have alleged. When an old man is virtuous, the moral sentiment of his distress is excited in us with redoubled force; this is an evident proof, that pity in man is by no means an animal affection. The sight of a Belisarius is, accordingly, a most affecting object. If you heighten it by the introduction of a child holding out his little hand to receive the alms bestowed on that illustrious blind beggar, the impression of pity is still more powerful. But let me put a sentimental case: Suppose you had fallen in with Belisarius soliciting charity, on the one hand, and on the other, an orphan child, blind and wretched, and that you had but one crown, without the possibility of dividing it; to which of the two would you have given it?

If on reflection you find, that the eminent services rendered by Belisarius to his ungrateful country have inclined the balance of sentiment too decidedly in his favour, suppose the child overwhelmed with the woes of Belisarius, and at the same time possessing some of his virtues, such as having his eyes put out by his parents, and, nevertheless, continuing to beg alms for their relief; there would, in my opinion, be no room for hesitation, provided a man felt only; for, if you reason, the case is entirely altered; the talents, the victories, the renown, of the Grecian general, would presently absorb the calamitities of an obscure child. Reason will recal you to the political interest, to the I human. The sentiment of innocence is a ray of the divinity. It invests the unfortunate person with a celestial radiance, which falls on the human heart, and recoils, kindling it into generosity, that other flame of divine original. It alone renders us sensible to the distress of virtue, by representing it to us as incapable of doing harm; for otherwise, we might be induced to consider

consider it as sufficient to itself. In this case, it would excite rather admiration than pity.

This sentiment is, still farther, the source of love of our country, because it brings to our recollection the gentle and pure affections of our earlier years. It encreases with extension, and expands with the progress of time, as a sentiment of a celestial and immortal nature. They have, in Swisserland, an ancient musical air, and extremely simple, called the *rans des vaches*.—This air produces an effect so powerful, that it was found necessary to prohibit the playing of it, in Holland and in France, before the Swiss soldiers, because it set them all a-deserting one after another. I imagine, that the *rans des vaches* must imitate the lowing and bleating of the cattle, the repercussion of the echos, and other local associations, which made the blood boil in the veins of those poor soldiers, by recalling to their memory the valleys, the lakes, the mountains, of their country, and at the same time, the companions of their earlier life, their first love, the recollection of their indulgent grand-fathers, and the like.

The love of our country seems to strengthen in proportion as it is innocent and unhappy. For this reason savages are fonder of their country than polished nations are; and those who inhabit regions rough and wild, such as mountaineers, than those who live in fertile countries and fine climates.

Never could the court of Russia prevail upon a single Samoiède to leave the shores of the Frozen Ocean, and settle at Petersburg. Some Greenlanders were brought, in the course of the last century, to the court of Copenhagen, where they were entertained with a profusion of kindness, but soon fretted themselves to death. Several of them were drowned, in attempting to return to their country in an open boat. They beheld all the magnificence of the court of Denmark with extreme indifference; but there was one, in particular, whom they observed to weep every time he saw a woman with a child in her arms; hence they conjectured that this unfortunate man was a father. The gentleness of domestic education, undoubtedly, thus powerfully attaches these poor people to the place of their birth. It was this which inspired the Greeks and Romans with so much courage in the defence of their country. The sentiment of innocence strengthens the love of it, because it brings back all the affections of early life, pure, sacred, and incorruptible. Virgil was well acquainted with the effect of this sentiment, when he puts into the mouth of Nisus, who was dissuading Euryalus from undertaking a noctural expedition, fraught with danger, those affecting words:

Te superesse velim: tua vita dignior ætas.

If thou survive me, I shall die content:
Thy tender age deserves the longer life.

But among nations with whom infancy is rendered miserable, and is corrupted by irksome, ferocious, and unnatural, education, there is no more love of country than there is of innocence. This is one of the causes which sends so many Europeans rambling over the world, and which accounts for our having so few modern monuments in Europe, because the next generation never fails to destroy the monuments of that which precedes it. This is the reason that

our books, our fashions, our customs, our ceremonies, and our languages, become obsolete so soon, and are entirely different this age from what they were in the last; whereas all these particulars continue the same among the sendentary nations of Asia, for a long series of ages together; because children brought up in Asia, in the habitation of their parents, and treated with much gentleness, remain attached to the establishments of their ancestors out of gratitude to their memory, and to the places of their birth from the recollection of their happiness and innocence.

The sentiment of admiration transports us immediately into the bosom of Deity. If it is excited in us by an object which inspires delight, we convey ourselves thither as to the source of joy; if terror is roused, we fly thither for refuge. In either case, admiration exclaims in these words, "Ah, my God!" This is, we are told, the effect of education merely, in the course of which, frequent mention is made of the name of God; but mention is still more frequently made of our father, of the king, of a protector, of a celebrated literary character. How comes it, then, that when we feel ourselves standing in need of support in such unexpected concussions, we never exclaim, "Ah, my king!" or, if science were concerned, "Ah, Newton!"

It is certain, that if the name of the Deity be frequently mentioned to us, in the progress of our education, the idea of it is quickly effaced in the usual train of affairs of this world; why then have we recourse to it in extraordinary emergencies? This sentiment of nature is common to all nations, many of whom give no theological instruction to their children. I have remarked it in the negroes of the coast of Guinea, of Madagascar, of Caffraria, and Mosambique, the Tartars, and the Indians of the Malabar coast; in a word, among men of every quarter of the world. I never saw a single one, who, under the extraordinary motions of surprize, or of admiration, did not make in his own language the same exclamation which we do, and who did not lift up his hands and his eyes to heaven.

The sentiment of admiration is the source of the instinct which men have in every age discovered for the marvellous. We are hunting after it continually, and every where, and we diffuse it, principally, over the commencement and the close of human life; hence it is that the cradles and the tombs of so great a part of mankind have been enveloped in fiction. It is the perennial source of our curiosity; it discloses itself from early infancy, and is long the companion of innocence. Whence could children derive the taste for the marvellous? They must have fairy-tales; and men must have epic poems and operas. It is the marvellous which constitutes one of the grand charms of the antique statues of Greece and Rome, representing heroes or gods, and which contributes, more than is generally imagined, to our delight, in the perusal of the ancient history of those countries. It is one of the natural reasons which may be produced to the president Hainault, who expresses astonishment that we should be more enamored of ancient history than of modern, especially that of our own country: the truth is, independently of the patriotic sentiments, which serve, at least, as a pretext to the intrigues of the great men of Greece and Rome, and which were so entirely unknown to ours, that they frequently embroiled their country in maintaining the interests of a particular house, and sometimes

times in asserting the honour of precedency, or of sitting on a joint-stool; there is a marvellous in the religion of the ancients which consoles and elevates human nature, whereas that of the Gauls terrifies and debases it. The gods of the Greeks and the Romans were patriots, like their great men. Minerva had given to them the olive, Neptune the horse. These gods protected the cities and the people. But those of the ancient Gauls were tyrants, like their barons; they afforded protection only to the Druids. They must be glutted with human sacrifices. In a word, this religion was so inhuman, that two successive Roman Emperors, according to the testimony of Suetonius and Pliny, commanded it to be abolished. I say nothing of the modern interests of our history; but sure I am, that the relations of our politics will never replace in it, to the heart of man, those of the divinity.

I must observe that, as admiration is an involuntary movement of the soul towards Deity, and is of consequence sublime, several modern authors have strained to multiply this kind of beauty in their productions, by an accumulation of surprising incidents; but nature employs them sparingly in hers, because man is incapable of frequently undergoing concussions so violent. She discloses to us, by little and little, the light of the sun, the expansion of flowers, the formation of fruits. She gradually induces our enjoyments by a long series of harmonies; she treats us as human beings, that is, as machines feeble and easily deranged; she veils Deity from our view, that we may be able to support his approach.

This is the reason that mystery possesses so many charms. Pictures placed in the full glare of light, avenues in straight lines, roses fully blown, women in gaudy apparel, are far from being the objects which please us most. But shady vallies, paths winding about through the forests, flowers scarcely half-opened, and timid shepherdesses, excite in us the sweetest and the most lasting emotions. The loveliness and respectability of objects are increased by their mysteriousness. Sometimes it is that of antiquity, which renders so many monuments venerable in our eyes; sometimes it is that of distance, which diffuses so many charms over objects in the horizon; sometimes it is that of names. Hence the sciences which retain the Greek names, though they frequently denote only the most ordinary things, have a more imposing air of respect than those which have only modern names, though these may, in many cases, be more ingenious and more useful. Hence, for example, the construction of ships, and the art of navigation, are more lightly prized by our modern *literati*, than several other physical sciences of the most frivolous nature, but which are dignified by Greek names. Admiration, accordingly, is not a relation of the understanding, or a perception of our reason; but a sentiment of the soul, which arises in us, from a certain undescribable instinct of Deity, at sight of extraordinary objects, and from the very mysteriousness in which they are involved. This is so indubitably certain, that admiration is destroyed by the science which enlightens us. If I exhibit to a savage an eolipile darting out a stream of inflamed spirit of wine, I throw him into an extasy of admiration; he feels himself disposed to fall down and worship the machine; he venerates me as the god of fire, as long as he comprehends it not; but no sooner do I explain to him the nature of the process, than his admiration ceases, and he looks upon

me as a cheat. For this reason it is that we admire only that which is uncommon. Were there to appear, over the horizon of Paris, one of those parhelia which are so common at Spitzbergen, the whole inhabitants of the city would be in the streets to gaze at it, and wonder. It is nothing more, however, than a reflection of the sun's disk in the clouds; and no one stands still to contemplate the sun himself, because the sun is an object too well-known to be admired.

From an effect of those ineffable sentiments, and of those universal instincts of Deity, it is, that ignorance is become the inexhaustible source of delight to man. We must take care not to confound, as all our moralists do, ignorance and error. Ignorance is the work of nature, and, in many cases, a blessing to man; whereas error is frequently the fruit of our pretended human sciences, and is always an evil. Let our political writers say what they will, while they boast of our wonderful progress in knowledge, and oppose to it the barbarism of past ages, it was not ignorance which then set all Europe on fire, and inundated it with blood, in settling religious disputations. A race of ignorants would have kept themselves quiet. The mischief was done by persons who were under the power of error, who, at that time, vaunted as much, perhaps, of their superior illumination as we now-a-days do of ours, and into each of whom the European spirit of education had instilled this error of early infancy, "Be the first."

How many evils does ignorance conceal from us, which we are doomed one day to encounter, in the course of human life, beyond the possibility of escaping! the inconstancy of friends, the revolutions of fortune, calumnies, and the hour of death itself, so tremendous to most men. The knowledge of ills like these would mar all the comfort of living. How many blessings does ignorance render sublime! the illusions of friendship, and those of love, the perspectives of hope, and the very treasures which science unfolds. The sciences inspire delight only when we enter upon the study of them, at the period when the mind, in a state of ignorance, plunges into the great career. It is the point of contact between light and darkness, which presents to the eye the most favourable state of vision: this is the harmonic point, which excites our admiration, when we are beginning to see clearly; but it lasts only a single instant. It vanishes together with ignorance. The elements of geometry may have impassioned young minds, but never the aged, unless in the case of certain illustrious mathematicians, who were proceeding from discovery to discovery. Those sciences only, and those passions, which are subjected to doubt and chance, form enthusiasts at every age of life, such as chemistry, avarice, play, and love.

For one pleasure which science bestows, and causes to perish in the bestowing, ignorance presents us with a thousand, which flatter us infinitely more. You demonstrate to me that the sun is a fixed globe, the attraction of which gives to the planets one half of their movements. Had they, who believed it to be conducted round the world by Apollo, an idea less sublime? They imagined, at least, that the attention of a god pervaded the earth, together with the rays of the orb of day. It is science which has dragged down the chaste Diana from her nocturnal car: she has banished the Hamadryads from the antique forests, and the gentle Naiads from the fountains. Ignorance had invited the gods, to partake of its joys and

and its woes, to man's wedding, and to his grave; science discerns nothing in either, except the elements merely. She has abandoned man to his fellow, and thrown him upon the earth as into a desert. Ah! whatever may be the names which man gives to the different kingdoms of nature, celestial spirits, undoubtedly, regulate their combinations so ingenious, so varied and so uniform; and man, who could bestow nothing upon himself, is not the only being in the universe who partakes of intelligence.

It is not to the illumination of science that the Deity communicates the most profound sentiment of his attributes, but to our ignorance. Night conveys to the mind a much grander idea of infinity than all the glare of day. In the day-time, I see but one sun; during the night, I discern thousands.

Are those very stars we behold so variously coloured, really suns? Are those planets, which revolve around ours, actually inhabited, as ours is? From whence came the planet Cybele, discovered but yesterday by a German of the name of Herschel? It has been running its race from the beginning of the creation, and was, till of late, unknown to us. Whither go those uncertainly revolving comets, traversing the regions of unbounded space? Of what consists that milky way which divides the firmament of heaven? What are those two dark clouds, placed toward the antarctic pole, near the cross of the south? Can there be stars which diffuse darkness, conformably to the belief of the ancients? Are there places in the firmament which the light never reaches? The sun discovers to me only a terrestrial infinity, and the night discloses an infinity altogether celestial. O, mysterious ignorance, draw thy hallowed curtains over those enchanting spectacles! Permit not human science to apply to them its cheerless compasses. Let not virtue be reduced, henceforth, to look for her reward from the justice and the sensibility of a globe! Permit her to think that there are in the universe, destinies far different from those which fill up the measure of woe upon this earth.

Science is continually shewing us the boundary of our reason, and ignorance is for ever removing it. I take care, in my solitary rambles, not to ask information respecting the name and quality of the person who owns the castle which I perceive at a distance. The history of the master frequently disfigures that of the landscape. It is not so with the History of Nature; the more her works are studied, the more is our admiration excited. There is one case only in which the knowledge of the works of men is agreeable to us, it is when the monument which we contemplate has been the abode of goodness. What little spire is that which I perceive at Montmorency? It is that of St. Gratian, where Catinat lived the life of a sage, and under which his ashes are laid to rest. My soul, circumscribed within the precincts of a small village, takes its flight, and ranges over the capacious sphere of the age of Louis XIV. and hastens thence to expatiate through a sphere more sublime than that of the world, the sphere of virtue. When I am incapable of procuring for myself such perspectives as these, ignorance of places answers my purpose much better than the knowledge of them could do.

I have no occasion to be informed that such a forest belongs to an abbey or to a duchy, in order to feel how majestic it is. Its ancient trees, its profound glades, its solemn silent solitudes, are sufficient for me. The moment I cease to behold man there, that moment

ment I feel a present Deity. Let me give ever so little scope to my sentiment, there is no landscape but what I am able to ennoble. These vast meadows are metamorphosed into oceans; these mist-clad hills are islands emerging above the horizon; that city below, is a city of Greece, dignified by the residence of Socrates and Xenophon. Thanks to my ignorance, I can give the reins to the instinct of my soul. I plunge into infinity. I prolong the distance of places by that of ages; and, to complete the illusion, I make that enchanted spot the habitation of virtue.

OF THE DIET OF THE EGYPTIANS.

IN other nations diet is nothing more than a test of opulence, or of the progress of luxury; in Egypt it becomes an inlet into religion, manners, and character, of this singular people. The peculiar circumstances of their climate and soil made it expedient for the Egyptians to have a particular attention to their diet; hence most of their religious observances:—Moses adopted many of these, but wisely deserted the system in some points, consulting the character of his people, and the circumstances of the country in which they were to live. Pythagoras was not so wise; having passed into Egypt, and submitted to circumcision, he, in the true spirit of a fanatic, would have all or none, so adopted the intire dietetic system: after this, travelling into India, he embraced without reserve the regimen of the Bramins, forbidding all animal food, as the Egyptians had done that of fish, and of many vegetables: thus his system became an absurd union of the two; each of which had been calculated for a different climate, and neither for that in which he and his followers were to observe it. To a genuine bigot, doctrine is every thing; common sense is nothing. Leprosy, sore eyes, and gonorrhea, are endemic in Egypt: the elephantiasis, a species of leprosy peculiar to the Egyptians, above all corrupts the spermatic juices; this accounts for the origin of the gonorrhea in Egypt; as likewise for the invention of circumcision.

The priests abstained from all kinds of fish, as productive of scurvy; the people were indulged in the use of such as were least so: shell-fish, and in general those of the scaly tribe, were deemed the most innocent. The first magistrates, especially the Pharaohs, were not allowed to drink wine. Pythagoras adopted the prohibition: such a sect could not last long. Apollonius Tyanæus, a bigot worthy of his master, endeavoured to revive it, but in vain. The flesh of swine was totally prohibited, except twice a year, when the common people were indulged in the use of it. The flesh of goose and pigeon was the most esteemed; and therefore reserved for the priests and the king.

The Egyptian Lent of forty days, was a dietetic institution: they had several smaller Lents of six days: during all these the husband was not allowed to sleep with his wife. Their Lent was kept in the hottest season of the year: at this day, the better sort of the inhabitants, in the hot months, take their meals in the cool of the morning and evening. Mahomet borrowed his Lent, the time of keeping it, and the abstaining from wine, from the Egyptians:—*C'est en Egypte qu'il faut chercher la racine de la plus-part des institutions religieuses:* "It is from Egypt that we must trace the origin of most religiou

religious inſtitutions." Moſes was not ſo bold as Mahomet; he knew his people too well to venture on the prohibition of wine.

The Egyptians conſecrated onions, that is, prohibited the eating of them, on account of their being ſtimulating and hurtful to the eyes: it is in this point of view that we are to conſider their conſecrations in general. The Chineſe have never conſecrated either vegetables or animals, therefore eat of all. The Egyptians hated ſtrangers, and therefore fair hair, by which they were diſtinguiſhed: it is remarkable that the Chineſe have the ſame averſion.

THE BIRD-CATCHER AND CANARY:—AN AFFECTING ANECDOTE.

[FROM MR. PRATT'S GLEANINGS.]

IN the pretty country of Skuytz, ſouthward of Weſtphalia, they have an idea that cats are to be reconciled to a new reſidence only by coercive meaſures. In purſuance of which notion, a widow woman, at whoſe houſe I lodged, impriſoned a poor cat three nights and days in a dark room, to the entire deſtruction of my reſt, and almoſt to the cat's inſanity, in order to make her in love with her new houſe. Now in England, you know, where cats are not a whit more remarkable for an amiable diſpoſition, we ſhould have ſtroaked the poor animal till ſhe purred approbation; we ſhould have permitted her to feed and ſleep the firſt night by our fire-ſide, and ſo hoſpitably treated her, that at the breakfaſt table next morning, ſhe would have found herſelf one of the family.

Not that I would have you ſuppoſe I am an advocate for the feline race, except on general principles of juſtice and mercy. A dog is often an example to his maſter, and a proper object of his love, honour, imitation, and good faith. But a cat I take to be (with very rare exceptions indeed) both a traitor and a ſycophant. She is won to you only by fawnings, and, if you puniſh her on ever ſo juſt a cauſe, ſhe either ſtrikes immediately, or owns you a grudge, the unexecuted malice of which ſhe can hold till an opportunity of vengeance occurs. Even when you imagine you have gained her affections, ſhe will deſert you, like a faithleſs lover, and elope from your arms.

Perhaps, you may not think this the proper moment to introduce an anecdote of one of theſe inſidious creatures. You may ſuſpect me of imitating the grimalkin diſpoſition by ſitting down in malice. Were I about to become an accuſer, it might be ſo: but what I have now to mention exhibits no charge, though it will report an unlucky event.

In the town of Cleves, where I was reſiding with a Pruſſian family during the time of the fair, a travelling band of German muſicians, who commonly ply the houſes at theſe times, preſented themſelves and were ſuffered to play; and, juſt as they were making their bows for the money they received for their harmony, a bird-catcher, who had rendered himſelf famous for educating and calling forth the talents of the feathered race, made his appearance, and was well received by our party, which was numerous and benevolent. The muſicians, who had heard of this bird-catcher's fame, begged permiſſion

mission to stay; and the master of the house, who had a great share of good-nature, indulged their curiosity: a curiosity, indeed, which every body participated; for all that we have heard or seen of learned pigs, asses, dogs, and horses, was said to be extinguished in the wonderful wisdom, which blazed in the genius of this bird-catcher's canary. The canary was produced, and the owner harangued him in the following manner, placing him upon his fore-finger. Bijou (jewel), you are now in the presence of persons of great sagacity and honour: take heed you do not deceive the expectations they have conceived of you from the world's report: you have got laurels: beware their withering. In a word, deport yourself like the bijou (the jewel) of canary birds, as you certainly are.

All this time the bird seemed to listen, and, indeed, placed himself in the true attitude of attention, by sloping his head to the ear of the man, and then distinctly nodding twice when his master left off speaking; and, if ever nods were intelligible and promissory, these were two of them.

That's good, says the master, pulling off his hat to the bird. Now, then, let us see if you are a canary of honour. Give us a tune:—The canary sung. Pshaw, that's too harsh: 'tis the note of a raven with a hoarseness upon him: something pathetic. The canary whistled as if its little throat was changed to a lute. Faster, says the man.—Slower—very well—but what a plague is this foot about, and this little head.—No wonder you are out, Mr. Bijou, when you forgot your time. That's a jewel.—Bravo, bravo, my little man.

All that he was ordered or reminded of did he do to admiration. His head and foot beat time—humoured the variations both of tone and movement, and "the sound was a just echo to the sense," according to the strictest laws of poetical and (as it ought to be) of musical composition.—Bravo! bravo! re-echoed from all parts of the dining-room.—The musicians swore the canary was a greater master of music than any of their band.

And do you not shew your sense of this civility, sir, cries the bird-catcher, with an angry air. The canary bowed most respectfully, to the great delight of the company. His next atchievement was going through martial exercise with a straw gun, after which, Poor bijou, says his owner, thou hast had hard work, and must be a little weary: a few performances more, and thou shalt repose. Shew the ladies how to make a curtsey.

The bird here crossed his taper legs, and sunk and rose with an ease and grace that would have put half our belles to the blush—That's my fine bird—and now a bow, head and foot corresponding. Here the striplings for ten miles round London might have blushed also. Let us finish with a hornpipe, my brave little fellow—that's it—keep it up, keep it up.

The activity, glee, spirit, and accuracy, with which this last order was obeyed, wound up the applause (in which all the musicians joined, as well with their instruments as their clappings) to the highest pitch of admiration. Bijou himself, seemed to feel the sacred thirst of fame, and shook his little plumes, and carolled an *Io pæan* that sounded like the conscious notes of victory.

Thou hast done all my biddings bravely, said the master, caressing his feathered servant; now then, take a nap, while I take thy place.

place. Hereupon the canary went into a counterfeit ſlumber, ſo like the effect of the poppied god, firſt ſhutting one eye, then the other, then nodding, then dropping ſo much on one ſide that the hands of ſeveral of the company were ſtretched out to ſave him from falling, and, juſt as thoſe hands approached his feathers, ſuddenly recovering and dropping as much on the other; at length the ſleep ſeemed to fix him in a ſteady poſture; whereupon the man took him from his finger, and laid him flat upon the table, where the man aſſured us he would remain in a good ſound ſleep, while he himſelf had the honour to do his beſt to fill up the interval. Accordingly, after drinking a glaſs of wine, (in the progreſs of taking off which he was interrupted by the canary-bird ſpringing ſuddenly up to aſſert his right to a ſhare, really putting his little bill into the glaſs, and then laying himſelf down to ſleep again,) the owner called him a ſaucy fellow, and began to ſhew off his own independent powers of entertaining. The *forte* of theſe lay chiefly in balancing with a tobacco-pipe, while he ſmoked with another, and ſeveral of the poſitions were ſo difficult to be preſerved, yet maintained with ſuch dexterity, that the general attention was fixed upon him. But, while he was thus exhibiting, a huge black cat, who had been no doubt on the watch, from ſome unobſerved corner ſprung upon the table, ſeized the poor canary in its mouth, and ruſhed out of the window in deſpite of oppoſition. Though the dining-room was emptied in an inſtant, it was a vain purſuit; the life of the bird was gone, and its mangled body was brought in by the unfortunate owner in ſuch diſmay, accompanied by ſuch looks and language, as muſt have awaked pity in a miſanthrope. He ſpread himſelf half-length over the table, and mourned his canary-bird with the moſt undiſſembled ſorrow. Well may I grieve for thee, poor little thing; well may I grieve: more than four years haſt thou fed from my hand, drank from my lip, and ſlept in my boſom. I owe to thee my ſupport, my health, my ſtrength, and my happineſs; without thee what will become of me! Thou it was who enſured my welcome in the beſt company. It was thy genius only made me welcome. But thy death is a juſt puniſhment for my vanity: had I relied only on thy happy powers, all had been well, and thou hadſt been perched on my finger, or lulled in my breaſt, at this moment! but truſting to my own talents, and glorifying myſelf in them, a judgment has fallen upon me, and thou art dead and mangled on this table.

Accurſed be the hour I entered this houſe! and more accurſed the deteſtable monſter that killed thee! Accurſed be myſelf, for I contributed. I ought not to have taken away my eyes when thine were cloſed in frolic. O, bijou, my deareſt only bijou, would I were dead alſo!

As near as the ſpirit of his diſordered mind can be transfuſed, ſuch was the language and ſentiment of the forlorn bird-catcher; whoſe deſpairing motion and frantic air no words can paint. He took from his pocket a little green bag of faded velvet, and taking out of it ſome wool and cotton, that were the wrapping of whiſtles, bird-calls, and other inſtruments of his trade, (all of which he threw on the table, "as in ſcorn,") and making a couch, placed the mutilated limbs and ravaged feathers of his canary upon it, and renewed his lamentations.

These were now much softened, as is ever the case, when the rage of grief yields to its tenderness: when it is too much overpowered by the effect to advert to the cause. It is needless to observe that every one of the company sympathised with him. But none more than the band of musicians, who, being engaged in a profession that naturally keeps the sensibilities more or less in exercise, felt the distress of the poor bird-man with peculiar force. It was really a banquet to see these people gathering themselves into a knot, and after whispering, and wiping their eyes, depute one from among them to be the medium of conveying into the pocket of the bird-man the very contribution they had just before received for their own efforts. The poor fellow, perceiving them, took from the pocket the little parcel they had rolled up, and brought out with it, by an unlucky accident, another little bag, at the sight of which he was extremely agitated; for it contained the canary-seed, the food of the "dear lost companion of his art." There is no giving language to the effect of this trifling circumstance upon the poor fellow; he threw down the contribution money that he brought from his pocket along with it, not with an ungrateful but with a desperate hand. He opened the bag, which was fastened with red tape, and taking out some of the seed put it to the very bill of the lifeless bird, exclaiming—No, poor bijou, no—thou canst not peck any more out of this hand, that has been thy feeding place so many years—thou canst remember how happy we both were when I bought this bag full for thee. Had it been filled with gold, thou hadst deserved it. It shall be filled,—and with gold, said the master of the house, if I could afford it.

The good man rose from his seat, which had long been uneasy to him, and, gently taking the bag, put into it some silver; saying, as he handed it to his nearest neighbour, Who will refuse to follow my example? it is not a subscription for mere charity, it is a tribute to one of the rarest things in the whole world; namely, to real feeling, in this sophistical, pretending, parading, age. If ever the passion of love and gratitude was in the heart of man, it is in the heart of that unhappy fellow, and whether the object that calls out such feelings be bird, beast, fish, or man, it is alike virtue, and—ought to be rewarded—said his next neighbour, putting into the bag his quota. It is superfluous to tell you, that after the seed had been taken wholly away, and put very delicately out of the poor man's sight, every body most chearfully contributed to make up a purse, to repair (as much as money could) the birdman's loss. The last person applied to, was a very beautiful German young lady, who, as she placed her bounty into the bag, closed it immediately after, and blushed. As there are all sorts of blushes, (at least one to every action of our lives, that is worth any characteristic feeling, supposing the actor can feel at all,) suspicion would have thought this young lady, who was so anxious to conceal her gift, gave little or nothing; but candour, who reasons in a different manner, would suppose what was really the case—that it was a blush, not of avarice and deception, but of benevolence graced by modesty. Curiosity, however, caught the bag, opened it, and turned out its contents, among which was a golden ducat, that by its date and brightness had been hoarded. Ah ha, said curiosity, who does this belong to, I wonder? Guilt and innocence, avarice and benignity, are alike

honest

honeſt in one point; ſince they all in the moment of attack, by ſome means or another, diſcover what they wiſh to conceal. There was not in the then large company a ſingle perſon, who could not have exclaimed to this young lady, with aſſurance of the truth—Thou art the woman! There was no denying the fact; it was written on every feature of her enchanting face. She ſtruggled, however, with the accuſation, almoſt to tears, but they were ſuch tears as would have given luſtre to the fineſt eyes in the world, for they gave luſtre to hers. Well then, if nobody elſe will own this neglected ducat, cried the maſter of the houſe, who was uncle to the lady above-mentioned, I will: whereupon he took it from the heap, and exchanged it for two others, which enriched the collection.

While the buſineſs of the heart was thus carrying on, the poor bird-man, who was the occaſion and object of it, was at firſt divided by contrary emotions of pain and pleaſure: his eye ſometimes directed to the maſſacred canary, and ſometimes to the company: at length generoſity proved the ſtronger emotion, and grief ebbed away. He had loſt a bird, but he had gained the good will of many human beings. That bird, it is true, was his pride and ſupport, but this was not the criſis any longer to bewail its fate. He accepted the contribution-purſe, by one means or another filled like the ſack of Benjamin, even to the brim, and bowed, but ſpoke not; then, folding up the corpſe of the canary in its wool and cotton ſhroud, departed with one of thoſe looks, that the moment it is ſeen is felt and underſtood, but for which, being too powerful for deſcription, no language has yet been provided. On going out he beckoned the muſicians to follow. They did ſo, ſtriking a few chords that would have graced the funeral of Juliet.—My very ſoul purſued the ſounds, and ſo did my feet. I haſtened to the outer door, and ſaw the bird-man contending about returning the money, which the founders of the benevolence (for ſuch were the muſicians) had ſubſcribed.

DESCRIPTION OF THE BOSHIES-MEN AT THE CAPE OF GOOD HOPE.

THE Boſhies-men are a ſpecies of Hottentot, ſo called, according to Dr. Sparrman, from their dwelling in woody or mountainous places. They are ſworn enemies to a paſtoral life. Some of their maxims are, to live on hunting and plunder, and never to keep any animal alive for the ſpace of one night. By this means they render themſelves odious to the reſt of the inhabitants of the Cape; and are purſued and exterminated like the wild beaſts, whoſe manners they have aſſumed. Others of them again are kept alive, and made ſlaves of. Their weapons are poiſoned arrows, which ſhot out of a ſmall bow will fly to the diſtance of 200 paces, and will hit a mark with a tolerable degree of certainty at the diſtance of 50 or even 100 paces. From this diſtance they can by ſtealth, as it were, convey death to the game they hunt for food, as well as to their foes, and even to ſo large and tremendous a beaſt as the lion; this noble animal thus falling by a weapon which perhaps it deſpiſed, or even did not take notice of. The Hottentot, in the mean time, concealed and ſafe in his ambuſh, is abſolutely certain of the operation of his

poiſon, which he always culls of the moſt virulent kind; and it is ſaid he has only to wait a few minutes in order to ſee the wild beaſt languiſh and die. The dwellings of theſe foes to a paſtoral life are generally not more agreeable than their maxims and manners. Like the wild beaſts, buſhes and clifts in rocks by turns ſerve them inſtead of houſes: and ſome of them are ſaid to be ſo far worſe than beaſts, that their ſoil has been found cloſe by their habitations. A great many of them are entirely naked; but ſuch as have been able to procure the ſkin of any ſort of animal, great or ſmall, cover their bodies with it from the ſhoulders downwards as far as it will reach, wearing it till it falls off their backs in rags. As ignorant of agriculture as apes and monkies, like them they are obliged to wander about over hills and dales after certain wild roots, berries, and plants (which they eat raw), in order to ſuſtain a life that this miſerable food would ſoon extinguiſh and deſtroy were they uſed to better fare. Their table, however, is ſometimes compoſed of ſeveral other diſhes, among which they may be reckoned the larvæ of inſects, or that kind of caterpillars from which butterflies are generated; and in like manner a ſort of white ants (the *termes*), graſhoppers, ſnakes, and ſome ſorts of ſpiders. With all theſe changes of diet, the Boſhies-man is nevertheleſs frequently in want, and famiſhed to ſuch a degree as to waſte almoſt to a ſhadow. "It was with no ſmall aſtoniſhment (ſays Dr. Sparrman), that I for the firſt time ſaw in Lange Kloof a lad belonging to this race of men with his face, arms, legs, and body, ſo monſtrouſly ſmall and withered, that I could not have been induced to ſuppoſe but that he had been brought to that ſtate by the fever that was epidemic in thoſe parts, had I not ſeen him at the ſame time run like a lapwing. It required but a few weeks to bring one of theſe ſtarvelings to a thriving ſtate, and even to make him fat; their ſtomachs being ſtrong enough to digeſt the great quantity of food with which they are crammed, as they may rather be ſaid to bolt than eat. It ſometimes happens indeed that they cannot long retain what they have taken in; but this circumſtance, it is ſaid, does not hinder them from beginning again upon a new ſcore."

The capture of ſlaves from among this race of men is by no means difficult; and is effected in the following manner. "Several farmers that are in want of ſervants join together and take a journey to that part of the country where the Boſhies-men live. They themſelves, as well as their Lego-Hottentots, or elſe ſuch Boſhies-men as have been caught ſome time before, and have been trained up to fidelity in their ſervice, endeavour to ſpy out where the wild Boſhies-men have their haunts. This is beſt diſcovered by the ſmoke of their fires. They are found in ſocieties from 10 to 15 and 100, reckoning great and ſmall together. Notwithſtanding this, the farmers will venture in a dark night and ſet upon them with ſix or eight people, which they contrive to do by previouſly ſtationing themſelves at ſome diſtance round about the craal. They then give the alarm by firing a gun or two. By this means there is ſuch a conſternation ſpread over the whole body of theſe ſavages, that it is only the moſt bold and intelligent among them that have the courage to break through the circle and ſteal off. Theſe the captors are glad enough to get rid of at ſo eaſy a rate; being better pleaſed with thoſe that are ſtupid, timorous, and ſtruck with amazement, and who conſe-

quently allow themselves to be taken and carried into bondage. They are however, at first treated by gentle methods; that is, the victors intermix the fairest promises with their threats, and endeavour, if possible, to shoot some of the larger kinds of game for their prisoners, such as buffaloes, sea-cows, and the like. Such agreeable baits, together with a little tobacco, soon induce them, continually cockered and feasted as they are, to go with a tolerable degree of cheerfulness to the colonists place of abode. There this luxurious junketting upon meat and fat is exchanged for more moderate portions, consisting for the most part of butter-milk, frumenty, and hasty-pudding. This diet, nevertheless, makes the Boshies-men fat in a few weeks. However, he soon finds his good living embittered by the maundering and grumbling of his master and mistress. The words *t'guzeri* and *t'gaunatsi*, which perhaps are best translated by those of "young sorcerer" and "imp," are expressions which he must frequently put up with, and sometimes a few curses and blows into the bargain; and this for neglect, remissness, or idleness: which last failure, if it cannot be said to be born with him, is however in a manner naturalized in him. So that, both by nature and custom detesting all manner of labour, and now from his greater corpulency becoming still more slothful, and having besides been used to a wandering life subject to no controul, he most sensibly feels the want of his liberty. No wonder, then, that he generally endeavours to regain it by making his escape: but what is really a subject for wonder is, that when one of these poor devils run away from his service, or more properly bondage, he never takes with him any thing that does not belong to him. This is an instance of moderation in the savages towards their tyrants which is universally attested, and at the same time praised and admired by the colonists themselves; which, however, I cannot easily reconcile with what I have learned of the human heart. Is it in consequence of their fearing to meet with harder usage in case they should be retaken? This far, however, is certain, that none of this species of Hottentots are much given to violence or revenge. Free from many wants and desires that torment the rest of mankind, they are little if at all addicted to thieving, if we except brandy, victuals, and tobacco. It is not improbable likewise, that the advantages accruing from a theft may be overlooked by them, when their thoughts are taken up with regaining their liberty, the greatest of all treasures. It is necessary to observe here, that some of the Hottentots or Boshies-men, who are thus forced into the service of the colonists, live in small societies peaceably and quietly in desert tracts, where the colonists cannot easily come at them, and are sometimes in the possession of a few cows. These people probably originate from Boshies-men who have run away from the colonists service.

"I must confess (continues Dr. Sparrman,) that the Boshies-men in some husbandmens service are treated in the gentlest manner, and perhaps even without ever having a harsh word given them; live very well with regard to provisions; are well clad, relatively to their condition of life; and are very comfortably lodged, in comparison of what others are, in their own straw cattages. The chief of their business perhaps consists in tending a herd of cattle or flock of sheep during the heat of the day, when they have an opportunity of getting into a gentle state of intoxication by smoking tobacco; a

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ſtate which excites in them ſenſations of as agreeable a nature as the frenzy produced by ſpirituous liquors and opium ſeems to afford to many others, who are never at eaſe but when they can procure to themſelves this delicious pleaſure. And yet, though they may thus agreeably paſs away the otherwiſe tedious hours of their lives in ſmoking and ſleep, they nevertheleſs generally run away. The coloniſts wonder at this, as a procedure entirely devoid of reaſon; without perceiving, that in ſo doing they ſuppoſe the Hottentots not endued with a deſire, which has its immediate foundation in nature, and which is common to the human race, and even to moſt brute animals, viz. an earneſt longing after their birth-place and families, and eſpecially after their liberty.

"The ſlave buſineſs, that violent outrage to the natural rights of mankind, always in itſelf a crime, and which leads to all manner of miſdemeanors and wickedneſs, is exerciſed by the coloniſts in general with a cruelty towards the nation of Boſhies-men which merits the abhorrence of every one; though I have been told that they pique themſelves upon it: and not only is the capture of thoſe Hottentots conſidered by them merely as a party of pleaſure, but in cold blood they deſtroy the bands which nature has knit between huſbands and their wives and children. Not content, for inſtance, with having torn an unhappy woman from the embraces of her huſband, her only protection and comfort, they endeavour all they can, and that chiefly at night, to deprive her likewiſe of her infants; for it has been obſerved, that the mothers can ſeldom perſuade themſelves to flee from their tender offſpring. The amiable tenderneſs of the mother, which perhaps glows with a more lively flame in the breaſt of this poor heathen than in thoſe of her Chriſtian tyrants, is the very circumſtance laid hold on by their perſecutors in order to rivet the chains of this wretched female ſo much the faſter. There are ſome mothers, however, that ſet themſelvs free, when they have loſt all hopes of ſaving their children. After having made their eſcape, they ſometimes keep ſecretly about the neighbourhood, in hopes of finding ſome opportunity of recovering their infants again."

DESCRIPTION OF THE ATMOSPHERE.

THE atmoſphere compriſes the whole maſs of fluid conſiſting of air, aqueous and other vapours, electric fluid, &c. ſurrounding the earth to a conſiderable height. The compoſition of that part of our atmoſphere properly called air, was till lately very much unknown. In former times it was ſuppoſed to be a ſimple, homogeneous, and elementary, fluid. The experiments of Dr. Prieſtley diſcovered, that the pureſt kind of air, which he called dephlogiſticated, was in reality a compound, and might be artificially produced in various ways. His firſt conjectures concerning its component parts were, that it conſiſted of earth, nitrous acid, and phlogiſton. Subſequent experiments rendered theſe conjectures dubious; and at laſt it was ſuppoſed that dephlogiſticated air is a pure elementry ſubſtance, the vivifying principle to animals, and the acidifying principle throughout all nature. This dephlogiſticated air, however, is but a ſmall part of the compoſition of our atmoſphere. According to the moſt accurate computations, the air we uſually breathe is compoſed of only one-fourth of this dephlogiſticated air, or perhaps leſs;

less; the other three or four parts consisting of what Dr. Priestley calls phlogisticated, and M. Lavoisier mephitic, air. This by itself is absolutely noxious, and exceedingly poisonous to animals: though it seems only to be negatively so; for, when mixed in a certain proportion with dephlogisticated air, it may be breathed with safety, which could not be if it contained any ingredient absolutely unfriendly to the human constitution. The other parts, viz. the pure dephlogisticated air, seems to stand much in the same relation to plants that phlogisticated air does to animals; that is, it would prove poisonous and destroy them if they were to depend upon it entirely for their subsistence; but, as they derive their nourishment partly from the air and partly from the soil, it thence happens, that the plants which are set to grow in dephlogisticated air do not die instantly, as animals do in the phlogisticated kind, but remain for some time weak and sickly.

The other component parts of our atmosphere are so various, and of such heterogeneous natures, that they do not admit of any kind of definition or analysis, one only excepted, namely, the electric fluid. This we know pervades the whole, but appears to be much more copious in the upper than in the lower atmospherical regions. To measure the absolute quantity of this fluid, either in the atmosphere or any other substance, is impossible. All that we can know on this subject is, that the electric fluid pervades the atmosphere; that it appears to be more abundant in the superior than the inferior regions; that it seems to be the immediate bond of connection between the atmosphere and the water which is suspended in it; and that, by its various operations, the phenomena of hail, rain, snow, lightning, and various other kinds of meteors, are occasioned.

Various attempts have been made to ascertain the height to which the atmosphere is extended all round the earth. These commenced soon after it was discovered, by means of the Torricellian tube, that air is a gravitating substance. Thus it also became known, that a column of air, whose base is a square inch, and the height that of the whole atmosphere, weighs fifteen pounds; and that the weight of air is to that of mercury, as 1 to 10,800; whence it follows, that if the weight of the atmosphere be sufficient to raise a column of mercury to the height of thirty inches, the height of the of the aerial column must be 10,800 times as much, and consequently a little more than five miles high.

It was not, however, at any time supposed, that this calculation could be just; for, as the air is an elastic fluid, the upper parts must expand to an immense bulk, and thus render the calculation above related exceedingly erroneous. By experiments made in different countries, it has been found, that the spaces which any portion of air takes up, are reciprocally proportional to the weights with which it is compressed. Allowances were therefore to be made in calculating the height of the atmosphere. If we suppose the height of the whole divided into innumerable equal parts, the density of each of which is as its quantity; and the weight of the whole incumbent atmosphere being also as its quantity; it is evident, that the weight of the incumbent air is every where as the quantity contained in the subjacent part; which makes a difference between the weights of each two contiguous parts of air. By a theorem in geometry, where the differences of magnitudes are geometrically proportional

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to the magnitudes themselves, these magnitudes are in continual arithmetical proportion; therefore, if, according to the supposition, the altitude of the air, by the addition of new parts into which it is divided, do continually increase in arithmetical proportion, its density will be diminished, or (which is the same thing, its gravity decreased) in continual geometrical proportion.

It is now easy, from such a series, by making two or three barometrical observations, and determining the density of the atmosphere at two or three different stations, to determine its absolute height, or its rarity at any assignable height. Calculations accordingly were made upon this plan; but it having been found that the barometrical observations by no means corresponded with the density which, by other experiments, the air ought to have had, it was suspected that the upper parts of the atmospherical regions were not subject to the same laws with the lower ones. Philosophers therefore had recourse to another method for determining the altitude of the atmosphere, viz. by a calculation of the height from which the light of the sun is refracted, so as to become visible to us before he himself is seen in the heavens. By this method it was determined, that at the height of forty-five miles the atmosphere had no power of refraction; and consequently beyond that distance was either a mere vacuum or the next thing to it, and not to be regarded.

This theory soon became very generally received, and the height of the atmosphere was spoken of as familiarly as the height of a mountain, and reckoned to be as well ascertained, if not more so, than the heights of most mountains are. Very great objections, however, which have never yet been removed, arise from the appearances of some meteors, like large globes of fire, not unfrequently to be seen at vast heights above the earth. A very remarkable one of this kind was observed by Dr. Halley in the month of March 1719, whose altitude he computed to have been between 69 and 73½ English miles; its diameter 2800 yards, or upwards of a mile and a half; and its velocity about 350 miles in a minute. Others, apparently of the same kind, but whose altitude and velocity were still greater, have been observed: particularly that very remarkable one, August 18th, 1783, whose distance from the earth could not be less than ninety miles, and its diameter not less than the former; at the same time that its velocity was certainly not less than 1000 miles in a minute. Fire-balls, in appearance similar to these, though vastly inferior in size, have been sometimes observed at the surface of the earth. Of this kind Dr. Priestley mentions one seen on-board the Montague, 4th November 1749, which appeared as big as a large millstone, and broke with a violent explosion.

From analogical reasoning, it seems very probable, that the meteors which appear at such great heights in the air are not essentially different from those which, like the fire-ball just mentioned, are met with on the surface of the earth. The perplexing circumstances with regard to the former are, that at the great heights above-mentioned, the atmosphere ought not to have any density sufficient to support flame, or to propagate sound; yet these meteors are commonly succeeded by one or more explosions, nay are sometimes said to be accompanied with a hissing noise as they pass over our heads. The meteor of 1719 was not only very bright, insomuch that for a short space it turned night into day, but was attended with an explosion

plosion heard over all the island of Great Britain, occasioning a violent concussion in the atmosphere, and seeming to shake the earth itself. That of 1783 also, though much higher than the former, was succeeded by explosions; and, according to the testimony of several people, a hissing noise was heard as it passed. Dr. Halley acknowledged that he was unable to reconcile these circumstances with the received theory of the height of the atmosphere; as, in the regions in which this meteor moved, the air ought to have been 300,000 times more rare than what we breathe, and the next thing to a perfect vacuum.

In the meteor of 1783, the difficulty is still greater, as it appears to have been twenty miles farther up in the air. Dr. Halley offers a conjecture, indeed, that the vast magnitude of such bodies might compensate for the thinness of the medium in which they moved. Whether or not this was the case cannot indeed be ascertained, as we have so few data to go upon; but the greatest difficulty is to account for the brightness of the light. Appearances of this kind are indeed with great probability attributed to electricity, but the difficulty is not thus removed. Though the electrical fire pervades with great ease the vacuum of a common air-pump, yet it does not in that case appear in bright well-defined sparks, as in the open air, but rather in long streams resembling the aurora borealis. From some late experiments, indeed, Mr. Morgan concludes, that the electrical fluid cannot penetrate a perfect vacuum. If this is the case, it shews that the regions we speak of are not such a perfect vacuum as can be artificially made; but whether it is or not, the extreme brightness of the light shews that a fluid was present in those regions, capable of confining and condensing the electric matter as much as the air does at the surface of the ground; for the brightness of these meteors, considering their distance, cannot be supposed inferior to that of the brightest flashes of lightning.

This being the case, it appears reasonable to conclude, that what is called the *density* of the air does not altogether keep pace with its gravity. The latter indeed must in a great measure be affected by the vapours, but above all by the quantity, of the basis of fixed or dephlogisticated air contained in it: for Mr. Kirwan has discovered that the basis of fixed air, when deprived of its elastic principle, is not greatly inferior to gold in specific gravity; and we cannot suppose that of dephlogisticated air to be much less. It is possible, therefore, that pure air, could it be deprived of all the water it contains, might have very little gravity; and as there is great reason to believe that the basis of dephlogisticated air is only one of the constituent parts of water, we see an evident reason why the air ought to become lighter, and likewise less fit for respiration, the higher up we go, though there is a possibility that its density, or power of supporting flame, may continue unaltered.

There are not yet, however, a sufficient number of facts to enable us to determine this question; though such as have been discovered seem rather to favour the above conjecture. Dr. Boerhaave was of opinion that the gravity of the air depended entirely on the water it contained; and, by the means of alkaline salts, he was enabled to extract as much water from a quantity of air as was very near equivalent to its weight. By the calcination of metals we may extract as much of the basis of dephlogisticated air from a quantity of atmos-

pherical air as is equivalent to the weight of air loſt. Were it poſſible, therefore, to extract the whole of this, as well as all other vapours, and to preſerve only the elaſtic principle, it is highly probable that its gravity would entirely ceaſe. It has been found by thoſe who have aſcended with aeroſtatic machines, or to the tops of high mountains, that the dephlogiſticated air is found to be contained in ſmaller quantities in the atmoſphere of thoſe elevated regions than on the lower grounds. It is alſo found, that in ſuch ſituations the air is much drier, and parts with water with much more difficulty, than on the ordinary ſurface. Salt of tartar, for inſtance, which at the foot of a mountain will very ſoon run into a liquid, remains for a long time expoſed to the air on the top of it, without ſhewing the leaſt tendency to deliqueſce. Nevertheleſs, it hath never been obſerved that fires did not burn as intenſely on the tops of the higheſt mountains as on the plains. The matter indeed was put to the trial in the great eruption of Veſuvius in 1779, where, though the lava ſpouted up to the height of three miles above the level of the ſea, the uppermoſt parts all the while were to appearance as much inflamed as the loweſt.

The high degree of electricity, always exiſting in the upper regions of the atmoſphere, muſt of neceſſity have a very conſiderable influence on the gravity of any heterogeneous particles floating in it. When we conſider the effects of the electric fluid upon light bodies at the ſurface of the earth, it will readily be admitted, that in thoſe regions where this fluid is very abundant, the gravity of the atmoſphere may be much diminiſhed without affecting its denſity. We know that it is the nature of any electrified ſubſtance to attract light bodies; and that, by proper management, they may even be ſuſpended in the air, without either moving up or down, for a conſiderable time. If this is the caſe with light terreſtrial bodies, it cannot be thought very improbable that the aerial particles themſelves, *i. e.* thoſe which we call the baſis of dephlogiſticated air, and of aqueous or other vapour diffuſed among them, ſhould be thus affected in the regions where electricity is ſo abundant. From this cauſe, therefore, alſo the gravity of the atmoſphere may be affected without any alteration at all being made in its denſity; and hence may ariſe anomalies in the barometer hitherto not taken notice of.

It appears, therefore, that the abſolute height of the atmoſphere is not yet determined. The beginning and ending of twilight indeed ſhow, that the height at which the atmoſphere begins to refract the ſun's light is about forty-four or forty-five Engliſh miles. But this may not improbably be the only height to which the aqueous vapours are carried: for it cannot be thought any unreaſonable ſuppoſition, that light is refracted only by means of the aqueous vapour contained in the atmoſphere; and that where this ceaſes, it is ſtill capable of ſupporting the electric fire at leaſt as bright and ſtrong as at the ſurface. That it does extend much higher, is evident from the meteors already mentioned: for all theſe are undoubtedly carried along with the atmoſphere; otherwiſe that of 1783, which was ſeen for about a minute, muſt have been left 1000 miles to the weſtward, by the earth flying out below it in its annual courſe round the ſun.

It has already been mentioned, that the preſſure of the atmoſphere, when in its mean ſtate, is equivalent to a weight of fifteen pounds on every ſquare inch. Hence Dr. Cotes computed, that the preſſure of

of the whole ambient fluid upon the earth's surface is equivalent to that of a globe of lead sixty miles in diameter. Hence also it appears, that the pressure upon a human body must be very considerable; for as every square inch of surface sustains a pressure of fifteen pounds, every square foot, as containing 144 inches, must sustain a pressure of 2160; and if we suppose a man's body to contain fifteen square feet of surface, which is pretty near the truth, he must sustain a weight of 32,400 pounds, or sixteen ton for his ordinary load. By this enormous pressure we should undoubtedly be crushed in a moment, were not all parts of our bodies filled either with air or some other elastic fluid, the spring of which is just sufficient to counterbalance the weight of the atmosphere. But whatever this fluid may be, we are sure that it is just able to counteract the atmospherical gravity and no more; for if any considerable pressure be superadded to that of the air, as by going into deep water, or the like, it is always severely felt, let it be ever so equable. If the pressure of the atmosphere is taken off from any part of the human body, the hand, for instance, when put in an open receiver from whence the air is afterwards extracted, the weight of the atmosphere then discovers itself, and we imagine the hand to be strongly sucked down into the glass.

In countries at some distance from the equator, the pressure of the atmosphere varies considerably, and thus produces considerable changes on many terrestrial bodies. On the human body the quantity of pressure sometimes varies near a whole ton; and when it is thus so much diminished, most people find something of a listlessness and inactivity about them. It is surprising, however, that the spring of the internal fluid, already mentioned, which acts as a counterpoise to the atmospherical gravity, should in all cases seem to keep pace with it when the pressure is naturally diminished, and even when it is artificially augmented, though not when the pressure is artifically diminished. Thus in that kind of weather when the pressure of the air is least, we never perceive our veins to swell, or are sensible of any inward expansion in our bodies. On the contrary, the circulation is languid, and we seem rather to be oppressed by a weight. Even in going up to the tops of mountains, where the pressure of the atmosphere is diminished more than three times what it usually is on the plain, no such appearances are observed. Some travellers indeed have affirmed, that, on the tops of very high mountains, the air is so light as to occasion a great difficulty of respiration, and even violent vomiting of blood. It does not appear, however, that these assertions are well founded. Mr. Bridone found no inconvenience of this kind on the top of mount Ætna; nor is any such thing mentioned by Mr. Houel, who also ascended this mountain. Sir William Hamilton indeed says, that he did feel a difficulty of respiration, independent of any sulphureous steam. But, on the top of a volcano, the respiration may be affected by so many different causes, that it is perhaps impossible to assign the true one. The French mathematicians, when on the top of a very high peak of the Andes, did not make any complaint of this kind, though they lived there for some time. On the contrary, they found the wind so extremely violent, that they were scarce able to withstand its force; which seems an argument for at least equal density of the atmosphere in the superior as the inferior regions. Dr. Heberden, who ascended to the top of

Teneriffe, a higher mountain than Ætna, makes no mention of any difficulty of respiration. M. Saussure, however, in his journey to the top of Mount Blanc, the highest of the Alps, felt very great uneasiness in this way. His respiration was not only extremely difficult, but his pulse became quick, and he was seized with all the symptoms of a fever. His strength was also exhausted to such a degree, that he seemed to require four times as long a space to perform some experiments on the top of the mountain as he would have done at the foot of it. It must be observed, however, that these symptoms did not begin to appear till he had ascended two miles and a half perpendicular above the level of the sea. The mountain is only about a quarter of a mile higher; and in this short space he was reduced to the situation just mentioned. But it is improbable that so small a difference, even at the end of his journey, should have produced such violent effects, had not some other cause concurred. A cause of this kind he himself mentions, viz. that the atmosphere at the top of the mountain was so much impregnated with fixed air, that lime-water, exposed to it, quickly became covered with a pellicle occasioned by the absorption of that fluid. Now it is known, that fixed air is extremely pernicious to animals, and would bring on symptoms similar to those above-mentioned. There is no reason, therefore, to have recourse to the rarity of the atmosphere for solving a phenomenon which may more naturally be acounted for in another manner.

When the pressure of the atmosphere is augmented, by descending, in the diving-bell, to considerable depths in the sea, it does not appear that any inconvenience follows from its increase. Those who sit in the diving-bell are not sensible of any pressure as long as they remain in the air, though they feel it very sensibly in going into the water: yet it is certain, that the pressure in both cases is the same; for the whole pressure of the atmosphere, as well as of the water, is sustained by the air in the diving-bell, and consequently communicated to those who sit in it. But though artificial compression of the air as well as natural rarefaction, can thus be borne, it is otherwise with artificial rarefaction. Animals in an air-pump show uneasiness from the very first, and cannot live for any time in an atmosphere rarefied artificially even as much as it appeared to be from the barometer on the top of Mount Blanc.

It is not easy to assign the true reason of the variations of gravity in the atmosphere. Certain it is, however, that they take place only in a very small degree within the tropics; and seem there to depend on the heat of the sun, the barometer constantly sinks near half an inch every day, and rises again to its former station in the night-time. In the temperate zones the barometer ranges from twenty-eight to near thirty-one inches, by its various altitudes, showing the changes that are about to take place in the weather. If we could know, therefore, the latent causes by which the weather is influenced, we should likewise certainly know those by which the atmosphere is affected; but in general they may be reduced to two, viz. an emission of latent heat from the vapour contained in the atmosphere, or of electric fluid from the same, or from the earth. To one or both of these causes, therefore, may we ascribe the variations of the gravity of the atmosphere; and we see that they both tend to produce the same effect with the solar heat in the tropical climates, viz. to rarefy the air,

air, by mixing with it or setting loose a non-gravitating fluid, which did not act in such large proportion in any particular place before. No doubt, the action of the latent heat and electric fluid is the same in the torrid as in the temperate zones: but in the torrid zone the solar heat and excessive evaporation counteract them; so that whatever quantities may be discharged by the excessive deluges of rain, &c. which fall in those countries, they are instantly absorbed by the abundant fluid, and are quickly ready to be discharged again; while, in the temperate zones, the air becomes sensibly lighter, as well as warmer, by them for some time before they can be absorbed again.

The variations of heat and cold to which the atmosphere is subject, have been the subject of much speculation. In general they seem to depend entirely upon the light of the sun reflected into the atmosphere from the earth; and where this reflection is deficient, even though the light should be present ever so much, the most violent degrees of cold are found to take place. Hence, on the tops of mountains, the cold is generally excessive, though by reason of the clearness of the atmosphere the light of the sun falls upon them in greater quantity than it can do on an equal space on the plain. In long winding passages also, such as the caverns of Ætna and Vesuvius, where the air has room to circulate freely, without any access of the sun, the cold is scarce tolerable; whence the use of these for cooling liquors, preserving meat, &c.

The coldness of the atmosphere on the tops of mountains has been ascribed by M. Lambert, and de Luc, to the igneous fluid, or elementary fire, being more rare in those elevated situations than on the plains. M. Lambert is of opinion that it is rarefied above by the action of the air, and that below it is condensed by its own proper weight. He considers fire as a fluid in motion, the parts of which are separable, and which is rarefied when its velocity is accelerated. He does not decide with regard to the identity of fire and light, though he seems inclined to believe it. M. de Luc compares elementary fire to a continuous fluid, whose parts are condensed by being mutually compressed. He denies that fire and light are the same; and maintains that the latter is incapable, by itself, of setting fire to bodies, though it does so by putting in motion the igneous fluid they contain; and that it acts with more force near the earth than at a distance from its surface by reason of this fluid, which he calls an heavy and elastic one, being more condensed there than at a greater height.

M. Saussure in treating of this subject in his account of the Alps, does not consider fire as a fluid so free and detached as to be able either to ascend with rapidity by its specific levity, or to condense itself sensibly by its proper weight. He supposes it to be united to bodies by so strict an affinity, that all its motions are determined, or at least powerfully modified, by that affinity. As soon therefore as fire, disengaged by combustion or by any other cause, endeavours to diffuse itself, all the bodies that come within the sphere of its activity endeavour to attract it; and they absorb such quantities of it as are in the direct ratio of their affinities with it, or in the inverse ratio of what is necessary for their equilibrium with the surrounding bodies. Now it does not appear that in this distribution the situation of places, with regard to the horizon, has any other influence than what they receive from the different currents produced by the dilatation

of

of the air, and by the levity which that dilatation produces. The ascent of flame, smoke, &c. or of air heated in any way, persuaded the ancients that fire is possessed of absolute levity, by which it had a tendency to mount upwards. "But these effects (says he) are owing either to the levity of the fluid which constitutes flame, or to that of air dilated by heat; and not to the levity of the igneous fluid. I am, however, sufficiently convinced, that this fluid is incomparably lighter than air, though I do not believe it possesses the power of ascending in our atmosphere by virtue of its levity alone.

"The celebrated Bouguer has demonstrated, by principles the most simple and most universally adopted, that it is not necessary, in order to account for the diminution of heat on mountains, to have recourse to hypotheses that are at best doubtful. The following is his explanation of what was felt on the mountains of Peru.

"It was proper, in order to explain this subject, to insist on the short duration of the sun's rays, which cannot strike the different sides of mountains but for a few hours, and even this not always. A horizontal plain, when the sun is clear, is exposed at mid-day to the perpendicular and undiminished action of these rays, while they fall but obliquely on a plain not much inclined, or on the sides of a high pile of steep rocks. But let us conceive for a moment an insulated point, half the height of the atmosphere, at a distance from all mountains, as well as from the clouds which float in the air. The more a medium is transparent, the less heat it ought to receive by the immediate action of the sun. The free passage which a very transparent body allows to the rays of light, shows that its small particles are hardly touched by them. Indeed what impression could they make on it, when they pass through almost without obstruction? Light, when it consists of parallel rays, does not by passing through a foot of free atmospheric air, near the earth, lose an hundred thousandth part of its force. From this we may judge how few rays are weakened, or can act on this fluid, in their passage through a stratum of the diameter not of an inch or a line, but of a particle. Yet the subtilty and transparency are still greater at great heights, as was obvious on the Cordilleras, when we looked at distant objects. Lastly, the grosser air is heated below by the contact or neighbourhood of bodies of greater density than itself, which it surrounds, and on which it rests; and the heat may be communicated by little and little to a certain distance. The inferior parts of the atmosphere by this means contract daily a very considerable degree of heat, and may receive it in proportion to its density or bulk. But it is evident that the same thing cannot happen at the distance of a league and an half or two leagues above the surface of the earth, although the light there may be something more active. The air and the wind therefore must at this height be extremely cold, and colder in proportion to the elevation.

"Besides, the heat necessary to life is not merely that which we receive every instant from the sun. The momentary degree of this heat corresponds to a very small part of that which all the bodies around us have imbibed, and by which ours is chiefly regulated. The action of the sun only serves to maintain nearly in the same state the sum of the total heat, by repairing through the day the loss it sustains thro' the night, and at all times. If the addition be greater than the loss, the total heat will increase, as it happens in summer, and it will continue

tinue to accumulate in a certain degree; but for the reasons already given, this accumulation cannot be very great on the top of a mountain, where the summit which rises high, is never of great bulk. The lowest state of the thermometer in every place is always in proportion to the heat acquired by the soil; and that heat being very small on the top of a mountain, the quantity added to it by the sun during the day must be comparatively greater; and the accumulated heat will be more in a condition to receive increase in proportion to its distance from the degree which it cannot pass.

"Another particular observable on all the high places of the Cordilleras, and which depends on the same cause, is, that when we leave the shade, and expose ourselves to the sunshine, we feel a much greater difference than we do here in our fine days when the weather is temperate. Every thing contributes at Quito to make the sun exceedingly powerful: a single step from an exposed place to the shade gives the sensation of cold: this would not be the case if the quantity of heat acquired by the soil were more considerable. We now also see why the same thermometer, put first into the shade and then in the sun, does not undergo the same changes at all times and in all places. In the morning, upon Pichincha, this instrument is generally a few degrees below the freezing point, which may be reckoned the natural temperature of the place; but when during the day we expose it to the sun, it is easy to imagine that the effect must be great, and much more than double in whatever way it is measured."

This theory is adopted by M. Saussure, who adds the following fact to prove that the action of the sun's rays, considered abstractedly and independent of any extrinsic source of cold, is as great on mountains as on plains, viz. that the power of burning lenses and mirrors is the same at all heights. To ascertain this fact our author procured a burning-glass so weak that at Geneva it would just set fire to tinder. This he carried, with some of the same tinder, to the top of the mountain Saleve (a height of 3000 feet), where it not only produced the same effect, but apparently with greater facility than on the plain. Being persuaded then, that the principal source of cold on the tops of high mountains is their being perpetually surrounded with an atmosphere which cannot be much heated either by the rays of the sun on account of its transparency, or by the reflection of them from the earth by reason of its distance, he wished to know, whether the direct solar rays on the top of a high mountain had the same power as on the plain, while the body on which they acted was placed in such a manner as to be unaffected by the surrounding air. For this purpose he instituted a set of experiments, from which he drew the following conclusions, viz. that a difference of 777 toises in height, diminishes the heat which the rays of the sun are able to communicate to a body exposed to the external air, 14° of the thermometer; that it diminishes the heat of a body partially exposed, only 6°; and that it augments by 1° the heat of a third body completely defended from the air.

Hence it appears that the atmosphere, though so essentially necessary to the support of fire, is somehow or other the greatest antagonist of heat, and most effectually counteracts the operation of the solar rays in producing it. This power it seems to exert at all distances, at the surface as well as in the higher regions. From some experiments made by M. Pictet, it appears, that even in places exposed to the

the rays of the ſun, the heat, at five feet diſtance from the ground, is greater only by one or two degrees than at fifty feet above the ſurface, though the ground was at that time 15 or 20° warmer than the air immediately in contact with it. Inconſiderable as this difference is, however, it does not hold as we go higher up; for if it did, the cold on the top of the mountain of Saleve, which is 3000 feet above the level of the lake of Geneva, would be 60° greater than at the foot of it; whereas in reality it is only 10°. In the night-time the caſe is reverſed; for the ſtratum of air at five feet from the ground, was found by M. Pictet to be colder than at 50. Beſides this, different ſtrata of the atmoſphere are found to poſſeſs very different and variable degrees of cold, without any regard to their ſituation high up or low down. In the year 1780, Dr. Wilſon of Glaſgow found a very remarkable cold exiſting cloſe to the ſurface of the ground; ſo that the thermometer, when laid on the ſurface of the ſnow, ſunk many degrees lower than one ſuſpended twenty-four feet above it. It has been likewiſe obſerved, that in clear weather, though the ſurface of the earth be then moſt liable to be heated by the ſun, yet after that is ſet, and during the night, the air is colder near the ground, and particularly in the valleys. Experiments on this ſubject were made for a whole year by Mr. James Sex, who has given an account of them in the 78th volume of the Philoſophical Tranſactions. He ſuſpended thermometers (conſtructed in ſuch a manner as to ſhow the true maximum and minimum of heat that might take place in the obſerver's abſence) in a ſhady northerly aſpect, and at different heights in the open air. One of theſe was placed to the height of nine feet, and the other at that of 220, from the ground; and the obſervations were continued, with only a few days omiſſion, from July 1784 to July 1785. The greateſt variations of heat were in the months of October and June; in the former the thermometers generally differed moſt in the night, and in the latter moſtly in the day. From the 25th to the 28th of October, the heat below, in the night-time, exceeded in a ſmall degree the heat above; at which time there was frequent rain mingled with hail. From the 11th to the 14th, and alſo on the 31ſt, there was no variation at all; during which time likewiſe the weather was rainy; all the reſt of the month proving clear, the air below was found colder than that above, ſometimes by nine or ten degrees. In the month of June, the greateſt variations took place from the 11th to the 15th, and from the 25th to the 30th; and at both theſe times there appeared to be two currents of wind, the upper from the ſouth-weſt and the lower from the north-eaſt. Sometimes theſe were rendered viſible by clouds, in different ſtrata, moving in different directions; and ſometimes by clouds moving in a contrary direction to a very ſenſible current of air below. On cloudy nights the loweſt thermometer ſometimes ſhowed the heat to be a degree or two greater than the upper one; but in the day-time the heat below conſtantly exceeded that above more than in the month of October.

To determine whether the nocturnal refrigeration was augmented by a nearer approach to the earth, two thermometers were placed in the midſt of an open meadow, on the bank of the river near Canterbury. One was placed on the ground, and the other only ſix feet above it. The thermometer, at ſix feet diſtance from the ground, agreed nearly with the former at nine feet; but the nocturnal variations

ations were found to correſpond entirely with the clearneſs or the cloudineſs of the ſky: and, though they did not always happen in proportion to their reſpective altitudes, yet, when the thermometers differed in any reſpect, that on the ground always indicated the greateſt degree of cold.

The difference betwixt theſe two thermometers, at the ſmall diſtance of ſix feet from each other, being found no leſs than three degrees and an half, the number of thermometers in the meadow was augmented to four. One was ſunk in the ground, another placed juſt upon it, and the third ſuſpended at three feet above it. Three others were placed on a riſing ground where the land was level with the cathedral tower, and about a mile diſtant from it. One of theſe was likewiſe ſunk in the ground, another placed juſt upon it, and a third ſuſpended ſix feet above it. With theſe ſeven thermometers, and the two firſt mentioned, which were placed in the city, he continued his obſervations for twenty days; but as the weather happened to be cloudy during the whole of that ſpace, excepting for ſeven or eight days, no conſiderable variation happened excepting on theſe days. The reſult of the experiments was, that the cold was generally greater in the valley than on the hill; but the variations between the thermometers on the ground and thoſe ſix feet above them were often as great on the hill as in the valley.

Thus it was perceived that a difference of temperature took place at the diſtance of only three feet from the ground; but the length of the thermometers hitherto made uſe of rendered it impoſſible to make any experiment at a ſmaller diſtance. Two new ones, therefore, were formed by bending down the large tube, the body or bulb of the thermometer, to an horizontal poſition, while the ſtem remained in a vertical one; by which method the temperature might be obſerved to the diſtance of a ſingle inch. Sometimes, in clear weather, theſe two horizontal thermometers were placed in the open air, one within an inch of the ground, and the other nine inches above it. *When the variation among the other thermometers was conſiderable*, a difference was likewiſe perceived between theſe; the lower one ſometimes indicating more than two degrees leſs heat than the upper one, though placed ſo near each other.

From theſe experiments, Mr. Sex concludes, that a greater diminution of heat frequently takes place near the earth in the night-time than at any altitude in the atmoſphere within the limits of his inquiry, that is, 220 feet from the ground; and at ſuch times the greateſt degrees of cold are always met with neareſt the ſurface of the earth.

This is a conſtant and regular operation of nature, under certain circumſtances and diſpoſitions of the atmoſphere, and takes place at all ſeaſons of the year; and this difference never happens in any conſiderable degree but when the air is ſtill, and the ſky perfectly unclouded. The moiſteſt vapour, as dews and fogs, did not at all impede, but rather promote, the refrigeration. In very ſevere froſts, when the air frequently depoſites a quantity of frozen vapour, it is commonly found greateſt; but in the exceſs of heat, which in the day-time was found at the loweſt ſtation in ſummer, diminiſhed in winter almoſt to nothing.

It has been obſerved, that a thermometer, included in a receiver, always ſinks when the air begins to be rarefied. This has been thought to ariſe, not from any degree of cold thus produced, but from the

ſudden expanſion of the bulb of the thermometer in conſequence of the removal of the atmoſpherical preſſure: but from ſome late experiments related, Phil. Tranſ. vol. 78. by Mr. Darwin, it appears that the atmoſphere always becomes warm by compreſſion, and cold by dilatation from a compreſſed ſtate. These experiments were,

1. The blaſt from an air-gun was repeatedly thrown upon the bulb of a thermometer, and it uniformly ſunk in about two degrees. In making this experiment, the thermometer was firmly fixed againſt a wall, and the air-gun, after being charged, was left an hour in its vicinity, that it might previouſly loſe the heat it had acquired in the act of charging; the air was then diſcharged in a continued ſtream on the bulb of the thermometer, with the effect already mentioned.

2. A thermometer was fixed in a wooden tube, and ſo applied to the receiver of an air-gun, that, on diſcharging the air by means of a ſcrew preſſing on the valve of the receiver, a continued ſtream of air, at the very time of its expanſion, paſſed over the bulb of the thermometer. This experiment was four times repeated, and the thermometer uniformly ſunk from five to ſeven degrees. During the time of condenſation there was a great difference in the heat, as perceived by the hand, at the two ends of the condenſing ſyringe: that next the air-globe was almoſt painful to the touch; and the globe itſelf became hotter than could have been expected from its contact with the ſyringe. "Add to this (ſays Mr. Darwin), that in exploding an air-gun the ſtream of air always becomes viſible, which is owing to the cold then produced precipitating the vapour it contained; and if this ſtream of air had been previouſly more condenſed, or in greater quantity ſo as not inſtantly to acquire heat from the common atmoſphere in its vicinity, it would probably have fallen in ſnow.

3. A thermometer was placed in the receiver of an air-pump, and, the air being haſtily exhauſted, it ſunk two or three degrees; but after ſome minutes regained its former ſtation. The experiment was repeated with a thermometer open at the top, ſo that the bulb could not be affected by any diminution of the external preſſure; but the reſult was the ſame. Both during exhauſtion and re-admiſſion of the air into the receiver, a ſteam was regularly obſerved to be condenſed on the ſides of the glaſs; which, in both caſes, was in a few minutes reabſorbed, and which appeared to be precipitated by being deprived of its heat by the expanded air.

4. A hole, about the ſize of a crow-quill, was bored into a large air-veſſel placed at the commencement of the principal pipe of the water-works of Derby. There are four pumps worked by a water-wheel, the water of which is firſt thrown into the lower part of this air-veſſel, and riſes from thence to a reſervoir about thirty-five or forty feet above the level; ſo that the water in this veſſel is conſtantly in a ſtate of compreſſion. Two thermometers were previouſly ſuſpended on the leaden air-veſſel, that they might aſſume the temperature of it, and, as ſoon as the hole above-mentioned was opened, had their bulbs applied to the ſtream of air, which iſſued out; the conſequence of which was, that the mercury ſunk ſome degrees in each. This ſinking of the mercury could not be aſcribed to any evaporation of moiſture from their ſurfaces, as it was ſeen both in exhauſting and admitting the air into the exhauſted receiver mentioned in the laſt experiment, that the vapour which it previouſly contained was depoſited during its expanſion.

5. There

5. There is a curious phenomenon observed in the fountain of Hiero, constructed on a very large scale, the Chemnitzensian mines in Hungary. In this machine the air, in a large vessel, is compressed by a column of water 260 feet high; a stop-cock is then opened; and as the air issues with great vehemence, and in consequence of its previous condensation becomes immediately much expanded, the moisture it contains is not only precipitated, as in the exhausted receiver above-mentioned, but falls down in a shower of snow, with isicles adhereing to the nose of the cock. See Phil. Transf. vol. 52.

From this phenomenon, as well as the four experiments above related, Mr. Darwin thinks "there is good reason to conclude, that in all circumstances where air is mechanically expanded, it becomes capable of attracting the fluid matter of heat from other bodies in contact with it.

"Now, (continues he,) as the vast region of air which surrounds our globe is perpetually moving along its surface, climbing up the sides of mountains, and descending into the valleys; as it passes along, it must be perpetually varying the degree of heat according to the elevation of the country it traverses; for, in rising to the summits of mountains, it becomes expanded, having so much of the pressure of the superincumbent atmosphere taken away; and, when thus expanded, attracts or absorbs heat from the mountains in contiguity with it; and, when it descends into the valleys, and is compressed into less compass, it again gives out the heat it has acquired to the bodies it comes in contact with. The same thing must happen to the higher regions of the atmosphere, which are regions of perpetual frost, as has lately been discovered by the aerial navigators. When large districts of air, from the lower parts of the atmosphere, are raised two or three miles high, they become so much expanded by the great diminution of the pressure over them, and thence become so cold, that hail or snow is produced by the precipitation of the vapour: and as there is, in these high regions of the atmosphere, nothing else for the expanded air to acquire heat from after it has parted with its vapour, the same degree of cold continues, till the air, on descending to the earth, acquires its former state of condensation and warmth.

"The Andes, almost under the line, rests its base on burning sands; about its middle height is a most pleasant and temperate climate, covering an extensive plain, on which is built the city of Quito; while its forehead is encircled with eternal snow, perhaps coeval with the mountain. Yet, according to the accounts of Don Alloa, these three discordant climates seldom encroach much on each other's territories. The hot winds below, if they ascend, become cooled by their expansion; and hence they cannot affect the snow upon the summit; and the cold winds that sweep the summit become condensed as they descend, and of temperate warmth before they reach the plains of Quito."

Notwithstanding all these explanations, however, several very considerable difficulties remain with regard to the heat and cold of the atmosphere. That warm air should always ascend; and thus, when the source of heat is taken away by the absence of the sun, that the stratum of atmosphere lying immediately next to the earth should be somewhat colder than that which lies a little farther up; is not at all to be wondered at. We have an example somewhat similar to this in the potter's kiln; where, after the vessels have been intensely heated for some time, and the fire is then withdrawn, the cooling always

begins at bottom, and those which stand lowermost will often be quite black, while all the upper part of the furnace and the vessels nex to it are of a bright red. It doth not, however, appear why such degrees of cold should take place at the surface of the earth as we sometimes meet with. It is, besides, no uncommon thing to meet with large strata in the upper regions of the atmosphere, remarkable for their cold, while others are warmer than those at the surface; as we have been assured of by the testimony of several aerial navigators. It is also difficult to see why the air which has once ascended, and become rarefied to an extreme degree, should afterwards descend among a denser fluid of superior gravity, though indeed the atmospherical currents by which this fluid is continually agitated may have considerable effect in this way.

The air on the tops of mountains is generally more salubrious than that in pits. Dense air indeed is always more proper for respiration than such as is more rare; yet the air on mountains, though much more rare, is more free from phlogistic vapours than that of pits. Hence it has been found, that people can live very well on the tops of mountains where the barometer sinks to fifteen or sixteen inches. M. de Saussure, in his journey upon the Alps, having observed the air at the foot, on the middle, and on the summits, of various mountains, observes, that the air of the very low plains seems to be the less salubrious; that the air of very high mountains is neither very pure, nor, upon the whole, seems so fit for the lives of men, as that of a certain height above the level of the sea, which he estimates to be about 200 or 300 toises, that is, about 430 or 650 yards.

Dr. White, in the 68th vol. of the Phil. Transf. giving an account of his experiment on air made at York, says, that the atmospherical air was in a very bad state, and indeed in the worst he had ever observed it, the 13th of September 1777; when the barometer stood at 30.30, the thermometer at 69°; the weather being calm, clear, and the air dry and sultry, no rain having fallen for above a fortnight. A slight shock of an earthquake was perceived that day. The air of a bed-room at various times, viz. at night, and in the morning after sleeping in it, has been examined by various persons; and it has been generally found, that after sleeping in it the air is less pure than at any other time. The air of privies, even in calm weather, has not been found to be so much phlogisticated as might have been expected, notwithstanding its disagreeable smell.

From this and other observations, it is thought that the exhalations of human excrements are very little if at all injurious, except when they became putrid, or proceed from a diseased body; in which case they infect the air very quickly.

Dr. Ingenhousz, soon after he left London, sent an account of his experiments made in the year 1779 upon the purity of the air at sea and other parts; which account was read at the Royal Society the 24th of April 1780, and is inserted in the 70th vol. of the Phil. Transf. His first observations were made on-board a vessel in the mouth of the Thames, between Sheerness and Margate, where he found that the air was purer than any other sort of common air he had met with before. He found that the sea-air taken farther from the land, viz. between the English coast and Ostend, was not so pure as that tried before; yet this inferior purity seems not to take place always. The doctor's general observations, deduced from his numerous experiments,

ments, are, "That the air at sea, and close to it, is in general purer, and fitter for animal life, than the air on the land, though it seems to be subject to some inconsistency in its degrees of purity with that of the land; that probably the air will be found in general much purer far from the land than near the shore, the former being never subject to be mixed with land air."

The doctor in the same paper transcribes a journal of experiments, shewing the degree of purity of the atmosphere in various places, and under different circumstances. The method used in those experiments was to introduce one measure of common air into the eudiometer-tube, and then one measure of nitrous air. The moment that these two sorts of elastic fluids came into contact, he agitated the tube in the water-trough, and then measured the diminution, expressing it by hundredth parts of a measure; thus, when he says, that such air was found to be 130, it signifies, that, after mixing one measure of it with one of nitrous air, the whole mixed and diminished quantity was 130 hundredths of a measure, viz. one measure and 30 hundredths of a measure more.

The different degrees of salubrity of the atmosphere, as I found it in general in my country-house at Southal Green, ten miles from London, from June to September, lay between 103 and 109. I was surprised when, upon my return to town to my former lodgings in Pall-Mall Court, I found the common air purer in general in October than I used to find it in the middle of summer in the country; for on the 22d of October, at nine o'clock in the morning, the weather being fair and frosty, I found that one measure of common air, and one of nitrous air, occupied 100 subdivisions in the glass tube, or exactly one measure. That very day, at two o'clock in the afternoon, (it being then rainy weather,) the air was somewhat altered for the worse. It gave 102. October the 23d, it being rainy weather, the air gave 102. October the 24th, the weather being serene, the air at nine o'clock in the morning gave 100. October the 25th, the sky being cloudy at 11 o'clock in the morning, the air gave 102. At 11 o'clock at night, from five different trials, it gave 105. October the 26, the weather being very dark and rainy, the air gave 105, as before."

The air at Ostend was found by the doctor to be generally very good, giving between 94 and 98. At Bruges, the air taken at seven o'clock at night gave 103. November 8th, the air at Ghent at three in the afternoon gave 103. November the 12th, the air of Brussels at seven o'clock P. M. gave 105½. The next day the air of the lower part of the same city gave 106; that of the highest appeared to be purer, as it gave 104: which agrees with the common popular observation. November the 14th, both the air of the highest and that of the lowest part of the city appeared to be of the same goodness, giving 103. The weather was frosty.

November the 22d, the air of Antwerp in the evening gave 109½; the weather being rainy, damp, and cold. November the 23d, the air of Breda gave 106. The next day about eleven o'clock the air gave 102; the weather being fair, cold, and inclining to frost. At seven o'clock it gave 103. Next day, being the 25th, the air gave 104; the weather being cold and rainy. The 26th it gave 103; the weather being very rainy, cold, and stormy. November the 27th, the air at Moordyke close to the water gave 101½; the weather being fair and cold, but not frosty. This spot is reckoned very healthy.

November

November the 28th the air of Rotterdam gave 103; the weather being rainy and cold. November the 29th, the air of Delft gave 103; the weather being ſtormy and rainy. November the 30th, the air of the Hague gave 104; the weather being cold, and the wind northerly. The firſt of December the weather underwent a ſudden change; the wind becoming ſoutherly and ſtormy, and the atmoſphere becoming very hot. The day after, Fahrenheit's thermometer ſtood at 54°; and the common air being repeatedly and accurately tried gave 116; and that preſerved in a glaſs phial from the preceding day gave 117; and that gathered cloſe to the ſea gave 115.

December the 4th, the air of Amſterdam gave 103; the weather being rainy, windy, and cold. The day after the weather continuing nearly the ſame, the air gave 102. Dec. 10th, the air of Rotterdam gave 101; the weather being rainy. December the 12th, being in the middle of the water between Dort and the Moordyke, the air gave 109; the weather being remarkable dark, rainy, and windy. December the 13th, the air of Breda in the morning gave 109; the weather continuing as the day before. And in the afternoon, the air gave 106½; the weather having cleared up. December the 16th, the air of the lower part of the city of Antwerp gave 105, that of the higher part 104; the weather being rainy and temperate. December the 17th, the air of Antwerp gave 107; the weather contiuing nearly as in the preceding day. December the 19th, the air of Bruſſels gave 109; the weather being rainy, windy, and rather warm. December the 21ſt, the air of Bruſſels gave 106; the weather being dry and cold. The next day the air and weather continued the ſame. December the 23d, the air of Mons gave 104; the weather being rainy and cold. December the 24th, the air near Bouchain gave 104½, the weather being cloudy and cold. December the 25th, the air of Peronne gave 102½; the weather being froſty. December 26th, the air of Cuvilli gave 103; the weather froſty. December the 27th, the air of Senlis gave 102½; the weather froſty. December the 29th, the air of Paris gave 103; the weather froſty. 1780, January the 8th, the air of Paris gave 100; the weather froſty. January the 13th, the air of Paris gave 98; hard froſt.

Thus far Dr. Ingenhouſz's obſervations. His apparatus was a very portable one, made by Mr. Martin, which in reality is the eudiometer-tube and meaſure as uſed by Mr. Fontana before he made his laſt improvement. "The whole of this apparatus (ſays Dr. Ingenhouſz) was packed up in a box about ten inches long, five broad, and three and a half high. The glaſs tube or great meaſure, which was ſixteen inches long, and divided into two ſeparate pieces, lay in a ſmall compaſs, and could be put together by braſs ſcrews adapted to the divided extremities. Inſtead of a water-trough, ſuch as is uſed commonly, I made uſe of a ſmall round wooden tub, &c."

The Abbé Fontana, who has made a great number of very accurate experiments upon this ſubject, gives his opinion in the following words: "I have not the leaſt heſitation in aſſerting, that the experiments made to aſcertain the ſalubrity of the atmoſpherical air in various places in different countries and ſituations, mentioned by ſeveral authors, are not to be depended upon; becauſe the method they uſed was far from being exact, the elements or ingredients for the experiment were unknown and uncertain, and the reſults very different from one another.

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"When all the errors are corrected, it will be found that the difference between the air of one country and that of another, at different times, is much less than what is commonly believed; and that the great differences found by various observers are owing to the fallacious effects of uncertain methods. This I advance from experience; for I was in the same error. I found very great differences between the results of the experiment of this nature which ought to have been similar; which diversities I attributed to myself, rather than to the method I then used. At Paris I examined the air of different places at the same time, and especially of those situations where it was most probable to meet with infected air, because those places abounded with putrid substances and impure exhalations; but the differences I observed were very small, and much less than what could have been suspected, for they hardly arrived at one-fiftieth of the air in the tube. Having taken the air of the hill called Mount Valerian, at the height of about 500 feet above the level of Paris, and compared it with the air of Paris taken at the same time, and treated alike, I found the former to be hardly one-thirtieth better than the latter.

"In London I have observed almost the same. The air of Islington and that of London suffered an equal diminution by the mixture of nitrous air; yet the air of Islington is esteemed to be much better. I have examined the air of London taken at different heights, (for instance, in the street, at the second floor, and at the top of the adjoining houses,) and have found it to be of the same quality. Having taken the air at the iron gallery at St. Paul's cupola, at the height of 313 feet above the ground, and likewise the air of the stone gallery, which is 202 feet below the other; and having compared these two quantities of air with that of the street adjoining, I found that there was scarcely any sensible difference between them, though taken at such different heights.

"In this experiment a circumstance is to be considered, which must have contributed to render the above-mentioned differences more sensible: this is, the agitation of the air of the cupola; for there was felt a pretty brisk wind upon it, which I observed to be stronger and stronger the higher I ascended; whereas in the street, and indeed in all the streets I passed through, there was no sensible wind to be felt. This experiment was made at four in the afternoon, the weather being clear. The quicksilver in the barometer at that time was 28.6 inches high, and Fahrenheit's thermometer stood at 54°."

Mr. Fontana concludes with observing, that "Nature is not so partial as we commonly believe. She has not only given us an air almost equally good every where at every time, but has allowed us a certain latitude, or a power of living and being in health in qualities of air which differ to a certain degree. By this I do not mean to deny the existence of certain kinds of noxious air in some particular places; but only say, that in general the air is good every where, and that the small differences are not to be feared so much as some people would make us believe. Nor do I mean to speak here of some vapours and other bodies which are accidentally joined to the common air in particular places, but do not change its nature and intrinsical property. This state of the air cannot be known by the test of nitrous air; and those vapours are to be considered in the same manner

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as we ſhould conſider ſo many particles of arſenic ſwimming in the atmoſphere. In this caſe it is the arſenic, and not the degenerated air, that would kill the animals who ventured to breathe it."

DESCRIPTION OF PETERSBURG.

PETERSBURG, with all its ſtately palaces and gilded domes, is ſituated in the midſt of a wood, as wild and barren as any in the north. It preſents a wonderful picture of what power and genius can accompliſh. Independently of art, the Neva is its only ornament: a dead, ſandy, flat, country, covered with bruſh-wood, ſurrounds it upon every ſide; a few miſerable huts, ſcattered about, complete the ſcene.

Peterſburg is the emporium for naval, Moſcow for rural, affairs. The Ruſſian empire, extending over a conſiderable part of Europe and Aſia, muſt have a capital city to every kingdom of which it conſiſts. Tobolſky is the chief city of the Ruſſian dominions under the pole, and bordering upon China; Petro Paulouſky, of the eaſtern countries adjoining to America and Japan; Orengburg, of the provinces bordering upon Tartary and India; Caſan and Aſtrakan, of kingdoms of the ſame name, near the frontiers of Perſia; Cherſon, of the Crimea and provinces adjoining: and Kioff and Mohilow, of the Ukraine, and Little and White Ruſſia bordering upon Turkey and Poland.

The city of Peterſburg is not huddled together: it ſpreads out like the wings of the imperial eagle. The principal quarter ſtands upon the continent, and upon the ſouth banks of the river Neva; the ſecond diviſion is what is called old Peterſburg, and is ſituated upon ſeveral iſlands toward the north banks; the third quarter, upon Williams iſland, is the middle channel of the Neva, between the other two. This noble river, after embracing the whole in its courſe, empties itſelf into the Gulph of Finland immediately below the city. The old city, originally built on one iſland, bearing its name, now ſtretches over ſeveral ſmaller ones. It is very irregularly built, and conſiſts chiefly of wooden houſes: here, however, are the firſt objects that draw atteſtion—the citadel, in which is the cathedral, a fine pile of building, with its gilded ſpire and turrets; whoſe ſparkling grandeur ſtrikes the eye at a great diſtance, and marks the ſacred ſpot where lie interred the remains of Peter I. and his empreſs, the Livonian villager, Catherine I. This is the Ruſſian Mecca, and none but infidels will neglect to make a pilgrimage to it. Mahomet's ſplendid impoſture collects together a crowd of vagrant Turks and Arabs; but the mauſoleum of Peter attracts the philoſopher as well as the warrior, from every corner of enlightened Europe: the firſt admires the legiſlator; the ſecond comes to touch the bones of Scanderbeg!

The boat which gave Peter the idea of building a navy, is carefully preſerved in a ſmall houſe near the ſepulchre: it is emphatically called the Grand Sire. Before this relic was depoſited here, a naval review took place at Crondſtadt: the Grand Sire had the honour of carrying the admiral's flag, and received a general ſalute from the Ruſſian fleet.

Some will ſay, that the Ruſſian nation is not yet civilized; and that Peter only began the work of civilization—of arts and ſciences. What a narrow thought! When the work is finiſhed, it is his. Will

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ſucceeding monarchs think themſelves diſgraced in being named the diſciples of this immortal prince? He gave the plan of the building—he laid the foundations, and reared a part of the walls! Succeeding monarchs are his workmen, his bricklayers, ſlaters, carpenters, painters, and upholſterers.

Catherine II. is the moſt diſtinguiſhed of Peter's work-people, and has made ſuch elegant improvements upon the original plan, that it is ſo far become her own. The hatchet was the emperor's favourite inſtrument: his work was uſeful, but unpoliſhed. He ſeemed to be ſenſible of this, and early called in the aſſiſtance of a female. Another Catherine is born to him: the fine arts go hand in hand with thoſe of war, of agriculture, and commerce.

From Old Peterſburg we proceed along a bridge of boats to Williams Iſland. Upon the north ſide, and fronting the old town, are the merchants wharfs, the exchange, the cuſtom-houſe, and warehouſes. In the river, between Old Peterſburg and Williams Iſland, lie all the veſſels that take down to Cronſtadt the produce of Ruſſia, to the larger foreign ſhips, that cannot come to Peterſburg, the channel being narrow and ſhallow at the mouth of the river. Theſe veſſels likewiſe bring from Cronſtadt all goods imported, landing them at the cuſtom-houſe to ſecure the duties. The ſouth ſide of Williams Iſland fronts the new city of Peterſburg; and here is built a ſuperb line of houſes, among which are the Imperial Academies and the Muſeum. The Imperial Academy of Sciences is a grand ſtructure, and is amply endowed for its ſupport. The profeſſors are eminent in the republic of letters, and are of different nations. Her Imperial Majeſty, to adorn thoſe eſtabliſhments, ſelects merit from every climate and country.

The muſeum is ſituated upon the higheſt and eaſt point of Williams Iſland, oppoſite to the imperial palace upon the continent to the ſouth, and the citadel to the north. The weſt point of this iſland reaches to the mouth of the Neva. The muſeum, (I beg her imperial majeſty's pardon,) is a ſmall warehouſe, containing ſamples of the various productions of her empire. This world of dominion furniſhes a muſeum of itſelf; yet no expence has been ſpared to complete the collection with every curious production from other countries. Here the naturaliſt and merchant find equal pleaſure; the one views with rapture the veins of gold, ſilver, and lead, in the native ore; the other conſiders how much one hundred weight will produce of pure metal.

The Cadet Corps, or Academy of War, formerly the palace of Prince Menzikoff, is ſituated between the academy of ſciences and the muſeum; it is the nurſery of young warriors, the ſons of the nobility and gentry; and from this ſeminary of Mars are taken the officers for the army. The palace of the Prince Menzikoff was applied to its preſent uſe by Count Munich. There are a number of buildings adjoining, for the accommodation of the young gentlemen.

The hiſtory of Menzikoff is romantic. Raiſed from the humbleſt ſtation to the rank of prince, then racked upon the wheel of fortune; yet, in every ſituation, the military art continued his favourite ſtudy. During his baniſhment in Siberia, the table of his cottage was always covered with maps and plans of the countries, the ſeats of former wars, and of battles in which he had been engaged; ſtill delighting in what had occaſioned his fall, and poring over his deſtruction! It

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must appease his manes, that his house is still the nursery of war.—Except this line of building upon the banks of the Neva, and another street, the whole of this quarter of the city consists of wooden houses. These are built very regularly in streets intersecting each other at right angles: canals run through the middle of the streets; but, owing to the level surface of the ground, the water in them, in the heat of summer, stagnates, and is offensive.

A bridge of boats crosses the Neva opposite to the Cadet Corps, making a communication from Williams Island to the grand quarter of the city upon the continent. As you walk along this bridge, you have a front view of the equestrian statue of Peter I. which is erected upon the opposite bank of the river; the horse, upon the summit of a rock, majestically rearing, and pawing the air—seems conscious of his rider—'he smells the battle afar off; his neck is clothed with thunder.' Around the statue are always several Russians, attended by some biographer.

You can trace, without any knowledge of the language, by the gestures of the orator and his audience, when he is recording the defeat at Narva, or the victory at Pultowa. They add in these orations, that Peter stood upon the very rock which now supports his effigy, while he beheld the Swedish army fly from the field of battle. 'When an heroic monument,' says M. Falconer, the artist who executed this celebrated work, 'is to be consecrated to the memory of a prince, and this prince has achieved great matters in various and even opposite departments—he has gained victories in war—he has enacted wise laws, and founded establishments conducive to the happiness of his people in time of peace—his academical eulogium may turn upon both these texts: but in a statute, which can represent but one instance, we must consider and choose. If we give a preference to his civil qualities over his military virtues, this preference cannot justly be condemned, till it shall certainly be determined which of these two kinds of glory belongs more particularly to him who has so well deserved them both; but more especially, which of them was most useful to the happiness of mankind. The habit I have given the statue of Peter the Great, is the habit of all nations—of all men—of every age—in a word, it is an heroic habit.'

Upon the right hand of the statue, and to the east, is the Admiralty and Dock-yards, and immediately beyond these, the Imperial palace. At this instant there are two first rate ships-of-war building under the palace windows! From the admiralty spire all the streets run out as radii from the center of a circle. The principal street is that line of buildings fronting the Neva, for an extent of between three and four English miles. The bank for the same extent is lined with granite stone, with balustrades and footpath of the same materials. Near the extremities of this superb street, called the Grand Million, and which, taking the course of the Neva, forms a vast obtuse angle, a canal is cut across the main land, making the base of this angle, and surrounding the city upon the continent to the south; so that this quarter is entirely inclosed, with the Neva on one side, and this canal upon the other, for an extent of about eight miles; the whole bank lined with granite stone, having granite balustrades or iron railing. Over these canals are erected draw-bridges, likewise built of granite stone. The quarter without this canal may be deemed

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the ſuburbs; the houſes are moſtly of wood, but the houſes within the canal are moſtly of brick, and plaiſtered, painted with every variety of colours. No houſe is ſuffered to be rebuilt within the canal of wood, but with brick; and the new is quickly driving the old city out of the gates! Amid theſe modern fabrics, the Ruſſian churches every where ſhoot up their antique turrets! The Ruſſians hold the form of their church-walls as ſacred as their forms of religion within them. The roofs are covered with block-tin, and many of them gilded. There are in Peterſburg three imperial palaces: the palace near the admiralty, in which her imperial majeſty reſides, is a magnificent edifice of brick ſtuccoed, and adjoining is a long range of buildings fronting the Neva, including the private theatre of the court. The Marble Palace is built of the ſtone which gives it this name. The architect has made, what ought to have been the gravel, the front of this ſuperb building, which ſeems itſelf to bluſh at its poſture. The third is the Summer Palace, built of timber, and yet the moſt regular and elegant. It is placed in the ſummer-gardens upon the banks of the river, and is truly a moſt delightful reſidence.

The Ruſſian nobles, and even the middling ranks, exceed in the elegance of their houſes. In the Aſiatic ſtyle, they are all built in ſquares; an open court in the centre, to which is an entry by a large gate-way. With this taſte is mixed the Grecian and Italian: and the Corinthian, Ionic, and other, ornaments are too much crowded upon the ſlight fabric of brick and plaiſter. It would be better to finiſh their houſes in a plainer ſtyle: and the eaſier expence would enable the poſſeſſors to keep them in better repair. Nothing looks ſo tawdry as a Corinthian cornice of plaiſter in ruins. The new church near the equeſtrian ſtatue is a building of the fineſt Siberian marble, and will be one of the moſt coſtly and ſuperb ſtructures in the univerſe. The granite banks of the Neva, the equeſtrian ſtatue of Peter I. and this admirable building, will deliver down to the lateſt poſterity the name of Catherine II. But Catherine is imperial in every thing; and poſterity will overlook even theſe monuments, amid the continued diſplay of great actions. The palace near the admiralty is ſituate at the point of the angle which the river makes; and here the Neva rolls his tide, embracing the lodging of his ſovereign. From this ſpot one has the grandeſt proſpect imaginable: before you, upon the other ſide of the river, is the old city, with its citadel and gilded ſpire; the houſes ſurrounded or intermixed with woods. Williams Iſland preſents another proſpect of a different nature: a wood of maſts, planted in front of the ſtreets. To the right and left is the Grand Million, every houſe in which is of elegant ſtructure, and inhabited by the principal Ruſſian nobility and gentlemen. The admiralty dock-yards are ſoon to be removed to Cronſtadt, a more convenient place, adapted to the ſcite of the naval yards. The vacancy from the palace to the equeſtrian ſtatue and ſenate-houſe will be filled with buildings; and the Grand Million will be one continued range of taſte and ſplendour.

I am at a loſs to gueſs what induced the emperor to pitch upon ſo aukward a ſpot for dock-yards; from which the ſhips muſt be tranſported to Cronſtadt, over ſhoals, by means of wooden camels, when this trouble could have been ſo eaſily avoided by building his navy

at the harbour where they lie, and where is a great depth of water and every accommodation. The machines called camels are conſtructed of two pieces, or a ſort of half-veſſels, built in the ſame manner as other veſſels, but of a ſingular-ſhape. They are ſquare at the bottom, the ends, and one ſide; the other ſide is hollow and rounding. Theſe half-veſſels are ſunk to a proper depth, one at each ſide of the ſhip-of-war they are intended to carry; and their hollow ſides, being drawn cloſe to her, form a capacious womb which embraces the ſhip-of-war.

ANECDOTES OF Dr. DEE, THE ASTROLOGER.

DR. DEE was the ſon of Rowland Dee, Gentleman Sewer to Henry VIII. and grandſon of Bedo of Dee, Standard-bearer to Lord de Ferrars at the battle of Tournay; if any credit is to be given to his pedigree in the Britiſh muſeum, drawn up by himſelf, he was deſcended in a direct line from Tudor the Great. His father was impriſoned in the tower in the year 1553. His mother, Johannah Dee, lived at Mortlake as early as the year 1568.—The greater part of the following account, except where other authorities are quoted, is taken from the MS. narrative of his life, which he read to the commiſſioners at his houſe at Mortlake.

"John Dee was born at London A. D. 1527. At the age of fiftee, he went to the univerſity of Cambridge, where he applied himſelf to his ſtudies with ſuch diligence that he allowed only four hours for ſleep, and two for his meals and recreation. In 1547 he went abroad to converſe with learned men, particularly mathematicians; and on his return the enſuing year was elected fellow of Trinity College, and made under-reader of the Greek language. He went to the continent again ſoon afterwards; and, being then only twenty-three years of age, read public lectures at Paris upon the Elements of Euclid to crowded audiences, and was viſited by perſons of the higheſt rank, who were anxious to become his pupils. In 1553 Edw. VI. took him under his patronage, allowed him a penſion, and gave him the rectories of Upton-upon-Severn in Worceſterſhire, and Long Lednam in Lincolnſhire. About this time he was offered a handſome ſalary for reading lectures upon natural philoſophy at Oxford. In Queen Mary's reign he was out of favour; and, being ſuſpected of treaſonable deſigns, was committed to the cuſtody of Biſhop Bonner, but eſcaped better than his fellow-priſoner Green, who ſuffered at the ſtake. Queen Elizabeth, upon her acceſſion to the throne, immediately took Dee under her patronage, and among other marks of her favour appointed him, though a lay-man, to the deanery of Glouceſter; of which, however, he never got poſſeſſion. In 1575 the queen, with ſeveral of the nobility, came to his houſe at Mortlake, with an intention of ſeeing his library, but, hearing that his wife was lately dead, they did not enter the houſe. Dee attended her majeſty at the door, and explained to her the properties of a glaſs which had occaſioned much converſation, and given riſe to a report that he was a magician. In 1578 he married Jane, daughter of Bartholomew Fromound, Eſq. of Eaſt Cheam. In 1581 he firſt began his incantations in concert with one Edward Kelly. *Albert Laſki, a Poliſh nobleman of high rank, was admitted into a kind of partnerſhip with them. They pretended to carry on their converſations with ſpirits

by

by means of a show-stone, which Dee affirmed was given him by an angel. Kelly was the seer, who, when they had finished their invocations, was to report what spirits he saw and what they said; whilst Dee, who sat at a table, noted all in a book. A folio volume of these notes was published by Casaubon, and many more remain in MS. in the British Museum. They contain the most unintelligible jargon. The consecrated cakes of wax used in these ceremonies, marked with hierologyphics and mathematical figures, are also in the Museum. The show-stone, which is a round piece of volcanic glass finely polished, is in the Earl of Orford's collection at Strawberry-hill. This farce was carried on for some time, till at length, the whole party having involved themselves in debt, they were obliged suddenly to quit England. They left Mortlake September 21, 1583; the mob, who had always been prejudiced against him as a magician, immediately upon his departure broke into his house, and destroyed a great part of his furniture and books. Meanwhile Dee and his friends hastened to Poland, where they flattered themselves that they should meet with great encouragement through the interest of Laski; but were grevipusly disappointed in their expectations, and reduced to great distress. They then bent their course to Germany, but the emperor banished them his dominions. At length in the year 1580 the queen ordered him to return, being then in Bohemia. On his arrival in England he waited upon her majesty at Richmond, and was very graciously received. She assured him that he might rely upon her protection in the prosecution of his studies. Having been in England three years without reaping any advantage from the promise which had been made him, he was induced to present a petition to the queen, praying that she would appoint commissioners to enquire into the losses and injuries which he had sustained, the services he had done her majesty, and the various disappointments which he had encountered. In consequence of this application, Sir Thomas Gorge, Knt. and Mr. Secretary Wolley, were actually appointed commissioners to hear his grievances, and sat as such at his house at Mortlake, November 22, 1592, to whom, sitting in his library, he related his case at large. In the mean time two tables were placed near him; on one of them were the proper vouchers for the facts he asserted, to which he constantly referred; on the other, all the printed books and MSS. which he had written. Among the services which he had rendered to the queen he reckons some consultations with her majesty's physicians at home, and a journey of 1500 miles, which he undertook in the winter season, to hold a conference with the most learned philosophers on the continent upon the means of restoring and preserving her health. In enumerating his losses, he estimates the damage sustained in his library at 390l. His whole collection, which consisted of 4000 books, of which a great part were MSS. he valued at 2000l. Among the latter he mentions a large collection of deeds and charters, relating principally to estates in Ireland, which he got out of a ruined church. His chemical apparatus, which cost him 200l. was entirely destroyed by the mob when he left Mortlake in 1583; at the same time they beat to pieces a fine quadrant of the chancellor's which cost him 20l. and took away a magnet for which he gave 33l. Among the many promises of preferment which had been made him to so little effect, he particularly specifies Dr. Aubrey's benefices in the diocese of St. David's, and the mastership of St. Cross,

Croſs. He concludes with deſiring ſpeedy relief, and gives his reaſons for preferring the maſterſhip of St. Croſs to any other appointment, it being a retired ſituation, well adapted for his ſtudies, with a good houſe annexed; whereas his preſent ſituation at Mortlake was too public and his houſe too ſmall to entertain the foreign literati who reſorted to him. Upon the report of the commiſſioners, "the queen willed the Lady Howard to write ſome words of comfort to his wife, and ſend ſome friendly tokens beſides;" ſhe commanded Sir Thomas Gorge to take him 100 marks, and ſaid, "that St. Croſs he ſhould have," and that the incumbent Dr. Bennet might be removed to ſome biſhopric; and aſſigned him a penſion of 200l. per annum out of the biſhopric of Oxford till it ſhould become vacant. All theſe promiſes, like the former, came to nothing; the maſterſhip of St. Croſs he never got. The next year indeed he was preſented to the chancellorſhip of St. Paul's, but this was by no means adequate to his expectations; and he continued to memorialiſe her majeſty, till at length he procured the wardenſhip of Mancheſter in 1595. Here he continued ſeven years, leading a very unquiet life, and continually engaged in diſputes with the fellows. He returned to Mortlake in 1604. King James at firſt patronized, but was afterwards prejudiced againſt him and his ſtudies; upon which Dee preſented a petition to his majeſty, and another in verſe to the houſe of commons, praying that he might be brought to trial, having been accuſed of calling up evil ſpirits.

"It is the opinion of ſome writers, that Dee was employed by Queen Elizabeth as a ſpy, and ſome have gone ſo far as to ſuppoſe that all the notes of his pretended converſations with ſpirits were, in fact, political intelligence, couched in cyphers. As they contained a kind of jargon, meaning nothing in itſelf, they might undoubtedly be uſed occaſionally for ſuch purpoſes. Dee himſelf avers in his narrative, that he was taken into the queen's ſervice on her acceſſion to the throne, when ſhe promiſed, that where her brother had given him a crown ſhe would give him a noble. The inſtances of her majeſty's attention to him were ſtriking and numerous, and certainly prove either that ſhe was indebted to him for real, or that he duped her by magnifying the importance of imaginary, ſervices. When he was ſick, the queen ordered her own phyſicians to attend him, "ſent him divers rarities to eat, and the Hon. Lady Sydney to attend on him, and comfort him with divers ſpeeches from her majeſty, pithy and gracious!" The queen frequently viſited him at his houſe at Mortlake; one day ſhe came on horſeback, and "exhorted him to take his mother's death patiently." Another time, as he deſcribes it himſelf, "ſhe came from Richmond in her coach, the higher way of Mortlake field, and when ſhe came right againſt the church, ſhe turned down (ſays he) towards my houſe, and, when ſhe was againſt my garden in the field, her majeſty ſtaid there a good while, and then came into the field at the great gate of the field, where her majeſty eſpied me at my door, making reverent and dutiful obeyſances to her; and with her hand her majeſty beckoned me to come unto her, and I came to her coach-ſide; her majeſty then very ſpeedily pulled off her glove, and gave me her hand to kiſs; and to be ſhort, her majeſty willed me to reſort oftener to her court, and by ſome of her privy chamber to give her to weete when I am there."

"Dee was undoubtedly a man of very great reſearch and ſingular character

character and learning, as is evident by his various writings both printed and MS. in almost every science. He wrote upon the reformation of the Gregorian calendar; on the mode of propagating the gospel on the other side of the Atlantic; on geography; natural philosophy, particularly optics; mathematics; metaphysics; astronomy; astrology; and the occult sciences. He wrote an account also of his voyage to St. Helena, and a treatise on the queen's right to certain foreign countries; and projected a scheme for the preservation of ancient MSS. by establishing a general repository, a plan which is in a great measure realised by that noble national collection at the British Museum. Whether with all his learning he was himself the dupe of an enthusiastic imagination, or whether he availed himself of his knowledge to dupe others in an age when all ranks were given to credulity, may perhaps admit of a question. As a proof of the superstition and credulity of the age, it will not be amiss to mention that Dee was employed to determine, according to the opinion of the ancient astrologers, what day would be most fortunate for Queen Elizabeth's coronation. Some time afterwards he was sent for by the lords of the council to counteract the ill effects which it was apprehended would befal the queen from a waxen image of her majesty stuck full of pins, which was picked up in Lincoln's-inn fields. This we are told he performed "in a godly and artificial manner," in the presence of the Earl of Leicester and Mr. Secretary Wilson. Dr. Dee was much connected with the earl, and has been accused of being an instrument in his nefarious designs. He was much patronized and encouraged by Henry Earl of Northumberland, the Earl of Oxford, Sir Christopher Hatton, Sir Henry Sidney, and other great men belonging to the court. So great was his reputation abroad, that he was offered great salaries by various foreign princes if he would settle in their courts. The Emperor of Russia in particular sent him a rich present, with an offer of conveying him and all his family to Petersburgh, and promising to settle an annuity of 2000l. per annum upon him, and to grant him the rank of a privy counsellor. These offers, it must be observed, were made before his last unsuccessful journey to the continent.

"Notwithstanding the queen's patronage, and the various and rich presents he was constantly in the habit of receiving, his unbounded extravagance kept him always poor. His journey from Bohemia in 1589, which cost him near 800l. will afford some idea of his ostentation. He was attended by a guard of horse, and travelled with three coaches, besides baggage-waggons. The coaches, with harness for twelve horses, he bought new upon the occasion. When he arrived in England, he appears not to have been worth a penny, and to have subsisted for the next three years upon the precarious bounty of his friends. During this period he received 500l. in money, besides vessels of wine, whole sheep, pigs, wheat, sugar, and other commodities; he sold his wife's jewels, his own rarities, and whatever could be spared out of his house; at the end of the three years he was 333l. in debt. With these expenditures, which according to the present value of money we must estimate at more than 1000l. per annum, he tells us, that, "with great parsimony used, he preserved his family from hunger, starving, and nakedness." Dr. Dee carried on his conversation with spirits till the year before his death, at which time he seems to have applied his pretended art to the dis-

covery

covery of hidden treasure and stolen goods, probably with the view of procuring some present subsistence from those who were silly enough to employ him.

Dr. Dee died at Mortlake in the year 1608, having been so poor in the latter part of his life as to be obliged to sell his library piecemeal for subsistence. He was buried in the chancel of Mortlake church, where Aubrey says, an old marble stone was shewn as belonging to his tomb."

HISTORY OF THE JEWS IN ENGLAND.

NEHEMIAH ranks among the great characters of ancient history. He forsook a place of influence at the most splendid court of Asia, to encounter every hardship, for the beneficent purpose of bestowing independence upon a horde of poor, ignorant, and wretched, slaves, and of educating them by religious and civil culture into a moral, brave, and industrious, nation—and he succeeded. Before Nehemiah, the Jews were addicted to idolatry, and untaught as to an hereafter. By the wise selection of traditions and laws which his institutions impressed upon the people, they became zealous monotheists, austerely moral, and brave defenders of their independence, without acquiring the spirit of conquest. Yet they neglected not the arts of peace. They covered the rocks of Galilee with olive-trees; and pursued commerce with so great success, that to Alexander it already appeared an object to court the settlement of Jewish colonies in his sea-ports. They multiplied rapidly in all places. In the time of Tiberius, much of the commerce of the Mediterranean was in their hands. They had synagogues every where, which they tolerantly suffered to become schools of Christianity. Even under Vespasian, Jerusalem was still maintaining, against Roman tyranny, a noble but unequal struggle for its religions and civil liberties.

How soon any Jews settled in Great Britain is unknown; but from the spread of Christianity among the Britons, previously to its establishment under Constantine, it is reasonable to infer that there had long been some synagogues here to serve as studs of propagation for the new faith. The inroads of the Saxons and Danes obliterated much of the imperfect conversion of the native inhabitants. At this period, the Jews with singular liberality, patronized the civilization of these barbarious heathens, by endowing Christian monasteries. In a charter of Witglaff, king of Mercia, made to the monks of Croyland, we find confirmed to them not only such lands as had at any time been given to the monastery by the kings of Mercia, but also all their possessions whatever, whether they were originally bestowed on them by Christians or Jews: *Omnes terris et tenementa, possessiones et eorum peculia, quæ reges Merciorum et eorum proceres, vel alii fideles Christiani, vel Judæi, dictis monachis dederunt.* Nearly a hundred years earlier, the Jews must have been numerous in England, since the 146th paragraph of the Canonical Excerptions, published by Egbright, Archbishop of York, in 740, forbids any Christians to be present at the Jewish feasts.

Indeed, during the feudal ages, the Jews seem to have been the most opulent, polished, and literate, portion of the laity. They were the only bankers, or, as the vulgar termed them, usurers, of the time. They conducted what there existed of foreign trade, and often visited

ſited the civilized ſouth of Europe. They wrought moſt of the gold and ſilver ornaments for altars. William Rufus, who (as Tovey ſays) "was no better than an infidel," not only permitted, but encouraged, them to enter into ſolemn conteſts with his biſhops concerning the true faith; ſwearing, by the face of St. Luke, that, if the Jews got the better of the diſpute, he would turn Jew himſelf. Accordingly, in his time, there was a public meeting of the chief leaders on both ſides in London, when the Jews oppoſed the Chriſtians with ſo much vigour, that the biſhops and clergy were not without ſome ſolicitude how the diſputations might terminate. No other claſs of men was at that period enlightened enough to cope with the prieſthood. Some young Jews were ſo imprudent as even to value themſelves upon their infidelity. The ſon of one Moſſey, of Wallingford, to laugh at the votaries of St. Frideſwide, would ſometimes crook his fingers, and then pretend he had miraculouſly made them ſtraight again: at other times he would halt like a cripple, and then in a few minutes ſkip and dance about, bidding the croud obſerve how ſuddenly he had cured himſelf.

Henry II. in the 24th year of his reign, granted a burial-place to the Jews on the outſide of every city where they dwelt: proof they were numerous and reſpected. In this reign, one Joſhua, a Jew, furniſhed the rebels in Ireland with great ſums of money. And one Sancto, of Bury St. Edmund's, took in pledge certain veſſels appointed for the ſervice of the altar. Others were grown ſo preſumptuous as even to ſcoff at, and ridicule, the higheſt dignitaries of the church. We in part owe to them the ſpirit which dictated the conſtitutions of Clarendon. In 1188, the parliament at Northampton propoſed to aſſeſs the Jews at ſixty thouſand pounds, and the Chriſtians at ſeventy thouſand, toward a projected war. The Jews muſt have been very rich, or the parliament very tyrannical.

Under Richard I. the prejudices of the populace were let looſe againſt the Jews. A cruſade had been reſolved on. The declamations of the clergy in favour of this holy war ſtirred up the intolerance of the vulgar. In London, a riotous populace broke open and plundered the houſes of the Jews. Three perſons only were puniſhed, who by miſtake had injured the houſes of Chriſtians. In ſix months the flame became general. The moſt formidable exploſion happened at Stamford-fair, which had drawn together great multitudes of people, and among them whole troops of roaming ſaints, who were preparing to go with the king to the Holy Land. Theſe zealous men, diſdaining that the enemies of Chriſt ſhould abound in wealth, while they, who were his great friends, were obliged to ſtrip their wives and children of common neceſſaries to ſupply the the charges of the voyage, perſuaded themſelves, that God would be highly honoured, if they ſhould firſt cut the throats of the Jews, and then ſeize upon their money: ſo ready are men to believe what makes for their worldly advantage. Accordingly they flew upon them, and, finding very little reſiſtance from an oppreſſed and ſpiritleſs enemy, quickly made themſelves maſters both of their perſons and fortunes: the former of which they treated with all kinds of barbarity. Some few of them, indeed, were ſo fortunate as to get ſhelter in the caſtle; whither, as they fled without their riches, the ſource of all their miſery, they were not earneſtly purſued. And, as the devout pilgrims pretended to do all this for the advancement of

God's glory, to shew they were in earnest, they took shipping as fast as they could, and fled away for Jerusalem, not so much as one of them being detained by the magistrates, or any farther enquiry made by the king into such a sanctified piece of villainy. Internal trade must at that time have been chiefly conducted by the Jews, since they were assembled in such numbers at an inland fair. They had probably too bestowed ere this upon commerce the important improvement of inventing bills of exchange, as mention seems to be made of them, by the name of Starra (from the Hebrew Shetar) in certain Latin documents of this æra. The Jews were still admitted to the liberal professions, as the cruel edict of Richard I. for registering their property, orders that their "contracts should be made in the presence of two assigned lawyers who were Jews, two who were Christians, and two public notaries." This king appointed justices of the Jews, whose office it was to collect and pay into the exchequer the taxes assessed upon that unfortunate sect. Benedict de Talemunt and Joseph Aaron were the two first of these justices.

The intolerant policy of Richard I. occasioned the emigration of all the wealthier Jews, and a consequent defalcation of the revenue; which was so sensibly felt, that John, in 1199, used several arts to draw them back into his kingdom; not only confirming their ancient, but offering new, privileges, and particularly that of naming a high-priest by the title of Presbyter Judæorum. Many Jews upon this returned, and were afterwards more cruelly plundered than ever. Our great charter sanctions an injustice to the Jews, by enacting that, "If any persons have borrowed money of the Jews, more or less, and die before they have paid the debt, the debt shall not grow whilst the heir is under age," &c.

Henry III. liberated such Jews as were in prison, ordered them to be protected against the insults of Jerusalem pilgrims, and to wear upon the fore-part of their upper garment two broad strips of white linen or parchment. In this reign, Stephen Langton, archbishop of Canterbury, and Hugo de Velles, bishop of Lincoln, (in hopes of driving them away by want of sustenance) published injunctions throughout their respective dioceses, that no Christian should presume to have communication with, or sell them any provision, under pain of excommunication. And the same seems to have been done by the Bishop of Norwich. Persons unacquainted with the nature of false zeal (continues Tovey) when backed by authority, will scarcely believe, that the Jews had been in any great danger of starving, though the king had not interposed in this matter.—Yet Rapin tells us, that when the Gerhardine heretics made their appearance in the time of Henry II. and orders were given not to relieve them, the prohibition was so punctually observed, that all those wretches miserably perished with hunger.

Be it remembered, however, that the Prior of Dunstable, much about this time, granted to several Jews free liberty to reside within his lordship, and to enjoy all the privileges of it, in consideration of the annual payment of two silver spoons.

During the sunshine of the king's favour (in 1230) the Jews erected a very stately synagogue in London, which surpassed in magnificence the Christian churches. But the people petitioned the king to take it from them and have it consecrated; which accordingly he complied with. In the 18th year of his reign, upon a petition of the inhabitants

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of Newcastle, he granted them the inhospitable privilege, that no Jew should ever reside among them. This prince was not free from the confiscatory policy so common in the dark ages, but frequently pillaged the Jews; his necessities, however, would have continued to tolerate them, had not the pope sent over the Caursini, Christians and Lombards, who were gradually to supersede the ancient practitioners of usury, by conducting it in a manner not disapproved by the church. To such a pitch of hatred was the prejudice, which had been gradually instilled into the people against the Jews, arrived during this reign, that in 1262, when the king, refusing to stand to the agreement lately made with his barons at Oxford, withdrew into the Tower, and threatened the Londoners for taking part with his enemies; the barons suddenly entered London with great forces, and (to keep the citizens more strongly in their interest) gratified them with the slaughter of seven hundred Jews at once, whose houses they first plundered, and then burnt their new synagogue to the ground. It was however rebuilt, but in 1270 taken from them, upon complaint of the friars penitents, that they were not able to make the body of Christ in quiet, for the great howlings the Jews made there during their worship.

In the third year of Edward I. a law passed the commons concerning Judaism, which seemed to promise a qualified security; notwithstanding which, in the year 1290, and the 18th of his reign, the king seized upon all their real estates, and the whole community was for ever banished the kingdom. Yet no sooner (adds the historian) was the inventory made, and every thing sold to the best bidder, than the whole produce was unaccountably squandered away, without one penny being ever set aside for those pious uses which the king had talked of. From fifteen to sixteen thousand Jews were thus ruined, and then expelled. During the preceding century, they must constantly have been in a state of rapid and progressive diminution: neither is it probable, that the more respectable portion of them should have put so much confidence in edicts of recal, thus frequently and perfidiously revoked, as to have been found settled in England. Yet even these left behind them several valuable libraries, one particularly at Stamford, and another at Oxford, which last being purchased among the scholars, most of the Hebrew books were bought by the famous Roger Bacon, who, by a short note written in one of them, declared they were of great service to him in his studies. This expulsion was so complete, that no farther traces of English Jews occur until long after the reformation.

It was reserved for the generous policy of Oliver Cromwell to attempt restoring to Great Britain the industry and wealth of the Jews. —During ages of unrelenting persecutions, they had, however, lost many of the virtues of their early character. Oppression had imprinted an air of meanness, of servile timidity, upon their demeanour. The undistinguishing contempt of men, who ought to treat them as equals, had lessened the importance, and therefore the frequency, of respectable characters among them. This inferior degree of delicacy in points of reputation, occasioned their being employed in usurious and other illegal transactions; and these practices kept alive the prejudices of the magistrate. Scarcely allowed a home, they contracted the habit of all itinerant pedlars, who, never expecting to see the same customer twice, have nothing to apprehend

from making an exorbitant gain upon each single transaction. Schools, synagogues, and other institutions of public instruction, were so unwillingly allotted them, and their appearance in Christian schools so shamefully resisted, that they were sunk into a degree of ignorance, which increased to themselves and others the difficulty of bettering their condition.

The first intercourse between Cromwell and the Jews, was managed by means of one Henry Marten, upon whose intimations, a deputation from the Jews at Amsterdam waited on the English ambassadors there, whom they entertained with concerts of music in their synagogue, and by means of whom they obtained permission from the instrument-parliament, to send a public envoy with proposals. After some deliberation, they fixed upon Manasseh Ben Israel, a divine and doctor of physic, as he stiled himself; in reality a printer and bookseller; and of whom Huet tells us, that he was a chief ruler of the synagogue, and married to a wife who was related to the family of the Abrabanels, which pretends to be of the tribe of Judah and of the house of David, by which wife having several children, he would sometimes boast of having raised up seed unto David. He was a man of great modesty and moderation, a perfect master of the letter of scripture, and very little addicted to the mystical superstitions of the cabbala. He was much acquainted with the younger Vossius, with Blondel, and with Bochart.

This Manasseh, on his arrival in England, presented an address to the lord protector, recognizing his authority, and soliciting his protection: "For our people, (says he,) did in their own minds presage, that, the kingly government being now changed into that of a commonwealth, the ancient hatred toward them would also be changed into good-will: that those rigorous laws, if any there be yet extant made under the kings, against so innocent a people, would happily be repealed." He also presented, printed, and dispersed, a declaration to the commonwealth, and a treatise containing several arguments for toleration, addressed to the justice of the principled, to the prudence of the reflecting, and to the prejudices of the multitude. On the 4th of December, 1655, Cromwell summoned a convention, meeting, or privy council, consisting of two lawyers, seven citizens, and fourteen noted preachers, to consult upon this request of the Jews. Among the latter, Mr. Goodwin and Mr. Peters, (whose works were burned along with those of Milton at the restoration,) and Mr. Nye, (of celebrated beard,) particularly exerted themselves in favour of putting the Jews upon the like footing with other sects. So many symptoms of prejudice and intolerance escaped from others, that, after a conference of four days, Cromwell began to think the measure would not be introduced to the people from the pulpits in a manner to assist its popularity; and therefore dismissed the meeting, saying, they had rendered the matter more doubtful to him than it was before. On the 1st of April, he took leave of Manasseh, by a polite but evasive answer. Whilst this affair was pending, the Rabbee Jacob Ben Azahel professed to entertain suspicions that Cromwell was the expected Messiah; an opinion propagated, no doubt, for the purpose of attracting a vast concourse of the lower classes of Jews into England, in case the political equality, for which Manasseh petitioned, could have been obtained. Some few must, from this period, have settled in London by connivance, since,

ſince, in 1663, their regiſter of births contained twelve names: and during the whole reign of Charles II. who introduced the ſale of patents of denization, their numbers increaſed.

In 1684, James II. (who loſt the affections of the bigotted people, as much by his diſpoſition to tolerate both Catholics and Diſſenters, as by his political intolerance to the adherents of Monmouth) remitted the alien duty upon all goods exported, in favour of the Jews.—This was univerſally reſented by the Engliſh merchants, who were apprehenſive, that the ſame duties would alſo be remitted upon all imported goods. Petitions from the Hamburgh company, from the Eaſt-land company, from fifty-ſeven of the leading merchants in the city, from the weſt, and from the north, were offered to the king againſt this equitable regulation. Theſe illiberal beings were glad, under any pretext, to defraud ſome of their neighbours of the privilege to trade upon the ſame terms with themſelves: remembering the homely proverb, "the fewer the better cheer," they were naturally very glad to ſee the number of candidates leſſened for the advantages they were themſelves ſtriving to obtain. After the revolution, this order was ſuperſeded, to the great joy of the Chriſtian merchants.

In the firſt year of Queen Anne, a deteſtable ſtatute was paſſed, to encourage the converſion of young Jews, by emancipating ſuch converts from all dependence upon their parents. And in the ſixth year of George II. Reaſons were offered to the lord mayor and court of aldermen, for applying to parliament for the ſuppreſſion of Jew-brokers. No public proceeding, however, enſued: equity for once overpowered ſelfiſhneſs: it ſeemed the dawn of riſing liberality; but, like the twilight of a winter's morn with the arctic-circle, was to be ſucceeded by no effectual ſun-ſhine.

The church of England, jealous from its infancy, had obtained, in the ſeventh year of James I. an act, which prevented all perſons from being naturalized, unleſs they firſt received the ſacrament of the Lord's Supper, according to its own peculiar and moſt uſual mode of commemoration. This act effectually excluded the Jews from being naturalized; till, in the year 1753, a bill was brought into the houſe of lords, and paſſed there without oppoſition, which provided, that all perſons profeſſing the Jewiſh religion, who have reſided in Great Britain or Ireland for three years, without being abſent more than three months at one time during that ſpace, may, upon application for that purpoſe, be naturalized by parliament, without receiving the ſacrament of the Lord's Supper. But all perſons profeſſing the Jewiſh religion, are, by this act, diſabled from purchaſing or inheriting any advowſon, right of patronage, &c. to any benefice or eccleſiaſtical promotion, ſchool, hoſpital, or donative, whatſoever. On the 16th of April, this bill was ſent down to the houſe of commons, ordered to be printed, and on the 7th of May read a ſecond time, when a motion was made for its being committed. Lord Barrington, Lord Duplin, Robert Nugent, Eſq. and Henry Pelham, Eſq. were among its moſt eloquent advocates; Lord Egmont, Sir Edmund Iſham, among its more zealous opponents. The bill was ſupported by the petitions of a few merchants, chiefly diſſidents, and countenanced by the miniſtry, who argued:

That it would increaſe the numbers and wealth of the people, upon which depend the national ſtrength, the ability to encounter future

future difficulties, and atchieve useful undertakings—and by which posterity would estimate the wisdom and utility of our frame of government. That, by receiving the Jews into our community, and admitting them to a participation of our civil rights, they would contract a warm attachment to our constitution and country, and gladly divide with us the public burdens. That, a great portion of the funds belonging to foreign Jews, it was our obvious interest to induce them to follow their property, and to expend here an income which was yearly exported to a clear loss. That, connected as the Jews were with the great bankers and monied interest of Europe, their residence here, would, in future wars, give us a great command of capital, and facilitate our loans. That even their prejudices, as a sect, would operate in our favour, and occasion our manufactures to be dispersed among the multitudinous Jew-shopkeepers in Europe, who now recurred to the Jew-merchants of Holland and the other tolerant countries. That Poland had never risen to so high a pitch of civil, literary, and commercial, distinction, as when her policy was most liberal toward Socinians and Jews; and that the sect itself had always abandoned its offensive prejudices in proportion to its good usage.

On the other side, it was urged, that, born as we are to privileges and exclusive rights, we did not, by this bill, sell our birth-right, like Esau, for any consideration, however inadequate, but foolishly gave it away. That if the Jews, about to be naturalized, belonged to the numerous classes, we should import vagrants and cheats to burden our rates, or supplant the industry of our less parsimonious poor—if to the wealthy classes, who cannot procure a settlement elsewhere, they would become the highest bidders for our landed estates, dispossess the Christian owners, attract around them, their butchers, bakers, and poulterers, (for they can eat nothing of our killing,) and, bye and bye, would endanger our religion itself. That the rites of the Jews will for ever resist their incorporation with other nations for any common purposes, while their early marriages and frequent divorces promote so rapid an increase of their numbers, that they might become, like the bitch in the kennel, too strong for their hospitable patrons. That it had a tendency to embroil us with foreign powers: we must reclaim, for instance, as a British subject, any Portuguese Jew who should come over to be naturalized, and by indiscretions expose himself to the inquisition. That the Jews were not given to manufactures, and, if they should open shops, would interfere with the profits and maintenance of Christians; for the number of shops, being adequate to the consumption, could only be increased with injury to the established. The Jewish nationality would intrigue all the trade into their own hands: that they were enemies upon principle to all Christians: and that it was flying in the face of the Almighty to gather together a sect of which the bible foretold the dispersion.

The trumpet of alarm was first founded by the lord mayor, aldermen, and commons, of the city of London, who, in a petition to parliament, expressed their apprehension, that the bill, if passed into a law, would greatly tend to the dishonour of the Christian religion, and endanger the excellent constitution.

The Earl of Egmont became their mouth-piece; who, in an artful speech, countenanced and inflamed the ungenerous bigotry of the

the multitude. The English have always enjoyed a cry of alarm, when there is no real danger; because it enhances, for the time, the personal importance of each individual. It flatters his love of consequence to be called upon to stand up for his church and king, when he is not likely to be exposed to the ruffle of contest, or the humiliation of defeat. Accordingly, a zeal, the most furious, vociferated in the pulpits and corporations against the bill, and, by the next sessions of parliament, instructions were sent to almost all the members to solicit a repeal of it.

The minister did not attempt to resist the torrent, but was among the foremost who spoke in favour of the repeal: he was answered, with much force of reasoning, and a truly liberal spirit, by Thomas Potter, Esq. to whose speech a very elegant reply was delivered by Sir George Littleton: and the Jew bill was repealed, by an act which received the royal assent the same session. Attempts too were made, but successfully opposed, by Mr. Pelham and Mr. Pitt, to repeal so much of an act for naturalizing foreigners in America as did not exclude Jews. Such was the spirit of intolerance which the parliamentary leaders of the people were not ashamed to foster. From that time, the legal condition of Jews in England has not altered: but the people no longer view them with rancour, or mistrust, or unbrotherly emotions.

The Jews have been singularly unfortunate. They shared the oppression and contumely, which the Christian sects underwent, as soon as the jealousy of the pagan priests and emperors was excited by the progress of their monotheism: but they in no degree partook of the security or triumphs gained for the church by Constantine. Their incredulity was considered by orthodox and heretics as of all others the most criminal, nor was it till after the Mahomedan conquests, that they obtained, in part of Asia, along the southern shores of the Mediterranean and in Spain, a resting place for their feet.

In modern Italy, the earliest haunt of reviving literature and philosophy, the first attempts were made to prepare the European mind for the toleration of Judaism. Simone Lazzurato, of Venice, is mentioned as a pleader of their cause. The friends of the Socini were thought to entertain sentiments very favourable to the Jews; but the interference of the inquisition in 1546, to suppress the celebrated club of Vicenza, an event preparatory to the exile and dispersion of all the rational Christians of Italy, defrauded them of rising advocates. In the several Italian republics, the Jews enjoyed only a contemptuous protection. Their fate was somewhat more favourable in Poland, and much more favourable in Holland, where Basnage, and no doubt others, wrote of them becomingly.

In Germany, Gotthold Ephraim Lessing, a celebrated dramatist, by his philosophical plays, Nathan the Wise, and the Monk of Libanon, attacked the prejudice against Judaism in its fortress, the public mind; while his friends, Moses Mendelsohn, was illustrating the sect, both by his elegant writings and by a well-argued defence of general toleration, published under the title Jerusalem. C. W. Dohm, a Prussian, offered, in 1781, to the German public, two small volumes of Remarks on the Means of Improving the Civil Condition of the Jews, which called forth several pamphlets on the same topic, among which those of Schlotzer and Michaelis, no doubt, deserve consultation.

In France, the prejudices of Voltaire against the Jewish religion, proved a powerful obstacle to the advances of the philosophic party, in an equitable disposition towards its professors. In 1788, however, the academy of Metz proposed as a prize question:—Are there means of rendering the Jews in France usefuller and happier? Zalkind Hourwitz, a Polish Jew, M. Thierry, a counsellor of Nanci, and the Abbé Gregoire, shared the prize, but not the public suffrage. The work of the latter, on the moral, physical, and political, regeneration of the Jews, has obtained the more impressive publicity. Among his most distinguished coadjutors in obtaining a legal improvement of their condition, the constituting assembly of France numbered Mirabeau, Clermont-Tonnerre, and Rabaud.

In our own country, the well-intended conduct of the English government, under the protectorate of Cromwell, and under the administration of Mr. Pelham, were alike defeated by the fanaticism of the people. Mr. Toland's naturalization of the Jews in England is the best antidote of elder date that has descended to us. Tovey and Ockley have also stored up information on these topics.

Of late, Priestly's Letters to the Jews, a work which, probably, under the mask of pursuing their conversion, had for its object to do away the ungrateful prejudices of religionists against their parent-sects, has rendered to them, in the devout world, the same service as Cumberland's comedy of the Jew in the polished. There can scarcely remain any apprehension among thinking men, that the slightest popular odium would now be incurred by the legislature, if it repealed every law which incroaches upon the political equality of this and other sects. It may not however, have been amiss to bring within a small compass, such particulars of the fortunes of this people in our island, and such notices of the writings in their behalf, as may be likeliest to invite attention, whenever a reformed and reforming legislature shall consider of their condition.

ART OF PRODUCING AND PREPARING SILK.

As the silk-worm is a native of China, the culture of silk in ancient times was entirely confined to that country. We are told that the empresses, surrounded by their women, spent their leisure hours in hatching and rearing silk-worms, and in weaving tissues and silk veils. That this example was soon imitated by persons of all ranks, we have reason to conclude; for we are informed, that the Chinese, who were formerly clothed in skins, in a short time after were dressed in vestments of silk. Till the reign of Justinian, the silk-worm was unknown beyond the territories of China, but silk was introduced into Persia long before that period. After the conquest of the Persian empire by Alexander the Great, this valuable commodity was brought into Greece, and thence conveyed to Rome. The first of the Roman writers extant by whom silk is mentioned, are Virgil and Horace; but it is probable that neither of them knew from what country it was obtained, nor how it was produced. By some of the ancients it was supposed to be a fine down adhering to the leaves of certain trees or flowers. Others imagined it to be a delicate species of wool or cotton; and even those who had learned that it was the work of an insect, shew by their descriptions that they had no distinct idea of the manner in which it was formed.

Among the Romans, silk was deemed a dress too expensive and too delicate for men, and was appropriated wholly to women of eminent rank and opulence. Elagabulus is said to have been the first man among the Romans who wore a garment of fine silk: Aurelian complained that a pound of silk was sold at Rome for twelve ounces of gold; and it is said he refused to give his wife permission to wear it on account of its exorbitant price.

For several centuries the Persians supplied the Roman empire with the silks of China. Caravans traversed the whole latitude of Asia, in two hundred and forty-three days, from the Chinese ocean to the sea-coast of Syria, carrying this commodity. Sometimes it was conveyed to the ports of Guzerat and Malabar, and thence transported by sea to the Persian Gulph. The Persians, with the usual rapacity of monopolists, raised the price of silk to such an exorbitant height, that Justinian, eager not only to obtain a full and certain supply of a commodity which was become of indispensable use, but solicitous to deliver the commerce of his subjects from the exactions of his enemies, endeavoured, by means his ally, the Christian monarch of Abyssinia, to wrest some portion of the silk-trade from the Persians. In this attempt he failed; but, when he least expected it, he, by an unforeseen event, attained, in some measure, the object which he had in view. Two Persian monks having been employed as missionaries in some of the Christian churches, which were established (as we are informed by Cosmas) in different parts of India, had penetrated into the country of the Seres, or China. There they observed the labours of the silk-worm, and became acquainted with all the arts of man in working up its productions into such a variety of elegant fabrics. The prospect of gain, or perhaps an indignant zeal, excited by seeing this lucrative branch of commerce engrossed by unbelieving nations, prompted them to repair to Constantinople. There they explained to the emperor the origin of silk, as well as various modes of preparing and manufacturing it, mysteries hitherto unknown, or very imperfectly understood, in Europe; and, encouraged by his liberal promises, they undertook to bring to the capital a sufficient number of those wonderful insects, to whose labours man is so much indebted. This they accomplished, by conveying the eggs of the silk-worm in a hollow cane. They were hatched by the heat of a dunghill, fed with the leaves of a wild mulberry-tree, and they multiplied and worked in the same manner as in those climates where they first became objects of human attention and care. Vast numbers of these insects were soon reared in different parts of Greece, particularly in the Peloponnesus. Sicily afterwards undertook to breed silk-worms with equal success, and was imitated, from time to time, in several towns of Italy. In all these places extensive manufactures were established and carried on with silk of domestic production. The demand for silk from the east diminished of course, the subjects of the Greek emperors were no longer obliged to have recourse to the Persians for a supply of it, and a considerable change took place in the nature of the commercial intercourse between Europe and India.

As silk is the production of a worm, it will be first necessary to give a description of its nature and mode of manufacturing. But, before we give any account of the most approved methods of managing silk-worms in Europe, it will be proper to present a short

description of the methods practised in China, the original country of the silk-worm. These are two: they either permit them to remain at liberty on mulberry-trees, or keep them in rooms. As the finest silk is produced by worms confined in rooms, and as the first method is very simple, it will suffice to describe the second.

To begin with the eggs, which are laid on large sheets of paper, to which they firmly adhere. The sheets are hung up on a beam of the room, with the eggs inward, and the windows are opened in the front to admit the wind; but no hempen ropes must ever come near the worms or their eggs. After some days the sheets are taken down, rolled up loosely with the eggs inward, and then hung up again, during the summer and autumn. At the end of December, or the beginning of January, the eggs are put into cold water, with a little salt dissolved in it. Two days after they take them out, hang them up again, and when dry roll them a little tighter, and enclose each separately, standing on one end in an earthen vessel. Some put them into a lye made of mulberry-tree ashes, and then lay them some moments in snow-water, or else hang them up three nights on a mulberry-tree to receive the snow or rain, if not too violent. The time of hatching them is when the leaves of the mulberry-trees begin to open, for they are hastened or impeded according to the different degrees of heat or cold to which they are exposed. When they are ready to come forth, the eggs swell, and become a little pointed.

The third day before they are hatched, the rolls of paper are taken out of the vessel, stretched out, and hung up with their backs toward the sun, till they receive a kindly warmth; and then, being rolled up close, they are set upright in a vessel in a warm place. This is repeated the next day, and the eggs change to an ash-grey. They then put two sheets together, and rolling them close tie the ends.

The third day, towards night, the sheets are unrolled and stretched on a fine mat, when the eggs appear blackish. They then roll three sheets together, and carry them into a pretty warm place, sheltered from the south wind. They next day the people taking out the rolls, and, opening them, find them full of worms like small black ants.

The apartment chosen for silk-worms is on a dry ground, in a pure air, and free from noise. The rooms are square, and very close, for the sake of warmth; the door faces the south, and is covered with a double mat, to keep out the cold; yet there should be a window on every side, that when it is thought necessary the air may have a free passage. In opening a window to let in a refreshing breeze, care must be taken to keep out the gnats and flies. The room must be furnished with nine or ten rows of frames, about nine inches one above the other. On these they place rush hurdles, upon which the worms are fed till they are ready to spin; and, to preserve a regular heat, stove fires are placed at the corners of the room, or else a warming-pan is carried up and down it; but it must not have the least flame or smoke. Cow-dung dried in the sun is esteemed the most proper fuel.

The worms eat equally day and night. The Chinese give them on the first day forty-eight meals, that is one every half hour; the next thirty; the third day they have still less. As cloudy and rainy weather takes away their stomach, just before their repast a wisp of very dry straw, the flame of which must be all alike, is held over the

the worms to free them from the cold and moisture that benumbs them, or else the blinds are taken from the windows to let in the full day-light.

Eating so often hastens their growth, on which the chief profit of the silk-worm depends. If they come to maturity in twenty-three or twenty-five days, a large sheet of paper covered with worms, which at their first coming from the eggs weigh little more than a drachm, will produce twenty-five ounces of silk; but, if not till twenty-eight days, they then yield only twenty ounces; and if they are a month or forty days in growing, they then produce but ten.

They are kept extremely clean, and are often removed; and, when they are pretty well grown, the worms belonging to one hurdle are divided into three, afterwards they are placed on six, and so on to the number of twenty or more; for, being full of humours, they must be kept at a due distance from each other. The critical moment for removing them is when they are of a bright yellow and ready to spin; they must be surrounded with mats at a small distance, which must cover the top of the place to keep off the outward air; and because they love to work in the dark. However, after the the third day's labour, the mats are taken away from one o'clock till three, but the rays of the sun must not shine upon them. They are at this time covered with the sheets of paper that were used on the hurdles.

The cocoons are completed in seven days, after which the worm is metamorphosed into a chrysalis; the cocoons are then gathered, and laid in heaps, having first set apart those designed for propagation upon a hurdle, in a cool airy place. The next care is to kill the moths in those cones which are not to be bored. The best way of doing this is to fill large earthen vessels with cones in layers of ten pounds each, throwing in four ounces of salt with every layer, and covering it with large dry leaves like those of the water-lily, and closely stopping the mouth of the vessels. But in laying the cones into the vessels, they separate the long, white, and glittering, ones, which yield a very fine silk, from those that are thick, dark, and of the colour of the skin of an onion, which produce a coarser silk.

The silk-worm is a species of caterpillar, which, like all others of the same class, undergoes a variety of changes, that, to persons who are not acquainted with objects of this kind, will appear to be not a little surprising. It is produced from a yellowish-coloured egg, about the size of a small pin head, which has been laid by a kind of greyish-coloured moth, which the vulgar confound with the butterfly.

These eggs, in the temperature of this climate, if kept beyond the reach of the fire and sun-shine, may be preserved during the whole of the winter and spring months without danger of hatching: and even in summer they may easily be prevented from hatching if they be kept in a cool place; but in warmer climates it is scarcely possible to preserve them from hatching, even for a few days, or from drying so much as to destroy them. Hence it is easy for a native of Britain to keep the eggs till the food on which the worm is to feed be ready for that purpose. When this food is in perfection, the eggs need only be exposed to the sun for a day or two, when they will be hatched with great facility.

When the animal is first protruded from the egg, it is a small black worm, which is active, and naturally ascends to the top of the heap

in ſearch of food. At this ſtage of his growth the ſilk-worm requires to be fed with the youngeſt and moſt tender leaves. On theſe leaves, if good, he will feed very freely for about eight days, during which period he increaſes in ſize to about a quarter of an inch in length. He is then attacked with his firſt ſickneſs, which conſiſts in a kind of lethargic ſleep for about three days continuance; during which time he refuſes to eat, and changes his ſkin, preſerving the ſame bulk. This ſleep being over, he begins to eat again, during five days, at which term he is grown to the ſize of full half an inch in length; after which follows a ſecond ſickneſs in every reſpect like the former. He then feeds for other five days; during which time he will have increaſed to about three quarters of an inch in length, when he is attacked with his third ſickneſs. This being over, he begins to eat again, and continues to do ſo for five days more, when he is attacked by his fourth ſickneſs, at which time he is arrived at his full growth. When he recovers this ſickneſs, he feeds once more during five days with a moſt voracious appetite; after which he diſdains his food, becomes tranſparent, a little on the yellowiſh caſt, and leaves his ſilky traces on the leaves where he paſſes. Theſe ſigns denote that he is ready to begin his cocoon, and will eat no more.

Thus it appears that the whole duration of the life of the worm, in this ſtate of its exiſtence, in our climate, is uſually about forty-ſix days; twenty-eight of which days he takes food, and remains in his ſick or torpid ſtate eighteen; but it is to be obſerved, that during warm weather the periods of ſickneſs are ſhortened, and in cold weather lengthened, above the terms here ſpecified. In very hot climates it may be ſaid to live faſter, and ſooner to attain maturity, than in thoſe that are colder. Dr. Anderſon informs us, that at Madras the worm undergoes its whole evolutions in the ſpace of twenty-two days. It appears, however, that it feeds fully as many days in India as in Europe, the difference being entirely occaſioned by ſhortening the period of ſickneſs. The longeſt ſickneſs he had ſeen them experience there did not exceed two days; and during ſummer it only laſts a few hours.

When the worm has attained its full growth, it ſearches about for a convenient place for forming its cocoon, and mounts upon any branches or twigs that are put in its way for that purpoſe. After about two days ſpent in this manner, it ſettles in its place, and forms the cocoon, by winding the ſilk which it draws from its bowels round itſelf into an oblong roundiſh ball. During this operation it gradually loſes the appearance of a worm; its length is much contracted, and its thickneſs augmented. By the time the web is finiſhed, it is found to be transformed into an oblong roundiſh ball, covered with a ſmooth ſhelly ſkin, and appears to be perfectly dead. In this ſtate of exiſtence it is called an *aurelia*. Many animals in this ſtate may be often ſeen ſticking on the walls of out-houſes, ſomewhat reſembling a ſmall bean. In this ſtate it remains for ſeveral days entirely motionleſs in the heart of the cocoon, after which it burſts like an egg hatching, and from that comes forth a heavy dull-looking moth with wings; but theſe wings it never uſes for flying; it only crawls ſlowly about in the place where it was hatched. This creature forces its way through the ſilk covering which the worm had woven, goes immediately in queſt of its mate, after which the female lays her

eggs;

eggs; and both male and female, without tasting food in this stage of their existence, die in a very short time.

The silk-worm, when at its full size, is from an inch and a quarter to an inch and a half in length, and about half an inch in circumference. He is either of a milk or pearl colour, or blackish; these last are esteemed the best. His body is divided into seven rings, to each of which are joined two very short feet. He has a small point like a thorn exactly above the anus. The substance which forms the silk is in his stomach, which is very long, wound up, as it were, upon two spindles, as some say, and surrounded with a gum, commonly yellowish, sometimes white, but seldom greenish. When the worm spins his cocoon, he winds off a thread from each of his spindles, and joins them afterwards by means of two hooks which are placed in his mouth, so that the cocoon is formed of a double thread. Having opened a silk-worm, you may take out the spindles, which are folded up in three plaits, and, on stretching them out, and drawing each extremity, you may extend them to near two ells in length. If you then scrape the thread so stretched out with your nail, you scrape off the gum, which is very like bees wax, and performs the same office to the silk it covers as gold leaf does to the ingot of silver it surrounds, when drawn out by the wire-drawer. This thread, which is extremely strong and even, is about the thickness of a middling pin.

Of silk-worms, as of most other animals, there is a considerable variety of breeds, some of which are much more hardy, and possess qualities considerably different from others. This is a particular of much importance to be adverted to at the time of beginning to breed these creatures in any place; for it will make a great difference in the profit on the whole to the undertaker if he rears a good or a bad sort. This is a department in respect to the economy of animals that has been in every case much less adverted to than it deserves; and in particular with regard to the silk-worm it has been almost entirely overlooked. A few eggs of the silk-worm can be easily transported by post in a letter from any part of Europe to another, especially during the winter season. It would therefore be an easy matter for any patriotic society, such as the Society of Arts in London, to obtain a specimen of the eggs from every country in which silk is now reared, to put these under the care of a person who could be depended upon, and who understood the management of them, with orders to keep each kind distinct from another, and advert to every particular that occurred in their management, so as to make a fair estimate of their respective merits. By these means the best might be selected, and those of inferior value rejected. Forty or fifty of each sort might be enough for the experiment; but it ought to be repeated several times before conclusions could be drawn from it that might be altogether relied upon; for it is well-known that a variation of circumstances will make a change in the result; and it is by no means certain that the same particular would affect those of one breed exactly in the same manner as it would do those of a different breed. One may be more hardy with regard to cold, another more delicate in respect to food, and so on. It is experience alone that can ascertain the circumstances here inquired for.

From the above-mentioned particulars, it is evident, that the management of silk-worms must be very different in hot climates from

from what is required in those that are colder. At Madras, it appears from Dr. Anderson's experiments that it is very difficult to prevent the eggs from hatching for a very few days, so that many generations of them must be propagated in one year. "In this hottest season," says he, in a letter to Sir Joseph Banks, dated July 6, 1791, "the shortest time I have been able to remark for the whole evolutions of the silk-worm is forty days; that is to say, six days an egg, twenty-two a worm, eleven a grub in the cocoon, and one a moth or butterfly." Fortunately, where the climate forces forward their production so rapidly, nature hath been equally provident of food for their subsistence; for in these regions the mulberry continues to grow and push out leaves throughout the whole year.

Though the silk-worm be a native of China, there is no doubt but it might easily be propagated perhaps in most parts of the temperate zones. The eggs of this insect, indeed, require a considerable degree of warmth to hatch them, but they can also endure a severe frost. No less than 5400 lbs of silk was raised in 1789 in the cold sandy territories of Prussia. In the province of Pekin, in China, where great quantities of silk are fabricated, the winter is much colder than in England. From the information of some Russians who were sent thither to learn the Chinese language, we find that Reaumur's thermometer was observed from ten to fifteen, and even twenty, degrees below the freezing point. Nor is it difficult to rear the food of the silk-worm in a temperate clime. The mulberry-tree is a hardy vegetable, which bears, without injury, the winters of Sweden, and even of Siberia. Of the seven species of the mulberry enumerated by Linnæus, four of these (viz. the white, red, black, and Tartarian) there is every reason to believe could be reared both in Britain and Ireland. The white grows in Sweden; the red is abundant round Quebec; the black delights in bleak situations, exposed to wind on the sea-shore; and the Tartarian mulberry is represented as growing in the chilly regions of Siberia. As to the superior qualities of the different species, probably there is very little to be pointed out amongst the four just-mentioned with regard to nourishment, except what may be drawn from the following fact: that, if the first three are laid down together, the silk-worm will first eat the white, then the red, and next the black, in the order of the tenderness of the leaves. The Tartarian seems to hold as high a place in its esteem as either the red or black; but all must yield to the white, which seems to be its natural food. In Calabria the red mulberry is used; in Valencia the white; and in Granada, where excellent silk is produced, the mulberries are all black. The white seems to prosper very well in a moist stiff soil: the black agrees well with a dry, sandy, or gravelly, soil; and the white is most luxuriant in a moist rich loam.

It may justly be asserted, that Britain possesses some advantages in the raising of raw silk which are not enjoyed by warmer countries. Even in the south of France, Mr. Arthur Young informs us, the mulberry-leaves are often nipped by frost in the bud; but this is scarcely ever the case with us. It is well-known that thunder and lightning are hurtful to the silk-worm. Now our climate can boast that it is almost wholly exempted from those dreadful storms of thunder and lightning which prevail so much in hot climates. Nature has then furnished us with every thing requisite for the silk manufacture;

manufacture; it remains only for us to improve the advantages which we possess. Let mulberry-trees be planted by proprietors of lands, and let a few persons of skill and attention devote their time to the raising of silk-worms. This is an employment that will not interfere with any manufacture already established; on the contrary, it would afford a respectable, a lucrative, and agreeable, employment to ladies, or to females in general, who have at present too few professions to which they can apply. The society instituted at London for the encouragement of arts, manufactures, and commerce, much to their honour, have offered premiums to those who shall plant a certain number of mulberry-trees.

The following method of raising mulberry-trees from seed is practised in the south of France, and has been repeated with success in the East Indies by Dr. Anderson of Madras. "Take the ripe berries of the mulberry when it is full of juice and of seeds. Next take a rough horse-hair line or rope, such as we dry linen on, and with a good handful of ripe mulberries run your hand along the line, bruising the berries and mashing them as much as possible as your hand runs along, so that the pulp and seeds of the berries may adhere in great abundance to the rope or hair-line. Next dig a trench in the ground where you wish to plant them, much like what is practised in kitchen-gardens for crops of various kinds. Next cut the rope or hair-line into lengths according to the length of the trench you think fit to make, and plunge the line full of mashed berries into the trench, and then cover it over well with earth, always remembering afterwards to water it well, which is essential to the success. The seeds of the berries thus sown will grow, and soon shoot out young suckers, which will bear young leaves, which are the best food for the silk-worm.

"The facility and rapidity with which young leaves may by this means be produced is evident, for as many rows of trenches may thus be filled as can be wished; and it can never be necessary to have mulberry-trees higher than our raspberries, currants, or goosberry-bushes. Whenever they get beyond that, they lose their value; and, if these trenches succeed, you may have a supply coming fresh up day after day, or any quantity you please." Thus abundance of these trees might be reared. But, as mulberry-trees are not yet found in abundance in this country, it were to be wished that some other food could be substituted in their place: attempts have accordingly been made by those who have reared silk-worms, and it has been found possible to support the silk-worms upon lettuce.

Miss Henrietta Rhodes, a lady who has made some successful experiments on raising silk-worms in England, had found that the silk-worm could with safety be kept on lettuce for some time. This is pretty generally known by ladies who have turned their attention to this subject; but she found that in general they could not with safety be kept upon that food above three weeks. If longer fed upon that plant, the worms for the most part die without spinning a web at all. She found, however, that they did not always die, but that in some cases they produced very good cocoons, even when fed entirely on lettuce. She therefore with reason suspected that the death of the animal must be occasioned by some extraneous circumstance, and not from the poisonous quality of the food itself; the circumstance she suspected, from some incidental observations, was the coldness

of that food; and therefore she thought it was not impossible, but if they were kept in a very warm place, while fed on lettuce, they might attain, in all cases, a due perfection.

General Mordaunt, having been informed of this conjecture, resolved to try the experiment. He got some silk-worms eggs, had them hatched in his hot-house, and caused them to be fed upon lettuce and nothing else. They prospered as well as any worms could do, few or none of them died; and they afforded as fine cocoons as if they had been fed upon mulberry leaves. As far as one experiment can go, this affords a very exhilarating prospect in many points of view. If one kind of food has been noxious, merely on account of an improper temperature, others may be found which have been hurtful only from a similar cause; so that it is not impossible but we may at last find that this delicate creature may be supported by a variety of kinds of food. Few, however, could be more easily obtained than lettuce; and this plant, when cabbaged, (the cos or ice lettuce especially,) would possess one quality that the mulberry-leaf never can possess, from the want of which many millions of worms die in those countries where silk is now reared; for it is observed, that, when the leaves are gathered wet, it is scarcely possible to preserve the worms alive for any length of time; so that during a continuance of rainy weather many of them are unavoidably cut off; but a lettuce, when cabbaged, resists moisture. If gathered even during rain, the heart of it is dry; so that, if the outer leaves be thrown aside at that time, the worms would be continued in perfect health. The expence, too, of cultivating and gathering lettuce, would be so much less than that of gathering mulberry-leaves, as to occasion a saving that would be much more than sufficient to counterbalance the expence of heating the conservatory, as a little reflection will shew.

But the great point to be now ascertained is, whether it is a fact that worms fed on lettuce, if kept in a due temperature, will continue in good health, in general, till they shall have perfected their cocoon? One experiment is too little to establish this fact with perfect certainty. It would therefore be necessary that more experiments should be made on this subject.

It is said that Dr. Lodovico Bellardi, a learned and ingenious botanist of Turin, has, after a number of experiments, discovered a new method of feeding silk-worms, when they are hatched before the mulberry-trees have produced leaves, or when it happens that the frost destroys the tender branches. This new method consists in giving the worms dried leaves of the mulberry-tree. One would think that this dry nourishment would not be much relished by these insects; but repeated experiments made by our author prove that they prefer it to any other, and eat it with the greatest avidity. The mulberry-leaves must be gathered about the end of autumn, before the frosts commence, in dry weather, and at times when the heat is greatest. They must be dried afterwards in the sun, by spreading them upon large cloths, and laid up in a dry place after they have been reduced to powder. When it is necessary to give this powder to the worms, it should be gently moistened with a little water, and a thin coat of it must be placed around the young worms, which will immediately begin to feed upon it.

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We have mentioned all the different kinds of food, which, as far as we have heard, have been tried with any ſucceſs to nouriſh the ſilk-worm; not, however, with great confidence, but as experiments which it might be worth while carefully to conſider and perform. We muſt not omit to mention that one perſon, who has had much experience in the managing of ſilk-worms, aſſures us, that the ſilk produced from any other food than the mulberry leaves is of an inferior quality, and that the worms are ſickly. We think, however, that there is reaſon to ſuſpect that the experiment has not been ſkilfully performed; and therefore, before every other food except mulberry leaves is diſcarded, the experiment ought to be performed with more attention and care. We know that many animals in a domeſtic ſtate can live upon food very different from that which ſupported them when running wild in the fields. Certain it is, however, that every animal, in its ſtate of nature, partakes of a food peculiar to itſelf, which is rejected by other animals as if it were of a poiſonous quality; and it may be mentioned as a curious fact, as well as an admirable inſtance of the care of that Being who feeds the fowls of heaven, that, notwithſtanding the numberleſs inſects that prey upon animals and vegetables, the mulberry-tree is left untouched by them all, as the excluſive property of the ſilk-worm, the chief of the inſect tribe, which toils and ſpins for the uſe of man.

Having now conſidered the food proper for the ſilk-worm, we ſhall next conſider what ſituation is moſt favourable to them. In the opinion of ſome perſons in this country who have been in the practice of rearing ſilk-worms, they ought always to be kept in a dry place, well ſheltered, and poſſeſſing a conſiderable degree of warmth, and which is not expoſed to ſudden tranſitions from heat to cold. If the weather be too cold, a ſmall fire muſt be made: this is of moſt importance when the worms are ready for ſpinning. A ſouthern expoſure is therefore preferable. Some think light is of great utility to ſilk-worms, others think that they thrive better in the dark. As to what apartments are beſt accommodated for promoting the health of ſilk-worms, and moſt convenient for thoſe who have the care of them, they may be various according to the extent of the manufacture or the wealth of the proprietors. Silk-worms may be kept in boxes or in ſhelves. When ſhelves are to be uſed, they may be conſtructed in the following manner:—The ſhelves may be of wicker, ranged at the diſtance of a foot and a half, and fixed in the middle of the room: their breath ought to be ſuch, that any perſon can eaſily reach to the middle from either ſide. This is perhaps the ſimpleſt and cheapeſt apparatus for rearing ſilk-worms.

The management of ſilk-worms is next to be attended to. The proper time for hatching them is when the leaves of the mulberry are full grown, or nearly ſo; that as ſoon as theſe inſects are capable of receiving food they may obtain it in abundance. To attempt to hatch them ſooner would be hurtful, as the weather would not be ſufficiently warm. Beſides, as leaves are neceſſary to the life of a vegetable, if the young leaves of the mulberry-tree are cropped as ſoon as they are unfolded, the tree will be ſo much weakened as to be incapable of producing ſo many leaves as it would otherwiſe have done; and, if this practice be frequently repeated, will inevitably be deſtroyed.

When the proper ſeaſon is arrived, the eggs may be hatched either by the heat of the ſun, when it happens to be ſtrong enough, or by

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placing them in a ſmall room moderately heated by a ſtove or fire; and, after being expoſed for ſix or ſeven days to a gentle heat, the ſilk-worm iſſues from the egg in the form of a ſmall black hairy caterpillar.

It has been already-mentioned, that wet or damp food is exceedingly prejudicial to theſe inſects. It produces contagious and fatal diſeaſes. To prevent the neceſſity of giving them wet or damp food, attention ought to be paid to the weather, ſo that, when there is an immediate proſpect of rain, a ſufficient quantity of leaves may be gathered to ſerve the worms two or three days. In this country, the leaves of the black or red mulberry-tree may be preſerved good for food, although kept four or five days, by the following method: When new-gathered, lay them looſely in glazed earthen veſſels, place theſe in a cold place, well aired, not expoſed to drought.

The utmoſt attention muſt be paid to preſerve the place where ſilk-worms are kept as clean as poſſible: the houſe or room muſt be well ventilated, that no noxious vapours be accumulated. By ſome experiments of M. Faujas de St. Fond, which are recorded in his hiſtory of Languedoc, it appears that the ſilk-worm is much injured by foul air. All decayed leaves muſt be removed from them, as it is now well known that they emit bad air in great abundance.

One of the moſt difficult branches of the management of ſilk-worms has hitherto been the cleaning without bruiſing them. To avoid this inconvenience, the peaſants in France and Italy frequently allow the whole litter to remain without ever cleaning them, which is the cauſe of that unwholeſome ſtench that has been ſo often remarked by thoſe who viſit the places for rearing ſilk-worms in theſe countries. This difficulty may be effectually removed by providing a net, or, what would be ſtill better, a wire-bottomed frame, wrought into large meſhes like a riddle. Have that made of a ſize exactly ſufficient to cover the wooden box in which the worms are kept. When you mean to ſhift them, ſpread freſh leaves into the wire-baſket; and let it down gently over the worms till it comes within their reach. They no ſooner perceive the freſh food than they abandon the rubbiſh below, and creep through the meſhes, ſo as to fix themſelves upon the leaves; then by gently raiſing the freſh baſket, and drawing out the board below, (which ought to be made to ſlip out like the ſlip-bottom of a bird's cage,) you get off all the excrements and decayed leaves, without incommoding the worms in the ſmalleſt degree; and along with the litter you will draw off an inch or two in depth of the fouleſt mephitic vapours. To get entirely rid of theſe, the board, when thus taken out, ſhould be carried without doors, and there cleaned; and the ſlip-board immediately replaced to receive all the excrements and offals. After it is replaced, the wire-frame that had been elevated a little, may be allowed to deſcend to a convenient diſtance above the board without touching it. Thus will there be left a vacant ſpace for the mephitic air to fall below the worms, ſo as to allow them to inhabit a wholeſome region of the atmoſphere.

When a freſh ſupply of food is to be given before cleaning, the wire-frame ought to be let down as cloſe to the board as can be ſafely done, and another wire-bottomed frame put over it, with freſh leaves, as before deſcribed. When the worms have abandoned that in their turn, let the ſlip-board, together with the lower wire-frame,

frame, be drawn out and removed, and so on as often as necessary. To admit of this alternate change, every table, consisting of one slip-board, ought to have two sets of wire-bottomed frames of the same size; the slip-board to be always put into its place immediately after it is cleaned, and the wire-frames reserved to be afterwards placed over the other. By this mode of management, it is probable that the worms would be saved from the diseases engendered by the mephitic air, and the numerous deaths that are the consequence of it avoided.

Dr. Anderson advises those who have the management of silk-worms to strew a thin stratum of fresh-slaked quicklime upon the slip-board each time it is cleaned, and immediately before it is put into its place. This would absorb the mephitic gas; for as soon as it is generated it would descend upon the surface of the quicklime. Thus would the worms be kept continually in an atmosphere of pure air. Were the walls of the apartment to be frequently washed with quicklime and water, it would tend much to promote cleanliness at a small expence, and increase the healthiness of the worms as well as that of the persons who attend them.

When the silk-worm refuses its food, and leaves silky traces on the leaves over which it passes, it is a proof that it is ready to begin its cocoon. Little bushes of heath, broom, or twigs, should now be stuck upright near the shelf or box in which they are inclosed: the worms mount these, and attach their web to them. When the worms are ready to mount, in order to spin, if the weather be hot, attended with thunder, you will see them in a languishing condition; your care must then be to revive them, which is effected thus:—Take a few eggs and onions, and fry them in a pan with some stale hog's lard, the ranker the better, and make a pancake; which done, carry it smoaking hot into the room where they are kept, and go round the chamber with it. You will be surprised to see how the smell revives them, excites those to eat who have not done feeding, and makes the others that are ready to spin climb up the twigs.

We shall now distinguish the cocoons from one another according to their value or their use, and consider the method of managing each. They may be distinguished into the good and bad. The good cocoons may be known by these marks: they are little, strong, and firm; have a fine grain, both ends are round, and they are free from spots. Among the good cocoons also may be arranged those, which are called calcined cocoons, in which the worm, in consequence of sickness, is petrified or reduced to a fine powder. These cocoons produce more silk than others, and are sold in Piedmont at half as much again. They may be distinguished by the noise which the worm makes when the cocoon is shaken. Of the bad cocoons there are six species: 1. The pointed cocoons, one extremity of which ends in a point; the silk which covers the point is weak, and soon breaks or tears. 2. The cocalons, which are bigger, but the contexture is weak. 3. The dupions, or double cocoons, which have been formed by the joint labour of two or sometimes of three worms. 4. The soufflons, which have a loose contexture, sometimes so loose that they are transparent. 5. The perforated cocoons, which have a hole at one end. 6. The bad choquette, which is composed of defective cocoons, spotted or rotten. Besides these there is the good choquette, which does not properly belong to either of these two

classes: it is formed of those cocoons in which the worm dies before the silk is brought to perfection. The worms adhere to one side of the cocoon, and therefore when the cocoon is shaken will not rattle: the silk is as fine, but is not of so bright a colour, nor is so strong and nervous, as that which is obtained from good cocoons.

The cocoons which are kept for breeding are called royal cocoons. The largest and best cocoons ought to be kept for breed, about an equal number of males and females; the cocoons that contain the former are sharper pointed at the ends than those that contain the latter. Although it should happen that there are more females than males, little inconvenience or ill consequences can arise from it, as one male will serve two or three females, if the time of their coming out of the cocoons answer. About twelve or fifteen days after they begin to spin, the cocoons for breed may be laid on sheets of white paper; about this time the moth opens for itself a passage through the end of its cocoon, and issues out. When the female has laid her eggs, which on an average may amount to two hundred and fifty, they are spread upon sheets of paper and hung up to dry in some place where they may not be exposed to the heat of the sun: after being dried they must be kept in a cool well-aired place, where neither vapours not moisture can reach them. That they may be preserved from external accidents, as insects of different kinds will destroy them, and mice is their enemy in all the stages of their existence, they should be kept in stone pots or glass bottles with their mouths stopped, and there remain until brought out next season to be hatched. The cocoons from which the silk is to be immediately wound must be exposed to the heat of an oven, in order to kill the chrysalis or aurelia, which would otherwise eat its way through the cocoon, and render it useless. The following directions are given for this process by one of the first silk-manufacturers in Italy.

Put your cocoons in long shallow baskets, and fill them up within an inch of the top. You then cover them with paper, and put a wrapper over that. These baskets are to be disposed in an oven, whose heat is as near as can be that of an oven from which bread is just drawn after being baked. When your cocoons have remained therein near an hour, you must draw them out; and, to see whether all the worms are dead, draw out a dupion from the middle of your basket and open it: if the worm be dead, you may conclude all the rest are so; because, the contexture of the dupion being stronger than that of the other cocoons, it is consequently less easy to be penetrated by the heat. You must observe to take it from the middle of the basket, because in that part the heat is least perceptible. After you have drawn your baskets from the oven, you must first cover each of them with a woollen blanket or rug, leaving the wrapper besides, and then you pile them above one another. If your baking has succeeded, your woollen cover will be all over wet with a kind of dew, the thickness of your little finger. If there be less, it is a sign your cocoons have been too much or too little baked. If too much baked, the worm, being over-dried, cannot transpire a humour he no longer contains, and your cocoon is then burnt. If not enough baked, the worm has not been sufficiently penetrated by the heat to distil the liquor he contains, and in that case is not dead.

You must let your baskets stand thus covered five or six hours if possible, in order to keep in the heat, as this makes an end of stifling

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those worms which might have avoided the first impression of the fire. You are likewise to take great care to let your cocoons stand in the oven the time that is necessary; for, if they do not stand long enough, your worms are only stunned for a time, and will afterwards be revived. If, on the other hand, you leave them too long in the oven, you burn them: many instances of these two cases are frequently to be met with. It is a good sign when you see some of the butterflies spring out from the cocoons which have been baked, because you may be certain they are not burnt. For, if you would kill them all to the last worm, you would burn many cocoons which might be more exposed to the heat than that particular worm.

The next operation is the winding of the silk. Before you begin to wind, you must prepare your cocoons as follows: 1. In stripping them of that waste silk that surrounds them, and which served to fasten them to the twigs. This burr is proper to stuff quilts, or other such uses; you may likewise spin it to make stockings, but they will be coarse and ordinary. 2. You must sort your cocoons, separating them into different classes in order to wind them apart. These classes are, the good white cocoons; the good cocoons of all the other colours; the dupions; the cocalons, among which are included the weak cocoons; the good choquette; and, lastly, the bad choquette. In sorting the cocoons, you will always find some perforated cocoons amongst them, whose worm is already born; those you must set apart for fleuret. You will likewise find some soufflons, but very few; for which reason you may put them among the bad choquette, and they run up into waste. The good cocoons, as well white as yellow, are the easiest to wind; those which require the greatest care and pains are the cocalons; you must wind them in cooler water than the others, and, if you take care to give them a good windster, you will have as good silk from them as the rest. You must likewise have careful windsters for the dupions and choquettes. These two species require hotter water than the common cocoons. The good cocoons are to be wound in the following manner:—First, choose an open convenient place for your filature, the longer the better, if you intend to have many furnaces and coppers. The building should be high and open on one side, and walled on the other, as well to screen you from the cold winds and receive the sun, as to give a free passage to the steam of your basons or coppers. These coppers or basons are to be disposed (when the building will admit of it) in a row on each side of the filature, as being the most convenient method of placing them, for by that means in walking up and down you see what every one is about. And these basons should be two and two together, with a chimney between every couple.

Having prepared your reels, (which are turned by hands, and require a quick eye,) and your fire being a light one under every bason, your windster must stay till the water is as hot as it can be without boiling. When every thing is ready, you throw into your basons two or three handfuls of cocoons, which you gently brush over with a wisk about six inches long, cut stumpy like a broom worn out: by these means the threads of the cocoons stick to the wisk. You must disengage these threads from the wisk, and purge them by drawing these ends with your fingers till they come off entirely clean. This operation is called *la battue*.

When

When the threads are quite clear, you muſt paſs four of them (if you wind fine ſilk) through each of the holes in a thin iron bar that is placed horizontally at the edge of your baſon; afterwards you twiſt the two ends (which conſiſt of four cocoons each) twenty or twenty-five times, that the four ends in each thread may the better join together in croſſing each other, and that your ſilk may be plump, which otherwiſe would be flat. Your windſter muſt always have a bowl of cold water by her, to dip her fingers in, and to ſprinkle very often the ſaid bar, that the heat may not burn the thread. Your threads, when thus twiſted, go upon two iron hooks called rampins, which are placed higher, and from thence they go upon the reel. At one end of the axis of the reel is a cog-wheel, which, catching in the teeth of the poſt-rampin, moves it from the right to the left, and conſequently the thread that is upon it; ſo that your ſilk is wound on the reel croſsways, and your threads form two hanks of about four fingers broad. As often as the cocoons you wind are done, or break or diminiſh only, you muſt join freſh ones to keep up the number requiſite, or the proportion; becauſe, as the cocoons wind off, the thread being finer, you muſt join two cocoons half wound to replace a new one.—Thus you may wind three new ones and two half wound, and your ſilk is from four to five cocoons.

When you would join a freſh thread, you muſt lay one end on your finger, which you throw lightly on the other threads that are winding, and it joins them immediately, and continues to go up with the reſt. You muſt not wind off your cocoons too bare or to the laſt, becauſe, when they are near at an end, the *bairré*, that is, the huſk, joins in with the other threads, and makes the ſilk foul and gouty. When you have finiſhed your firſt parcel, you muſt clean your baſons, taking out all the ſtriped worms, as well as the cocoons, on which there is a little ſilk, which you firſt open and take out the worm, and then throw them into a baſket by you, into which you likewiſe caſt the looſe ſilk that comes off in making the battue. You then proceed as before with other two or three handfuls of cocoons; you make a new battue; you purge them, and continue to wind the ſame number of cocoons or their equivalent, and ſo to the end.

As was already-mentioned, the windſter muſt always have a bowl of cold water by her, to ſprinkle the bar, to cool her fingers every time ſhe dips them in the hot water, and to pour into her baſon when neceſſary, that is, when her water begins to boil. You muſt be very careful to twiſt your threads a ſufficient number of times, about twenty-five, otherwiſe your ſilk remains flat, inſtead of being round and full; beſides, when the ſilk is not well croſſed, it never can be clean, becauſe a gout or nub that comes from a cocoon will paſs through a ſmall number of theſe twiſts, though a greater will ſtop it. Your thread then breaks, and you paſs what foulneſs there may be in the middle of your reel between the two hanks, which ſerves for a head-band to tie them. You muſt obſerve that your water be juſt in a proper degree of heat. When it is too hot, the thread is dead, and has no body; when it is too cold, the ends which form the thread do not join well, and form a harſh ill-qualified ſilk. You muſt change the water in your baſon four times a-day for your dupions and choquette, and twice only for good cocoons when you wind fine ſilk; but, if you wind coarſe ſilk, it is neceſſary to change it three or

four

four times; for, if you were not to change the water, the silk would not be so bright and glossy, because the worm contained in the cocoons foul it very considerably. You must endeavour as much as possible to wind with clear water, for, if there are too many worms in it, your silk is covered with a kind of dust which attracts the moth, and destroys your silk.

You may wind your silk of what size you please, from one cocoon to one thousand; but it is difficult to wind more than thirty in a thread. The nicety, and that in which consists the greatest difficulty, is to wind even; because, as the cocoon winds off, the end is finer, and you must then join other cocoons to keep up the same size. This difficulty of keeping the silk always even is so great, that (excepting a thread of two cocoons, which we call such) we do not say a silk of three, of four, or of six, cocoons; but a silk of three to four, of four to five, of six to seven, cocoons. If you proceed to a coarser silk, you cannot calculate so nicely as to one cocoon, more or less.—We say, for example, from twelve to fifteen, fifteen to twenty, &c.

What number of worms are necessary to produce a certain quantity of silk has not been ascertained; and, as different persons who have wished to determine this point have had different results, the truth seems to be, that, from various circumstances, the same number of worms may produce more silk at one time than another. It is related in the second volume of the Transactions of the Society for encouraging Arts, &c. that Mrs. Williams obtained nearly an ounce and a half of silk from two hundred and forty-four cocoons. Mr. Swayne from fifty cocoons procured one hundred grains. Miss Rhodes obtained from two hundred and fifty of the largest cocoons three quarters of an ounce and a dram. From a paper in the second volume of the American Transactions, we are informed that one hundred and fifty ounces of good cocoons yield about eleven ounces of silk from five to six cocoons: if you wind coarser, something more. But what appears astonishing, Mr. Salvatore Bertezen, an Italian, to whom the Society for encouraging Arts, &c. adjudged their gold medal, raised five pounds of excellent silk from twelve thousand worms. The cocoons produce a thread of very unequal length; you may meet with some that yield twelve hundred ells, whilst others will scarcely affords two hundred ells. In general, you may calculate the production of a cocoon from five hundred to six hundred ells in length.

As there is every reason to hope that the silk manufacture will soon be carried on with ardour in this country, and to a great extent, we are happy to learn that the silk-loom has been much improved lately by Mr. Sholl of Bethnal-Green. It appears from the evidence of several gentlemen conversant in that branch of silk weaving to which this loom is particularly adapted, that the advantages of this construction are, the gaining light, a power of shortening the porry occasionally, so as to suit any kind of work, being more portable, and having the gibbet firmly fixed, together with the diminution of price; which, compared with the old loom, is as five pounds, the price of a loom on the old construction, to three pounds ten shillings, the price of one of those contrived by Mr. Sholl; and that, as the proportion of light work is to strong work as nine to one, this sort of loom promises to be of very considerable advantage, particularly in making modes, or other black work.

Of

OF THE RISE AND PROGRESS OF SOCIETY.

MAN in a civilized ſtate appears a being of a ſuperior order to man in a ſavage ſtate; yet ſome philoſophers tell us, that it is only he who, having been educated in ſociety, has been taught to depend upon others, that can be helpleſs or miſerable when placed in a ſolitary ſtate. They view the ſavage who exerts himſelf with intrepidity to ſupply his wants, or bears them with fortitude, as the greateſt hero, and poſſeſſing the greateſt happineſs. And therefore if we agree with them, that the propenſities of nature may have prompted men to enter into ſocial union, though they may have hoped to enjoy ſuperior ſecurity and happineſs by engaging to protect and ſupport each other, we muſt conclude that the Author of the univerſe has deſtined man to attain greater dignity and happineſs in a ſavage and ſolitary than in a ſocial ſtate; and therefore that thoſe diſpoſitions and views which had lead us to ſociety are fallacious and inimical to our real intereſt.

Whatever be the ſuppoſed advantages of a ſolitary ſtate, certain it is that mankind, at the earlieſt periods, were united in ſociety. Various theories have been formed concerning the circumſtances and principles which gave riſe to this union: but the greater part of them are founded in error; they ſuppoſe the original ſtate of man to have been that of ſavages; yet ſuch a ſuppoſition is contradicted by the moſt authentic records of antiquity. For though the records of the earlier ages are generally obſcure, fabulous, and imperfect; yet happily there is one free from the imperfections of the reſt, and of undoubted authenticity, to which we may ſafely have recourſe. This record is the Pentateuch of Moſes, which preſents us with a genuine account of the origin of man and ſociety. According to Moſes, the firſt ſociety was that of a huſband and wife united in the bonds of marriage: the firſt government that of a father and huſband, the maſter of his family. Men lived together under the patriarchal form of government while they employed themſelves chiefly in tending flocks and herds. Children in ſuch circumſtances cannot ſoon riſe to an equality with their parents, where a man's importance depends on his property, not on his abilities. When flocks and herds are the chief articles of property, the ſon can only obtain theſe from his father; in general therefore the ſon muſt be entirely dependent on the father for the means of ſubſiſtence. If the parent during his life beſtow on his children any part of his property, he may do it on ſuch conditions as ſhall make their dependence upon him continue till the period of his death. When the community are by this event deprived of their head, inſtead of continuing in a ſtate of union, and ſelecting ſome one from among themſelves whom they may inveſt with the authority of a parent, they ſeparate into ſo many diſtinct tribes, each ſubjected to the authority of a different lord, the maſter of the family, and the proprietor of all the flocks and herds belonging to it. Such was the ſtate of the firſt ſocieties which the narrative of Moſes exhibits to our attention.

Thoſe philoſophers who have made ſociety, in its various ſtages between rudeneſs and refinement, the ſubject of their ſpeculations, have generally conſidered mankind, in whatever region of the globe, and under whatever climate, as proceeding uniformly through certain regular

regular gradations from one extreme to the other. They regard them, first, as gaining a precarious subsistence by gathering the spontaneous fruits of the earth, preying on the inhabitants of the waters, if placed on the sea-shore, or along the banks of large rivers; or hunting wild beasts, if in a situation where these are to be found in abundance, without foresight or industry to provide for future wants when the present call of appetite is gratified. Next, they say, man rises to the shepherd state, and next to that of husbandmen, when they turn their attention from the management of flocks to the cultivation of the ground. Next, these husbandmen improve their powers, and better their condition, by becoming artizans and merchants; and the beginning of this period is the boundary between barbarity and civilization.

These are the stages through which they who have employed themselves on the natural history of society have generally conducted mankind in their progress from rudeness to refinement: but they seem to have overlooked the manner in which mankind were at first established on this earth; for the circumstances in which the parents of the human race were originally placed; for the degree of knowledge communicated to them; and for the instruction which they must have been capable of communicating to their posterity. They rather appear to consider the inhabitants of every different region of the globe as aborigines, springing at first from the ground, or dropped on the spot which they inhabit; no less ignorant than infants of nature and relations of the objects around them, and of the purposes which they may accomplish by the exercise of their organs and faculties.

The absurdity of this theory must be obvious; and, if we agree to receive the Mosaic account of the original establishment of mankind, we shall be led to view the phenomena of social life in a light very different. We must first allow, that, though many of the rudest tribes are found in the state of hunters or fishers, yet the hunting or fishing state cannot have been invariably the primary form of society. Notwithstanding the powers with which we are endowed, we are in a great measure the creatures of circumstances. Physical causes exert, though indirectly, a mighty influence in forming the character and directing the exertions of the human race. From the information of Moses we gather, that the first societies of men lived under the patriarchal form of government, and employed themselves in the cultivation of the ground and the management of flocks. And as we know that mankind, being subjected to the influence both of physical and moral causes, are no less liable to degeneracy than capable of improvement; we may easily conceive, that though descending all from the same original pair, and though enlightened with much traditionary knowledge relative to the arts of life, the order of society, moral distinctions, and religious obligations; yet as they were gradually, and by various accidents, dispersed over the earth, being removed to situations in which the arts with which they were acquainted could but little avail them, where industry was overpowered, or indolence encouraged by the severity or the profusion of nature, they might degenerate and fall into a condition almost as humble and precarious as that of the brutal tribes. Other moral causes might also concur to debase or elevate the human character in that early period. The particular character of the original settlers in any

region, the manner in which they were connected with one another, and the arts which they were best qualified to exercise, with various other causes of a similar nature, would have considerable influence in determining the character of the society.

When, laying aside the spirit of theory and system, we set ourselves, with due humility, to trace facts, and to listen to evidence, though our discoveries may be fewer than we should otherwise fancy them; yet the knowledge which we thus acquire will be more useful and solid, and our speculations more consistent with the spirit of true philosophy. Here, though we learn from the information of the sacred writings, that the first family of mankind was not cruelly exposed in this world, as children whom the inhumanity of their parents induces them to desert; yet we are not, in consequence of admitting this fact, laid under any necessity of denying or explaining away any of the other phenomena which occur to our observation when tracing the natural history of society. Tradition may be corrupted; arts and sciences may be lost; the sublimest religious doctrines may be debased into absurdity.

If then we are desirous of surveying society in its rudest form, we must look, not to the earliest period of its existence, but to those districts of the globe where external circumstances concur to drive them into a state of stupidity and wretchedness. Thus in many places of the happy clime of Asia, which a variety of ancient records concur with the sacred writings in representing as the first peopled quarter of the globe, we cannot trace the form of society backwards beyond the shepherd state. In that state indeed the bonds which connect society extend not to a wide range of individuals, and men remain for a long period in distinct families; but yet that state is highly favourable to knowledge, to happiness, and to virtue. Again, the torrid and the frozen regions of the earth, though probably peopled at a later period, and by tribes sprung from the same stock with the shepherds of Asia, have yet exhibited mankind in a much lower state. It is in the parched deserts of Africa and the wilds of America that human beings have been found in a condition approaching the nearest to that of the brutes. We may therefore with some propriety desert the order of time, and take a view of the different stages through which philosophers have considered mankind as advancing, beginning with that of rudeness, though we have shewn that it cannot have been the first in the progress.

Where the human species are found in the lowest and rudest state, their rational and moral powers are very faintly displayed; but their external senses are acute, and their bodily organs active and vigorous. Hunting and fishing are then the chief employments on which they depend for support. During that portion of their time which is not spent in these pursuits, they are sunk in listless indolence. Destitute of foresight, they are roused to active exertion only by the pressure of immediate necessity or the urgent calls of appetite. Accustomed to endure the severity of the elements, and but scantily provided with the means of subsistence, they acquire habits of resignation and fortitude, which are beheld with astonishment by those who enjoy the plenty and indulgence of cultivated life. But in the state of want and depression, when the powers and possessions of every individual are scarcely sufficient for his own support, when even the calls of appetite are repressed because they cannot always be gratified, and

and the more refined paſſions, which either originate from ſuch as are merely animal, or are intimately connected with them, have not yet been felt—in this ſtate all the milder affections are unknown; or, if the breaſt is at all ſenſible to their impulſe, it is extremely feeble. Huſband and wife, parent and child, brother and brother, are united by the weakeſt ties. Want and misfortune are not pitied. Why indeed ſhould they, where they cannot be relieved? It is impoſſible to determine how far beings in this condition can be capable of moral diſtinctions. One thing certain is, that in no ſtate are the human race entirely incapable of theſe. If we liſten, however, to the relations of reſpectable travellers, we muſt admit that human beings have ſometimes been found in that abject ſtate where no proper ideas of ſubordination, government, or diſtinction of ranks, could be formed. No diſtinct notions of Deity can be here entertained. Beings in ſo humble a condition cannot look through the order of the univerſe and the harmony of nature to that Eternal Wiſdom and Goodneſs which contrived, and that Almighty Power which brought into exiſtence, the ſyſtem of things. Of arts they muſt be almoſt totally deſtitute. They may uſe ſome inſtruments for fiſhing or the chace; but theſe muſt be extremely rude and ſimple. If they be acquainted with any means to ſhelter them from the inclemency of the elements, their houſes and clothing will be aukward and inconvenient.

But human beings have not been often found in ſo rude a ſtate as this. Even thoſe tribes which we denominate ſavage, are for the moſt part farther removed from mere animal life. They generally appear united under ſome ſpecies of government, exerciſing the powers of reaſon, capable of morality, though that morality be not always very refined; diſplaying ſome degree of ſocial virtues, and acting under the influence of religious ſentiments. Thoſe who may be conſidered as but one degree higher in the ſcale than the ſtupid and wretched beings whoſe condition we have ſurveyed, are to be found ſtill in the hunting and fiſhing ſtate; but they are farther advanced towards ſocial life, and are become more ſenſible to the impulſe of ſocial affection. By unavoidable intercourſe in their employments, a few individual hunters or fiſhers contract a certain degree of fondneſs for each other's company, and are led to take ſome part in each other's joys and ſorrows; and, when the ſocial affections thus generated begin to exert themſelves, all the other powers of the mind are at the ſame time called forth, and the circumſtances of the little ſociety are immediately improved. We behold its members in a more comfortable condition, and find reaſon to view the human character with more complacency and reſpect. Huts are now built, more commodious clothes are faſhioned, inſtruments for the annoyance of wild beaſts and even of enemies are contrived; in ſhort, arts, and ſcience, and ſocial order, and religious ſentiments, and ceremonies, now make their appearance in the riſing ſociety, and ſerve to characterize it by the particular form which diſtinguiſhes each of them. But, though ſocial order is no longer unknown nor unobſerved, yet the form of government is ſtill extremely ſimple, and its ties are but looſe and feeble. It will perhaps bear ſome reſemblance to the patriarchal; only all its members are on a more equal footing, and at the ſame time leſs cloſely connected than in the ſhepherd ſtate, to which that form of government ſeems almoſt peculiar. The old men are treated with veneration; but the

young are not entirely subject to them. They may listen respectfully to their advice; but they do not submit to their arbitrary commands. Where mankind are in the state of hunters and fishers, where the means of subsistence are precariously acquired, and prudent foresight does not prompt to accumulate much provision for the future, no individual can acquire comparative wealth. As soon as the son is grown up, he ceases to be dependent on his father, as well as on the society in general. Difference of experience therefore constitutes the only distinction between the young and the old; and, if the old have experience, the young have strength and activity. Here, then, neither age nor property can give rise to any striking distinction of ranks. All who have attained to manhood, and are not disabled by unusual deficiency of strength or agility, or by the infirmities of old age, are on an equal footing; or if any one possels a pre-eminence over the rest, he owes it to superior address or fortitude. The whole tribe deliberate; the old give their advice; each individual of the assembly receives or rejects it at his pleasure, (for the whole body think not of exercising any compulsatory power over the will of individuals;) and the warrior who is most distinguished for strength, address, and valour, leads out the youth of the tribe to the chace or against the enemy. War, which in the former stage did not prevail, as they who were strangers to social sentiments were at the same time scarcely capable of being enemies, now first begins to depopulate the thinly-inhabited regions where those hunters and fishers pursue their prey. They are scattered, possibly in scanty and separate tribes, over an immense tract of country; but they know no medium between the affection which brethren of the same tribe bear to each other and the hatred of enemies. Though thinly scattered over the earth, yet the hunting parties of different tribes will sometimes meet as they range the forests; and, when they meet, they will naturally view each other with a jealous eye; for the success of the one party in the chace may cause the other to be unsuccessful; and, while the one snatches the prey, the other must return home to all the pangs of famine. Inveterate hostility will therefore long prevail among neighbouring tribes in the hunting state. If we find them not incapable of social order, we may naturally expect that their conduct will be influenced by some sentiments of religion. They have at this period ideas of superior beings. They also practise certain ceremonies to recommend them to these beings; but both these sentiments and ceremonies are superstitious and absurd.

Savage tribes have probably degenerated from the pure worship of the one true God to the adoration of a multitude of imaginary divinities in heaven, earth, and hell. We may trace this idolatrous worship, from that of the heavenly bodies, thro' all the gradations of dæmon-worship, hero-worship, and statue-worship, to that wonderful instance of absurd superstition which induced the inhabitants of some countries to fall prostrate in adoration before the vilest reptiles. But, though we are convinced that the heavenly bodies have by all idolaters been considered as their first and greatest gods, we pretend not that the progress through the other stages of polytheism has been every where in the very same order. It is indeed impossible to exhibit under one general view an account of arts, manners, and religious sentiments, which may apply to some certain period in the history of of every nation. The characters and circumstances of nations are

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scarcely less various and anomalous than those of individuals. Among many of the American tribes, among the ancient inhabitants of the forests of Germany, whose manners have been so accurately delineated by the masterly pen of Tacitus, and in some of the islands scattered over the southern ocean, religion, arts, and government, have been found in that state which we have described as characterizing the second stage of social life. But neither can we pretend that all those simple and rude societies have been described by historians and travellers as agreeing precisely in their arts, manners, and religious sentiments; or that the difference of circumstances always enables us to account in a satisfactory manner for the distinction of their characters. There is a variety of facts in the history of the early periods of society, which no ingenuity, no industry however painful, can reduce under general heads. Here, as well as when we attempt to philosophise on the phenomena of the material world, we find reason to confess that our powers are weak, and our observation confined within a narrow sphere.

But we may now carry our views a little forward, and survey human life as approaching somewhat nearer to a civilized and enlightened state. As property is acquired, inequality and subordination of ranks necessarily follow: and, when men are no longer equal, the many are soon subjected to the will of the few. But what gives rise to these new phenomena is, that, after having often suffered from the precariousness of the hunting and fishing state, men begin to extend their cares beyond the present moment, and to think of providing some supply for future wants. When they are enabled to provide such a supply, either by pursuing the chace with new eagerness and perseverance, by gathering the spontaneous fruits of the earth, or by breeding tame animals—these acquisitions are at first the property of the whole society, and distributed from a common store to each individual according to his wants.—But as various reasons will soon concur to convince the community, that by this mode of distribution, industry and activity are treated with injustice, while negligence and indolence receive more than their due, each individual will in a short time become his own steward, and a community of goods will be abolished. As soon as distinct ideas of property are formed, it must be unequally distributed; and as soon as property is unequally distributed, there arises an inequality of ranks. Here we have the origin of the depression of the female sex in rude ages, of the tyrannical authority exercised by parents over their children, and perhaps of slavery. The women cannot display the same perseverance, or activity, or address, as the men in pursuing the chace. They are therefore left at home; and from that moment are no longer equals, but slaves and dependants, who must subsist by the bounty of the males, and must therefore submit with implicit obedience to all their capricious commands. Even before the era of property, the female sex were viewed as inferiors; but till that period they were not reduced to a state of abject slavery.

In this period of society new notions are formed of the relative duties. Men now become citizens, masters, and servants; husbands, parents, &c. It is impossible to enumerate all the various modes of government which take place among the tribes who have advanced to this stage; but one thing certain is, that the authority of the few over the many is now first established, and that the rise of property

first

first introduces inequality of ranks. In one place, we shall perhaps find the community subjected during this period to the will of a single person; in another, power may be lodged in the hands of a number of chiefs; and in a third, every individual may have a voice in creating public officers, and in enacting laws for the support of public order. But, as no code of laws is formed during this period, justice is not very impartially administered, nor are the rights of individuals very faithfully guarded. Many actions, which will afterwards be considered as heinously immoral, are now considered as praise-worthy or indifferent. This is the age of hero-worship, and of household and tutelary gods; for it is in this stage of society that the invention of arts, which gave rise to that worship contributes most conspicuously to the public good. War, too, which we considered as beginning first to ravage the earth during the former period, and which is another cause of the deification of dead men, will still prevail in this age, and be carried on with no less ferocity than before, though in a more systematic form.

The prevalence of war, and the means by which subsistence is procured, cannot but have considerable influence on the character and sentiments of societies and individuals. The hunter and the warrior are characters in many respects different from the shepherd and the husbandman. Such, in point of government, arts, and manners, religious and moral sentiments, were several of the German tribes described by Tacitus; and the Britons whose character has been sketched by the pen of Cæsar: such, too, were the Romans in the early period of their history; such too the inhabitants of Asia Minor about the time of the siege of Troy, as well as the Greeks whom Homer celebrates as the destroyers of the Trojan state: the northern tribes also, who poured through Asia, Africa, and Europe, and overthrew the Roman empire, appear to have been of a nearly similar character. It seems to be a general opinion among those who have directed their attention to the history of society, that, in the scale ascending from the lowest condition of human beings to the most civilized and enlightened state of society, the shepherd state is the next in order above the hunting; and that as mankind improve in knowledge and in moral sentiments, and as the forests are gradually depopulated of their inhabitants, instead of destroying the inferior animals, men become their guardians and protectors. But we cannot unreservedly subscribe to this opinion: we believe, that in the shepherd state societies have been sometimes found superior to the most polished tribes of hunters; but, upon viewing the annals of mankind in early ages, we observe that there is often no inconsiderable resemblance even between hunters and shepherds in point of the improvement of the rational faculties and the moral sense; and we are therefore led to think, that these two states are sometimes parallel: for instance, several of the American tribes, who still procure their subsistence by hunting, appear to be nearly in the state which we have described as the third stage in the progress of society; and the ancient shepherds of Asia do not appear to have been much more cultivated and refined. We even believe that men have sometimes turned their attention from hunting to agriculture without passing through any intermediate state. Let us remember, that much depends upon local circumstances, and somewhat undoubtedly on original inspiration and traditionary instruction. In this period of

society

ſociety the ſtate of the arts well deſerves our attention. We ſhall find, that the ſhepherds and the hunters are in that reſpect on a pretty equal footing. Whether we examine the records of ancient hiſtory, or view the iſlands ſcattered through the South Sea, or range the wilds of America, or ſurvey the ſnowy waſtes of Lapland and the frozen coaſt of Greenland, ſtill we find the uſeful arts in this period, though known and cultivated, in a very rude ſtate; and the fine arts, or ſuch as are cultivated merely to pleaſe the fancy or to gratify caprice, diſplaying an odd and fantaſtic, not a true or natural, taſte; yet this is the period in which eloquence ſhines with the trueſt luſtre: all is metaphor or glowing ſentiment. Languages are not yet copious; and therefore ſpeech is figurative, expreſſive, and forcible. The tones and geſtures of nature, not being yet laid aſide, as they generally are, from regard to decorum, in more poliſhed ages, give a degree of force and expreſſion to the harangues of the ruſtic or ſavage orator, which the moſt laborious ſtudy of the rules of rhetoric and elocution could not enable even a more poliſhed orator to diſplay.

But let us advance a little farther, and contemplate our ſpecies in a new light, where they will appear with greater dignity and amiableneſs of character. Let us view them as huſbandmen, artizans, and legiſlators. Whatever circumſtances might turn the attention of any people from hunting to agriculture, or cauſe the herdſman to yoke his oxen for the cultivation of the ground, certain it is that this change in the occupation would produce an happy change on character and circumſtances of men; it would oblige them to exert a more regular and perſevering induſtry. The hunter is like one of thoſe birds that are deſcribed as paſſing the winter in a torpid ſtate. The ſhepherd's life is extremely indolent. Neither of theſe is very favourable to refinement. But different is the condition of the huſbandman. His labours ſucceed each other in regular rotation through the year; each ſeaſon with him has its proper employments; he therefore muſt exert active perſevering induſtry; and in this ſtate we often find the virtues of rude and poliſhed ages united. This is the period where barbariſm ends and civilization begins. Nations have exiſted for ages in the hunting or ſhepherd ſtate, fixed as by a kind of ſtagnation, without advancing farther. But ſcarcely any inſtances occur in the hiſtory of mankind, of thoſe who once reached the ſtate of huſbandmen remaining long in that condition without riſing to a more civilized and poliſhed ſtate. Where a people turn their attention in any conſiderable degree to the objects of agriculture, a diſtinction of occupations naturally ariſes among them. The huſbandman is ſo cloſely employed through the ſeveral ſeaſons of the year in the labours of the field, that he has no longer leiſure to exerciſe all the rude arts known among his countrymen. He has not time to faſhion the inſtruments of huſbandry, to prepare his clothes, to build his houſe, to manufacture houſehold utenſils, or to tend thoſe tame animals which he continues to rear. Thoſe different departments therefore now begin to employ different perſons; each of whom dedicates his whole time and attention to his own occupation. The manufacture of cloth is for a conſiderable time managed excluſively by the women; but ſmiths and joiners ariſe from among the men. Metals begin now to be conſidered as valuable materials. The intercourſe of mankind is now placed on a new footing. Before,

fore, every individual practised all the arts that were known, as far as was necessary for supplying himself with the conveniences of life. Now he confines himself to one or to a few of them; and, in order to obtain a necessary supply of the productions of those arts which he does not cultivate himself he gives in excharge a part of the productions of his own labours. Here we have the origin of commerce.

After continuing perhaps for some time in this state, as arts and distinctions multiply in society, the exchange of one commodity for another is found troublesome and inconvenient. It is ingeniously contrived to adopt a medium of commerce, which being estimated not by its intrinsic value, but by a certain nominal value which it receives from the agreement of the society among whom it is used, serves to render the exchange of property, which is so necessary for the purposes of social life, easy and expeditious. Wherever metals have been known, they appear to have been adopted as the medium of commerce almost as soon as such a medium began to be used: and this is one important purpose for which they serve; but they have still more important uses. Almost all the necessary arts depend on them. Where the metals are known, agriculture practised, and the necessary arts distributed among different orders of artisans—civilization and refinement, if not obstructed by some accidental circumstances, advance with a rapid progress. With regard to the first applying of the precious metals as the medium of commerce, we may observe, that this was probably not accomplished by means of a formal contract. They might be first used as ornaments; and the love of ornament, which prevails among rude as much as among civilized nations, would render every one willing to receive them in exchange for such articles as he could spare. Such might be the change produced on society with regard to the necessary arts by the origin of agriculture. As soon as ornament and amusement are thought of, the fine arts begin to be cultivated. In their origin therefore they are not long posterior to the necessary and useful arts. They appear long before men reach the comfortable and respectable condition of husbandmen; but so rude in their character at their first origin, that our *Dilettanti* would probably view their productions of that period with unspeakable contempt and disgust. But, in the period of society which we now consider, they have aspired to an higher character; yet poetry is now perhaps less generally cultivated than during the shepherd state. Agriculture, considered by itself, is not directly favourable either to refinement of manners or to the fine arts. The conversation of shepherds is generally supposed to be far more elegant than that of husbandmen; but, though the direct and immediate effects of this condition of life be not favourable to the fine arts, yet indirectly it has a strong tendency to promote their improvement. Its immediate influence is extremely favourable to the necessary and useful arts; and these are no less favourable to the fine arts.

One of the noblest changes which the introduction of the arts by agriculture produces on the form and circumstances of society, is the introduction of regular government and laws. In tracing the history of ancient nations, we scarcely ever find laws introduced at an earlier period. Minos, Solon, and Lycurgus, do not appear to have formed codes of wisdom and justice for regulating the manners of their countrymen, till after the Cretans, the Athenians, and even the Lacedemonians had made some progress in agriculture and the useful arts.

Religion,

Religion, under all its various forms, has in every stage of society a mighty influence on the sentiments and conduct of men; and the arts cultivated in society have on the other hand some influence on the system of religious belief. One happy effect which will result from the invention of arts, though perhaps not immediately, will be, to render the character of the deities more benevolent and amiable, and the rites of their worship more mild and humane. The female sex in this period generally find the yoke of their slavery somewhat lightened. Men now become easier in their circumstances; the social affections assume stronger influence over the mind; plenty, and security, and ease, at once communicate both delicacy and keenness to the sensual desires. All these circumstances concur to make men relax in some degree that tyrannic sway by which they before depressed the softer sex. The foundation of that empire, where beauty triumphs over both wisdom and strength, now begins to be laid. Such are the effects which history warrants us to attribute to agriculture and the arts; and such the outlines of the character of that which we reckon the fourth stage in the progress of society from rudeness to refinement.

Society is rude at the period when the arts first begin to shew themselves, in comparison of that state to which it is raised by the industrious cultivation of them. The neighbouring commonwealths of Athens and Lacedemon afford us a happy opportunity of comparing this with the former stage in the progress of society. The chief effect produced by the institutions of a Lycurgus seems to have been, to fix the manners of his countrymen for a considerable period in that state to which they had attained in his days. Spartan virtue has been admired and extolled in the language of enthusiasm; but in the same manner has the character and the condition of the savage inhabitants of the wilds of America been preferred, by some philosophers, to the virtues and the enjoyments of social life in the most polished and enlightened state. The Spartans in the days of Lycurgus had begun to cultivate the ground, and were not unacquainted with the useful arts. They must soon have advanced farther had not Lycurgus arisen, and by effecting the establishment of a code of laws, the tendency of which appears to have been in many particulars directly opposite to the designs of nature, retarded their progress towards complete civilization and refinement. The history of the Lacedemonians, therefore, while the laws of Lycurgus continued in force, exhibits the manners and character of a people in that which we have denominated the fourth stage in the progress of society. But if we turn our eyes to their neighbours the Athenians, we behold in their history the natural progress of opinions, arts, and manners. The useful arts are first cultivated with such steady industry, as to raise the community to opulence, and to furnish them with articles for commerce with foreign nations. The useful arts cannot be raised to this height of improvement without leading men to the pursuit of science. Commerce with foreign nations, skill in the useful arts, and a taste for science, mutually aid each other, and conspire to promote the improvement of the fine arts. Hence magnificent buildings, noble statues, paintings expressive of life, action, and passion; and poems in which imagination adds new grace and sublimity to nature, and gives the appearances of social life more irresistible power over the affections of the heart. Hence are moral distinc-

tions more carefully ſtudied, and the rights of every individual and every order in ſociety better underſtood and more accurately defined. Moral ſcience is generally the firſt ſcientific purſuit which ſtrongly attracts the attention of men. Lawgivers appear before geometricians and aſtronomers. Some particular circumſtances may cauſe theſe ſciences to be cultivated at a very early period. In Egypt the overflowing of the Nile cauſed geometry to be early cultivated. Cauſes no leſs favourable to the ſtudy of aſtronomy concurred to recommend that ſcience to the attention of the Chaldeans long before they had attained the height of refinement. But, in general, we find, that the laws of morality are underſtood, and the principles of morals inquired into, before men make any conſiderable progreſs in phyſical ſcience, or even proſecute it with any degree of keenneſs. Accordingly, when we view the ſtate of literature in this period (for it is now become an object of ſo much importance as to force itſelf on our attention), we perceive that poetry, hiſtory, and morals, are the branches chiefly cultivated. Arts are generally caſual inventions, and long practiſed before rules and principles on which they are founded aſſume the form of ſcience. But morality, if conſidered as an art, is that art which men have ſooneſt and moſt conſtantly occaſion to practiſe. Beſides, we are ſo conſtituted by the wiſdom of nature, that human actions, and the events which befal human beings, have more powerful influence than any other object to engage and fix our attention. Hence we are enabled to explain why morality, and thoſe branches of literature more immediately connected with it, are almoſt always cultivated in preference to phyſical ſcience. Though poetry, hiſtory, and morals, be purſued with no ſmall eagerneſs and ſucceſs in that period of ſociety which we now conſider, we need not therefore be greatly ſurpriſed that natural philoſophy is neither very generally nor very ſucceſsfully cultivated. Were we to conſider each particular in that happy change which is now produced on the circumſtances of mankind, we ſhould be led into a too minute and perhaps unimportant detail. This is the period when human virtue and human abilities ſhine with moſt ſplendour. Rudeneſs, ferocity, and barbariſm, are now baniſhed. Luxury has made her appearance; but as yet ſhe is the friend and the benfactreſs of ſociety. Commerce has ſtimulated and rewarded induſtry, but has not yet contracted the heart and debaſed the character. Wealth is not yet become the ſole object of purſuit. The charms of ſocial intercourſe are known and reliſhed; but domeſtic duties are not yet deſerted for public amuſements. The female ſex acquire new influence, and contribute much to refine and poliſh the manners of their lords. Religion now aſſumes a milder and more pleaſing form; ſplendid rites, magnificent temples, pompous ſacrifices, and gay feſtivals, give even ſuperſtition an influence favourable to the happineſs of mankind. The gloomy notions and barbarous rites of former periods fall into diſuſe. The ſyſtem of theology produced in former ages ſtill remains; but only the mild and amiable qualities of the deities are celebrated; and none but the gay, human, and laughing, divinities, are worſhipped. Philoſophy alſo teaches men to diſcard ſuch parts of their religion as are unfriendly to good morals, and have any tendency to call forth or cheriſh unſocial ſentiments in the heart. War (for in this period of ſociety enough of cauſes will ariſe to arm one nation againſt another)—war, however, no longer retains

tains its former ferocity; nations no longer strive to extirpate one another, to procure redress for real and imaginary injuries; to humble, not to destroy, is now its object. Prisoners are no longer murdered in cold blood, subjected to horror and excruciating tortures, or condemned to hopeless slavery. They are ransomed or exchanged; they return to their country, and again fight under its banners. In this period the arts of government are likewise better understood, and practised so as to contribute most to the interests of society. Whether monarchy, or democracy, or aristocracy, be the established form, the rights of individuals and of society are in general respected. The interests of society are so well understood, that the few, in order to preserve their influence over the many, find it necessary to act rather as the faithful servants than the imperious lords of the public. Though the liberties of a nation in this state be not accurately defined by law, nor their property guaranteed to them by any legal institutions, yet their governors dare not violate their liberties, nor deprive them wantonly of their properties. This is truly the golden age of society: every trace of barbarism is entirely effaced; and vicious luxury has not yet begun to sap the virtue and the happiness of the community. Men live not in lifeless indolence; but the industry in which they are engaged is not of such a nature as to overpower their strength or exhaust their spirits. The social affections have now the strongest influence on men's sentiments and conduct.

But human affairs are scarcely ever stationary. The circumstances of mankind are almost always changing, either growing better or worse. Their manners are ever in the same fluctuating state. They either advance towards perfection or degenerate. Scarcely have they attained that happy period in which we have just contemplated them, when they begin to decline till they perhaps fall back into a state nearly as low as that from which we suppose them to have emerged. Instances of this unhappy degeneracy occur more than once in the history of mankind; and we may finish this short sketch of the history of society by mentioning in what manner this degeneracy takes place. Perhaps, strictly speaking, every thing but the simple necessaries of life may be denominated luxury. For a long time, however the welfare of society is best promoted, while its members aspire after something more than the mere necessaries of life. As long as these superfluities are to be obtained only by active and honest exertions; as long as they only engage the leisure hours, without becoming the chief objects of pursuit—the employment which they give to the faculties is favourable both to the virtue and the happiness of the human race.

The period arrives, however, when luxury is no longer serviceable to the interests of nations: when she is no longer a graceful, elegant, active, form, but a languid, overgrown, and bloated, carcase. It is the love of luxury, which contributed so much to the civilization of society, that now brings on its decline. Arts are cultivated and improved, and commerce extended, till enormous opulence be acquired: the effect of opulence is to awake the fancy, to conceive ideas of new and capricious wants, and to inflame the breast with new desires. Here we have the origin of that selfishness which, operating in conjunction with caprice and the violence of unbridled passions, contributes so much to the corruption of virtuous manners. Selfishness, caprice, indolence, effeminacy, all join to loosen the bonds of soci-

ety, to bring on the degeneracy both of the useful and the fine arts, to banish at once the mild and the austere virtues, to destroy civil order and subordination, and to introduce in their rooms anarchy or despotism.

Scarcely could we have found an example of the beautiful form of society which we last attempted to describe. Never, at least, has any nation continued long to enjoy such happy circumstances, or to display so amiable and respectable a character. But, when we speak of the declining state of society, we have no difficulty in finding instances to which we may refer. History tells of the Assyrians, the Egyptians, and the Persians, all of them once flourishing nations, but brought low by luxury and an unhappy corruption of manners. The Greeks, the Romans, and the Arabians, owed their fall to the same causes; and we know not if a similar fate does not now threaten many of those nations who have long made a distinguished figure in the system of Europe. The Portuguese, the Venetians, and the Spaniards, have already fallen; and what is the present state of our neighbours the French? They have long been a people destitute of religion, corrupted in morals, unsteady in conduct, and slaves to pleasure and public amusements. Among them luxury had arrived at its highest pitch; and the consequence has been, that, after capriciously shaking off the yoke of despotism, they have established, or rather set up (for established it cannot be), a motley kind of government, which, in the course of a few years, has exhibited scenes of tyranny and oppression, to which we doubt if the annals of the world can furnish any parallel. Yet this is the people whose manners the other nations of Europe were ambitious to imitate. May those nations take warning in time, and avoid the rocks upon which they and others have split.

On SPECTRES.

A BELIEF that supernatural beings sometimes make themselves visible, and that the dead sometimes revisit the living, has prevailed among most nations, especially in the rudest stages of society. It was common among the Jews, among the Greeks, and among the Romans, as we find from the Scriptures, and from the poems of Homer and Virgil. Celestial appearances were indeed so often exhibited to the Jews, that the origin of their belief is not difficult to be explained.—The Divine Being manifested himself to each of the patriarchs by some sensible sign, generally by a flame of fire, as he did to Moses. Under this semblance also did he appear to the Israelites during their abode in the desert, and after they obtained a settlement in the land of Canaan. Nor did they believe that heavenly beings alone assumed a sensible appearance:—they believed that deceased men also sometimes revisited this world. When Saul went to consult the witch at Endor, he asked her to bring up the person whom he should name unto her; a proof that he considered his demand as easy to be performed, and therefore that he probably acted under the influence of popular opinion. The same opinions had been generally entertained at a much earlier period; for necromancy and witchcraft, the arts by which the dead were supposed to be raised, had been prohibited while the Israelites were in the wilderness, and yet untainted with the vices of the Canaanites. They must

therefore

therefore have derived them from Egypt, the cradle of superstition, as well as of the arts and sciences.

Among the Greeks and Romans, the apparition of spectres was generally believed. On innumerable occasions the gods are said to have discovered themselves to the eyes of mortals, to have held conferences, and to have interposed their aid. The ghosts of the dead, too, are said to have appeared. When Æneas, amidst the distraction and confusion of his mind in flying from the destruction of Troy, had lost his wife by the way, he returned in search of her. Her shade appeared to him (for she herself had been slain) with the same aspect as before, but her figure was large. She endeavoured to assuage the grief of her unhappy husband, by ascribing her death to the appointment of the gods, and by foretelling the illustrious honours which yet awaited him. But, when Æneas attempted to clasp her in his arms, the phantom immediately vanished into air. From this story we may observe, that the ancients believed that the umbræ, or shades, retained nearly the same appearance after death as before; that they had so far the resemblance of a body as to be visible; that they could think and speak as formerly, but could not be touched. This description applies equally well to those shades which had passed the river Styx, and taken up their residence in the infernal regions. Such were the shades of Dido, of Deiphobus, and all those which Æneas met with in his journey through the subterraneous world.

It appears from the writings of modern travellers who have visited rude and savage nations, that the belief of spectres is no less common among them. Mr. Bruce tells us, that the priest of the Nile affirmed, that he had more than once seen the spirit of the river in the form of an old man with a white beard. Among the Mahometans the doctrine of spectres seems to be reduced to a regular system, by the accounts which they give of genii. Whoever has read the Arabian Nights Entertainments must have furnished his memory with a thousand instances of this kind. Their opinions concerning genii seem to be a corrupted mixture of the doctrines of the Jews and ancient Persians. In Christian countries, too, notwithstanding the additional light which their religion has spread, and the great improvement in the sciences to which it has been subservient, the belief of ghosts and apparitions is very general, especially among the lower ranks. They believe that evil spirits sometimes make their appearance in order to terrify wicked men, especially those who have committed murder.—They suppose that the spirits of dead men assume a corporeal appearance, hover about church-yards and the houses of the deceased, or haunt the places where murders have been committed. In some places it is even believed that beings have been seen bearing a perfect resemblance to men alive.

So general has the belief of spectres been, that this circumstance alone may be thought by some sufficient to prove that it must have its foundation in human nature, or must rest upon rational evidence. When any doctrine has been universally received by all nations, by generations living several thousand years from one another, and by people in all the different stages of society, there is certainly the strongest presumption to conclude that such a doctrine has its foundation in reason and truth. In this way we argue in favour of the existence of a God, concerning moral distinction, and the doctrine of a

future

future ſtate: and certainly ſo far we argue well. But if the ſame argument be applied to idolatry, to ſacrifices, or to apparitions, we ſhall find that it is applied improperly. Idolatry was very general among ancient nations; ſo was the offering of ſacrifices, ſo was polytheiſm: but they were by no means univerſal. Should we allow, for the ſake of ſhortening the argument, that all ancient nations were polytheiſts and idolaters, and preſented oblations to their imaginary deities, all that could be concluded from this conceſſion is, that they fell into theſe miſtakes from their ignorance and from the rude ſtate of ſociety, from which their imperfect knowledge of theology and moral philoſophy was never able to reſcue them. Theſe erroneous notions fled before the brightneſs of the Chriſtian ſyſtem; while the doctrines of the exiſtence of God, of moral diſtinction, and of a future ſtate, have been more thoroughly confirmed and aſcertained. The ſame thing may be ſaid of the belief of ſpectres. However generally it has been adopted in the firſt ſtages of ſociety, or by civilized nations who had made but little progreſs in the ſtudy of divine things, it has been rejected, we may ſay invariably, wherever theology and philoſophy have gone hand in hand.

Many apparitions of ſpectres have no other origin than the artifices of the waggiſh or ſelf-intereſted. Dr. Plot, in his Natural Hiſtory of Oxfordſhire, relates a marvellous ſtory, which will illuſtrate this aſſertion. Soon after the murder of King Charles I. a commiſſion was appointed to ſurvey the king's houſe at Woodſtock, with the manor, park, woods, and other demeſnes to that manor belonging; and one Collins, under a feigned name, hired himſelf as ſecretary to the commiſſioners, who, upon the 13th of October 1649, met, and took up their reſidence in the king's own rooms. His majeſty's bed-chamber they made their kitchen, the council-hall their pantry, and the preſence-chamber was the place where they ſat for the diſpatch of buſineſs. His majeſty's dining-room they made their wood-houſe, and ſtored it with the wood of the famous royal-oak from the High Park, which, that nothing might be left with the name of the king about it, they had dug up by the roots, and ſplit and bundled up into faggots for their firing. Things being thus prepared, they ſat on the 16th of the ſame month for the diſpatch of buſineſs; and in the midſt of their firſt debate there entered a large black dog, (as they thought,) which made a dreadful howling, overturned two or three of their chairs, and then crept under a bed and vaniſhed. This gave them the greater ſurpriſe, as the doors were kept conſtantly locked, ſo that no real dog could get in or out. The next day their ſurpriſe was increaſed, when, ſitting at dinner in a lower room, they heard plainly the noiſe of perſons walking over their heads, though they well knew the doors were all locked, and there could be nobody there. Preſently after they heard alſo all the wood of the king's oak brought by parcels from the dining-room, and thrown with great violence into the preſence-chamber; as alſo all the chairs, ſtools, tables, and other furniture, forcibly hurled about the room; their papers, containing the minutes of their tranſactions, were torn, and the ink-glaſs broken. When all this noiſe had ceaſed, Giles Sharp, their ſecretary, propoſed to enter firſt into theſe rooms; and in preſence of the commiſſioners, from whom he received the key, he opened the doors, and found the wood ſpread about the room, the chairs toſſed about and broken, the papers torn, the ink-glaſs broken,

broken, (as has been said,) but not the least track of any human creature, nor the least reason to suspect one, as the doors were all fast, and the keys in the custody of the commissioners. It was therefore unanimously agreed, that the power who did this mischief must have entered the room at the key-hole. The night following, Sharp the secretary, with two of the commissioners servants, as they were in bed in the same room, which room was contiguous to that where the commissioners lay, had their bed's feet lifted up so much higher than their heads, that they expected to have their necks broken, and then they were let fall at once with so much violence as shook the whole house, and more than ever terrified the commissioners. On the night of the 19th, as all were in bed in the same room for greater safety, and lights burning by them, the candles in an instant went out with a sulphureous smell, and that moment many trenchers of wood were hurled about the room, which next morning were found to be the same their honours had eaten on the day before, which were all removed from the pantry, though not a lock was found opened in the whole house. The next night they still fared worse; the candles were out as before, the curtains of their honours beds were rattled to and fro with great violence; their honours received many cruel blows and bruises, by eight great pewter-dishes and a number of wooden trenchers being thrown on their beds, which being heaved off, were heard rolling about the room, though in the morning none of these were to be seen. This night likewise they were alarmed with the tumbling down of oaken billets about their beds, and other frightful noises; but all was clear in the morning, as if no such thing had happened. This night the keeper of the king's house and his dog lay in the commissioners room, and then they had no disturbance. But on the night of 22d, though the dog lay in the room as before, yet the candles went out, a number of brick-bats fell from the chimney into the room, the dog howled piteously, their bed clothes were all stripped off, and their terror increased. On the 24th they thought all the wood of the king's oak was violently thrown down by their bed-sides; they counted sixty-four billets that fell, and some hit and shook the beds in which they lay; but in the morning none were found there, nor had the door been opened where the billet-wood was kept. The next night the candles were put out, the curtains rattled, and a dreadful crack like thunder was heard; and one of the servants running in haste, thinking his master was killed, found three dozen of trenchers laid smoothly under the quilt by him. But all this was nothing to what succeeded afterwards.—The 29th, about midnight, the candles went out, something walked majestically through the room, and opened and shut the windows; great stones were thrown violently into the room, some of which fell on the beds, others on the floor; and at about a quarter after one a noise was heard as of forty cannon discharged together, and again repeated at about eight minutes distance. This alarmed and raised all the neighbourhood, who, coming into their honours room, gathered up the great stones, fourscore in number, and laid them by in the corner of a field, where, in Dr. Plot's time, who reports this story, they were to be seen. This noise, like the discharge of cannon, was heard through all the country for sixteen miles round. During these noises, which were heard in both rooms together, the commissioners and their servants gave one another over for lost, and cried

cried out for help; and Giles Sharp, ſnatching up a ſword, had well nigh killed one of their honours, miſtaking him for the ſpirit, as he came in his ſhirt from his own room to theirs. While they were together, the noiſe was continued, and part of the tiling of the houſe was ſtript off, and all the windows of an upper room were taken away with it. On the 30th at midnight ſomething walked into the chamber treading like a bear; it walked many times about, then threw the warming-pan violently on the floor; at the ſame time a large quantity of broken glaſs, accompanied with great ſtones and horſes bones, came pouring into the room with uncommon force. Theſe were all found in the morning, to the aſtoniſhment and terror of the commiſſioners, who were yet determined to go on with their buſineſs. But on the firſt of November the moſt dreadful ſcene of all enſued:—Candles *in every part of the room were lighted up*, and a great fire made; at midnight, the candles all yet burning, a noiſe like the burſting of a cannon was heard in the room, and the burning billets were toſſed about by it even into their honours beds; who called Giles and his companions to their relief, otherwiſe the houſe had been burnt to the ground; about an hour after the candles went out as uſual, the crack as of many cannon was heard, and many pailfuls of green ſtinking water were thrown upon their honours beds; great ſtones were alſo thrown in as before, the bed-curtains and bedſteads torn and broken, the windows ſhattered, and the whole neighbourhood alarmed with the moſt dreadful noiſes; nay, the very rabbit-ſtealers that were abroad that night in the warren were ſo terrified, that they fled for fear and left their ferrets behind them. One of their honours this night ſpoke, and, *in the name of God, aſked what it was, and why it diſturbed them ſo?* No anſwer was given to this; but the noiſe ceaſed for a while, when the ſpirit came again; and, as they all agreed, *brought with it ſeven devils worſe than itſelf*. One of the ſervants now lighted a large candle, and ſet it in the door-way between the two chambers, to ſee what paſſed; and, as he watched it, he plainly ſaw a hoof ſtriking the candle and candle-ſtick into the middle of the room, and afterwards, making three ſcrapes over the ſnuff, ſcraped it out. Upon this the ſame perſon was ſo bold as to draw a ſword; but he had ſcarcely got it out when he felt another inviſible hand holding it too, and pulling it from him; and at length prevailing, ſtruck him ſo violently on the head with the pummel, that he fell down for dead with the blow. At this inſtant was heard another burſt like the diſcharge of the broad-ſide of a ſhip of war, and at about a minute or two's diſtance each no leſs than nineteen more ſuch: theſe ſhook the houſe ſo violently, that they expected every moment it would fall upon their heads. The neighbours, on this, as has been ſaid, being all alarmed, flocked to the houſe in great numbers, and all joined in prayer and pſalm-ſinging; during which the noiſe ſtill continued in the other rooms, and the diſcharge of cannons was heard as from without, though no viſible agent was ſeen to diſcharge them. But what was the moſt alarming of all, and put an end to their proceedings effectually, happened the next day as they were all at dinner, when a paper, in which they had ſigned a mutual agreement to reſerve a part of the premiſes out of the general ſurvey, and afterwards to ſhare it equally amongſt themſelves, (which paper they had hid for the preſent under the earth in a pot in one corner of the room, and in which an

orange-tree grew,) was consumed in a wonderful manner, by the earth's taking fire with which the pot was filled, and burning violently with a blue fume, and an intolerable stench; so that they were all driven out of the house, to which they could never be again prevailed upon to return.

This wonderful contrivance was all the invention of the memorable Joseph Collins of Oxford, otherwise called Funny Joe, who having hired himself as secretary, under the name of Giles Sharp, by knowing the private traps belonging to the house, and the help of *pulvis fulminans* and other chemical preparations, and letting his fellow-servants into the scheme, carried on the deceit without discovery to the very last; insomuch that the late Dr. Plot, in his Natural History, relates the whole for fact, and concludes in this grave manner: "That, though tricks have been often played in affairs of this kind, many of the things above related are not reconcileable with juggling; such as the loud noises, beyond the power of man to make without such instruments as were not there; the tearing and breaking the beds; the throwing about the fire; the hoof treading out the candle; and the striving for the sword, and the blow the man received from the pummel of it."

DIRECTIONS FOR THE CULTURE OF EARLY CUCUMBERS.

IN the culture of early cucumbers, that is such as are in perfection during the months of March and April, where there is not a conveniency of stoves for raising the seedling plants, it is proper to have three hot-beds: the first small with a single-light frame, for a seed-bed, in which the plants are to remain only a few days: the second, a large single-light or a two-light frame, for a nursery-bed, in which the plants are to continue pricked out into pots, till they have formed one joint, and the two first rough leaves are from two to three inches broad, which will be in three weeks or a month: the third, a two-light or three-light frame, or frames, in proportion to the quantity that is wanted, for the fruiting hot-bed, into which the plants are finally to be turned out of the pots, with good balls of earth about their roots. If your first frame be large enough, or a great number of plants be not wanting; the seeds may be raised, and the plants pricked out, and brought forward for the fruiting-bed in this, without the second, by means of occasional linings of dung: and if you have a stove, the first bed may be dispensed with.

The principal circumstances to be attended to in this stage of the business are, to make the hot-beds on the surface, or rather above the surface, if your ground be wet; and not to dig a trench for them, as is often practised: in order that the bottom of the bed may not be chilled by standing water, and that the whole of it may receive the full benefit of the linings of dung. To make the seedling bed two feet and a half high; and the second three feet and a half, or if the dung be long four feet high. As soon as the bed is made, to set on the frame; keeping the glass down for a day or two to draw up the heat, and then letting out the steam by setting up the glass behind. In six, eight, or ten, days, when the heat begins to abate, to earth the bed five or six inches thick, and whilst the earth is warm to sow the seeds in drills, or in small pots; raising the light an inch or two behind in the day, and covering it at night with a

mat. The beſt ſorts for early crops are, the early ſhort or long prickly cucumber; the ſeeds ſhould be ſaved from the earlieſt fruit, and ſhould be three or four years old. When the ſeedling plants are come up, and the ſeed-leaves are about half an inch in breadth, prick them out in ſmall pots, filled within an inch of the top with your compoſt earth, and ſet in the frame a day to warm; ſet four plants in each pot, covering them almoſt to the leaves, and watering them gently from bottles ſet a few hours in the frame to take off the cold. Continue to raiſe the lights every day, and ſometimes in the night during the great heat and ſteaming of the bed; in cold weather letting a mat hang looſely over the aperture. When the heat is moderate, the glaſſes ſhould be raiſed only from nine or ten in the morning to three or four in the afternoon, according to the ſeaſon; ſhutting them cloſe before ſun-ſet; and covering them with one, two, or three, mats, in proportion to the ſeaſon and the warmth of the bed; obſerving not to let the mats hang over the ſides of the bed, and taking them off about eight in the morning. Some perſons put a layer of hay between the mats in ſevere weather. Water the plants moderately once in three, four, five, or ſix, days, according to the dryneſs of the earth in the pots, the heat of the bed, or the ſtate of the weather, between eleven and two o'clock; preferring ſun-ſhine for this purpoſe, and having the water ſoft and warm from 65° to 85° of the thermometer, or feeling neither hot nor cold when taken into the mouth. Earth up the young plants in the pots gradually with mould warmed in the frame, till the pots are full. Keep up the heat in the bed as regular as you can from 70° to 80°, by firſt laying dry ſtraw, fern, &c. round the ſides, in about a week: and in a fortnight or three weeks by giving the back and front a lining of hot dung eighteen inches wide at bottom, contracting gradually to the top, where it ſhould be covered with earth two inches deep to keep down the ſteam: and in ten days or a fortnight after, lining the ſides, if the heat ſhould decline: guarding on theſe occaſions againſt burning, by raiſing the pots, ſetting up the glaſſes, &c. Some perſons for this purpoſe pour water on the dung; but, if too much be poured in, it chills the bed, and if too little, it increaſes the burning.

One of the moſt important operations in this ſtage of the buſineſs is the pruning or ſtopping the young plants. This is done to promote lateral ſhoots, which are the fruitful ones, and is particularly uſeful in this caſe, where the deſirable point is to procure fruit as early as poſſible. The end of the runner ſhould be taken off almoſt cloſe to the baſe of the ſecond leaf; and the operation is beſt performed when the end of the ſhoot is not bigger than a large pin's head.

The plants being thus prepared, in three weeks or a month, when the two or three firſt leaves are between two and three inches broad, they are fit to be finally tranſplanted into the fruiting beds, which the gardeners call ridging out. The beds muſt be got ready for this a week or ten days at leaſt before, and, where there are ſeveral frames, near a fortnight, in order to have them of a proper temperature for receiving the mould and plants. The height of the beds ſhould be four feet, or three feet and a half at leaſt. As ſoon as they are finiſhed, the frames ſhould be ſet on, and the lights raiſed to give vent to the ſteam as the heat riſes. A long ſtick or two ſhould alſo be thruſt into the bed to judge of its temperature; and it muſt not be moulded till you can bear your finger on the ſticks for ſome

time together. You must be careful however not to stay too long, for a brisk heat is required to bring the young plants forward at first.

Make a hillock of mould in the middle of each light ten or twelve inches high, which will require near a bushel of earth; cover the rest of the bed three inches thick with the same mould; and, if you are fearful of the bed's burning, under each hill spread a layer of cow-dung, not too wet, eighteen inches or two feet in width, and an inch and half in thickness. Having finished this, close the glasses, and the next day the bed will be fit for the reception of the plants.

Early in the morning let the pots containing the plants to be ridged out be watered, that the earth may adhere firmly to their roots. One pot being destined for each hill, shake the plants out, disturbing them at little as possible; and, having made a sufficient hole in the middle of the hillock, place the plants with the ball of earth about them in it, drawing the mould close round and about an inch over them; if the mould be dry, give them a little water that is not cold, and shut the glasses close. If the leaves flag much, shade the lights three or four days with a thin mat in the middle of the day.

Air must now be admitted daily by raising the lights behind, from half an inch to two or three inches high, according to the weather and the state of the bed; hanging a mat loosely over the aperture when the weather is severe. Wet foggy weather however is more to be feared than frost with sun-shine. At this early season, namely the beginning of February, it is sometimes dangerous to admit air very freely, and yet the lights cannot be kept close on account of the noxious steam: in this case the introduction of warm air, by means of pipes opening into the frames and communicating with the open air through the bed, might be of considerable service, and has been practised with great success. The heat of the beds may also be regulated by thermometers, especially where the person who manages them has not had long experience in the conduct of hot-beds. It is of great importance to have them kept nearly in the same temperature; and cucumbers at this early season require almost the same heat with the pine-stove.

Mats must be put over the glasses at sun-set, or sooner if the weather be cloudy; and must be taken off in the morning, soon after sun-rise, or somewhat later in cold cloudy weather. A single mat will be sufficient at first; but as the heat of the beds declines, especially if the weather be severe, two or three mats may be laid on, with hay between them if there should be occasion; remembering not to let them hang much over the sides of the frame.

During the first fortnight examine carefully the state of the hot-bed every day, lest the heat should become too violent and burn the young plants; the most certain indications of this are, the sickly hue of the plants themselves, and a whitish mouldy appearance at the bottom of the hillocks. This must be taken away before it reaches the roots of the plants, and a quantity of fresh earth put in its place. If the heat continues too violent, more of the burnt mould must be removed, plenty of air must be given to the plants if possible, and holes must be made in the sides of the bed, by large stakes thrust into the dung in different places. Some persons pour water into the dung, to assuage the burning heat of the bed.

As soon as this danger is over, earth or mould the whole beds at different times to the depth of eight or ten inches; laying the mould

for a day or two against the sides and ends of the frames, to acquire due degree of warmth.

Water moderately once in a week or ten days, or, if the weather be warm, twice in that time; and, as the season advances, still oftener. The best time is between ten and two o'clock. Let the chill be taken off the water; give it between the vines, except in very fine weather, when it may be sprinkled moderately all over the leaves; but, if the sun should shine hot, throw a mat over the glasses for an hour or two. Whenever you water, shut down the lights for half an hour or an hour after.

Train the plants by pruning or stopping. In ten days or a fortnight after the first stopping, the plants will put forth two or three lateral shoots or runners; when these are advanced two or three joints in length without shewing fruit, stop each runner at the third joint, to promote their putting out fruitful shoots. As the runners advance, train them regularly at equal distances, pegging them down occasionally.

When the plants shew fruit, which may be expected in three or four weeks, if it have not appeared sooner from the first or second joint, be particularly attentive to keep up a regular heat in the beds; having previously laid dry litter or fern round them, then give them proper linings of dung. As soon as the heat is considerably abated, line the back of the bed directly a foot and a half wide; in a week after line the front; and in ten or twelve days after that, shake up the first lining, adding a little fresh dung to it, and doing the same by the second lining: always laying two or three inches of earth on the top of the dung, which should be six inches higher than the bed, to allow for settling.

In setting the fruit, the male blossom should be applied to the female on the day it opens, or the day after. It is the custom with some to whelm the former over the latter, and to leave it there; but it is better to apply the anthers to the middle of the stigmas when they are in a proper state to discharge the pollen, and then to throw the male blossom away, unless males are scarce, which sometimes happens early in the year, and then one may be used to impregnate two or three females. Observe not to wet the flowers at this period, for that prevents the impregnation of the fruit.

It now remains only to cut off the weak, long-jointed, barren, shoots, and to thin out the weakest and most straggling runners, so as to be able to train the main vine and principal bearing side-runners in a regular manner: to clear away worn-out runners and decayed leaves, and to thin the clusters of male blossoms where they are too large, and to pick them off as they decay: as the season advances, to shade the glasses with a single mat occasionally on scorching days; to give them more air by setting up the glasses higher in front as well as behind; to water them from one to four times a week, according to the heat of the weather; and when the plants are grown so large as to press against the lights, and so crowded as to shade the fruit too much, to cut out some of the leaves, to raise the frame three or four inches, and finally, in the middle of June, if the weather be settled, to raise the frames so high, that the vines may be trained under them, along the sides of the bed, covering them with mats at night for the first week; and thus leaving them till some time in July, when the frames may be taken off, and the plants will

will want no more protection, except in heavy rains, and at night when the weather is not quite propitious.

In this early frame-culture of cucumbers, it is necessary to remember, not to depend wholly upon the first sowing, but to continue to sow a little seed occasionally, pricking the plants out so as to have them of two or three different growths, to supply the place of such plants as do not thrive, or may be cut off by the severity of the season, burning, steaming, &c. and, if they are not wanting for these purposes, they will be ready for the second frame-crop. Two crops cultivated in this manner will furnish a succession of fruit till those which are under hand and bell glasses come in, and these will be succeeded by those in the open ground; by which means there will be a constant supply of fruit from February or March to the middle or end of September.

Early cucumbers are in general much esteemed in private families, and are a valuable article for the market-gardeners, for in March they often fetch thirty shillings a dozen, and in April from ten to fifteen shillings a dozen is a common price. After this time the price falls every week till August, when those in the natural ground come in, a dozen of which will sometimes scarcely fetch a penny. The quantity of these sold for eating and pickling is prodigious; in the summer of 1794, above ten thousand bushels were disposed of in one week from the village of Sandy in Bedfordshire; the gardeners of which supply the towns and villages fifty miles round with that and the other produce of their gardens.

The culture under hand-glasses and in the open ground being less difficult, and having been before sufficiently discussed, is not insisted upon here.

Such persons as are not contented with having cucumbers from February or March to September, may have them at Christmas or soon after by sowing in October, and treating them in the manner above directed. Those in the open ground may be continued through October and part of November, by placing frames over some of the best holes, and protecting them with lights during the night and in wet weather. The succession may also be continued by sowing the middle of July, and treating them in the same manner; or by sowing the end of July, and transplanting into a slender hot-bed towards the end of August. Or by sowing in a slight hot-bed at the end of August, and transplanting into another about the middle of September.

By these means may a succession of cucumbers be kept up during the latter autumnal and winter months, from the time that those in the open ground go off, till the return of such as are raised by the early frame-culture in March. But these crops cannot be expected to succeed like the others, nor in general will they produce any thing more than a few fruit rather for curiosity than use.

Cucumbers may also be produced in hot-houses or pine-stoves at any time in the winter or very early in the spring, with less trouble than in hot-beds, but not with the same certainty of a crop. For this purpose the seeds may be sown in October, and from that time every fortnight during winter, in small pots of rich earth plunged in the bark-pit, and at two or three days old pricked out into other pots, which must be also plunged into the bark-bed. Having treated

treated the plants like those for ridging out in the early frame-culture, when they are ready to put out runners, transplant them into large pots, or rather into boxes three feet long, a foot wide at top, nine inches at bottom, and ten inches deep. Plunge them half way in the bark-bed; or set them on the top of the flues; elevating them ten or twelve inches; or place them by means of brackets twelve or fifteen inches below the top glasses, a little behind the back walk of the stove; putting laths for the vines to run upon, as they advance in length.

Cuttings of cucumbers taken off five or six inches long from healthy plants in the summer crops, at the end of September or the beginning of October, planted in pots of rich mould, plunged into the bark-bed and shaded till they have struck, will produce fruit before Christmas. By this method, or by laying, plants may be kept on from year to year.

After all that can be said, in many points much will depend upon the experience, attention, and sagacity, of the gardener himself.

Two centuries since (1597,) in the infant state of gardening in this country, Gerarde gives directions for making a hot-bed, whereon cucumbers, &c. may be raised. It was to be made in the middle of April or somewhat sooner, of stable-dung, an ell in breadth and depth; it was to be covered with hoops and poles, for glasses were not then known; and at night mats, old painted cloth, or straw, were to be thrown over it: the bed was to be covered with rich earth finely sifted half a foot thick: in this the seeds were to be sown; and the covering, being put on, was to remain seven or eight days without being taken off: the plants being then come up were to be watered in the middle of the day with water that had stood in the house or in the sun; the covering was to be put on every night and taken off every day: and when the plants had four or six leaves, and the danger of cold nights was past, they were to be replanted very curiously with the earth sticking to them as near as may be, unto the most fruitful place, and where the sun hath most force in the garden; covering them with dock-leaves or wisps of straw, propped up with forked sticks, to keep them from the cold of the night and the heat of the sun.

Parkinson also, in 1629, gives directions for making a hot-bed of dung in the same manner for melons; and mentions the covering them with bell-glasses.

The first account we find of raising cucumbers in autumn to bring fruit about Christmas, is by Mr. Thomas Fowler, gardener to Sir Nathanael Gould, at Stoke Newington. He presented the king with a brace of well-grown cucumbers on New Year's day 1721. The seeds were sown on the 25th of September.

This subject, so largely treated, of raising cucumbers on hot-beds of dung, seems as little capable of ornament as any; and yet Cowper in the third book of his Task, at the same time that he has described the process with great accuracy, has scattered over it some of the sweetest flowers of poesy:

> Grudge not, ye rich, (since luxury must have
> His dainties, and the world's more num'rous half
> Lives by contriving delicates for you,)
> Grudge not the cost. Ye little know the cares,

The

The vigilance, the labour, and the skill,
That day and night are exercis'd, and hang
Upon the ticklish balance of suspense,
That ye may garnish your profuse regales
With summer fruits brought forth by wintry suns.
Ten thousand dangers lie in wait to thwart
The process. Heat and cold, and wind and steam,
Moisture and drought, mice, worms, and swarming flies,
Minute as dust, and numberless, oft work
Dire disappointment that admits no cure,
And which no care can obviate. It were long,
Too long, to tell th' expedients and the shifts
Which he that fights a season so severe
Devises, while he guards his tender trust,
And oft, at last, in vain. The learn'd and wise
Sarcastic would exclaim, and judge the song
Cold as its theme, and, like its theme, the fruit
Of too much labour, worthless when produc'd.

DESCRIPTION OF THE ISLE OF ANGLESEY.

ANGLESEY is the most western county of North Wales. It is twenty-four miles in length, eighteen in breadth, and sends one member to parliament. It is separated from Caernarvonshire by a strait called *Menai*, and on every other side is surrounded by the sea. It is a fertile spot, and abounds in corn, cattle, flesh, fish, and fowls. At Port Aethwy, the most general ferry into the island, there is a great passage of cattle. It is computed that the island sends forth annually from 12,000 to 15,000 heads, and multitudes of sheep and hogs. It is also computed that the remaining stock of cattle is 30,000. In 1770, upwards of 90,000 bushels of corn were exported, exclusive of wheat. The improvement in husbandry has greatly increased since the suppression of smuggling from the Isle of Man; before that time every farmer was mounted on some high promontory, expecting the vessels with illicit trade; but, since that period, he applies in earnest to industry and cultivation. Not but that the island was in most remote time famous for its fertility: Mon, Mam Gymry, the Nursing-mother of Wales, was a title it assumed even in the 12th century.

This island is divided into seventy-four parishes, of which most of the churches are situated near the shores. By an account given on the 13th of August, 1563, there were 2010 households, or families, in Anglesey; allowing five to a family, the whole number of inhabitants in that period was 10,050. In 1776, the number of houses in Anglesey was about 3,956: allowing five persons to a family, the whole number of inhabitants was at that time 19,780; which wants only 340 of doubling the number of inhabitants in the intervening space. The chief town is Beaumaris.

In ancient times this island was called, *Mon*, *Mona*, or *Moneg*. It was the great nursery of the religion of the Druids; being the residence of the Grand Druid, or chief pontiff, and consequently of all the learned doctors in that religion. Many ancient monuments of Druidism still remain in the island. At Tre'r Dryw, or the habitation of the arch druid, are several mutilated remains, which have

have been described by Mr. Rowlands. His *Bryn Gwyn*, or royal tribunal, is a circular hollow of 180 feet in diameter, surrounded by an immense agger of earth and stones, evidently brought from some other place, as there is not the least mark of their being taken from the spot. It has only a single entrance. This is supposed to have been the grand consistory of the druidical administration. Not far from it was one of the *Gorseddau*, now in a manner dispersed, but which once consisted of a great copped heap of stones, on which sat a druid, instructing the surrounding people *multa de Deorum immortalium vi et potestate disputare, et juventuti tradunt.* Cæs. lib. vi. Here were also the relics of a circle of stones, with the *cromlech* in the midst; but all extremely imperfect. Two of the stones are very large; one, which serves at present as part of the end of a house, is twelve feet seven inches high, and eight feet broad; and another eleven feet high, and twenty-three feet in girth. Some smaller stones yet remain. This circle, when complete, was one of the temples of the druids, in which their religious rites were performed. It is the conjecture of Mr. Rowlands, that the whole of these remains were surrounded with a circle of oaks, and formed a deep and sacred grove: *Jam per se roborum elegunt lucos, neque ulla sacra sine ea fronde conficiunt.* Plin. Hist. Nat. xv. 44. Near this is *Caer Leb*, or the moated entrenchment; of a square form, with a double rampart, and broad ditch intervening, and a smaller on the outside. Within are foundations of circular and of square buildings. This Mr. Rowland supposes to have been the residence of the arch druid, and to have given the name, *Tre'r Dryw*, to the township in which it stands. At Trew-Wry are several faint traces of circles of stones, and other vestiges of buildings; but all so dilapidated, or hid in weeds, as to become almost formless. *Bod-drudan*, or the habitation of the druids, *Tre'r-Bierdd*, or that of the bard, and *Bodowyr*, or that of the priests, are all of them hamlets, nearly surrounding the seat of the chief druid, composing the essential part of his suite. At the last is a thick cromlech, resting on three stones.

The shore near Porthamel, not far from hence, is famed for being the place where Suetonius landed, and put an end in this island to the druid reign. His infantry passed over in flat-bottom boats, perhaps at the spot still called *Pant yr Yscraphie*, or the valley of *skiffs*. His cavalry crossed partly by fording, partly by swimming. Of the conflict on this occasion we have the following animated description by Tacitus: *Stat pro littore diversa acies, densa armis virisque, intercursantibus fœminis in modum furiarum, veste ferali, crinibus dejectis, faces, preferebant*; druidæque *circum, preces diras sublatis ad cœlum manibus fundentes. Novitate aspectus percutere militem, ut quasi hærentibus membris, immobile corpus vulneribus præberent. Dein cohortionibus ducis, et se ipse stimulantes, ne muliebre et fanaticum agmen pavescerent, inferunt signa, sternuntque obvios et igni suo involvunt. Præsidium posthac impositum vicis, excisque luci, sævis superstitionibus sacri. Nam cruore captivo adolere aras, et hominum fibris consulere deos fas habebant.* Thus Englished: "On the shore stood a motley army in close array, and well armed; with women running wildly about in black attire with dishevelled hair, and like the furies brandishing their torches; surrounded by the druids, lifting up their hands to heaven, and pouring forth the most dreadful imprecations. The soldier stood astonished with the novelty of the sight. His limbs grew torpid, and his body remaining motionless

tionless resigned to every wound. At length, animated by their leader, and rouzing one another not to be intimidated with a womanly and fanatic band, they displayed their ensigns, overthrew all who opposed them, and flung them into their own fires. After the battle, they placed garrisons in the towns, and cut down the groves consecrated to the most horrible superstitions: for the Britons held it right to sacrifice on their altars with the blood of their enemies, and to consult the gods by the inspection of their entrails." There are no traces of any Roman works left in this country. Their stay was so short, that they had not time to form any thing permanent.

Near the ferry of Moelly Don appear the fine woods of Sir Nicholas Bayley, skirting the Menai for a considerable way. The wooded part of the island is on this side. It commences at Llanidan, and recals the ancient British name of Anglesey, *Ynys Dywyll*, or the Dark Island, on account of the deep shade of its groves: but at present it is (except in this part) entirely divested of trees; and the climate so averse to their growth, that in most parts it is with great difficulty the gentry can raise a plantation round their houses. Plas Newydd, the seat of Sir Nicholas Bayley, lies close upon the water, protected on three sides by venerable oaks and ashes. The view up and down this magnificent river-like strait is extremely fine. The shores are rocky; those on the opposite side covered with woods; and beyond soar a long range of Snowdonian alps. Here stood a house built by Gwenllian, a descendant of Cadrod Hardd. The mansion has been improved, and altered to a castellated form by the present owner.

In the woods are some very remarkable druidical antiquities. Behind the house are to be seen two vast cromlechs. The upper stone of one is twelve feet seven inches long, twelve broad and four thick, supported by five tall stones. The other is but barely separated from the first: is almost a square, of five feet and a half, and supported by four stones. The number of supporters to cromlechs are merely accidental, and depend on the size or form of the incumbent stone. These are the most magnificent we have, and the highest from the ground; for a middle-sized horse may easily pass under the largest. In the lands of Llugwy, indeed, there is a most stupendous one of a rhomboidal form. The greatest diagonal is seventeen feet and a half, the smaller fifteen, and the thickness three feet nine inches; but its height from the ground is only two feet: it was supported by several stones. The Welsh, who ascribe every thing stupendous to our famous British king, call it *Arthur's Quoit*. In the woods at this place are some druidical circles nearly contiguous to each other.

At a small distance from Beaumaris, on the shore, stand the remains of Llanvaes, or the Friers. It was founded by Prince Llewelyn ap Jerwerth, and according to the general tradition of the country, over the grave of his wife Joan, daughter to king John, who died in 1237, and was interred on the spot. Here also were interred a son of a Danish king, Lord Clifford, and many barons and knights who fell in the Welsh wars. It was dedicated to St. Francis, and consecrated by Howell bishop of Bangor a prelate who died in 1240. The religious were Franciscans, or minor friars. Their church and house were destroyed, and their lands wasted, in the insurrection made soon after the death of Llewelyn, last Welsh prince, by his relation Madoc. Edward II. in consideration of their misfortunes, remitted to them the payment of the taxes due to him, which before the war were levied at

the rate of 12l. 10s. These friars were strong favourers of Owen Glendwr. Henry IV. in his first march against Owen, plundered the convent, put several of the friars to the sword, and carried away the rest; but afterwards set them at liberty, made restitution to the place, but peopled it with English recluses. It possibly was again reduced to ruin: for Henry V. by patent, establishes here eight friars, but directs that two only should be Welsh. At the dissolution Henry VIII. sold the convent and its possessions to one of his courtiers. They became in later days the property of a family of the name of *White* (now extinct), who built here a good mansion. It of late became the property of Lord Bulkeley. The church is turned into a barn, and the coffin of the Princess Joan now serves for a watering-trough. A little farther is Castle Aber Llienawg, a small square fort, with the remains of a little round tower at each corner. In the middle one stood a square tower. A foss surrounds the whole. A hollow way is carried quite to the shore, and at its extremity is a large mound of earth, designed to cover the landing. This castle was founded by Hugh Lupus earl of Chester, and Hugh the Red earl of Shrewsbury, in 1098, when they made an invasion, and commited more savage barbarities on the natives, especially on one Kenred a priest, than ever stained the annals of any country. Providence sent Magnus king of Norway to revenge the cruelties. His coming was to all appearance casual. He offered to land, but was opposed by the earls. Magnus stood in the prow of his ship, and, calling to him a most expert bowmen, they at once directed their arrows at the Earl of Shrewsbury, who stood all armed on the shore. An arrow pierced his brain through one of his eyes, the only defenceless part. The victor, seeing him spring up in the agonies of death, insultingly cried out in his own language, *Leit loupe*, "Let him dance." This fort was garrisoned so lately as the time of Charles I. when it was kept for the parliament by Sir Thomas Cheadle; but was taken by Colonel Robinson in 1645.

Above Llanddona is a high hill, called *Bwrdd Arthur*; the true name was probably *Din* or *Dinas Sulwy*: for a church immediately beneath bears that of *Llanvihangle Din-Sulwy*. On the top of it is a great British post, surrounded by a double row of rude stones with their sharp points uppermost; and in some parts the ramparts are formed of small stones. In the area are vestiges of oval buildings: the largest is formed with two rows of flat stones set on end. These had been the temporary habitations of the possessors. It had been a place of vast strength; for, besides the artificial defence, the hill slopes steeply on all sides, and the brink next to the ramparts is mostly precipitous. It is worth the attention of the traveller to ascend this hill for the sake of the vast prospect; an intermixture of sea, rock, and alps, most elegantly great.

About two miles south of Plas Gwyn, the seat of Paul Panton, Esq. was situated Penmynydd, once the residence of the ancestors of Owen Tudor, second husband to Catherine of France, queen dowager of Henry V. "who, beyng (as honest Halle informs us) young and lustye, folowyng more her own appetyte than frendely consaill, and regardyng more her private affection than her open honour, toke to husband privily (in 1428) a goodly gentylman, and a beautiful person, garniged with many godlye gyftes both of nature and of grace, called *Owen Teuther*, a man brought forth and come of the noble lignage and auncient lyne of Cadwaladar, the last kynge of the Britonnes."

The

The match, important in its consequences, restored the British race of princes to this kingdom. These reigned long, under the title of the House of Tudor; the mixed race having ceased on the accession of Henry VII. grandson to our illustrious countryman. The remains of the residence of the Tudors are, the door of the gateway; part of the house, and the great chimney-piece of the hall, are to be seen in the present farm-house. The Tudors, for a considerable space before the extinction of their race, assumed the name of *Owen*. Richard was the last male of the family, and was sheriff of the county in 1657. Margaret, heiress of the house, married Coningsby Williams, Esq. of Glan y gors, in this island, who possessed it during his life. It was afterwards sold to Lord Bulkeley, in whose descendant it still continues. In the church of Penmynnyd is a most magnificent monument of white alabaster, removed at the dissolution from the abbey of Llanvaes to this place; probably erected in memory of one of the house of Tudor, who had been interred there.

On the western point of the bay is a small cape, flat at top, called *Castell mawr*, joined to the land by a low isthmus. It is composed of lime-stone, which is carried to distant parts in small vessels, which lie in a small channel near the rock, and by their numbers frequently enliven the view. Roman coins have been found in this neighbourhood; but there are no vestiges of there having been any station. Beyond Castell mawr, on the shore, are vast blocks of black marble filled with shells, corolloids, and fungitæ.

At Tryselwyn mountain is the most considerable body of copper-ore perhaps ever known. The part of Tryselwyn which contains it is called *Parys mountain*. Of this mountain, and the works there carried on, we have the following very curious and interesting account by Mr. Pennant: "The external aspect of the hill is extremely rude, and rises into enormous rocks of coarse white quartz. The ore is lodged in a bason, or hollow, and has on one side a small lake, on whose waters, distasteful as those of Avernus, no bird is known to alight. The whole aspect of this tract has, by the mineral operations, assumed a most savage appearance. Suffocating fumes of the burning heaps of copper arise in all parts, and extend their baneful influence for miles around. In the adjacent parts vegetation is nearly destroyed: even the mosses and lichens of the rocks have perished; and nothing seems capable of resisting the fumes but the purple melic grass, which flourishes in abundance. It is thought that the ore had been worked in a very distant period. Vestiges of the ancient operations appear in several parts, carried on by trenching, and by heating the rocks intensely, then suddenly pouring on water, so as to cause them to crack or scale; thus aukwardly supplying the use of gunpowder. Pieces of charcoal were also found, which proves that wood was made use of for that purpose. As the Britons imported all works in brass, it is certain that the Romans were the undertakers of these mines; and it is very probable that they sent the ore to Caerhên to be smelted, the place were the famous cake of copper was discovered. They might likewise have had a smelting hearth in this island; for a round cake of copper was discovered at Llanvaethlle, a few miles from this place. Its weight was fifty pounds, and it had on it a mark resembling an *L*.

"In the year 1762, Alexander Frazier came into Anglesy in search of mines. He visited Parys mountain; called on Sir Nicholas Bayley, and gave him so flattering an account of the prospect, as induced

him to make a trial, and sink shafts. Ore was discovered; but, before any quantity could be gotten, the mines were overpowered with water. In about two years after, Messrs. Roe and Co. of Macclesfield, applied to Sir Nicholas for a lease of Penrhyn ddu mine in Caernarvonshire; with which they were, much against their wills, compelled to take a lease of part of this mountain, and to carry on a level, and make a fair trial, The trial was accordingly made; ore was discovered; but the expences overbalanced the profits. They continued working to great loss; and at length determined to give the affair up. They gave their agent orders for that purpose; but he, as a final attempt, divided his men into ten several companies, of three or four in a partnership, and let them sink shafts in various places, about 800 yards eastwards of a place called the *Golden Venture*, on a presumption that a spring, which issued from near the place, must come from a body of mineral. His conjecture was right; for in less than two days they met with, at the depth of seven feet from the surface, the solid mineral, which proved to be that vast body which has since been worked to such advantage. The day that this discovery was made was March 2, 1768: which has ever since been observed as a festival by the miners. Soon after this discovery, another adventure was begun by the Rev. Mr. Edward Hughes, owner of part of the mountain, in right of his wife Mary Lewis, of Llys Dulas; so that the whole of the treasure is the property of Sir Nicholas Bayley and himself. The body of copper-ore is of unknown extent. The thickness has been ascertained in some places by the driving of a level under it, several years ago, and it was found to be in some places twenty-four yards. The ore is mostly of the kind called by Cronsted *Pyrites cupri flavo viridescens*, and contains vast quantities of sulphur. There are other species of copper-ore found here. Of late a vein of the *Pyrites cupri griseus* of Cronsted, about seven yards wide, has been discovered near the west end of the mountain: some is of an iron grey, some quite black; the first contains 16lb. of copper per cwt. the last forty. An ore has been lately found, in form of loose earth, of a dark purplish colour; and the best of it has produced better than eight in twenty. Some years ago, above thirty pounds of native copper was found in driving a level through a turbery; some was in form of moss, some in very thin leaves.

"It is quarried out of the bed in vast masses; is broken into small pieces; and the most pure part is sold raw, at the rate of about 3l. to 6l. per ton, or sent to the smelting-houses of the respective companies to be melted into metal. The more impure ore is also broken to about the size of hens eggs; but, in order to clear it from the quantity of sulphur with which it abounds, as well as other adventitious matter, it must undergo the operation of burning. For that purpose it is placed between two parallel walls of vast length; some kilns are twenty, others forty and fifty, yards in length; some ten, others twenty, feet wide; and above four feet in height. The space between is not only filled, but the ore is piled many feet higher, in a convex form, from end to end. The whole is then covered with flat stones, closely luted with clay; and above is placed a general integument of clay, and small rubbish of the work, in order to prevent any of the fumes from evaporating. Of late, some kilns have been constructed with brick arches over the ore, which is found to be the best method of burning. Within these few years, attempts are made to preserve the

the sulphur from flying away; and that is done by flues made of brick, whose tops are in form of a Gothic arch, many scores of feet in length. One end of these opens into the beds of copper which are to be burnt. Those beds are set on fire by a very small quantity of coal, for all the rest is affected by its own phlogiston. The volatile part is confined, and directed to the flues; in its course the sulphureous particles strike against their roofs, and fall to the bottom in form of the finest brimstone; which is collected and carried to adjacent houses, where it is melted into what is called in the shops *stone brimstone*.

"The beds of copper, thus piled for burning, are of vast extent. Some contain 400 tons of ore, others 2000. The first require four months to be completely burnt, the last near ten. Thus burnt, it is carried to proper places to be dressed, or washed, and made merchantable. By this process the ore is reduced to a fourth part in quantity, but considerably improved in quality: and by this means the water is strongly or richly impregnated with copper, which is dissolved by the acid quality of the sulphur; and is collected or precipitated again by iron in the above described pits. The iron is all dissolved.

"But a far richer produce of copper is discovered from the water lodged in the bottom of the bed of ore, which is highly saturated with the precious metal. This is drawn up, either by means of whimsies or windmills, to the surface, and then distributed into numbers of rectangular pits thirty-six feet long, some pits more some less, twelve to fifteen feet broad, and twenty inches deep. To speak in the language of the adept, Venus must make an assignation with Mars, or this solution will have no effect. In plain English, a quantity of iron must be immersed in the water. The kind of iron is of no moment; old pots, hoops, anchors, or any refuse, will suffice; but of late, for the convenience of management, the adventurers procure new plates four feet long, one and a half broad, and three-quarters of an inch thick. These they immerse into the pits. The particles of copper instantly are precipitated by the iron, and the iron is gradually dissolved into a yellow ochre. Great part of it floats off by the water, and sinks to the bottom. The plates, or the old iron (as it happens), are frequently taken out, and the copper scraped off; and this is repeated till the whole of the iron is consumed. The copper thus procured differs little from native copper, and is prized accordingly, and sold for prices of 25l. to 45l. is a ton. The discovery is far from new: it has been practised long in the Wicklow mines in Ireland; and above a century in those of Hern-grundt in Hungary, where it is called *ziment copper*. The waters of the Hungarian mines are much more strongly impregnated with copper than those of Parys mountain. The first effects its operation in twelve or about twenty days, the last requires two months. Horse-shoes, iron made in the shape of hearts, and other forms, are put into the foreign waters; and, when perfectly transmuted, are given as presents to curious strangers.

"Nature has been profuse in bestowing her mineral favours on this spot: for above the copper-ore, and not more than three quarters of a yard beneath the common soil, is a bed of yellowish greasy clay, from one to four yards thick, containing lead-ore, and yielding from 600 to 1000 pounds weight of lead from one ton; and one ton of the metal yields not less than fifty-seven ounces of silver. This place has been worked for lead-ore in very distant times. In the bottom of the pool was found an ancient smelting-hearth of grit-stone, and several bits of

ſmelted lead, of about four inches in length, two in breadth, and half an inch thick. Theſe works have added greatly to the population of the iſland; for about 1500 perſons are employed; who, with their families, are ſuppoſed to make near 8000 perſons, getting their bread from theſe mines."

Near Kemlyn Bay is a quarry of marble, common to this place, ſome parts of Italy, and to Corſica, and known in the ſhops by the name of *Verde di Corſica*. Its colours are green, black, white, and dull purple, irregularly diſpoſed. In different blocks one or other of the colours are frequently wanting; but among the green parts are often found narrow veins of a moſt elegant and ſilky white aſbeſtos. It is a compound ſpecies of marble: part is calcareous, and may be acted upon by aqua-fortis. The green parts partake of the nature of jaſper. It is apt to be interſected by ſmall cracks, or by aſbeſtine veins, therefore capable of taking a high poliſh. This quarry lies on the lands of Monachty, in the pariſh of Llan-Fair-Ynghornwy; and it is found again in the iſle of Skerries, off this pariſh. In Rhoſcolyn pariſh, a green amianthus, or brittle aſbeſtos, is met with in great plenty in a green marble ſimilar to the above; but, by reaſon of the inflexible quality of its fibres, not applicable to the ſame uſe.

Of ANIMAL FLOWERS.

THE grand argument for animal life in vegetables was originally inferred from the curious conſtruction of the *actinia* genus; viz. the *ſea-anemone*, *ſea ſun-flower*, *freſh-water polypus*, &c. which having indeed the external form and figure of vegetables, with ſcarcely any progreſſive motion, might eaſily deceive ſuperficial obſervers; but, when more minutely examined, the polypus, and all the actinia claſs, turn out to be abſolute animals; the heads or mouths of which, when open, reſemble a full-blown flower, whence they are called *flower-fiſh*. There is one ſpecies of them, which the pureſt white, carmine, and ultramarine, are ſcarcely ſufficient to expreſs their brilliancy. The bodies of ſome of them are hemiſpherical, of others cylindrical, and of others ſhaped like a fig. Their ſubſtance likewiſe differs: ſome are ſtiff and gelatinous, others fleſhy and maſcular; but all of them are capable of altering their figure when they extend their bodies and claws in ſearch of food. They are found on many of the rocky coaſts of the Weſt-India iſlands, and on ſome parts of the coaſt of England. They have only one opening, which is in the centre of the uppermoſt part of the animal; round this are placed rows of fleſhy claws: this opening is the mouth of the animal, and is capable of great extenſion. The animals themſelves, though exceedingly voracious, will bear long faſting. They may be preſerved alive a whole year, or perhaps longer, in a veſſel of ſea-water, without any viſible food; but, when food is preſented, one of them will ſucceſſively devour two muſcles in their ſhells, or even ſwallow a whole crab as large as a hen's egg. In a day or two the crab-ſhell is voided at the mouth, perfectly cleared of all the meat. The muſcle-ſhells are likewiſe diſcharged whole, with the ſhells joined together, but entirely empty, ſo that not the leaſt particle of fiſh is to be perceived on opening them. An anemone of one ſpecies will even ſwallow an individual of another ſpecies; but, after retaining it ten or twelve hours, will throw it up alive and uninjured. Through this opening alſo it produces its young ones alive, already

already furnished with little claws, which, as soon as they fix themselves, they begin to extend in search of food. One of the extremities of the sea-anemone exactly resembles the outward leaves of that flower; while its limbs are not unlike the shag or inner part of it. By the other extremity it fixes itself, as by a sucker, to the rocks or stones lying in the sand; but it is not totally deprived of the power of progressive motion, as it can shift its situation, though very slowly.

A peculiar species of animal-flower, called the *clustered animal-flower*, has been found in some of the West-India islands, an account of which was published in the Philosophical Transactions, vol. 57, by Mr. Ellis in a letter to Lord Hillsborough. This compound animal, which is of a tender fleshy substance, consists of many tubular bodies swelling gently towards the upper part, and ending like a bulb or very small onion. On the top of each is its mouth surrounded by one or two rows of tentacles, or claws, which when contracted look like circles of beads. The lower part of all these bodies has a communication with a firm fleshy wrinkled tube, which sticks fast to the rocks, and sends forth other fleshy tubes, which creep a long them in various directions. These are full of different sizes of these remarkable animals, which rise up irregularly in groups near to one another. This adhering tube, that secures them fast to the rock, or shelly bottom, is worthy of our notice. The knobs are formed into several parts of it by its insinuating itself into the inequalities of the coral rock, or by grasping pieces of shells, part of which still remain in it, with the fleshy substance grown over them. This shews us the instinct of nature, that directs these animals to preserve themselves from the violence of the waves, not unlike the anchoring of muscles, by their fine silken filaments that end in suckers; or rather like the shelly basis of the serpula, or worm-shell, the tree-oyster, and the slipper-barnicle, &c. whose bases conform to the shape of whatever substance they fix themselves to, grasping it fast with their testaceous claws, to withstand the fury of a storm. When we view the inside of this animal dissected lengthwise, we find a little tube leading from the mouth to the stomach, from whence there rise eight wrinkled small guts in a circular order, with a yellowish soft substance in them; these bend over in the form of arches towards the lower part of the bulb, from whence they may be traced downwards, to the narrow part of the upright tube, till they come to the fleshy adhering tube, where some of them may be perceived entering into the papilla, or the beginning of an animal of the like kind, most probably to convey it nourishment until it is provided with claws; the remaining parts of these slender guts are continued on in the fleshy tube, without doubt for the same purpose of producing and supporting more young from the same common parent.

The Abbé Dicquemarre, by many curious, though cruel, experiments, related in the Philosophical Transactions for 1773, has shewn that these animals possess, in a most extraordinary degree, the power of reproduction; so that scarcely any thing more is necessary to produce as many sea-anemones as we please than to cut a single one into as many pieces. A sea-anemone being cut in two by a section through the body, that part, where the limbs and mouth are placed, ate a piece of a muscle offered to it soon after the operation, and continued to feed and grow daily for three months after. The food sometimes passed through the animal; but was generally thrown up again, considerably

siderably changed, as in the perfect sea-anemone. In about two months, two rows of limbs and a mouth were perceived growing out of the part where the incision was made. On offering food to this new mouth, it was laid hold of and eaten; and, the limbs continually increasing, the animal gradually became as perfect as those which had never been cut. In some instances, however, when one of these creatures was cut through, new limbs would be produced from the cut place, those at the mouth remaining as before; so that a monstrous animal was the consequence, having two mouths, and feeding at both ends.

Under a large hollow cliff, in the island of Barbadoes, where the sea flows up, and forms a bason, there is a fixed stone or piece of rock in the middle, which is always under water. Round its sides, at different depths, seldom exceeding eighteen inches, are seen, at all times of the year, issuing out of little holes, certain substances that have the appearance of fine radiated flowers, of a pale yellow, or bright straw colour, slightly tinged with green, having a circular border of thick-set petals, about the size of and much resembling those of a single garden-marigold, except that the whole of the seeming flower is narrower at the discus, or setting on of the leaves, than any flower of that kind. Mr. Hughes, in his History of Barbadoes, gives the following curious account of them: "I have attempted to pluck one of these animal-flowers from the rock, to which they are fixed; but never could effect it: for, as soon as my fingers came within two or three inches of it, it would immediately contract its yellow border, and shrink back into the hole of the rock; but, if left undisturbed for about four minutes, it would come gradually in sight, expanding, though at first very cautiously, its seeming leaves, till at last it appeared in its former bloom. However, it would again recoil, with a surprising quickness, when my hand came within a small distance of it. Having tried the same experiment by attempting to touch it with my cane, and a small slender rod, the effect was the same. But, though I could not by any means contrive to take or pluck one of these animals entire, yet I cut off (with a knife which I had held for a long time out of sight near the mouth of a hole out of which one of these animals appeared) two of these seeming leaves. These, when out of the water, retain their shape and colour; but, being composed of a membrane-like substance, surprisingly thin, they soon shrivelled up, and decayed." The reproductive power of the Barbadoes animal-flower is prodigious. Many people coming to see these strange creatures, and occasioning some inconvenience to a person through whose grounds they were obliged to pass, he resolved to destroy the objects of their curiosity; and, that he might do so more effectually, he caused all the holes out of which they appeared, to be carefully bored and drilled with an iron instrument, so that we cannot suppose but their bodies must have been entirely crushed to a pulp; nevertheless, they again appeared in a few weeks, in still greater abundance, from the very same places.

The sea-carnation, or animal-flower, found among the rocks at Hastings in Sussex, is very similiar to the animal-flower of Barbadoes. This animal adheres by its tail, or sucker, to the under-part of the projecting rocks opposite the town; and, when the tide is out, has the appearance of a long white fig; which is also the form of it when put into a glass of sea-water.

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The fresh-water polypus is also of a similar species, and of a cylindrical figure, but variable, with very long tentacula, or claws. There is scarcely an animal in the world more difficult to describe; it varies its whole form at pleasure, and is frequently found beset with young in such a manner, as to appear ramose and divaricated; these young ones adhering to it in such a manner as to appear parts of its body. When simple, and in a moderate state as to contraction or dilatation, it is oblong, slender, pellucid, and of a pale-reddish colour; its body is somewhat smaller towards the tail, by which it affixes itself to some solid body; and larger towards the other extremity, where it has a large opening, called its mouth, around which are the tentacula, or claws, which are eight in number, and are usually extended to about half the length of its body. By means of these tentacula, or arms, as they are commonly called, expanded into a circle of more than half a foot diameter, the creature feels every thing that can serve it for food; and, seizing the prey with one of them, calls in the assistance of the others, if necessary, to conduct it to its mouth. The production of its young is different from the common course of nature in other animals; for the young one issues from the side of its parent in the form of a small pimple, which, lengthening every hour, becomes, in about two days, a perfect animal, and drops from off its parent to shift for itself: but what is still more surprising, is the reproduction of its several parts when cut off; for, when cut into a number of separate pieces, it becomes in a day or two so many distinct and separate animals; each piece having the property of producing a head and tail, and the other organs necessary for life, and all the animal functions.

There is no distinguished place in the body of the polypus, from whence the young are brought forth; for they spring out like shoots or branches of a tree, from all the exterior parts of their bodies. They are always to be found in clear slowly-running waters, adhering by the tail to sticks, stones, and water-plants, and live on small insects. What were originally taken for feet, have since been called its horns, and of late more properly its arms, their office being to catch its prey. With these little arms, which are capable of great extension, it seizes minute worms, and various kinds of water-insects, and brings them to its mouth; and, like the sea-anemone, often swallows bodies larger than itself; having a surprising property of extending its mouth wider, in proportion, than any other animal. After its food is digested in its stomach, it returns the remains of the animals upon which it feeds through its mouth again, having no other observable emunctory. In a few days there appear small knobs or papillæ on its sides: as these increase in length, little fibres are seen rising out of the circumference of their heads, as in the parent animal; which fibres they soon begin to use, for the purpose of procuring nourishment, &c. When these are arrived at mature size, they send out other young ones on their sides in the same manner; so that the animal branches out into a numerous offspring, growing out of one common parent. Each of these provides nourishment not only for itself, but for the whole society; an increase of the bulk of one polype by its feeding, tending to an increase in the rest. Thus a polype of the fresh-water kind becomes like a plant branched out, or composed of many bodies, each of which has this singular characteristic, that, if one of them be cut in

two in the middle, the separated part becomes a complete animal, and soon adhering to some fixed base, like the parent from which it was separated, produces a circle of arms; a mouth is formed in the centre; it increases in bulk, emits a numerous progeny, and is soon, in every respect, as perfect an animal as that from which it was severed.

REMAINS OF A LARGE FOREST NEAR LIVERPOOL.

THERE is a great curiosity in the neighbourhood of Liverpool, which, though daily seen by numbers of persons, never excited the least enquiry or investigation before it was remarked by Mr. Holt, of Walton. It is the remains of a large forest, six miles northward of Liverpool, upon the shore, near Crosby-point, extending, at present, upwards of a mile towards Formby. What might have been its original extent, either in that or in any other direction, seems at present impossible to ascertain; but it is wonderful to remark, that vestiges of it are visible, dipping westwardly even into the sea, which, doubtless, from the changes made in a series of years, covers great part of the land on which a considerable portion of it grew. Upon a shore where there are frequent wrecks, and pieces of ship-timber frequently thrown up, it is probable, from the similarity of appearances, that this forest has not been often noticed with much distinction from such wrecks of the sea; but the smallest degree of inquisitive inspection is sufficient to discover, to a certainty, that this was originally a forest, as there are numberless trunks of trees, standing upright some feet above the surface, in the very places where they must have grown, with their prodigious roots extending into the ground in all directions, in their natural positions, though a great part of their branches, by being thrown promiscuously in all directions, exhibit, at the first view, very much the appearance of an ancient shipwreck, or rather of many of them together.

There is a kind of black mossy soil, amongst these trees, of very inconsiderable thickness, under which their roots extend into one of a more sandy nature. The higher land to the east is formed almost entirely of sea-sand, and is sown with ling or bent to secure some form, and to prevent the farther incursions of the sea, which, notwithstanding, seems still to encroach; and, by washing the foundations of the sand-hills, to occasion the almost perpendicular front they exhibit to the west.

Having satisfied the mind of the reality of a forest, a considerable degree of astonishment arises on its being found on a place where it is impossible it should have grown, supposing the adjoining objects to have been in the state they now are. Not that it is impossible for trees to flourish on the sea-coast, experience having proved the contrary; but that they should actually have grown in the sea, between high and low water marks, is utterly so.

As the changes of the circumstances of this forest must have been effected principally, though perhaps not wholly, by the river Mersey and the sea, it seems necessary to direct some attention to those two objects, and the probable alterations made by time.

It does not seem unphilosophical to suppose that rivers are not all equally ancient, and that we are not obliged to refer them to any given point of time, as the flood, or the creation; for, as new springs may issue from the mountains, so may they, in a series of ages,

ages, become the sources of very considerable rivers; but, if this cannot be the fate of every spring, yet it is very probable that it is so of many. In their earlier days, as their channels are small, so must be their openings into the sea, giving little opportunity for those greater devastations which that powerful element is able to cause after it has overcome some temporary obstruction. The imagination can easily look back into times of remote antiquity, and trace the Mersey, or any other river, from a brook, in its several ages and gradations, till it has attained its present maturity and greatness.

Any reference to the etymology of the name of the Mersey serves only to ascertain that it was in being at some assigned period; but whether large or small, navigable or otherwise, must be judged of from other circumstances.

The life of man is too short to observe slow and gradual changes; and therefore we must naturally and properly refer the first existence of large rivers to the earliest ages of the world; but it does not hence follow that great changes may not have been made at their junction with the ocean at a much later period, and that such changes, when begun, may not have advanced with great rapidity.

Whoever will survey that part of the chart of the Irish sea now called the Liverpool channel, which comprehends the openings or mouths of the Dee and Mersey, and the adjoining shores, will not find it very difficult to suppose, from the violence of the north-west sea upon this angular and pent-up situation, that what now forms the banks of Burbo and Hoyle may have been land attached to the peninsula of Cheshire, and the eastern banks attached in like manner to Crosby and Formby, with the river Mersey quietly running through them, in a narrow inconsiderable stream, until such time as the sea, having once gained an accidental advantage, must have laid the foundation for that large expanse of water before and above the town of Liverpool, which, though bearing the name of a river, is in reality a portion of the sea. The like, it is probable, happened to the Dee; for, if we go a very few miles only up either of these apparently-great rivers, we shall not find streams that shall satisfactorily of themselves account for such bodies of water; and, this is in some sort confirmed by the successful labours of the river Dee company, who are daily gaining the ground that the ocean has formerly overwhelmed. The like may probably happen at the mouths of all rivers, but in different degrees both as to extent and time. The Thames and Severn roll gradually widening to the sea, with which they unite in natural and easy forms, indicating neither abruptness nor violence; but not so the Mersey and Dee; which, being alike situated, and the like having apparently happened to both, proves the above conjecture more satisfactorily than if either of them had been considered apart by itself.

We are always reduced to perplexities when we attempt, by force of argument, to prove things that are self-evident; and, were it the business of this paper only to shew that the wood in question has in part suffered from the inundation, or rather incroachment, of the sea, it would be sufficient to direct the curious to view it; but that the banks were formerly land, attached to Cheshire and Lancashire, is an opinion that requires some support, which the situation and present circumstances of this ancient assemblage of large trees considerably afford. This opinion seems farther confirmed by the same

appearance of old trees, now to be seen, in Cheshire, opposite to the banks of Hoyle, which was most probably only a continuation of the same forest; with the Mersey hardly making a visible division of it, perhaps fordable, or not too large for a bridge, and whose union with the sea must have been considerably beyond what it now is. If this opinion should be thought to want still farther confirmation, we need but direct our attention to the fate of the property and estates of Earl Godwin; which, in the course of a few centuries only, have been as wonderfully converted from dry land into those immense sands and banks, the dread of mariners, so well-known by the name of the Godwin Sands.

It would be difficult to ascertain at what period the sea destroyed so considerable a portion of this wood; but, for such parts as were reserved for other modes of destruction, some satisfactory conjectures may be formed, as they were probably existing in a flourishing state about the time of the Roman conquests in Britain.

Before war and bloodshed acquired a rank amongst the arts and sciences, and geometry and chemistry had taught civilized nations how to effect a speedier extermination of the human race, each barbarous nation had a mode of attack and defence peculiar to itself. In the rude ages of Britain, its inhabitants not only found great security from their numerous and almost impenetrable woods, but could greatly annoy their invaders from their ambuscades at favourable junctures; which was found so detrimental to the progress of conquest, that the Romans determined on, and accomplished, the destruction of most of the forests in the island, and particularly such as were in mossy or boggy situations, sometimes by the axe, but generally by fire, and thus secured a quiet possession of Britain for some centuries.

Suetonius Paulinus, at the time he subdued the isle of Anglesey, ordered all the forests to be cut down; and, though historians do not inform us of the extent of the execution of this order; yet it is most probable that it should comprehend not only the immediate object of conquest, but also its neighbourhood; in which Cheshire and the lower parts of Lancashire must certainly be included. This conjecture receives considerable confirmation from the great age of the wood, which is now as black as ebony, which it very much resembles, though evidently oak; as well as from the most unequivocal marks of their destruction being wilful, not only from the apparent labours of the axe, but from the great quantity left to perish where it has been cut down, without applying it to any domestic or useful purpose; from which considerations it is most likely that such part of this great forest as escaped the ravages of the ocean fell a victim to the fury of the Roman conquest. Those devastations were, doubtless, severely felt and deprecated by the then inhabitants of this island; but these seemingly great evils laid the foundation for that general clearance of the country so necessary for the unrestrained progress of agriculture, which has been the blessing of future ages.

Since the times of the Romans another change has taken place, from those great drifts of sand called sand-floods, which are not now so usual as formerly, on account of the regulations made by the legislature respecting bent or star, which seems peculiarly designed by Providence for this beneficial purpose, by giving it a quick and prolific growth, with a firm and binding root; but, what is the

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most remarkable, and secures it best for its destined purpose, is, that it is without nourishment, and no animal is tempted to destroy it.

The eye of Fancy may here be gratified in raising sylvan scenery from the barren sands and watery expanse, and varying and blending it with the sublimity that now prevails amongst the few simple surrounding objects. The philosopher may here feel a depression and melancholy not unpleasing in the survey of the great changes wrought by time, and in the contemplation of his own unimportance, amidst the works of Omnipotence. And here, too, may the rash and presumptuous resort, to learn that a correct decision cannot be made of the good or evil of the day; and that it is best to rest satisfied in the wisdom of the Almighty, and to be assured that what he does, or permits, is intended to operate to the ultimate advantage of the human race.

HISTORY OF THE ANTEDILUVIAN WORLD.

ANTEDILUVIANS is a general name for all mankind who lived before the flood, in which are included the whole of the human race from Adam to Noah, and his family. Moses not having set down the particular time of any transaction before the flood, except only the years of the fathers' age wherein the several descendants of Adam in the line of Seth were begotten, and the length of their several lives; it has been the business of chronologers to endeavour to fix the years of the lives and deaths of those patriarchs, and the distance of time from the creation to the deluge. In this there would be little difficulty were there no varieties in the several copies we now have of Moses's writings; which are, the Hebrew, the Samaritan, and the Greek versions of the Septuagint; but, as these differ very considerably from one another, learned men are much divided in their opinions concerning the chronology of the first ages of the world; some preferring one copy, and some another. Some writers, in order to explain the variations in the lives or ages of the same patriarchs, have added separate chronological tables, shewing in what year of his contemporaries the birth and death of each patriarch happened, according to the computation of each of the three copies alluded to. St. Jerom tells us, that, in his time, there were some copies of the Samaritan Pentateuch which make Methuselah 187 years old at the birth of Lamech, and Lamech 182 at the birth of Noah, just as the Hebrew does. Now, if these numbers be approved as the true original numbers, the interval from the creation to the flood will be 1556 years; differing from the Hebrew computation but 100 years in the age of Jared at the birth of Enoch; and if this last be allowed to be a mistake of the transcriber, by his dropping a number, and writing 62 instead of 162, as has been suspected, the Samaritan will be perfectly reconciled with the Hebrew, and all differences between them will vanish. As to the Septuagint, in the common editions of that version, the age of Methuselah at the birth of Lamech is 167; and consequently the sum of this period, according to them, is no more than 2242. But in this case Methuselah will outlive the flood 14 years; and we may well wonder, with Eusebius, where he was preserved. To obviate this objection, we are told, that, in some copies, Methuselah is said to have lived but 782 (not 802) years after the birth of Lamech, and no more

than 949 in all. But the Alexandrian manuſcript entirely takes away the difficulty, by giving the ſame number in this place with the Hebrew. Pezron is of opinion, that the age of Lamech at the birth of Noah ſhould be but 182, as it is both in the Hebrew and in Joſephus, ſuppoſing, with St. Auſtin, that the preſent number is the error of the ſcribe who firſt copied the original Septuagint manuſcript in Ptolemy's library. So that he computes 2256 years to the flood. And, if this correction be admitted, and one more mentioned alſo by St. Auſtin, viz. that Lamech lived 595 years after the birth of Noah, and not 565, as in the preſent copies, there will then remain no other difference between the Septuagint and the Hebrew than 600 years added to the ages of the ſix patriarchs when they begat their ſons, and Methuſelah will, conformably to the Hebrew and Samaritan, die in the year of the flood. Having premiſed this this chronological view, we ſhall proceed to the hiſtory of that remote period. The antediluvian world was, in all probability, ſtocked with a much greater number of inhabitants than the preſent earth either actually does, or perhaps is capable of containing or ſupplying. This ſeems naturally to follow from the great length of their lives, which exceeding the preſent ſtandard of life in the proportion, at leaſt, of ten to one, the antediluvians muſt accordingly in any long ſpace of time double themſelves, at leaſt in about the tenth part of the time in which mankind do now double themſelves. It has been ſuppoſed that they began to get children as early, and left off as late, in proportion, as men do now; and that the ſeveral children of the ſame father ſucceeded as quickly one after another as they uſually do at this day; and as many generations, which are but ſucceſſive with us, were contemporary before the flood, the number of people living on the earth at once would be by that means ſufficiently increaſed to anſwer any defect which might ariſe from other circumſtances not conſidered. So that, if we make a computation on theſe principles, we ſhall find, that the number of mankind before the deluge would eaſily amount to above one hundred thouſand millions (*even according to the Samaritan chronology*), that is, to twenty times as many as our preſent earth has, in all probability, now upon it, or can well be ſuppoſed capable of maintaining in its preſent conſtitution. With reſpect to the patriarchal hiſtory, and the Moſaic account of the antediluvian world, they are already, it is preſumed, ſo much impreſſed on the reader's mind, by his acquaintance with the Scriptures, that it would be a needleſs and unneceſſary taſk to repeat them here. The Jews and eaſtern nations, however, having recorded many important traditions concerning the antediluvians, which ancient and profane hiſtory contributes to ſupport, it may not be unentertaining, nor unacceptable to the reader, to be informed how exactly theſe accounts agree with thoſe of the ſacred hiſtorian. They are as follow:

After the death of Adam, Seth, with his family, ſeparated themſelves from the profligate race of Cain, and choſe for their habitation the mountain where Adam was buried, the Cainites remaining below, in the plain where Abel was killed; and, according to the tradition, this mountain was ſo high, that the inhabitants could hear the angels ſinging the praiſes of God, and even join them in that ſervice. Here they lived in great purity and ſanctity of manners. Their conſtant employment was praiſing God, from which they

they had few or no avocations; for their only food was the fruits of the trees which grew on the mountain, so that they had no occasion to undergo any servile labours, nor the trouble of sowing and gathering in their harvest. They were utter strangers to envy, injustice, or deceit. Their only oath was "By the blood of Abel;" and they every day went up to the top of the mountain to worship God, and to visit the body of Adam, as a mean of procuring the divine blessing. Here, by contemplation of the heavenly bodies, they laid the foundations of the science of astronomy; and, lest their inventions should be forgotten, or lost before they were publicly known, understanding, from a prediction of Adam's, that there would be a general destruction of all things, once by fire, and once by water, they built two pillars, one of brick, and the other of stone, that, if the brick one happened to be overthrown by the flood or otherwise destroyed, that of stone might remain. This last, Josephus says, was to be seen in his time in the land of Syriad, (thought to be Upper Egypt.) The descendants of Seth continued in the practice of virtue till the 40th year of Jared, when an hundred of them hearing the noise of the music and the riotous mirth of the Cainites below, agreed to go down to them from the holy mountain. On their arrival in the plain, they were immediately captivated by the beauty of the women, who were naked, and with whom they defiled themselves; and this is what is meant by the intermarriage of the sons of God with the daughters of men, mentioned by Moses. The example of these apostate sons of Seth was soon followed by others; and from time to time great numbers continued to descend from the mountain, who in like manner took wives from the abandoned race of Cain. From these marriages sprung the giants (who, however, according to Moses, existed before); and these, being as remarkable for their impiety as for their strength of body, tyrannized in a cruel manner, and polluted the earth with wickedness of every kind. This defection became at last so universal, that none were left in the holy mountain, except Noah, his wife, his three sons and their wives.

Berosus, a Chaldean historian, who flourished in the time of Alexander the Great, enumerates ten kings who reigned in Chaldea before the flood; of whom the first, called Alorus, is supposed to be Adam, and Xisuthrus, the last, to be Noah. This Alorus declared that he held his kingdom by divine right, and that God himself had appointed him to be the pastor of the people. According to this historian, in the first year of the world, there appeared out of the Red Sea, at a place near the confines of Babylon, a certain irrational animal called Oannes. He had his whole body like that of a fish: but beneath his fish's head grew another of a different sort (probably a human one). He had also feet like a man, which proceeded from his fish's tail, and a human voice, the picture of him being preserved ever after. This animal conversed with mankind in the day-time, without eating any thing: he delivered to them the knowledge of letters, sciences, and various arts: he taught them to dwell together in cities, to erect temples, to introduce laws, and instructed them in geometry: he likewise shewed them how to gather seeds and fruits, and imparted to them whatever was necessary and convenient for a civilized life; but after this time there was nothing excellent invented. When the sun set, Oannes retired into the sea, and

and continued there all night. He not only delivered his instructions by word of mouth, but, as our author assures us, wrote of the origin of things, and of political economy. This, or a similar animal, is also mentioned by other authors. Of Alasporus, the second king, nothing remarkable is related. His successor, Amelon, or Amillarus, was of a city called Pantabibla. In his time another animal resembling the former appeared, 2601 years after the beginning of this monarchy. Amelon was succeeded by Metularus; and he by Daonus, all of whom were of the same city. In the time of the latter, four animals of a double form, half man and half fish, made their appearance. Their names were, Euedocus, Eneugamus, Encubulus, and Anementus. Under the next prince, who was likewise of Pantabibla, appeared another animal of the same kind, whose name was Odacon. All these explained more particularly what had been concisely delivered by Oannes.

In the reign of the tenth king, Xisuthrus, happened the great deluge, of which Berosus gives the following account: Cronus, or Saturn, appeared to Xisuthrus in a dream, and warned him, that on the 15th day of the month Dæsius mankind would be destroyed by a flood; and therefore commanded him to write down the original, intermediate state, and end, of all things, and bury the writings under ground in Sippara, the city of the sun; that he should also build a ship, and go into it with his relations and dearest friends, having first furnished it with provisions, and taken into it fowls and four-footed beasts; and that when he had provided every thing, and was asked whither he was sailing, he should answer, *To the gods, to pray for happiness to mankind.* Xisuthrus did not disobey; but built a vessel, whose length was five furlongs, and breadth two furlongs. He put on-board all he was directed; and went into it with his wife, children, and friends. The flood being come, and soon ceasing, Xisuthrus let out certain birds, which finding no food, nor place to rest upon, returned again to the ship. Xisuthrus, after some days, let out the birds again; but they returned to the ship, having their feet daubed with mud: but, when they were let go the third time, they came no more to the ship, whereby Xisuthrus understood that the earth appeared again; and thereupon he made an opening between the planks of the ship, and, seeing that it rested on a certain mountain, he came out with his wife, and his daughter and his pilot: and having worshipped the earth, and raised an altar, and sacrificed to the gods, he and those who went out with him disappeared. They who were left behind in the ship, finding that Xisuthrus and the persons that accompanied him did not return, went out themselves to seek for him, calling him aloud by his name; but Xisuthrus was no more to be seen by them: only a voice came out of the air, which enjoined them, as their duty was, to be religious; and informed them, that on account of his own piety he was gone to dwell with the gods, and that his wife and daughter and pilot were partakers of the same honour. It also directed them to return to Babylon, and that, as the fates had ordained, they should take the writings from Sippara, and communicate them to mankind; and told them that the place where they were was the country of Armenia. When they had heard this, they offered sacrifice to the gods, and unanimously went to Babylon; and, when they came thither, they dug

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up the writings at Sippara, built many cities, raised temples, and rebuilt Babylon.

The Egyptians, who would give place to no nation in point of antiquity, have also a series of kings, who, as is pretended, reigned in Egypt before the flood; and, to be even with the Chaldeans, began their account the very same year that theirs does according to Berosus. There was an ancient chronicle extant among the Egyptians, not many centuries ago, which contained thirty dynasties of princes who ruled in that country, by a series of 113 generations, through an immense space of 36,525 years, during which Egypt was successively governed by three different races; of whom the first were the Auritæ, the second the Mestræi, and the third the Egyptians. But this extravagant number of years Manetho, to whose remains we must chiefly have recourse for the ancient Egyptian history, has not adopted, however in other respects he is supposed to have been led into errors in chronology by this old chronicle, which yet seems to have been a composition since Manetho's time.

The account given by Berosus is manifestly taken from the writings of Moses; but we have another account of the first ages of mankind, in which no mention is made of the flood at all. This is contained in some fragments of a Phœnician author called Sanchoniatho, who is by some said to have been contemporary with Gideon, by others to have lived in the days of King David; while some boldly assert there never was such a person, and that the whole is a fiction of Philo-Biblius, in opposition to the books of Josephus against Apion. Sanchoniatho having delivered his cosmogony, or generation of the other parts of the world, begins his history of mankind with the production of the first pair of mortals, whom Philo, his translator, calls Protogonus and Æon; the latter of whom found out the food which was gathered from trees. Their issue were called Genus and Genea, and dwelt in Phœnicia; but, when the great droughts came, they stretched forth their hands to heaven towards the sun; for him they thought the only God and Lord of heaven, calling him Beelsamen, which in Phœnician is *Lord of heaven*, and in Greek *Zeus*.

Afterwards from Genus, the son of Protogonus and Æon, other mortal issue was begotten, whose names were Phos, Pur, and Phlox; that is, Light, Fire, and Flame. These found out the way of generating fire, by the rubbing of pieces of wood against each other, and taught men the use thereof. They begat sons of vast bulk and height, whose names were given to the mountains on which they seized: so from them were named mount Cassius, Libanus, Antilibanus, and Brathys. Of these last were begotten Memrumus, and Hypsuranius; but they were so named by their mothers, the women of those times, who without shame lay with any man they could light upon. Hypsuranius inhabited Tyre, and he invented the making of huts of reeds and rushes and the papyrus. He also fell into enmity with his brother Usous, who first invented a covering for his body out of the skins of the wild beasts which he could catch. And, when violent tempests of winds and rains came, the boughs in Tyre, being rubbed against each other, took fire, and burnt the wood there. And Usous, having taken a tree, and broke off its boughs, was so bold as to venture upon it into the sea. He also

consecrated two rude stones, or pillars, to fire and wind; and he worshipped them, and poured out to them the blood of such wild beasts as had been caught in hunting. But, when these were dead, those that remained consecrated to them stumps of wood and pillars, worshipping them, and kept anniversary feasts unto them.

Many years after this generation came Agreus and Halicus, the inventors of the arts of hunting and fishing, from whom huntsmen and fishermen are named. Of these were begotten two brothers, the inventors of iron and of the forging thereof: one of these, called Chroysor, the same with Hephestus, or Vulcan, exercised himself in words and charms and divinations; found out the hook, bait, and fishing-line, and boats slightly built; and was the first of all men that sailed. Wherefore he also was worshipped after his death for a god: and they called him Zeus Michius, or Jupiter the engineer; and some say his brothers invented the way of making walls of brick. Afterwards from this generation came two brothers; one of whom was called Technites, or the artist; the other, Gienus Autochthon, i. e. the home-born man of the earth. These found out to mingle stubble, or small twigs, with the brick-earth, and to dry them in the sun, and so made tiling. By these were begotten others; of which one was called Agrus, field; and other Agrouerus, or Agrotes, husbandmen, who had a statue much worshipped, and a temple carried about by one or more yoke of oxen, in Phœnicia, and among those of Byblus he is eminently called the greatest of the gods. These found out how to make courts about men's houses, and fences, and caves or cellars. Husbandmen, and such as use dogs in hunting, derive from these; and they are also called Aletæ and Titans. Of these were begotten Amynus and Magus, who shewed men to constitute villages and flocks. In these men's age there was one Eliun, which imports in Greek Hypsistus, i. e. the most high, and his wife was named Beruth, who dwelt about Byblus: and by him was begot Epigerus, or Autochthon, whom they afterwards called Uranus, i. e. heaven; so that from him that element which is over us, by reason of its excellent beauty, is called Heaven: and he had a sister of the same parents called Ge, the earth; and by reason of her beauty the earth had her name given to it. Hypsistus, the father of these, dying in fight with wild beasts, was consecrated, and his children offered sacrifices and libations to him. But Uranus, taking the kingdom of his father, married his sister Ge, and had by her four sons: Ilus, who is called Cronus, or Saturn; Betylus; Dagon, who is Siton, or the god of corn; and Atlas: but by other wives Uranus had much issue.

As to the customs, policy, and other general circumstances, of the antediluvians, we can only form conjectures. The only thing we know as to their religious rites, is, that they offered sacrifices, and that very early, both of the fruits of the earth, and of animals; but whether the blood and flesh of the animals, or only their milk and wool, were offered, is a disputed point.—Of their arts and sciences, we have not much more knowledge. The antediluvians seem to have spent their time rather in luxury and wantonness, to which the abundant fertility of the first earth invited them, than in discoveries and improvements, which probably they stood much less in need of than their successors. The art of working metals was found out by the last generation of Cain's line; and music; which they

they might be supposed to practise for their pleasure, was not brought to any perfection, if invented, before the same generation. Some authors have supposed astronomy to have been cultivated by the antediluvians, though this is probably owing to a mistake of Josephus. As to their politics and civil constitutions, we have not so much as any circumstances whereon to build conjecture. It is probable, the patriarchal form of government, which certainly was the first, was set aside when tyranny and oppression began to take place, and much sooner among the race of Cain than that of Seth. It seems also, that their communities were but few, and consisted of vastly larger numbers of people than any formed since the flood; or rather, it is a question, whether, after the union of the two great families of Seth and Cain, there were any distinction of civil societies, or diversity of regular governments, at all. It is more likely, that all mankind then made but one great nation, though living in a kind of anarchy, divided into several disorderly associations; which, as it was almost the natural consequence of their having, in all probability, but one common language, so it was a circumstance which greatly contributed to that general corruption which otherwise perhaps could not have so universally overspread the antediluvian world. And for this reason chiefly, as it seems, so soon as the posterity of Noah were sufficiently increased, a plurality of tongues was miraculously introduced at Babel, in order to divide them into distinct societies, and thereby prevent any such total depravation for the future.

Of the condition of the antediluvians, Mr. Whitehurst, in his Inquiry into the Original State and Formation of the Earth, has given us the following picture: "Under a mild and serene sky, and when the spontaneous productions of the earth were more than sufficient *for the calls of nature without art or labour, mankind had no need* of any other protection from the inclemency of the seasons, nor of barns for winter's store, than the benevolent Author of nature had plentifully provided for them. Consequently, in a state of nature like this, there was no temptation to acts of violence, injustice, fraud, &c. every one having plenty and enough, each equally partook of the numerous blessings thus amply provided for him. Power and property being equally diffused, men lived together in perfect peace and harmony, without law, and without fear; therefore it may be truly said of the antediluvians, that they slept away their time in sweet repose on the ever-verdant turf. Such apparently was the state of nature in the first ages of the world, or from the creation to the first convulsion in nature, whereby the world was not only universally deluged, but reduced to a heap of ruins." But this ingenious author, whose Inquiry is not professedly repugnant to revelation, seems here to have lost himself in a pleasing reverie. At least he has forgot to inform us, For what purpose, under such circumstances, he supposes the deluge to have been sent upon the earth? and, How we are to understand the account given by Moses, who represents the antediluvians, not as an innocent race, quietly reposing on the ever-verdant turf, but as a corrupt generation, by whom "the earth was filled with violence?"

One of the most extraordinary circumstances which occurs in the antediluvian history, is the vast length of human lives in those first

ages, in comparison with our own. Few persons now arrive to eighty or an hundred years; whereas, before the flood, they frequently lived to near a thousand: a disproportion almost incredible, though supported by the joint testimonies of sacred and profane writers. Some, to reconcile the matter with probability, have imagined that the ages of those first men might possibly be computed, not by solar years, but months; an expedient which reduces the length of their lives rather to a shorter period than our own. But for this there is not the least foundation; besides the many absurdities that would thence follow, such as their begetting children at about six years of age, as some of them in that case must have done, and the contraction of the whole interval between the creation and the deluge to considerably less than two hundred years, even according to the larger computation of the Septuagint. Again: Josephus, the Jewish historian, and some Christian divines, are of opinion, that before the flood, and some time after, mankind in general did not live to such a remarkable age, but only a few beloved of God, such as the patriarchs mentioned by Moses. They reason in this manner:—Though the historian records the names of some men whose longevity was singular, yet that is no proof that the rest of mankind attained to the same period of life, more than that every man was then of gigantic stature, because he says, *in those days there were giants upon the earth.* Besides, had the whole of the antediluvians lived so very long, and increased in numbers in proportion to their age, before the flood of Noah, the earth could not have contained its inhabitants, even supposing no part of it had been sea. And had animals lived so long, and multiplied in the same manner as they have done afterwards, they would have consumed the whole produce of the globe, and the stronger would have extinguished many species of the weaker. Hence they conclude, that, for wise and good ends, God extended only the lives of the patriarchs, and a few besides, to such extraordinary length.

But most writers maintain the longevity of mankind in general in the early world, not only upon the authority of sacred, but likewise of profane, history. And for such a constitution, the moral reasons are abundantly obvious. When the earth was wholly unpeopled, except by one pair, it was necessary to endow men with a stronger frame, and to allow them a longer continuance upon earth for peopling it with inhabitants. In the infant state of every mechanical art relating to tillage, building, clothing, &c. it would require many years experience to invent proper tools and instruments to ease men of their labour, and by multiplied essays and experiments to bring their inventions to any degree of maturity and perfection. Every part of their work must have been exceedingly arduous from such a penury and coarseness of tools, and must have required longer time and more strength of body than afterwards, when mechanical knowledge was introduced into the world. If parents at this period had not continued long with their children, to have taught them the arts of providing for themselves, and have defended them from the attacks of wild beasts, and from other injuries to which they were exposed, many families would have been totally extinguished. But one of the best and most valuable ends which longevity would answer was, the transmitting of knowledge, particularly

particularly of religious knowledge, to mankind. And thus, before writing was invented, or any such easy and durable mode of conveyance was found out, a very few men served for many generations to instruct their posterity, who would not be at a loss to consult living and authentic records.

The natural causes of this longevity are variously assigned. Some have imputed it to the sobriety of the antediluvians, and the simplicity of their diet; alleging that they had none of those provocations to gluttony which wit and vice have since invented. Temperance might undoubtedly have some effect, but not possibly to such a degree. There have been many temperate and abstemious persons in later ages, who yet seldom have exceeded the usual period. Others have thought that the long lives of those inhabitants of the old world proceeded from the strength of their stamina, or first principles of their bodily constitutions: which might, indeed, be a concurrent, but not the sole and adequate, cause of their longevity; for Shem, who was born before the deluge, and had all the virtue of the antediluvian constitution, fell three hundred years short of the age of his forefathers, because the greater part of his life was passed after the flood. Others have imputed the longevity of the antediluvians to the excellency of their fruits, and some peculiar virtue in the herbs and plants of those days. But to this supposition it has been objected, that, as the earth was cursed immediately after the fall, its productions we may suppose gradually decreased in their virtue and goodness till the flood; and yet we do not see the length of men's lives decreased considerably, if at all, during that interval. Waving this objection, as the import of the curse is variously interpreted, it appears certain that the productions of the earth were at first, and probably continued till after the deluge, of a different nature from what they were in future times. Buffon supposes this difference may have continued gradually to diminish for many ages subsequent to that catastrophe. The surface of the globe (according to his theory) was in the first ages of the world less solid and compact; because, gravity having only acted for a short time, terrestrial bodies had not acquired their present density and consistence. The surface being more loose and moist, its productions would of course be more ductile and capable of extension: their growth, therefore, and even that of the human body, would require a longer time of being completed. The softness and ductility of the bones, muscles, &c. would probably remain for a longer period, because every species of food was more soft and succulent. Hence the full expansion of the human body, or when it was capable of generating, must have required 120 or 130 years; and the duration of life would be in proportion to the time of growth, as is uniformly the case at present: for if we suppose the age of puberty, among the first races of men, to have been 130 years, as they now arrive at that age in fourteen years, the age of the antediluvians will be in exact proportion to that of the present race; since by multiplying these two numbers by seven, for example, the age of the present race will be ninety, and that of the antediluvians will be 910. The period of man's existence, therefore, may have gradually diminished in proportion as the surface of the earth acquired more solidity by the constant action of gravity: and it is probable, that the period from the creation, to the days of David, was sufficient to give the earth all the density it was capable of receiving

ceiving from the influence of gravitation; and consequently that the surface of the earth has ever since remained in the same state, and that the terms of growth in the productions of the earth, as well as the duration of life, have been invariably fixed from that period.

It has been farther supposed, that a principal cause of the longevity under consideration was the wholesome constitution of the antediluvian air, which, after the deluge, became corrupted and unwholesome, breaking, by degrees, the pristine crasis of the body, and shortening men's lives, in a very few ages, to near the present standard. The temperature of the air and seasons before that catastrophe are upon very probable grounds supposed to have been constantly uniform and mild: the burning heats of summer and the severities of winter's cold were not then come forth, but spring and autumn reigned perpetually together: and indeed, the circumstance above all others most conducive to the prolongation of human life in the post-diluvian world appears to be an equal and benign temperature of climate; whence it seems reasonable to refer, that the same cause might have produced the same effect in the antediluvian world.

EULOGY ON TAILS, PARTICULARLY THOSE WORN BY THE HUMAN SPECIES.

THE tail is so distinguished an ornament in brutes, and till very lately in men, that I much wonder it has never been celebrated by any eminent author. This subject, in proper hands, may be turned and twisted a thousand ways, and afford the greatest genius the most ample and beautiful indulgence in all the ebullitions of taste and fancy.

When we contemplate the bushy tail of the fox, the shady umbrella of the squirrel, the gorgeous train of the peacock, the scaly folds of the dragon, or the graceful appendages which hang down from the buttocks of the monkey race, now curling over their heads, now spread on the ground in spiral folds, and now assisting them in their flight from tree to tree, we are apt to repine at our own deficiency, and wonder that Nature, who has been so liberal to other creatures, should have sent the capital of her works into the world so essentially defective. We peevishly ask, Why is the human rump, of all others, the only one unfurnished? It is our highest wisdom to judge in most things with the greatest caution. There is the greatest probability, from the conjectures of tradition, that even this useful embellishment was not originally denied us. In the Golden Age every thing was produced far more perfect than at present. The fruits of the earth were brought to maturity without the least culture. Not only the necessaries, but the elegancies, of life rose spontaneously. The woolly vesture of the sheep was now stained with lovely yellow, now tinged with azure, and now glowed with the Tyrian purple. Science and manufactures were equally superseded. And can it be imagined that man was then as now obliged to have recourse to art for so natural, so becoming, so necessary, a part of his make and attire as a tail? No. The familiarity which appears in these ages to have subsisted between him and his companions of the wood, is a fresh presumption in favour of this supposition. Such an intimacy

could not have been formed, had there been so characteristical a difference between them.

There is even a tradition among the Japanese, that the Genius Lien-tien-chi (who seems to answer to the European Prometheus) gave his man a larger tail than any other creature; but on his complaining he had not the wings of the eagle and the trunk of the elephant, Lien-tien-chi in great anger took away his tail, and gave it to the monkey, who before was but scantily provided. Others say, the great Emperor Xo-ho-chang-fu, cousin to the Moon, in a battle with the Tartars was seized with a sudden panic, and flying through a wood his tail was so entangled in the brakes, that he was obliged to leave it behind him; upon which his courtiers, for courtiers were sycophants in all ages, immediately cut off theirs to lessen their monarch's disgrace, from which time they grew quite out of fashion.

I shall not insist on the rabbinical fable, that man was at first made with a tail, but was afterwards deprived, and woman formed out of it. This has a great deal too much of the air of a fiction, and would better suit the cabalistical researches of a bishop than the simple observations of common sense; and I should moreover be very sorry to bottom my system on an hypothesis so peculiarly disrespectful to the sex.

But without examining the records of remote antiquity, many terms, phrases, and usages, still current in modern times, plainly refer to the reality of some such custom. 'I can make neither head nor tail of it,' is an expression evidently founded in the conviction, that both ends of us are of equal dignity and importance, and that it was originally reckoned as strange to appear without the one as the other. The whole army 'turned tail' and fled, is a mode of speaking common alike to all historians, and which had never wriggled into the politest compositions, if this elegant part of animated life had not formerly belonged to man. I shall only add, that 'cutting off entails,' which appears to us a strange unmeaning term, took its rise from the manner of disinheriting among the ancients. This we may conjecture was literally done in that emblematical period, by cutting off the tail, when a son or next heir proved undutiful, and so, by this very ignominious treatment or ceremony, deprived of his birthright or succession.

This much, I should imagine, may shew the great probability of tails being at first at least natural to us. We all know that North-Britain has of late, under the patronage of a B—, produced very wonderful displays of genius in the literary world. There 'Man' has been turned topsy-turvey and inside out, with as little ceremony as a Billingsgate hawker guts a fish. Hume allows him nothing but brains, Beattie and Co. nothing but feelings, and Kaims with infinite poring and plodding reduces him to a perfect hobby-horse. It was left for the philanthropy and generosity of a Monboddo to restore to his real form all its original parts and appendages, to reprobate the various mutilations his exterior had undergone by the incessant vicissitudes of fashion, to make his hands but feelers to his feet, and embellish his posteriors with a tail. For this learned senator, great and splendid as his legal talents are, has not thought it beneath him to spend much of his time in devising and arranging the proofs of the very fact in question.

But, though this matter should notwithstanding be still problematical to many, it should not prevent us from supplying a defect thus universally

universally acknowledged, as well as we can, by some other means. Nature has not given us the fur of the bear, nor the fleece of the sheep: but we have reason and invention, by which we are able to imitate and surpass the covering of all other animals; and it is fit and proper we should use them.

Of the beauty of tails, little need be said. Why else are the robes of lawyers and lords so voluminous and flowing? Why were the queues of our modern macaronies so bushy and enormous? And why are our ladies of late so fond of increasing the size of their bottoms to the present fashionable magnitude? Nor is their utility less apparent: the tail assists the fox in all his various stratagems, and serves the swallow for a rudder in sailing through the air. The beavers make carts and barrows of it in building their houses, and trowels in their mason work. The Syrian sheep have little carriages made on purpose, on which they drag them about, lest they should be soiled or tarnished in the dirt. To other animals they afford a very cheap, harmless, and convenient, diversion; and I cannot help wishing that our Priestleys and Oswalds, and many such subtle logicians and spinners of cobwebs, or managers of syllogisms, who are eternally bandying among the lunatics of schools and colleges the trite theories of antiquity, had so easy, so simple, so ready, and so pleasing, an amusement for their leisure hours, as a cat enjoys in running after her tail.

There has ever been the strongest propensity in us to supply this fundamental defect in our make, by some artificial expedient. The sweeping trains of the ladies, the bushy fleece of the judges, which falls down half their backs, and the long, strait, taper pig-tail of the beaus, two or three years ago, seem all imitations of different patterns. A tail in Turkey is the highest badge of nobility and distinction. When the Grand Signior considers what shall be done to the man he delights to honour, he makes him a bashaw of one tail; if he be a great favourite, he gives him two tails; but, if his merits are extraordinary indeed, he makes him a bashaw of three tails, which is the highest honour the sultan can confer on a subject. Something like this has taken place at least among our physicians, where the tail of the tye-wig settles precedence, and indicates the merit of the wearer, as they are more or fewer in number. The Turks likewise hang out this as their ensign of war; and, when the black horse's tail is on their standard, their enemies tremble no less than if some comet hung over their heads with omens of ruin and devastation.

And here who can help remarking, that we deprive so noble an animal as the horse of his tail, merely as it would seem to gratify our own envy and jealousy? But perhaps it may not be so easy to emulate the virtues of others, as to reduce them by artifice or stratagem to our own standard; and I never see one of our kind proudly bestriding a docked steed, but I am struck with the improving genius of the species in squaring by their own taste the rude materials around them, as if the Maker of the world sent them hither for the sole purpose of correcting his works!

The various absurdities of our modern substitute for the tail, it may some time or other be the business of the legislature to rectify. Would to heaven both houses of parliament were at present no worse employed! It seems now but seldom their humour to restore any of our ancient privileges. A bill 'for the restitution of tails' can

can hardly be expected till our pockets are as empty as our rumps are bare. It would be no bad ministerial manœuvre, while the crown is so liberal of its favours, to exchange this posterior honour for the petty moiety of our liberty still left us. For this, thanks to the propitious industry of our great financier, and all his various gangs of official extortioners, we are now in a very fair way; then it may be supposed, we shall no longer take our model from the pig but the monkey, whose tail is infinitely more flowing and degagee. Perhaps too they may replace it on its ancient station at the opposite extremity, to serve at once for a contrast and plaything to its rival the head!

The objections to the renewal of the human tail are too frivolous to merit a serious refutation. It has been said, a tail would greatly diminish our military genius, as in a retreat it might afford a handle to the enemy, by which to lay hold of our soldiers. I am aware how much the gentlemen of the army may be startled by this circumstance: and ill would it become me to impede the present fashionable dexterity in getting away from the republican monsieurs; though, had my system taken place before the 27th of July, 1779, Keppel would have escaped a very malicious prosecution, a great naval lord an indubitable blot on his official character, the navy much dissention and disgust, the nation just and lasting offence, and a certain hospital a most ignominious governor; so that, on second thoughts, were all cowards furnished with tails, they would not so eternally, as with us, justle the brave and honourable in their progress and preferment.

I shall have done with remarking, that the present position of the tail is for many reasons apposite enough. There are who consider these excrescences of the head as suckers, which draw the nourishment from the stock, and must be cut off before we can expect any fruit. They say, an head so apt to shoot out into superfluities, seldom produces any thing of more importance, and bring the censure denounced by the church of Rome on those who devote themselves to study, in support of their opinion. But this I look on as a prejudice, and much of a piece with the advice of the monk who directed the amputation of one arm that the other might grow the stronger. I am rather inclined to think, that the soil must be rich, where the young sprouts acquire such an amazing size in so short a time; and have not a doubt but the luxuriance of the outward indicates the fertility of the inward man.—I believe that no animal, except man, would be so mad as to deprive himself of a tail, where nature had given him one, or the materials to make one.

ON THE ART OF SWIMMING.

AS swimming is not natural to man, it is evident that at some period it must have been unknown among the human race. Nevertheless there are no accounts of its origin to be found in the history of any nation; nor are there any nations so barbarous but that the art of swimming is known among them, and that in greater perfection than among civilized people. It is probable, therefore, that the art, though not absolutely natural, will always be acquired by people in a savage state from imitating the brute animals, most of which swim naturally. Indeed so much does this appear to be the case, that very expert swimmers have recommended it to those who wished to learn the art, to keep some frogs in a tub of water constantly beside them,

and to imitate the motions by which they move through that element. —The theory of swimming depends upon one very simple principle; namely, that, if a force is applied to any body, it will always move towards that side where there is the least resistance. Thus, if a person standing in a boat pushes with a pole against the side or any other part of the vessel in which he stands, no motion will ensue; for, as much as he presses in one direction with the pole, just so much does the action of his feet, on which the pressure of the pole must ultimately rest, push the vessel the other way: but if, instead of the side of the vessel, he pushes the pole against the shore, then only one force acts upon it, namely that of the feet; which being resisted only by the fluid water, the boat begins to move from the shore. Now the very same thing takes place in swimming, whether the animal be man, quadruped, bird, or fish. If we consider the matter simply, we may suppose an animal in such a situation that it could not possibly swim: thus, if we cut off the fins and tail of a fish, it will indeed float in consequence of being specifically lighter than the water, but cannot make any progressive motion, or at least but very little, in consequence of wriggling its body; but, if we allow it to keep any of its fins, by striking them against the water in any direction, the body moves the contrary way, just as a boat moves the contrary way to that in which the oars strike the water. It is true, that, as the boat is but partly immerged in the water, the resistance is comparatively less than when a frog or even any other quadruped swims; but a boat could certainly be rowed with oars though it was totally immerged in water, only with less velocity than when it is not. When a man swims, he in like manner strikes the water with his hands, arms, and feet; in consequence of which the body moves in a direction contrary to the stroke. Upon this principle, and on this only, a man may either ascend, descend, or move obliquely, in any possible direction in the water. One would think, indeed, that, as the strength of a man's arms and legs is but small, he could make but very little way by any stroke he could give the water, considering the fluidity of that element. Nevertheless it is incredible what expert swimmers will perform in this way: of which Mr. Forster gives a most remarkable instance in the inhabitants of Otaheite; whose agility, he tells us, was such, that, when a nail was thrown overboard, they would jump after it into the sea, and never fail to catch it before it came to the bottom.

As to the practice of swimming, there are but few directions which can be given. The great obstacle is the natural dread which people have of being drowned; and this it is impossible to overcome by any thing but accustoming ourselves to go into the water. With regard to the real danger of being drowned, it is but little; and on innumerable occasions arises entirely from the terror above-mentioned, as will appear from the following observations by Dr. Franklin.

"1st, That, tho' the legs, arms, and head, of a human body, being solid parts, are specifically somewhat heavier than fresh water, yet the trunk, particularly the upper part, from its hollowness, is so much lighter than water, as that the whole of the body, taken together, is too light to sink wholly under water, but some part will remain above until the lungs become filled with water; which happens from drawing water into them instead of air, when a person in the fright attempts breathing while the mouth and nostrils are under water. 2dly, That the legs and arms are specifically lighter than salt-

water,

water, and will be supported by it; so that a human body would not sink in salt-water though the lungs were filled as above, but from the greater specific gravity of the head. 3dly, That therefore a person throwing himself on his back in salt-water, and extending his arms, may easily lie so as to keep his mouth and nostrils free for breathing; and by a small motion of his hands may prevent turning, if he should perceive any tendency to it. 4thly, That in fresh water, if a man throws himself on his back near the surface, he cannot long continue in that situation, but by a proper action of his hands on the water. If he uses no such action, the legs and lower part of the body will gradually sink till he comes into an upright position; in which he will continue suspended, the hollow of the breast keeping the head uppermost. 5thly, But if in this erect position the head is kept upright above the shoulders, as when we stand on the ground, the immersion will, by the weight of that part of the head that is out of the water, reach above the mouth and nostrils, perhaps a little above the eyes; so that a man cannot long remain suspended in water with his head in that position. 6thly, The body continued suspended as before, and upright, if the head be leaned quite back, so that the face looks upwards, all the back part of the head being then under water, and its weight consequently in a great measure supported by it, the face will remain above water quite free for breathing, will rise an inch higher every inspiration, and sink as much every expiration, but never so low as that the water may come over the mouth. 7thly, If therefore a person unacquainted with swimming, and falling accidentally into the water, could have presence of mind sufficient to avoid struggling and plunging, and to let the body take this natural position, he might continue long safe from drowning, till perhaps help would come; for as to clothes, their additional weight while immersed is very inconsiderable, the water supporting it; though when he comes out of the water, he would find them very heavy indeed."

The method of learning to swim is as follows: The person must walk into water so deep that it will reach to the breast. He is then to lie down gently on the belly, keeping the head and neck perfectly upright, the breast advancing forward, the thorax inflated, and the back bent; then withdrawing the legs from the bottom, and stretching them out, strike the arms forward in unison with the legs. Swimming on the back is somewhat similar to that on the belly; but with this difference, that although the legs are employed to move the body forwards, the arms are generally unemployed, and the progressive motion is derived from the movement of the legs. In diving, a person must close his hands together, and, pressing his chin upon his breast, make an exertion to bend with force forwards. While in that position, he must continue to move with rapidity under the surface; and, whenever he chooses to return to his former situation, he has nothing to do but bend back his head, and he will immediately return to the surface.

It is very common for novices in the art of swimming to make use of corks or bladders to assist in keeping the body above water. Some have utterly condemned the use of these; however, Dr. Franklin allows that they may be of service for supporting the body while one is learning what is called the stroke, or that manner of drawing in and striking out the hands and feet that is necessary to produce progressive

motion. "But (says he) you will be no swimmer till you can place confidence in the power of the water to support you: I would therefore advise the acquiring that confidence in the first place, especially as I have known several who, by a little of the practice necessary for that purpose, have insensibly acquired the stroke, taught as it were by nature.

"The practice I mean is this: Choosing a place where the water deepens gradually, walk coolly into it till it is up to your breast: then turn round your face to the shore, and throw an egg into the water, between you and the shore; it will sink to the bottom, and be easily seen there, if the water is clear. It must lie in the water so deep as that you cannot reach it to take it up but by diving for it. To encourage yourself in order to do this, reflect that your progress will be from deeper to shallower water; and that at any time you may, by bringing your legs under you, and standing on the bottom, raise your head far above the water: then plunge under it with your eyes open, throwing yourself towards the egg, and endeavouring, by the action of your hands and feet against the water, to get forward till within reach of it. In this attempt you will find that the water buoys you up against your inclination; that it is not so easy a thing to sink as you imagined; that you cannot but by active force get down to the egg. Thus you feel the power of the water to support you, and learn to confide in that power; while your endeavours to overcome it, and to reach the egg, teach you the manner of acting on the water with your feet and hands; which action is afterwards used in swimming, to support your head higher above water, or to go forward through it."

As swimming is a healthy exercise and a pleasant amusement, and as a dexterity in it may frequently put it in a man's power to save his own life and the lives of his fellow-creatures, perhaps of his dearest friends, it can neither be useless nor uninteresting to consider a few of the evolutions which a swimmer must be master of, that he may move in any direction without difficulty, without danger, and without being unnecessarily fatigued. There are several different ways of turning one's self in swimming. You may do it in this way: turn the palm of the right hand outwards, extend the arm in the same manner, and make a contrary movement with the left hand and left arm; then, by a gradual motion, incline your head and whole body to the left side, and the evolution will be finished. There is another way which is easier still: bend your head and body towards that side to which you are going to turn. If you wish to turn to the left, incline the thumb and the right hand towards the bottom, bend the fingers of the right hand, stretch it out, and use it for driving away the water sidewise, or, which is the same thing, for pushing yourself the contrary way. At the same time, with your left hand, the fingers being close, push the water behind you, and all at once turn your body and your face to the left, and the manœuvre will be accomplished. If you wish to turn to the right, you must do with your right hand what you did with your left, and with your left what you did with your right. You must be careful when turning yourself never to stretch out your legs, and be sure that the water be so deep that you be in no danger of hurting yourself.

When you are swimming on your belly, and wish to turn on your back, draw your feet in quickly, and throw them before you; stretch out your hands behind you, and keep your body firm and steady.

When

When you wish to turn from swimming on your back, fold your feet at once under your body as if you were throwing them to the bottom, and at the same instant dart your body forwards, that you may fall upon your belly.

In swimming, the eyes ought to be turned towards heaven. This is a most important rule, and to the neglect of it many of the accidents which befal swimmers are owing. For, when they bend their eyes downwards, they insensibly bend their head too, and thus the mouth, being too deep in the water, may admit a quantity of it in breaking; besides, the more the body is stretched, it covers a greater part of the surface of the water, and consequently its specific gravity is less. Any person who will make the experiment will find it impossible to dive while he keeps his head erect and his eyes fixed on the heavens.

An interesting question occurs here, which deserves to be considered. Since the body, when spread upon the surface, can be supported with so little exertion, and frequently without any at all, as in swimming on the back, how comes it to pass that a person when drowned sinks and frequently rises again some time afterwards? The reason is this: in the act of drowning, the lungs are filled with water, and consequently the body, being specifically heavier, sinks. It is well known that the human body contains a great quantity of air: this air is at first compressed by the water; and while this is the case the body remains at the bottom: but, as soon as the air by its elasticity endeavours to disengage itself from the compression, the body is swelled and expanded, becomes specifically lighter than the water, and consequently rises to the top.

The easiest posture in swimming is lying on the back. When you wish to swim in this posture, lay yourself softly on your back, and raise your breast to the surface of the water, keeping your body extended in the same line. Put your hands easily over the upper part of your thighs, and throw out your legs and draw them in alternately, keeping them within two feet of the surface. In this way you may advance in any direction you please. You may perhaps not like having so much of your head under water: there is however no way of swimming so easy, so safe, and so little fatiguing. If you wish to swim with great rapidity, you may use your arms as well as your feet; and you will find this the easiest way of breaking the force of the waves. In swimming on the back, one may advance forward as well as backward. For this purpose the body must be kept straight and extended; the breast inflated, so that the hollow of the back may assume a semicircular form. The hands must recline over the upper parts of the thighs. It is also necessary to raise the legs one after another, and draw them in strongly towards the hams, and then leave them suspended in the water. This way of swimming is not only pleasant, but may serve to rest you when fatigued.

When you are tired of swimming on your back and belly, you may swim on one side. When you wish to do this, sink a little your left side and raise your right; you will immediately find yourself on your left side. Move then your left hand without either raising or sinking it; you have only to stretch it and draw it back, as in a straight line, on the surface of the water. Independent of the pleasure which this kind of motion will give you, you will have the satisfaction of seeing both sides of the river. It is possible to swim on the belly without the

the assistance of the hands. For this purpose you must keep your breast erect; your neck straight, and fix your hands behind your head, or upon your back, while you move forward by employing your feet; this way is not without its advantages. It is an excellent resource when the arms are seized with a cramp, or with any indisposition which makes it painful to exert them. This in some cases may be preferable to swimming on the back; for, while in that attitude, one cannot see before them without turning every instant. If one of your legs be seized with a cramp, take hold of it with the hand opposite to it, and use the other hand and leg to advance or support yourself. A very ancient and graceful mode of swimming is that of swimming with the hands joined. When you wish to put this in practice, join your hands, keeping the thumbs and fingers towards heaven, so that they may appear above the water; then draw them back and push them forwards alternately from your breast. This method of swimming may be useful in several circumstances, but above all, if you are entangled with grass or weeds, your hands will then open a passage for you. As a person may sometimes have occasion to carry something in his hand in swimming, which he is anxious to preserve from the water, he may swim easily with one hand and hold a parcel in the other, as Cæsar swam with his Commentaries at Alexandria; or one may swim with both hands elevated. To perform this well, the swimmer must raise his breast, and keep it as much inflated as he can, at the same time that he supports the arms above the water. It must not be concealed, that this method of swimming is attended with some danger to one who is not dextrous at the art; for if one should imprudently draw in his breast, when his arms are raised, he would immediately sink to the bottom.

Every one knows that when a man plunges into the water, and when he has reached the bottom, he has nothing to do but to give a small stroke with his foot against the ground, in order to rise; but an experienced swimmer, if he misses the ground, has recourse to another expedient, which is very pretty, and which has not been considered with sufficient attention. We suppose him at a considerable depth when he perceives that he cannot reach the bottom. In such a case, he first puts his hands before his face, at the height of his forehead, with the palms turned outwardly; then, holding the fore part of his arm vertically, he makes them move backwards and forwards from right to left; that is to say, these two parts of his arms, having the elbow as a kind of pivot, describe very quickly, both the hands being open, and the fingers joined, two small portions of a circle before the forehead, as if he would make the water retire, which he in fact does; and, from these strokes given to the water, there results an oblique force, one part of which carries the swimmer upwards.

ON SYMPATHY.

SYMPATHY is the quality of being affected by the affection of another; and may subsist either between different persons or bodies, or between different parts of the same body. It is either similar or dissimilar; similar, when the affection or action in the sympathiser is similar to the affection or action in the sympathant; and dissimilar when those are different.—Symphathy, too, is often an imitative faculty, sometimes involuntary, frequently without consciousness;

ness: thus we yawn when we see others yawn, and are made to laugh by the laughing of another. Sympathy, according to Dr. Jackson, relates to the operations of the affections of the mind, to the operations of the imagination, and to the affections of the external senses.

1. The passions and affections of the mind produce in the body different sensations and impressions, and, as sympathies of consciousness, determine in general the spirits to those parts which labour most, or are most apt to be affected. Thus fear and anger determine to the heart; lust to the eyes, &c. joy, pity, wonder, and the like, to the head. The affections of the mind of one person will often work upon the spirits of many. Thus whole companies are sometimes disposed to be sad and melancholy, or merry and jovial, when any one is present much inclined to either of those states of mind; and it has been observed, that old people, who have loved the company of the young and have been conversant continually with them, have generally lived long. But young people must not conclude from this, that the company and conversation of the grave and old will operate upon the living and sensitive principle, through the affections of their mind, and dispose them to be short-lived. On the contrary, by thus improving their understanding, they will be more enabled to fortify their constitution and resist the ravages of youthful indulgence. It may also be further observed, that those tender sympathetic affections which lay hold of the mind, at the representation of theatrical performances, originate from the same principle, while they are to be considered as the surest test of just execution in the actor, and of the expressive language of the author. Indeed all stage-effect depends on sympathy. It has been said, that the passions of the mind are occasionally infectious, particularly some of them. Thus fear and shame are sometimes very suddenly so. We frequently may have occasion to see, that the starting of one will make another ready to start. Again, when one man is out of countenance in company, others will often blush in his behalf. However, the serious passions may surely be so under the controul of reason as to resist infection, whatever may be the case of temporary, muscular, or nervous, attraction.

Dr. Johnson is inclined to think, that a connection between the affections and sensations of the female mind and uterus, is very materially concerned in the process of generation, and probably can alone give efficacy to those actions and impressions subservient to conception, through the sympathizing affections of the mind. But this is a subject of which we know so little, that the speculations of even the most distinguished philosophers respecting it have been nothing but the wild ravings of imagination. With respect to the depravity and force of the imagination in the production of sympathies, they always operate most upon "weak minds and spirits, and therefore most on women, superstitious and fearful persons, sick people, children, and young creatures." "Their effects, however, sometimes fail to appear, because they are encountered and overcome by the mind and spirit before they work any manifest effects." Such effects are obviated upon the same principle which establishes the prevention of bodily disease: for, in infection and contagion from body to body (as, for example, during the plague), the miasma may be received; but, from the strength and good disposition of the body, it is expelled and wrought out before it has had sufficient time to form the disease. "It has been said, and many are of the opinion, that the force of imagination doth often

forward

forward the end proposed. Thus, for instance, it has been put as a question, "Whether a man, when he constantly and strongly believes that such a thing shall be (as that such a one will love him, and the like), helps any thing to the effecting the thing desired?" Certainly not in the manner which has been advanced, namely "by a secret operation on the spirit of another." If he succeeds, it is either because he persevered, or because his perseverance and earnestness (and not any occult operation) makes him at length be attended to. There is not a doubt but the force of imagination often gives energy to our actions. It may, however, unless we are much on our guard, easily draw us aside from reason. It has been the tree which has yielded the fruits of superstition in former times, and which has often fed the human mind with the most extravagant notions of sympathy. Sympathies of this kind, such as the power of charms, and the like, are now pretty generally exploded.

3. The five senses, hearing, tasting, smelling, feeling, and seeing, are conscious of a sympathetic impression from odious objects. "A disagreeable sound will set the teeth on edge, and make all the body shiver. The swallowing of a nauseous medicine will be attended with a shaking of the head and neck. Disagreeable smells produce nearly the same effect, which are less perceived, because there is a remedy at hand by stopping the nose. If you come suddenly out of the sun into the shade, the sense of feeling is disturbed by a chillinefs or shivering of the whole body. And even sudden darkness produces a propensity to shivering. There is a very apparent reason why a sympathy should take place between the eyes. Hence their motions are synchronous. It may be said, that custom and habit dispose the eyes to move one and the same way; "for, when one eye moveth towards the nose, the other eye moveth from the nose. Though the eyes are by nature prone to move in concert, custom will, however, destroy this natural concert, and produce the contrary effect. Thus some people can squint when they will. Dr. Jackson therefore gives this caution to mothers and nurses: "Let them not suffer infants to sit with a candle placed behind them; for both their eyes be disposed to move outwards, as affecting to see the light of the candle; which may bring on the habit of squinting."—It appears as a quality in the senses of seeing and hearing, "that the instrument of each separate sense has a sympathy and similitude to that which giveth the reflection." Thus it has been observed, "that the eye will sympathize with a crystal glass or water, and the ear with caves and such hollow places as are suited to report echo."

Sympathies have been compared to unisons of sound in music. Unisons of sound produce agreeable sympathetic feelings. "All concords and discords of music are (no doubt) sympathies and antipathies of sound. Moreover, "they are said to work as well by report of sound as by motion." The most agreeable as well as odious objects operate in a secondary way, in producing those sympathetic impressions and actions which they commonly give rise to. An increased secretion of saliva often takes place at the sight of a favourite dish; and the running of water from a bottle, or otherwise, will sometimes affect individuals of a particular temperament with an involuntary propensity to void urine.

Many have attempted to account for the remarkable sympathy which takes place between parts of the body seemingly unconnected with

with each other; but as these attempts are merely conjectures, without any solid principles to rest on, we pass them over as the dreams of ingenious men. It would be fortunate for science, if men would confine themselves to those subjects which can be known, and never draw conclusions till they have established principles.

ON THE PAIRING OF BIRDS.

THE instinct of pairing is bestowed on every species of animals to which it is necessary for rearing their young; and on no other species. All wild birds pair; but with a remarkable difference between such as place their nests on trees and such as place them on the ground. The young of the former, being hatched blind, and without feathers, require the nursing care of both parents till they be able to fly. The male feeds his mate on the nest, and cheers her with a song. As soon as the young are hatched, singing yields to a more necessary occupation, that of providing food for a numerous issue; a task that requires both parents.

Eagles and other birds of prey build on trees, or on other inaccessible spots. They not only pair, but continue in pairs all the year round; and the same pair procreates year after year. This at least is the case of eagles: the male and female hunt together, unless during incubation, at which time the female is fed by the male. A greater number than a single pair are never seen in company. Gregarious birds pair, in order probably to prevent discord in a society confined to a narrow space. This is the case particularly of pigeons and rooks. The male and female sit on the eggs alternately, and divide the care of feeding their young.

Partridges, plovers, pheasants, sea-fowl, grouse, and other kinds that place their nests on the ground, have the instinct of pairing; but differ from such as build on trees in the following particular, that, after the female is impregnated, she completes her task without needing any help from the male. Retiring from him, she chooses a safe spot for her nest, where she can find plenty of worms and grass-seed at hand; and her young, as soon as hatched, take foot, and seek food for themselves. The only remaining duty incumbent on the dam is, to lead them to proper places for food, and to call them together when danger impends. Some males, provoked at the desertion of their mates break the eggs if they stumble on them. Eider ducks pair like other birds that place their nests on the ground; and the female finishes her nest with down plucked from her own breast. If the nest be destroyed for the down, which is remarkably warm and elastic, she makes another nest as before. If she is robbed a second time, she makes a third nest; but the male furnishes the down. A lady of spirit observed, that the eider duck may give a lesson to many a married woman, who is more disposed to pluck her husband than herself. The black game never pair: in spring, the cock on an eminence crows, and claps his wings; and all the females within hearing instantly resort to him.

Pairing birds, excepting those of prey, flock together in February, in order to choose their mates. They soon disperse; and are not seen afterwards but in pairs. Pairing is unknown to quadrupeds that feed on grass. To such it would be useless; as the female gives suck to her young while she herself is feeding. If M. Buffon deserves credit,

dit, the roe-deer are an exception. They pair, though they feed on grass, and have but one litter in a year. Beasts of prey, such as lions, tygers, wolves, pair not. The female is left to shift for herself and for her young; which is a laborious task, and often so unsuccessful as to shorten the life of many of them. Pairing is essential to birds of prey, because incubation leaves the female no sufficient time to hunt for food. Pairing is not necessary to beasts of prey, because their young can bear a long fast. Another reason is, that they would multiply so fast by pairing, as to prove troublesome neighbours to the human race.

Among animals that pair not, males fight desperately about a female. Such a battle among horned cattle is finely described by Lucretius. Nor is it unusual for seven or eight lions to wage bloody war for a single female. The same reason that makes pairing necessary for gregarious birds, obtains with respect to gregarious quadrupeds; those especially who store up food for the winter, and during that season live in common. Discord among such would be attended with worse consequences than even among lions and bulls, who are not confined to one place. The beavers, with respect to pairing, resemble birds that place their nests on the ground. As soon as the young are produced, the males abandon their stock of food to their mates, and live at large; but return frequently to visit them while they are suckling their young. Hedgehogs pair, as well as several of the monkey-kind. We are not sufficiently acquainted with the natural history and economy of these animals; but it would appear that the young require the nursing-care of both parents. Seals have a singular economy. Polygamy seems to be a law of nature among them, as a male associates with several females. The sea-turtle has no occasion to pair, as the female concludes her task by laying her eggs in the sand. The young are hatched by the sun, and immediately crawl to the sea.

On the MIGRATION and TORPID STATE of SWALLOWS.

CONCERNING this bird, one curious question arises, which has never yet been completely answered:—What becomes of it in the winter? Upon this subject there are three opinions. Some say that it migrates to a warmer climate; some, that it retires to hollow trees and caverns, where it lies in a torpid state; and others have affirmed, that it lies in the same state in the bottom of lakes and under the ice. The first opinion is supported by Marsigh, Ray, Willoughby, Catesby, Reaumur, Adanson, Buffon, &c. The first and second opinions are both adopted by Pennant and White. The third is sanctioned by Schæffer, Hevelius, Derham, Klein, Ellis, Linnæus, Kalm: and the second and third have been strongly defended by the Hon. Daines Barrington.

Though we cannot help giving a preference to that opinion which appears the most probable, yet we do not think that any one of them is established upon such evidence as so curious a subject requires, and as the advanced state of natural history would lead us to expect. We shall therefore state the arguments upon which each opinion is founded as fairly and distinctly as we can, and as often as possible in the very words of their respective advocates. By doing so, we shall place the whole subject before the eyes of our readers, who will thus have an opportunity of examining it attentively, and of making such observations

vations and experiments as may lead to the truth. Those who assert that the swallow migrates to a warmer country in winter, argue in this manner: That may birds migrate, is a fact fully proved by the observations of natural historians. Is it not more probable, therefore, that swallows, which disappear regularly every season, retire to some other country, than that they lie in a state of torpor in caverns or lakes? But this opinion does not rest on probability, it is founded on facts. We often see them collected in great flocks on churches, rocks, and trees, about the time when they annually disappear. The direction of their flight has been observed to be southward. Mr. White, the ingenious historian of Selborne, travelling near the coast of the British Channel one morning early, saw a flock of swallows take their departure. At the beginning of his journey he was environed with a thick fog; but on a large wild heath the mist began to break, and discovered to him numberless swallows, clustered on the standing bushes, as if they had roosted there: as soon as the sun burst out, they were instantly on wing, and with an easy and placid flight proceeded towards the sea. After this he saw no more flocks, only now and then a straggler.

Mr. Laskey of Exeter observed attentively the direction which a flock of swallows took in the autumn of 1793. On the 22d of Sept. about seven o'clock in the morning, the wind being easterly, accompanied with a cold drizzling rain, Mr. Laskey's house was entirely covered with house-swallows. At intervals large flocks arrived and joined the main body, and at their arrival an unusual chirping commenced. The appearance of the whole company was so lethargic, that he found it an easy matter to catch a considerable number of them, which he kept in a room all that day. By heating the room they all revived: he opened four of them, and found their stomachs quite full. The main body occupied the house-top all day, except for two hours. About half an hour after nine on the morning of the 23d, there was a great commotion, with very loud chirping; and, within a few minutes after, the whole multitude took their flight, in a direct south-east direction, having ascended to a great height in the atmosphere. He let go the birds which he had caught, at certain intervals till four o'clock, and they all flew towards the same quarter.

Not only has the direction of their flight been observed, but they have also been found on their passage at a great distance from land. Mr. Adanson informs us, that about 50 leagues from the coast of Senegal four swallows settled upon the ship on the 6th of October; that these birds were taken; and that he knew them to be European swallows, which, he conjectures, were returning to the coast of Africa. Sir Charles Wager's authority may also be appealed to: "Returning home (says he) in the spring of the year, as I came into soundings in our channel, a great flock of swallows came and settled on all my rigging; every rope was covered, they hung on one another like a swarm of bees; the decks and carving were filled with them. They seemed almost famished and spent, and were only feathers and bones; but, being recruited with a night's rest, took their flight in the morning." This vast fatigue proves that their journey must have been very great, considering the amazing swiftness of these birds: in all probability they had crossed the Atlantic ocean, and were returning from the shores of Senegal, or other parts of Africa; so that this account, from

that most able and honest seaman, confirms the later information of Mr. Adanson.

Mr. Kalm, who is an advocate for the opinion that swallows lie immersed in lakes during the winter, acknowledges, that in crossing the Atlantic from Europe a swallow lighted on the ship on the 2d of September, when it had passed only two-thirds of the ocean. Since, therefore, swallows have been seen assembled in great flocks in autumn flying off in company towards southern climes, since they have been found both in their passage from Europe and returning again, can there be any doubt of their annual migration?

The second notion (says Mr. Pennant) has great antiquity on its side. Aristotle and Pliny give it as their belief, that swallows do not remove very far from their summer habitation, but winter in the hollows of rocks, and during that time lose their feathers. The former part of their opinion has been adopted by several ingenious men; and of late several proofs have been brought of some species, at least having been discovered in a torpid state. Mr. Collinson favoured us with the evidence of three gentlemen, eye-witnesses to numbers of sand-martins being drawn out of a cliff on the Rhine, in the month of March 1762. And the Hon. Danies Barrington communicated to us the following fact, on the authority of the late Lord Belhaven: That numbers of swallows have been found in old dry walls and in sand-hills near his lordship's seat in East Lothian; not once only, but from year to year; and that when they were exposed to the warmth of a fire they revived. We have also heard of the same annual discoveries near Morpeth in Northumberland, but cannot speak of them with the same assurance as the two former: neither in the two last instances are we certain of the particular species.

"Other witnesses crowd on us to prove the residence of those birds in a torpid state during the severe season. First, In the chalky cliffs of Sussex; as was seen on the fall of a great fragment some years ago. Secondly, In a decayed hollow tree that was cut down, near Dolgelli, in Merionethshire. Thirdly, In a cliff near Whitby, Yorkshire; where, on digging out a fox, whole bushels of swallows were found in a torpid condition. And, lastly, The Reverend Mr. Conway, of Sychton, Flintshire, was so obliging as to communicate the following fact: A few years ago, on looking down an old lead-mine in that county, he observed numbers of swallows clinging to the timbers of the shaft, seemingly asleep; and on flinging some gravel on them, they just moved, but never attempted to fly or change their place: this was between All Saints and Christmas. These are doubtless the lurking places of the later hatches, or of those young birds which are incapable of distant migrations. There they continue insensible and rigid; but like flies may sometimes be re-animated by an unseasonable hot day in the midst of winter; for very near Christmas a few appeared on the moulding of a widow of Merton college, Oxford, in a remarkably warm nook, which permaturely set their blood in motion, having the same effect as laying them before a fire at the same time of year. Others have been known to make this permature appearance; but, as soon as the cold natural to the season returns, they withdraw again to their former retreats. The above are circumstances we cannot but assent to, though seemingly contradictory to the common course of nature in regard to other birds. We must, therefore, divide our belief relating to these two different opinions; and conclude,

clude, that one part of the swallow tribe migrate, and that others have their winter-quarters near home. If it should be demanded, why swallows alone are found in a torpid state, and not the other many species of soft-billed birds, which likewise disappear about the same time? reasons might be assigned."

The third opinion we shall state and support in the words of Mr. Kalm. "Natural history (says he), as all other histories, depends not always upon the intrinsic degree of probability, but upon facts founded on the testimony of people of noted veracity.—Swallows are seldom seen sinking down into the water; swallows have no such organs as frogs or lizards, which are torpid during winter; *ergo*, swallows live not, nor cannot live, under water.—This way of arguing, I believe, would carry us, in a great many cases, too far: for, though it is not clear to every one, it may however be true; and lizards and frogs are animals of a class widely different from that of birds, and must therefore of course have a different structure; hence it is they are classed separately. The bear and the marmot are in winter in a torpid state: and have, however, no such organs as lizards and frogs; and nobody doubts of their being, during some time, in the most rigid climates, in a torpid state: for the Alpine nations hunt the marmots frequently by digging their holes up; and find them so torpid, that they cut their throats, without their reviving or giving the least sign of life during the operation; but when the torpid marmot is brought into a warm room, and placed before the fire, it revives from its lethargy. The question must therefore be decided by facts; nor are these wanting here. Dr. Wallerius, the celebrated Swedish chemist, informs us, That he has seen, more than once, swallows assembling on a reed, till they were all immersed and went to the bottom; this being preceded by a dirge of a quarter of an hour's length. He attests likewise, that he had seen a swallow caught during winter out of a lake with a net, drawn, as is common in northern countries, under the ice; this bird was brought into a warm room, revived, fluttered about, and soon after died.

Mr. Kelin applied to many farmer-generals of the King of Prussia's domains, who had great lakes in their districts, the fishery in them being a part of the revenue. In the winter the fishery thereon is the most considerable under the ice, with nets spreading more than two or three hundred fathoms, and they are often wound by screws and engines on account of their weight. All the people that were questioned made affidavits upon oath before the magistrates. First, The mother of the Countess Lehndorf said, that she had seen a bundle of swallows brought from the Frishe-Haff (a lake communicating with the Baltic at Pillaw), which, when brought into a moderately warm room, revived and fluttered about. Secondly, Count Schileben gave an instrument on stamped paper, importing, that by fishing on the lake belonging to his estate of Gerdanen in winter, he saw several swallows caught in the net, one of which he took up in his hand, brought it into a warm room, where it lay about an hour, when it began to stir, and half an hour after it flew about in the room. Thirdly, Farmer-general (Amtman) Witkouski made affidavit, that, in the year 1740, three swallows were brought up with the net in the great pond at Didlacken; in the year 1741 he got two swallows from another part of the pond, and took them home (they being all caught in his presence); after an hour's space they revived in a warm room,

fluttered

fluttered about, and died in three hours after. Fourthly, Amtman Bonke says, that, having had the estate of Kleskow in farm, he had seen nine swallows brought up in the net from under the ice, all which he took into a warm room, where he distinctly observed how they gradually revived; but a few hours after they all died. Another time his people got likewise some swallows in a net, but he ordered them again to be thrown into the water. Fifthly, Andrew Rutta, a master fisherman at Oletsko, made affidavit, in 1747, that twenty-two years ago, two swallows were taken up by him in a net, under the ice, and, being brought into a warm room, they flew about. Sixthly, Jacob Kosiulo, a master-fisherman at Stradauen, made affidavit, that, in 1736, he brought up in winter, in a net, from under the ice of the lake at Raski, a seemingly dead swallow, which revived in half an hour's time in a warm room; and he saw, in a quarter of an hour after, the bird grew weaker, and soon after dying. Seventhly, I can reckon myself (says this author) among the eye-witnesses of this paradox of natural history. In the year 1735, being a little boy, I saw several swallows brought in winter by the fishermen from the river Vistula to my father's house; where two of them were brought into a warm room, revived, and flew about. I saw them several times settling on the warm stove (which the northern nations have in their rooms); and I recollect well that the same forenoon they died, and I had them, when dead, in my hand. In the year 1754, after the death of my uncle Godefroy Wolf, captain in the Polish regiment of foot-guards, being myself one of his heirs, I administered for my co-heirs, to several estates called the Starosty of Dischau in Polish Prussia, which my late uncle farmed under the king. In January, the lake of Lybshaw, belonging to these estates, being covered with ice, I ordered the fishermen to fish therein, and in my presence several swallows were taken, which the fishermen threw in again; but one I took up to myself, brought it home, which was five miles from thence, and it revived, but died about an hour after its reviving.

These are facts attested by people of the highest quality, by some in public offices, and by others who, though of a low rank, however, made these affidavits upon oath. It is impossible to suppose indiscriminately that they were prompted, by views of interest, to assert as a fact a thing which had no truth in it. It is therefore highly probable, or rather incontestably true, that swallows retire in the northern countries, during winter, into the water, and stay there in a torpid state till the return of warmth revives them again in spring. The question therefore, I believe, for the future, ought to be thus stated: The swallows in Spain, Italy, France, and perhaps some from England, remove to warmer climates; some English ones, and some in Germany and other mild countries, retire into clefts and holes in rocks, and remain there in a torpid state. In the colder northern countries the swallows immerse into the sea, in lakes, and rivers; and remain in a torpid state, under ice, during winter. There are still some objections to this latter assertion, which we must remove. It is said, Why do not rapacious fish, and aquatic quadrupeds and birds, devour these swallows? The answer is obvious: swallows choose only such places in the water for their winter retreat as are near reeds and rushes; so that, sinking down there between them and their roots, they are by them secured against the rapaciousness of their enemies. But others

object,

object, Why are not these birds caught in such fresh waters as are continually harassed by nets? I believe the same answer which has been made to the first objection will serve for this likewise. Fishermen take care to keep off with their nets from places filled with reeds and rushes, for fear of entangling and tearing their net; and thus the situation of swallows under water is the reason that they are seldom disturbed in their silent winter retreats. What confirms this opinion still more is, that swallows were never caught in Prussia according to the above-mentioned affidavits, but with those parts of the net which passed near to the reeds and rushes; and sometimes the swallows were yet fastened with their feet to a reed, when they were drawn up by the net. As to the argument taken from their being so long under water without corruption, I believe there is a real difference between animals suffocated in water and animals being torpid therein. We have examples of things being a long time under water; to which we may add the intense cold of these northern regions, which preserves them. Who would have thought that snails and polypes might be dissected, and could reproduce the parts severed from their bodies, if it were not a fact? Natural history ought to be studied as a collection of facts, not as the history of our guesses or opinions. Nature varies in an infinite manner; and Providence has diversified the instinct of animals and their economy, and adapted it to the various seasons and climates."

With Mr. Kalm's concluding observations we heartily concur. Natural history ought to be studied as a collection of facts; and it was from this very notion that we have stated the above-mentioned opinions so fully, and brought together the facts which the best advocates for each opinion have judged most proper for supporting them. We are sensible of the great improbability of the third opinion, and know that many arguments have been used to prove its absurdity: such as these, The swallow is lighter than water, and therefore cannot sink; if it moults at all, it must moult under water during its torpid state, which is very improbable; there is no instance of land-animals living so long under water without respiration. Many other arguments of the same sort have been advanced, and certainly afford a short way of deciding the question; but, unless they were sufficient to prove the immersion of swallows a physical impossibility, they are of no force when opposed to the evidence of testimony, if there be no cause to suspect the witnesses of inaccuracy or design. The true way to refute such an opinion is by accurate observation and experiment. We have not heard of any accurate inquiries being made by philosophers in those northern countries where swallows are said to pass the winter under water. The Count de Buffon, indeed, shut up some swallows in an ice-house by way of experiment, which died in a few days; but, as he does not tell us what precautions he took to make the experiment succeed, it is not intitled to any attention.

Mr. John Hunter made a very judicious experiment for the purpose of ascertaining these curious facts. One year, in the month of September, he prepared a room, with every accommodation and convenience which he could contrive, to serve as a dormitory for swallows, if they were disposed to sleep in winter. He placed in the centre a large tub of water with twigs and reeds, &c. which reached to the bottom. In the corners of the room he contrived artificial caverns and holes, into which they might retire; and he laid on the floor, or suspended

ſuſpended in the air, different lengths of old wooden pipes, which had formerly been employed in conveying water through the ſtreets, &c. When the receptacle was rendered as complete as poſſible, he then engaged ſome watermen to take by night a large quantity of the ſwallows that hang upon the reeds in the Thames about the time of their departure. They brought him, in a hamper, a conſiderable number; and had ſo nicely hit the time of their capture, that on the very day following there were none to be ſeen.

He put the ſwallows into the room ſo prepared, where they continued to fly about, and occaſionally perch on the twigs, &c. But not one ever retired into the water, the caverns, holes, or wooden pipes, or ſhewed the leaſt diſpoſition to grow torpid, &c. In this ſituation he let them remain till they all died but one. This, appearing to retain ſome vigour, was ſet at liberty; when it mounted out of ſight, and flew away. All the birds lay dead, ſcattered about the room; but not one was found aſleep or torpid, or had ſo much as crept into any of the receptacles he had ſo provided.

This experiment was ingenious, and certainly does render the doctrine of immerſion much more improbable; but it is not deciſive; for it may ſtill be urged by the advocates for that doctrine, as Mr. Kalm has done, that it may only be in the colder countries where ſwallows retire into the water. We formerly ſaid, that none of the three opinions are ſupported by ſuch evidence as to ſatisfy the mind completely. Opinions which reſpect events which happen every year ought to be confirmed by a great number of obſervations, and not by a few inſtances diveſted of almoſt all their concomitant circumſtances. Can no better proofs be brought to prove the migration of ſwallows than thoſe of Adanſon and Sir Charles Wager, or the circumſtances mentioned by Mr. White and Mr. Laſkey, reſpecting their diſappearing? We ought not merely to know that ſome ſwallows have taken a ſoutherly flight in autumn, that ſome have been found at a great diſtance from land in the ſpring, or in harveſt; but we ought to know to what countries they actually retire. Before we can reſt ſatisfied, too, that it is a general fact that ſwallows remain in a torpid ſtate during winter, either in caverns or in the bottom of lakes, &c. we muſt have more proofs; we muſt know what ſpecies of ſwallows they are ſaid to be, in what countries this event takes place, and ſeveral other circumſtances of the ſame kind.

We cannot help being of opinion, that much remains to be done in order properly to aſcertain what becomes of the ſwallows in Europe during winter. It would be neceſſary, in the firſt place, to know accurately what are the countries in which ſwallows are found. 2. Do they remain viſible the whole year? or, if they diſappear, at what ſeaſon does this happen, and when do they appear again? 3. Do they ever appear while a ſtrong north wind blows, or do they only come in great numbers with a ſouth wind? We will endeavour to anſwer ſome of theſe queſtions in part; but muſt regret, that all the information on this ſubject which we have been able to cull from the beſt writers in natural hiſtory is very ſcanty; and we merely give it by way of ſpecimen, hoping that future obſervations will ſoon render it more complete.

There are five ſpecies which viſit Britain during the ſummer months; the common or chimney ſwallow, the martin, ſand-martin, ſwift, and goat-ſucker. The chimney ſwallow frequents almoſt every part of

the old continent; being known (says Dr. Latham) from Norway to the Cape of Good Hope on the one side, and from Kamtschatka to India and Japan on the other. It is also found in all parts of North America, and in several of the West-India islands. In Europe it disappears during the winter months. It appears generally a little after the vernal equinox; but rather earlier in the southern, and later in the northern, latitudes. It adheres to the usual seasons with much regularity; for, though the months of February and March should be uncommonly mild, and April and May remarkably cold, it never deviates from its ordinary time. In the cold spring of 1740, some appeared in France before the insects on which they feed had become numerous enough to support them, and great numbers died. In the mild and even warm spring of 1774, they appeared no earlier than usual. They remain in some warm countries the whole year. Kolben assures us, that this is the case at the Cape of Good Hope; but (he says) they are more numerous in winter. Some birds of this species live during winter, even in Europe; for example, on the coast of Genoa, where they spend the night in the open country on the orange shrubs.

2. The *martins* are also widely diffused through the old continent; but the countries where they reside or visit have not been marked by naturalists with much attention. 3. The *sand-martins* are found in every part of Europe, and frequently spend the winter in Malta. Two birds of this species were seen at Perigord, in France, on the 27th of December, 1775, when there was a southerly wind, attended with a little rain. 4. The *swift* visits the whole continent of Europe; has also been observed at the Cape of Good Hope, and in Carolina, in North America. 5. The *goat-suckers* are not very common birds, yet are widely scattered. They are found in every country between Sweden and Africa: they are found also in India. In April the south-west wind brings them to Malta, and in autumn they repass in great numbers.

Mr. Markwick, of Catsfield, near Battle, in Sussex, has drawn up an accurate table, expressing the day of the month on which the birds, commonly called *migratory*, appeared in spring, and disappeared in autumn, for sixteen years, from 1768 to 1783 inclusive. The observations were made at Catsfield. From this table we shall extract the dates for five years, and add the very few observations which we have been able to collect respecting the time when the swallow appears and disappears in other countries.

	1779. First seen.	Last seen.		1781. First seen.	Last seen.
Chim. Swal.	Apr. 14.	Oct. 29.	Sand Mart.	Apr. 26.	Sept. 1.
Martin	14.	15.	Swift	May 12.	1.
Sand Mart.	May 7.			1782.	
Swift	9.		Chim. Swal.	Apr. 22.	Sept. 1.
	1780.		Martins	26.	Nov. 2.
Chim. Swal.		Nov. 3.	Sand Mart.	May 15.	Aug. 28.
Martins	Apr. 29.	3.	Swift	18.	28.
Sand Mart.	8.	Sept. 8.		1783.	
Swift	May 6.	8.	Chim. Swal.	Apr. 13.	Nov. 6.
	1781.		Martins	May 1.	6.
Chim. Swal.	Apr. 8.	Oct. 15.	Sand Mart.	July 25.	Sept. 1.
Martins	May 12.	Sept. 7.	Swift	May 13.	Nov. 6.

	Chim. Swal.	Swifts.	Martins.	S. Mart.
		Appear about		
In Burgundy			Apr. 9.	Apr. 12.
In Selborne, Hampshire	Apr. 4.	Apr. 24.	Apr. 30.	
In South Zele, Devonshire	25.	May 1.	May 15.	
In Blackburn, Lancashire	29.	Apr. 28.		
In Upsal, in Sweden			May 9.	

Were tables of the same kind made in every different country, particularly within the torrid zone, it would be easy to determine the question which we have been considering. To many, perhaps, it may not appear a matter of such importance as to be worth the labour. We acknowledge it to be rather a curious than an important inquiry; yet it is one which must be highly gratifying to every mind that can admire the wisdom of the Great Architect of nature. The instinct of the swallow is indeed wonderful: it appears among us just at the time when insects become numerous; and it continues with us during the hot weather, in order to prevent them from multiplying too much. It disappears when these insects are no longer troublesome. It is never found in solitude; it is the friend of man, and always takes up its residence with us, that it may protect our houses and our streets from being annoyed with swarms of flies.

DESCRIPTION OF SNOWDON.

SNOWDON and all his sons, *Crib Coch*, *Crib y Distil*, *Lliwedd yr Aran*, and many others, burst at once in full view at Capel Kerig, and make this far the finest approach to our boasted Alps. The boundaries of this vale are, on one side, the base of the crooked mountain, *Moel Siabod*; on the other, that of the *Gludar Back*, and several other hills of smaller note. The bottom is meadowy: the middle is varied with two small lakes.

The top of Snowdon, which, by way of pre-eminence, is stiled *Y Wyddfa*, or "the conspicuous," rises almost to a point: the mountain from hence seems propped by four vast buttresses, between which are four deep *cwms*, or hollows; each, excepting one, had one or more lakes, lodged in its distant bottom. The nearest was *Ffynnon Lâs*, or the "green well," lying immediately below us. One of the company had the curiosity to descend a very bad way to a jutting rock, that impended over the monstrous precipice; and he seemed like Mercury ready to take his flight from the summit of mount Atlas. The waters of Ffynnon Lâs, from this height appeared black and unfathomable, and the edges quite green. From thence is a succession of bottoms surrounded by the most lofty and rugged hills, the greatest part of whose sides are quite mural, and form the most magnificent amphitheatre in nature. The Wyddfa is on one side; Crib y Distill, with its serrated tops, on another; Crib Coch, a ridge of fiery redness, appears beneath the preceding; and opposite to it is the boundary called the Lliwedd. Another very singular support to this mountain, is *Y Clawdd Coch*, rising into a sharp ridge, so narrow as not to afford breadth even for a path.

The view from this exalted situation is unbounded. In a former tour, I saw from it the county of Chester, the high hills of Yorkshire, part of the north of England, Scotland, and Ireland; a plain view of the Isle of Man; and that of Anglesea lay extended like a map

map beneath us, with every rill visible. I took much pains to see this prospect to advantage; sat up at a farm on the west till about twelve, and walked up the whole way. The night was remarkably fine and starry: towards morn the stars faded away, and left a short interval of darkness, which was soon dispersed by the dawn of day. The body of the sun appeared most distinct, with the rotundity of the moon, before it rose high enough to render its beams too brilliant for our sight. The sea which bounded the western part was gilt by its beams, first in slender streaks, at length glowed with redness. The prospect was disclosed to us like the gradual drawing up of a curtain in a theatre. We saw more and more, till the heat became so powerful as to attract the mists from the various lakes, which in a slight degree obscured the prospect. The shadow of the mountain was flung many miles, and shewed its bicapitated form; the Wyddfa making one, Crib y Distill the other, head. I counted this time between twenty and thirty lakes, either in this county, or Merionethshire. The day proved so excessively hot, that my journey cost me the skin of the lower part of my face, before I reached the resting-place, after the fatigue of the morning.

On this day the sky was obscured very soon after I got up. A vast mist enveloped the whole circuit of the mountain. The prospect down was horrible. It gave an idea of numbers of abysses, concealed by a thick smoke, furiously circulating around us. Very often a gust of wind formed an opening in the clouds, which gave a fine and distinct visto of lake and valley. Sometimes they opened only in one place; at others, in many at once, exhibiting a most strange and perplexing sight of water, fields, rocks, or chasms, in fifty different places. They then closed at once, and left us involved in darkness; in a small space they would separate again, and fly in wild eddies round the middle of the mountains, and expose, in parts, both tops and bases clear to our view. We descended from this various scene with great reluctance; but before we reached our horses a thunder-storm overtook us. Its rolling among the mountains was inexpressibly awful: the rain uncommonly heavy. We re-mounted our horses, and gained the bottom with great hazard. The little rills, which on our ascent trickled along the gullies on the sides of the mountain, were now swelled into torrents; and we and our steeds passed with the utmost risque of being swept away by these sudden waters. At length we arrived safe, yet sufficiently wet and weary, at our former quarters.

It is very rare that a traveller gets a proper day to ascend the hill; for it often appears clear, but, by the evident attraction of the clouds by this lofty mountain, it becomes suddenly and unexpectedly enveloped in mist, when the clouds have just before appeared very remote, and at great heights. At times I have observed them lower to half their height, and notwithstanding they had been dispersed to the right and to the left, yet they have met from both sides, and united to involve the summit in one great obscurity.

The quantity of water which flows from the lakes of Snowdonia is very considerable; so much, that I doubt not but collectively they would exceed the waters of the Thames before it meets the flux of the ocean.

The reports of the height of this noted hill have been very differently given. A Mr. Caswell, who was employed by Mr. Adams,

in 1682, in a ſurvey of Wales, meaſured it by inſtruments made by the directions of Mr. Flamſtead; and aſſerts its height to have been twelve hundred and forty yards: but, for the honour of our mountain, I am ſorry to ſay, that I muſt give greater credit to the experiments of late years, which have ſunk it to one thouſand one hundred and eighty-nine yards and one foot, reckoning from the quay at Caernarvon to the higheſt peak.

REFLECTIONS ON THE CHANGE OF SEASONS.

AS Providence has made the human ſoul an active being, always impatient for novelty, and ſtruggling for ſomething yet unenjoyed with reſtleſs deſire and unwearied progreſſion, the world ſeems to have been eminently adapted to this diſpoſition of the mind, and formed to raiſe new expectations by conſtant viciſſitudes, and obviate ſatiety by perpetual change. Wherever we turn our eyes, we find ſomething to revive our curioſity, and engage our attention. In the duſk of the morning we watch the riſing of the ſun, and ſee the day diverſify the clouds, and open new proſpects in its gradual advance. After a few hours we ſee the ſhades lengthen, the light decline, and the ſky reſigned to a multitude of ſhining orbs differing in magnitude and ſplendour. The earth has a new appearance, as we move upon it; the woods offer their ſhades, and the fields their harveſts; the hill flatters with an extenſive view; and the valley invites with ſhelter, fragrance, and flowers.

The poets have numbered among the felicities of the golden age, an exemption from the change of ſeaſons, and a perpetuity of ſpring; but I am not certain that in this ſtate of imaginary happineſs they have made ſufficient proviſion for that inſatiable demand of new gratifications, which ſeems particularly to characterize the nature of man. Our ſenſe of delight is in a great meaſure comparative, and ariſes at once from the ſenſations which we feel, and thoſe which we remember: thus eaſe after pain for a time is pleaſure, and we are very agreeably recreated, when the body, chilled with the weather, is gradually recovering its natural trepidity; but the joy ceaſes when we have forgot the cold, and we muſt fall below eaſe again, if we deſire to riſe above it; and purchaſe new felicity by voluntary pain. It is therefore not unlikely, that, however the fancy may be amuſed with the deſcription of regions in which no wind is heard but the gentle zephyr, and no ſcenes are diſplayed but vallies enamelled with unfading flowers, and woods waving their perennial verdure, we ſhould ſoon grow weary of uniformity, find our thoughts languiſh for want of other objects and employment, call on heaven for our wonted round of ſeaſons, and think ourſelves liberally recompenſed for the inconveniences of ſummer and winter, by new perceptions of the calmneſs and mildneſs of the intermediate variations.

Every ſeaſon has its particular power of ſtriking the mind. The nakedneſs and aſperity of wintery nature always fills the beholder with penſive and profound aſtoniſhment; as the variety of the ſcene is leſſened, its grandeur is increaſed, and the mind is ſwelled at once by the mingled ideas of the preſent and the paſt, of the beauties which have vaniſhed from the eyes, and the waſte and deſolation which are now before them. It is obſerved by Milton, that he who neglects to viſit the country in ſpring, and rejects the pleaſures that are then in

their

their first bloom and fragrance, is guilty of *sullenness against nature*. If we allot different duties to different seasons, he may be charged with equal disobedience to the voice of nature, who looks on the bleak hills and leafless woods, without seriousness and awe. Spring is the season of gaiety, and winter of terror; in spring the heart of tranquillity dances to the melody of the groves, and the eye of benevolence sparkles at the sight of happiness and plenty: in the winter, compassion melts at universal calamity, the tear starts at the wailings of hunger, and the cries of the creation in distress.

There is indeed in most minds very little inclination to indulge heaviness and sorrow, nor do I recommend them beyond the degree necessary to maintain in its full vigour that habitual sympathy and tenderness, which, in a world of so much misery, is necessary to the ready discharge of the most important duties. The winter therefore is generally celebrated as the proper season for domestic merriment and gaiety, and we are seldom invited by the votaries of pleasure to look abroad for any other purpose, than that we may shrink back with more satisfaction to our coverts, and, when we have heard the howl of the tempest, and felt the gripe of the frost, congratulate each other with more gladness upon a close room, an easy chair, a high-piled fire, and a smoaking dinner.

There are indeed now natural incitements to jollity and conversation. Differences, we know, are never so effectually laid asleep, as by some common calamity, and an enemy unites all to whom he threatens danger. The rigour of winter brings generally to the same fire-side those, who, by the opposition of their inclinations, or the difference of their employments, moved in various directions through the other parts of the year; and, when they have met, and find it their mutual interest to remain together, they endear each other by mutual compliances, and often wish for the continuance of the social season, with all its bleakness and all its severities.

To the men of study and imagination, the winter is generally the chief time of labour. Gloom and silence produce composure of mind, and concentration of ideas, and the privation of external pleasure naturally causes an effort to find entertainment within. This is the time in which those, whom literature enables to find amusements for themselves, have more than common convictions of their own happiness. When they are condemned by the elements to retirement, and debarred from most of the diversions which are called in to assist the flight of time, they can always find new subjects of inquiry, engage their passions in new pursuits, and preserve themselves from that weariness which hangs always flagging upon the vacant mind.

It cannot indeed be expected of all to be poets and philosophers, deeply versed in sciences, or much engaged in any researches into past or distant transactions; it is necessary that the greatest part of mankind should be employed in the trivial business of common life; trivial, indeed, not with respect to its influence upon our happiness, but of the abilities requisite to conduct it. These must necessarily be more dependent on accident for the means of spending agreeably those hours which their employment leaves unengaged, or which the imbecillity of nature obliges them to allow to relaxation and diversion. Yet on these I would willingly impress such a sense of the value of time, as may incline them to find out for their most careless hours some amusement of more use and dignity than the common games, which not

only weary the mind without improving it, but strengthen the passions of envy and avarice, and often lead to fraud and to profusion, to corruption and to ruin. It is unworthy of a reasonable being to spend any of the little time allotted us, without some tendency, either direct or oblique, to the end of our existence. And, though every moment cannot be laid out on the formal and regular improvement of our knowledge, or in the stated practice of a moral or religious duty, yet none should be so spent as to exclude wisdom or virtue, or pass without possibility of qualifying us more or less for the better employment of those which are to come.

It is scarcely possible to pass an hour in honest conversation, without being able, when we rise from it, to please ourselves with having given or received some advantages; but a man may shuffle cards or rattle dice from noon to midnight, without tracing any new idea in his mind, or being able to recollect the day by any other token but his gain or loss, and a confused remembrance of agitated passions, and clamorous altercations.

However, as experience is always of more weight than precept, any of my readers, who are contriving how to spend the dreary months before them, may consider which of their past amusements fill them now with greatest satisfaction, and resolve to repeat those gratifications of which the pleasure is most durable.

Of the CULTIVATION and PREPARATION of SUGAR.

As the sugar-cane is the principal production of the West Indies, and the great source of their riches; as it is so important in a commercial view, from the employment which it gives to seamen, and the wealth which it opens for merchants; and besides is now become a necessary of life; it may justly be esteemed one of the most valuable plants in the world. The quantity consumed in Europe is estimated at 9,000,000l. and the demand would probably be greater if it could be sold at a reduced price. Since sugar then is reckoned so precious a commodity, it must be an object of desire to all persons of curiosity and research, to obtain some general knowledge of the history and nature of the plant by which it is produced, as well as to understand the process by which the juice is extracted and refined. We will therefore first inquire in what countries it originally flourished, and when it was brought into general use, and became an article of commerce.

From the few remains of the Grecian and Roman authors which have survived the ravages of time, we can find no proofs that the juice of the sugar-cane was known at a very early period. There can be no doubt, however, that in those countries where it was indigenous its value was not long concealed. It is not improbable that it was known to the ancient Jews; for there is some reason to suppose, that the Hebrew word קנה, which occurs frequently in the Old Testament, and is by our translators rendered sometimes *calamus*, and sometimes *sweet-cane*, does in fact mean the sugar-cane. The first passage in which we have observed it mentioned is Exod. xxx. 23. where Moses is commanded to make an ointment with myrrh, cinnamon, kené, and cassia. Now the kené does not appear to have been a native of Egypt nor of Judea; for, in Jeremiah, vi. 20. it is mentioned as coming from a far country: "To what purpose cometh there to me incense from Sheba and

and the sweet-cane from a far country?" This is not true of the calamus aromaticus, which grows spontaneously in the Levant, as well as in many parts of Europe. If the cinnamon mentioned in the passage of Exodus quoted above was true cinnamon, it must have come from the East Indies, the only country in the world from which cinnamon is obtained. There is no difficulty therefore in supposing that the sugar-cane was exported from the same country. If any credit be due to etymology, it confirms the opinion that kené denotes the sugar-cane; for the Latin word *canna*, and the English word *cane*, are evidently derived from it. It is also a curious fact, that *sachar*, or *sheker*, שכר, in Hebrew, signifies *inebriation*; from which the Greek word σακχαρ, "sugar," is undoubtedly to be traced.

The sugar-cane was first made known to the western parts of the world by the conquests of Alexander the Great. Strabo relates, that Nearchus, his admiral, found it in the East Indies, in the year before Christ 325. It is evidently alluded to in a fragment of Theophrastus, preserved in Photius. Varro, who lived A. C. 68, describes it in a fragment quoted by Isidorus, as a fluid pressed from reeds of a large size, which was sweeter than honey. Dioscorides, about the year 35 before Christ, says, "that there is a kind of honey called *saccharon*, which is found in India and Arabia Felix. It has the appearance of salt, and is brittle when chewed. If dissolved in water, it is beneficial to the bowels and stomach, is useful in diseases of the bladder and kidneys, and, when sprinkled on the eye, removes those substances that obscure the sight." This is the first account we have of its medical qualities. Galen often prescribed it as a medicine. Lucan relates, that an oriental nation in alliance with Pompey used the juice of the cane as a common drink.

Pliny says it was produced in Arabia and India, but that the best came from the latter country. It is also mentioned by Arrian, in his Periplus of the Red Sea, by the name of σακχαρ (*sachar*), as an article of commerce from India to the Red Sea. Ælian, Tertullian, and Alexander Aphrodisieus, mention it as a species of honey procured from canes.—That the sugar-cane is an indigenous plant in some parts of the East Indies, we have the strongest reason to believe; for Thunberg found it in Japan, and has accordingly mentioned it as a native of that country in his work intitled "Flora Japonica," published in the year 1784. Osbeck also found it in China, in 1751. It may indeed have been transplanted from some other country; but, as it does not appear from history that the inhabitants of Japan or China ever carried on any commerce with remote nations, it could only be conveyed from some neighbouring country. Marco Polo, a noble Venetian, who travelled into the East about the year 1250, found sugar in abundance in Bengal. Vasco de Gama, who doubled the Cape of Good Hope in 1497, relates, that a considerable trade in sugar was then carried on in the kingdom of Calicut. On the authority of Dioscorides and Pliny, too, we should be disposed to admit, that it is a native of Arabia, did we not find, on consulting Niebuhr's Travels, that that botanist has omitted it when enumerating the most valuable plants of that country. If it be a spontaneous production of Arabia, it must still flourish in its native soil. Mr. Bruce found it in Upper Egypt. If we may believe the relation of Giovan Lioni, a considerable trade was carried on in sugar in Nubia, in 1500; it abounded also at Thebes, on the Nile, and in the northern parts of Africa, about the

the same period. There is reason to believe that the sugar-cane was introduced into Europe during the crusades; expeditions which however romantic in their plan, and unsuccessful in their execution, were certainly productive of many advantages to the nations of Europe. Albertus Aquensis, a monkish writer, observes, that the Christian soldiers in the Holy Land frequently derived refreshment and support, during a scarcity of provisions, by sucking the canes. This plant flourished also in the Morea, and in the islands of Rhodes and Malta, from which it was transported into Sicily. The date of this transaction it is not easy to ascertain; but we are sure that sugar was cultivated in that island previous to the year 1166; for Lafitau the Jesuit, who wrote a history of the Portuguese discoveries, mentions a donation made that year to the monastery of St. Bennet, by William II. king of Sicily, of a mill for grinding sugar-canes, with all its rights, members, and appurtenances.

From Sicily, where the sugar-cane still flourishes on the sides of mount Hybla, it was conveyed to Spain, Madeira, the Canary and Cape de Verd islands, soon after they were discovered, in the fifteenth century. An opinion has prevailed, that the sugar-cane is not a native of the western continent, or its adjacent islands the West Indies, but was conveyed thither by the Spaniards or Portuguese, soon after the discovery of America by Columbus. From the testimony of Peter Martyr, in the third book of his first decade, composed during Columbus's second voyage, which commenced in 1493 and ended in 1495, it appears, that the sugar-cane was known at that time in Hispaniola. It may be said, that it was brought thither by Columbus; but for this assertion we have found no direct evidence; and, though we had direct evidence, this would not prove that the sugar-cane was not an indigenous plant of the West Indies. There are authors of learning who, after investigating this subject with attention, do not hesitate to maintain, that it is a native both of the islands and of the continent of America.

P. Labat has supported this opinion with much appearance of truth; and, in particular, he appeals to the testimony of Thomas Gage, an Englishman, who visited New Spain, in 1625. Gage enumerates sugar-canes among the provisions with which the Charaibes of Guadaloupe supplied his ship. "Now (says Labat) it is a fact that the Spaniards had never cultivated an inch of ground in the Smaller Antilles. Their ships commonly touched at those islands indeed for wood and water; and they left swine in the view of supplying with fresh provisions such of their countrymen as might call there in future; but it would be absurd in the highest degree to suppose, that they would plant sugar-canes, and at the same time put hogs ashore to destroy them.

"Neither had the Spaniards any motive for bestowing this plant on islands which they considered as of no kind of importance, except for the purpose which has been mentioned; and to suppose that the Charaibes might have cultivated, after their departure, a production of which they knew nothing, betrays a total ignorance of the Indian disposition and character.

"But (continues Labat) we have surer testimony, and such as proves, beyond all contradiction, that the sugar-cane is the natural production of America. For, besides the evidence of Francis Ximenes, who, in a Treatise on American plants, printed at Mexico, asserts, that the sugar-

sugar-cane grows without cultivation, and to an extraordinary size, on the banks of the river Plate, we are assured by Jean de Lery, a Protestant minister, who was chaplain in 1556 to the Dutch garrison in the fort of Coligny, on the river Janeiro, that he himself found sugar-canes in great abundance in many places on the banks of that river, and in situations never visited by the Portuguese. Father Hennepen and other voyagers bear testimony in like manner to the growth of the cane near the mouth of the Mississippi; and Jean de Laet to its spontaneous production in the island of St. Vincent. It is not for the plant itself, therefore, but for the secret of making sugar from it, that the West Indies are indebted to the Spaniards and Portuguese; and these to the nations of the east."

Such is the reasoning of Labat, which the learned Lafitan has pronounced incontrovertible; and it is greatly strengthened by recent discoveries, the sugar-cane having been found in many of the islands of the Pacific Ocean by our late illustrious navigator Captain Cook.

The sugar-cane, or saccharum officinarum of botanists, is a jointed reed, commonly measuring (the flag part not included) from three feet and a half to seven feet in height, but sometimes rising to twelve feet. When ripe it is of a fine straw-colour inclining to yellow, producing leaves or blades, the edges of which are finely and sharply serrated, and terminating in an arrow decorated with a panicle. The joints in one stalk are from forty to sixty in number, and the stalks rising from one root are sometimes very numerous. The young shoot ascends from the earth like the point of an arrow; the shaft of which soon breaks, and the two first leaves, which had been inclosed within a quadruple sheath of seminal leaves, rise to a considerable height. "A field of canes, when standing, in the month of November, when it is in arrow or full of blossom (says Mr. Beckford in his descriptive Account of the Island of Jamaica), is one of the most beautiful productions that the pen or pencil can possibly describe. It in common rises from three to eight feet or more in height; a difference of growth that very strongly marks the difference of soil or the varieties of culture. It is when ripe of a bright and golden yellow; and, where obvious to the sun, is in many parts very beautifully streaked with red: the top is of a darkish green; but more dry, it becomes, from either an excess of ripeness or a continuance of drought, of a russet yellow, with long and narrow leaves depending; from the centre of which shoots up an arrow like a silver wand from two to six feet in height; and from the summits of which grows out a plume of white feathers, which are delicately fringed with a lilac dye; and indeed is, in its appearance, not much unlike the tuft that adorns this particular and elegant tree."

As the cane is a rank succulent plant, it must require a strong deep soil to bring it to perfection, perhaps indeed no soil can be too rich for this purpose. The soil which experience has found to be most favourable to the cultivation of it in the West Indies is the dark grey loam of St. Christopher's, which is so light and porous as to be penetrable by the slightest application of the hoe. The under stratum is gravel from eight to twelve inches deep. Canes planted in particular spots in the island have been known to yield eight thousand pounds of muscovado sugar from a single acre. The average produce of the island for a series of years has been sixteen thousand

hogſheads of ſixteen cwt. which is one-half only of the whole cane-land, or eight thouſand five hundred acres. When annually cut, it gives nearly two hogſheads of ſixteen cwt. per acre for the whole of the land in ripe canes.

Next to the aſhy loan of St. Chriſtopher's is the ſoil which in Jamaica is called brick-mold; not as reſembling a brick in colour, but as containing ſuch a due mixture of clay and ſand as is ſuppoſed to render it well adapted for the uſe of the kiln. It is a deep, warm, and mellow, hazel earth, eaſily worked; and though its ſurface ſoon grows dry after rain, the under ſtratum retains a conſiderable degree of moiſture in the drieſt weather; with this advantage too, that even in the wetteſt ſeaſon it ſeldom requires trenching. Plant-canes, by which is meant canes of the firſt growth, have been known in very fine ſeaſons to yield two tons and a half of ſugar per acre. After this may be reckoned the black mold of ſeveral varieties. The beſt is the deep black earth of Barbadoes, Antigua, and ſome other of the windward iſlands; but there is a ſpecies of this mold in Jamaica that is but little, if any thing, inferior to it, which abounds with limeſtone and flint on a ſubſtratum of ſoapy marle. Black mold on clay is more common; but as the mold is generally ſhallow, and the clay ſtiff and retentive of water, this laſt ſort of land requires great labour, both in ploughing and trenching, to render it profitable. When manured and properly pulverized, it becomes very productive. It is unneceſſary to attempt a minute deſcription of all the other ſoils which are found in theſe iſlands. There is, however, a peculiar ſort of land on the north ſide of Jamaica, chiefly in the pariſh of Trelawney, that cannot be paſſed over unnoticed, not only on account of its ſcarcity but its value; few ſoils producing finer ſugars, or ſuch as anſwer ſo well in the pan; an expreſſion ſignifying a greater return of refined ſugar than common. The land alluded to is generally of a red colour; the ſhades of which, however, vary conſiderably from a deep chocolate to a rich ſcarlet; in ſome places it approaches to a bright yellow, but it is every where remarkable, when firſt turned up, for a gloſſy or ſhining ſurface, and if wetted ſtains the fingers like paint.

As in every climate there is a ſeaſon more favourable for vegetation than others, it is of great importance that plants for ſeed be committed to the ground at the commencement of this ſeaſon. As the cane requires a great deal of moiſture to bring it to maturity, the propereſt ſeaſon for planting it is in the months of September and October, when the autumnal rains commence, that it may be ſufficiently luxuriant to ſhade the ground before the dry weather ſets in. Thus the root is kept moiſt, and the crop is ripe for the mill in the beginning of the enſuing year. Canes planted in the month of November, or later in the ſeaſon, loſe the advantage of the autumnal rains; and it often happens that dry weather in the beginning of the enſuing year retards their vegetation until the vernal or May rains ſet in, when they ſprout both at the roots and the joints; ſo that by the time they are cut the field is loaded with unripe ſuckers inſtead of ſugar-canes. A January plant, however, commonly turns out well; but canes planted very late in the ſpring, though they have the benefit of the May rains, ſeldom anſwer expectation; for they generally come in unſeaſonably, and throw the enſuing crops out of regular rotation. They are therefore frequently cut before they are

ripe;

ripe; or if the autumnal seasons set in early, are cut in wet weather, which has probably occasioned them to spring afresh; in either case the effect is the same:—The juice is unconcocted, and all the sap being in motion, the root is deprived of its natural nourishment, to the great injury of the ratoon. The chief objection to a fall-plant is this, that the canes become rank and top heavy, at a period when violent rains and high winds are expected, and are therefore frequently lodged before they are fit to be cut.

The sugar-cane is propagated by the top-shoots, which are cut from the tops of the old canes. The usual method of planting in the West Indies is this:—The quantity of land intended to be planted, being cleared of weeds and other incumbrances, is first divided into several plats of certain dimensions, commonly from fifteen to twenty acres each; the spaces between each plat or division are left wide enough for roads, for the conveniency of carting, and are called intervals. Each plat is then subdivided, by means of a line and wooden pegs, into small squares of about three feet and a half. Sometimes indeed the squares are a foot larger; but this circumstance makes but little difference. The negroes are then placed in a row in the first line, one to a square, and directed to dig out with their hoes the several squares, commonly to the depth of five or six inches. The mold which is dug up being formed into a bank at the lower side, the excavation or cane-hole seldom exceeds fifteen inches in width at the bottom, and two feet and a half at the top. The negroes then fall back to the next line, and proceed as before. Thus the several squares between each line are formed into a trench of much the same dimensions with that which is made by the plough. An able negro will dig from one hundred to one hundred and twenty of these holes for his day's work of ten hours; but if the land has been previously ploughed and lain fallow, the same negro will dig nearly double the number in the same time. As the negroes work at this business very unequally, according to their different degrees of bodily strength, it is sometimes the practice to put two negroes to a single square; but if the land has not had the previous assistance of the plough, it commonly requires the labour of fifty able negroes for thirteen days to hole twenty acres. In Jamaica, some gentlemen, to ease their own slaves, have this laborious part of the planting-business performed by job-work. The usual price for holing and planting is 6l. currency per acre (equal to 4l. 7s. sterling). The cost of falling and clearing heavy wood-land is commonly as much more.

The cane-holes or trench being now completed, whether by the plough or by the hoe, and the cuttings selected for planting, which are commonly the tops of the canes that have been ground for sugar (each cutting containing five or six gems), two of them are sufficient for a cane-hole of the dimensions described. These, being placed longitudinally in the bottom of the hole, are covered with mold about two inches deep; the rest of the bank being intended for future use. In twelve or fourteen days the young sprouts begin to appear; and as soon as they rise a few inches above the ground, they are, or ought to be, carefully cleared of weeds, and furnished with an addition of mold from the banks. This is usually performed by the hands. At the end of four or five months the banks are wholly levelled, and the spaces between the rows carefully hoe-ploughed. Frequent cleanings, while the canes are young, are indeed so essen-

tially necessary, that no other merit in an overseer can compensate for the want of attention in this particular. A careful manager will remove at the same time all the lateral shoots or suckers that spring up after the canes begin to joint, as they seldom come to maturity, and draw nourishment from the original plants.

"In the cultivation of other lands, in Jamaica especially (says Mr. Edwards, the elegant historian of the West Indies, whose superior excellence has induced us frequently to refer to him in the course of this article), the plough has been introduced of late years, and in some few cases to great advantage; but it is not every soil or situation that will admit of the use of the plough; some lands being much too stony, and others too steep; and I am sorry I have occasion to remark, that a practice commonly prevails in Jamaica, on properties where this auxiliary is used, which would exhaust the finest lands in the world. It is that of ploughing, then cross-ploughing, round-ridging, and harrowing, the same lands from year to year, or at least every other year, without affording manure: accordingly it is found that this method is utterly destructive of the ratoon or second growth, and altogether ruinous. It is indeed astonishing that any planter of common reading or observation should be passive under so pernicious a system. Some gentlemen, however, of late manage better: their practice is to break up stiff and clayey land, by one or two ploughings, early in the spring, and give it a summer's fallow. In the autumn following, being then mellow and more easily worked, it is holed and planted by manual labour after the old method, which has been already described. But in truth, the only advantageous system of ploughing in the West Indies is to confine it to the simple operation of holing, which may certainly be performed with much greater facility and dispatch by the plough than by the hoe; and the relief which, in the case of stiff and dry soils, is thus given to the negroes, exceeds all estimation, in the mind of a humane and provident owner. On this subject I speak from practical knowledge. At a plantation of my own, the greatest part of the land which is annually planted is neatly and sufficiently laid into cane-holes, by the labour of one able man, three boys, and eight oxen, with the common single-wheeled plough. The plough-share indeed is somewhat wider than usual; but this is the only difference, and the method of ploughing is the simplest possible. By returning the plough back along the furrow, the turf is alternately thrown to the right and to the left, forming a trench seven inches deep, about two feet and a half wide at the top, and one foot wide at the bottom. A space of eighteen or twenty inches is left between each trench, on which the mold being thrown by the share, the banks are properly formed, and the holing is complete. Thus the land is not exhausted by being too much exposed to the sun; and in this manner a field of twenty acres is holed with one plough, and with great ease, in thirteen days. The plants are afterwards placed in the trench as in the common method, where manual labour alone is employed."

In most parts of the West Indies it is usual to hole and plant a certain proportion of the cane-land, commonly one-third, in annual rotation. Canes of the first year's growth are called plant-canes, as has been already observed. The sprouts that spring from the roots of the canes that have been previously cut for sugar are called ratoons;

toons; the first yearly returns from their roots are called first ratoons; the second year's growth second ratoons.

Mr. Edwards informs us, that the manure generally used is a compost, formed, 1st, Of the vegetable ashes, drawn from the fires of the boiling and still houses. 2dly, Feculencies discharged from the still-house, mixed up with rubbish of buildings, white-lime, &c. 3dly, Refuse, or field-trash (i. e.) the decayed leaves and stems of the canes; so called in contradistinction to cane-trash, reserved for fuel. 4thly, Dung, obtained from the horse and mule stables, and from moveable pens, or small inclosures made by posts and rails, occasionally shifted upon the lands intended to be planted, and into which the cattle are turned at night. 5thly, Good mold, collected from gullies and other waste places, and thrown into the cattle-pens.

The sugar-cane is liable to be destroyed by monkeys, rats, and insects. The upland plantations suffer greatly from monkeys; these creatures, which now abound in the mountainous parts of St. Christopher's, were first brought thither by the French, when they possessed half that island; they come down from the rocks in silent parties by night, and having posted centinels to give the alarm if any thing approaches, they destroy incredible quantities of the cane, by their gambols as well as their greediness. It is in vain to set traps for these creatures, however baited; and the only way to protect the plantation, and destroy them, is to set a numerous watch, well armed with fowling-pieces, and furnished with dogs. The negroes will perform this service cheerfully, for they are very fond of monkeys as food. The celebrated Father Labat says, they are very delicious, but the white inhabitants of St. Kitt's never eat them.

The low-land plantations suffer as much by rats as those on the mountains do from monkeys; but the rats, no more than the monkeys, are natives of the place; they came with the shipping from Europe, and breed in the ground under loose rocks and bushes: the field negroes eat them greedily, and they are said to be publicly sold in the markets at Jamaica. To free the plantations from these vermin, the breed of wild cats should be encouraged, and snakes suffered to multiply unmolested; but they may be easily extirpated by a vigilant use of the Hampshire Miller's Rat-Powder, a very extraordinary, yet infallible method, if persevered in, as hath been testified by many respectable planters.

The sugar-cane is often subject to a disease which no foresight can obviate, and for which human wisdom has hitherto in vain attempted to find a remedy. This disease is called the blast, and is occasioned by the *aphis* of Linnæus. When this happens, the fine, broad, green blades become sickly, dry, and withered; soon after they appear stained in spots; and if these spots are carefully examined, they will be found to contain innumerable eggs of an insect like a bug, which are soon quickened, and cover the plants with the vermin: the juice of the canes thus affected becomes sour, and no future shoot issues from the joints. Ants also concur with the bugs to spoil the plantation, and against these evils it is hard to find a remedy.

The crops of sugar-canes do not ripen precisely at the same period in all the colonies. In the Danish, Spanish, and Dutch, settlements, they begin in January, and continue till October. This method doth not imply any fixed season for the maturity of the sugar-cane. The plant, however, like others, must have its progress; and it hath

hath been justly observed to be in flower in the months of November and December. It must necessarily follow, from the custom these nations have adopted of continuing to gather their crops for ten months without intermission, that they cut some canes which are not ripe enough, and others that are too ripe, and then the fruit hath not the requisite qualities. The time of gathering them should be at a fixed season, and probably the months of March and April are the fittest for it; because all the sweet fruits are ripe at that time, while the sour ones do not arrive to a state of maturity till the months of July and August. The English cut their canes in March and April; but they are not induced to do this on account of their ripeness. The drought that prevails in their islands renders the rains which fall in September necessary to their planting; and as the canes are eighteen months in growing, this period always brings them to the precise point of maturity.

"The time of crop in the sugar islands (says Mr. Edwards) is the season of gladness and festivity to man and beast. So palatable, salutary, and nourishing, is the juice of the cane, that every individual of the animal creation, drinking freely of it, derives health and vigour from its use. The meagre and sickly among the negroes exhibit a surprising alteration in a few weeks after the mill is set in action. The labouring horses, oxen, and mules, though almost constantly at work during this season, yet, being indulged with plenty of the green tops of this noble plant, and some of the scummings from the boiling-house, improve more than at any other period of the year. Even the pigs and poultry fatten on the refuse. In short, on a well-regulated plantation, under a humane and benevolent director, there is such an appearance during crop-time of plenty and busy cheerfulness, as to soften, in a great measure, the hardships of slavery, and induce a spectator to hope, when the miseries of life are represented as insupportable, that they are sometimes exaggerated through the medium of fancy."

The plants being cut, the branches at the top are given to the cattle for food; the top-shoot, which is full of eyes is preserved for planting. The canes are cut into pieces about a yard long, tied up in bundles, and carried in carts to the mill, where they are bruised, and the juice is extracted from them. The mill consists principally of three upright iron plated rollers or cylinders, from thirty to forty inches in length, and from twenty to twenty-five in diameter; and the middle one, to which the moving power is applied, turns the other two by means of cogs. Between these rollers, the canes (being previously cut short, and tied into bundles) are twice compressed; for having passed through the first and second rollers, they are turned round the middle one by a circular piece of frame-work or screen, called in Jamaica the dumb-returner, and forced back through the second and third; an operation which squeezes them completely dry, and sometimes even reduces them to powder. The cane juice is received in a leaden bed, and thence conveyed into a vessel called the receiver. The refuse, or macerated rind of the cane (which is called cane-trash, in contradistinction to field-trash), serves for fuel to boil the liquor.

The juice as it flows from the mill, taken at a medium, contains eight parts of pure water, one part of sugar, and one part consisting of coarse oil and mucilaginous gum, with a portion of essential oil.

As

As this juice has a strong disposition to fermentation, it must be boiled as soon as possible. There are some water-mills that will grind with great ease canes sufficient for thirty hogsheads of sugar in a week. It is necessary to have boiling vessels, or clarifiers, that will correspond in dimensions to the quantity of juice flowing from the receiver. These clarifiers are commonly three in number, and are sometimes capable of containing one thousand gallons each; but it is more usual to see them of three hundred or four hundred gallons each. Besides the clarifiers which are used for the first boiling, there are generally four coppers or boilers. The clarifiers are placed in the middle or at one end of the boiling-house. If at one end, the boiler called the teache is placed at the other, and several boilers (generally three) are ranged between them. The teache is ordinarily from seventy to one hundred gallons, and the boilers between the clarifiers and teache diminish in size from the first to the last. Where the clarifiers are in the middle, there is usually a set of three boilers of each size, which constitute in effect a double boiling-house. On very large estates this arrangement is found useful and necessary. The objection to so great a number is the expence of fuel; to obviate which, in some degree, the three boilers on each side of the clarifiers are commonly hung to one fire.

The juice runs from the receiver along a wooden gutter lined with lead into the boiling-house, where it is received into one of the clarifiers. When the clarifier is filled, a fire is lighted, and a quantity of Bristol quicklime in powder, which is called temper, is poured into the vessel. The use of the lime is to unite with the superabundant acid, which, for the success of the process, it is necessary to get rid of. The quantity sufficient to separate the acid must vary according to the strength of the quicklime and the quality of the liquor. Some planters allow a pint of lime to every hundred gallons of liquor; but Mr. Edwards thinks that little more than half the quantity is a better medium proportion, and even then, that it ought to be dissolved in boiling water, that as little of it as possible may be precipitated. The heat is suffered gradually to increase till it approaches within a few degrees of the heat of boiling water, that the impurities may be thoroughly separated. But if the liquor were suffered to boil with violence, the impurities would again incorporate with it. It is known to be sufficiently heated when the scum begins to rise in blisters, which break into white froth, and appear generally in about forty minutes. The fire is then suddenly extinguished by means of a damper, which excludes the external air, and the liquor is allowed to remain about an hour undisturbed, during which period the impurities are collected in scum on the surface. The juice is then drained off either by a syphon or a cock; the scum being of a tenacious gummy nature, does not flow out with the liquor, but remains behind in the clarifier. The liquid juice is conveyed from the clarifier by a gutter into the evaporating boiler, commonly termed the grand copper; and if it has been obtained from good canes it generally appears transparent.

In the evaporating boiler, which should be large enough to receive the contents of the clarifier, the liquor is allowed to boil; and as the scum rises it is taken off. The scumming and evaporation are continued till the liquor becomes finer and thicker, and so far diminished in bulk that it may be easily contained in the second copper.

When

When put into the second copper, it is nearly of the colour of Madeira wine; the boiling and scumming are continued, and if the impurities be considerable, a quantity of lime-water is added. This process is carried on till the liquor be sufficiently diminished in quantity to be contained in the third copper. After being purified a third time, it is put into the fourth copper, which is called the teache, where it is boiled and evaporated till it is judged sufficiently pure to be removed from the fire. In judging of the purity of the liquor, many of the negroes (says Mr. Edwards) guess solely by the eye (which by long habit they do with great accuracy), judging by the appearace of the grain on the back of the ladle: but the practice most in use is to judge by what is called the touch; i. e. taking up with the thumb a small portion of the hot liquor from the ladle; and, as the heat diminishes, drawing with the fore-finger the liquid into a thread. This thread will suddenly break, and shrink from the thumb to the suspended finger, in different lengths, according as the liquor is more or less boiled. The proper boiling height for strong muscovado sugar is generally determined by a thread of a quarter of an inch long. It is evident, that certainty in this experiment can be attained only by long habit, and that no verbal precepts will furnish any degree of skill in a matter depending wholly on constant practice.

The juice being thus purified by passing through the clarifier and four coppers, it is poured into coolers, which are usually six in number. The removal from the teache to the cooler is called striking. The cooler is a shallow wooden vessel seven feet long, from five to six wide, about eleven inches deep, and capable of containing a hogshead of sugar. As the liquor cools, the sugar grains, that is, collects into an irregular mass of imperfect crystals, separating itself from the melasses. It is then removed from the cooler, and conveyed to the curing-house, where the melasses drain from it. For receiving them there is a large cistern, the sloping sides of which are lined with boards. Directly above the cistern a frame of joist-work without boarding is placed, on which empty hogsheads without heads are ranged. The bottoms of these hogsheads are pierced with eight or ten holes, in each of which the stalk of a plantain leaf is fixed so as to project six or eight inches below the joists, and rise a little above the top of the hogshead. The hogsheads being filled with the contents of the cooler, consisting of sugar and melasses, the melasses being liquid, drain through the spungy stalk, and drop into the cistern. After the melasses are drained off, the sugar becomes pretty dry and fair, and is then called muscovado or raw sugar.

We have described the process for extracting sugar, which is generally adopted in the British West-India islands, according to the latest improvements; and have been anxious to present it to our readers in the simplest and most perspicuous form, that it might be intelligible to every person; and have therefore avoided to mention the observations and proposed amendments of those who have written on this subject. But we flatter ourselves it will not be disagreeable to learn by what methods the French make their sugar purer and whiter than ours. A quantity of sugar from the cooler is put into conical pans or earthen pots, called by the French *formes*, having a small perforation at the apex, which is kept closed. Each cone, reversed on its apex, is supported in another earthen vessel. The syrup

syrup is stirred together, and then left to crystallize. At the end of fifteen or sixteen hours, the hole in the point of each cane is opened, that the impure syrup may run out. The base of these sugar-loaves is then taken out, and white pulverized sugar substituted in its stead; which being well pressed down, the whole is covered with clay moistened with water. This water filters through the mass, carrying the syrup with it which was mixed with the sugar, but which by this management flows into a pot substituted in the place of the first. This second fluid is called fine syrup. Care is taken to moisten and keep the clay to a proper degree of softness as it becomes dry. The sugar loaves are afterwards taken out, and dried in a stove for eight or ten days; after which they are pulverized, packed, and exported to Europe, where they are still farther purified. The reason assigned why this process is not universally adopted in the British sugar islands is this, that the water which dilutes and carries away the molasses dissolves and carries with it so much of the sugar, that the difference in quality does not pay for the difference in quantity. The French planters probably think otherwise, upwards of four hundred of the plantations of St. Domingo having the necessary apparatus for claying and actually carrying on the system.

The art of refining sugar was first made known to the Europeans by a Venetian, who is said to have received 100,000 crowns for the invention. This discovery was made before the new world was explored; but whether it was an invention of the person who first communicated it, or whether it was conveyed from China, where it had been known for a considerable time before, cannot now perhaps be accurately ascertained. We find no mention made of the refining of sugar in Britain till the year 1659, though it probably was practised several years before. For in the Portuguese island of St. Thomas in 1624 there were seventy-four sugar ingenios, each having upwards of two hundred slaves. The quantity of raw sugar imported into England in 1778 amounted to 1,403,995 cwts. the quantity imported into Scotland in the same year was 117,285 cwts. the whole quantity imported into Great Britain in 1787 was 1,926,741 cwts.

The sugar which undergoes the operation of refining in Europe is either raw sugar, sometimes called muscovado, or cassonado, which is raw sugar in a purer state. The raw sugar generally contains a certain quantity of melasses as well as earthy and feculent substances. The cassonado, by the operation of earthing, is freed from its melasses. As the intention of refining these sugars is to give them a higher degree of whiteness and solidity, it is necessary for them to undergo other processes. The first of these is called clarification. It consists in dissolving the sugar in a certain proportion of lime-water, adding a proper quantity of bullock's blood, and exposing it to heat in order to remove the impurities which still remain. The heat is increased very gradually till it approach that of boiling water. By the assistance of the heat, the animal matter which was thrown in coagulates, at the same time that it attracts all the solid feculent and earthy matter, and raises it to the surface in the appearance of a thick foam of a brownish colour. As the feculencies are never entirely removed by a first process, a second is necessary. The solution is therefore cooled to a certain degree by adding some water; then a fresh quantity of blood, but less considerable than at first, is poured in. The fire is renewed, and care is taken to increase the heat gently

as before. The animal ſubſtance ſeizes on the impurities which remain, collects them on the ſurface, and they are then ſkimmed off. The ſame operation is repeated a third and even a fourth time, but no addition is made to the liquor except water. If the different proceſſes have been properly conducted, the ſolution will be freed from every impurity, and appear tranſparent. It is then conveyed by a gutter into an oblong baſket about ſixteen inches deep, lined with a woollen cloth; and, after filtering through this cloth, it is received in a ciſtern or copper which is placed below.

The ſolution being thus clarified, it undergoes a ſecond general operation called evaporation. Fire is applied to the copper into which the ſolution was received, and the liquid is boiled till it has acquired the proper degree of conſiſtency. A judgment is formed of this by taking up a ſmall portion of the liquid and drawing it into a thread. When, after this trial, it is found ſufficiently viſcous, the fire is extinguiſhed, and the liquid is poured into coolers. It is then ſtirred violently by an inſtrument called an oar, from the reſemblance it bears to the oar of a boat. This is done in order to diminiſh the viſcoſity, and promote what is called the granulation, that is, the forming of it into grains or imperfect cryſtals. When the liquid is properly mixed and cooled, it is then poured into moulds of the form of a ſugar-loaf. Theſe moulds are ranged in rows. The ſmall ends, which are loweſt, are placed in pots; and they have each of them apertures ſtopped up with linen for filtering the ſyrup, which runs from the moulds into the pots. The liquor is then taken out ſlowly in ladlefuls from the coolers, and poured into the moulds. When the moulds are filled, and the contents ſtill in a fluid ſtate, it is neceſſary to ſtir them, that no part may adhere to the moulds, and that the ſmall cryſtals which are juſt formed may be equally diffuſed through the whole maſs. When the ſugar is completely cryſtallized, the linen is taken away from the apertures in the moulds, and the ſyrup, or that part which did not cryſtallize, deſcends into the pots in which the moulds are placed. After this purgation the moulds are removed and fixed in other pots, and a ſtratum of fine white clay diluted with water is laid on the upper part of the loaf. The water, deſcending through the ſugar by its own weight, mixes with the ſyrup which ſtill remains in the body of the loaf, and waſhes it away. When the clay dries, it is taken off, and another covering of moiſt clay put in its place; and, if it be not then ſufficiently waſhed, a third covering of clay is applied. After the loaves have ſtood ſome days in the moulds, and have acquired a conſiderable degree of firmneſs and ſolidity, they are taken out, and carried to a ſtove, where they are gradually heated to the 50° of Reaumur (64° of Fahrenheit), in order to diſſipate any moiſture which may be ſtill confined to them. After remaining in the ſtove eight days, they are taken out; and after cutting off all diſcolouring ſpecks, and the head if ſtill wet, they are wrapped in blue paper, and are ready for ſale. The ſeveral ſyrups collected during the different parts of the proceſs, treated in the ſame manner which we have juſt deſcribed, afford ſugars of inferior quality; and the laſt portion, which no longer affords any ſugar, is ſold by the name of melaſſes.

The beauty of refined ſugar, when formed into loaves, conſiſts in whiteneſs, joined to a ſmallneſs of grain; in being dry, hard, and ſomewhat tranſparent. The proceſs which we have deſcribed above

refers

refers to sugar once refined; but some more labour is necessary to produce double-refined sugar. The principal difference in the operation is this: the latter is clarified by white of eggs instead of blood, and fresh water in place of lime-water.

Sugar-candy is the true essence of the cane formed into large crystals by a slow process. When the syrup is well clarified, it is boiled a little, but not so much as is done for the proof-mentioned in the process for making common sugar. It is then placed in old moulds, having their lower ends stopped with linen, and crossed at little distances with small twigs to retain the sugar as it crystallizes. The moulds are carried to the stove, and placed in a pot; but the linen is not removed entirely, so that the syrup falls down slowly in drops. When the syrup has dropped away, and the crystals of the sugar-candy are become dry, the moulds are taken from the stove and broken in pieces, to disengage the sugar, which adheres strongly to the sides of the moulds. If the syrup has been coloured with cochineal, the crystals take a slight tint of red; if indigo has been mixed, they assume a bluish colour. If it be desired to have the candy perfumed, the essence of flowers or amber may be dropped into the moulds along with the syrup.

Having now given some account of the method usually employed for refining sugar, it will not be improper to say a few things concerning its nature and its uses.

Sugar is soluble in water, and in a small degree in alcohol. When united with a small portion of water, it becomes fusible; from which quality the art of preserving is indebted for many of its preparations. It is phosphoric and combustible; when exposed to fire emitting a blue flame if the combustion be slow, and a white flame if the combustion be rapid. By distillation it produces a quantity of phlegm, acid, oil, gas, and charcoal. Bergman, in treating sugar with the nitrous acid, obtained a new acid now known by the name of the *oxalic acid*: but he has omitted to mention the principles of which sugar is composed. Lavoisier, however, has supplied this omission; and after many experiments has assigned three principles in sugar, hydrogene, oxygene, and carbone. If the juice expressed from the sugar-cane be left to itself, it passes into the acetous fermentation; and during the decomposition of the sugar, which is continued for three or four months, a great quantity of glutinous matter is separated. This matter when distilled gives a portion of ammoniac. If the juice be exposed to the spirituous fermentation, a wine is obtained analogous to cyder. If this wine, after being kept in bottles a year, be distilled, we obtain a portion of *eau de vie*.

The uses to which sugar are applied are indeed numerous and important:—It can be made so solid as in the art of preserving to receive the most agreeable colours and the greatest variety of forms. It can be made so fluid as to mix with any soluble substance.—It preserves the juice and substance of fruits in all countries and in all seasons. It affords a delicious seasoning to many kinds of food. It is useful in pharmacy, for it unites with medicines, and removes their disagreeable flavour: it is the basis of all syrups. M. Macquer has shewn in a very satisfactory manner how useful sugar would be if employed in fermenting wines. Sugar has also been found a remedy for the scurvy, and a valuable article of food in cases of necessity. M. Imbert de Lennes, first surgeon to the late Duke of

Orleans, publiſhed the following ſtory in the Gazette de Santé, which confirms this aſſertion. A veſſel laden with ſugar bound from the Weſt Indies was becalmed in its paſſage for ſeveral days, during which the ſtock of proviſions was exhauſted. Some of the crew were dying of the ſcurvy, and the reſt were threatened with a ſtill more terrible death. In this emergency recourſe was had to the ſugar. The conſequence was, the ſymptoms of the ſcurvy went off, the crew found it a wholeſome and ſubſtantial aliment, and returned in good health to France.

"Sugar (ſays Dr. Ruſh) affords the greateſt quantity of nouriſhment in a given quantity of matter of any ſubſtance in nature; of courſe it may be preſerved in leſs room in our houſes, and may be conſumed in leſs time, than more bulky and leſs nouriſhing aliment. It has this peculiar advantage over moſt kinds of aliment, that it is not liable to have its nutritious qualities affected by time or the weather; hence it is preferred by the Indians in their excurſions from home. They mix a certain quantity of maple-ſugar, with an equal quantity of Indian corn, dried and powdered, in its milky ſtate. This mixture is packed in little baſkets, which are frequently wetted in travelling, without injuring the ſugar. A few ſpoonfuls of it mixed with half a pint of ſpring water afford them a pleaſant and ſtrengthening meal. From the degrees of ſtrength and nouriſhment which are conveyed into animal bodies by a ſmall bulk of ſugar, it might probably be given to horſes with great advantage, when they are uſed in places or under circumſtances which make it difficult or expenſive to ſupport them with more bulky or weighty aliment. A pound of ſugar with graſs or hay has ſupported the ſtrength and ſpirits of an horſe during a whole day's labour in one of the Weſt-India iſlands. A larger quantity given alone has fattened horſes and cattle, during the war before laſt in Hiſpaniola, for a period of ſeveral months, in which the exportation of ſugar, and the importation of grain, were prevented by the want of ſhips.

"The plentiful uſe of ſugar in diet is one of the beſt preventatives that has ever been diſcovered of the diſeaſes which are produced by worms. Nature ſeems to have implanted a love for this aliment in all children, as if it were on purpoſe to defend them from thoſe diſeaſes. Dr. Ruſh knew a gentleman in Philadelphia, who early adopted this opinion, and who, by indulging a large family of children in the uſe of ſugar, has preſerved them all from the diſeaſes uſually occaſioned by worms.

"Sir John Pringle has remarked, that the plague has never been known in any country where ſugar compoſes a material part of the diet of the inhabitants. Dr. Ruſh thinks it probable that the frequency of malignant fevers of all kinds has been leſſened by this diet, and that its more general uſe would defend that claſs of people who are moſt ſubject to malignant fevers from being ſo often affected by them.

"In the numerous and frequent diſorders of the breaſt, which occur in all countries where the body is expoſed to a variable temperature of weather, ſugar affords the baſis of many agreeable remedies. It is uſeful in weakneſſes, and acrid defluxions upon other parts of the body. Many facts might be adduced in favour of this aſſertion. Dr. Ruſh mentions only one, which, from the venerable name of the perſon whoſe caſe furniſhed it, cannot fail of commanding

ing attention and credit. Upon my inquiring of Dr. Franklin, at the request of a friend (says our respectable author), about a year before he died, whether he had found any relief from the pain of the stone from the blackberry jam, of which he took large quantities, he told me that he had, but that he believed the medicinal part of the jam resided wholly in the sugar; and as a reason for thinking so, he added, that he often found the same relief by taking about half a pint of a syrup, prepared by boiling a little brown sugar in water, just before he went to bed, that he did from a dose of opium. It has been supposed by some of the early physicians of our country, that the sugar obtained from the maple-tree is more medicinal than that obtained from the West India sugar-cane; but this opinion I believe is without foundation. It is preferable in its qualities to the West-India sugar only from its superior cleanliness.

"Cases may occur in which sugar may be required in medicine, or in diet, by persons who refuse to be benefited, even indirectly, by the labour of slaves. In such cases the innocent maple-sugar will always be preferred. It has been said, that sugar injures the teeth; but this opinion now has so few advocates, that it does not deserve a serious refutation."

In the account which we have given above of the method of cultivating and manufacturing sugar, we have had in our eye the plantations in the West Indies, where slaves alone are employed; but we feel a peculiar pleasure in having it in our power to add a short description of the method used in the East Indies, because there sugar is manufactured by free men, on a plan which is much more economical than what is followed in the West Indies. The account which we mean to give is an extract from the report of the committee of privy-council for trade on the subject of the African slave-trade, drawn up by Mr. Botham. We shall give it in the author's own words.

"Having been for two years in the English and French West-India islands, and since conducted sugar estates in the East Indies, before the abolition of the slave-trade was agitated in parliament, it may be desirable to know that sugar of a superior quality and inferior price to that in our islands is produced in the East Indies; that the culture of the cane, the manufacture of the sugar and arrack, is, with these material advantages, carried on by free people. China, Bengal, the coast of Malabar, all produce quantities of sugar and spirits; but as the most considerable growth of the cane is carried on near Batavia, I shall explain the improved manner in which sugar estates are there conducted. The proprietor of the estate is generally a wealthy Dutchman, who has erected on it substantial mills, boiling and curing houses. He rents this estate to a Chinese, who resides on it as a superintendant; and this renter (supposing the estate to consist of three hundred or more acres) re-lets it to freemen in parcels of fifty or sixty on these conditions: "That they shall plant it in canes, and receive so much per pecul of 133⅓ pounds for every pecul of sugar that the canes shall produce."

When crop-time comes on, the superintendant collects a sufficient number of persons from the adjacent towns or villages, and takes off his crop as follows:—To any set of tradesmen who bring their carts and buffaloes he agrees to give such a price per pecul to cut all his crop of canes, carry them to the mill, and grind them. A second to

boil them per pecul. A third to clay them and basket them for market per pecul. So that by this method of conducting a sugar estate the renter knows to a certainty what the produce of it will cost him per pecul. He has not any permanent or unnecessary expence; for, when the crop is taken off, the taskmen return to their several pursuits in the towns and villages they came from; and there only remain the cane planters who are preparing the next year's crop. This like all other complex arts, by being divided into several branches, renders the labour cheaper and the work more perfectly done.

Only clayed sugars are made at Batavia; these are in quality equal to the best sort from the West Indies, and are sold so low from the sugar estates as eighteen shillings sterling per pecul of 133⅓lbs. This is not the selling price to the trader at Batavia, as the government there is arbitrary, and sugar subject to duties imposed at will. The Shabander exacts a dollar per pecul on all sugar exported. The price of common labour is from 9d. to 10d. per day. By the method of carrying on the sugar estates, the taskmen gain considerably more than this, not only from working extraordinary hours, but from being considered artists in their several branches. They do not make spirits on the sugar estates. The melasses are sent for sale to Batavia, where one distillery may purchase the produce of an hundred estates. Here is a vast saving and reduction of the price of spirits; not, as in the West Indies, a distillery for each estate; many centre in one, and arrack is sold at Batavia from twenty-one to twenty-five rix-dollars per leaguer of one hundred sixty gallons; about 8d. per gallon.

The Sugar-Maple, (the *acer saccharinum* of Linnæus,) as well as the sugar-cane, produces a great quantity of sugar. This tree grows in great numbers in the western counties of all the middle states of the American union. Those which grow in New York and Pennsylvania yield the sugar in a greater quantity than those which grow on the waters of Ohio.—These trees are generally found mixed with the beech, hemlock, white and water ash, the cucumber-tree, linden, aspen, butter-nut, and wild cherry-trees. They sometimes appear in groves covering five or six acres in a body, but they are more commonly interspersed with some or all of the forest trees which have been mentioned. From thirty to fifty trees are generally found upon an acre of ground. They grow only in the richest soils, and frequently in stony ground. Springs of the purest water abound in their neighbourhood. They are, when fully grown, as tall as the white and black oaks, and from two to three feet in diameter. They put forth a beautiful white blossom in the spring before they shew a single leaf. The colour of the blossom distinguishes them from the acer rubrum, or the common maple, which affords a blossom of a red colour. The wood of the sugar maple-tree is extremely inflammable, and is preferred upon that account by hunters and surveyors for fire-wood. Its small branches are so much impregnated with sugar as to afford support to the cattle, horses, and sheep, of the first settlers, during the winter, before they are able to cultivate forage for that purpose. Its ashes afford a great quantity of potash, exceeded by few, or perhaps by none, of the trees that grow in the woods of the United States. The tree is supposed to arrive at its full growth in the woods in twenty years.

It is not injured by tapping; on the contrary, the oftener it is tapped, the more sprup is obtained from it. In this respect it follows

lows a law of animal secretion. A single tree had not only survived, but flourished, after forty-two tappings in the same number of years. The effects of a yearly discharge of sap from the tree, in improving and increasing the sap, are demonstrated from the superior excellence of those trees which have been perforated in an hundred places by a small wood-pecker which feeds upon the sap. The trees after having been wounded in this way, distil the remains of their juice on the ground, and afterwards acquire a black colour. The sap of these trees is much sweeter to the taste than that which is obtained from trees which have not been previously wounded, and it affords more sugar.

From twenty-three gallons and one quart of sap, procured in twenty-four hours from only two of these dark-coloured trees, Arthur Noble, Esq. of the state of New York, obtained four pounds and thirteen ounces of good grained sugar.

A tree of an ordinary size yields in a good season from twenty to thirty gallons of sap, from which are made from five or six pounds of sugar. To this there are sometimes remarkable exceptions. Samuel Lowe, Esq. in Montgomery county, in the state of New York, made twenty pounds and one ounce of sugar between the 14th and 23d of April, in the year 1789, from a single tree that had been tapped for several successive years before.

From the influence which culture has upon forest and other trees, it has been supposed, that by transplanting the sugar maple-tree into a garden, or by destroying such other trees as shelter it from the rays of the sun, the quantity of the sap might be increased, and its quality much improved. A farmer in Northampton county, in the state of Pennsylvania, planted a number of these trees above twenty years ago in his meadow, from three gallons of the sap of which he obtains every year a pound of sugar. It was observed formerly, that it required five or six gallons of the sap of the trees which grow in the woods to produce the same quantity of sugar.

The sap distils from the wood of the tree. Trees which have been cut down in the winter for the support of the domestic animals of the new settlers, yield a considerable quantity of sap as soon as their trunks and limbs feel the rays of the sun in the spring of the year. It is in consequence of the sap of these trees being equally diffused through every part of them, that they live three years after they are girdled, that is, after a circular incision is made through the bark into the substance of the tree for the purpose of destroying it. It is remarkable that grass thrives better under this tree in a meadow, than in situations exposed to the constant action of the sun. The season for tapping the trees is in February, March, and April, according to the weather which occurs in these months.

Warm days and frosty nights are most favourable to a plentiful discharge of sap. The quantity obtained in a day from a tree is from five gallons to a pint, according to the greater or less heat of the air. Mr. Lowe obtained near three and twenty gallons of sap in one day (April 14, 1789) from the single tree which was before mentioned. Such instances of a profusion of sap in single trees are however not very common.

There is always a suspension of the discharge of sap in the night if a frost succeed a warm day. The perforation in the tree is made with an axe or an auger. The latter is perferred from experience of its

its advantages. The auger is introduced about three quarters of an inch, and in an ascending direction (that the sap may not be frozen in a slow current in the mornings or evenings), and is afterwards deepened gradually to the extent of two inches. A spout is introduced about half an inch into the hole made by this auger, and projects from three to twelve inches from the tree. The spout is generally made of the sumach or elder, which usually grows in the neighbourhood of the sugar-trees. The tree is first tapped on the south side; when the discharge of its sap begins to lessen, an opening is made on the north side, from which an increased discharge takes place. The sap flows from four to six weeks, according to the temperature of the weather. Troughs large enough to contain three or four gallons made of white pine, or white ash, or of dried water ash, aspen, linden, poplar, or common maple, are placed under the spout to receive the sap, which is carried every day to a large receiver, made of either of the trees before-mentioned. From this receiver it is conveyed, after being strained, to the boiler.

There are three modes of reducing the sap to sugar; by evaporation, by freezing, and by boiling; of which the latter is most general, as being the most expeditious. The profit of the maple-tree is not confined to its sugar. It affords most agreeable melasses, and an excellent vinegar. The sap which is suitable for these purposes is obtained after the sap which affords the sugar has ceased to flow, so that the manufactories of these different products of the maple-tree, by succeeding, do not interfere with each other. The melasses may be made to compose the basis of a pleasant summer beer. The sap of the maple is moreover capable of affording a spirit; but we hope this precious juice will never be prostituted to this ignoble purpose. Should the use of sugar in diet become more general in this country (says Dr. Rush), it may tend to lessen the inclination or supposed necessity for spirits; for I have observed a relish for sugar in diet to be seldom accompanied by a love for strong drink.

There are several other vegetables raised in our own country which afford sugar; as beet-roots, skirrets, parsneps, potatoes, celeri, red-cabbage stalks, the young shoots of Indian wheat. The sugar is most readily obtained from these, by making a tincture of the subject in rectified spirit of wine; which, when saturated by heat, will deposit the sugar upon standing in the cold.

ON SUICIDE.

SUICIDE is one of those crimes which we are led to believe not common among savage nations. The first instances of it recorded in the Jewish history are those of Saul and Ahitophel; for we do not think the death of Samson a proper example. We have no reason to suppose that it became common among the Jews till their wars with the Romans, when multitudes slaughtered themselves that they might not fall alive into the hands of their enemies. But at this period the Jews were a most desperate and abandoned race of men, had corrupted the religion of their fathers, and rejected that pure system which their promised Messiah came to Jerusalem to announce.

When it became remarkable among the Greeks, we have not been able to discover; but it was forbidden by Pythagoras, as we learn from Athenæus, by Socrates and Aristotle, and by the Theban and Athenian

Athenian laws. In the earliest ages of the Roman republic it was seldom committed; but when luxury and the Epicurean and Stoical philosophy had corrupted the simplicity and virtue of the Roman character, then they began to seek shelter in suicide from their misfortunes or the effects of their own vices.

The religious principles of the bramins of India led them to admire suicide on particular occasions as honourable. Accustomed to abstinence, mortification, and the contempt of death, they considered it as a mark of weakness of mind to submit to the infirmities of old age. We are informed that the modern Gentoos, who still in most things conform to the customs of their ancestors, when old and infirm, are frequently brought to the banks of rivers, particularly to those of the Ganges, that they may die in its sacred streams, which they believe can wash away the guilt of their sins. But the maxims of the bramins, which have encouraged this practice, we are assured by Mr. Holwell, are a corruption of the doctrines of the Shastah, which positively forbid suicide under the severest punishment. The practice which religion or affection has established among the Gentoos for women at the death of their husbands to burn themselves alive on the funeral pile, we do not think ought to be considered as suicide, as we are not anxious to extend the meaning of the word; for, were we to extend it thus far, it would be as proper to apply it to those who choose rather to die in battle than make their escape at the expence of their honour. Thus we should condemn as suicides the brave Spartans who died at Thermopylæ in defence of their country: we should also be obliged to apply the same disgraceful epithet to all those well-meaning but weak-minded Christians in this island, who in the last century chose rather to die as martyrs than comply with commands which were not morally wrong. According to the Gentoo laws, "it is proper for a woman after her husband's death to burn herself in the fire with his corpse. Every woman who thus burns shall remain in paradise with her husband three crore and fifty lacks of years. If she cannot, she must in that case preserve an inviolable chastity. If she remain chaste, she goes to paradise; and, if she do not preserve her chastity, she goes to hell."

A custom similar to this prevailed among many nations on the continent of America. When a chief died, a certain number of his wives, of his favourites, and of his slaves, were put to death, and interred together with him, that he might appear with the same dignity in his future station, and be waited upon by the same attendants. This persuasion is so deeply rooted, that many of their retainers offer themselves as victims; and the same custom prevails in many of the negro nations in Africa.

If we can believe the historians of Japan, voluntary death is common in that empire. The devotees of the idol Amida drown themselves in his presence, attended by their relations and friends, and several of the priests, who all consider the devoted person as a saint who is gone to everlasting happiness. Such being the supposed honours appropriated to a voluntary death, it is not surprising that the Japanese anxiously cherish a contempt of life. Accordingly it is a part of the education of their children "to repeat poems in which the virtues of their ancestors are celebrated, an utter contempt of life is inculcated, and suicide is set up as the most heroic of actions."

A notion ſeems alſo to have prevailed among the ancient Scythian tribes, that it was puſillanimous and ignoble for a man whoſe ſtrength was waſted with diſeaſe or infirmity, ſo as to be uſeleſs to the community, to continue to live. It was reckoned an heroic action voluntarily to ſeek that death which he had not the good fortune to meet in the field of battle. Perverſion of moral feeling does not ſpring up, we hope, ſpontaneouſly in any nation, but is produced by ſome peculiarities of ſituation. A wandering people like the Scythians, who roamed about from place to place, might often find it impoſſible to attend the ſick, or to ſupply from their precarious ſtore the wants of the aged and infirm. The aged and infirm themſelves, no longer able to ſupport the character of warriors, would find themſelves unhappy. In this way the practice of putting to death ſuch perſons as were uſeleſs to the community might originate, and afterwards be inculcated as honourable; but he, who put an end to his infirmities by his own hand, obtained a character ſtill more illuſtrious.

The tribes of Scandinavia, which worſhipped Odin the "father of ſlaughter," were taught, that dying in the field of battle was the moſt glorious event that could befal them. This was a maxim ſuited to a warlike nation. In order to eſtabliſh it more firmly in the mind, all were excluded from Odin's feaſt of heroes who died a natural death. In Aſgardia ſtood the hall of Odin; where, ſeated on a throne, he received the ſouls of his departed heroes. This place was called Valhalla, ſignifying "the hall of thoſe who died by violence." Natural death being thus deemed inglorious, and puniſhed with excluſion from Valhalla the paradiſe of Odin, he who could not enjoy death in the field of battle was led to ſeek it by his own hands when ſickneſs or old age began to aſſail him. In ſuch a nation ſuicide muſt have been very common.

As ſuicide prevailed much in the decline of the Roman empire, when luxury, licentiouſneſs, profligacy, and falſe philoſophy, pervaded the world, ſo it continued to prevail even after Chriſtianity was eſtabliſhed. The Romans, when they became converts to Chriſtianity, did not renounce their ancient prejudices and falſe opinions, but blended them with the new religion which they embraced. The Gothic nations alſo, who ſubverted the Roman empire, while they received the Chriſtian religion, adhered to many of their former opinions and manners. Among other criminal practices which were retained by the Romans and their conquerors, that of ſuicide was one; but the principles from which it proceeded were explained, ſo as to appear more agreeable to the new ſyſtem which they had eſpouſed. It was committed, either to ſecure from the danger of apoſtacy, to procure the honour of martyrdom, or to preſerve the crown of virginity.

When we deſcend to modern times, we lament to find ſo many inſtances of ſuicide among the moſt poliſhed nations, who have the beſt opportunities of knowing the atrocity of that unnatural crime. The Engliſh have long been reproached by foreigners for the frequent commiſſion of it; and the "gloomy month of November" has been ſtigmatized as the ſeaſon when it is moſt common. But this diſgraceful imputation, we think, may be juſtly attributed, not to the greater frequency of the crime in England than in other places, but to the cuſtom of publiſhing in the newſpapers every inſtance of

ſuicide

ſuicide which is known. Mr. Moore, who lately publiſhed a full inquiry into this ſubject, was at great pains to obtain accurate information concerning the perpetration of this crime in different countries. Mercier, who wrote in 1782, ſays, that the annual number of ſuicides in Paris was then about one hundred and fifty. He does not tell us how he came by the information; but we have the authority of the Abbé Fontana for aſſerting, that more perſons put an end to their lives in Paris than in London. The abbé had this information from the lieutenant of the police. Mr. Moore was informed by one of the principal magiſtrates of Geneva, that in that city, which contains about 25,000 inhabitants, the average number of ſuicides is about eight. The average number of ſuicides, from what cauſe ſoever, for the laſt twenty-eight years, has been thirty-two each year for London, Southwark, and Weſtminſter. In Edinburgh, which contains 80,000 inhabitants, the average number of ſuicides does not exceed four. Mr. Moore found, from the accounts he was favoured with by the ſeveral coroners of the county of Kent, that for the laſt eighteen years the number has been upwards of thirty-two each year. Kent is ſuppoſed to contain 200,000 inhabitants, and London 800,000. It is eaſy therefore to ſee, that in the metropolis many inſtances of ſuicide muſt occur which are never the ſubject of legal inquiry, and conſequently never made known to the world. Whereas in the country towns and villages of Kent it is ſcarcely poſſible to conceal ſuch an action as ſelf-murder from the knowledge of the whole neighbourhood. The calculation therefore reſpecting Kent we may receive as true, while we muſt increaſe the average number in London very conſiderably. Mr. Moore computes the average number of ſuicides in England every year at a thouſand; but the principles on which he founds this opinion are ſo imperfect and vague, that we do not think it can be depended on as coming near the truth.

It might lead to ſome intereſting concluſions to compare together, not only the number of ſuicides in different countries, but alſo the rank and principles, the ſex and age, of thoſe unhappy perſons by whom it has been committed. Mercier ſays, that at Paris it was the lower ranks who were moſt commonly guilty of it; that it was moſtly committed in garrets or hired lodgings; and that it proceeded from poverty and oppreſſion. A great many, he ſays, wrote letters to the magiſtrates before their death. Mr. Moore's correſpondent from Geneva informed him, that from the year 1777 to 1787 more than one hundred ſuicides were committed in Geneva; that two-thirds of theſe unfortunate perſons were men; that few of the clerical order have been known to commit it; and that it is not ſo much the end of an immoral, irreligious, diſſipated, life, as the effect of melancholy and poverty. By the information obtained from the coroners of Kent, it appears, that of the 32, three-fourths have deſtroyed themſelves by hanging; that the proportion of males to females has been about two-thirds of the former; that no one ſeaſon of the year is more diſtinguiſhed for this crime than another; and that ſuicide is upon the increaſe. In London ſuicide ſeems more common among the great and wealthy than among the lower ranks, and that it is uſually the effect of gaming and diſſipation.

Thoſe who have inquired into the cauſes of ſuicide in Britain have enumerated many phyſical as well as moral cauſes. They have

ascribed it to the variableness of our climate, to the great use of animal food, to strong spirituous liquors, to tea, and to the sulphureous exhalations of the pit-coal used as fuel, which are said to produce a depression of spirits and nervous affections. Of our climate, we have no cause to complain, nor have we any reason to impute any of our vices to its influence. There are many climates much more unfavourable where suicide is scarcely known. That an excessive quantity of gross animal food, or of strong liquors, or of tea, will powerfully affect the human constitution, we will not deny: but, before we consider these as causes, it must first be determined, whether those who are guilty of self-murder be much addicted to them; and, if they are, whether there be not other causes much more violent in their nature which have operated on their mind; for we ought not rashly to attribute vicious effects to any of those things which seem to have been created on purpose for the comfort or convenience of man. We are rather surprised to find that coal is mentioned even as a distant cause of suicide; for it is one of the blessings of our island; and a good coal-fire we have always found rather conducive to good spirits than injurious to them.

Among the moral causes which are supposed to co-operate in producing suicide in Britain, the freedom of our constitution and laws is reckoned one. That rational liberty should have any tendency to encourage crimes of any kind, a Christian philosopher can never allow; for such an opinion is totally discountenanced by enlightened views of nature. Mercier has ascribed the frequency of suicide in Paris to the oppression of the late government. Now it appears somewhat extraordinary, that suicide in one country should be occasioned by liberty, and in another by the want of it. One of these opinions must be false, and it is surely not difficult to distinguish which.

Humanity would in most cases dispose us to conclude, that suicide is the effect of insanity, were there not so many instances of cool deliberate self-murder. That suicide is an unnatural crime, which none but a madman would commit, compassion indeed may suppose: but the murder of a wife, a father, or a child, are also unnatural; yet compassion does not teach us in all cases to ascribe such a crime to madness. Passion may often arise to such a height of outrage as to be scarcely distinguishable from madness in its symptoms and its effects; yet we always make a distinction between that madness which arises from disease, and that which is owing to a violent perturbation of mind. If a person be capable of managing his worldly affairs, of making a will, and of disposing of his property, immediately before his death, or after he formed the resolution of dying by his own hands, such a man is not to be considered as insane.

But, though a regard for truth prevents us from ascribing suicide in all cases to insanity, we must ascribe it either to insanity or to vicious passion. These two divisions, we imagine, will comprehend every species of it, whether arising from melancholy, *tædium vitæ* or *ennui*, disappointment in schemes of ambition or love, pride, gaming, or a desire to avoid the shame of a public execution: passions which are often increased by false views of Providence, of man, and of a future state, arising from deism and infidelity. If these be the causes of suicide in modern time, what a disgraceful contrast do they form to those principles which actuated many of the ancient philoso-

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phers, the Gentoos, the Japanese, and the worshippers of Odin? When they committed suicide, they committed it from principle, from a belief of its lawfulness, and the hope of being rewarded for what they judged an honourable sacrifice. But in modern times, we are sorry to say, when it is not the effect of madness, it is the effect of vice: and, when it is the effect of vice, it proves that the vicious passions are then indulged to the highest degree; for there is no crime which a man can commit that is so strong a symptom of the violence of particular passions. It is from not attending to this circumstance, that it has been found so difficult to refute the arguments in favour of suicide. If the criminality of suicide be confined merely to the violent action, many apologies may be made for it; but if it be considered solely as the effect of vice, as the strongest symptom of ungoverned passion, he who undertakes its defence must undertake the defence of what all men will loudly condemn. Several of the heathens entertained a very just sense of the atrocity of suicide. Quintus Curtius introduces Darius with the following speech, when he had lost his empire: "I wait (says the unfortunate monarch) the issue of my fate: you wonder, perhaps, that I do not terminate my own life; but I choose rather to die by the crime of another than by my own."

It is unnecessary to enter particularly into the arguments of those casuists who have undertaken the despicable office of advocates for the crime of suicide. Their talents might surely have been employed more usefully to the world, and more honourably to themselves, than in pleading for a crime which, if it were committed by every man to whom their principles would make it lawful, would totally destroy some of the noblest virtues, fortitude, patience, and resignation; nay, would destroy society itself, and teach us to despise the opinion that this world is a state of preparation for another. "I came into life without my own consent, and may I not quit it at pleasure?" (say the advocates for suicide.) If, because we came into life without our own consent, we might quit it at pleasure, why may we not spend our life also as we please? Why may we not rob and murder, and commit every kind of crime, if mere inclination is to be the rule of action? Thus upon the principles of suicide the highwayman and murderer may reason, and every man may find a sufficient apology for any crime which he is tempted to commit. Or this absurdity may be otherwise answered; As we came into life without our own consent, we must have come with the consent of some other being; and logic says, that with the consent of that Being only can we lawfully quit it.

It is sufficient shortly to say, that suicide is contray to the strongest principle of the human constitution, self-preservation; that it is rebellion against heaven; that it is cruelty to the feelings and reputation, and often takes away the subsistence of a wife, a child, or a father; that it proves a want of fortitude to brave misfortunes; that it delivers only from imagined to plunge into real evils. We may add, that almost every instance of suicide of which we have heard was rash, imprudent, and premature, interrupted a useful life, or prevented a more honourable death. Had Cato's pride permitted him to yield himself to the generosity of Cæsar, his character and his influence might have contributed to retard the slavery of his country, which his death tended to hasten. Had Brutus and

Cassius

Caſſius not executed the fatal reſolution which they had formed, of dying by their own hands in caſe of misfortune, the battle of Philippi might have had a very different iſſue. Had Hannibal ſurrendered himſelf to the Romans, inſtead of ſwallowing poiſon, he would have gained more glory in braving their tortures than he won in the battle of Cannæ; for to die innocently and heroically is the greateſt exertion of human fortitude.

As ſuicide was deemed a crime by the moſt illuſtrious and virtuous of the Greek and Roman philoſophers, it was conſidered as a crime by the laws, and treated with ignominy. By the law of Thebes ſuicides were to have no honours paid to their memory. The Athenian law ordained the hand which committed the deed to be cut off, and burned apart from the reſt of the body. The body was not buried with the uſual ſolemnities, but was ignominiouſly thrown into ſome pit. In Cea and Maſſilia (the ancient Marſeilles), it was conſidered as a crime againſt the ſtate; and it was therefore neceſſary for thoſe who wiſhed to deſtroy themſelves to obtain permiſſion from the magiſtrates. Plutarch acquaints us, that an unaccountable paſſion for ſuicide ſeized the Mileſian virgins; from indulging which they could not be prevented by the tears and enfreaties of parents and friends: but what perſuaſion and entreaty could not effect was accompliſhed by very different means. A decree was iſſued, "that the body of every young woman who hanged herſelf ſhould be dragged naked through the ſtreets by the ſame rope with which ſhe had committed the deed." This wiſe edict put a complete ſtop to the extraordinary frenzy, and ſuicide was no longer committed by the virgins of Miletus.

In the early part of the Roman hiſtory there ſeems to have been ſeldom occaſion for framing any laws againſt ſuicide. The only inſtance recorded occurs in the reign of Tarquinius Priſcus. The ſoldiers who were appointed to make drains and common ſewers, thinking themſelves diſgraced by ſuch ſervile offices, put themſelves to death in great numbers. The king ordered the bodies of all the ſelf-murderers to be expoſed on croſſes, and this put an effectual ſtop to the practice. It is doubtful whether there was any ſtanding law againſt ſuicide during the exiſtence of the republic; but during the reign of the emperors it was thought proper to lay it under certain regulations, though not abſolutely to condemn it as a crime. In Juſtinian's Digeſt there is a law, by which it was enacted, "that if perſons accuſed, or who had been found guilty, of any crime, ſhould make away with themſelves, their effects ſhould be confiſcated." But this puniſhment only took place when confiſcation of goods happened to be the penalty appointed by the law for the crime of which the ſelf-murderer was accuſed or found guilty, and was not inflicted for ſuicide committed in any other circumſtances.

When the Chriſtian church had extended its juriſdiction in the Roman empire, it was decreed, in the ſixth century, that no commemoration ſhould be made in the euchariſt for ſuch as deſtroyed themſelves; neither ſhould their bodies be carried out to burial with pſalms, nor have the uſual ſervice ſaid over them. This eccleſiaſtical law continued till the reformation, when it was admitted into the ſtatute code of England by the authority of parliament. As an additional puniſhment, however, confiſcation of land and goods ſeems to have been adopted from the Danes, as we learn from Bracton.

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At present the punishment consists in confiscating all the personal property of a *felo de se* for the use of the crown, and in excluding his body from interment in consecrated ground. The warrant of the coroner requires that the body should be buried in some public highway, and a stake driven through it to increase the ignominy.

To inquire into the prevalence and causes of crimes, in order to discover the most judicious methods of preventing them, is the duty of the patriot and the Christian. Suicide, we find, is a common and an increasing evil: but it is a difficult matter to find an effectual remedy; for what motives can be held out sufficient to influence that man's mind who is deaf to the voice of nature speaking within him, and to the voice of nature's God, declaring that he is stationed at a post which it is his duty to maintain? His reputation and property are indeed within the reach of the laws; his body may be treated with ignominy, and his property confiscated; but this punishment will not be a preventive, even if it could be always inflicted; and that it is seldom inflicted, though the laws have decreed it, is well known. The humanity of the present age disposes us to sympathise with the relations of the deceased, instead of demanding that the sentence of the law should be executed. It is a generally-received opinion, and a just one, that punishments decreed by human laws should be directed only against such crimes as are injurious to society; but when it is hence inferred, that suicide ought not to be subject to the cognizance of human laws, every rule of logic is violated. There is no man, however mean in station and in talents, whose life may not, on some occasions, be useful to the community at large; and to conclude, that a person who fancies himself useless may therefore lawfully put a period to his life, is as false reasoning as it would be to conclude, that by killing a poor man, who lives on the public, we should perform an action not only innocent but meritorious, as we should thereby free society from one of its burdens.

We cannot conclude without presenting to our readers the following beautiful passage upon this subject from Fitzosborne's Letters:—

"I am persuaded (says this elegant writer) this disgust of life is frequently indulged out of a principle of mere vanity. It is esteemed as a mark of uncommon refinement, and as placing a man above the ordinary level of his species, to seem superior to the vulgar feelings of happiness. True good sense, however, most certainly consists not in despising, but in managing our stock of life to the best advantage, as a cheerful acquiescence in the measures of Providence is one of the strongest symptoms of a well constituted mind. Self-weariness is a circumstance that ever attends folly; and to condemn our being is the greatest, and indeed the peculiar, infirmity, of human nature. It is a noble sentiment which Tully puts into the mouth of Cato, in his Treatise upon Old Age: *Non lubet mihi* (says that venerable Roman) *deplorare vitam, quod multi, et ii docti, sæpe fecerunt; neque me vixisse pœnitet: quoniam ita vixi, ut non frustra me natum existimem.*

"It is in the power, indeed, of but a very small portion of mankind to act the same glorious part that afforded such high satisfaction to this distinguished patriot; but the number is yet far more inconsiderable of those who cannot, in any station, secure themselves a sufficient fund of complacency to render life justly valuable. Who is it that is placed out of the reach of the highest of all gratifications, those

those of the generous affections, and that cannot provide for his own happiness, by contributing something to the welfare of others? As this disease of the mind generally breaks out with most violence in those who are supposed to be endowed with a greater delicacy of taste and reason than is the usual allotment of their fellow-creatures, one may ask them, whether there is any satiety in the pursuits of useful knowledge? or, if one can ever be weary of benefiting mankind? Will not the fine arts supply a lasting feast to the mind; or, can there be wanting a pleasurable enjoyment, so long as there remains even one advantageous truth to be discovered or confirmed? To complain that life has no joys, while there is a single creature whom we can relieve by our bounty, assist by our counsels, or enliven by our presence is, to lament the loss of that which we possess, and is just as rational as to die for thirst with the cup in our hands. But the misfortune is, when a man is settled into a habit of receiving all his pleasures from the mere selfish indulgences, he wears out of his mind the relish of every nobler enjoyment, at the same time that his powers of the sensual kind are growing more languid by each repetition. It is no wonder, therefore, he should fill up the measure of his gratifications long before he has completed the circle of his duration; and either wretchedly sit down the remainder of his days in discontent, or rashly throw them up in despair."

OSYMANDES, KING OF EGYPT.

OSYMANDES, according to some authors, was the first monarch who collected a great number of books for the purpose of forming a library. To this curious collection he gave the title of Pharmacy of the Soul. Of all the monuments of the kings of Thebes, that of Osymandes is one of the most magnificent. "He appears (says an elegant author) to have been a prince of great elegance and taste in his day. Diodorus Siculus describes many sumptuous edifices erected by him; among those edifices his palace or mausoleum, whichsoever it was, has been eminently distinguished for the paintings and sculptures with which it was adorned. When we look to the subjects of those works, we shall have reason to think that no man in any age could discover a fairer and more enlightened judgment than he did in the employment of the genius around him, which was not tamely devoted to dull or contracted objects, nor lavished on scenes of savage life, nor wholly engrossed in allusions to himself, but sensibly enlarged to a variety of contemplation which might become a great sovereign; and in each of those parts the subject was characteristically great.

In one place was represented, in a multitude of sculptures, his expedition against the Bactrians, a people of Asia, whom he had invaded with 400,000 foot and 20,000 horse, and whom he conquered. In another part was displayed the variety of fruits and productions, with which Pan, the great source of all things, had enriched the fertile land over which Osymandes reigned. A third group of figures represented the monarch himself, as the high-priest of the country, offering to the gods the gold and silver which he drew every year from the mines of Egypt. In another part of the edifice was exhibited, in an infinite number of figures, an assembly

of judges, in the midst of a great audience attentive to their decisions; the president, or chief of those judges, surrounded by many books, wore on his breast a picture of truth with her eyes shut—those emphatic emblems, beyond which no age could go for the impression of that wisdom and impartiality which ought to prevail in administrative justice."

In short, we cannot without astonishment read the account which Diodorus Siculus gives of the almost incredible magnificence of this prince, and of the immense sums which he spent upon those grand works. Amongst a variety of other surprising curiosities, was to be seen a statue in the attitude of sitting, which was the largest in all Egypt, the length of one of the feet being seven cubits. Not only the art of the sculptor, but also the beauty of the stone which was perfect in its kind, contributed to render this a master-piece of sculpture. It bore the following inscription: "I am OSYMANDES, King of Kings; whoever will dispute with me this title, let him surpass me in any of my works."

Indeed (to use the words of the same elegant author quoted above) "the palace or mausoleum of this accomplished prince must give us a striking assurance of the progress which had been made in the arts at that time; whether he lived, as some have thought, the immediate successor of the first Busiris, which was somewhat later than the period of Semiramis; or, as others have conceived, subsequent to Sesostris, which would be four hundred years later. Diodorus Siculus, who describes that edifice, says nothing of age in which Osymandes lived; every opinion therefore on that point must be conjecture. We shall only remark, that there is nothing in the works of art in that edifice which should appear too much for the earliest age in which that monarch has been placed, when we look back to what was done of those works in a period full as early by Semiramis in Assyria."

DESCRIPTION OF THE PEAK IN DERBYSHIRE.

IT is very necessary that those who travel for information, should furnish themselves with the best account of every thing they find worthy particular attention, otherwise the principal use of their labours is lost. To explore the hidden secrets of nature, and view the elegant erections of art, are certainly delightful pursuits to the speculative mind, and at the same time afford rational entertainment, and solid instruction. It would probably conduce much to the certain information of the public, if travellers were furnished with a good description of the principal places worthy of notice, as it might point out immediately the most proper objects of observation, and greatly help their enquiries.

What is called the Peak includes several towns, in a range of about forty miles. To describe the principal natural curiosities which are to be met with in this tour is our present object.

Ashborne, in Derbyshire, is on the borders of Staffordshire, and on the East side of the river Dove, ten miles from Derby, and one hundred and thirty-nine from London.

At a small distance from Ashborne is the valley called Dove-dale, which is a narrow winding glen among a variety of hills and rocks, through which the river Dove takes its course for about two miles.

It is bounded in a very romantic manner by hills, rocks, and hanging woods, which are extremely various, and the hills in particular of a very bold and ſtriking character. They ſpread on all ſides in vaſt ſweeps, inexpreſſibly magnificent, and are much more ſtriking than any thing elſe at Dove-dale. The rocks are in ſome places very romantic, riſing in various ſhapes from banks of hill and wood, and forming a wild aſſemblage of really romantic objects; but they are much exceeded in magnitude by others in different parts of the kingdom. The courſe of the river is various, from a gentle current to a great rapidity over broken rocks, and in ſome places falls, but not in a bold manner. The fragments of rocks in it, with branches of wood growing from them, are truly romantic and pictureſque.

About three miles beyond this is Ilam, the ſeat of John Port, Eſq. the gardens of which are as romantic as moſt in England. They conſiſt of a ſmall vale, bounded by high, or rather ſteep, hills, totally covered with wood, and forming a complete amphitheatre. A rapid ſtream waſhes the bottom of them on one ſide, and on the other is a walk, from whence you command the whole ſweep, in a very great ſtile. A nobler range of wood, hanging almoſt perpendicular, can no where be ſeen. The walk at the entrance of the valley winds up a rocky cliff, from which you look down on the river in ſome places, and in others only hear the roar of it over broken rocks. At the end of the vale, on the ſide of the water, is a bench which commands the whole, and looks full on the entrance of the ground, which ſeems quite blocked up by a diſtant mountain, called Thorpe Cloud, of a very regular coned ſhape, blunt at top: the effect fine. This part of the country is full of romantic and uncommon views.

Buxton is one of the wonders of the Peak, having nine wells that riſe near the ſource of the river Wye, whoſe waters were noted by the Romans, and are mentioned by Lucan. This is confirmed by the high road called Roman Bath-gate, and by a wall cemented with red Roman plaiſter, cloſe by St. Anne's well, where may be ſeen the ruins of the ancient bath, its dimenſions and length. The plaiſter is red and hard as brick, a mixture not prepared in theſe days. It appears as if it was burnt, exactly reſembling tile; but Dr. Leigh is inclined to think it was a mixture of lime and powdered tiles, cemented with blood and eggs. The hot-bath is at a houſe called the Hall, beſides which there is another good inn or two, on the hill; but the company who come for their health chiefly frequent the Hall, on account of its convenience. The waters are hot and ſulphureous, yet not fœtid, but palatable, and are eminent for creating an appetite, opening obſtructions, and, if bathed in, are of good effect in ſcorbutic rheumatiſms, nervous diſtempers, &c. The building for the bath was erected by George Earl of Shrewſbury. Mary Queen of Scots was here for ſome time. She took her leave of this place with a diſtich of Julius Cæſar, ſomewhat altered, which is ſtill ſhewn, written with a diamond on a pane of glaſs, as the laſt claſſical authority of antiquity:

> Buxtona, *quæ calidæ celebraberе nomine lymphæ,*
> *Forte mihi poſthac non adeunda, vale.*

> Buxton, whoſe fame thy baths ſhall ever tell,
> Whom I perhaps ſhall ſee no more, farewel.

The

The Duke of Devonshire has erected, at an immense expence, a very beautiful edifice, in the form of a crescent, without any display of affected ornament. It contains twenty-nine windows in length, on a floor, and five at each end; but the piazzas are rather too narrow for much company. Under these are shops. On the back of this admirable building are stables, of an octagon form on the outside, and circular within the yard, where is a riding-house.

This place stands in an open healthy country, has a variety of fine views, and a beautiful down. The bath-water is exceeding clear, of a blood-warm temper, and will admit twenty people at a time. The pump was given by Sir Thomas Delves, who received a cure here. The Roman road, called Bath-gate, runs from hence seven miles to Burgh.

The town of Buxton is supposed, during the season, when full, to accommodate above five hundred persons, besides the inhabitants of the place.

Buxton is distant from Derby thirty-two miles, Manchester twenty-four, Sheffield twenty-four, Chesterfield twenty-four, Matlock twenty-four, Ashborn twenty, Leek twelve, Castleton twelve, Macclesfield ten and a half, and one hundred and fifty-nine from London.

Poole's Hole is within one mile of Buxton, and is one of the wonders of the Peak. The entrance is so low and narrow, that you must stoop to get in; but it soon dilates into a wide and lofty concavity, which reaches above a quarter of a mile endways, and farther, as they say. Eight women, with lighted candles, are guides in this dark way. Water drops every-where from the roof, and, and incrusts all the stones with long crystals and fluors, whence a thousand imaginary figures are shewn you by the names of lions, fonts, lanterns, organs, flitches of bacon, &c. At length you come to the Queen of Scot's Pillar, as the boundary of most people's curiosity. It was so named by that unhappy princess, when she visited this place. A stream of water runs along the middle of the cavern, among the falling rocks, with an hideous noise, re-echoed from all sides of the horrid concave. On the left-hand is a sort of chamber, where they say Poole, a famous robber, lived, and whose kitchen, as well as bed-chamber, they shew you, after you have crept ten yards on all fours. The most surprising thing you here meet with, is the extraordinary height of the arch. As you have guides before and behind you, carrying every one a candle, the light of the candles, reflected by the globular drops of water, dazzles your eyes like the dew in the morning sun; whereas, were any part of the arch of this vault to be seen by a clear light, all this beauty would disappear. Few people, as before observed, choose to venture beyond the Queen of Scot's Pillar; but some late travellers, urged by the spirit of curiosity, dared venture farther. Cotton, indeed, throws a damp upon the mind when he speaks of this attempt; for, in his words,

> Over the brook you're now oblig'd to stride,
> And on the left hand by this pillar's side,
> To seek new wonders; though beyond this stone,
> Unless you safe return, you'll meet with none,
> And that, indeed, will be a kind of one.

"On we went; the place so steep, so craggy, and so very slippery, that, had it not been for fast grasps, we should never have been

able to have got to the top. Here we ſtopped ſome time in admiration. A candle judiciouſly placed, without our knowledge, at the very extremity, peeped like a ſtar on a fine cloudy night, while another, as properly ſet at the bottom, whence we had aſcended, had as ſingular and as awful an effect. Cotton, ſpeaking of this, ſays,

Here, through a hole, your kind conductors ſhew
A candle, left on purpoſe at the brook,
On which, with trembling horror whilſt you look,
You'll fancy it, from that dreadful precipice,
A ſpark aſcending from the black abyſs.

"Hence, ſtill adventuring upwards, you paſs by the Lady's Pillion, and a Curtain, both of them beautiful incruſtations; and thence paſſing through the eye of St. Andrew's Needle, and keeping his throne, or pavilion, to the right, which is a remarkable petrifaction, both from its ſize and reſemblance to its deſignation, you paſs over a heap of irregular rocks to a paſſage moſt emphatically and juſtly ſtiled Break-back Paſſage. Here, crawling again, you at length come to the apparent end of this extenſive cavern (a ſmall aperture making it probable that it ſtill continues, although inacceſſible) at the diſtance of 2007 feet. Trifling as a diſtance of this kind may ſeem, it is yet wonderfully fatiguing to clamber over; for in many places the poet's words are far from hyperbolic:

For, in ſeveral places among theſe, you meet
With nothing worth obſerving but your feet,
Which with great caution you muſt ſtill diſpoſe,
Leſt, by miſchance, ſhould you once footing loſe,
Your own true ſtory only ſerve to grace
The lying fables of the uncouth place.

"Returning, therefore, with as much or rather with a greater degree of caution than we had entered, we at laſt, with ſome difficulty, got to the day-light; in our way having paid a viſit to Poole's Chamber and Parlour, in the latter of which is ſuch an hollow and reverberating ſound, that it is beyond a doubt there is a hideous cavern beneath."

Near the mouth of Poole's Hole, thirty or forty paces up the ſide of the hill, is a habitation cut out of a ſolid rock, by a man and his wife, who have lived in it about ſixteen years. In 1789 they had only one apartment, in which they brought up three children (Abraham, Iſaac, and Jacob;) but they were working backwards with great alacrity.

As Poole's Hole is called the ſecond wonder of the Peak, on the North ſide of the road from Buxton to Caſtleton you come to what is reckoned the third wonder, which is Mam Tor, or, as the word in the mountain jargon, or rather in the Britiſh, ſignifies, the Mother Rock (for *mam* is the Britiſh word for mother), upon a ſuggeſtion that the ſoft crumbling earth which falls from its ſummit produces ſeveral other mountains below, without being in the leaſt diminiſhed itſelf. The whole of the wonder is this: on the ſouth ſide of this hill is a precipice, very ſteep from the top to the bottom; and the ſubſtance, being of a crumbling looſe earth, mingled with little ſtones, is continually falling down in ſmall quantities, as the heavy rains looſen and waſh it off, or as froſts and thaws operate upon it.

Now

Now the great hill, which is thick, as well as high, parts with this loose stuff without being sensibly diminished; though the bottom into which it falls, being narrow, is more easily perceived to swell. Here then is the pretended wonder, that the little heap below should grow up into an hill, without any decrease of the great hill, as it should seem, notwithstanding so much has fallen from it. But the fact is certainly otherwise, though not perceivable.

Chesterfield, the chief town in the beautiful and fertile vale of Scarsdale, and the second considerable town in the county of Derby, is pleasantly situated between two rivulets, the Hyper and Rother, in a prolific soil.

Castleton is about eight miles from Chesterfield, in the High-Peak; it takes its name from an old castle adjoining to it, on a steep rock, to which there is but one ascent, and that so full of windings, that it is two miles to the top. Here you meet with what is called the fourth wonder of the Peak, stiled The Devil's Arse in the Peak. On the steep side of a mountain is a large opening, almost in the form of an old Gothic arch. It is upwards of thirty feet perpendicular, and twice as much broad at the bottom at least, and wider, it is said, than any artificial arch now to be seen. This arch is formed by nature at the bottom of a rock whose height is eighty-seven yards. It is chequered with a diversity of coloured stones, from which continually drops a sparry water that petrifies. Within this arch are several small buildings, which are inhabited by poor people, who lie there ready to attend travellers who have the curiosity to come to see these rarities; and the smoke arising from these wretched dwellings gives a most horrid appearance to the chasm, or grand arch, on first approaching it. Just within this arch is a cavern of the same height, forty yards wide and above one hundred in length. The roof of this place is flattish, all of solid rock, and looks dreadful over-head, because it has nothing but the natural side-walls to support it. A manufactory of thread is carried on by the poor people by the light that comes through the arch.

The first information you receive from your rustic guide, who is the naturalist and philosoper of the place, is the manner in which water congeals itself to spar: "At first it is," says he, "but a transparent drop; by the air it afterwards becomes a clay, and then gradually forms itself into petrifaction." As you go on beyond these hovels, the roof descends gradually, and is then so far from having houses, that a man cannot stand upright in it, though in the water; but stooping for a little way, and passing over (in a kind of bathing-tub, wherein you lie extended) the same stream of water which crosses the cave, you find more room over your head. But, going a little farther, you come to a third water, which crosses your way; and the rock stooping, at it were, down almost to the surface of the water, puts an end to the traveller's search.

Some farther particulars relating to this wonderful cavern we here present to our readers from the description of that celebrated self-taught philosopher Mr. Ferguson, who visited it in 1772; in which we shall occasionally interpolate something from the elegant and animated pen of Mr. Sullivan. After speaking of passing under the low-arched roof in a kind of boat, and lying at full length, as described above, Mr. F. proceeds thus: "When landed on the farther side of this water, and helped out of the boat by my guide, I

was

was conducted through a low place into a cavern ſeventy yards wide and forty yards high, in the top of which are ſeveral openings upwards, reaching ſo high that I could not ſee their tops. On one ſide of this place I ſaw ſeveral young lads, with candles in their hands, clambering up a very rough ſtony aſcent, and they diſappeared when about half way up. I aſked my guide who they were, and he told me they were the ſingers, and that I ſhould ſoon ſee them again, for that they were going through an opening that led into the next cavern. At eighty-ſeven yards from the firſt water I came to a ſecond, nine yards and a half broad, over which my guide carried me on his back. I then went under three natural arches, at ſome diſtance from one another, and all of them pretty regular; then entered a third cavern, called Roger Rain's Houſe, becauſe there is a continual dropping on one ſide of it, like a moderate rain. I no ſooner entered this cavern, than I was agreeably ſurpriſed by a melodious ſinging which ſeemed to echo on all ſides; and, on looking back, I ſaw the above-mentioned lads, in a large round opening called the chancel, nineteen yards above the bottom where I ſtood: they ſing for what viſitors pleaſe to give them as they return. The effect of ſlow ſolemn muſic in this ſituation is wonderful—it is impoſſible to deſcribe it. The lights, diſperſed in various parts of the gloomy cavern, appearing like ſtars; the ſtillneſs of the ſcene, ſave the patterings of the water in the rainy cell; form an uncommon admixture of the ſublime and beautiful, and conſpire, with the ſolemnity of the airs they ſing, to turn the mind to meditation; nature appears in awful majeſty before you, and you may eaſily fancy yourſelf tranſported into another world. At the top of a ſteep, rugged, ſtony, aſcent, on one ſide of this cavern, I ſaw a ſmall irregular hole, and aſked my guide whether there was another cavern beyond it. He told me there was; but that very few people ventured to go through into it, on account of the frightful appearance at the top of the hole, where the ſtones ſeemed to be almoſt looſe, as if ready to fall, and cloſe up the paſſage. I told him, that, if he would venture through, I would follow him: ſo I did, creeping flat, the place being rather too low to go on all fours; we then got into a long, narrow, irregular, and very high, cavern, which has ſurpriſing openings, of various ſhapes, at top, too high to ſee how far they reach. We returned through the hole into Roger Rain's houſe again, and from thence went down fifty yards lower, on wet ſand, wherein ſteps are made for convenience; at the bottom of which we entered into a cavern called the Devil's cellar, in which, my guide told me, there had been many bowls of good rum-punch made and drunk, the water having been heated by a fire occaſionally made for that purpoſe. In the roof of this cellar is a large opening, through which the ſmoke of the fire aſcends, and has been ſeen by many perſons above-ground to go out at the top of the rock; but this opening is ſo irregular and crooked, that no ſtone let down from the top was ever known to fall quite through into the cavern. From this place I was conducted a good way onward, under a roof too low to let one walk upright, and then entered a cavern called the Bell, becauſe the top of it is ſhaped ſomething like the inſide of a bell; hence I was conducted through a very low place into a higher, in the bottom of which runs a third water; here you are ſhewn a line, about the height of your ſhoulders, at which the water arrives in the time of heavy rains.

The roof of that place ſlopes gradually downward till it comes within five inches of the ſurface of the running water under it. My guide then told me, that I was juſt two hundred and ſeven yards below the ſurface of the ground, and ſeven hundred and fifty yards from the firſt entrance into the rock, and that there was no going any farther. This however, is not ſuppoſed to be the end of the cavern; and, as a conſiderable ſtream of water runs through a ſmall opening at the extremity, many people think it continues farther. Some few years ago, a gentleman was determined to try if he could not dive under the rock, and riſe in the cavern which is ſuppoſed to be ſtill beyond it; he plunged in, but ſtruck his head againſt the rock, and fell motionleſs to the bottom, from which the attendants with difficulty dragged him out. They have lately been at the trouble and expence of blowing up a part of the rock at this extremity, to try if they could diſcover any landing-place beyond it; but to no purpoſe—the water is ſeven feet deep where the rock cloſes again. Before I quit this ſpot, I muſt not omit mentioning the ſtaggering effect of a blaſt, as they ſtile it, occaſioned by a ſmall quantity of gunpowder crammed into a rock and ſet fire to. The exploſion is wonderfully grand: heaven and earth ſeem coming together. All viſitors are treated with this ſalute, and we, of courſe, had our ſhare of it. Throughout the whole I found the air very agreeable, and warm enough to bring on a moderate perſpiration, although, leſs than a fortnight before, (this was in the month of October,) all the caverns beyond the firſt river, where I was ferried under the low arch, had been filled to a conſiderable height with water during a flood occaſioned by great and long-continued rains."

We ſhall now follow Mr. Sullivan in a much more dangerous deſcent, and which very few travellers have the courage to attempt. We cannot do better than give the account exactly in his own words. "The ſpirit of curioſity had ſo warped our rational faculties, and danger was become ſo familiar to us, that we determined upon a plan that wiſer men would have ſhuddered at the idea of. This was no other than exploring a prodigious cavern, ſaid to be three miles in length, and ſtrongly ſuppoſed by the miners to have a communication with the Peak Cavern, as they inſiſt upon it the ſame river runs through both. Summoning therefore a *poſſe-comitatus* of the miners about Caſtleton, we in brief told them our intention. Aſtoniſhment at firſt prevented them from thinking us ſerious; none but two or three had ever ventured upon a trial; and even cuſtom had not reconciled the others to ſo hazardous an enterpriſe. A promiſe of reward, however, prevailed upon the whole, and they agreed to attend us in the morning. In the mean time a meſſenger being diſpatched to Sheffield for torches, we began, with all due form, to prepare for our deſcent: this was ſoon accompliſhed. A paper of memorandums, and a card, in caſe of an accident, telling who our friends were, and where they were to be found, were left upon our table in the inn. Thus guarding againſt the worſt that could befal us, at leaſt ſo far as it reſpected matters which we ſhould no longer have any concern in, we early the next morning, accompanied by a choſen ſet of our guides, repaired to the top of the mountain, where the ſciſſure opens itſelf about three feet in diameter. Provided by the miners with proper dreſſes, we then ſtripped ourſelves of our own outward apparel, and putting on each a pair of canvaſs trowſers,

trowsers, a flannel jacket, and over that a canvass frock, with a handkerchief round our heads, and a miner's cap, we proceeded one by one down this dreadful abyss, for the distance of about four hundred and twenty feet perpendicular. Imagination can scarcely form a descent more perilous. The only steps or things to hold by are bits of oak stuck into the sides, inhabitants of the place since it was first discovered, and which, from want of use, it was natural to suppose must have either rotted or loosened themselves in the earth; moreover, a false step hurled one inevitably to destruction: fortunately all was firm, and we arrived at the bottom unhurt. Here ranging ourselves in order, with a large bundle of candles and torches, independent of the candles which each of us carried, we proceeded with tolerable facility through two or three lofty and most beautifully enamelled caverns of spar. This we conceived an earnest of future delight, and the tablets were accordingly set at work; but, alas, how great was our mistake! Here our difficulties were to commence. Following the guide, who, besides another who was with us, was the only one of the party who had ever penetrated before, we forced our way, with infinite struggles, through a narrow space, between two rocks, and thence getting on our hands and knees, were, for the full distance of a mile, obliged to crawl, without ever daring to lift up our heads, the passage being both low and craggy; and, as it was likewise filled with mud, dirt, and a multitude of bits of rocks, our progress was painful indeed: we still, however, hoped for something better. On we accordingly proceeded, till a dreadful noise, rumbling along the horrible crevices of the cave, gave us to understand we were near a river: to this then we, as fast as we were able, hurried. But description is inadequate to any thing like a representation of the scene. A vast ocean seeming roaring in upon us; in some places bursting with inconceivable impetuosity, and at others falling through dreadful chasms, burst into shaggy forms to give it vent! through this our journey was to continue. A cry of light, however, alarmed us: the confinement of the air, and the narrowness of our track, had extinguished all our torches; the candles too, all but one small end, were totally expended. We knew not what to do. In vain the miners halloo'd for the supply which was to have come behind; no answer was to be heard. Our fate seemed inevitable; but the principals of the party fortunately expressed no fear. In this extremity, a gallant fellow, who yet was ignorant of the place, but from experience knew the danger we were in, suddenly disappeared, and, after groping for a considerable time in the dark and dismal horrors of the place, at length returned to us with a supply of candles, having discovered his companions, unto whom they were given in charge, almost petrified with fear, and unable to follow us from apprehension. Reprieved in this manner from a death which seemed to wait us, in its most horrid form, we onward proceeded with a fresh recruit of spirits; and plunging into the river above our waists, scarcely tenable from the impetuosity of the torrent, cautiously picked our steps, and, at length, after a four-hours most unspeakable fatigue, arrived at about three hundred yards beyond the spot where the subterranean passage we had the day before explored was expected to find an entrance into this dreadful place. Here we were obliged to stop. A passage still continued, but so filled with water, and so full of peril, that the miners themselves

ſelves were averſe to farther travel. All together, the depth we had deſcended was about one hundred and forty fathoms, or nine hundred and eighty feet, and the length about three miles. We had the happineſs to return without any injury."

The next wonder is called Tideſwell, or Weedenwell, a ſpring which, according to ſome writers, ebbs and flows as the ſea does. The baſon, or receiver for the water, is about three feet ſquare; the water ſeems to have ſome other receiver within the rock, which, when it fills by the force of the original ſtream, the air being contracted, or pent in, forces the water out with a bubbling noiſe, and ſo fills the receiver without; but, when the force is ſpent within, then it ſtops till the place is filled again; and, in the mean time, the water without runs off, till the quantity within ſwells again; and then the ſame cauſe produces the ſame effect. So that this oceanet, as Mr. Cotton calls it, which has been the ſubject of ſeveral philoſophic enquiries, is owing wholly to the figure of the place, and is only a mere accident in nature; and, if any perſon were to dig into the narrow cavities, and give vent to the air, which is pent up within, they would ſoon ſee Tideſwell turned into an ordinary ſtream.

In the middle of a plain open field, gently deſcending to the ſouth, is the frightful chaſm in the earth, or rather in the rock, called Elden Hole. The mouth of it is about twenty feet over one way, and fifty or ſixty the other, deſcending perpendicularly into the earth: how deep could never yet be diſcovered, notwithſtanding ſeveral attempts have been made to find its botton. Mr. Cotton ſays, he let down 800 fathoms of line, which is 1600 yards, near a mile, perpendicular. The Earl of Leiceſter, in the time of Queen Elizabeth, hired a man to go down in a baſket of ſtones, who was let down 300 ells, and, being pulled up, was both ſpeechleſs and ſenſeleſs, and died within eight days of a phrenſy. It was uſual for thoſe that went to ſee it, to throw down ſtones, and lay their ear to the mouth of the pit, which made a great rattling and noiſe for a long time, that leſſened by degrees, till beyond the ſphere of hearing.

About twenty years ago, the owner of the paſture in which this chaſm is ſituated, having loſt ſeveral cattle, agreed with two men to fill it up. Theſe men ſpent ſome days in throwing down many loads of ſtones; but, ſeeing no effect of their labour, ventured down it themſelves, and found at the bottom a vaſt cavern; upon which, deſpairing to procure a quantity of ſtones ſufficient to fill it up, they deſiſted from their work. A Mr. Lloyd, having received this account from one of the men, and being aſſured that there were no damps at the bottom, went down himſelf. The entrance is a chink, in the direction of north and ſouth, about thirty yards long and nine wide, as before obſerved. Mr. Lloyd was let down by two ropes about forty fathoms long; for the firſt twenty yards, though he deſcended obliquely, he could aſſiſt himſelf with his hands and feet; but, below this, the rock projected in large irregular crags, ſo that he found it very difficult to paſs; when he had deſcended ten yards more, he found the rope by which he was ſuſpended at leaſt ſix yards from the perpendicular; from hence, the breadth of the chink was about three yards, and the length about ſix; the ſides were very irregular, and the crags were covered with moſs, being, beſides, wet and dirty; within fourteen yards of the bottom, the rock opened on the eaſt ſide, and he ſwung till he reached the floor of

the cavern, which was at the depth of sixty-two yards from the mouth; the light, however, which came from above, was sufficient to read any print. Here he found the cavern to consist of two parts: that in which he alighted was like an oven; the other, where he first began to swing, was a vast dome, shaped like the inside of a glass-house; and a small arched passage formed a communication between them; in this passage, the stones which had been thrown in at the top formed a slope, extending from the wall at the west side of the first dome almost to the botton of the second cave or oven, so that the farther end of the cave was lower by twenty-five yards than where he alighted. The diameter of this cavern he judged to be about fifty yards; the top he could not trace with his eye, but had reason to believe that it extended to a prodigious height; for, when he was nearly at the top of one of the encrusted rocks, which was an elevation of at least twenty yards, he could then see no enclosure of the dome, though of course he saw much farther than when he stood at the bottom. After climbing up a few loose stones on the south side of the second cavern, he descended again, through a small slit, into a little cave about four yards long and two yards high, which was lined throughout with a kind of sparkling stalactites of a fine deep yellow, with some small stalactical drops hanging from the roof. He found a noble column, of about ninety feet high, of the same kind of incrustation, facing the first entrance; as he proceeded to the north, he came to a large stone that was covered with the same substance, and, under it, he found a hole two yards deep, that was uniformly lined with it. From the edge of this hole sprung a rocky ascent sloping like a buttress against the side of the cavern, and consisting of vast, solid, round, masses, of the same substance and colour; up this ascent he climbed to the height of about sixty feet, and got some fine pieces of the stalactites which hung from the craggy sides of the cavern, which joined the projection he had ascended. When he got down, which was not effected without considerable difficulty and danger, he proceeded in the same direction, and soon came to another pile of incrustations of a different kind and colour, these being much rougher, and not tinged with yellow, but brown: at the top of this he found a small cavern, opening into the side of the vault, which he entered, and where he saw vast drops of the stalactites, hanging like isicles from every part of the roof, some of which were four or five feet long, and as thick as a man's body. The greater part of the walls of the large cavern, or vault, was lined with incrustations of three kinds: the first was the deep yellow stalactites; the second was a thin coating resembling a light stone-coloured varnish; (this covered the lime-stone, and reflected the light of the candles with great splendour;) the third sort was a rough efflorescence, every shoot of which resembled a kind of rose-flower. He now returned through the arch which separates the two vaults, re-ascending the slope of loose stones, which greatly lessened the magnificence of the entrance into the inner cavern. When he had again fastened the rope to his body, he gave the signal to be drawn up, which he found much more dangerous and difficult than to be let down; because his weight drew the rope between the fragments of the rock, which made it stick, and his body was continually jarring against the sides, notwithstanding all the defence he could make with his hands; the rope also loosened the stones over his head, the fall

fall of which he dreaded every moment; and, if any of them had fallen, he must inevitably have perished. As he was obliged to ascend with his face towards the wall, he could not make any particular observations on the rocks that were behind or on each side of him; he saw, however, under the projection of the rock where the passage first became narrow, the entrance of a cavern which seemed to penetrate a great way, but he could not get into it. A gentleman who lived on the spot told Mr. Lloyd, after his return from the subterranean expedition, that there was formerly, in the floor of the great cavern, somewhere near the large heap of stones, the mouth of a second shaft, which had been covered by the miners; it was said to have gone down a vast depth further, and to have had water at the bottom—this was probably the direction which the plummet took let down by Mr. Cotton, as mentioned before. There is some reason to believe that this water is the continuation of the subterraneous stream we have mentioned in the great cavern at Castleton; for a large quantity of grit-stone is observed to grow near Elden-Hole, and none near Castleton; and yet, on high floods, the river at Castleton washes great quantities of that grit-stone, in fragments, out of the mouth of the cavern there. There is also a commonly-received tradition in this place which confirms that opinion; which is, that a goose, lost down Elden-Hole, was afterwards seen at the mouth of Castleton cavern. Many stories are told of accidents which have happened at this place; cattle frequently tumble into it; but nothing can be more dreadful than the acknowledgement of a villain, who, when on the scaffold for the perpetration of some other horrid deed, confessed the having thrown an unfortunate traveller into it, whom he had robbed, and who had intrusted himself to his guidance.

Bakewell is the best town on the N. W. side of the Peak, stands 152 miles from London, on the Wye, near its influx into the Derwent. It is a large town with seven chapels, though but one church, which is a peculiar exempt from episcopal jurisdiction. It is supposed to have been a Roman town, because of altars dug up near it at Haddon-House.

Near Bakewell is Chatsworth.—Chatsworth-House may be said to have had two or three different founders, who have all improved upon one another in the completion of this great design. The house was begun on a much narrower plan than it now takes up, by Sir William Cavendish, of Cavendish in Suffolk, who, by marriage with Elizabeth Hardwicke, relict of Robert Barley, Esq. became intitled to a noble fortune in this county. This lady, after the death of Sir William, married Sir William St. Loe, captain of the guard to Queen Elizabeth; and, fourthly, George Talbot, Earl of Shrewsbury. Sir William died, after having done little more than building one end of the fabric, and laying out the plan of the whole. But his lady finished it in the magnificent manner in which it appeared when it was first ranked among the wonders of the Peak. One thing is observable, that the very disadvantages of situation contribute to the beauty of the place, and, by the most exquisite management, are made subservient to the builder's design. On the east side, not far distant, rises a prodigious high mountain, which is so thick planted with beautiful trees, that you only see a rising wood gradually ascending, as if the trees crouded one above the other to admire the stately pile before them. Upon the top of this mountain they dig mill-stones; and

here begins a vast extended moor, which, for fifteen or sixteen miles together due north, has neither hedge, house, nor tree, but a waste and howling wilderness, over which, when strangers travel, it is impossible to find their way without a guide. Nothing can be more surprising of its kind to a traveller, who comes from the north, when, after a tedious progress through such a dismal desert, on a sudden the guide brings him to this precipice, where he looks down from a comfortless, barren, and, as he thought, endless, moor, into the most delightful valley, and sees a beautiful palace, adorned with fine gardens. If contraries illustrate each other, here they are seen in the strongest opposition. On the plain, which extends from the top of this moutain, is a large body of water, which takes up near thirty acres, and, from the ascent round it, receives, as into a cistern, all the water that falls; which, through pipes, supplies the cascades, water-works, ponds, and canals, in the gardens. Before the west front of the house, which is the most beautiful, and where the first foundress built a very august portal, runs the river Derwent, which, though not many miles here from its source, yet is a rapid river, when, by hasty rains, or the melting of snows, the hills pour down their waters into its channel. Over this river is a stately stone bridge, with an ancient tower upon it, and in an island in the river an ancient fabric all of stone, and built like a castle; which are the works of the aforesaid foundress, and shew the greatness of the original design; but are all, except the bridge, eclipsed, as it were, by the modern glories of the edifice. The front to the garden is a regular piece of architecture. The frize under the cornice has the motto of the family under it in gilt letters, so large as to take up the whole front, though the words are only two, CAVENDO TUTUS; which is no less applicable to the situation of the house than to the name and crest of the family. The sashes of the second story are seventeen feet high, of polished plate-glass, each glass two feet wide; and the wood-work double gilt. Under this front lie the gardens, exquisitely fine; and, to make a clear vista or prospect beyond into the flat country, towards Hardwick, another seat of the same owner, the duke (to whom those things which others thought impossible were practicable) removed a great mountain that stood in the way, and which interrupted the prospect. In the usual approach to this noble fabric, it presents itself thus: First, the river, which, in calm weather, glides gently by; then a venerable walk of trees, where the famous Hobbes used often to contemplate; a noble piece of iron-work gates and balusters, exposes the front of the house and court, terminated at the corners next the road with two large stone pedestals of Attic work, curiously adorned with trophies of war, and utensils of all the sciences, in basso relievo. This part of the building is Ionic, the whole being a square of a single order, but every side of a different model: a court in the middle, with a piazza of Doric columns of one stone each, overlaid with prodigious architraves. The stone is of an excellent sort, veined like marble, hewn out of the neighbouring quarries, and tumbled down the adjacent hill. In the anti-room to the hall are flat stones of fourteen feet square, laid upon the heads of four pillars, and so throughout. In the hall-stairs, the landing-steps are of the same dimensions; the doors, chimnies, window-cases, stairs, &c. all of marble; the ceilings and walls of the apartments charged with paintings of Varrio, and other famous hands; the bath-

room

room all of marble, curiously wrought. The chapel is a fine place; the altar-end and floor, marble; the seats and gallery, cedar; the rest of the wall and cieling, painted. The gardens abound with green-houses, summer-houses, walks, wildernesses, orangeries, with all the proper furniture of statues, urns, greens, &c. with canals, basons, and water-works, of various forms and contrivances; as sea-horses, drakes, dolphins, and other fountains, that throw up the water. An artificial willow-tree of copper spouts dropping water from every leaf. A wonderful cascade, where from a neat house of stone, like a temple, out of the mouths of beasts, pipes, urns, &c. a whole river descends the slope of an hill a quarter of a mile in length, over steps, with a terrible noise, and broken appearance, till it is lost under-ground; some distance beyond this, are concealed water-pipes, which, by the guide's turning a cock, are so contrived as to wet you pretty handsomely before you are aware, and this trick they seldom fail to play off upon strangers to make them remember Chatsworth; and it is said that a lady once lost her life by the fright she was thrown into at the water's being let off at the place called the Temple, before she had got out of it. Beyond the garden, upon the hills is a park, that overlooked a very high and rocky mountain. Here are some statues, and other antiquities. We should never have done, were we to say all that might be said of this august palace. But two historical circumstances in its honour must not be forgotten, viz. That Mary queen of Scots, whom we had occasion to mention as a visitant of the Peak, (see page 218 and 219,) was for some time in custody in this house, under the care of the celebrated foundress of it. In memory of this royal captive, the new lodgings that are built instead of the old that are still called the Queen of Scots apartment. Mr. Colley Cibber, equally noted for the number and decency of his dramatic pieces, as also for his inimitable action on the stage, left upon the walls of the bowling-green house a memorandum of his having visited this superb palace; and humanely deplored the fate of this unfortunate queen, in an handsome compliment upon the princely edifice, in the following lines:

When Scotland's queen, her native realm expell'd,
In ancient Chatsworth was a captive held,
Had there the pile to such new charms arriv'd,
Happier the captive, than the queen, had liv'd.
What tears, in pity of her fate, could rise,
That found the fugitive in paradise!

Of the modern improvements at Chatsworth, we shall only say, that the alterations were made by the command of the late Duke of Devonshire, under the direction of Mr. Brown: the whole of which do no less honour to his taste who formed and executed the plan, than to the judgment of the noble person who employed a man so well qualified for the arduous task of improving Chatsworth. The park, under this gentleman's direction, has been very much altered and modernised, the water greatly improved, a new and elegant bridge erected, trees removed, plantations made, and many of the formalities annihilated. The water-works still remain; but to the man of taste, these are considered as mere matters of curious expence, and the remains of that species of garden magnificence, which has long since been exploded by a happy attention to the powers and beauties of nature.

Upon

Upon the very edge of the Derwent is a village called Matlock. The environs of this place are superior in natural beauty to any of the most finished places in the kingdom. They form a winding vale of above three miles, through which the river Derwent runs: the course extremely various; in some places the breadth is considerable, the stream smooth; in others it breaks upon the rocks, and falls over the fragments, besides forming several slight cascades. The boundaries of the vale are cultivated hills on one side, and very bold rocks, with pendant woods, on the other. The best tour of the place is to cross the river near the turnpike, and then take the winding path up the rock, which leads you to the range of fields at the top, bounded this way by the precipice; along which we would advise every one who visits Matlock to walk, for it is, without exception, the finest natural terrace in the world. At the top turn to the left, till you come to the projecting point called Hag-rock. From this spot you have a perpendicular view down a vast precipice to the river, which here forms a fine sheet of water, fringed with wood on the opposite side. It falls twice over the rock, the roar of which adds to the effect of the scene. The valley is small, and bounded immediately by the hills, which rise boldly from it, and are cut into inclosures, some of a fine verdure, others scared with rocks, and some full of wood; the variety pleasing, and the whole view very noble. Advancing along the precipice, the views catch you as you move through the straggling branches of the woods which grow on the edge of it, and are very picturesque; in some places down on the water alone; in others, into glens of woods dark and gloomy, with spots here and there, quite open, which let in various cheerful views of the dale and cultivated hills. These continue till you come to an elm with divided branches, growing on the rocky edge of the precipice. It forms a natural balustrade, over which you view a very noble scene. You command the river both ways, presenting several fine sheets of water, and falling four times over the rocks. To the left, the shore is hanging-wood, from the precipice down to the very water's edge; but the rocks break from it in several places, their heads being beautifully fringed with open wood, as if the projection was to exhibit a variety of shade on the back ground of the wood. At the top of the rocks, and quite surrounded with wood, two small grass inclosures are seen, divided by straggling trees;—nothing can be more beautiful. The opposite side of the vale is formed by many hanging inclosures, and the higher boundary is a great variety of hill cut into fields. To the right the scene is different; the edging of the water is a thick stripe of wood, so close that the trees seem to grow from the water. They form a dark shade under which the river is smooth. Above this wood appear some houses surrounded by several grass-fields, beautifully shelving down among wild ground of wood and rock. Above the whole a noble hill, bare, but broken by rocky spots. Advancing, you come to a projecting point, edged with small ash trees, from which you have a smooth reach of the river through a thick dark wood: a most pleasing variation from the preceding scenes. Above it, to the right, a vast perpendicular rock, 150 feet high, rising out of a dark wood, itself being quite crowned with wood—the whole magnificent. Turning to another wave in the edge of the precipice, an opening in the shrubbery wood presents a reach of the river with a very noble share

of

of hanging wood, the rock partly bare, but all in a deep ſhade of wood. A houſe or two, and a few incloſures, enliven the ſpot where the river is loſt, all cloſely bounded by the great hill. This view is a complete picture. Proceeding further, the woody edging of the rocks is ſo thick as to prevent any views; but the river falling over ſome rocks beneath, the roar of it renders this circumſtance advantageous: it is the keeping of the general picture. It leads to a point of rock higher than any of the preceding, and, being open, preſents a full view of all the wonders of the valley. To the left, the river flows under a noble ſhore of hanging wood; and above the whole a vaſt range of incloſures, which riſe one above another in the moſt beautiful manner. This point of view is high enough to command likewiſe a new vale behind the precipice; this ridge of rocky hill, ſhelving gently down, is loſt in a fine waving vale of cultivated fields of a pleaſing verdure, and bounded by the ſide of an extended bare hill. This double view renders the ſpot amazingly fine. A few yards further, you turn on to the point of a very bold projection of the rock, which opens to new ſcenes. The river is ſeen both to the right and left, glorioufly environed with thick wood. On the oppoſite hill four graſs incloſures of a fine verdure are ſkirted with trees, through the branches of which you ſee freſh ſhades of green: a pleaſing contraſt to the rocky wonders of the precipice. From hence the wood excludes the view for ſome diſtance, till you turn to a point with a ſeat, called Adam's Bench; and, as the rock here projects very much into the dale, it conſequently gives a full command of all the woody ſteeps you have paſſed; and a very noble ſcene it is. The range of hanging wood, almoſt perpendicular from the lofty rocky points down to the very water, is ſtriking. The bare rocks in ſome places bulge out, but never without a ſkirting of open wood: the light through branches ſo growing, from ſuch lofty clifts, has an effect truly pictureſque. The immediate ſhore on the other ſide is wood, and higher up raiſed incloſures. On the whole, a nobler union of wood and water is ſcarcely to be imagined. Leaving the precipice, a walk cut in the rock leads to the bottom, where is another made along the banks of the river, but parted from it by a thick edging of wood, and quite arched with trees; it is waved in gentle bends in as true a taſte as we remember any where to have ſeen, where the wood is ſo thick as to be quite impervious. The roar of the falls in the river is fine; in other ſpots, the grove to the water is thin enough to let in the glittering of the ſun-beams on the river, which, in ſuch a dark ſequeſtered walk, has a very pleaſing effect. This ſhaded walk leads to a bank in view of a ſmall caſcade on the oppoſite ſide of the river; ſoon after is an opening, to the right, to a fine ſwell of wood, and then another to the left againſt the great hill, which is here fine. The next place to which we would adviſe a ſtranger to go, is to the high rock, which is at a ſmall diſtance: the way to it is an agreeable walk, which gives ſeveral views. The rock is 450 feet perpendicular; the river is directly below, a fine ſmooth ſtream, giving a noble bend. Oppoſite is a vaſt ſweep of hills which riſe in the boldeſt manner, with a pictureſque knot of incloſures in the middle of it. On one ſide, a ſteep ridge of rock; on the other, a varied precipice of rock and wood. You look down on the old bath with a fine front of wood, many varied waves of incloſures bounded by diſtant hills. Further on, on the ſame eminence, you come to a

point

point of bare rock, from which you look down a precipice of absolutely 500 feet perpendicular: the river, breaking over fragments of the rocks, roars in a manner that adds to the sublimity of the scene. The shore of wood very noble. From hence, following the edge of the precipice, you come to another point, from whence you have a double view of the river beneath, as it were in another region. To the left, the great rock arises from the bosom of a vast wood in the boldest and noblest stile. Sinking a little to the right, you have one of the finest views imaginable: the river gives a fine bend through a narrow meadow of a beautiful verdure; the boundaries of the vale, woods hanging perpendicularly, and scared with rocks. In the centre, a round hill rising out of a wood, in the midst of a vast sweep of inclosures, which, hanging to the eye in the most picturesque manner, has an effect astonishingly fine. In one place, a steeple rises from a knot of wood; and a variety of scattered villages, in others, unite to render this scene truly glorious. Matlock, on the whole, cannot fail of answering greatly to whoever views it. It is different from all the places in the kingdom. Several exceed it in particular circumstances: the rocks at Keswick are infinitely bolder; the water there, and at Winander Mere, far superior. The beauty that results from decoration is every day met with in a much finer stile, for here is nothing but nature; but the natural terrace on the edge of the precipices, with the variety of views commanded from it, is in that stile exceeded by nothing we have seen.

The water of the hot well is nothing near so hot as the waters at Bath. The heat of the hot well here, and that of our other most famous hot waters, is

Bath	-	116	or 84	above freezing.
Buxton	-	82	or 50	
Bristol	-	76	or 44	
Matlock	-	69	or 37	

All carefully taken by a physician, with one and the same instrument of Farenheit's scales.

Hereabout are very many hot springs, and some cold ones near them; but not any so near each other, that you might have put your thumb into one and your finger into another at the same time, as has been reported.

Underneath the earth is nothing but lime-stone. Here is a well called St. Anne's of Buxton, a warm spring, which, drunk of, is fancied to cure all diseases. Out of a hill near Buxton, called Axe-Edge, spring four rivers, which run four contrary ways; viz. Dove, South; Dane, West; Gwayt, North; and Wye, East.

At Cranford, near Matlock, is a manufactory erected by the late Sir James Arkwright, for carding and spinning cotton by engines, which are worked by water, and require but few hands to superintend them. There are likewise dwelling-houses erected for the workmen, and a chapel for divine service.

The town of Derby is situate on the west bank of the Derwent, over which it has a fine stone bridge, well-built, but ancient, and a chapel upon the bridge, now converted into a dwelling-house. The river is navigable into the Trent. The Derby boat-company (Evans and Stretton) send barges to Gainsboro'; a great deal of cheese and lead is sent; in return they bring deals, slates, &c. Derby is a fine, beautiful, and pleasant, town, and has more genteel families in it than

is

is usual in towns so remote from London; perhaps the more, because the Peak, which takes up the larger part of the county, is so inhospitable, rugged, and wild, a place, that the gentry choose to reside at Derby, rather than upon their estates as they do elsewhere.

The famous silk-mill on the river here was erected by Sir Thomas Lombe, who brought the model out of Italy, where one of this sort was used, but kept guarded with great care. It was with the utmost hazard, and at a great expence of time and money, that he effected it. There are 26,586 wheels, and 97,746 movements, which are all worked by a single wheel, and any one of them may be stopped independent of the rest. Every time this wheel goes round, which is three times in a minute, it works 73,726 yards of silk-thread: in twenty-four hours it will twist 318,496,320 yards of silk. A model of this complicated machine is preserved in the Tower of London. By this mill, the raw silk brought from Italy or China is prepared for the warp. At one end of this building is a mill on the old plan, used before this improvement was made, where the silk is fitted, in a coarser manner, for the shoot. These mills employ about two hundred persons of both sexes, and of all ages, to the great relief and advantage of the poor. The money given by strangers is put into a box, which is opened the day after Michaelmas-day, and a feast is made; an ox is killed, liquor prepared, the windows are illuminated, and the men, women, and children, employed in the work, drest in their best array, enjoy in dancing and decent mirth a holiday, the expectation of which lightens the labour of the rest of the year.—It is customary for the inhabitants of the town, and any strangers who may be there, to go to see the entertainment; and the pleasure marked in the happy countenances of these people is communicated to the spectators, and contributes to the provision for the ensuing year.

The china-manufactory is not less worthy of notice. It does honour to this country. They have brought the gold and the blue to a degree of beauty never before obtained in England, and the drawing and colouring of the flowers are truly elegant. A great number of hands are employed in it, and happily many very young are enabled to earn a livelihood in the business.

Another work is carried on here, which, though it does not employ so many hands, must not be passed without observation. The marbles, spars, and petrifactions, which abound in this county, take a fine polish, and from their great variety are capable of being rendered extremely beautiful. Several persons are engaged in this business, and make vases, urns, pillars, columns, &c. as ornaments for chimney-pieces, and even chimney-pieces themselves.

Derby is populous and well-built, has five parishes, a large market-place, a beautiful town-house of free-stone, and very handsome streets.

Keddleston-house, that most elegant and splendid seat of Lord Scarsdale, which is in the immediate neighbourhood of this town, is well worthy the attention of every traveller. It is indeed a most superb pile of building, where no expence has been spared to attain the highest degree of external and internal decoration. The Egyptian hall is one of the noblest and most magnificent rooms in Europe, and all its ornaments are adapted with so much judgment, and finished in such exquisite taste, that the whole forms a scene of

genuine edificial grandeur. The roof of this splendid room is supported by a great number of Corinthian columns of Derbyshire marble, most beautifully variegated. These are fluted, and, being contrasted with their high-wrought capitals, which are of pure statuary marble, afford the most striking spectacle of solid beauty which we have ever seen in any house or palace in any country. All the apartments are truly noble, the furniture of uncommon cost, and many of the rooms adorned with capital paintings of the most eminent masters.

Near the house, there arises a medicinal spring, to whose salutary streams many resort in the summer season, for various disorders. For the convenience therefore of such persons, a commodious house has been erected near the park-gate, large enough to accommodate a considerable number of people; and where the resorting company live upon the same plan of communicative society as at Buxton, Matlock, Harrowgate, &c.

The wonders of the Peak have been frequently described, both in prose and verse; but language, after all, has little power to give adequate ideas of scenes of this kind.

The mineral products of this hilly tract are various and valuable. Lead, the most important of them, has been gotten in great abundance out of the Derbyshire mines; but many of these are now exhausted. Much line is burned in the lower Peak, which is of the best quality, and is sent to considerable distances on horses backs. Iron ore is dug chiefly on the north-eastern side. Coals are plentiful in many parts. Marble is frequent in the hills; and some beautiful kinds of it are polished at the works at Ashford.

There are likewise other curiosities in the Peak, which we need but just mention; as the tottering stones at Byrch Over, standing upon an hard rock, one of them said to be four yards high, twelve round, and yet rests upon a point so equally poised, that it may be moved with a finger; the Roman causeway, called Bath-gate; the several minerals found in the hills, and in the lead-mines, as black lead, stibium, or antimony, and chrystal.

The extended angle of this county, which runs a great way north-west by Chapel-in-the-Frith, (which was formerly a market-town, and which they call High Peak,) is perhaps the most desolate, wild, and abandoned, country in Great Britain. The mountains of the Peak, of which we have been speaking, seem to be but the beginning of wonders to this part of the country; the tops of whose hills seem to be as much above the clouds as the clouds are above the ordinary hills. Nor is this all; the continuance of these mountains is such, that they have no bounds to them but the sea; they run on in a continued ridge from one to another, even to the highlands in Scotland; so that they may be said to divide Britain as the Appenine mountains divide Italy. Thus, joining to Blackstone-Edge, they divide Yorkshire from Lancashire; and, going on north, divide the bishopric of Durham from Westmoreland, and so on. All the rivers in the north of England take their rise from them; those on the east side run into the German ocean, those on the west into the Irish sea: for instance, the Dove and the Derwent rise both at the south end of them, and come away south to the Trent; but all the rivers afterwards run, as above, east or west; and first, the Mersey rises on the west side, and the

the Dun on the east; the first runs to Warrington, and into the sea at Liverpool, the other to Doncaster, and into the sea at the Humber.

The Derbyshire spars are uncommonly elegant; and this leads us to say a few words on the subject of spars in general. Spars are defined by Dr. Hill to be fossils not inflammable nor soluble in water: when pure, pellucid and colourless, and emulating the appearance of chrystal, but wanting its distinguishing characters; composed of plane and equable plates, not flexible nor elastic; not giving fire with steel; readily calcining in a small fire; and fermenting violently with acids, and wholly soluble in them. Of this class of bodies Hill enumerates ten orders, and under those twenty-one genera. The observation, that spar is continually formed at this time in caves and grottos under-ground, has given birth to many conjectures as to the origin of that substance; we have accounts from Switzerland, and other places, that the snow, by long lying on the earth, and being subject to repeated freezing, is at length hardened into spar. The more rational conjectures concerning its origin are, that it is produced either by effluvia alone, or by the joint force of effluvia issuing up from the depths of the earth, and mixing with water oozing out of rocks into their cracks and cavities, or by the same water or effluvia passing through beds of this sparry matter contained in clay. That some spars grow from vapours alone is evident from the stalactitæ, or stony isicles, hanging down from the roofs of some of the caverns mentioned in this article; which, though they grow downwards, yet have many little plants of the same substance growing out at their sides, and standing upwards, contrary to the growth of the other, and evidently formed of the matter separated from the vapours in their ascent, as the stalactitæ are themselves from such as have ascended to the roof, and there been condensed into water, and sent down again in drops.—Spars, as a medicine, have from the earliest times been recommended in nephritic complaints; some have used one kind of spar, some another; but, after all, the nephritic virtues of spar want sufficient proof; and some even suspect it to be more hurtful than beneficial.

The manufactory of Derbyshire spar is considerable; the ornaments produced from it are much in esteem, and are certainly very valuable, as the great natural elegance it contains, aided by the refinements of art, makes it much superior to most other decorations, and highly beautiful in appearance. Great variety of toys are also made of it; and, even in the smallest proportion, the richness and variegation of its colours render it exceedingly brilliant and pleasing to the eye.

It has been discovered, that the soil or the air of some particular places in this county has been almost as favourable to the preservation of dead bodies as the famous vaults of Bremen are represented to be. Two persons are said to have been lost in a great storm of snow, on the moors, near the woodlands, in this county, on the 14th of January, 1674; and, not being found till the May following, they then smelt so strong, that the coroner ordered them to be buried on the spot: they lay in the peat-moss for twenty-eight years and nine months before they were looked at again, when some countrymen, having observed the extraordinary qualities of this soil in preserving dead bodies from corruption, were curious enough to open the ground to see if these persons had been so preserved; and they

found them no way altered, the colour of their skin being fair and natural, and their flesh soft as that of persons newly dead. They were afterwards exposed for twenty years, though they were much changed in that time by being so uncovered.

ORIGIN OF SURNAMES.

SURNAMES were introduced among all nations at an early period, and seem to have been formed at first by adding the name of the father to that of the son. This was the practice among the Hebrews, as appears from the scriptures. Caleb is denominated the son of Jephunneh, and Joshua the son of Nun. That the same thing was customary among the Greeks, every one who has read the poems of Homer must remember. We have an instance of it in the very first line of the Iliad: Αχιλληος Πηληιαδεω, "Achilles the son of Peleus." This is perhaps the general origin of surnames, for it has been common among most nations. This might be supported by examples borrowed from many nations. The old Normans used *Fitz*, which signifies son; as Fitzherbert, Fitzsimmons, the son of Herbert, the son of Simmons. The Irish used *O*; as O'Neal, the son of Neal. The Scotch Highlanders employed *Mac*; as Macdonald, the son of Donald. The Saxons added the word *son* to the end of the father's name, as Williamson.

The Romans generally had three names. The first called *prænomen* answered to our Christian name, and was intended to distinguish the individuals of the same family; the second called *nomen* corresponded to the word *clan* in Scotland, and was given to all those who were sprung from the same stock; the third called *cognomen* expressed the particular branch of the tribe or clan from which an individual was sprung. Thus, Publius Cornelius Scipio: *Publius* corresponded to our names John, Robert, William; *Cornelius* was the name of the clan or tribe, as Campbell was formerly the name of all the Duke of Argyle's clients, and Douglas the name of the retainers of the Duke of Hamilton's progenitors. *Scipio* being added, conveyed this information, that Publius, who was of the tribe of the Cornelii, was of the family of the Scipios, one of the branches or families into which that tribe was divided. Respecting the three names which were common among the Romans, we may say that the first was a name and the other two surnames.

Du Chesne observes, that surnames were unknown in France before the year 987, when the lords began to assume the names of their demesnes. Camden relates, that they were first taken up in England, a little before the conquest, under King Edward the Confessor: but he adds, they were never fully established among the common people till the time of Edward II. till then they varied with the father's name; if the father, *e.gr.* was called *Richard*, or *Roger*, the son was called *Richardson*, or *Hodgson*; but from that time they were settled, some say, by act of parliament. The oldest surnames are those we find in Domesday-Book, most of them taken from places, with the addition of *de*; as Godefridus *de* Mannevilla, Walterus *de* Vernon, Robert *de* Oyly, &c. Others from their fathers, with *filius*, as Gulielmus *filius* Osberni; others from their offices, as Eudo *Dapifer*, Gulielmus *Camerarius*, Gislebertus *Cocus*, &c. But the inferior people

ple are noted simply by their Christian names, without any surnames at all. These seem to have been introduced into Scotland in the time of William the Conqueror by the English who accompanied Edgar Atheling when he fled into that kingdom. These had their proper surnames, as Moubray, Lovell, Lisle, using the particle *de* before them; which makes it probable that these surnames had been derived from the lands which their ancestors or they themselves had possessed. In Kenneth II's time, in 800, the great men had indeed begun to call their lands by their own names; but the ordinary distinctions then used were only personal, and did not descend to succeeding generations, such as those employed by the Hebrews and Greeks:—For example, *John the son of William*; or the name of office, as Stewart; or accidental distinctions from complexion or station, as Black, White, Long, Short; or the name of their trade, as Taylor, Weaver, &c.

It was long before any surnames were used in Wales, except that of son, as Evan ap Rice, Evan the son of Rice; Evan ap Howel, Evan the son of Howel: but many of them have at length formed separate surnames, as the English and Scots, by leaving out the *a* in *ap*, and joining the *p* to the father's name: thus Evan ap Rice becomes Evan Price; Evan ap Howel, Evan Powel.—We are told, surnames were unknown in Sweden till the year 1514, and that the common people of that country use none to this day; and the same is the case with the vulgar Irish, Poles, and Bohemians.

When we come to inquire into the etymology of surnames, we must allow that many of them were originally significant of the qualities of mind, as Bold, Hardy, Meek; some of the qualities of body, as Strong, Low, Short; others expressive of the trade or profession followed by the persons to whom they were applied, as Baker, Smith, Wright; Butler, Page, Marshal. But the greatest number, at least of the ancient surnames, were borrowed from the names of places. Camden says, that there is not a village in Normandy but has given its name to some family in England. He mentions as examples, Percy, Devereux, Tankervil, Mortimer, Warren, &c. They were introduced with William the Conqueror; several had been derived from places in the Netherlands, as Gaunt, Tournay, Grandison; and many from the names of towns and villages in England and Scotland, as Wentworth, Markham, Murray, Aberdeen. Many have been formed from the names of animals, as quadrupeds, birds, fishes; from vegetables, and parts of vegetables, as trees, shrubs, flowers, and fruits; from minerals of different kinds. Others are formed from such a variety of accidents, that it is impossible to particularize them.

But, as men now take the names of their parents, without taking their manners or qualities, a number of very incongruous appellations will offer themselves to the recollection of every one. Have we not seen a tame, meek, sweet-tempered, lady, falsely and erroneously called Mrs. Fury? Mrs. Lamb often beats her husband! Then there is Mr. Cross, the mildest man in the world. Mr. King is a poor subject. Mr. Prince lives in a lodging, without guards and attendants. Mr. Goodchild broke his father's heart. Mrs. Thorogood is a name utterly unfit for the probationary state of us poor mortals; and Mr. Dogood never troubled himself about his neighbours in all his life. There is Mrs. Clackitt that has been dumb

from

from her infancy, while Mrs. Mum ſtuns the company with her redundancy of words. How often have we ſeen men of the name of Taylor, ſhoemakers by trade—ſtrange abſurdity! However, Mr. Proudfoot is allowed to be an excellent boot-maker. The Miſſes Lovejoy are the dulleſt old maids in the univerſe. Mrs. Sable never wore mournining above once in her life. Mrs. Simper always frowns; the Miſſes Raven ſing like nightingales; Mr. Bloom is a ſwarthy Creole; and Mrs. Neild never prayed. Mr. Popwell never fired a gun. Mr. Barwell ſhould have been an ironmonger inſtead of a man of fortune. Mr. Street lives in a court. Mr. Foot cannot ſtand. Mr. Golightly is very luſty. Mr. Hazard never games. Mr. Pye ſhould have been a paſtry-cook inſtead of a Poet Laureat. Mr. Suett ought to have been a butcher inſtead of an actor. Mr. Goodluck has had ſeveral misfortunes. There is a grocer named Pickle; but Mrs. Coates very properly keeps an habit warehouſe; and Mr. Gauer got rich by his piano-fortes. Mr. Prettiman is deformed. Mr. Brewer is a baker. Mr. Baker is a mercer. Mr. Witworth never ſaid a good thing. Mr. Bent is as ſtraight as any man in Europe. Miſs Prim is all eaſe and elegance. Mr. Prig is a plain unaffected man. Mr. Page is illiterate. Miſs Criſp is as rough as hemp. Mr. Stones ſhould have a maſon. Mr. Shepherd has not an acre of ground. Mr. Diamond is an actor. Mr. Maſon was an admirable poet. What incongruities! Miſs Piper has no ear for muſic. Miſs Joiner is a ſawyer's daughter. Mrs. Beard is bald. Mr. Singer cannot turn a tune, Mrs. Peacock warbles inimitably. Miſs Tombs hates the idea of a church-yard, &c. &c. &c.

CAUSES OF THE SURF AND SWELLING OF THE SEA.

THE ſurf or ſwell and breaking of the ſea, ſometimes forms but a ſingle range along the ſhore, and at others three or four behind one another, extending perhaps half a mile out to ſea. The ſurf begins to aſſume its form at ſome diſtance from the place where it breaks, gradually accumulating as it moves forward, till it gain, not uncommonly, in places within the limits of the trade-winds, a height of fifteen or twenty feet, when it overhangs at top, and falls like a caſcade with great force and a prodigious noiſe. Countries where ſurfs prevail require boats of a particular conſtruction very different from the greater part of thoſe which are built in Europe. In ſome places ſurfs are great at high, and in others at low, water; but we believe they are uniformly moſt violent during the ſpring-tides.

It is not eaſy to aſſign the cauſe of ſurfs. That they are affected by the winds can hardly be queſtioned; but that they do not proceed from the immediate operation of the wind in the places where they happen, is evident from this circumſtance, that the ſurf is often higheſt and moſt violent where there is leaſt wind, and *vice verſa*. On the coaſt of Sumatra the higheſt are experienced during the ſouth-eaſt monſoon, which is never attended with ſuch gales as the north-weſt. As they are moſt general in the tropical latitudes, Mr. Marſden, who ſeems to have paid much attention to the ſubject, attributes them to the trade-winds which prevail at a diſtance from ſhore between the parallels of thirty degrees north and ſouth, whoſe uniform and invariable action cauſes a long and conſtant ſwell, that exiſts even in the calmeſt weather, about the line, towards which its direction tends from either ſide. This ſwell, when a ſquall happens

or

or the wind freshens up, will for the time have other subsidiary waves on the extent of its surface, breaking often in a direction contrary to it, and which will again subside as a calm returns, without having produced on it any perceptible effect. Sumatra, though not continually exposed to the south-east trade-wind, is not so distant but that its influence may be presumed to extend to it; and accordingly at Poolo Pesang, near the southern extremity of the island, a constant southerly sea is observed, even after a strong north-west wind. This incessant and powerful swell rolling in from an ocean, open even to the pole, seems an agent adequate to the prodigious effects produced on the coast; whilst its very size contributes to its being overlooked. It reconciles almost all the difficulties which the phenomena seems to present, and in particular it accounts for the decrease of the surf during the north-west monsoon, the local wind then counteracting the operation of the general one; and it is corroborated by an observation, that the surfs on the Sumatran coast ever begin to break at their southern extreme, the motion of the swell not being perpendicular to the direction of the shore. This explanation of the phenomena is certainly plausible; but, as the author candidly acknowledges, objections may be urged to it. The trade-winds and the swell occasioned by them are remarkably steady and uniform; but the surfs are much the reverse. How then comes an uniform cause to produce unsteady effects?

In the opinion of Mr. Marsden, it produces no unsteady effects. The irregularity of the surfs, he says, is perceived only within the remoter limits of the trade-winds. But the equatorial parts of the earth performing their diurnal revolution with greater velocity than the rest, a larger circle being described in the same time, the waters thereabout, from the stronger centrifugal force, may be supposed more buoyant; to feel less restraint from the sluggish principle of matter; to have less gravity; and therefore to be more obedient to external impulses of every kind, whether from the winds or any other cause.

THE LAKE AND CAVE OF AVERNUS.

THE Avernus is a lake of Campania in Italy, near Baiæ, famous among the ancients for its poisonous qualities. It is described by Strabo as lying within the Lucrine bay, deep and darksome, surrounded with steep banks that hang threatening over it, and only accessible by the narrow passage through which you sail in. Black aged groves stretched their boughs over the watery abyss, and with impenetrable foliage excluded almost every ray of wholesome light; mephitic vapours ascending from the hot bowels of the earth, being denied free passage to the upper atmosphere, floated along the surface in poisonous mists. These circumstances produced horrors fit for such gloomy deities; a colony of Cimmerians, as well suited to the rites as the place itself, cut dwellings in the bosom of the surrounding hills, and officiated as priests of Tartarus. Superstition, always delighting in dark ideas, early and eagerly seized upon this spot, and hither she led her trembling votaries to celebrate her dismal orgies; here she evoked the manes of departed heroes—here she offered sacrifices to the gods of hell, and attempted to dive into the secrets of futurity. Poets enlarged upon the popular theme, and

and painted its awful scenery with the strongest colours of their art. Homer brings Ulysses to Avernus, as to the mouth of the infernal abodes; and, in imitation of the Grecian bard, Virgil conducts his hero to the same ground. Whoever sailed thither, first did sacrifice; and endeavoured to propitiate the infernal powers, with the assistance of some priests who attended upon the place, and directed the mystic performance. Within, a fountain of pure water broke out just over the sea, which was fancied to be a vein of the river Styx; near this fountain was the oracle; and the hot waters frequent in those parts were supposed to be branches of the burning Phlegethon. The poisonous effluvia from this lake were said to be so strong, that they proved fatal to birds endeavouring to fly over it. Virgil ascribes the exhalation not to the lake itself, but to the cavern near it, which was called *Avernus*, or *Cave of the Sybil*, and through which the poets feigned a descent to hell. Hence the proper name of the lake is *Lacus Averni*, the "lake near the cavern," as it is called by some ancient authors.

The holiness of these shades remained unimpeached for many ages: Hannibal marched his army to offer incense at this altar; but it may be suspected he was led to this act of devotion rather by the hopes of surprising the garrison of Puteoli, than by his piety. After a long reign of undisturbed gloom and celebrity, a sudden glare of light was let in upon Avernus; the horrors were dispelled, and with them vanished the sanctity of the lake: the axe of Agrippa brought its forest to the ground, disturbed its sleepy waters with ships, and gave room for all its malignant effluvia to escape. The virulence of these exhalations, as described by ancient authors, has appeared so very extraordinary, that modern writers, who know the place in a cleared state only, charge these accounts with exaggeration: but Mr. Swinburne thinks them intitled to more respect; for even now, he observes the air is feverish and dangerous, as the jaundiced faces of the vine-dressers, who have succeeded the Sybils and the Cimmerians in the possession of the temple, most ruefully testify. Boccaccio relates, that, during his residence at the Neapolitan court, the surface of this lake was suddenly covered with dead fish, black and singed, as if killed by some subaqueous eruption of fire.

At present the lake abounds with tench; the Lucrine with eels. The change of fortune in these lake is singular:—In the splendid days of imperial Rome the Lucrine was the chosen spot for the brilliant parties of pleasure of a voluptuous court: now, a slimy bed of rushes covers the scattered pools of this once beautiful sheet of water; while the once dusky Avernus is clear and serene, offering a most alluring surface and charming scene for similar amusements. Opposite to the temple is a cave usually styled the Sybil's grotto; but apparently more likely to have been the mouth of a communication between Cuma and Avernus, than the abode of a prophetess; especially as the Sybil is positively said by historians to have dwelt in a cavern under the Cumean citadel.

ART OF PLAYING THE GAME OF BACK-GAMMON.

THE Back-gammon table is divided into two parts, upon which there are twenty-four black and white spaces, called points. Each adversary has fifteen men, black and white, to distinguish them;

them; and they are disposed of in the following manner:—Supposing the game to be played into the right-hand table, two are placed upon the ace point in the adversary's table, five upon the six point in the opposite table, three upon the cinque point in the hithermost table, and five on the six point in the right-hand table. The grand object in this game is for each player to bring the men round into his right-hand table, by throwing with a pair of dice those throws that contribute towards it, and at the same time prevent the adversary doing the like. The first best throw upon the dice is esteemed aces, because it stops the six point in the outer table, and secures the cinque in the thrower's table; whereby the adversary's two men upon the thrower's ace point cannot get out with either quatre, cinque, or six. This throw is an advantage often given to the antagonist by the superior player.

When he carries his men home in order to lose no point; he is to carry the most distant man to his adversary's bar point, that being the first stage he is to place it on; the next stage is six points farther, viz. in the place where the adversary's five men are first placed out of his tables. He must go on in this method till all his men are brought home, except two, when, by losing a point, he may often save the gammon, by throwing two fours or two fives. When a hit is only played for, he should endeavour to gain either his own or adversary's cinque-point; and if that fails, by his being hit by the adversary, and he finds him forwarder than himself, in that case he must throw more men into the adversary's tables; which is done in this manner:—He must put a man upon his cinque or bar point; and, if the adversary neglects to hit it, he may then gain a forward game instead of a back game: but, if the adversary hits him, he should play for a back game; and then the greater number of men which are taken up makes his game the better, because by these means he will preserve his game at home: and then he should endeavour to gain both his adversary's ace and trois points, or his ace and deuce points, and take care to keep three men upon the adversary's ace point, that in case he hits him from thence, that point may remain still secure to himself. A back game should not be played for at the beginning of a set, because it would be a great disadvantage, the player running the risk of a gammon to win a single hit.

Rules for playing at setting out all the throws on the dice, when the player is to play for a gammon or for a single hit. [The rules marked thus † are for a gammon only; those marked thus * are for a hit only.] 1. Two aces are to be played on the cinque point and bar point, for a gammon or for a hit. 2. Two sixes, to be played on the adversary's bar point and on the thrower's bar point, for a gammon or for a hit. 3. † Two trois, to be played on the cinque point, and the other two on the trois point in his own tables, for a gammon only. 4. † Two deuces, to be played on the quatre point in his own tables, and two to be brought over from the five men placed in the adversary's tables for a gammon only. 5. † Two fours, to be brought over from the five men placed in the adversary's tables, and to be put upon the cinque point in his own tables for a gammon only. 6. Two fives, to be brought over from the five men placed in the adversary's tables, and to be put on the trois point in his own tables, for a gammon or for a hit. 7. Size ace, he must take his bar point for a gammon or for a hit. 8. Size deuce, a man to be brought from the five men placed in the adversary's tables, and to be placed in the

cinque point in his own tables, for a gammon or for a hit. 9. Six and three, a man to be brought from the adversary's ace point, as far as he will go, for a gammon or for a hit. 10. Six and four, a man to be brought from the adversary's ace point, as far as he will go, for a gammon or for a hit. 11. Six and five, a man to be carried from the adversary's ace point, as far as he can go, for a gammon or for a hit. 12. Cinque and quatre, a man to be carried from the adversary's ace point, as far as he can go, for a gammon or for a hit. 13. Cinque trois, to make the trois point in his table, for a gammon or for a hit. 14. Cinque deuce, to play two men from the five placed in the adversary's tables, for a gammon or for a hit. 15. † Cinque ace, to bring one man from the five placed in the adversary's tables for the cinque, and to play one man down on the cinque point in his own tables for the ace, for a gammon only. 16. Quatre trois, two men to be brought from the five place in the adversary's tables, for a gammon or for a hit. 17. Quatre deuce, to make the quatre point in his own tables, for a gammon or for a hit. 18. † Quatre ace, to play a man from the five placed in the adversary's tables for the quatre; and for the ace, to play a man down upon the cinque point in his own tables, for a gammon only. 19. † Trois deuce, two men to be brought from the five placed in the adversary's tables, for a gammon only. 20. Trois ace, to make the cinque point in his own tables, for a gammon or for a hit. 21. † Deuce ace, to play one man from the five men placed in the adversary's table for the deuce; and for the ace to play a man down upon the cinque point in his own tables, for a gammon only. 22. * Two trois, two of them to be played on the cinque point in his own tables, and with the other two he is to take the quatre point in the adversary's tables. 23. * Two deuces, two of them are to be played on the quatre point in his own tables, and with the other two he is to take the trois point in the adversary's tables. By playing these two cases in this manner, the player avoids being shut up in the adversary's tables, and has the chance of throwing out the tables to win the hit. 24. * Two fours, two of them are to take the adversary's cinque point in the adversary's tables, and for the other two, two men are to be brought from the five placed in the adversary's tables. 25. * Cinque ace, the cinque should be played from the five men placed in the adversary's tables, and the ace from the adversary's ace point. 26. * Quatre ace, the quatre to be played from the five men placed in the adversary's ace point. 27. * Deuce ace, the deuce to be played from the five men placed in the adversary's tables, and the ace from the adversary's ace point. The three last chances are played in this manner; because an ace being laid down in the adversary's tables, there is a probability of throwing deuce ace, trois deuce, quatre trois, or size cinque, in two or three throws; either of which throws secures a point, and gives the player the best of the hit.

CAUTIONS, &c. The player must understand by the directions given to play for a gammon, that he is to make some blots on purpose, the odds being in his favour that they are not hit; but if it should happen that any blot is hit, as in this case there will be three men in the adversary's tables, he must then endeavour to secure the adversary's cinque, quatre, or trois, point, to prevent a gammon, and must be very cautious of his fourth man's not being taken up.

He

He must not crowd his game at any time if he can help it; that is to say, he should not put many men either upon the trois or deuce points in his own tables, being the same as losing those men, not having them in play. Besides, by crowding the game, and attempting to save a gammon, the player is often gammoned. His game being crowded in his own tables, the adversary has room to play as he thinks proper.

The following calculations will shew the odds of entering a single man upon any certain number of points; and accordingly the game should be played. It is necessary to know that there are thirty-six chances upon two dice, and the points that are upon these thirty-six chances are as follow:

Viz.	Points.		Points.
2 Aces	4		174
2 Deuces	8	5 And 4 twice	18
2 Trois	12	5 And 3 twice	16
2 Fours	16	5 And 2 twice	14
2 Fives	20	5 And 1 twice	12
2 Sixes	24	4 And 3 twice	14
6 And 5 twice	22	4 And 2 twice	12
6 And 4 twice	20	4 And 1 twice	10
6 And 3 twice	18	3 And 2 twice	10
6 And 2 twice	16	3 And 1 twice	8
6 And 1 twice	14	2 And 1 twice	6
	174	Divide by 36)	294(8
			288
			6

And it proves, that upon an average the player has a right to 8 points each throw.

The chances upon two dice for back-gammon are as follow:

2 Sixes	1		16
2 Fives	1	5 And 4 twice	2
2 Fours	1	5 And 3 twice	2
2 Trois	1	5 And 2 twice	2
2 Deuces	1	† 5 And 1 twice	2
† 2 Aces	1	4 And 3 twice	2
6 And 5 twice	2	4 And 2 twice	2
6 And 4 twice	2	† 4 And 1 twice	2
6 And 3 twice	2	3 And 2 twice	2
6 And 2 twice	2	† 3 And 1 twice	2
† 6 And 1 twice	2	† 2 And 1 twice	2
	16		36

As it may seem difficult to find out by this table of thirty-six chances what are the odds of being hit upon a certain or flat die, let the following method be pursued.

The player may observe in the table that what are thus † marked are,

† 2 Aces	1		7
† 6 And 1 twice	2	† 3 And 1 twice	2
† 5 And 1 twice	2	† 2 And 1 twice	2
† 4 And 1 twice	2	Total	11
	7		

Which deducted from 36

There remains 25

So that it appears it is twenty-five to eleven against hitting an ace upon a certain or flat die.

The above method holds good with respect to any other flat die. For example, what are the odds of entering a man upon 1, 2, 3, 4, or 5, points?

Answer.

To enter it upon	for against		Or about	for ag.
1 point is	11 to 25	-		4 to 9
2 points	20 - 16	-	-	5 4
3 -	27 - 9	-	-	3 1
4 -	32 - 4	-	-	8 1
5 -	35 - 1	-	-	35 1

The following table shews the odds of hitting with any chance, in the reach of a single die.

To hit upon	for against		Or about	for ag.
1 is -	11 to 25		Or about -	4 to 9
2 -	12 - 24	-	-	1 - 2
3 -	14 - 22	-	-	2 - 3
4 -	15 - 21	-	-	5 - 7
5 -	15 - 21	-	-	5 - 7
6 -	17 - 19	-	-	8½ 9½

The odds of hitting with double dice are as follow;

To hit upon	for against		Or about	for ag.
7 is -	6 to 30		Or about -	1 to 5
8 -	6 30	-	- -	1 5
9 -	5 31	-	-	1 6
10 -	3 33	-	-	1 11
11 -	2 34	-	-	1 17
12 -	1 36	-	-	1 35

How to find out the odds of being hit upon a six, by the table of thirty-six chances.

2 Sixes - -	1	6 And 2 twice - -	9
2 Trois - -	1	6 And 1 twice - -	2
2 Deuces - -	1	5 And 1 twice - -	2
6 And 5 twice - -	2	4 And 2 twice - -	2
6 And 4 twice - -	2		
6 And 3 twice - -	2		17
	9	Which deducted from	36
		There remains - -	19

By which it appears to be 19 to 17 against being hit upon a six.

The odds on the hits.

2 Love is about - - -	5 to 2	
2 to 1 is - - -	2 1	
1 Love is - - -	3 2	

Directions for the player to bear his men. If a player has taken up two of the adversary's men, and happens to have two, three, or more, points made in his own tables, he should spread his men, that he either may take a new point in his tables, or be ready to hit the man which the adversary may happen to enter. If he finds upon the adversary's entering, that the game is upon a par, or that the advantage is on his own side, he should take the adversary's man up whenever he can, it being 25 to 11 that he is not hit; except when he is playing for

for a single hit only; then, if playing the throw otherwise gives him a better chance for it, he ought to do it.

It being five to one against his being hit with double dice, he should never be deterred from taking up any one man of the adversary's.

If he has taken up one of the adversary's men, and should happen to have five points in his own tables, and forced to leave a blot out of his tables, he should endeavour to leave it upon doublets preferably to any other chance, because in that case the odds are 35 to one that he is not hit; whereas it is only 17 to one but he is hit upon any other chance.

When the adversary is very forward, a player should never move a man from his own quatre, trois, or deuce, points, thinking to bear that man from the point where he put it, as nothing but high doublets can give him any chance for the hit. Instead of playing an ace or a deuce from any of those points, he should play them from his own size or highest points, so that throwing two fives, or two fours, his size and cinque points being eased, would be a considerable advantage to him; whereas, had they been loaded, he must have been obliged to play otherwise.

It is the interest of the adversary to take up the player as soon as he enters. The blot should be left upon the adversary's lowest point; that is to say, upon his deuce point rather than upon his troise point; or upon his troise point rather than his quatre point; or upon his quatre point preferable to his cinque point, for a reason before-mentioned; all the men the adversary plays upon his trois or his deuce points, are deemed lost, being greatly out of play; so that those men not having it in their power to make his cinque point, and his game being crowded in one place and open in another, the adversary must be greatly annoyed by the player. If the player has two of the adversary's men in his tables, he has a better chance for a hit than if he had more, provided his game is forwarder than that of his antagonist; for, if he had three or more of the adversary's men in his tables, he would stand a worse chance to be hit.

When a player is running to save the gammon, if he should have two men upon his ace point, and several men abroad, although he should lose one point or two in putting his men into his tables, it is his interest to leave a man upon the adversary's ace point, because it will prevent his adversary from bearing his men to the greatest advantage, and at the same time the player will have a chance of the adversary's making a blot, which he may chance to hit. However, if a player finds upon a throw, that he has a probability of saving his gammon, he should never wait for a blot, as the odds are greatly against his hitting it, but should embrace that opportunity.

How to calculate the odds of saving or winning the gammon. Suppose the adversary has so many men abroad as require three throws to put them into his tables, and at the same time that the player's tables are made up, and that he has taken up one of the adversary's men; in this case, it is about an equal wager that the adversary is gammoned. For in all probability the player has borne two men before he opens his tables, and when he bears the third man, he will be obliged to open his size or cinque point. It is then probable, that the adversary is obliged to throw twice before he enters his men in the player's tables, twice more before he puts that man into his own tables, and three throws more to put the men which are abroad into his own tables,

tables, in all seven throws. Now the player having twelve men to bear, he may be forced to make an ace or a deuce twice before he can bear all his men, and consequently will require seven throws in bearing them; so that, upon the whole, it is about equal whether the adversary is gammoned or not. Suppose a player has three men upon his adversary's ace point and five points in his own tables, and that the adversary has all his men in his tables, three upon each of his five highest points. Has the player a probability of gammoning his adversary or not?

	Points.
For bearing three men from his 6th point, is	18
From his 5th point - - -	15
From his 4th point - - -	12
From his 3d point - - -	6
From his 2d point - - -	9
In all	60
Bringing his three men from the adversary's ace point to his size point in his own tables, being 18 points each, and making together - -	54
There must remain - - -	6

It is plain from this calculation, that the player has much the best of the probability of the gammon, exclusive of one or more blots which the adversary is liable to make in bearing his men, supposing at the same time the throws to be upon an equality.

Suppose two blots are left, either of which cannot be hit but by double dice; one must be hit by throwing eight and the other by throwing nine; so that the adversary has only one die to hit either of them. What are the odds of hitting either of them? The chances of two dice being in all - - - 36

The chances to hit 8 are 6 and 2 twice -	2
5 And 3 twice - - - -	2
2 Deuces - - - -	1
2 Fours - - - -	1
The chances to hit 9 are 6 and 3 twice -	2
5 And 4 twice - - - -	2
2 Trois - - - -	1
For hitting in all - - -	11
Chances for not hitting remain - -	25

So that the odds are 25 to 11 against hitting either of these blots.

This method may be taken to find out the odds of hitting three, four, or five, blots upon double dice; or blots made upon double and single dice at the same time. After knowing how many chances there are to hit any of those blots, they must be added all together, and then subtracted from the number 36, which are the chances of the two dice, and the question is solved.

A critical case for a Back-game. Suppose the fore-game to be played by A, and that all his men are placed as usual; B has fourteen of his men placed upon his adversary's ace point and one man upon his adversary's deuce point, and B is to throw. Who has the best of the hit?—*Answer:* A has the best of it, gold to silver: because, if B does not

not throw an ace to take his adversary's deuce point, which is 25 to 11 against him, A will take up B's men in his tables, either singly or to make points; and then if B secures either A's deuce or trois point, A will put as many men down as possible, in order to hit, and thereby get a back-game. It is evident that the back-game is very powerful; consequently, whoever practises it must become a greater proficient at the game than he could by any other means.

Another critical case.—Suppose A to have five men placed upon his size point, as many upon his quatre point, and the same number upon his deuce point, all in his own tables. At the same time, let us suppose B to have three men placed upon A's ace point, as many upon A's trois point, and the same number upon A's cinque point, in his own tables, and three men placed as usual out of his tables. Who has the best of the hit?—*Answer:* The game is equal, till B has gained his cinque and quatre points in his own tables; which if he can effect, and by playing two men from A's cinque point, in in order to force his adversary to blot by throwing an ace, which should B hit, he will have the best of the hit.

A case of curiosity and instruction: in which is shewn the probability of making the hit last by one of the players for many hours, although they shall both play as fast as usual.—Suppose B to have borne thirteen men, and that A has his fifteen men in B's tables, viz. three men upon his size point, as many upon his cinque point, three upon his quatre point, the same number upon his trois point, two upon his deuce point, and one upon his ace point. A in this situation can prolong it, as aforesaid, by bringing his fifteen men home, always securing six close points till B has entered his two men, and brought them upon any certain point; as soon as B has gained that point, A will open an ace, deuce, or trois, point, or all of them; which done, B hits one of them, and A, taking care to have two or three men in B's tables, is ready to hit that man; and also he being certain of taking up the other man, has it in his power to prolong the hit almost to any length, provided he takes care not to open such points as two fours, two fives, or two sixes, but always to open the ace, deuce, or trois, points, for B to hit him.

A critical game to play.—Suppose A and B place their men for a hit in the following manner: A to have three men upon the size point in his own tables, three men out of his tables upon the usual point, and nine men upon his adversary's ace, deuce, and trois, points; that is, three upon each: and suppose B's men to be placed in his own and his adversary's tables in the same order. So situated, the best player should win the hit. The game being so equal, that in this case the dice should be thrown for. Now if A throws first, he should endeavour to gain his adversary's cinque point: this being done, he should lay as many blots as possible, to tempt B to hit him, as it puts him backward, and A thereby gains an advantage. A should always endeavour to have three men upon each of his adversary's ace and deuce points; because when B makes a blot, these points will remain secure, and when A has borne five, six, or more, men, A yet may secure six close points out of his tables, in order to prevent B from getting his man home, at which time he should calculate *who has the best of the hit. If he finds that B is foremost,* he should then try to lay such blots as may be taken up by his adversary,

sary, that he may have a chance of taking up another man, in case B should happen to have a blot at home.

Laws of Back-Gammon.—1. If a man is taken from any point, it must be played; if two men are taken from it, they also must be played. 2. A man is not supposed to be played till it is placed upon a point and quitted. 3. If a player has only fourteen men in play, there is no penalty inflicted, because by his playing with a smaller number than he is intitled to, he plays to a disadvantage for want of the deficient man to make up his tables. 4. If he bears any number of men before he has entered a man taken up, and which of course he was obliged to enter, such men so borne must be entered again in the adversary's tables, as well as the man taken up. 5. If he has mistaken his throw and played it, and his adversary has thrown, it is not in the choice of either of the players to alter it, unless they both agree so to do.

METHOD OF RAISING WHEAT FOR A SERIES OF YEARS ON THE SAME LAND.

THE erroneous idea that plants draw from the earth such particles only as are congenial to their own natures, has probably occasioned the farming maxim, "That wheat cannot be raised for a series of years upon the same land." The truth is, that under the broad-cast husbandry, there is not sufficient time for manuring and stirring the earth, between the operations of reaping and sowing. Such being the case, may we not remove the obstacle by substituting transplantation for sowing? With a view to decide upon this important question, a gentleman has instituted the following experiment:—In October 1795, a quart of wheat was drilled in a piece of garden ground, and on the 22d of March 1796, the plants were taken up and transplanted in a field, which before had borne a crop of potatoes. The soil was a light loam, and contained six hundred square yards, or half a rood.—The land was only once ploughed, harrowed, and rolled, after which the plants were pricked down at the depth of one inch within the ground, and at the distance of nine inches from each other, each square yard containing sixteen plants. The expence of planting out was, by a skilful farmer, estimated at one guinea per acre, supposing the work to be chiefly done by women and children. At this time (June 14) the plants make a fine appearance, not one of them having failed. Should this experiment answer the purpose for which it is made, it is proposed, after the crop is cut down, to have the land well ploughed and manured, in order to prepare it for receiving another crop of transplanted wheat in the spring; and it is also proposed to continue the experiment for a number of successive years, in order to determine the doubtful point, "Whether wheat can be raised for a series of years upon the same land?" Independently, however, of the original purpose for which the experiment was instituted, there is reason to suppose, that the transplantation of wheat for a single year will turn out a beneficial improvement.

The following reasons present themselves:—1. The scheme saves 11-12ths of the seed usually sown. 2. It employs the feeble hands of the village at a time when they have but little work. 3. Land, that in winter has become too wet for sowing, may be planted in the spring,

ſpring, whereby it will be kept in its regular courſe of tillage. 4. The wheat may be hoed at a ſmall expence, which will keep the land clean, and ſave hand-weeding in ſummer. 5. The crop will probably exceed in quantity. 6. It will give the farmer a taſte for garden culture, which will inſenſibly remove that ſlovenlineſs too generally obſerved in farming operations. 7. Wheat may be tranſplanted upon any land, however light, if a judgment may be formed upon a ſmall experiment made this year upon a piece of land, almoſt too light for rye. 8. As it ſeems to be an eſtabliſhed law in nature, that land will not puſh up more ſtalks from one ſeed than ſhe can well ſupport, it follows that the greater the ſurface a plant has to ſtand upon, the greater will be the number of ſtems produced. In this mode of culture, each plant has eighty-one inches of ſoil to grow upon, whereas in the broad-caſt huſbandry, the plants have only twelve inches. 9. Land, inſtead of lying waſte under a ſummer-fallow, may be made to produce a crop of cabbages, turnips, peaſe, beans, potatoes, or ſummer-vetches, as preparatory to its being planted with wheat. 10. Should experience prove the juſtneſs of this idea, a field of five acres, kept conſtantly under tranſplanted wheat, will afford a ſufficient ſupply of bread-corn for a family of fourteen perſons.

Experiment I.—Was made in a field at Middlethorp, near York, belonging to Samuel Barlow, Eſq.

Obſervations. The crop was much neglected during its growth, not having been properly hoed. Beſides, it was much blighted and mildewed, owing, as ſuppoſed, to its growing in the middle of a field of very tall oats, whereby it was deprived of a free circulation of air. An experienced farmer eſtimated the loſs by mildew, and neglect, at ſix buſhels per acre.

Experiment II.—Produce of tranſplanted wheat on one hundred and one ſquare yards, or the forty-eighth part of an acre—four pecks. This produce is at the rate of forty-eight buſhels per acre. The plants nine inches from each other.

Obſervations. The land on which this experiment was made, was better wheat-land than the former, and every neceſſary attention was beſtowed upon the crop. Having been planted a month later than the other experiment, with a view to aſcertain the beſt time for tranſplanting, the plants were thereby introduced to tiller more than neceſſary, during the whole of the ſummer. I am inclined to think, that the ſecond week in March is the beſt time for tranſplanting wheat, for about that time the ſecond roots begin to ſprout from the crown. In both experiments, the ears of corn were uncommonly long. From the great ſpace allowed for each plant, (eighteen inches,) it becomes eſſentially neceſſary that the land ſhould have two, if not three, hoeings during the ſummer. It will be almoſt unneceſſary to remark, that when wheat is intended to be cultivated for a ſeries of years on the ſame land, that the ſame quantity of manure, and the ſame number of ploughings, ſhould be annually beſtowed upon it, as if only intended for a ſingle crop. It is propoſed to continue theſe lands under wheat for ſome ſucceſſive years, in order to determine whether the ſame land can be made to produce wheat for a ſeries of years, a thing of great importance, and hitherto deemed impracticable. By combining theſe two experiments, with all their advantages and diſadvantages, we may fairly eſtimate an acre of tranſplanted

 who

wheat at thirty-two bushels, a crop considerably above the average of this country.

This valuable paper was communicated to the Agricultural Society of Manchester, at their general meeting, on the 10th of October, for which Dr. Hunter received the thanks, &c. of the Society.

OF THE INFLUENCE OF COLD UPON THE HEALTH OF THE INHABITANTS OF LONDON.

THE extraordinary mildness of January 1796, compared with the unusual severity of the January preceding, affords a peculiarly-favourable opportunity of observing the effect of each of these seasons contrasted with the other. For of these two successive winters, the one was the coldest, and the other the warmest, of which any regular account has ever been kept in this country.—Nor is this by any means an idle speculation, or matter of mere curiosity; for one of the first steps towards preserving the health of our fellow-creatures, is to point out the sources from which diseases are to be apprehended. And what may make the present inquiry more particularly useful, is, that the result, as I hope clearly to make appear by the following statements, is entirely contrary to the prejudices usually entertained upon this subject.

During January 1796, nothing was more common than to hear expressions of the unseasonableness of the weather; and fears lest the want of the usual degree of cold should be productive of putrid diseases, and I know not what other causes of mortality. On the other hand, "a bracing cold," and "a clear frost," are familiar in the mouth of every Englishman; and what he is taught to wish for, as among the greatest promoters of health and vigour.

Whatever deference be due to received opinions, it appears to me, however, from the strongest evidence, that the prejudices of the world are upon this point at least unfounded.—The average degrees of heat upon Farenheit's thermometer kept in London during the month of January 1795, was 23° in the morning, and 29.4 degrees in the afternoon. The average in January 1796, was 43.5 degrees in the morning, and 50.1 degrees in the afternoon. A difference of above twenty degrees! And if we turn our attention from the comparative coldness of these months, to the corresponding healthiness of each, collected from the weekly bills of mortality, we shall find the result no less remarkable. For in five weeks between the 31st of December 1794, and the 3d of February 1795, the whole number of burials amounted to 2823; and in an equal period of five weeks between the 30th of December 1795, and the 2d of February 1796, to 1471. So that the excess of the mortality in January 1795 above that of January 1796, was not less than of 1352 persons. A number sufficient surely to awaken the attention of the most prejudiced admirers of a frosty winter. And, though I have only stated the evidence of two years, the same conclusion may universally be drawn; as I have learned from a careful examination of the weekly bills of mortality for many years. These two seasons were chosen as being each of them very remarkable, and in immediate succession one to the other, and in every body's recollection.

It may not be impertinent to the objects of this paper, without entering

entering too much into the province of medicine, to consider a little more particularly the several ways in which this effect may be supposed to be produced; and to point out some of the principal injuries which people are liable to sustain in their health from a severe frost. And one of the first things that must strike every mind engaged in this investigation, is its effect on old people. It is curious to observe, among those who are said in the bills to die above sixty years of age, how regularly the tide of mortality follows the influence of this prevailing cause: so that a person used to such inquiries, may form no contemptible judgment of the severity of any of our winter months, merely by attending to this circumstance. Thus their number in January 1796 was not above one-fiftieth of what it had been in the same month the year before. The article of asthma, as might be expected, is prodigiously increased, and perhaps includes no inconsiderable part of the mortality of the aged. After these come apoplexies and palsies, fevers, consumptions, and dropsies.—Under the two last of which are contained a large proportion of the chronical diseases of this country; all which seem to be hurried on to a premature termination.

Notwithstanding the plague, the remittent fever, the dysentery, and the scurvy, have so decreased, that their very name is almost unknown in London; yet there has, I know not how, arisen a prejudice concerning putrid diseases, which seems to have made people more and more apprehensive of them, as the danger has been growing less. It must in a great measure be attributed to this, that the consumption of Peruvian bark in this country has, within the last fifty years, increased from fourteen thousand to above one hundred thousand pounds annually. And the same cause has probably contributed, from a mistaken mode of reasoning, to prepossess people with the idea of the wholesomeness of a hard frost. But it has in another place been very ably demonstrated, that a long frost is eventually productive of the worst putrid fevers that are at this time known in London, and that heat does in fact prove a real preventative against that disease. And, although this may be said to be a very remote effect of the cold, it is not therefore the less real in its influence upon the mortality of London. Accordingly a comparison of the numbers will shew, that very nearly twice as many persons died of fevers in January 1795, as did in the corresponding month of next year. I might go on to observe that the true scurvy was last year generated in the metropolis from the same causes extended to an unusual length. But these are by no means the only ways, nor indeed do they seem to be the principal ways, in which a frost operates to the destruction of great numbers of people. The poor, as they are worse protected from the weather, so they are of course the greatest sufferers by its inclemency. But every physician in London, and every apothecary, can add his testimony, that their business among all ranks of people never fails to increase and to decrease with the frost. For if there be any whose lungs are tender, any whose constitution has been impaired either by age, or by intemperance, or by disease; he will be very liable to have all his complaints increased, and all his infirmities aggravated, by such a season. Nor must the young and active think themselves quite secure, or fancy their health will be confirmed by imprudently exposing themselves. The stoutest man may meet with impediments to his recovery from accidents otherwise in-

 considerable;

considerable; or may contract inflammations, or coughs, and lay the foundation of the severest ills.—In a country where the prevailing complaints among all orders of people are colds, coughs, consumptions, and rheumatisms, no prudent man can surely suppose that unnecessary exposure to an inclement sky; that priding one's-self upon going without any additional clothing in the severest winter; that inuring one's-self to be hardy, at a time that demands our cherishing the firmest constitution lest it suffer; that braving the winds, and challenging the rudest efforts of the season; can ever be generally useful to Englishmen. But if generally, and upon the whole, it be inexpedient, then ought every one for himself to take care that he be not the sufferer. For many doctrines, very importantly erroneous; many remedies either vain, or even noxious; are daily imposed upon the world for want of attention to this great truth: that it is from general effects only, and those founded upon extensive experience, that any maxim, to which each individual may with confidence defer, can possibly be established.

ILL EFFECTS OF TOO GREAT NUMBER OF PUBLIC-HOUSES IN LONDON.

IT is truly melancholy to reflect upon the abject condition of the numerous class of profligate parents, who, with their children, are constantly to be found in the tap-rooms of public-houses, spending in two days as much of their earnings as would support them a week comfortably in their own dwellings; destroying their health; wasting their time; and rearing up their children to be prostitutes and thieves before they know that it is a crime.

In the city of London, and within the bills of mortality, there are at present 5204 licensed public-houses; and it is calculated that the beer and spirits which are consumed in these receptacles of idleness and profligacy by the labouring people only, is more than of three millions sterling a year! A moment's reflection will shew how much these unfortunate habits tend to destroy the moral principle, and to engender crimes. The fact is, that a large proportion of those earnings which would enable a family to be comfortable at home, to educate children, and to rear them up with a proper regard to their health and morals, so as to render them useful instead of mischievous members of the community, is, from invincible and growing habit, squandered in public-houses.

The period is not too remote to be recollected, when it was thought a disgrace for a woman (excepting on holiday occasions) to be seen in the tap-room of a public-house: but of late years the obloquy has lost its effect, since it is to be lamented, that the public tap-rooms of many ale-houses are filled with men, women, and children, on all occasions, where the wages of labour are too often exchanged for indulgencies ruinous to health, and for lessons of profligacy and vice totally destructive to the morals of the adults as well as of the rising generation. In tracing the causes of the increase of public depredations by means of robberies, pilferings, and frauds, much must be attributed to ill-regulated public-houses.

Instead of entrusting licences only to men of sober manners and of good moral character, a little inquiry will shew that a considerable proportion

proportion of the present ale-house keepers in the metropolis are men of no respectability; disposed to promote drunkenness, low games, and every species of vice and immorality that can be the means of increasing their trade; while not a few of them are connected with highwaymen, common thieves, and coiners, venders, and utterers, of base money.

An ill-regulated public-house is one of the greatest nuisances which can exist in civil society. Through this medium, crimes are increased in an eminent degree. Its poison spreads far and wide. It may be truly said to be a seminary for rearing up rogues and vagabonds. It is in such houses that thieves and fraudulent persons find an asylum, and consult how and where they are to commit depredations on the public. It is here that apprentices, and boys and girls of tender years, are to be found engaged in scenes of lewdness and debauchery; and, in fine, it is in such places, where almost every vice which disturbs or interrupts the peace of society has its origin.

It has been lately discovered, that clubs of apprentice boys are harboured in public-houses, for the purpose of supporting their brethren who run away from their masters, and of indulging themselves early in the scenes of lewdness and drunkenness, which they generally do by pilfering their master's property, and disposing of it at the old-iron shops. In this situation, from being an apprentice to a lawful trade, they, in general, become the apprentices of thieves, who resort to such houses to find boys fit for their purpose. The proper regulation, therefore, of those haunts of idleness and vice becomes the ground-work of the system, and deserves infinite attention in the proper selection of persons fit to be intrusted with licences; for on this depends the preservation of the morals of the people, in a greater degree than can be easily conceived.

The chief source of this evil arises from the number of immoral, profligate, and criminal, characters, who procure such situations, and who grossly abuse the trust reposed in them; and the cause is to be traced to the number of superfluous houses which have been inadvertently licensed. Of these there are seldom less than one thousand who change masters every year in the metropolis alone, and many of them three or four times over. The result is, that, while so many public-houses are constantly at market, worthless and profligate characters get into such situations; and it will ever be the case, while no limits are set to the number in each district, and while the present mockery of security is in practice, by permitting one publican to be bound for another in the small penalty of ten pounds, for the performance of duties, the most important and sacred which are known to exist in civil society, since a breach of them saps the foundation of all morals.—In a tract, entitled, "Observations and Facts relative to Public-Houses," the evils arising from ill-regulated public-houses are explained at considerable length, and several remedies proposed. In this publication the consumption of ale and porter annually in London and its environs, is stated to be 1,132,147 barrels, =36,625,145 gall. or 158,400,580 pots, at 3½d. £2,311,466 15 10

And by another calculation, the average consumption of gin and compounds in public-houses, previous to the stoppage of the distillery, was about 3,000,000 of gallons, - - 975,000 0 0

£3,286,466 15 10

If

If a conclusion may be drawn from the apparent greater degree of sobriety which is manifested at present by the labouring people, and evinced by the number of quarrels and assaults being very considerably diminished, and the pressure, with respect to the means of living, apparently less than in the spring of 1795, notwithstanding no charities have been distributed, and meat is considerably higher: it would seem reasonable to attribute this favourable change to the high price of gin, which being in a great measure inaccessible, the lower ranks are now partly forced to apply the money formerly spent in this way in the purchase of provisions—perhaps to the extent of some hundred thousand pounds a year in the metropolis alone! If this fact is assumed, it is impossible to reflect without great satisfaction on the actual gain which results to the nation from the preservation of the healths of persons whose lives are shortened by the immoderate use of ardent spirits. In the labour of adults, the benefit to the nation is at least one hundred fold in length of life, and productive industry, wherever sobriety pervades the mass of the people.

Of how much importance therefore is it for magistrates to establish correct systems for watching over the conduct of publicans and for regulating public-houses? Every thing that tends to the prevention of crimes; to the comfort and happiness of the labouring people; and to the essential interest of the state in what regards the morals and the health of the lower ranks of the community, in checking the prevailing propensity to drunkenness, gaming, and idleness; depends, in a great measure, on the vigilance and attention of the civil magistrates, whose powers to do good in this respect are extremely ample, and only require to be exerted with attention, mildness, and prudence, joined to firmness and good judgment.

The following propositions are suggested as likely to aid the magistrates considerably in their exertions to reform the public-houses, in case they shall obtain the sanction of the legislature.

1. That the number of public-houses assigned to each licensing division shall be limited by law, and no new houses shall be licensed unless there shall be an increase of inhabitants (by means of an accession of buildings or manufactories in the neighbourhood) equal to 150 individuals, including those employed in public works.

2. That no person shall be licensed until he can produce a responsible house-keeper, who is not a publican, who will enter into a recognizance along with him, for his good behaviour, in the sum of fifty pounds, which shall be forfeited if he permits gaming, drunkenness, or any other irregularities, which shall be specified in the recognizance, the form and obligations of which might be modernized, altered, and amended, to the great benefit of the public. At present the legal recognizance is only for ten pounds. It has continued so for 234 years, since the reign of Edward VI. when the sum then fixed on, according to the decrease of the value of money, was much more than the fifty pounds now proposed is at the present time.

The foundation of all good police rests upon those wise regulations which the clergy and the magistrates shall carry into execution for the preservation of morals, and the prevention of crimes. It is earnestly to be hoped, that those who have the charge of parishes will lend their aid in a greater degree, by a more immediate attention

tion to the condition of the poor, by regularly visiting their abodes, and by proper religious instructions in their families. Certain it is, that, if the prevailing and the increasing immorality and profligacy among the lower orders of the people are not checked, very serious consequences are to be dreaded.

The total ignorance of moral and religious duties among the lower ranks of people in the metropolis is manifested in a very striking degree, from the vast numbers who cohabit together without marriage, from which connections a numerous progeny arises, reared up (where want of care and disease does not shorten their days) under the example of parents whose conduct exhibits nothing but the vilest profligacy.

SOME ACCOUNT OF DARTMOOR,

WITH GENERAL THOUGHTS ON CULTIVATING AND IMPROVING IT.

DARTMOOR, so called from its barren soil, is computed to be about twenty miles long, and fourteen miles wide; consisting chiefly of a blackish earth, covered with rocks and its fragments; some of these rocks are of great bulk and height, resembling towers of massy bigness, and, from their elevated situation, to be seen at a great distance. The external surface of the moor yields but few productions of the vegetable world, with the exception of whortleberry bushes, heath, and furze; its numerous woolly inhabitants speak fully the barrenness of the soil; but, with all these disadvantages, the forest of Dartmoor may truly be said to be rich, its bowels producing great quantities of tin; and, in some parts, turf is cut, and prepared for sale, by the adjacent dwellers, in great quantities, and to a great amount; from these hills the mother of many rivers declineth, some of which take their route and fall into the British ocean; while others bend their course in a contrary direction, and meet the Severn sea.

This waste King John assigned to be a forest; and King Henry III. not only confirmed his father's grant, but, among other things, set down its boundaries.

We find, in and about this moor, a certain species of tenants, known by the name of Fenfield men (in the Saxon Fengefield). These are the king's special tenants, and do suit and service at his court, paying him annually; these enjoy the following privileges: they are not to be attached by any officer, but for default of non-payment of their rents, which is four-pence yearly, at Michaelmas; they are privileged to fish in all waters there, and dig turfs, and to have all in the said moor that can do them good, except green oak and venison; also to present at the court (which was held at Lidford) all faults and offences found in and about the moor; also to winter in the moor by day as much cattle as they can keep, but, if they tarry the night, then they were to pay three-pence; if they had more cattle than they could winter by night on their tenements, they were then to pay for such as if strangers, viz. for every young cattle three half-pence, and every other greater beast two-pence.

The Moor, from its situation, being so much higher in the atmosphere than the fertile lands adjoining, the air of course must be very different, frosts and snow more frequent and of longer continuance, the winds have greater power, and blow more bleak; and rain

rain and mists must be more prevalent, as we often see the moor-hills involved in clouds, when the lower country is perfectly beautiful, clear, and serene. To this add, the waters being so near their source, and no doubt strongly impregnated with metalline particles, and not being softened by exposure to the air, must certainly be of a less fertilizing quality. The article of manure will be another great disadvantage the inclofer and cultivator will labour under; this must be deficient in every degree, unless a discovery (almost miraculous) should be made of some at present unknown; sea-sand and lime are too remote, and dung is impossible to be attained in sufficient quantity; neither is gypsum nor marle to be found in the whole forest, nor a lime-rock to be seen, the whole being a mass of granite or moor-stone. Dung, therefore, is the only probable manure that can be obtained, and even this not till a considerable degree of cultivation has taken place; for, should towns arise (by the magical touch of Harlequinism) in the moor, it is presumed their effects, in regard to this manure, would extend but a little way around them. Neither does it appear possible to subdue the natural sterility of the soil, even by implanting on the moor colonies of Chinese or Swiss peasants, who are so well known for their unwearied and persevering industry in the art of agriculture, as Coxe tells us in his Travels through Switzerland, "that he was struck with admiration and astonishment to observe rocks, that were formerly barren, now planted with vines, or abounding in rich pasturage; to mark the traces of the plough along the sides of the precipices so steep that it must have been with great difficulty that a horse could even mount them; in a word, the inhabitants seem to have surmounted every obstruction which soil, situation, and climate, had thrown in their way; and to have spread fertility over various spots of the country, which nature seemed to have consigned to everlasting barrenness." On reading these travels, I was sorry so intelligent a traveller did not particularize the mode by which the Swiss peasants overcome this vast sterility; he not having done it, I beg leave to observe, that in Switzerland the peasants on on the mountainous parts (which is where he spoke of) are driven to such distress, that their whole living consists chiefly of potatoes and milk; therefore it can be no wonder that the peasants are endowed with so much patience and unremitted ardour, as otherwise they must of necessity starve, they possessing no money (or but a very small quantity if any) to purchase with, and their every means of existence arising from their own little demesnes; it is therefore probable they possess not a spot, though ever so barren, but they wish it to be pasturage, as every fresh spot that they gain is the farther means of preserving the milk of their cattle; and I make no doubt but this is effected by carriage of soil, or other compost, from some more fertile spot, and making a layer on the barren; or they otherwise might (were it convenient) stop the current of the descending waters from the mountains, and thereby gain a sufficient depth of fertilizing sediment, which they might manure in something the like manner Baron de Tott gives of the mode of cultivation of the land after the overflowing of the Nile; he says, "It has long been a mistaken opinion, that the mud, left after such periodical inundation, was a fattener and fertilizer of the country; in the analyzation of such mud, he discovers that it possesses no such quality as the vegetative before its union with the sand, which, together with the clay com-

poſes the ſoil of Egypt. After the ſubſiding of the river, the cultivator takes immediate poſſeſſion, his induſtry ſupplying the barrenneſs of the ſand, with which he mixes pigeon's dung, then ſows his water-melons, and reaps a plentiful crop." Probably by ſome ſuch methods the Swiſs peaſants are enabled to raiſe ſuch beautiful ſpots, which Coxe ſo deliciouſly paints. We have many other travellers who highly praiſe the induſtry and perſeverance of various nations in reſpect to their improvements and wonderful ſtate of agriculture; among which I cannot paſs over the account of Charles Peter Thunberg, in his Travels in the Empire of Japan, and Iſlands of Java and Ceylon: he ſays, "The pains which a farmer takes to cultivate the ſides of even the ſteepeſt hills are almoſt incredible; if the place be even no more than two feet ſquare, he raiſes a wall of earth and ſtones at the bottom of the declivity, fills the part above this with earth and manure, and ſows this little ſpot of ground with rice, or eſculent-rooted vegetables. Thouſands of theſe beds adorn moſt of their mountains, and give them the appearance which excites the greateſt aſtoniſhment in the breaſt of the ſpectators: the extreme population of the country obliging them thus to turn their thoughts toward the production of food for man. Few horſes are kept, conſequently no meadows; and cultivation ſeems like a garden of eſculent vegetables." I am of opinion, a ſcarcity of corn and grain would never (unleſs from unforeſeen accidents) take place again in England, if the laſt hint were but in ſome degree attended to by the farmers here; and let oxen be ſubſtituted for horſes, and there will be no more a cry of ſcarcity or a want of horned cattle. We find a ſimilar mode of cultivating barren rocks, and even mountains, in the narrative of Lord Macartney's embaſſy to China by Mr. Anderſon; and, I am confident, ſome ſuch methods will be abſolutely neceſſary in the cultivation of the foreſt of Dartmoor; and the cultivator, like Mr. Anderſon's Chineſe peaſant, muſt ſuſpend himſelf from many of the rocks by the precarious faſtening of a rope.

LETTER FROM A FRENCH OFFICER IN CORSICA.

YOU are too well verſed in hiſtory to make it neceſſary for me to carry you back to the remote periods of Corſica. Here they have a tale of a lady of Liguria, by name Corſa Bubulca, who brought a colony to this place. To the natural inconſtancy of theſe iſlanders it is owing, that they have ſo often changed their maſters. Corſica has been ſucceſſively the property of the Ligurians, the Phocæans, the Tyrrhenians, the Hetrurians, the Carthaginians, the Romans, the Goths, the Saracens, the Pope, the Genoeſe, the Piſans, and the kings of Arragon, Sardinia, and France.

They choſe themſelves a king in the perſon of the famous Baron Theodore, a German, who was afterwards expelled, then recalled, and again driven out, till at length he died in trouble and diſtreſs at London; where Paoli, either more diſcreet, or better ſupported by circumſtances, at preſent (1781) enjoys a handſome maintenance, tho' without the hope of ever regaining the eſteem and confidence of his countrymen. The Corſicans, finding the yoke of the Genoeſe utterly inſupportable, that republic ſaw itſelf compelled to cede the iſland to the crown of France, which has been at the expence of much blood and treaſure to ſecure its poſſeſſion.

Notwithstanding the ill opinion that is generally entertained of Corsica, yet it appears to merit the attention of the crown on two considerations. In the first place, because the possession of it would put the enemies of France in a condition to do great damage to her trade and navigation, by cruising to the heights of Antilles, Toulon, Marseilles, &c. Secondly, because this place is so excellently calculated to be the prime staple of the Levant, and the magazine of the whole Mediterranean trade. Antilles is no more than forty French miles from it.

Considered in this point of view, and without paying any regard to what it has cost, and still costs, it should almost seem as if the political interests of France made the keeping of it indispensably necessary, were it only to prevent other nations from making their uses of it. Consequently, the little produce of the island does not come into the account; which, in proportion to its magnitude, is but very moderate. I will specify its productions according to the provinces, beginning from the southern promontory.

The cape Corso produces wine; but to that sole article its whole produce is confined. It would be well if the vine plants and the grapes were better cultivated and managed. At present none can be exported but what are first boiled. This branch of commerce is moderate. Cape Corso has neither woods nor mulberry-trees, few olive-trees, but little corn, and chesnuts almost none at all. The soil of this province is dry and bare. It yields gold, silver, copper, lead, markassites, roch-allum, antimony, loadstone, and marble. They collect the leaves of the bushes, which they sell in bread to the Genoese for curing their raw hides. This traffic however is no great matter.

The province of Bastia is better cultivated; it has corn, wine, flax, olives, mulberry and other fruit trees, but especially chesnut-trees in abundance in the district of Ampugnani. Touch-stone is found in the river Gelo, which is dry in summer, and roch-allum in la Cazinca, a little territory bordering on the province Aleria.

Aleria would be the best province of the island, if the air were but wholesomer. The soil is deep and fertile. The sea-slime has manured it, and it bears excellent wheat.—But all that lies to the sea is swampy, and there arises such a pestilential vapour, particularly in June, July, and August, that a man risks his life by passing a night in these flats. The air at Fiumorbo, the mountainous part of the country, is healthy, and the ground covered with fine woods. At the village Isolaccio are hot springs, which were very famous in the time of the Romans. We still see the remains of the baths that were built there. Half a mile from the sea, we perceive the ruins of an ancient city which bore the name of Aleria. They consist of decayed walls and the fragments of some houses. The four walls of a church are still standing, but the architecture shews it to be of no remoter a date than the fifteenth century at the utmost; whereas we know that Aleria was existing in the time of the Saracens. It is asserted that it contained sixty thousand inhabitants. Not far from this, in the opinion of the historiographers, stood the city of Accia; of which, however, there is not the smallest vestige remaining.

Bonifacio and Porto-Vecchio contain vast tracts of land that might be excellently employed in agriculture; neither is there any scarcity of

of wood and water; but only the diſtricts about the inhabited places are cultivated.

The air at Porto-Vecchio, on account of the neighbouring marſhes, is very unwholeſome during the ſummer; this is owing to the negligence of the inhabitants, who ſuffer their haven, where it incroaches on the land, to get choked up with mud. The cleanſing of the haven would render it one of the fineſt and beſt in all the Mediterranean, and at the ſame time make the country more ſalubrious. Porto-Vecchio is only a wretched village, notwithſtanding it is honoured with the title of a city.

Bonifacio is ſituated on an eminence on the ſouthern point of the iſland, over-againſt Sardinia, and is tolerably well fortified. Hard by are ſeveral caverns, remarkable for their petrifactions: they remind me of Claudian's fine deſcription of theſe natural productions, in one of his epigrams, though they properly do not belong to that department of poetry:—

Poſſedit glacies naturæ ſigna prioris:
Quæ ſit parte lapis, frigora parte negat.
Sollers luſit hiems, imperfectoque rigore
Nobilior, mittis gemma tumeſcit aquis.

Sartena carries on a commerce in wine and corn, but the cultivation of either amounts to no great matter.—We meet here with cheſnuts. This province lies conveniently for trade, as the gulf of Valinco extends far into the country. The inhabitants of Sartena have taken it into their heads, that they are all of noble race, and, ever ſince they have given admiſſion to this charming dream, they paſs their lives in idleneſs, and have filled the whole diſtrict with proud and poor inhabitants. The neighbouring hills abound in marble.

The province of Ajaccio poſſeſſes all the advantages of an eaſy traffic, as its golfo is very deep, its circumference conſiderable, and its ſoil well watered and covered with foreſts.—At the ſame time this province is among thoſe that are the worſt built upon. The city of the ſame name is very elegant; the ſtreets are all in right lines, and tolerably well built. It is the only one that has the look of a French city. Vico contains the fineſt foreſts on the iſland. The golfo di Sagona, on the one ſide, and that of Porto on the other, facilitate their commerce. This province is ſhaded by numerous cheſnut-trees and olives; its vallies are richly ſupplied with water, and yet agriculture is in a very poor condition. Vico is but a village; and at Guagno, not far from it, are warm baths.

Corte, the centre of the iſland, is in the ſame bad ſtate, notwithſtanding the high road from Baſtia, and its abundance of water, woods, and vallies, which might ſo eaſily be turned to profit. Gold, ſulphur and talc, are found here. The city of this name, which was formerly the capital of the iſland, is a miſerable open ſpot, lying on the declivity of a lofty mountain, and from its foot looks like an old forſaken ſwallows neſt.—A certain Strangelo, who has publiſhed a map of Corſica, mentions, in the hiſtorical part of it, that, from January 1767 to March 1768, no leſs than 47,000 foreigners ſettled at Corte, which has not room to contain 4000 perſons. Probably it is an error of the preſs; three nullos too much! *et ſic de cæteris.*

The province Calvi is leaſt adapted to agriculture, excepting ſome glens that lie towards the ſea. The city of this name, built on a

rock, is tolerably strong. The inside is quite in the Corsican manner. Algagliola and Isola Rossa are two small villages on the sea-coast which carry on a petty commerce. Belagna, so much extolled for its fertility, is limited in that and its wealth to the single Pieve Tuani.—Oil forms the chief branch of its commerce, but it is considerable. Many almond-trees are seen here.—This Pieve Tuani is a small vale, two miles long, and four miles broad, and may be called the garden of the island; but, on leaving this vale on which ever side we will, Corsica resumes its sad and arid aspect. We come to bare unfruitful mountains, especially towards Nebio. But they yield very beautiful porphyry; from hence was fetched the whole quantity used for the annunciation of Mary at Florence. In the river Caccia is found red ocre.

Nebio has nothing good but its dale, which is bounded by the golfo of St. Fiorenzo, and at present is quite defenceless; but it is of great importance to the island. Whoever should make himself master of this golfo, may easily penetrate into the dale, and, without any impediment, take possession of the heights that extend over the provinces of Bastia and Belagna, and from thence over-run the whole island. Accordingly, the Corsicans gave up all for lost, on seeing that we had once secured this pass.

St. Fiorenzo is a wretched town on the golfo of that name. The air is here very unwholesome from the same cause that necessitated the inhabitants to desert Porto-Vecchio. It might here be corrected with as little trouble as there, and in my opinion this ought to be done before they begin to work at the fortifications; in the meantime they pass the whole year at St. Fiorenzo, and the present commandant has long made his abode at this place.

From this short description, you may perceive that the commerce of the island, at this moment, is not in the most flourishing condition. Accordingly the balance is eighty thousand livres per month against us, so much goes out of the island for necessaries of all kinds. The duties are fifteen per cent on foreign, and seven and an half per cent on French, imports. Doubtless, the crown had the wisest reasons for this regulation; it wanted the Corsicans to dispense with foreign assistance, by causing them to pay somewhat dearer for it. But perhaps a general liberty of trade would have made it flourish more in the Corsican ports, whereas too much interference of government always scares it away. A simple charge for anchorage would perhaps have brought in as much as the duty: the neighbouring nations would have been accustomed to visit Corsica; and it is more than probable that this island would by this time have been one of the seats of commerce in the Mediterranean sea, and the foremost staple of the Levant; and perhaps I may be mistaken.

The only tax in Corsica is the assessment. It relates principally to landed estates. The crown thought to give a spur to the inactivity of the Corsicans by laying on this tax: and it would have succeeded with any other people; but this forms an exception to the rule; the assessment seems to have quite overpowered them; accordingly, it has been thought fit to alter the plan. I am persuaded we should have a thorough knowledge of the physical part of a country and the genius of its inhabitants, before we proceed to new impositions, especially in a nation that has but lately been subjugated, and has been accustomed to anarchy and civil dissentions.

The

The Corſican cannot do without a maſter, but he that becomes ſo is ſure of his hatred. His lazineſs is a fault of his temperament, which the climate increaſes, and a conſequence of his puſillanimity, which again is the fruit of his inteſtine broils. We ſhould therefore go gently to work with him, if we would gain his friendſhip, and imperceptibly inſpire him with an inclination to work, as he will never ſubmit to be abruptly burdened. The only objection of any conſequence, is, that the revenues of the crown will be leſſened, and the expences which it muſt neceſſarily be at for Corſica increaſed. But to this it may be anſwered, that there are more ſimple and eaſy methods, as well to leſſen this expence as to ſupply the deficiencies ariſing from this abolition of the two kinds of impoſt, and at the ſame time be a relief to the nation. It is the buſineſs of the crown to think of theſe methods. One circumſtance eſpecially muſt never be loſt ſight of, that the Corſican is accuſtomed to live frugally, that he conſequently knows but few wants, and therefore has no inclination to works that would bring him in more money than he has occaſion to ſpend in the indiſpenſable neceſſaries of life. Such a nation puts a ſtop to all the calculations of politicians. The beſt project at this moment would be to induce foreigners to ſettle in Corſica. But in this we muſt go prudently and economically to work, and particularly act with firmneſs towards the natives.

To judge from the ſtate of affairs in America and Europe, and the viſionary ideas of the Engliſh, which make them forget it is a folly to laviſh money and troops in conquering an open country, which may as eaſily at any time be loſt again; to judge from this conduct, it ſhould ſeem as if Corſica was the only country in Europe on which that nation can wreak its vengeance, by making a diverſion againſt us. Why elſe ſhould they continue to pay Paoli his penſion of two thouſand pounds ſterling? his name indeed is now no more than a tattered ſcarecrow, no longer of any great ſervice; the utmoſt it could do might be to ſtir up ſome enthuſiaſts of Niolo to throw us into diſturbance, if we were not too ſtrong in the iſland.

Niolo is a baſon of two miles in breadth and four in length; it lies between the provinces Vico, Calvi, and Corte, and is in a manner confined by the latter. It has the figure of a boat. All its inhabitants have a ſavage look, and their manners are much more rude than thoſe of the other parts. They lead a paſtoral life, roving about the iſland the whole year through with their flocks and herds, which their own diſtrict is as little able to ſupport as themſelves. This channel, however, is of great utility in time of war; as it has but four entrances, where any one with a handful of people might defend it againſt an army of 10,000 men. Theſe poſts then muſt be firſt ſecured in caſe of an attack. Theſe entrances are extremly difficult. They are narrow paſſages hewn in the rock, leading to ſteep overhanging precipices. The Corſicans are fully ſenſible of the advantages of this tract of country. It was here where the laſt inſurrection happened. It might have been productive of bad conſequences, had not the Nioleſe begun their attempt before their project was ripe for execution, and that firſt without taking poſſeſſion of the four paſſes; ſo that, when they would have done it, our troops had already made themſelves maſters of them.

Corſica might be made a place of refuge to the unhappy ſchiſmatical Greeks, who labour under ſo many oppreſſions in the Levant, and

and have long been sighing after a secure and quiet abode. The colony of Carghesa would be the fruitful parent of numerous settlements, and the example of activity and industry set by these fugitives might be a spur to the emulation of the other Corsicans, or rouse them at least from their present indolence and sloth. The poor Acadians, who adhered to the crown of France, and refused to bend their necks to the yoke of England at the last treaty of peace, languish in Poitou, and are a burden to the government, without any certain support. Certain privileges granted them would enable these distressed families to render the desert tracts of Corsica populous and productive.

The island abounds in excellent firs and pines, of large growth, and inferior to none for the purposes of ship-building. The forest of Aiton is an inexhaustable plantation of beautiful trees. They had this reputation so long ago as the time of Dionysio Affro.—With better treatment and better culture, Corsica would yield good wine and excellent oil. The mulberry-tree thrives here to admiration, and silk of a pretty good quality is made. Formerly the Corsicans paid their tribute in wax; the culture of bees is therefore understood in the country. Formerly too they made salt; why should they not make it still? The growth of corn might likewise come again into practice, if more attention were paid to the draining of the morasses. In Corsica there are neither wolves nor rabbits; but foxes are here in plenty, strong enough to worry and devour young lambs. All species of animals are smaller here than elsewhere, and seem as if degenerated. The hogs, quails, and pigeons, are excellent; fowls and game are moderately large, excepting the wild boar, which is neither large nor wild. The fish of the Mediterranean are not to be compared with those of the ocean. They bear the same relation as pond-fish to river-fish.

Corsica contains between 130,000 and 140,000 inhabitants, as well natives as French and foreigners. The island produces gold, silver, copper, iron, lead, sulphur, antimony, basalt, chalk, roch-alum, cinnabar, jasper, porphyry, and marble of various colours; likewise yellow topazes, both of the pyramidal and cubic forms. The best stone for building is called travertina. It is very hard, and so disposed that it makes the whole thickness of the wall. There is plenty of crystal in the mountains of Cagna, Cazinca, and Niolo. Along the coast grow white and red corals. The black are imperfect madrepores. The rocks of cape Corso are covered with corallides. The species of pine, called here carricio, is a sort of cedar, which is highly prized, both on account of its beauty and its goodness. This tree grows to the height of 130 feet, and is as straight and smooth as a reed. Its rosin is fine and transparent, its wood very hard, and is exceedingly well adapted to the purposes of ship-building and the construction of houses. Fruit-trees are but indifferent, except the fig, almond, and chesnut, which succeed every where.

Cagna and Graddaccio are the highest mountains of Corsica. On the latter is a lake of considerable magnitude; the circumjacent territory is covered with wood. If you would get a notion of the horrors of the Thebaic deserts, you should visit the vale of Cruzzini; but not as I did, who had nearly paid for it with my life, as I fell with my horse down a steep of more than twenty toises, among nothing but rocks.

After

After the investigations I have made into the nature of the terrain in the parts about Antibes, into the species of wood, stones, strata, and even the products of the soil, I am more and more confirmed in my hypothesis, that Corsica has been severed from Provence by one of those violent convulsions of the globe, which must have frequently happened in the remote ages of antiquity. But the analogy extends not to the character of the inhabitants; for the Provençal is as active as the Corsican is slothful.

DESCRIPTION OF THE FOUNTAIN-TREE.

THE fountain-tree is a very extraordinary vegetable growing in one of the Canary islands, and likewise said to exist in some other places, which distils water from its leaves in such plenty as to answer all the purposes of the inhabitants who live near it. Of this tree we have the following account in Glasse's History of the Canary Islands.—"There are only three fountains of water in the whole island of Hierro, wherein the fountain-tree grows. One of these fountains is called Acof, which, in the language of the ancient inhabitants, signifies river; a name, however, which does not seem to have been given it on account of its yielding much water, for in that respect it hardly deserves the name of a fountain. More to the northward is another called Hapio; and in the middle of the island is a spring, yielding a stream about the thickness of a man's finger. This last was discovered in the year 1565, and is called the fountain of Anton. Hernandez. On account of the scarcity of water, the sheep, goats, and swine, here, do not drink in the summer, but are taught to dig up the roots of fern, and chew them to quench their thirst. The great cattle are watered at those fountains, and at a place where water distils from the leaves of a tree. Many writers have made mention of this famous tree, some in such a manner as to make it appear miraculous: others again deny the existence of any such tree; among whom is Father Feyjoo, a modern Spanish author, in his Theatro Critico. But he, and those who agree with him in this matter, are as much mistaken as those who would make it appear to be miraculous.

"The author of the History of the Discovery and Conquest has given us a particular account of it, which I shall here relate at large. 'The district in which this tree stands is called Tigulahe; near to which, and in the cliff or steep rocky ascent that surrounds the whole island, is a narrow gutter or gully, which commences at the sea, and continues to the summit of the cliff, where it joins or coincides with a valley, which is terminated by the steep front of a rock. On the top of this rock grows a tree, called in the language of the ancient inhabitants, *Garse*, "Sacred or Holy Tree," which for many years has been preserved sound, entire, and fresh. Its leaves constantly distil such a quantity of water as is sufficient to furnish drink to every living creature in Hierro; nature having provided this remedy for the drought of the island. It is situated about a league and a half from the sea. Nobody knows of what species it is, only that it is called *Til*. It is distinct from other trees, and stands by itself; the circumference of the trunk is about twelve spans, the diameter four, and in height from the ground to the top of the highest branch, forty spans: the circumference of all the branches

branches together is one hundred and twenty feet. The branches are thick and extended; the lowest commence about the height of an ell from the ground. Its fruit resembles the acorn, and tastes something like the kernel of a pine-apple, but is softer and more aromatic. The leaves of this tree resemble those of the laurel, but are larger, wider, and more curved; they come forth in a perpetual succession, so that the tree always remains green. Near to it grows a thorn which fastens on many of its branches, and interweaves with them; and at a small distance from the garse are some beech-trees, bresos, and thorns. On the north side of the trunk are two large tanks or cisterns, of rough stone, or rather one cistern divided, each half being twenty feet square, and sixteen spans in depth. One of these contains water for the drinking of the inhabitants; and the other that which they use for their cattle, washing, and such-like purposes. Every morning, near this part of the island, a cloud or mist arises from the sea, which the south and easterly winds force against the fore-mentioned steep cliff; so that the cloud, having no vent but by the gutter, gradually ascends it, and from thence advances slowly to the extremity of the valley, whence it is stopped and checked by the front of the rock which terminates the valley, and then rests upon the thick leaves and wide-spreading branches of the tree, from whence it distils in drops during the remainder of the day, until it is at length exhausted, in the same manner that we see water drip from the leaves of trees after a heavy shower of rain. This distillation is not peculiar to the garse or til; for the bresoes, which grow near it, likewise drop water; but, their leaves being but few and narrow, the quantity is so trifling, that, though the natives save some of it, yet they make little or no account of any but what distils from the til, which, together with the water of some fountains, and what is saved in the winter season, is sufficient to serve them and their flocks. This tree yields most water in those years when the Levant or easterly winds have prevailed for a continuance; for, by these winds only the clouds or mists are drawn hither from the sea. A person lives on the spot near which this tree grows, who is appointed by the council to take care of it and its water; and is allowed a house to live in, with a certain salary. He every day distributes to each family of the district seven pots or vessels full of water, besides what he gives to the principal people of the island.'

"Whether the tree which yields water at this present time be the same as that mentioned in the above description, I cannot pretend to determine: but it is probable there has been a succession of them; for Pliny, describing the Fortunate Island, says, 'In the mountains of Ombrion are trees resembling the plant ferula, from which water may be procured by pressure. What come from the black kind is bitter; but that which the white yields is sweet and potable."

Trees yielding water are not peculiar to the island of Hierro; for travellers inform us of one of the same kind on the island of St. Thomas, in the bight or gulph of Guiney. In Cockburn's Voyages we find the following account of a dropping tree, near the mountains of Fera Paz, in America:

"On the morning of the fourth day, we came out on a large plain, where were great numbers of fine deer, and in the middle stood a tree of unusual size, spreading its branches over a vast compass of ground. Curiosity led us up to it. We had perceived, at some

some distance off, the ground about it to be wet; at which we began to be somewhat surprised, as well knowing there had no rain fallen for near six months past, according to the certain course of the season in that latitude: that it was impossible to be occasioned by the fall of dew on the tree, we were convinced, by the sun's having power to exhale away all moisture of that nature a few minutes after its rising. At last, to our great amazement as well as joy, we saw water dropping, or as it were, distilling, fast from the end of every leaf of this wonderful (nor had it been amiss if I had said miraculous) tree; at least it was so with respect to us, who had been labouring four days through extreme heat, without receiving the least moisture, and were now almost expiring for the want of it.

"We could not help looking on this as liquor sent from heaven to comfort us under great extremity. We caught what we could of it in our hands, and drank very plentifully of it; and liked it so well, that we could hardly prevail with ourselves to give over. A matter of this nature could not but incite us to make the strictest observations concerning it; and accordingly we staid under the tree near three hours, and found we could not fathom its body in five times. We observed the soil where it grew to be very strong; and upon the nicest inquiry we could afterwards make, both of the natives of the country and the Spanish inhabitants, we could not learn that there was any such tree known throughout New Spain, nor perhaps all America over: but I do not relate this as a prodigy in nature, because I am not philosopher enough to ascribe any natural cause for it; the learned may perhaps give substantial reasons in nature for what appeared to us a great and marvellous secret."

SINGULARITIES OF THE LATE Mr. HOWARD.

FROM PRATT'S GLEANINGS.

HOWARD had many singularities, but very few affectations. It was singular for mere mortal man to go about doing good for the sake of doing it: to devote his fortune and his life, to explore the most neglected and the most forlorn of the wretched, and to relieve them "according to their several necessities"—to begin the work of benevolence, where other people's bounty commonly ends it—in a prison. All this was very singular, but wholly pure of affectation. Further, it was singular, deserving that word, indeed, inasmuch as in human history—it is without a parallel—to put himself to the greatest personal inconveniencies, and to encounter the greatest dangers, often of life itself, to accomplish the proposed ends of his philanthropy, since it is notorious, that he traversed the earth, without any considerations of political distinctions, or the nature of climate, in search of his objects, by which perseverance and intrepidity of resolution, he overcame all impediments that would have deterred many excellent persons from attempting the like enterprises; and made even those faint by the way, who, with like good hearts, but less firm minds, would have found themselves unequal to like undertakings: yet in Howard this was altogether unaffected: and before any man sets down any part of it to a love of being particular, or to a love of fame arising therefrom, let him well and truly examine his own heart, his own disposition, and see that he is not hunt-

ing about for an excuſe to his own want of benevolence, or to his own vanities in being bountiful, by lowering the principle of benevolence in another. Let it not be imputed to John Howard, as a diſhonour, that he had enemies, who, while they could not but applaud the bleſſed effects of his virtue, laboured to depreciate the cauſe. The Saviour of the whole world, whom, perhaps, of human creatures he moſt correctly imitated, had the ſame; and to reſemble his divine example, even in the wrongs that were heaped on his ſacred head, is rather glory than ſhame.

He was ſingular in many of the common habits of life: for inſtance, he preferred damp ſheets, linen, and clothes, to dry ones, and both riſing and going to bed ſwathed himſelf with coarſe towels dipped into the coldeſt water he could get; in that ſtate he remained half an hour, and then threw them off, freſhened and invigorated, as he ſaid, beyond meaſure. He never put on a great-coat in the coldeſt countries; nor had been a minute under or over the time of an appointment, ſo far as it depended on himſelf, for ſix and twenty years. He never continued at a place, or with a perſon, a ſingle day beyond the period prefixed for going, in his whole life; and he had not for the laſt ſixteen years of his exiſtence, eaten any fiſh, fleſh, or fowl; nor ſat down to his ſimple fare of tea, milk, and ruſks, all that time.—His journeys were continued from priſon to priſon, from one groupe of wretched beings to another, night and day; and where he could not go with a carriage he would ride, and where that was hazardous he would walk. Such a thing as an obſtruction was out of the queſtion.

There are thoſe who, conſcious of wanting in themſelves what they envy in others, brand this victorious determination of ſuffering no let or hindrance to ſtop him from keeping on in the right way, as madneſs. Ah, my friend, how much better would it be for their neighbours, and for ſociety were they half as mad. Diſtractions they doubtleſs have, but it is to be feared, not half ſo friendly to the intereſts of human kind. But, indeed, all enthuſiaſm of virtue is deemed romantic excentricity, by the cold-hearted.

With reſpect to Mr. Howard's perſonal ſingularities above deſcribed, though they were certainly hazardous experiments, in the firſt inſtance, it was not uſeleſs for a man, who had pre-reſolved to ſet his face againſt wind and weather, and, after paſſing all ſorts of unhealthy climes, to deſcend into the realms of diſeaſe and death, to make them.

Some days after his firſt return from an attempt to mitigate the fury of the plague in Conſtantinople, he favoured me with a morning viſit in London; the weather was ſo very terrible, that I had forgot his inveterate exactneſs, and had yielded up even the hope, for his own ſake, of expecting him. Twelve at noon was the hour, and exactly as the clock, in my room, ſtruck it, he entered; the wet, for it rained torrents, dripping from every part of his dreſs, like water from a ſheep juſt landed from its waſhing. He would not even have attended to his ſituation, having ſat himſelf down with the greateſt compoſure, and begun converſation, had I not made an offer of dry clothes, &c.

"Yes," ſaid he, ſmiling, "I had my fears, as I knocked at your door, that we ſhould go over the old buſineſs of apprehenſions, about a little rain-water, which, though it does not run from off my back, as

as it does from that of a duck, goose, or any other aquatic bird, it does me as little injury; and after a long drought is scarcely less refreshing. The coat I have now on has been as often wetted through as any duck's in the world, and, indeed, gets no other sort of cleaning. I do assure you, a good soaking shower is the best brush for broad-cloth in the universe. You, like the rest of my friends, throw away your pity upon my supposed hardships with just as much reason, as you commiserate the common beggars, who, being familiar with storms and hurricanes, necessity and nakedness, are a thousand times less to be compassionated than the sons and daughters of ease and luxury, who, accustomed to all the enfeebling refinements of feathers by night, and fires by day, are taught to feel like the puny creature stigmatised by Pope, who shivered at a breeze.—All this is the work of art, my good friend; nature is more independent of external circumstances. Nature is intrepid, hardy, and adventurous; but it is a practice to spoil her, with indulgencies, from the moment we come into the world—a soft dress, and soft cradle, begin our education in luxuries, and we do not grow more manly the more we are gratified: on the contrary, our feet must be wrapt in wool or silk, we must tread upon carpets, breathe, as it were, in fire, avoid a tempest, which sweetens the air, as we would a blast that putrefies it; and, guarding every crevice from an unwholesome breeze, when it is the most elastic and bracing, lie down upon a bed of feathers, that relax the system more than a night's lodging upon flint-stones."

"You smile," added Mr. Howard, after a pause; "but I am a living instance of the truths I insist on. A more puny whipster than myself, in the days of my youth, was never seen. I could not walk out an evening without wrapping up: if I got wet in the feet, a cold succeeded; I could not put on my shirt without its being aired; I was politely enfeebled enough to have delicate nerves, and was, occasionally troubled with a very genteel hectic. To be serious, I am convinced what emasculates the body debilitates the mind, and renders both unfit for those exertions which are of such use to us as social beings. I, therefore, entered upon a reform of my constitution, and have succeeded in such a degree, that I have neither had a cough, cold, the vapours, nor any other alarming disorder, since I surmounted the seasoning. Prior to this, I used to be a miserable dependent on wind and weather; a little too much of either would postpone, and frequently prevent—not only my amusements, but my duties; and every one knows that a pleasure, or a duty, deferred, is often destroyed.—Procrastination, Young very justly called the Thief of Time. And, if pressed by my affections, or by the necessity of affairs, I did venture forth in despite of the elements, the consequences were equally absurd and incommodious, not seldom afflictive. I muffled up even to my nostrils; a crack in the glass of my chaise was sufficient to distress me, a sudden slope of the wheels to the right or left set me a trembling, a jolt seemed like dislocation, and the sight of a bank or precipice, near which my horse, or carriage, was to pass, would disorder me so much, that I would order the driver to stop, that I might get out and walk by the difficult places. Mulled wines, spirituous cordials, and great fires, were to comfort me, and to keep out the cold, as it is called, at every stage; and, if I felt the least damp in my feet or other parts of my body, dry stockings, linen, &c. were to be instantly put on, the perils of the day were to

be baffled by something taken hot going to bed, and before I purſued my journey in the morning a dram was to be ſwallowed down to fortify the ſtomach. In a word, I lived, moved, and had my being, ſo much by rule, that the ſlighteſt deviation was a diſeaſe."

"Every man," continued Mr. Howard, "muſt, in theſe caſes, be his own phyſician. He muſt preſcribe for, and practiſe on, himſelf. I did this by a very ſimple, but as you will think, very ſevere, regimen; namely, by denying myſelf almoſt every thing in which I had long indulged. But, as it is always much harder to get rid of a bad habit than to contract it, I entered on my reform gradually; that is to ſay, I began to diminiſh my uſual indulgencies by degrees. I found that a heavy meal, or a hearty one, as it is termed, and a chearful glaſs, that is to ſay, one more than does you good, made me incapable, or at beſt diſinclined, to any uſeful exertions for ſome hours after dinner; and if the diluting powers of tea aſſiſted the work of a diſturbed digeſtion, ſo far as to reſtore my faculties, a luxurious ſupper comes ſo cloſe upon it, that I was fit for nothing but diſſipation, till I went to a luxurious bed, where I finiſhed the enervating practices, by ſleeping eight, ten, and ſometimes a dozen, of hours on the ſtretch. You will not wonder, that I aroſe next morning, with the ſolids relaxed, the nerves unſtrung, the juices thickened, and the conſtitution weakened.—To remedy all this, I ate a little leſs at every meal, and reduced my drink in proportion. It is really wonderful to conſider, how imperceptibly a ſingle morſel of animal food, and a tea-ſpoonful of liquor, deducted from the uſual quantity daily, will reſtore the mental functions without any injury to the corporeal; nay, with increaſe of vigour to both. I brought myſelf, in the firſt inſtance, from dining upon many diſhes, to dining on a few, and then to be ſatisfied with one; in like manner, inſtead of drinking a variety of wines, I made my election of a ſingle ſort, and adhered to it alone. In the next place—but I ſhall tire you."

I intreated him to go on till I either ſhewed by words, or actions, that I was weary.

He proceeded thus:—"My next buſineſs was to eat and drink ſparingly of that adopted diſh and bottle. My eaſe, vivacity, and ſpirits, augmented. My clothing, &c. underwent a ſimilar reform, the effect of all which is, and has been for many years, that I am neither affected by ſeeing my carriage dragged up a mountain, or driven down a valley. If an accident happens, I am prepared for it, I mean ſo far as reſpects unneceſſary terrors; and I am proof againſt all changes in the atmoſphere, wet clothes, wet feet, night air, damp beds, damp houſes, tranſitions from heat to cold, and the long train of hypochondriac affections.

"Believe me, we are too apt to invert the remedies which we ought to preſcribe to ourſelves—for inſtance, we are for ever giving hot things when we ſhould adminiſter cold. On my going down to my houſe laſt week in Bedfordſhire, the overſeer of my grounds met me with a pail-full of comfortable things, as he called them, which he was carrying to one of my cows, which was afflicted ſorely with, as he called it, the racketty complaint in her bowels. I ordered him to throw away his pail of comforts, and take to the poor beaſt a pail of cold water. 'Cold water, your honour,' exclaimed the man, with every mark of conſternation! 'would you kill the poor dumb creature? Why, ſhe is in ſuch deſperatious pain, that I don't think

a bucket

a bucket of sheer brandy would have any more effect upon her than if I were to pour it against a dead wall.' 'No matter for that,' said I, 'take her a pail of water! Suppose, honest friend, she had all her life run wild in a forest, and fell into the sickness under which she now labours, dost thou think that nature would ever carry her the hot comforts you have got in that pail?'—'Nature, your honour, but with submission, Nature must, when either man or beast is sick, be clapped on the back a little: if not, nature will let them die.' 'Not she, truly; if they are recoverable, she will, on the contrary, make them well. Depend upon it, she is the best physician in the world, though she has not taken her degrees in the college; and so make haste to throw away what is now in your pail, and fill it as I directed; for, whether my cow die or live, she shall have nothing but grass and cold water.' Though the poor fellow dared not any longer to resist, I could plainly see that he put me down as having lost not only my senses, but my humanity.—However, the cow did very well; and I am satisfied, that if we were to trust more to nature, and suffer her to supply her own remedies, to cure her own diseases, the formidable catalogue of human maladies would be reduced to a third of their present number. Dr. Sydenham, I think, reckons sixty different kinds of fevers, for example; of these I cannot suppose less than fifty are either brought about, or rendered worse, by misapplication of improper remedies, or by our own violation of the laws of nature. And the same, I take it, may be said of other disorders."

He now pulled out his watch, telling me he had an engagement at half past one, that he had about three quarters of a mile to walk to it, that he could do this in twenty minutes, and as it then wanted seven minutes and almost an half of one, he had exactly time enough still to spare, to state the object of his visit to me:—"Which is to thank you very sincerely," said he, taking my hand, "for the honour you have done me in your verses: I read them merely as a composition in which the poetical licence had been used to the utmost: poets, you know, my dear sir, always succeed best in fiction."

You will see by this conversation, that it was about the time when the English nation had been emulous of commemorating their respect for this great and good man, by erecting a statue, towards which, I had contributed my mite, by devoting to the fund the profits of my little poem, called, "The Triumph of Benevolence;" and, while I am touched very sensibly with even the recollection of the public favour, which crowned this little work, I very sincerely attribute a great deal of its success to the popularity of a subject in which every lover of humanity took such an interest.

In reply to Mr. Howard, I assured him, that he ought to be, and doubtless was, conscious, the liberty allowed a poet was never more unnecessary or less made use of, than on the occasion alluded to; and, if an agreeable fiction was any test of the poetical art, I could pretend to none, from having very closely, as his heart could not but at that moment tell him, adhered to truth; and that I assured myself he would admit that truth was the same, whether expressed in prose or verse. I added, it was my earnest hope, there was no ground for an idea that had gone forth of his refusing the offering of gratitude, which his country were preparing for him.

"Indeed but there is," answered he, with the most lively earnestness; "I was never more serious than in my refusal of any and every such

ſuch offering, and for the ſimpleſt reaſon in the world; namely, my having no manner of claim to it. What I do, have done, or may hereafter do, is, has been, and will always be, matter of inclination, the gratifying which always pays itſelf; and I have no more merit in employing my time and money in the way I am known to do, than another man in other occupations. Inſtead of taking pleaſure in a pack of hounds, in ſocial entertainments, and a fine ſtud of horſes, and in many other ſimilar ſatisfactions, I have made my election of different purſuits; and being fully purſuaded a man's own gratifications are always, more or leſs, involved in other people's, I feel no deſire to change with any man, and yet I can ſee no manner of pretenſion whereon to erect a ſtatue; beſide all which, I have a moſt inconquerable averſion, and ever had, to have public exhibitions made of me, inſomuch, that I proteſt to you, it has coſt me a great deal of trouble, and ſome money, to make this inſignificant form and ugly face, eſcape a pack of draftſmen, painters, &c. that are lying in wait for me."—

Unleſs you had perſonally known Mr. Howard, it is impoſſible you ſhould have the ſmalleſt idea of the pleaſant manner with which he ſpoke on his own perſonal ſubject.—"I have detected a fellow at work upon this face of mine, ugly as it is," ſaid he, "even as I have been walking in the ſtreets of London; and, if a hackney-coach has been within call, I have popped into it, drawn up the blinds, and ſat ſnug, till I got to my own door, and then I have leaped out, and run into my own houſe, as if I was apprehenſive a bailiff was at my heels; nay, I have often had my door itſelf infeſted by a lurking artiſt, who was literally in wait to take me off. But one day, ſince my return, a trick I played one of theſe takers-off diverted me exceſſively. You muſt know I am a great gaper at the novelties that are continually preſented at the print-ſhops in this great city; I was ſtanding at that of Carrington Bowles, in St. Paul's church-yard, the other day, to look at ſome political caricatures very pleaſantly executed, when, happening to caſt my eye ſide-long, I diſcovered a fellow operating on my phiz with all his might. Perceiving himſelf caught in the fact, he lowered his paper, and pretended to be, like myſelf and a number of others, looking only at the prints. I was juſt then in the humour to pay off this deception by another; ſo ſeeming, like him, to be wholly engroſſed by a figure, called Scotch Economy, well calculated to provoke the riſible muſcles, I threw mine into ſuch contortions, and gave ſuch ſudden changes from one deformity to another, that, had my painter etched any one of my features in its then poſition, the reſemblance betwixt my actual ſelf and the copy would have been juſt as ſtriking as—I could deſire it to be. The painter, however, at length perceived the ſtratagem, and ſmiling, as if he gave me credit for it, put his pencil into his pocket and went away. I own I enjoyed the joke, and have ſince, practiſed it, more than once, with no leſs ſucceſs."

You will, doubtleſs, throw theſe ſallies amongſt his ſingularities, my friend; but they are by no means to be ſtigmatized as affectations. From a very intent obſervation on Mr. Howard, I am perfectly ſatisfied, that, as he had but few who acted like himſelf, the proportion of thoſe who felt in the ſame way the ordinary reſults of ſuch actions were not greater. That he was inſenſible to honeſt praiſe cannot be ſuppoſed, without depriving him of emotions which the

moſt

moſt ingenuous modeſty may indulge, and which are indeed amongſt the natural pleaſures of the human mind; but to court the reputation of benevolence, by ſuffering the lucre of it to mix with any of his motives, or, ſtill worſe, to make it, as alas too many people do, a firſt great cauſe of being bountiful, argues an envy or a depravity in thoſe who impute to him ſuch vanities. In a word, if ever a human being could be truly ſaid to "do good, and bluſh to find it fame," it was the late Mr. John Howard.

Among his other ſingularities, is to be enumerated his generous care of his ſuperannuated horſes. He had a range of paſtures ſacred to the old age of thoſe who had carried him pleaſantly, or worked for him honeſtly and induſtriouſly till they were no longer fit for ſervice. This is the moment when horſes are, in general, either ſold at an under price to people who are conſtrained to allow no touch of pity to predominate over that charity which begins at home, or elſe they are deſtroyed, and given to the dogs, their maſters alleging that it is an act of humanity. Our philanthropiſt's humanity never leading him to kill an old ſervant, he turns his uſeleſs horſes into the aforeſaid paſtures, where they remain happy penſioners on his bounty for the reſt of their lives.

I was much delighted, on walking over thoſe grounds with the generous maſter of them, to ſee twenty or thirty of theſe quadruped penſioners, enjoying themſelves in perfect freedom from labour, and in full ſupply of all that old age requires.—Each of the fields has a comfortable ſhed, where the inhabitants can reſort to in the hard weather, and are ſure of finding the rigours of the ſeaſon ſoftened by a a well-furniſhed crib of the beſt hay, and a manger either of bran, or corn ground, or ſome other nouriſhing food. Chelſea hoſpital is not better accommodated: the day on which I made the circuit of the paſtures, was one of the fineſt of Auguſt; ſome of the penſioners were renovating in the ſun, others repoſing in the ſhade; but on the approach of their benefactor, all of them, actuated by a ſpirit of gratitude worthy of imitation, that could move with eaſe, came towards him, invited his attentions, and ſeemed very ſenſible of their ſituation. Some, whoſe limbs almoſt refuſed their offices, put themſelves to no ſmall difficulties to limp towards him; and even thoſe, who, being confined to their hovels, might be fairly ſaid to be bedridden, turned their languid eyes toward him, and appeared ſenſible of his pity and careſſings.

"Theſe have been all very faithful creatures, ſir," ſaid he, "and who have ſtrong claims upon me: that poor fellow, who has now ſcarcely a leg to ſtand upon, was the conſtant companion of my peregrinations for ſix and twenty years, and was as proud and prancing as he is now humble and decrepid; and the iron-grey invalid, which you ſee yonder, dragging his ſlow length along, was, in the days of his youth, ſuch a roving riotous fellow, that no gate or hedge could keep him within bounds, and it was a day's work ſometimes to catch him; nay, when he was caught, it required more addreſs and horſemanſhip than ever I was maſter of to make him underſtand, that the philoſophy of a parſon's pad had more charms for me than all the flights of Bucephalus, or even of Pegaſus himſelf. Look at him now, The morality of the contraſt is obvious."—

In this manner he went on, enumerating the ſeveral qualities and hiſtorical anecdotes of the ſeveral penſioners. The one laſt deſcribed

he

he told me, "was at no time a horse for him, and would not probably have been amongst his pensioners, but that he had been once rode by a relation of his, a young agreeable rake, who valued him for the very points that made him useless to me, skittishness and impetuosity; all which, he asserted, were the sure marks, both in man and beast, of a generous spirit, high heart, and noble disposition. Now, as my little frolic-loving cousin was precisely of this character himself, and, after a mad but not vicious career of fifteen years, consolidated into a very good man, I suffered the horse and his master to reform themselves at leisure, and wish, with all my soul, that half the reformed rakes about town had turned out so well, after sowing their wild oats, as did this young gentleman, and his favourite steed, who, for the eight last years of his servitude, was a pattern of sobriety to horses and riders."

DESCRIPTION OF A SURINAM PLANTER.

A Planter in Surinam, when he lives on his estate, (which is but seldom, as they mostly prefer the society of Paramaribo,) gets out of his hammock with the rising sun, viz. about six o'clock in the morning, when he makes his appearance under the piazza of his house; where his coffee is ready waiting for him, which he generally takes with his pipe, instead of toast and butter; and there he is attended by half a dozen of the finest young slaves, both male and female, of the plantation, to serve him; at this sanctum sanctorum he is next accosted by his overseer, who regularly every morning attends at his levee, and having made his bows at several yards distance, with the most profound respect informs his greatness what work was done the day before; what negroes deserted, died, fell sick, recovered, were bought or born; and, above all things, which of them neglected their work, affected sickness, or had been drunk or absent, &c. the prisoners are generally present, being secured by the negro-drivers, and instantly tied up to the beams of the piazza, or a tree, without so much as being heard in their own defence; when the flogging begins, with men, women, or children, without exception. The instruments of torture on these occasions are long hempen whips, that cut round at every lash, and crack like pistol-shot; during which they alternately repeat, *Dankee, massera*, Thank you, master. In the mean time he stalks up and down with his overseer, affecting not so much as to hear their cries, till they are sufficiently mangled, when they are untied, and ordered to return to their work, without so much as a dressing.

This ceremony being over, the dressy negro (a black surgeon) comes to make his report; who being dismissed with a hearty curse, for allowing any slaves to be sick; next makes her appearance a superannuated matron, with all the young negro children of the estate, over whom she is governess; these, being clean washed in the river, clap their hands and cheer in chorus, when they are sent away to breakfast on a large platter of rice and plantains; the levee ends with a low bow from the overseer, as it began.

His worship now saunters out in his morning dress, which consists of a pair of the finest Holland trowsers, white silk stockings, and red or yellow Morocco slippers; the neck of his shirt open, and nothing over it, a loose flowing night-gown of the finest India chintz excepted.

On

On his head is a cotton night-cap, as thin as a cobweb, and over that an enormous beaver hat, that protects his meagre visage from the sun, which is already the colour of mahogany, while his whole carcase seldom weighs above eight or ten stone, being generally exhausted by the climate and dissipation.

Having loitered about his estate, or sometimes ridden on horseback to his fields, to view his increasing stores, he returns about eight o'clock, when, if he goes abroad, he dresses, but if not, remains just as he is. Should the first take place, having only exchanged his trowsers for a pair of thin linen or silk breeches, he sits down, and holding out one foot after the other, like a horse going to be shod, a negro boy puts on his stockings and shoes, which he also buckles, while another dresses his hair, his wig, or shaves his chin, and a third is fanning him to keep off the musquitoes. Having now shifted, he puts on a thin coat and waistcoat, all white; when, under an umbrella carried by a black boy, he is conducted to his barge, which is in waiting for him, with six or eight oars, well provided with fruit, wine, water, and tobacco, by his overseer, who no sooner sees him depart, than he resumes the command with all the usual insolence of office. But, should this prince not mean to stir from his estate, he goes to breakfast about ten o'clock, for which a table is spread in the large hall, provided with a bacon-ham, hung-beef, fowls or pigeons broiled, plantains and sweet cassavas roasted, bread, butter, cheese, &c. with which he drinks strong beer, and a glass of Madeira, Rhenish, or Mozelle, wine, while the cringing overseer sits at the farther end, keeping his proper distance; but both are served by the most beautiful slaves that can be selected.

After this he takes a book, plays at chess or billiards, entertains himself with music, &c. till the heat of the day forces him to return into his cotton hammock to enjoy his meridian nap, (which he could no more dispense with than a Spaniard with his *siesta*, or after-dinner doze,) and in which he rocks to and fro, like a performer on the slack rope, till he falls asleep, without either bed or covering, and during which time he is fanned by a couple of his black attendants, to keep him cool, drive off the flies, &c.

About three o'clock he awakes by natural instinct, when, having washed and perfumed himself, he sits down to dinner, attended, as at breakfast, by his deputy-governor and sable pages, where nothing is wanting that the world can afford, in a western climate, of meat, fowls, venison, fish, vegetables, fruits, &c. and the most exquisite wines are often squandered in profusion; after this, a cup of strong coffee and a dram finish the repast. At six o'clock he is again waited on by his overseer, attended as in the morning by negro-drivers and prisoners, when, the flogging having once more continued for some time, and the necessary orders being given for the next day's work, the assembly is dismissed, and the evening spent with weak punch, sangaree, cards, and tobacco. His worship generally begins to yawn about ten or eleven o'clock, when he withdraws, and is undressed by his sooty pages. He then retires to rest, and he passes the night in the arms of one or other of his sable sultanas (for he always keeps a seraglio), till about six in the morning, when he again repairs to his piazza-walk, where his pipe and coffee are waiting for him; and where, with the rising sun, he begins his round of dissipation, like a petty monarch, as capricious as he is despotic.

ART OF PLAYING THE GAME OF CHESS.

CHESS is a game performed with different pieces of wood, on a board divided into sixty-four squares, or houses; in which chance has so small a share, that it may be doubted whether a person ever lost a game but by his own fault. Each gamester has eight dignified pieces, viz. a king, a queen, two bishops, two knights, and two rooks; also eight pawns: all of which, for distinction's sake, are painted of two different colours, as white and black. As to their disposition on the board, the white king is to be placed on the fourth black house from the corner of the board, in the first and lower rank; and the black king is to be placed on the fourth white house on the opposite or adversary's end of the board. The queens are to be placed next to the kings, on houses of their own colour.—Next to the king and queen, on each hand, place the two bishops; next to them, the two knights; and last of all, on the corners of the board, the two rooks. As to the pawns, they are placed, without distinction, on the second rank of the house, one before each of the dignified pieces.

Having thus disposed the men, the onset is commonly begun by the pawns, which march strait forwards in their own file, one house at a time, except the first move, when it can advance two houses, but never moves backwards. The manner of their taking the adversary's men is sideways, in the next house forwards; where, having captivated the enemy, they move forward as before. The rook goes forward or crossways though the whole file, and back again. The knight skips backwards and forwards to the next house save one of a different colour, with a sidelong march, or a slope, and thus kills his enemies that fall in his way, or guards his friends that maybe exposed on that side. The bishop walks always in the same colour of the field that he is placed in at first, forwards and backwards, aslope or diagonally, as far as he pleases. The queen's walk is more extended, as she takes all the steps of the before-mentioned pieces, excepting that of the knight. As to the king's motion, it is one house at a time, and that either forwards, backwards, sloping, or sideways.

As to the value of the different pieces, next to the king is the queen, after her the rooks, then the bishops, and last of the dignified pieces come the knights. The difference of the worth of pawns is not so great as that of noblemen; only it must be observed, that the king's bishop's pawn is the best in the field, and therefore the skilful gamester will be careful of him. It ought also to be observed, that, whereas any man may be taken when he falls within the reach of any of the adversary's pieces, it is otherwise with the king, who in such a case is only to be saluted with the word *check*, warning him of his danger, out of which it is absolutely necessary that he move; and, if it so happen that he cannot move without exposing himself to the like inconveniency, it is check-mate, and the game is lost. The rules of the game are,

1. In order to begin the game, the pawns must be moved before the pieces, and afterwards the pieces must be brought out to support them. The king's, queen's, and bishop's, pawns, should be moved first, that the game may be well opened; the pieces must not be played out early in the game, because the player may thereby lose his

moves;

moves: but above all, the game ſhould be well arranged before the queen is played out. Uſeleſs checks ſhould alſo be avoided, unleſs ſome advantage is to be gained by them, becauſe the move may be loſt, if the adverſary can either take or drive the piece away. 2. If the game is crowded, the player will meet with obſtructions in moving his pieces; for which reaſon he ſhould exchange pieces or pawns, and caſtle his king as ſoon as it is convenient, endeavouring at the ſame time to crowd the adverſary's game, which may be done by attacking his pieces with the pawns, if the adverſary ſhould move his pieces out too ſoon. *Caſtle his king*, is to cover the king with a caſtle; which is done by a certain move which each player has a right to, whenever he thinks proper. 3. The men ſhould be ſo guarded by one another, that, if a man ſhould be loſt, the player may have it in his power to take one of the adverſary's in return; and, if he can take a ſuperior piece in lieu of that which he loſt, it would be an advantage, and diſtreſs the adverſary. 4. The adverſary's king ſhould never be attacked without a force ſufficient; and, if the player's king ſhould be attacked without having it in his power to attack the adverſary's, he ſhould offer to make an exchange of pieces, which may cauſe the adverſary to loſe a move. 5. The board ſhould be looked over with attention, and the men reconnoitred, ſo as to be aware of any ſtroke that the adverſary might attempt in conſequence of his laſt move. If, by counting as many moves forward as poſſible, the player has a proſpect of ſucceſs, he ſhould not fail doing it; and even ſacrifice a piece or two to accompliſh his end. 6. No man ſhould be played till the board is thoroughly examined, that the player might defend himſelf againſt any move the adverſary has in view; neither ſhould any attack be made till the conſequences of the adverſary's next move are conſidered; and, when an attack may with ſafety be made, it ſhould be purſued without catching at any bait that might be thrown out in order for the adverſary to gain a move, and thereby cauſe the deſign to miſcarry. 7. The queen ſhould never ſtand in ſuch a manner before the king, that the adverſary, by bringing a rook or biſhop, could check the king if ſhe were not there; as it might be the loſs of the queen. 8. The adverſary's knight ſhould never be ſuffered to check the king and queen, or king and rook, or queen and rook, or the two rooks, at the ſame time; eſpecially if the knights are properly guarded: becauſe, in the two firſt caſes, the king being forced to go out of check, the queen or the rook muſt be loſt; and in the two laſt caſes a rook muſt be loſt at leaſt for a worſe piece. 9. The player ſhould take care that no guarded pawn of the adverſary's fork two of his pieces. 10. As ſoon as the kings have caſtled on different ſides of the board, the pawns on that ſide of the board ſhould be advanced upon the adverſary's king, and the pieces, eſpecially the queen and rook, ſhould be brought to ſupport them; and the three pawns belonging to the king that is caſtled muſt not to be moved. 11. The more moves a player can have as it were in ambuſcade, the better; that is to ſay, the queen, biſhop, or rook, is to be placed behind a pawn or a piece in ſuch a poſition as that upon playing that pawn or piece a check is diſcovered upon the adverſary's king, by which means a piece or ſome advantage is often gained. 12. An inferior piece ſhould never be guarded with a ſuperior, when a pawn would anſwer the ſame purpoſe; for this reaſon, that it may cauſe the ſuperior piece to remain out of play; neither

should a pawn be guarded with a piece when a pawn would do as well. 13. A well-supported pawn that is passed often costs the adversary a piece; and, when a pawn or any other advantage is gained without endangering the loss of the move, the player should make as frequent exchanges of pieces as he can. The advantage of a passed pawn is this: for example, if the player and his adversary have each three pawns upon the board, and no piece, and the player has one of his pawns on one side of the board and the other two on the other side, and the adversary's three pawns are opposite to the player's two pawns, he should march with his king as soon as he can, and take the adversary's pawns. If the adversary goes with his king to support them, the player should go on to queen with his single pawns; and then, if the adversary goes to hinder him, he should take the adversary's pawns, and move the others to queen. *To queen*, is to make a queen; that is, to move a pawn into the adversary's back row, which is the rule at this game when the original one is lost. 14. When the game is near finished, each party having only three or four pawns on each side of the board, the kings must endeavour to gain the move in order to win the game. For instance, when the player brings his king opposite to the adversary's with only one square between, he will gain the move. 15. If the adversary has his king and one pawn on the board, and the player has only his king, he cannot lose the game, provided he brings his king opposite to the adversary's, when the adversary is directly before or on one side of his pawn, and there is only one square between the kings. 16. If the adversary has a bishop and one pawn on the rook's line, and this bishop is not of the colour that commands the corner-square the pawn is going to, and the player has only his king, if he can get into that corner, he cannot lose; but, on the contrary, may win by a stale; which is, when the king is blocked up so as to have no move at all. 17. If the player has greatly the disadvantage of the game, having only his queen left in play, and his king happens to be in a position to win, as above-mentioned, he should keep giving check to the adversary's king, always taking care not to check him where he can interpose any of his pieces that make the stale; by so doing he will at last force the adversary to take his queen, and when he will win the game by being in a stale-mate. 18. The player should never cover a check with a piece that a pawn pushed upon it may take, for fear of getting only the pawn in exchange for the piece. 19. A player should never crowd his adversary up with pieces, for fear of giving a stale-mate inadvertently, but always should leave room for his king to move.

By way of corroborating what has been already said with respect to this game, it is necessary to warn a player against playing a timid game. He should never be too much afraid of losing a rook for an inferior piece; because, although a rook is a better piece than any other except the queen, it seldom comes into play so be of any great use till at the end of the game; for which reason it is often better to have an inferior piece in play, than a superior one to stand still, or moving to no great purpose. If a piece is moved, and is immediately driven away by a pawn, it may be reckoned a bad move, because the adversary gains a double advantage over the player, in advancing at the same time the other is made to retire; although the first move may not seem of consequence between equal players, yet a

move

move or two more loſt after the firſt makes the game ſcarcely to be recovered. There never wants for variety at this game, provided the pieces have been brought out regular; but if otherwiſe, it often happens that a player has ſcarcely any thing to play.

Many indifferent players think nothing of the pawns, whereas three pawns together are ſtrong; but four, which conſtitute a ſquare, with the aſſiſtance of other pieces, well managed, make an invincible ſtrength, and in all probability may produce a queen when very much wanted. It is true, that two pawns with a ſpace between are no better than one; and, if there ſhould be three over each other in a line, the game cannot be in a worſe way. This ſhews that the pawns are of great conſequence, provided they are kept cloſe together. Some middling players are very apt to riſk loſing the game in order to recover a piece; this is a miſtake; for it is much better to give up a piece and attack the enemy in another quarter; by ſo doing, the player has a chance of ſnatching a pawn or two from, or gaining ſome advantage over, the adverſary, whilſt his attention is taken up in purſuing this piece. If the queen and another piece are attacked at the ſame time, and that by removing the queen the piece muſt be loſt; provided two pieces can be gained in exchange for the queen, the queen ſhould be given up, it being the difference of three pieces, and conſequently more than the value of the queen. By loſing the queen, the game is not thrown into that diſorder which it would otherwiſe have been: in this caſe it would be judicious to give the queen for even a piece, or a pawn or two; it being well-known among good players, that he who begins the attack, and cannot maintain it, being obliged to retire, generally loſes the game.

A player ſhould never be fond of changing without reaſon, becauſe the adverſary, if he is a good player, will ruin his ſituation, and gain a conſiderable advantage over him. But rather than loſe a move, when a player is ſtronger than the adverſary, it is good play to change, for he thereby increaſes his ſtrength. When the game is almoſt drawn to a concluſion, the player ſhould recollect that his king is a capital piece, and conſequently ſhould keep him in motion; by ſo doing he generally gets the move, and often the game. As the queen, rook, and biſhop, operate at a diſtance, it is not always neceſſary in the attack to have them near the adverſary's king. If a man can be taken with different pieces, the player ſhould take his time, and conſider which of thoſe pieces is beſt to take it with. If a piece can be taken almoſt at any time, the player ſhould not be in a hurry about it, but try to make a good move elſewhere before he takes it. A player ſhould be cautious how he takes his adverſary's pawn with his king, as it often happens to be a ſafeguard to it.

After all that has been ſaid, it is ſtill neceſſary for us to adviſe thoſe who would play well at this game, to be very cool and attentive to the matter in queſtion: for it is impoſſible that any perſon in the univerſe can be capable of playing at cheſs if their thoughts are employed elſewhere. The laws at this game are,—1. If a player touches his man, he muſt play it, and, if he quits it, he cannot recal it. 2. If by miſtake or otherwiſe a falſe move is played, and the adverſary takes no notice of it till he hath played his next move, it cannot be recalled by either of the parties. 3. If a player miſplaces the men, and he plays two moves, it is at the option of the adverſary to permit him to begin the game or not. 4. If the adverſary

plays

plays or discovers a check to a player's king, and gives no notice of it, the player may let him stand still he does. 5. After the king is moved, a player cannot castle. Sarasin has an express treatise on the different opinions of the origin of the Latin *schacchi*, whence the French *echecs*, and our *chess*, is formed. Menage is also very full on the same head. Leunclavius takes it to come from *Uscoches*, famous Turkish robbers: P. Sirmond, from the German *scache*, "theft;" and that from *calculus*. He takes *chess* to be the same with the *ludus latrunculorum* of the Romans, but mistakenly. This opinion is countenanced by Vossius and Salmasius, who derive the word from *calculus*, as used for *latrunculus*. G. Tolosanus derives it from the Hebrew, *scach, valavit et mat mortuus*; whence *check* and *checkmate*. Fabricius says, a celebrated Persian astronomer, one Schatrenscha, invented the game of *chess*; and gave it his own name, which it still bears in that country. Nicod derives it from *schecque*, or *xeque*, a Moorish word for lord, king, and prince. Bochart adds that *scach* is originally Persian; and that *scachmat*, in that language, signifies *the king is dead*.—The opinion of Nicod and Bochart, which is likewise that of Scriverius, appears the most probable.

Mr. Twiss mentions a small treatise on chess, written, as he supposes, about four hundred years ago; at the end of which is a representation of a round chess-board, with directions for placing the men upon it. In this the knight can cover the sixty-four squares on the board at as many moves. The board is divided into these sixty-four parts by four concentric circles, having an empty space in the middle; and each of these is divided into sixteen parts. Number 1 is placed in the outermost circle; number 2 in the third circle counting inwards, in the division to the right hand of the former; number 3 is placed in the outermost circle, in the division to the right hand of 2; 4 in the third circle counting inwards to the right hand of three; and thus alternately from the first to the third, and from the third to the first circle, till the round is completed by 16 on the third circle to the left hand of 1. Number 17 is then placed on the division of the innermost circle to the right hand of 1; 18 on the second circle counting inwards, to the right hand of 17; and thus alternately from the fourth to the second, and from the second to the fourth circles, until the round is completed by 32, directly below number 1. Number 33 then is placed on the third circle directly to the right hand of number 2; 34 on the fourth circle, to the right hand of 4; and thus alternately between the third and fourth circles, until the round is again completed by 48 on the fourth circle, directly below number 33. The numbers are now placed in a retrograde fashion; 50 on the outer circle in that division immediately to the right hand of 1; 51 on the third circle, to the left hand of 2, and directly below number 32; 52 is then placed on the outer circle, immediately on the left hand of 1: 53 on the third circle directly to the left hand of 16; and thus alternately on the first and third circles, until the last round is completed by 64 between the numbers 3 and 5. On this round chess-board, supposing the black king to be placed in number 48 on the fourth circle, the queen stands on number 17 at his left hand; the bishops in 33 and 2; the knights 18 and 47; the castles in 3 and 50; and pawns on 19, 4, 49, 64, and 46, 51, 32, 1. The white king will then stand in 25, opposite to the black queen; the white queen in 40 opposite to the black king, and so on.

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In playing on a board of this kind, it will be found, that the power of the castle is double to that in the common game, and that of the bishop only one half; the former having sixteen squares to range in, and the last only four. The king can castle only one way; and it is very difficult to bring the game to a conclusion.

With respect to the origin of the game at chess, we are much in the dark. Though it came to us from the Saracens, it is by no means probable that they were the original inventors of it. According to some, it was invented by the celebrated Grecian hero Diomedes. Others say that two Grecian brothers, Ledo and Tyrrheno, were the inventors; and that, being much pressed with hunger, they sought to alleviate the pain by this amusement. It is certain, however, that it is a game of very ancient standing, and in former ages has been fashionable in every part of Europe; though in this country it is not now very common, probably on account of the intense application of thought required to play at it. It has long been a favourite of the Icelanders and other northern people; and there is little difference between their game and our's.

The game of chess has been generally practised by the greatest warriors and generals; and some have even supposed that it was necessary for a military man to be well skilled in this game. Indeed it is a game which has something in it peculiarly interesting. We read that Tamerlane was a great chess-player, and was engaged in a game during the very time of the decisive battle with Bajazet, the Turkish emperor, who was defeated and taken prisoner.—It is also related of Al Amin khalif of Bagdad, that he was engaged at chess with his freedman Kuthar at the time when Al Mamun's forces were carrying on the siege of that city with so much vigour that it was on the point of being carried by storm. Dr. Hyde quotes an Arabic story of the Saracens, in which the khalif is said to have cried out, when warned of his danger, 'Let me alone; I see a check-mate against Kuthar!'—We are told that Charles I. was at chess when news was brought of the final intention of the Scots to sell him to the English; but, so little was he discomposed at this alarming intelligence, that he continued his game with the utmost attention; so that no person would have conceived that he letter he had received contained any uncommon information.—King John was playing at chess when the deputies from Rouen came to acquaint him that their city was besieged by Philip Augustus; but he would not hear them until he had finished.

The following remarkable anecdote we have from Dr. Robertson's History of Charles V.—John Frederic, elector of Saxony, having been taken prisoner by Charles, was condemned to death. The decree was intimated to him while at chess with Ernest of Brunswic, his fellow-prisoner. After a short pause, and making some reflections on the irregularity and injustice of the emperor's proceedings, he turned to his antagonist, whom he challenged to finish the game: he played with his usual ingenuity and attention; and, having won, he expressed all the satisfaction that is commonly felt on gaining such victories.—He was not, however, put to death, but set at liberty after five years confinement.

In the Chronicle of the Moorish kings of Granada we find it related, that, in 1396, Mehemed Balba seized upon the crown in prejudice of his elder brother, and passed his life in one continual round of disasters. His wars with Castile were invariably unsuccessful; and

and his death was occasioned by a poisoned vest. Finding his case desperate, he dispatched an officer to the fort of Salobreno to put his brother Juzaf to death, lest that prince's adherents should form any obstacle to his son's succession. The alcayde found the prince playing at chess with an *alfaqui* or priest. Juzaf begged hard of the officer to permit him to finish the game; but before it was concluded a messenger arrived with the news of the death of Mehemed, and the unanimous election of Juzaf to the crown.

We have a curious anecdote of Ferrand count of Flanders; who having been accustomed to amuse himself at chess with his wife, and being constantly beaten by her, a mutual hatred took place; which came to such an height, that, when the count was taken prisoner at the battle of Bovines, she suffered him to remain a long time in prison, though she could easily have procured his release.

The game of chess has undergone considerable variations since it was first invented. We have it on good authority, that, among the eastern nations, the piece now called the queen was formerly called the vizir, or king's minister; and that the powers of the queen herself were but very small. The chess-boards used by Tamerlane were larger, and contained many more squares than those at present in use. Carrera invented two new pieces to be added to the eight commonly in use. One of these, which he calls *Campione*, is placed between the king's knight and castle; and the other, named *Centaur*, between the queen's knight and castle, has the move of the bishop and knight united. This invention, however, did not survive its author.—In another of this kind, the two additional pieces are called *centurion* and *decurion*: the former, situated between the king and his bishop, in its move the same with that of the queen, but only for two squares; the latter moves as the bishop, but only one square at a time. This, like the former, died with its inventor.—The chess-board of Tamerlane was a parallelogram, having eleven squares one way and twelve the other.—In the Memoirs of the late Marshal Keith, we find it related, that he invented an amusement something similar to that of chess, with which the King of Prussia was highly entertained. Several thousand small statues were cast by a founder; and these were ranged opposite to each other as if they had been drawn up in an army, making the different movements with them as in real service in the field.

A very complicated kind of game at chess was invented by the late Duke of Rutland.—At this, the board has fourteen squares in breadth and ten in height, which make in all 140 houses; and there are fourteen pawns on each side, which may move either one, two, or three, squares the first time. The other pieces were, the king, queen, two bishops, two knights, a crowned castle uniting the move of the king and castle, and a common castle. On the other side of the king was a *concubine*, (whose move united that of the castle and knight,) two bishops, a single knight, a crowned castle, and a common one. In this game the pawns are of very little use; and, by the extent of the board, the knights lose much of their value; and this renders the game more defective and less interesting.

There is an amusing variety at the game of chess, in which the king with eight pawns engages the whole set, by being allowed to make two moves for every one of his adversary. In this he is almost certain of coming off victorious: which of course lessens the interest.

OF THE FLUTE-PLAYER, CHESS-PLAYER, AND OTHER AUTOMATON FIGURES.

AN automaton is a self-moving machine, or one so constructed, by means of weights, levers, pullies, &c. as to move for a considerable time, as though endowed with animal life. According to this description, clocks, watches, and all machines of that kind, are automata. Very surprising imitations of this kind have been made. So long ago as 400 years before Christ, Archytas of Tarentum is said to have made a wooden pigeon that could fly. Dr. Hook is also said to have made the model of a flying chariot, capable of supporting itself in the air. But M. Vaucanson distinguished himself still more eminently; he made, a duck, which was capable of eating, drinking, and imitating exactly the voice of a natural one. Nay, what is still more surprising, the food it swallowed was evacuated in a digested state; not that it was really in a state of natural excrement, but only considerably altered from what it was when swallowed; and this digestion was performed on the principles of solution, not of trituration. The wings, viscera, and bones of this artificial duck, were also formed so as very strongly to resemble those of a living animal. Even in the actions of eating and drinking, this resemblance was preserved; the artificial duck swallowed with avidity and vastly quick motions of the head and throat; and likewise muddled the water with his bill exactly like a natural one.

M. Le Droz, of La Chaux de Fonds in the county of Neufchatel, hath also executed some very curious pieces of mechanism, which well deserve to be ranked with those already mentioned. One was a clock, which was presented to his Spanish majesty; and had, among other curiosities, a sheep, which imitated the bleating of a natural one; and a dog watching a basket of fruit. When any one attempted to purloin the fruit, the dog gnashed his teeth and barked; and if it was actually taken away he never ceased barking till it was restored.

But the motions of the human body are more complicated, and consequently more difficult to be imitated, than those of any other creature; whence the construction of an automaton in such a manner as to imitate any of these actions with tolerable exactness, is justly supposed to indicate a greater skill in mechanics than any other piece of workmanship whatever.

A very remarkable figure of this kind appeared in Paris, in the year 1738. It represented a flute-player, and was capable of performing many different pieces of music on the German flute; which, considering the difficulty of blowing that instrument, the different contractions of the lips necessary to produce the distinctions between the high and low notes, and the complicated motions of the fingers, must appear truly wonderful. This machine was the invention of M. Vaucanson, member of the Royal Academy of Sciences; and a particular description of it was published in the Memoirs of the Academy for that year.

The figure itself was about five feet and a half in height, situated at the end of an artificial rock, and placed upon a square pedestal four feet and an half high and three and an half high and three and an half broad. The air entered the body by three pipes separated one from the other. It was conveyed to them by nine pair of bellows,

lows, three of which were placed above and six below. These were made to expand and contract regularly in succession, by means of an axis of steel turned round by some clock-work. On this axis were different protuberances at proper distances, to which were fixed cords thrown over pullies, and terminating in the upper boards of the bellows, so that, as the axis turned, these boards were alternately raised and let down. A contrivance was also used to prevent the disagreeable hissing fluttering noise usually attending the motion of bellows: this was by making the cord, by which the bellows was moved, press, in its descent, upon one end of a smaller lever, the other end of which ascending forced open the small leathern valve that admitted the air, and kept it so, till, the cord being relaxed by the descent of the upper board, the lever fell, and the air was forced out. Thus the bellows performed their functions constantly without the least hissing or other noise by which it could be judged in what manner the air was conveyed to the machine. The three tubes, by which the air entered, terminated in three small reservoirs in the trunk of the figure. There they united, and, ascending towards the throat, formed the cavity of the mouth, which terminated in two small lips adapted in some measure to perform their proper functions. Within this cavity also was a small moveable tongue; which, by its play, at proper periods, admitted the air, or intercepted its passage to the flute.

The fingers, lips, and tongue, received their proper directions by means of a steel cylinder turned by clock-work. It was divided into fifteen equal parts, which by means of pegs, pressing upon the ends of fifteen different levers, caused the other extremities to ascend. Seven of these levers directed the fingers, having wires and chains affixed to their ascending extremities, which, being attached to the fingers, caused them to ascend in proportion as the other extremity was pressed down by the motion of the cylinder, and *vice versa*. Thus the ascent or descent of one end of a lever produced a similar ascent or descent in the corresponding finger, by which one of the holes of the flute was occasionally opened or stopped, as by a living performer. Three of the levers served to regulate the ingress of the air, being contrived so as to open and shut, by means of valves, the three reservoirs of air above-mentioned, so that more or less strength might be given, and a higher or lower note produced, as occasion required. The lips were, by a similar mechanism, directed by four levers, one of which opened them, to give the air a free passage; the other contracted them; the third drew them backward; and the fourth pushed them forward. The lips were projected upon that part of the flute which receives the air; and, by the different motions already mentioned, modified the tone in a proper manner.—The remaining lever was employed in the direction of the tongue, which it easily moved so as to shut or open the mouth of the flute.

Thus we see how all the motions necessary for a German-flute-player could be performed by this machine; but a considerable difficulty still remains, namely, how to regulate these motions properly, and make each of them follow in just succession. This, however, was effected by the following simple method. The extremity of the axis of the cylinder was terminated on the right side by an endless screw, consisting of twelve threads, each placed at the distance of a line and an half from the other. Above this screw was fixed a piece of

of copper, and in it a ſteel pivot, which, falling in between the threads of the ſcrew, obliged the cylinder to follow the threads, and, inſtead of turning directly round, it was continually puſhed to one ſide. Hence, if a lever was moved, by a peg placed on the cylinder, in any one revolution, it could not be moved by the ſame peg in the ſucceeding revolution, becauſe the peg would be moved a line and a half beyond it by the lateral motion of the cylinder. Thus, by an artificial diſpoſition of thoſe pegs in different parts of the cylinder, the ſtatue was made, by the ſucceſſive elevation of the proper levers, to exhibit all the different motions of a flute-player, to the admiration of every one who ſaw it.

M. de Kempell, a gentleman of Preſburg in Hungary, excited by the above performances of M. de Vaucanſon, at firſt endeavoured to imitate them, and at laſt excelled them. This gentleman conſtructed an automaton capable of playing at chess!—Every one who is in the leaſt acquainted with this game muſt know, that it is ſo far from being mechanically performed, as to require a greater exertion of the judgment and rational faculties than is ſufficient to accompliſh many matters of greater importance. An attempt, therefore, to make a wooden chess-player, muſt appear as ridiculous as to make a wooden preacher or counſellor of ſtate. That this machine really was made, however, the public have had ocular demonſtration. The inventor came to England in 1783, where he continued above a year with this automaton.

It is a figure as large as life, in a Turkiſh dreſs, ſitting behind a table, with doors of three feet and a half in length, two in depth, and two and a half in height. The chair in which it ſits is fixed to the table, which runs on four wheels. The automaton leans its right arm on the table, and in its left hand holds a pipe: with this hand it plays after the pipe is removed. A chess-board of eighteen inches is fixed before it. This table, or rather cupboard, contains wheels, levers, cylinders, and other pieces of mechaniſm; all which are publicly diſplayed. The veſtments of the automaton are then lifted over its head, and the body is ſeen full of ſimilar wheels and levers. There is a little door in its thigh, which is likewiſe opened; and with this, and the table alſo open, and the automaton uncovered, the whole is wheeled about the room. The doors are then ſhut, and the automaton is ready to play; and it always takes the firſt move. At every motion the wheels are heard; the image moves its head, and looks over every part of the chess-board. When it checks the queen, it ſhakes its head twice, and thrice in giving check to the king. It likewiſe ſhakes its head when a falſe move is made, replaces the piece, and makes its own move; by which means the adverſary loſes one.

M. de Kempell remarks as the moſt ſurpriſing circumſtance attending his automaton, that it had been exhibited at Preſburg, Vienna, Paris, and London, to thouſands, many of whom were mathematicians and chess-players, and yet the ſecret by which he governed the motion of its arm was never diſcovered. He prided himſelf ſolely on the conſtruction of the mechanical powers, by which the arm could perform ten or twelve moves. It then required to be wound up like a watch, after which it was capable of continuing the ſame number of motions.

The automaton could not play unleſs M. de Kempell or his ſub-

ſtitute was near it, to direct its moves. A ſmall ſquare box, during the game, was frequently conſulted by the exhibiter; and herein conſiſted the ſecret, which he ſaid he could in a moment communicate. He who could beat M. de Kempell was, of courſe, certain of conquering the automaton. It was made in 1769. His own account of it was: "C'eſt une bagatelle qui n'eſt pas ſans merite du coté du mechaniſme, mais les effets n'en paroiſſent ſi merveilleux que par la hardieſſe de Pidée, & par l'heureux choix des moyens employés pour faire illuſion."

To the no ſmall diminution of the merit of this cheſs-player, however, the following Letter of Thomas Collinſon, Eſq. nephew of the late Peter Collinſon, F. R. S. is publiſhed in Dr. Hutton's Mathematical Dictionary, Vol. ii. p. 730. "M. de Kempell's cheſs-player would have been the greateſt maſterpiece in mechanics, had its ſcientific movements depended merely on mechaniſm. Being ſlightly acquainted with M. de Kempell when he exhibited his cheſs-playing figure in London, I called on him about five years ſince at his houſe at Vienna; another gentleman and myſelf being then on a tour on the continent. The baron (for I think he is ſuch) ſhewed me ſome working models which he had lately made—among them, an improvement on Arkwright's cotton-mill, and alſo one which he thought an improvement on Boulton and Watt's leaſt ſteam-engine. I aſked him after a piece of ſpeaking mechaniſm, which he had ſhewn me when in London. It ſpoke as before, and I gave the ſame word as I gave when I firſt ſaw it, *Exploitation*, which it diſtinctly pronounced with the French accent. But I particularly noticed, that not a word paſſed about the cheſs-player; and of courſe I did not aſk to ſee it. In the progreſs of the tour I came to Dreſden, where becoming acquainted with Mr. Eden, our envoy there, by means of a letter given me by his brother Lord Auckland, who was ambaſſador when I was at Madrid, he obligingly accompanied me in ſeeing ſeveral things worthy of attention. And he introduced my companion and myſelf to a gentleman of rank and talents, named Joſeph Frederick Freyhere, who ſeems completely to have diſcovered the *vitality* and ſoul of the cheſs-playing figure. This gentleman courteouſly preſented me with the treatiſe he had publiſhed, dated at Dreſden, September 30, 1789, explaining its principles, accompanied with curious plates neatly coloured. This treatiſe is in the German language. A well-taught boy, very thin and ſmall of his age (ſufficiently ſo that he could be concealed in a drawer almoſt immediately under the cheſs-board), agitated the whole. Even after this abatement of its being ſtrictly an automaton, much ingenuity however, remains to the contriver.—This diſcovery at Dreſden accounts for the ſilence about it at Vienna; for I underſtand, by Mr. Eden, that Mr. Freyhere had ſent a copy to Baron Kempell: though he ſeems unwilling to acknowledge that Mr. F. has completely analyſed the whole.

"I know that long and unintereſting letters are formidable things to men who know the value of time and ſcience: but, as this happens to be upon the ſubject, forgive me for adding one very admirable piece of mechaniſm. When at Geneva, I called upon Droz, ſon of the original Droz of la Chaux de Fonds. He ſhewed me an oval gold ſnuff-box, about four inches and a half long, by three inches broad, and about an inch and a half thick. It was double, having an horizontal partition; ſo that it may be conſidered as one box

placed

placed on another, with a lid of course to each box.—One contained snuff—In the other, as soon as the lid was opened, there rose up a very small bird, of green enamelled gold, sitting on a gold stand. Immediately this minute curiosity wagged its tail, shook its wings, opened its bill of white enamelled gold, and poured forth, minute as it was (being only three quarters of an inch from the beak to the extremity of the tail), such a clear melodious song, as would have filled a room of twenty or thirty feet square with its harmony.—Droz agreed to meet me at Florence; and we visited the Abbé Fontana together. He afterwards joined me at Rome, and exhibited his bird to the pope and the cardinals in the Vatican palace, to the admiration, I may say to the astonishment, of all who saw and heard it."

Another extract from a second letter upon the same subject, by Mr. Collinson, is as follows: "Permit me to speak of another automaton of Droz's, which several years since he exhibited in England; and which, from my personal acquaintance, I had a commodious opportunity of particularly examining. It was a figure of a man, a drawing-master, I think the size of life. It held in its hand a metal style; a card of Dutch vellum being laid under it. A spring was touched, which released the internal clock-work from its stop, when the figure immediately began to draw. Mr. Droz, happening once to be sent for in a great hurry to wait upon some considerable personage at the west end of the town, left me in possession of the keys, which opened the recesses of all his machinery. He opened the drawing-master himself; wound it up; explained its leading parts; and taught me how to make it obey my requirings, as it had obeyed his own. Mr. Droz then went away. After the first card was finished, the figure rested. I put a second; and so on, to five separate cards, all different subjects: but five or six was the extent of its delineating powers. The first card contained, I may truly say, elegant portraits and likenesses of the king and queen, facing each other: and it was curious to observe with what precision the figure lifted up his pencil, in the transition of it from one point of the draft to another, without making the least slur whatever: for instance, in passing from the forehead to the eye, nose, and chin; or from the waving curls of the hair to the ear, &c.

ACCOUNT OF ALBERT-AZO II. MARQUIS OF ESTE.

LIKE one of his Tuscan ancestors, Azo II. was distinguished among the princes of Italy by the epithet of the "Rich." The particulars of his rent-roll cannot now be ascertained: an occasional, though authentic, deed of investiture, enumerates eighty-three fiefs or manors, which he held of the empire in Lombardy and Tuscany, from the marquisate of Este to the county of Luni: but to these possessions must be added the lands which he enjoyed as the vassal of the church, the ancient patrimony of Otbert (the *Terra Obertenga*) in the counties of Arezzo, Pisa, and Lucca, and the marriage portion of his first wife, which, according to the various readings of the manuscripts, may be computed either at twenty or at two hundred thousand English acres. If such a mass of landed property were now accumulated on the head of an Italian nobleman, the annual revenue might satisfy the largest demands of private luxury or avarice, and the fortunate owner would be rich in the improvement of agriculture,

ture, the manufactures of induſtry, the refinement of taſte, and the extent of commerce. But the barbariſm of the eleventh century diminiſhed the income, and aggravated the expence, of the Marquis of Eſte. In a long ſeries of war and anarchy, man, and the works of man, had been ſwept away; and the introduction of each ferocious and idle ſtranger had been over-balanced by the loſs of five or ſix perhaps of the peaceful induſtrious natives. The miſchievous growth of vegetation, the frequent inundations of the rivers, were no longer checked by the vigilance of labour; the face of the country was again covered with foreſts and moraſſes; of the vaſt domains which acknowledged Azo for their lord, the far greater part was abandoned to the wild beaſts of the field, and a much ſmaller portion was reduced to the ſtate of conſtant and productive huſbandry. An adequate rent may be obtained from the ſkill and ſubſtance of a free tenant, who fertilizes a grateful ſoil, and enjoys the ſecurity and benefit of a long leaſe. But faint is the hope, and ſcanty is the produce, of thoſe harveſts, which are raiſed by the reluctant toil of peaſants and ſlaves, condemned to a bare ſubſiſtence, and careleſs of the intereſts of a rapacious maſter. If his granaries are full, his purſe is empty; and the want of cities or commerce, the difficulty of finding or reaching a market, obliges him to conſume on the ſpot a part of his uſeleſs ſtock, which cannot be exchanged for merchandize or money. The member of a well-regulated ſociety is defended from private wrongs by the laws, and from public injuries by the arms of the ſtate; and the tax which he pays is a juſt equivalent for the protection he receives. But the guard of his life, his honour, and his fortune, was abandoned to the ſword of a feudal chief; and, if his own temper had been inclined to moderation and patience, the public contempt would have rouſed him to deeds of violence and revenge. The entertainment of his vaſſals and ſoldiers, their pay and rewards, their arms and horſes, ſurpaſſed the meaſure of the moſt oppreſſive tribute, and the deſtruction which he inflicted on his neighbours was often retaliated on his own lands. The coſtly elegance of palaces and gardens was ſuperſeded by the laborious and expenſive conſtruction of ſtrong caſtles on the ſummits of the moſt inacceſſible rocks; and ſome of theſe, like the fortreſs of Canoſſa in the Appenine, were built and provided to ſuſtain a three-years ſiege againſt a royal army. But his defence in this world was leſs burthenſome to a wealthy lord than his ſalvation in the next: the demands of his chapel, his prieſts, his alms, his offerings, his pilgrimages, were inceſſantly renewed; the monaſtery choſen for his ſepulchre was endowed with his faireſt poſſeſſions, and the naked heir might often complain, that his father's ſins had been redeemed at too high a price. The Marquis Azo was not exempt from the contagion of the times: his devotion was amuſed and inflamed by the frequent miracles which were performed in his preſence; and the monks of Vangadizza, who yielded to his requeſt the arm of a dead ſaint, were ignorant of the value of that ineſtimable jewel. After ſatisfying the demands of war and ſuperſtition, he might appropriate the reſt of his revenue to uſe and pleaſure: but the Italians of the eleventh century were imperfectly ſkilled in the liberal and mechanical arts; the objects of foreign luxury were furniſhed at an exorbitant price by the merchants of Piſa and Venice; and the ſuperfluous wealth, which could not purchaſe the real comforts of life, was idly waſted on ſome rare occa-

tions of vanity and pomp. Such were the nuptials of Boniface, duke or marquis of Tuscany, whose family was long after united with that of Azo by the marriage of their children. These nuptials were celebrated on the banks of the Mincius, which the fancy of Virgil has decorated with a more beautiful picture. The princes and people of Italy were invited to the feast, which continued three months; the fertile meadows, which are intersected by the slow and winding course of the river, were covered with innumerable tents, and the bridegroom displayed and diversified the scenes of his proud and tasteless magnificence. All the utensils of service were of silver, and his horses were shod with plates of the same metal, loosely nailed, and carelessly dropped, to indicate his contempt of riches. An image of plenty and profusion was expressed in the banquet: the most delicious wines were drawn in buckets from the well; and the spices of the east were ground in water-mills like common flour. The dramatic and musical arts were in the rudest state; but the marquis had summoned the most popular singers, harpers, and buffoons, to exercise their talents on this splendid theatre. Their exhibitions were applauded, and they applauded the liberality of their patron. After this festival, we might remark a singular gift of the same Boniface to the emperor Henry III. a chariot and oxen of solid silver, which were designed only as a vehicle for a hogshead of vinegar. If such an example should seem above the imitation of Azo himself, the Marquis of Este was at least superior in wealth and dignity to the vassals of his compeer. One of these vassals, the Viscount of Mantua, presented the German monarch with one hundred falcons and one hundred bay horses, a grateful contribution to the pleasures of a royal sportsman. In that age, the proud distinction between the nobles and princes of Italy was guarded with jealous ceremony: the Viscount of Mantua had never been seated at the table of his immediate lord: he yielded to the invitation of the emperor; and a stag's skin, filled with pieces of gold, was graciously accepted by the Marquis of Tuscany as the fine of his presumption.

The temporal felicity of Azo was crowned by the long possession of honours and riches: he died in the year one thousand and ninety-seven, aged upwards of an hundred years: and the term of his mortal existence was almost commensurate with the lapse of the eleventh century. The character as well as the situation of the Marquis of Este, rendered him an actor in the revolutions of that memorable period: but time has cast a veil over the virtues and vices of the man, and I must be content to mark some of the æras, the milestones of his life, which measure the extent and intervals of the vacant way.—Albert-Azo II. was no more than seventeen when he first drew the sword of rebellion or patriotism, when he was involved with his grandfather, his father, and his three uncles, in a common proscription.—In the vigour of manhood, about his fiftieth year, the Ligurian marquis governed the cities of Milan and Genoa, as the minister of imperial authority. He was upwards of seventy when he passed the Alps to vindicate the inheritance of Maine for the children of his second marriage. He became the friend and servant of Gregory VII. and, in one of his epistles, that ambitious pontiff recommends the Marquis Azo as the most faithful and best beloved of the Italian princes; as the proper channel through which a king of Hungary might convey his petitions to the apostolic throne. In the mighty

contest

contest between the crown and the mitre, the Marquis Azo and the Countess Matilda led the powers of Italy; and, when the standard of St. Peter was displayed, neither the age of the one, nor the sex of the other, could detain them from the field.—With these two affectionate clients, the pope maintained his station in the fortress of Canossa, while the emperor, barefoot on the frozen ground, fasted and prayed three days at the foot of the rock: they were witnesses to the abject ceremony of the penance and pardon of Henry IV. and in the triumph of the church a patriot might foresee the deliverance of Italy from the German yoke. At the time of this event, the Marquis of Este was above fourscore; but in the twenty following years he was still alive, and active amidst the revolutions of pecce and war. The last act which he subscribed is dated above a century after his birth; and in that act the venerable chief possesses the command of his faculties, his family, and his fortune. In this rare prerogative of longevity, Albert-Azo II. stands alone; nor can I recollect in the authentic annals of mortality a single example of a king or prince, of a statesman or general, of a philosopher or poet, whose life has been extended beyond the period of an hundred years. Nor should this observation, which is justified by universal experience, be thought either strange or surprising. It has been found, that of twenty-four thousand new-born infants, seven only will survive to attain that distant term; and much smaller is the proportion of those who will be raised by fortune or genius, to govern, or afflict, or enlighten, their age or country. The chance, that the same individual should draw the two great prizes in the lottery of life, will not easily be defined by the powers of calculation. Three approximations, which will not hastily be matched, have distinguished the present century, Aurengzebe, Cardinal Fleury, and Fontenelle. Had a fortnight more been given to the philosopher, he might have celebrated his secular festival, but the lives and labours of the Mogul king and the French minister were terminated before they had accomplished their ninetieth year. A strong constitution may be the gift of nature; but the few who survive their contemporaries must have been superior to the passions and appetites which urge the speedy decay and dissolution of the mind and body. The Marquis of Este may be presumed, from his riches and longevity, to have understood the economy of health and fortune.

On DWARFS AND GIANTS.

THE ancients supposed that a race of men of diminutive stature composed a peculiar nation. Homer gives an account of a pigmy nation contending with the cranes; and however the poet might be supposed to exaggerate, Athenæus has gravely attempted to confirm this. If we attend to these, we must believe that in the internal parts of Africa there are whole nations of pigmy beings, not more than a foot in stature, who continually wage an unequal war with the birds and beasts that inhabit the plains in which they reside. Some of the ancients, however, and Strabo in particular, have supposed all these accounts to be fabulous; and have been more inclined to think this supposed nation of pigmies nothing more than a species of apes, well known to be numerous in that part of the world. With this opinion the moderns have all concurred; and that diminutive race, which

was

was described as human, has been long degraded into a class of animals that resemble us but very imperfectly.

The existence, therefore, of a pigmy race of mankind, being founded in error or in fable, we can expect to find men of diminutive stature only by accident, among men of the ordinary size. Of these accidental dwarfs, every country, and almost every village, can produce numerous instances. There was a time when these unfavoured children of nature were the peculiar favourites of the great; and no prince or nobleman thought himself completely attended unless he had a dwarf among the number of his domestics. These poor little men were kept to be laughed at, or to raise the barbarous pleasure of their masters, by their contrasted inferiority. Even in England, as late as the times of King James I. the court was at one time furnished with a dwarf, a giant, and a jester: these the king often took a pleasure in opposing to each other, and often fomented quarrels among them, in order to be a concealed spectator of their animosity. It was a particular entertainment of the courtiers at that time to see little Jeffery, for so the dwarf was called, ride round the lists, expecting his antagonist, and discovering in his actions all the marks of contemptible resolution.

In the reign of Charles I. a dwarf named Richard Gibson, who was a page of the back-stairs, and a favourite at court, was married to Miss Anne Shepherd, a lady of equal height; the king honoured this singular wedding with his presence, and gave away the bride. On this occasion Waller composed the following lines:

Design or chance make others wive,
But nature did this match contrive:
Eve might as well have Adam fled,
As she deny'd her little bed
To him, for whom heav'n seem'd to frame
And measure out this only dame.

Thrice happy is that humble pair,
Beneath the level of all care!
Over whose heads those arrows fly
Of sad distrust and jealousy;
Secured in as high extreme,
As if the world held none but them.

To him the fairest nymphs do show
Like moving mountains topp'd with snow;
And ev'ry man a Polypheme
Does to his Galatea seem:
None may presume her faith to prove;
He proffers death that proffers love.
Ah, Chloris! that kind nature thus
From all the world had sever'd us;
Creating for ourselves us two,
As love has me for only you!

Each of them measured three feet ten inches. This little pair were painted at whole length by Sir Peter Lely. They had nine children, five of which attained to maturity, and were well proportioned to the usual standard of mankind. Mr. Gibson's genius led him to painting, in the rudiments of which art he was instructed by

De Clein, master of the tapestry works at Mortlake, and distinguished by his drawings for several of the cuts to Ogilby's Virgil, and Sandy's Translation of Ovid.

Gibson's paintings in water-colours were well esteemed, but the copies which he made of Lely's portraits gained him the greatest reputation. He had the honour to be employed in teaching Queen Anne the art of drawing, and was sent for into Holland to instruct her sister, the Princess of Orange. To recompence the shortness of their stature, nature gave them an equivalent length of days, for he died in the seventy-fifth year of his age, and his wife, having survived him almost twenty years, died in the year 1709, at the great age of eighty-nine.

In the year 1710, Peter, czar of Russia, celebrated a marriage of dwarfs, which was attended with great parade. Upon a certain day, which he had ordered to be proclaimed several months before, he invited the whole body of his courtiers, and all the foreign ambassadors, to be present at the marriage of a pigmy man and woman. The preparations for this wedding were not only very grand, but executed in a style of barbarous ridicule. He ordered that all the dwarf men and women, within two hundred miles, should repair to the capital; and also insisted that they should be present at the ceremony. For this purpose, he supplied them with proper vehicles; but so contrived it, that one horse was seen carrying a dozen of them into the city at once, while the mob followed shouting, and laughing, from behind.

Some of them were at first unwilling to obey an order, which they knew to be calculated to turn them into ridicule, and did not come; but he soon obliged them to obey; and, as a punishment, enjoined, that they should wait upon the rest at dinner. The whole company of dwarfs amounted to about seventy, beside the bride and bridegroom, who were richly adorned, and in the extremity of the fashion. For this little company in miniature every thing was suitably provided; a low table, small plates, little glasses, and, in short, every thing was so fitted, as if all things had been dwindled to their own standard. It was his great pleasure to see their gravity and their pride; the contention of the women for places, and the men for superiority. This point he attempted to adjust, by ordering, that the most diminutive should take the lead; but this bred disputes, for none would then consent to sit foremost. All this, however, being at last settled, dancing followed the dinner, and the ball was opened with a minuet by the bridegroom, whose height was exactly three feet two inches. In the end, matters were so contrived, that this little company, who met together in gloomy disgust, and with an unwillingness to be pleased, being at last familiarized to laughter, entered into the diversion, and became extremely sprightly and entertaining.

A dwarf of the name of Coan was exhibited in almost every part of England, for some years. He was likewise brought upon the stage of one of the London theatres, where he was contrasted with a giant, each of whom sung for the entertainment of the audience. He died at Chelsea, March 28, 1764.

Concerning the reality of a race of giants the learned have been much divided. Ferdinand Magellan was the first who discovered such a race of people, along the coast towards the extremity of South America, in 1520. Commodore Byron touched at Patagonia, the country spoken of by Magellan, in the year 1764, when he saw a number

ber of horſemen riding backward and forward. The natives ſoon collected near the ſhore, to the number of five hundred, many of whom were on foot, and made ſigns of invitation for thoſe on-board to land. Byron accordingly went aſhore in his twelve-oared boat, having with him a party of men well armed. Theſe people are deſcribed as a gigantic race, whoſe height in general is not much leſs than ſeven feet. Their only clothing was the ſkins of beaſts thrown over their ſhoulders, with the hair inward: they paint themſelves ſo as to make a hideous appearance; but their diſpoſition is neither fierce nor rapacious. Each one had a circle of white round one eye, and of black round the other; and their faces were ſtreaked with paint of different colours. Except the ſkins, moſt of them were naked; a few only having upon their legs a kind of boot, with a ſhort pointed ſtick faſtened to each heel, which ſerved as a ſpur. The commodore preſented them with ſome beads and ribbands, which they received with expreſſions of joy and acknowledgement. Theſe Indians had a great number of dogs. Their horſes were not large, but nimble and well broken. The Patagonians, however, were not wholly ſtrangers to European commodities; for, on cloſe attention to them, one woman was obſerved to have bracelets, either of braſs or of very pale gold, upon her arms, and ſome beads of blue glaſs ſtrung upon two long queues of hair, which, being parted at top, hung down over each ſhoulder before her: ſhe was of a moſt enormous ſize, and her face was, if poſſible, more frightfully painted than the reſt. All the enquiries which could be made by ſigns were ineffectual to gain information whence theſe beads and bracelets were obtained, as theſe people were utterly incapable of comprehending the drift of the enquiry. The bridles which they uſed were made of leathern thongs; and a ſmall piece of wood ſerved for a bit. Their ſaddles reſembled the pads uſed by the country-people in England. The women rode aſtride, and both men and women without ſtirrups.

There is nothing about which travellers are more divided than concerning the height of theſe Patagonians. M. de Bougainville, who *viſited another part of this coaſt in the year 1767*, aſſerts, that the Patagonians are not gigantic; and that "what makes them appear ſo, is their prodigious broad ſhoulders, the ſize of their heads, and the thickneſs of all their limbs." Some time before Mr. Byron made this voyage, it was the ſubject of warm conteſt among men of ſcience in this country, whether a race of men upon the coaſt of Patagonia above the common ſtature did really exiſt; and the contradictory reports, made by ocular witneſſes, concerning this fact, tended greatly to perplex the queſtion. It appears that, during one hundred years, almoſt all navigators, of whatever country, agree in affirming the exiſtence of a race of giants upon theſe coaſts; but, during another century, a much greater number agree in denying the fact, treating their predeceſſors as idle fabuliſts. Barbenais ſpeaks of a race of giants in South America; and the Unca Garcilaſſa de la Vega, in his Hiſtory of Peru, is deciſively on the ſame ſide of the queſtion. Torquemado records the American traditions concerning a race of giants, and a deluge which happened in remote times in theſe parts; Magellan, Loaiſa, Sarmiento, and Nodal, among the Spaniards; and Cavendiſh, Hawkins, and Knivet, among the Engliſh; while Sebald, Oliver de Noort, le Maire, and Spilberg, among the Dutch; together with ſome French voyagers, all bear teſtimony to the fact, that the inhabi-

tants of Patagonia were of a gigantic height. On the contrary, Winter, the Dutch admiral Hermite, Froger, in De Gennes' Narrative, and Sir John Narborough, deny it. To reconcile these different opinions, we have only to suppose that the country is inhabited by distinct races of men, one of which is a size beyond the ordinary pitch, the other not gigantic, though perhaps tall and remarkably large limbed, and that each possess parts of the country separate and remote from each other. That some giants inhabit these regions can now no longer be doubted; since the concurrent testimony of late English navigators, particularly Commodore Byron, Captains Wallis and Carteret, gentlemen of unquestionable veracity, the two latter of whom are still living, establish the fact, from their not only having seen and conversed with these people, but even measured them. Mr. Clark, who sailed with Commodore Byron, and who in the last voyage succeeded, on the death of Captain Cook, to the command of the two ships, addressed a paper to the secretary of the Royal Society, which was read in 1766, and fully testified the gigantic height of the Patagonians. To these testimonies, Mr. Pennant, actuated by that zeal for science which distinguishes him on all occasions, has been enabled to add another, which is that of Father Falkener, a jesuit, but a native of England, who was alive a few years since, and whom Mr. Pennant visited for the express purpose of gaining certain information concerning the Patagonians, as he had been sent on a mission into their country about the year 1742. The father (who was very communicative, and about seventy years of age when he imparted his information to our inquirer) asserted, that the tallest which he measured, in the same manner that Mr. Byron did, was seven feet eight inches high; the common height of the men was six feet, and there were numbers who were shorter: the tallest woman did not exceed six feet. The particulars of this conversation Mr. Pennant communicated in a letter addressed to the Hon. Daines Barrington, which has since been printed at a private press, but only a few copies taken off to gratify the author's friends.

Notwithstanding the concurring testimony concerning the height of the Patagonians, M. de Buffon does not admit the existence of a race of giants, which Lord Monboddo strenuously contends for; in doing which, he relates that M. de Guyet, captain of a French ship trading to the South Sea, brought from the coast of Patagonia, a skeleton of one of these giants, which measured between twelve and thirteen feet, purposing to bring it to Europe; but happening to be overtaken by a violent storm, and having the Spanish archbishop of Lima on-board, the ecclesiastic declared that the storm was caused by the bones of the pagan then on-board, and insisted on having the skeleton thrown into the sea. His lordship adds, "The archbishop died soon after, and was thrown overboard in his turn. I could have wished that he had been thrown overboard sooner, and then the bones of the Patagonian would have arrived safe in France, though I am persuaded they would not have made Buffon alter his opinion, but he would have still maintained that it was only an accidental variety of the individual, not any difference of the race."

At Trinity College, Dublin, in the anatomical room there, is the skeleton, between seven and eight feet high, of one Magrath, who was born near Cloyne. This man was carried through various parts of Europe, and exhibited as the prodigious Irish giant; but such

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was his early imbecility, both of body and mind, that he died of old age in his twentieth year. The account of this prodigy is given by a very sensible writer, and is as follows:—In his infancy he became an orphan, and was provided for by the famous Berkley, then bishop of Cloyne. This subtile doctor, who denied the existence of matter, was as inquisitive in his physical researches as he was whimsical in his metaphysical speculations: when I tell you he had well-nigh put an end to his own existence by experimenting what are the sensations of a person dying on the gallows, you will be the more ready to forgive him for his treatment of this poor orphan. The bishop had a strange fancy to know whether it was not in the power of art to increase the human stature, and this unhappy infant appeared to him a fit subject for trial. He made his essay according to his preconceived theory, whatever it might be, and the consequence was, that he became seven feet high in his sixteenth year.

In the same letter follows an account of another skeleton which is preserved in the college, of one Clark, a native of Cork, who was called "the ossified man." Early in life his joints stiffened, his locomotive powers were lost, and his very jaws grew together; so that it became necessary for his sustenance to pour liquid into his mouth by means of a hole perforated through his teeth. He lived in this state several years, leaning against a wall, till at length the very organs of life were converted into bone.—See farther on the subject of Giants in vol. i. p. 20-23 of this work.

ON LITERARY FAME.

THE fame acquired by literary talents is not only in itself of the most durable and extensive nature, but the only means of preserving every other species of celebrity. The pyramids of Memphis, and some stupendous edifices in India, indeed, exist, after a vast succession of years; and nothing, in all probability, but an internal convulsion of the globe, will overthrow such immense piles: yet they have not transmitted to posterity the names of those monarchs, thro' whose vanity, superstition, or munificence, they were erected. The finer designs of ancient art are almost totally lost: the exquisite performances of the statuary and the painter are mouldered into dust; but Praxiteles and Zeuxis will always live to fame, though not by their own efforts; for the pencil of literature alone paints to distant ages, and its colours fade not amidst the revolutions of time.

Without the bard or the historian, the monarch builds, and the artist designs, in vain. Without their assistance the tribute of applause cannot be levied on posterity. "Dark (says Ossian) are the deeds of other times, before the light of the song arose." And Horace, to the same purport, remarks, that "heroes existed before the Trojan war, but no divine bard recorded their fame, and their deeds are concealed in night."

Notwithstanding this obvious truth, the man of letters is commonly regarded with indifference, possibly with contempt, by his cotemporaries, who act in the more elevated departments of life. Such, we may suppose, has ever been the case; for the substance of human nature, however the outward form may vary, is still the same. The statesmen and generals of our age, like *most* of their predecessors, (for some exceptions have occurred,) little reflect, that whatever character

they

they are to ſuſtain with poſterity, will not depend on the adulation of their creatures or the huzzas of the people, not even on the applauſes of ſenates or munificence of kings; but will, in all probability, be finally eſtabliſhed on the credit of ſome literary man, a ſilent but not inattentive ſpectator, living unknown, and dying unregarded. Whim, caprice, or faſhion, generally govern the world's opinion concerning living authors. The favourites of the day have ſeldom ſtood the teſt of time. The immortal "Paradiſe Loſt" was contemptuouſly ſaid by an author of conſiderable eminence, "to have been written by *one* Milton, a blind man:" and almoſt a century elapſed before his merit was properly known. He has been truly compared to a ſlow ſubterraneous ſtream—it purſues its ſilent courſe in darkneſs, but at length burſts into day, and is adorned with the radiance of heaven. Shakeſpeare, for a longer period, obtained but a very moderate degree of eſtimation. For a ſhort time, indeed, he enjoyed the gale of popular applauſe, and flouriſhed, in the words of a kindred genius, "like an oak, that pours awhile its green branches to the ſun, but is ſoon enfolded in the ſkirts of a ſtorm, and clothed on high in miſt."

Their fame is now eſtabliſhed, and cannot, unleſs the world relapſes into barbariſm, ſuffer a ſecond eclipſe. In the days, however, of "the hero William, and the martyr Charles," when Blackmore was knighted, and Quarles penſioned, on account of their poetical pre-eminence, the plays of Shakeſpeare were ſeldom acted, and Milton was ſcarcely known. So ſlowly does genius emerge beneath the preſſure of caprice or ignorance!

A voluminous writer, called Cartwright, who is ſtyled by Wood "the moſt ſeraphical preacher of his age—another Tully—and another Virgil," in a poem addreſſed to Fletcher, thus familiarly treats his great predeceſſor:—

> Shakeſpeare to thee was dull, whoſe beſt jeſt lies
> I' th' ladies' queſtions, and the fool's replies.
> Old-faſhion'd wit, which walk'd from town to town
> In trunk-hoſe, which our fathers called the clown:
> Whoſe wit our nice times would obſcenenes call,
> And which made bawdry paſs for comical.
> Nature was all his art—thy vein was free
> As his, but without his ſcurrility.

Theſe encomiums on the ſuperior chaſtity and urbanity of Fletcher's muſe, appear ſomewhat ſingular to us. Poſterity differ in opinion from Mr. Cartwright; who, notwithſtanding his numerous publications, and celebrity in his own days, may probably be only known to futurity by the ill-grounded cenſure he has paſſed on Shakeſpeare, as Zoilus lives to fame by having depreciated Homer.

If we are to judge from the congratulatory verſes prefixed to Beaumont's and Fletcher's plays, we muſt conclude that theſe dramatic bards were conſidered as ſucceſsful rivals to Shakeſpeare, previous to his death, which happened in his fifty-third year, A. D. 1616. In the year 1642, Shirley, in his prologue to the Siſters, laments the neglect ſhewn to his performances, and intimates that they were frequently acted to empty houſes. Dryden, in his Eſſay on Dramatic Poetry, publiſhed in 1666, remarks, that Shakeſpeare's language was a little obſolete, and that two of Beaumont's and Fletcher's plays were

were exhibited to one of his. Shadwell, in the prologue to a comedy that came out the following year, obſerves,

> That which the world called wit in Shakeſpeare's age
> Is laugh'd at, as improper for the ſtage.

In conſequence of which, himſelf and other wits of the time, generouſly condeſcended to alter many of his plays, and accommodate them to an audience, grown, we may preſume, rather nice and faſtidious; having been for ſome time in the habit of attending to the chaſte humour and attic elegance of Mrs. Behn, and Tom Durfey! In 1707, Shakeſpeare was ſo little known, that Tate publiſhed a tragedy, called "Injured Love, or the Cruel Huſband," and mentioned in the title-page, that it was written by the author (meaning himſelf) of King Lear. He had, indeed, altered it from Shakeſpeare, and muſt have depended on eſcaping detection from the obſcurity of the original, or have ſuppoſed that it would hide its diminiſhed head, and ſink into oblivion, by means of his ſuperior production: he mentions it in his preface as an "obſcure performance commended to his notice by a friend." Steele, in the Tatler, which came out in 1709, gives two quotations, as he ſays, from Shakeſpeare's Macbeth, but the paſſages there quoted are only to be found in Davenant's alteration of that play. He mentions, likewiſe, ſome ſtriking incidents in Taming the Shrew, as circumſtances that occurred in a family with which he was particularly intimate. In the firſt inſtance we are ſurpriſed that Steele ſhould have ſo imperfect a knowledge of Shakeſpeare; in the ſecond, that he ſhould truſt ſo much to the ignorance of his readers.

From this period, however, and chiefly by means of the judicious and elegant aſſociate of Steele in the Spectator, Shakeſpeare as well as Milton, became more generally known to the world. Yet ſo late as the year 1750, Dr. Hill, a man not deſtitute of taſte, and during ſome part of his life a theatrical critic by profeſſion, introduces in The Actor, or a Treatiſe on the Art of Playing, ſome lines, if you will believe him, from Romeo and Juliet; "given as the author gives them; not as the butcherly hand of a blockhead prompter may have lopped them, or as the unequal genius of ſome bungling critic may have attempted to mend them." In another place he again plumes himſelf on the peculiar accuracy of his quotation; and yet no ſuch lines are to be found in Shakeſpeare; they are copied from Caius Marius, and Otway is their only juſt proprietor. He inſerted, indeed, entire ſcenes into that drama from Shakeſpeare's Romeo and Juliet, for which he made a very ſlight acknowledgment. Other critics have been equally unfortunate, and quoted as Otway's ſome beautiful paſſages which he had ſtolen from Shakeſpeare.

In the Auguſtan age of Charles II. as it has ſometimes been abſurdly ſtyled, Elkanah Settle, the city bard, divided theatric fame with Dryden; and Sir William Temple, generally reckoned the oracle of taſte in his time, mentions Sir Philip Sidney as "the greateſt poet and the nobleſt genius of any that have left writings behind them, and publiſhed in ours or in any other modern language." He does not condeſcend to name Milton in his Eſſay on Poetry; but evidently alludes to him and Cowley in the following paſſage:—The religion of the Gentiles had been woven into the contexture of all the ancient poetry, with a very agreeable mixture, which made the moderns affect to give that of Chriſtianity a place alſo in their poems: but the

time

true religion was not found to become fiction so well as the false had done; and all their attempts of this kind seemed rather to debase religion than to heighten poetry." Who now can read the insipid productions of Sidney? who is not charmed with the sublime energy of Milton! But the splendour of Sidney's character threw a delusive glare over his compositions; and the gloom of republicanism, annexed to the idea of Milton, cast a veil over beauties that could not otherwise have escaped observation.

High rank and temporal grandeur is, however, of no avail towards securing literary immortality. The poems of a Nero, though lord of "the majestic world," perished with him. Those of Homer, an indigent itinerant bard, are transplanted into every polished language, and will live as long as ideas are by language communicated. The copious works of the British Solomon, who, "*trowed himself to be* the oldest and the wisest king in Christendom," though bound in purple morocco, stamped with letters of gold, and embellished with clasps of silver, lie worm-eaten and cobweb-mantled even in the tory's garret; whilst the profane vulgar deem them of little other use than to inclose the trifling merchandize of the confectioner or haberdasher. Sometimes perhaps, ignorantly flagitious, they kindle their tobacco-charged pipes with those very pages in which he fulminated against the use of it both as a king and a Christian.

Compare with them the works of the vagabond Shakespeare; I fear he scarcely deserved a better appellation in his youthful days. They were produced under almost every disadvantage. But how soon did the frigid beams of royal pedantry suffer an eclipse; whilst the flame of genius that inspired the other, not a spark of which, possibly, was noticed in his native Stratford, and which dimly shone, or irregularly blazed (as caprice or envy urged the gale), in his own days, kindled as it flew through the track of time, and now irradiates with permanent lustre the poetic hemisphere of Britain! How little did Sir Thomas Lucy suppose, when, in the pomp and plenitude of magisterial power, he saw an idle youth stand trembling before him, or heard of his precipitate flight from the terrors of judicial authority, that he should be transmitted down to posterity by the same disorderly youth, under the humiliating appellation of "Robert Shallow, Esq. justice of peace and *coram!*"

It appears, therefore, that genius, whatever temporary depressions it may suffer, is superior to all human power. Kings may dignify, dishonour, or reward, merit; heroes and statesmen may live awhile in the mouths of men; while the vulgar, like the foliage of the grove, drop unnoted. Literary genius alone can confer the unfading wreath of fame on itself and others; can bestow it alike on the prince or peasant; crown with deathless glory, or brand with eternal infamy. Thersites, in the page of Homer, will live as long as the "king of men;" and Hostess Quickly will be remembered till the victor of Agincourt is forgotten.

These ideas were more particularly suggested by perusing the historical dramas of Shakespeare. The wonder-working power of the poet's pen is there most eminently displayed. Airy nothings are embodied; our ancestors start from their tombs, and participate a second existence. His characters, whether those of kings and nobles, of clowns, constables, or pick-pockets, Cade's licentious mob, or Henry's turbulent barons, are such genuine copies from life, that we must

 suppose

suppose the originals acted and spoke in the manner he represents them. Like Homer, and in that respect he is singular among our English bards, he has acquired both the credit of an historian and the celebrity of a poet; the illusion, at least, is so powerful, that, whilst we peruse his account of persons or events, we cannot easily disbelieve it. No man of a liberal taste, descended from, or related to, any of Shakespeare's favourite historic characters, can avoid feeling, from that very circumstance, additional pleasure in reflecting on them. The natural existence of a Hotspur continued only a few years: the tempest of war soon quenched that "soul of fire;" but the pen of Shakespeare, potent as the magician's wand, has conferred on him an ideal existence, which will terminate only with the extinction of the English language, possibly of the universe itself.

ON THE MYTHOLOGY AND WORSHIP OF THE SERPENT.

THE worship of the sun and solar fire is so natural in an age of ignorance, that it may easily be supposed to have existed in various and distant countries, which had no communication with each other. The majestic splendour of that luminary, and the benefits it imparted to mankind, could not but excite sentiments of awe and veneration. We need not therefore have recourse to a propagation of opinions from any one part of the world, either by colonization or conquest, to account for a species of adoration, which, while the Creator was unknown, every human bosom would be prone to pay to the most glorious and useful of created beings. We need not, as some have done, imagine there was ever any former connection between Asia and America, because nearly similar rites were appropriated to the sun in Persia and Peru.

But, though the solar worship might naturally arise in all parts of the world, what reason shall we give for the deification of the serpent? for his being attached to that worship? and for his being in such a variety of places considered either as a malign or benignant power? This seems to have been an arbitrary, not a natural, superstition; to have primarily taken place in some particular region, and thence to have been circulated to nations widely distant. Without attempting to answer the preceding questions, we shall, merely as an entertaining subject, give a short sketch of the serpent-worship, the origin of which is lost in the remotest antiquity.

The worship of the serpent, or of the sun and serpent, is perhaps among the first, if not the first, recorded mode of idolatry. As joined with the sun, or under his name of Cneph, in Egypt, he signified the good, as Typhon did the evil, principle. The Phœnicians gave him a name correspondent with Agathodæmon. The Egyptians, according to Eusebius, represented the universe by a sky-coloured and fiery circle, in the middle of which was the serpent with the head of a hawk, reaching from one side to the other, as if connecting the whole. The figure so drawn being like the Greek Θ. Epeis the Egyptian, translated into Greek by Arius, calls him, of every serpent the most divine, who opening his eyes fills all things with light in his primogenial residence, and if he closes them total darkness ensues. This tract, as well as Eusebius's Ethothia, with the theological work of Pherecydes on the serpent deity and his worshippers, whom

whom he calls Ophion, and Ophionidæ, are loſt, doubtleſs, with much curious information on the ſubject.

The high idea entertained of the ſame deity by the Perſians, Euſebius ſhews by a quotation from Zoroaſter Magus on their religious rites: the ſame likewiſe, he ſays, is delivered by Oſtanes. "The god has the head of a hawk, he is the firſt of beings, immortal, eternal, unbegotten, indiviſible, indefinable, the giver of every good, immutable, of the holy moſt holy, of the wiſe moſt wiſe, the ſource of equity and juſtice, ſelf-taught, natural, perfect, intelligent, and the ſole inventor of the ſacred powers of nature."

Oppoſite to Cneph, was Typhon; the former, as we have ſaid, being the principle of good, the latter of evil, the deſtructive ſerpent, the author of darkneſs, of ſtorms, of tempeſts, and confuſion, as the former was of light, of beauty, and of order.

As an emblem of the good principle, the ſerpent ſeems to have been erected by Moſes in the wilderneſs; to have been placed round the antient figures of the Magi in the ſculptures of Perſia, and on the heads of the prieſts in Egypt. As the good principle, he ſeems, in the Indian mythology, to have ſupported the world on the back of the tortoiſe. To have ſurrounded the ſeven worlds, that they might not again be deſtroyed; and to have attended, and held his head over, the infant god Criſhna, to protect him in the rainy ſeaſon. In the ſame light he was made uſe of by the genii, being coiled round a huge mountain, with which they churned the ocean to procure the water of immortality, an idea titanically ſublime.

The oldeſt reference we have to the ſerpent as the principle of evil is his tempting Adam and Eve in Paradiſe, for which his future puniſhment was decreed. As the evil principle he was fought with and conquered by various gods. In the Indian mythology Viſtnoo ſlew the giant or dragon Hirnacks at the botton of the ſea, and reſcued the world, which he had carried off to his dark receſs. Criſhna, after a deſperate engagement, conquered and remanded to his den the ſerpent Kellinaeg. In the northern mythology Thor pulled up the great ſerpent of Midgard from the deep, and bruiſed his head with his mace. The victory of Horus over Typhon is well known. The Greeks were ſo fond of this tale, as not only to apply it to their Apollo, the vanquiſher of Python, but to their Jupiter, who ſlew Typhœus with his thunder-bolts, an enormous giant, who had fifty ſerpent heads; to Hercules in various inſtances; to Cadmus, to Jaſon, and Belerophon, who ſlew the Chimæra, one of whoſe heads, as well as its tail, were thoſe of a ſerpent, the hero's name being as complex as the figure of the monſter; Bel-er-oph-on, Beli Ignis, Serpens Solis. He was aſſiſted by Pegaſus, whoſe name Heſiod derives from Πηγαι, the ſprings, becauſe he came from the ſprings of Oceanus, which in fact was the Nile. Perſeus, who was an Egyptian and eaſtern deity, cut off the head of Meduſa, which was covered with ſnakes; he likewiſe was, in his ſubſequent adventures, aſſiſted by Pegaſus. Somewhat analagous to this, is the white horſe of Criſhna, which he ſent out to ſubdue all nations to his laws.

It is remarkable that a ſimilar cuſtom exiſts at the ſprings of the Nile to this day. For the Abyſſinian chief, whoſe authority extended over that country, ſent his horſe properly capariſoned, as a protector before Mr. Bruce, to which all who met it paid homage, as the repreſentative of its owner. Mr. Bruce may be ſaid to have van-

quished the serpent of the Nile by means of Pegasus, the horse of Fasil. Besides the white horse of Crishna, there is in the Indian mythology another white horse with wings, of great virtue and power, being indeed accounted a transformation of Vistnoo. He resides in heaven, but at the conclusion of things will strike his fore-foot with such violence on the earth, that the serpent will quit his place, and the tortoise, unable to support the world, will cast it into the sea. If any prince presumed to stop the white horse of Crishna, and did not submit to his master, he attacked him with an army, and exterminated both him and his subjects. In the Revelations, Death rides on a pale or white horse, and Hell follows after. In the more early mythology of Greece, not the eagle, but Pegasus, was the thunder-bearer of Jupiter.

From Egypt, the serpent-worship was carried into Greece, and in their religious ceremonies real serpents were made use of by the priests in the same manner. The Chaldæans seem to have been worshippers of the sun and serpent, from the time of Nimrod, or Naimrod, the beauty of the serpent, the lovely serpent, or, as expressed by the Greeks Nebrod, viz. On-ab-rod, Sol Pater Serpens, down to the time of Daniel, when Cyrus destroyed Bel, and slew the Dragon.

Though both Cneph and Typhon were serpents, they were likewise considered as having human forms, and it is rather particular that to Cneph in Egypt was attributed the same complexion which the Indians gave to Crishna: the skin of Crishna was of a dark azure colour. Con was the name of the Egyptian Hercules, or the sun; Coneph, or Cneph, is therefore the solar serpent. From Cneph came cnephod, or ephod, the prophetic garment of the priests, used likewise by the Israelites; in the breast-plate of which were those precious stones, Urim, the fires, or resemblances of fire; and Thummim, or Aithommim, lights of the sun. The original ephods among the Egyptians and Persians were probably serpents, or girdles in the form of serpents. Moses consecrated the ephod, though it was criminally perverted, and applied to the old idolatry, by others. For instance, by Gideon, when "he set up an ephod in Ophrah, (the city of the serpent,) after which all Israel went a whoring, and which was a snare to him and his house."

The rod of Moses was converted into a serpent, when he was spoken to by the deity of fire from the burning bush; and afterwards, in presence of Pharaoh, "Aaron cast forth his rod, and it was turned into a serpent. Then Pharaoh called for the wise men and sorcerers, and those charmers also of Egypt did in like manner with their enchantments; for they cast down every man his rod, and they were turned into serpents; but Aaron's rod devoured their rods." The high opinion entertained of the serpent as the principle of good by the Persians, Egyptians, and Phœnicians, we have seen; and likewise, that there was a serpent of a different character, the principle of evil. From these two, serpents appear to have been multiplied in different mythologies without number and without end. In the Indian mythology serpents abound. The god Ixora, who, like Osiris, and the ancient Grecian Jupiter, had an eye in his forehead, wore a robe surrounded by serpents, and held one in his hand. An attendant of his, a figure resembling Silenus, had serpents hanging down by their tails from his head, and a bracelet on his left arm, with two others about his thighs, made of the same animals. Que-

navady, the ſon of Ixora, had long hair, tied round with a ſerpent. In one of the ancient caverns on the coaſt of Coromandel, is a gigantic figure of Viſtnoo, reclining on a coiled ſerpent. Viſtnoo, indeed, is ſaid to govern the world repoſing on the ſerpent Annatan. This ſerpent has five heads, two of which ſerve the god for pillows, one for a bolſter, and two are under his hands. But to try the power of Viſtnoo, Annatan once got a ſixth head, upon which Viſtnoo got a ſixth hand to lay on the head; and, when he generated a ſeventh, the god created another hand, and ſo on to a thouſand. This is analagous to Hercules and the Hydra.

Inderſiet, the ſon of Rawan, was taught by Bramha to make uſe of certain words, which, being uttered when he ſhot his arrow, converted it into a ſerpent, entangling his adverſary. Afterwards, in a fight, taking his ſtand behind a wheel of the chariot of the ſun, he ſhot one of his arrows, which, turning immediately to a ſerpent, ſent forth ſuch a vaſt number among the apes, compoſing the army of Ram, that they fell in crowds before the giants of Rawan. Near the town of Buddal is ſtill remaining a very ancient decapidated pillar, on which, as appears by a ſanſcrit inſcription, was placed Tarkſhya, or Garoor, the foe of ſerpents, who having journeyed, like his fame, to the extremity of the world, and deſcended even to its foundation, was there exalted with a ſerpent in his mouth.

Sir William Jones, from a Perſian tranſlation of the Bhagavat, (for he had not then procured the original,) ſays, the ſovereign of Patála, or the infernal regions, is called the King of Serpents.

In the Revelations, Michael fights with the devil, that old ſerpent, who likewiſe, as well as the hydra, had ſeven heads. The hydra was not overcome till Hercules applied fire, as each head was cut off. Michael, who overcame Satan, ſignifies the ſmiting of the deity of fire. To the ancient victory over the ſerpent of the Nile, the prophets allude in theſe paſſages:—"Awake! awake! put on ſtrength, O arm of the Lord. Awake, as in the ancient days, in the generations of old. Art thou not it that hath cut Rahab; and wounded the dragon?" Iſaiah li.—Thus ſaith the Lord God, I am againſt thee, Pharaoh, king of Egypt, the great dragon which lieth in the midſt of his rivers. I will put hooks in thy jaws; I will bring thee up out of the midſt of thy rivers." Ezekiel xxix.—In that day the Lord, with his ſore and great and ſtrong ſword, ſhall puniſh Leviathan, the piercing ſerpent, even Leviathan, that crooked ſerpent, and he ſhall ſlay the dragon that is in the ſea." Iſaiah xxvii.

The Greek legends are replete with ſerpents. To the ſtories already mentioned we might add that of Tireſias, of Orpheus, of Eſculapius, and others; likewiſe of Bacchus, who paſſed through the channels of the rivers Orontes and Hydaſpes, after he had dried them up by touching them with his rod; which, being caſt on the ground, began to creep as a ſerpent, and wind itſelf round an oak. In later times Olympias, the mother of Alexander, was ſaid to have been impregnated by Jupiter Ammon in the ſhape of a ſerpent:

——— round her ſlender waiſt he curl'd,
And ſtamp'd an image of himſelf, a ſovereign of the world.

From the old legends of Cadmus, Hercules, &c. I am inclined to think aroſe the hyperbolical ſtory of the ſerpent which impeded Regulus, and was ſlain by a formal attack of the army. Our St. George and

and the Dragon was of Egyptian or eastern origin; and the Druidical anguinum, or serpent's egg, the great serpent of the north, as well as that by the death of which Ragnar Lodbrach began his act of chivalry, I have little doubt, had the same source. Even to this day an annual procession takes place in Egypt, in which the Psylli perform the same part which probably they did of old. After the different bodies of artizans, the standard of Mahomet, and the priests, I observed, says M. Savery, a band of madmen with their arms bare, and a wild look, holding in their hands enormous serpents, which were twisted round their bodies, and endeavouring to make their escape. These Psylli, griping them forcibly by the neck, avoided their bite, and, notwithstanding their hissing, tore them with their teeth, and ate them up alive, the blood streaming down from their polluted mouths. Others were striving to tear from them their prey; it was a struggle who should devour a serpent. The populace followed them with amazement, and believed it to be a miracle.—They pass for persons inspired, and possessed by a spirit who destroys the effect of the bite of the serpent.

We are assured likewise by Mr. Bruce, that a set of men still exist in Egypt, who will suffer themselves to be bitten without injury by the most venomous serpents in that country; the wound inflicted by whom would be to others certain and speedy death. He mentions too, the veneration in which snakes are held at this time by the natives at the head of the Nile, where they consult them as oracles on every emergency; and by their manner of eating determine whether good or evil events are likely to succeed.

With respect to the Psylli, if they are so wondered at by the people accustomed to them, what might not have been their influence in a strange country, under the direction of their priests, and among an ignorant race of men like the primitive Greeks! We know when St. Paul shook off the viper from his hand in the island Melita, and felt no harm, the barbarians exclaimed that he was a god. Not only this peculiar species of religious worship, but every other, with its mythology and sacred language, seem to have been imported, at an early æra, into Greece, by the Egyptians. They probably received their religion and knowledge from Chaldæa or Ethiopia. As I have derived Nimrod (perhaps fancifully) from the worship of the serpent, so, according to Mr. Bryant's Radicals, Ethiopia may be deduced from Aithopis, Ignis Serpentis; and Cheops, the name of the reputed founder of the first pyramid, might originally have been applied to the building itself, Chap-os, Domus vel Templum Serpentis. But nothing is more deceptive than etymology, and without collateral evidence it is little to be trusted.

While, however, the whole tenor of Grecian history and tradition shews the power, knowledge, conquests, and colonization, of the ancient Egyptians, so is this in some measure supported by another most authentic narration, I mean that of Moses.—Greece, indeed, owed all its arts, as well as religious rites, to Egypt, and was not ashamed to confess it. It has lately been fashionable to detract from the merits of the latter country, which in some future essay we may attempt to establish; and point out the probable time when its great power existed, and its colonies disseminated, together with religion, agriculture, manufactures, policy, and refinement.

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RELATION BETWEEN VEGETABLES AND ANIMALS.

THERE is no occasion to resort to foreign plants, for ascertaining the existence of vegetable relations to animal. The bramble, which affords, in every field through which we pass, a shelter to so many birds, has its prickles formed into hooks; so that it not only prevents the cattle from disturbing the bird's retirement, but frequently lays them under contribution for a flake of wool or hair, proper for finishing off their nests, as a reprisal for hostility committed, and an indemnification for damages sustained. Pliny alleges, that this gave rise to the pretended animosity between the linnet and the ass. This quadruped, whose palate is proof against thorns, frequently browzes on the shrub in which the linnet builds her nest. She is so terrified at his voice, that on hearing it, says he, she kicks down her eggs; and her callow brood die with terror of it. But she makes war upon him, in her turn, by fixing her attack on the scratches made in his hide by the prickles, and picking the flesh, in those tender parts, to the very bone. It must be a very amusing spectacle to view the combat between the little and melodious songster, and the dull, braying, but otherwise inoffensive, animal.

Did we know the animal relations of plants, we should possess sources of intelligence respecting the instincts of the brute creation with which we are totally unacquainted. We should know the origin of their friendships, and of their animosities, at least as to those which are formed in society; for, with regard to such as are innate, we do not believe that the cause of them was ever revealed to any man. These are of a different order, and belong to another world.—How should so many animals have entered into life, under the dominion of hatred, without having been offended; furnished with skill and industry, without having served an apprenticeship, and directed by an instinct more infallible then experience? How came the electrical power to be conferred on the torpedo, invisibility on the cameleon, and the light of the stars themselves on a fly? Who taught the aquatic bug to slide along the waters, and another species of the same denomination to swim upon the back; both the one and the other for catching their prey, which hovers along the surface?—The water-spider is still more ingenious. She incloses a bubble of air in a contexture of filaments, takes her station in the middle, and plunges to the bottom of the brook, where the air-bubble appears like a globule of quicksilver. There she expatiates under the shade of the nymphæa, exempted from the dread of every foe. If, in this species, two individuals, different in sex, happen to meet, and to suit each other, the two globules, being in a state of approximation, become united into one, and the two insects are in the same atmosphere. The Romans, who constructed on the shores of Baiæ saloons underneath the waves of the sea, in order to enjoy the coolness, and the murmuring noise of the waters, during the heats of summers, were less dexterous, and less voluptuous. If a man united in himself those marvellous faculties which are the portion of insects, he would pass for a god with his fellow-creatures.

It is of importance for us to be acquainted with, at least, such insects as destroy those which are offensive to man. We might turn their mutual hostility to good account, by converting it into the means of our own repose. The spider catches the flies in nets; the formicaleo

formicaleo surprises the ants in a tunnel of sand; the four-winged ichneumon seizes the butterflies on the wing. There is another ichneumon, so small and so cunning, that it lays an egg in the anus of the vine-fretter. Man has it in his power to multiply at pleasure the families of insects which are useful to him; and may find means of diminishing such as make depredations on his agricultural possessions. The small birds of our groves tender him, to the same effect, services of still greater extent, and accompanied with other circumstances inexpressibly agreeable. They are all directed by instinct to live in his vicinity, and about the pastures and habitations of his flocks and herds. A single species of them might frequently be sufficient to protect the cattle from the insects which infest them through the summer.

There is in the north a gad-fly, called *kourbma* by the Laplanders, and by the learned *æstrus rangiferinus*, which torments the domestic rein-deer to such a degree, as to force them in agony to the mountains, and sometimes actually plague them to death, by depositing their eggs in the skin of the animal. Many dissertations have, as the custom is, been composed on this subject, but no remedy for the evil has been proposed. I am convinced there must be birds in Lapland which would deliver the rein-deer from this formidable insect, did not the Laplanders terrify them away by the noise of their fowling-pieces. These arms of civilized nations have overspread with barbarism all our plains. The birds destined to embellish the habitation of man withdraw from it, or approach with timidity and mistrust. The sound of musquetry ought to be prohibited, at least around the haunts of the harmless cattle. When the birds are not scared away by the fowler, they follow their instincts.

We have frequently seen in the Isle of France a species of starling, called martin, imported thither from India, perch familiarly on the back and horns of the oxen, to pick them clean. To this bird that island stands indebted, at the present day, for the destruction of the locusts, which, in former times, committed such ravages upon it. In those of our European rural scenes which still exhibit, on the part of man, some degree of hospitality toward the innocent warblers, he has the pleasure of seeing the stork build her nest on the ridge of his house; the swallow flutter about in his apartments; and the wag-tail, along the bank of the river, frisk around his sheep to protect them from the gnats.

The foundation of all this variety of pleasant and useful knowledge is laid in the study of plants. Each of them is the focus of the life of animals, the species of which there collect in a point, as the rays of a circle at their centre.

DR. BLACK'S THEORY OF HEAT, FIRE, AND FLUIDITY.

THE nature of heat, fire, and fluidity, seems to have been involved in obscurity and contradiction, till the genius and industry of Dr. Black, of Edinburgh, developed a system, which explains satisfactorily a variety of the most curious and difficult phenomena in nature. By a number of nice observations, he was enabled to determine that absolute heat or fire was absorbed by all bodies whatever, and that it was absorbed in greater quantities by fluid than by solid substances; heat therefore he considered as the cause of fluidity

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He found farther, that bodies in passing from a solid to a fluid state absorb a quantity of heat without increasing their temperature or sensible heat, as manifested by the thermometer. Thus, if water with a quantity of solid ice is set over the fire, the temperature of the water will not be increased, but will continue at the heat of thirty-two degrees, the freezing point, till every particle of the ice is dissolved. The reason is, that, fire being absolutely necessary to impart fluidity to any body, in proportion as the ice becomes fluid the superfluous fire is absorbed. In the same manner, when the fluid is converted into vapour, a quantity of absolute heat or fire is absorbed without any increase of temperature above the boiling or vaporific point. This discovery Dr. Black was led to by heating water in a close furnace a considerable degree above the boiling point; when on opening the vessel in which the water was confined, he found that a small quantity of the fluid burst out suddenly in the form of vapour, and the temperature both of the vapour and of the remaining water immediately sunk to the boiling point. It was evident therefore that the superfluous heat was absorbed by the vapour, and, as the quantity of water which was lost by the process was not great, it followed that a considerable quantity of the matter of heat or fire is necessary to keep water in a state of vapour. When any quantity of heat is expelled from a body, in such a manner as to affect our touch, it is termed, according to Dr. Black's theory, sensible heat; and when it is absorbed by any body, and exists in combination with that body, either in a fluid or vaporific state, it is termed latent heat. It is also evident from what has been stated, that the opinion of these later philosopers is, that heat or fire, which has also been called igneous fluid, matter of heat, and lately by the French chemists caloric, is a distinct substance or fluid, which has an attraction for all other substances; that it pervades most bodies; that it is the only permanent fluid in nature, and the cause of fluidity in all other bodies. That not only common fluids, such as water, but all elastic fluids, such as vapour and air, owe their existence in that state to the presence of heat; and that it is subject to all the laws of attraction, and is more forcibly attracted by some bodies than by others.

The school of Dr. Black seems to have considered light and heat as essentially different; and Dr. Scheele, a Swedish philosopher, has endeavoured to prove, that light is formed by an union of the matter of heat with phlogiston or the inflammable principle: but this theory is now exploded. Upon the theory of Dr. Black, the late ingenious Dr. Crawford has founded a very curious system concerning the generation of heat within animal bodies, which he considers as derived from the air we breathe. The air being condensed on lungs, the heat which it contained in a latent state is absorbed and dispersed over the animal body.

IMITATION OF THE TYRRHENA REGUM PROGENIES, &c. OF HORACE.

WHY, O my friend, now that all nature is decked in her loveliest charms—why sit ye solitary at home, while the three fabulous sisters are yet spinning our lives in vigorous threads?—Escape from toil, cease at once to investigate of what springs and wheels our bodies

bodies are composed, or what powerful force reconducts the deranged machine into its former course; for a while leave Father Hippocrates and his discordant sons.

Benign joy now visibly walks along the aromatic groves; every child of nature discards his little cares, and earth and water and sky invite the purest pleasure. Thou sittest perhaps sighing behind thy curtain in profound meditation on our future destiny; or, like a fool, art hunting after the fame of a philosopher or poet. Remember, only that is our's which we enjoy; the rest is irrevocably snatched away by the swift-footed messenger of time.

My friend! God wisely covers with a tenfold night the deep recesses of futurity; and laughs when we tremble more than we need. What is present strive to take with thee; the rest is like our stream, here it gives moisture to the blades of grass, here the cattle feed, and it fills inspired men with song, now it overwhelms the time-worn rocks, roots up trees, and bears flocks and houses and fields along its swelling torrent.

Blessed is the man that is master of himself; and joyfully he lives, who every night can say, This day I have lived; to-morrow, shine again, thou sun! or let the tempest hide thy glories from the earth—the iron pen of time has written up to-day for me, indelible even to eternity.

Fortune, the capricious goddess of fools, is now favourable to me, and now to others,—I can praise her while she stays. But, if the buzzard flies away on rapid wings—then welcome holy poverty! welcome thou prolific parent of arts and virtues—wrapped, O Innocence, in thy velvet mantle, I calmly wait the unfolding sky, and the crashing earth. Shall I, because Caius robs me of my estate by law, or my relations craftily lurk behind me, and even justice opens her wide jaws, shall I break out into curses like a woman, call down vengeance from heaven, or seek to bribe it by my vows?—Oh! then I soar aloft on easy pinions, cut through the yielding air, see deep below me the point of earth, descry infinite worlds, have hopes even from the grave, and exclaim, with the poet, Whatever is, is right.

OF THE FRAUDS PRACTISED IN LONDON.

THE vast increase and extensive circulation of counterfeit money, particularly of late years, is too obvious not to have attracted the notice of all ranks. It has become an enormous evil in the melancholy catalogue of crimes which the laws of the country are called upon to assist the police in suppressing. Its extent almost exceeds credibility; and the dexterity and ingenuity of these counterfeiters have (after considerable practice) enabled them to finish the different kinds of base money in so masterly a manner, that it has become extremely difficult for the common observer to distinguish their spurious manufacture from the worn-out silver of the mint—So systematic, indeed, has this nefarious traffic become of late, that the great dealers, who, in most instances, are the employers of the coiners, execute orders for the town and country with the same regularity as manufacturers in fair branches of trade.

Scarcely a waggon or coach departs from the metropolis, which does not carry boxes and parcels of base coin to the camps, sea-

ports, and manufacturing towns; insomuch, that the country is deluged with counterfeit money.

In London, regular markets, in various public and private houses, are held by the principal dealers; where hawkers, pedlars, fraudulent horse-dealers, unlicensed lottery-office keepers, gamblers at fairs, itinerant Jews, Irish labourers, servants of toll gatherers, and hackney-coach owners, fraudulent publicans, market-women, rabbet-sellers, fish-cryers, barrow-women, and many who would not be suspected, are regularly supplied with counterfeit copper and silver, with the advantage of nearly one hundred per cent. in their favour; and thus it happens, that through these various channels immense quantities of base money get into circulation, while an evident diminution of the mint coinage is apparent to every common observer.

The mischief is not confined to the counterfeiting of coin, similar to that of the realm. The avarice and ingenuity of man is constantly finding out new sources of fraud; insomuch, that in London and in Birmingham, and its neighbourhood, louis-d'ors, half Johannas, French half-crowns and shillings, as well as several coins of Flanders and Germany, are counterfeited, apparently without suspicion that, under the act of the 14th of Elizabeth, (cap. 3,) the offenders are guilty of misprision of high treason.

Nor does the evil end here:—not content with counterfeiting the foreign coins of Europe, the ingenious miscreants extend their manufacture to those of India: and a coinage of the star pagoda of Arcot has been established in London for some years. These counterfeits being made wholly of blanched copper, tempered in such a manner as to exhibit, when stamped, the cracks in the edges, which are always to be found on the real pagoda, cost the makers only three halfpence each, after being double gilt.—When finished, they are generally sold to Jews at five shillings a dozen; and though this medium introduced by a variety of channels into India, where they are probably mixed with real pagodas of the country, and pass at their full denominated value of eight shillings sterling. The sequins of Turkey, another gold coin, worth about five or six shillings, have, in like manner, been recently counterfeited in London:—thus the national character is wounded, and the disgrace of the British name proclaimed in Asia, and even in the most distant regions of India. Nor can it be sufficiently lamented, that persons who consider themselves as ranking in superior stations in life, with some pretensions to honour and integrity, have suffered their avarice so far to get the better of their honesty, as to be concerned in this iniquitous traffic.

It has been recently discovered that there are at least one hundred and twenty persons in the metropolis and the country, employed principally in coining and selling base money; and this, independent of the numerous horde of utterers, who chiefly support themselves by passing it at its full value.

It will scarcely be credited, that of criminals of this latter class, who have either been detected, prosecuted, or convicted, within the last seven years, there stand upon the register of the solicitor to the mint no less than six hundred and eight names! and yet the mischief increases rapidly. When the reader is informed that two persons can finish from 200l. to 300l. (nominal value,) in base silver in *six days*; and that three people, within the same period, will stamp the like amount

amount in copper; and takes into the calculation the number of known coiners; the aggregate amount in the course of a year will be found to be immense.

It is impossible to estimate the amount of this base money which entered into the circulation of the country during the last twenty years: but it must be immense, since one of the principal coiners in the flat way who has lately left off business, and made some important discoveries, acknowledged to a magistrate of the police, that he had coined to the extent of two hundred thousand pounds sterling in counterfeit half-crowns, and other base silver money, in a period of seven years. This is the less surprising, as two persons can stamp and finish to the amount of from 200l. to 300l. a week.

Trading in base money has now become as regular and systematic as any fair branch of trade. Certain it is that immense quantities are regularly sent from London to the camps during the summer season: and to persons at the sea-ports and manufacturing towns, who again sell in retail to the different tradesmen and others who pass them at their full import value. In this nefarious traffic a number of the lower order of the Jews in London assist the dealers, in an eminent degree, particularly in the circulation of bad halfpence.

It has not been an unusual thing for several of these dealers to hold a kind of market, every morning, where from forty to fifty Jew boys are regularly supplied with counterfeit halfpence; which they dispose of in the course of the day in different streets and lanes of the metropolis, for bad shillings, at about threepence each. Care is always taken that the person who cries bad shillings shall have a companion near him who carries the halfpence and takes charge of the purchased shillings (which are not cut), so as to elude the detection of the officers of the police, in the event of being searched.

The bad shillings thus purchased are received in payment, by the employers of the boys, for the bad halfpence supplied them, at the rate of four shillings a dozen; and are generally resold to smashers, at a profit of two shillings a dozen; who speedily re-colour them, and introduce them again into circulation, at their full nominal value. The boys will generally clear from five to seven shillings a day by this fraudulent business, which they almost uniformly spend, during the evening, in riot and debauchery; returning pennyless in morning to their old trade.

Thus it is that the frauds upon the public multiply beyond all possible conception, while the tradesman, who unwarily at least, if not improperly, sells his counterfeit shillings to Jew boys at threepence each, little suspects that it is for the purpose of being returned upon him again at the rate of twelvepence, or three hundred per cent. profit to the purchasers and utterers.

The principal depredators in the city of London appear to be, sharpers who obtain licenses to become pawn brokers, hawkers, and pedlars, or auctioneers; others, who raise money by pretending to be discounters of bills, and money-brokers; cheats, who set up gaming-houses; and unlicensed insurers of lottery tickets; Jews, who pretend to buy old clothes and metals; people, who sell provision and other articles by false weights and measures; swindlers, who conspire to defraud tradesmen of goods; cheats, who take genteel lodgings under false names; who personate tradesmen's servants, or gentlemen's footmen; who associate to make a prey of the

gnorant; who attend inns at the time that coaches and waggons are loading and unloading; who go from door to door soliciting contributions to charitable establishments; duffers, who pretend to sell smuggled goods; female sharpers; female bankers; and fortune-tellers.

In consequence of a very accurate enquiry which has been made, and of information derived from different sources, it appears that fraudulent lottery insurances have not diminished. The offices are numerous all over the metropolis, and are supposed to exceed four hundred of all descriptions; to many of which there are persons attached, called *morocco men*, who go about from house to house among their former customers, and attend in the back parlours of public houses, where they are met by customers who make insurances. It is calculated that at these offices (exclusive of what is done at the licensed offices) premiums for insurance are received to the amount of 800,000l. sterling during the Irish lottery, and above one million during the English; upon which it is calculated that they make from fifteen to twenty-five per cent. profit.—This infamous confederacy was estimated, during the English lottery of the year 1796, to support about 2090 agents and clerks, and nearly 7500 morocco men, including a considerable number of hired armed ruffians and bludgeonmen; these were paid by a general association of the principal proprietors of these fraudulent establishments; who regularly meet in committee, in a well-known public-house in Oxford market, twice or thrice a week, during the drawing of the lottery; for the purpose of concerting measures to defeat the exertions of the magistrates, by alarming and terrifying, and even forcibly resisting, the officers of justice in all instances where they could not be bribed by pecuniary gratuities;—to effect which last purpose, neither money nor pains were spared; and the wretched agents of these unprincipled miscreants were, in many cases, prepared to commit murder, had attempts been made to execute the warrants of magistrates: as can be proved by incontestable evidence.—It is to be feared that too much success attended these corrupt and fraudulent proceedings, in violation and defiance of the laws of the kingdom.

One of the sharpers for defrauding tradesmen commonly assumes the character of a merchant,—hires a genteel house, with a counting-house, and every appearance of business.—One or two associates take upon them the appearance of clerks, while others occasionally wear a livery: and sometimes a carriage is set up, in which the ladies of the party visit the shops, in the stile of persons of fashion, ordering goods to their apartments.—Thus circumstanced, goods are obtained on credit, which are immediately pawned or sold, and the produce used as a means of deception to obtain more, and procure recommendations, by offering to pay ready money,—or to discount bills.

When confidence is once established in this way, notes and bills are fabricated by these conspirators, as if remitted from the country, or from foreign parts: and application is made to their newly-acquired friends, the tradesmen, to assist in discounting them.—Sometimes money and bills upon one another are lodged at the banker's for the purpose of extending their credit, by referring to some respectable name for their character.

After

After circulating notes to a considerable amount, and completion their system of fraud by possessing as much of the property of others as is possible, without risk of detection, they move off; assume new characters; and, when the bills and notes are due, the parties are not to be found.

Female sharpers sometimes go to St. James's, and from their effrontery, actually get into the circle; where their wits and hands are employed in obtaining diamonds, and whatever other articles of value, capable of being concealed, are found to be most accessible. The wife of a well-known sharper, now upon the town, is said to have appeared at court, dressed in a stile of peculiar elegance: while the sharper himself is supposed to have gone in the dress of a clergyman.—According to the information of a noted receiver, they pilfered to the value of 1700l. on the king's birth-day (1795,) without discovery or suspicion. Houses are kept where female cheats dress and undress for public places.—Thirty or forty of these sharpers generally attend all masquerades, in different characters, where they seldom fail to get clear off with a considerable booty.

Female bankers accommodate barrow-women and others, who sell fish, fruit, vegetables, &c. in the streets, with five shillings a day; (the usual diurnal stock in trade in such cases;) for the use of which, for twelve hours, they obtain a premium of sixpence, when the money is returned in the evening; receiving thereby at this rate, about *seven pounds ten shillings a year for every five shillings they lend out!* A police-magistrate, on discovering this extraordinary species of fraud, attempted to explain to a barrow-woman on whom it was practised, that by saving up a single five shillings, and not laying any part of it out in gin, but keeping the whole, she would save 7l. 10s. a year, which seemed to astonish her, and to stagger her belief.—It is to be feared, however, that it had no effect upon her future conduct, since it is evident that this improvident and dissolute class of females have no other idea than that of making the day and the way alike long.—Their profits (which are often considerably augmented by dealing in base money, as well as fruit, vegetables, &c.) seldom last over the day, for they never fail to have a luxurious dinner and a hot supper, with abundance of gin and porter—looking in general no farther than to keep whole the original stock, with the sixpence interest, which is paid over to the female banker in the evening: and a new loan obtained on the following morning of the same five shillings again to go to market.

In contemplating this curious system of banking, (trifling as it seems to be,) it is impossible not to be forcibly struck with the immense profits that arise from it. It is only necessary for one of these female sharpers to possess a capital of seventy shillings, or three pounds ten shillings, with fourteen steady and regular customers, in order to realize an annual income of *one hundred guineas* a year!

The following particulars are related in a late publication concerning the receivers of stolen goods.

1. That there exists in the metropolis, (and also in all the towns where his majesty's dock yards are established,) a class of dealers, of late years become extremely numerous, who keep open shops for the purchase of rags, old iron, and other metals.

2. That these dealers are universally, almost without a single exception, the receivers of stolen goods of every denomination; from a

nail, a skewer, a key, or a glass bottle, up to the most valuable article of portable household goods, merchandise, plate, or jewels, &c. &c.

3. That they are divided into two classes:—wholesale and retail dealers.—That the retail dealers are generally (with some exceptions,) the immediate purchasers in the first instance, from the pilferers or their agents; and as soon as they collect a sufficient quantity of iron, copper, brass, lead, tin, pewter, or other metals, worthy the notice of a large dealer, they dispose of the same for ready-money, by which they are enabled to continue the trade.

4. That the increase of these old iron, rag, and store, shops, has been astonishing within the last twenty years: from about three or four hundred, they have multiplied within this short period to upwards of three thousand, in the metropolis alone!

5. That, although these shops (which are now to be seen in every bye-street and lane of the capital) exhibit only a beggarly appearance of old iron to public view, it frequently happens that they have large premises behind, where many rich articles of merchandize, but more particularly second-hand metals, composed of various household and ship's articles, most of which have been pilfered in a little way, are to be found; and which have been purchased by these dealers, often by false weights, and always under circumstances where they make an immense profit.

6. That the opportunities which these old iron shops afford to menial servants in private families, to apprentices, journeymen, labourers in founderies, warehouses, and workshops of manufacturers, artisans, and tradesmen of every description, by receiving and paying down money for every article that is brought them without asking a single question, have been the means of debauching the morals of a vast body of the lower orders of the people, young and old; and of carrying the system of pilfering in a small way, to an extent which almost exceeds credibility.

The floating property, laden and unladen in the port of London in the course of a year, is estimated at upwards of seventy millions. The annual plunder committed upon this property, including merchandize, ship's stores, tackling, and provision, is said to amount to 500,000l. One principal cause of this evil is the prevailing practice of discharging and delivering the cargoes of ships by a class of aquatic labourers, known by the name of *lumpers* and *scuffle-hunters*.

The cargoes of the West India ships are the principal objects of attention with the lumpers and their associates, who are supposed to plunder from each ship not less than ten hundred weight of sugar a day, during the period of the discharge; and it is estimated, by an intelligent writer, that upon West India produce imported, (*communibus annis*,) the merchants, ship-owners, and planters, at present lose 150,000l. and the revenue 50,000l. by pillage and plunder alone. The present average importation of sugar only, amounts to no less than one hundred thousand hogsheads a year.

These aquatic labourers are for the most part in connection with the journeymen coopers and watermen, who are also supposed to share in the plunder. They generally go on-shore three times a-day, and, being in a body together, it is difficult, and sometimes not very safe, for a trinity or police officer to attempt to search or to secure even one of them.—By the contrivance of a thin sack suspended by strings

strings from the shoulders, and placed under the waistcoat, a surprising quantity of sugar is carried away; exhibiting to the superficial observer only the appearance of the natural protuberance of the belly.—Others, who are not provided with such sacks, fill their hats, pockets, and trowsers, with large quantities of raw sugars; a fact which has been often ascertained by officers of justice who have apprehended them (so loaded) under the authority of the Bumboat act.

The fraudulent part of these lumpers, having from long practice established a prompt and systematic plan of sale, proceed immediately with their plunder to those who they know will purchase without asking questions;—namely, petty grocers, publicans, and dealers in old iron, and what is called *hund stuffs and old stores*; the latter class being inhabitants of the streets bordering on the river, where they are extremely numerous and increasing every day; and are on the same footing with iron shops.

Besides the depredations which these river plunderers make upon the property of their employers, in the manner already described, they practise another device, by connecting themselves with men and boys, known by the name of *mud-larks*, who prowl about, and watch under the discharging ships when the tide will permit, and to whom they throw small parcels of sugar, coffee, and other articles of plunder, which are conveyed to the receivers by these mud-larks, who generally have a certain share of the booty.

Besides these associates in villainy, scullers and other boats are, in like manner, constantly hovering about and under the discharging ships, upon pretence of carrying passengers and baggage; into which handkerchiefs of sugar and coffee, bladders of rum, kegs of tamarinds, and even bags of cotton, sacks of wheat or flour, and in short every portable article that can be safely plundered, are passed through the scuttles and port-holes of the ships; and immediately concealed by the pretended watermen, who, if pursued by the trinity or other officers, generally sink the goods to avoid the penalties of the law; but for the most part these adepts find means to elude the vigilance of the officers, and to convey the plunder, under the regular system they have established, to their friends, the receivers; who being under no legal restraint, immediately cover and protect their agents from all hazard of punishment.

But there are other modes by which the property of the merchants is said to be embezzled and plundered, even to a greater extent than by the lumpers, the mud-larks, or the pretended waterman. The depredations alluded to are made by what are denominated gentlemen-plunderers, or persons who keep *lumber-yards*, small *hemp* and *store shops*; *spirit dealers*, and *small grocers*; these insinuate themselves into the good graces of persons who are known to have some trust on-board of ships which are under discharge, and keep boats and servants for the purpose of plundering, on a more enlarged scale, by which many of them make fortunes in a few years: these, being more latent, are not so generally known, although from the extent of their dealings they are far more pernicious than the inferior class of thieves. The operations of these gentry are generally carried on during the night, or at those intervals when the discharge of a ship is suspended for want of craft; rum and other liquors are drawn off with cranes made on purpose, and conveyed into bladders containing

from

from two to ſix gallons each. Theſe bladders are immediately put into the boats which are in attendance, together with quantities of ſugar, coffee, and other portable articles, according to the nature of the cargo; all which are conveyed to an appointed place, where perſons are ſtationed on-ſhore to give notice by a particular ſignal or watch-word when the cargo may be ſafely landed.

The pillage of the naval, victualling, and ordnance, ſtores, in the dock-yards, and other public repoſitories, may be eſtimated at 300,000l. a year.

The vicinity of the metropolis;—the aſſiſtance afforded by old iron and ſtore ſhops on the ſpot;—by carts employed in this trade alone, conſtantly going and coming from and to the capital;—by the advantage of an eaſy and ſafe conveyance of ponderous and heavy articles, in lighters and other craft paſſing up and down the river; and the extenſive chain of criminal connection, which a courſe of many years has formed, joined to the eaſe with which frauds are committed, have combined to render this nefarious traffic a very ſerious evil. Among the multitude of perſons concerned in it, ſome are ſaid to keep men conſtantly employed in untwiſting the cordage, for the purpoſe of removing the king's mark, or coloured ſtran, which is introduced into it as a check againſt fraud; and others (as has been already noticed) are, in like manner, employed in knocking the broad arrow out of copper bolts, nails, bar-iron, and other articles, on which it is impreſſed, ſo as to elude detection.

It would ſcarcely be credited, to what an enormous extent the ſale of cordage, ſail-cloth, and other naval articles thus plundered, is carried, in ſupplying coaſting veſſels and ſmaller craft upon the river Thames, at a cheap rate.

The criminal and unfortunate individuals, who compoſe the diſmal catalogue of highwaymen, foot-pads, burglars, pick-pockets, and common thieves, may be thus claſſed.

Young men of ſome education, who, having acquired idle habits by abandoning buſineſs, or by being bred to no profeſſion, and having been ſeduced by this idleneſs to indulge in gambling and ſcenes of debauchery and diſſipation, at length, impoveriſhed and unable to purchaſe their accuſtomed gratifications, have recourſe to the highway to ſupply immediate wants. Tradeſmen and others, who, having ruined their fortunes and buſineſs by gaming and diſſipation, ſometimes as a deſperate remedy—go upon the road. But theſe two claſſes are extremely few in number, and bear no proportion to the lower and more depraved part of the fraternity of thieves, who purſue the trade ſyſtematically; who conduct their depredations under ſuch circumſtances of caution, as to render detection extremely difficult; and whoſe knowledge of all the weak parts of the criminal law is generally ſo complete, as to enable them to elude juſtice, and obtain acquittals, when detected and put upon their trial.—Namely, 1. Servants, hoſtlers, ſtable and poſt-boys out of place, who, preferring what they conſider as idleneſs, have ſtudied the profeſſion of thieving.—2. Perſons, who being impriſoned for debts, aſſaults, or petty offences, have learned habits of idleneſs and profligacy in gaols.—3. Idle and diſorderly mechanics and labourers, who, having on this account loſt the confidence of their maſters or employers, reſort to thieving, as a means of ſupport; from all whom the notorious and hackneyed thieves generally ſelect the moſt truſty and daring to

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let as their associates.—4. Criminals tried and acquitted of offences charged against them, of which class there have been a vast number let loose upon society within the last ten years.—5. Convicts discharged from prisons and the hulks, after suffering the sentence of the law: too often instructed by one another in all the arts and devices which attach to the most extreme degree of human depravity, and in the perfect knowledge of the means of perpetrating crimes, and of eluding justice. From Newgate alone, were discharged, between the years 1786 and 1795, 6206 prisoners.

The depredations which are committed almost every evening in Cheapside, and the adjacent streets leading into it, afford strong proof of the necessity of an improved system with regard to watchmen and patroles. Allured to that particular part of the metropolis, from the extensive and valuable property in piece-goods and other portable articles which are constantly removing to and fro from the different shops and warehouses: a multitude of thieves and pick-pockets, exhibiting often in their dress and exterior the appearance of gentlemen and men of business, assemble every evening in gangs, watching at the corners of every street, ready to hustle and rob, or to trip up the heels of the warehouse porters and the servants of shop-keepers carrying goods; or at the doors of warehouses, at dusk and at the time they are locked, to be ready to seize loose parcels when unperceived; by all which means, aided by a number of other tricks and fraudulent pretences, they are but too successful in obtaining considerable booty. In short, there is no device or artifice to which these vigilant plunderers do not resort: of which an example appeared in a recent instance, where almost in the twinkling of an eye, while the servant of an eminent silk-dyer had crossed a narrow street, his horse and cart, containing raw silk to the value of twelve hundred pounds, were driven clear off. Many of these atrocious villains, are also constantly in waiting at the inns, disguised in different ways, personating travellers, coach-office clerks, porters, and coachmen, for the purpose of plundering every thing that is portable: which, with the assistance of two or three associates, if necessary, is carried to a coach called for the purpose, and immediately conveyed to the receiver.

The most adroit thieves in this line are generally convicts from the hulks, or returned transports, who, under pretence of having some ostensible business, (while they carry on the trade of thieving,) generally open a chandler's shop, set up a green-stall, or get into a public-house:—some of these old offenders are known also to keep livery-stables for thieves, and horses for the use of highwaymen; thereby forming a connected chain by which these criminal people extend and facilitate their trade; nourishing, accommodating, and supporting, one another.

OF THE ESTHONIAN AND RUSSIAN BATHS.

IN A LETTER FROM A TRAVELLER.

DURING my stay in Esthonia and St. Petersburg, I had an opportunity of studying the nature of these baths. In many respects they are singular in their kind, and totally different from what persons unacquainted with them in England, France, Germany, and

other European ſtates, would form an idea of. The uſe of them is not reſerved to particular perſons, but it is univerſally a national cuſtom. The Eſthonian frequents the bath as a ſpecies of luxury, the Ruſſian as an indiſpenſible requiſite. On account of their various influence on life and health, they are highly important; and therefore the regulation of them is an affair of the police. The haſty traveller has often treated of them unjuſty and imperfectly. For theſe reaſons I will here briefly deſcribe the bathing-houſes according to their internal conſtruction, the utenſils belonging to them, and the manner in which they are made uſe of, and thence extract ſome probable conſequences in relation to the beauty of the other ſex.

By the expreſſion, "to bathe," in Eſthonia nothing elſe is meant than to go and ſweat in the national baths. Bathing in a river is what they would not underſtand; as they have no other term for this practice than "ſwimming." None but foreigners, unacquainted with their language, ever confound theſe words.

Swimming is there but very little in uſe, and that moſtly among foreign fiſhermen and ſailors. Whereas the bath is frequented, if poſſible, once a week by every Eſthonian, with his wife and children; commonly on Saturday. It is not ſo general among the noble families of the country, and rareſt of all among the German merchants and handicraftſmen in the cities of Revel, Veſenburg, Pernau, and Narva.

The bath is a room not lofty, furniſhed with a large oven, ſeveral rows of benches at different ſtages of elevation, and a large tub of water.

The oven is conſtructed of ſtone or brickwork, within which are croſs-bars of iron, whereon great flints, or, for want of theſe, large ſtones of any kind, are placed in ſuch manner that the flames may entwine between them. Inſtead of ſtones, which ſometimes emit an arſenical effluvia, they make uſe of ſolid iron-balls. The ovens of the common baths of the boors have no chimnies, ſo that the ſmoke remains in the room.

The benches, or ſhelves, are in the form of a ſcaffold, the uppermoſt ſtage of which is not more than a yard and a half from the top of the place, ſo that one cannot ſtand, but muſt lie down upon it. This ſcaffold reaches from one wall to the other, and is divided into a greater or ſmaller number of compartments by partition boards. The depth inwards, towards the hinder wall of each ſtage, is about three feet, or enough for a perſon to lie and turn upon at eaſe. In theſe compartments or ſtalls, freſh ſtraw, or a mat, is laid, and covered with a ſheet for the convenience of the bather.

The bathing-room, thus prepared, is ſtrongly heated. In winter, I know that it is begun to be heated eight or ten hours before it is wanted for uſe. The degree of cold in theſe parts of the world, and the thickneſs of the oven, make this neceſſary. One of our pottery ovens would not ſtand this degree of fire, but would burſt. When the oven is glowing hot, water is thrown on it, from time to time, that a vapour may be produced to fill the room.—Where the oven has no chimney, the water is thrown on the flints. This proceſs is repeated for hours together. By the humid vapour thus raiſed, ſo thick a cloud of dew enſues, that the people within cannot ſee one another. The hot moiſture extends to every part of the room; and, if one is not quite naked in going in, the clothes are in a few minutes

nutes wet through and through, as if they had been ſoaked in hot water. The boarded cieling, the walls, and generally the windows, are conſtantly dripping with water. And yet the attendants do not ceaſe from caſting wood into the oven, and pouring water on the ſtones.

The thick watery vapours drive out the fumes and the ſmoke; and till this is done one muſt not venture into the room; leſt, as the natives ſay, the agreeableneſs of the vapour-bath be infected with the poiſonous fumes.

When you are entirely undreſſed in an antichamber, you go into this hell—and, for thoroughly enjoying it, you muſt mount up to the higheſt region of the benches; where, like Satan on his throne, you find the quinteſſence of the ſweltering glow concentrated. Here you lie quietly as long as you pleaſe, five, ten, or more, minutes. All the pores of the body open, and water ſtreams from you on all ſides. Now comes the woman of the bath, or the man, with the bath-bruſh.

The bath-buſh is uſually a bundle of birch twigs, with the leaves on.—For this purpoſe, in the ſpring ſeaſon, whole roods of young verdant birch twigs are cut and tied together at one end for bath-whiſks or bruſhes. Before uſing it in the bath, it is commonly dipt in water to render it the more ſoft and pliant.

With this bunch of twigs the naked body is well flogged all over, ſo that the humidity runs in ſtreams from it, and the ſtrongly-agitated watery exhalation is collected about the bather. As certain intervals the ſkin is rubbed with a ſpunge, or with linen cloths, and all the parts and members of the body, particularly the moſt fleſhy, are preſſed and kneaded with the hands of the bath-wife. She then proceeds to pull the joints of the arms and fingers, legs and toes, till they ſnap, and ſcrapes and ſoles of the feet with ſcraping irons, or her finger nails. For continually keeping up a freſh vapour, the throwing of water on the hot flints is not neglected. Theſe and the like manipulations are ſo long continued, till the man lies, as it were, without ſpirit, or rather in the moſt voluptuous langour. In this condition, in a gentle relaxation of all his powers, he is now left for ſome time to reek; and then is brought down from the ſhelf, and put upright in the tub of water, where he is ſoftly waſhed with ſoap, and buckets of water are ſucceſſively poured on his head, which produces the fineſt ſenſations over all the body. That he may be thoroughly cleanſed, it is uſually to finiſh the proceſs by licking out the impurities of his eyes. This is an experiment for which ſome of the bath-wives are peculiarly famous. She makes her tongue quite pointed, then bores it under the eye-lid into the ſocket of the eye, and turns it round and round about the eye-ball.

If I had been witneſs only once to this mode of cleanſing the eyes, I ſhould have been tempted to doubt whether the tongue was actually turned about within the eye. Though I at various times made uſe of the bath according to the univerſal practice of the country, yet I never could bring myſelf to ſubmit to this experiment. But an unpleaſant accident obliged me once to undergo it; and therefore I am in every ſenſe an ocular witneſs of the fact. I was travelling one very hot ſummer's day in an open carriage, and I got, I know not by what miſchance, ſome particles of duſt in my eye. Every means, ſuch as wetting the corner of my handkerchief, taking ſnuff to promote ſneezing, &c. were tried in vain. The eye grew red, and became

came quite inflamed; I felt the most violent pain, and could no longer open it. In this condition, Baron Siedelmann, who was with me, sent to Jurgensburg for the bath-wife, whom he, and several other persons, affirmed to be expert in this sort of cures, by the easiest and speediest method. The woman happened not to be at home, but another female doctor was presently found, who, at all times, with red woollen threads, with powder of injection that had had certain words muttered over it, (according to the prevailing superstition of the country,) performed miraculous cures both on man and beast. To her I resigned the treatment of my eye. Without feeling any other pain than what was already occasioned by the dust or sand that had got in, and which raged continually, she instantly bored her tongue under the eye-lid into the cavity of the eye, and turned it several times round the ball. Notwithstanding the unusualness of the circumstance, the introduction and detension of a foreign and large piece of flesh into the eye, yet I found the strange guest by no means troublesome; for the woman had the art of expanding, and consequently of flattening, her tongue in such a manner as that the pressure could not be very great on any one part. The female practitioner assured me that she had extracted some grains of sand, yet that she felt several more behind. The same operation was now repeated for the second time, and I immediately felt a great alleviation of the smart. The redness went off, and my eye was well. Disgusting as this operation may appear, yet a great value is set upon it by many in the bath; to which I now return.

When the face and the whole body is in a perfect glow, and all is full of heat, they either pour cold water on themselves, or jump into the river adjoining; or, if it be winter, roll themselves about in the snow before the bathing-house door. However, in this particular the Esthonian is far excelled by the Russian. Among the latter, not only the common people do this, but also persons of quality, and those of far more delicate manners otherwise. Thus I have frequently seen Russian officers go from a dancing-room into the yard, to cool the boiling stomach, as they phrase it, by the application of snow within the bosom of their shirt. Of the sudden transition from a glowing heat into intense cold, a common soldier, in his language, expresses himself thus: "It strengthens the heart!"

Great as the resemblance is between all the bathing-rooms in essentials, yet there is a wide difference between those of the poor Esthonian peasants and such as are appropriated to the use of their feudal lords. Those of the vassals are extremely miserable and dirty. They, no more than their dwellings, have any regular windows. A small hole in the wall, of a foot square, generally supplies their place. Nor is this always provided with glass. It is for the most part stuffed with a wisp of straw, in some degree to prevent too great draft of the outward cold.—An eternal night most commonly reigns within. The bath-benches are not always parted off for each individual; but the bathers lie close together, and under one another, both sexes and all ages. Modesty and decency come into little or no consideration here: they are not violated; they are not thought of.

The bath-rooms of the rich and opulent are generally very neat and commodious. An antichamber or two are set apart for undressing and dressing, which usually contain beds for going into on leaving

the bath.—After such a fatigue, one has great need of repose. From this violent agitation of the blood, sleep comes uninvited, and with it new vigour, and a really new life. In regard to cleanliness and order, the bath-rooms constructed for the Russian soldiers cantoned in Esthonia, are, as it were, in the middle state between the two kinds before-mentioned. Prudent and humane proprietors of seignories always provide such for the soldiers that are quartered in their domains. Where bathing-houses are wanting for the military, the common men go into those of the boors, and the officers frequent those of the owner of the estate.

The considerate people do not willingly approve of the former, partly on account of the too familiar intimacy thence arising with their female vassals; partly because (as I know to have been the case in several manors between Revel and Narva, on the road to Petersburg) a few soldiers will spread the venereal disease in an incredible manner throughout whole villages.

In the cities of Revel, Vesenberg, Pernau, Veissenstein, &c. the bathing-houses generally have a completely wretched appearance. They are the property of private persons, but stand under the inspection of the police. They are all heated regularly every Saturday, some likewise on Fridays and Wednesdays. The customers pay a small matter for admission. In a large bathing-house at St. Petersburg, which I shall presently describe, the price of entrance was one copeek, for the bundle of twigs a denushka, for the place where the clothes are kept likewise a denushka, and for a pail of of water the same sum. As several of the English, French, and Germans, in short, the foreigners who live in St. Petersburg, wish at times to bathe according to the fashion of the place, and cannot bring themselves to resort to the public baths of the natives, bath-rooms for hire are constructed in the out-skirts of the town. Here you have the advantage of bathing decently and alone, by sending word to have it heated for your use against the time you please to appoint. The price for heating such an extra both at Katharinenhof, about a verst from Petersburg, was, in my time, from sixty copeeks to a ruble. Of late, however, it has got up to two rubles.

The concourse of people to the public baths is, on stated days, extremely great. But no where did it strike me more than in the great bathing-house on the Fontanka-canal. I know not whether it belongs to the crown which farms it out, or whether it is the property of some private persons who draw an annual revenue from it: I know that the scene is uncommonly striking to an English spectator. A friend of mine, tutor in a Russian family in the Morskoi, who accompanies a couple of his pupils hither every week, took me to this rare spectacle. The house has two entrances; we went in through that on the left hand. The other is appropriated to to the fair sex. Just behind the door sat a man, to whom my conductor gave a few copeeks for himself and for me. When we had passed through the fore-house, we came into a spacious quadrangular yard; which to the left and facing us was bounded by two long low buildings, and inclosed to the right by a wooden fence, or sabore, about five feet high. The whole yard was filled with human beings in the dress of paradise, only without the fig-leaves. One part employed in various ways, others reposing.—But, before I proceed

to

to mention their employments in the yard, I must give some description of the two buildings I just now spoke of.

The house on the left hand is fitted up within side like our stables of the better sort, where each horse stands separated from the next by a wooden partition. In each of these stalls stood a bench and a small table.—Here they laid their clothes who were going to bathe, in the keeping of a guard. To these buildings an overseer is appointed, to see that nothing is embezzled or exchanged.—For such a stand each person pays a denushka, or half a copeek, and is in perfect safety in regard to the property he brought with him. In case any thing should be missing of the articles belonging to him, it must be made good. This is perhaps the only assurance-office, where the assurance-money remains always the same, while the value of the articles assured is as various as possible, and often bears so small a proportion to it.

The long building facing us contained the bath-room. On the opening one of the doors to let me see the inward construction of it, there issued such fumes and exhalations as almost took away my breath. I could see nothing for the density of the vapour, and I could hear nothing but the confused murmurings of human voices, accompanied with the sound of the scourgings with the leafy bundles of birch. According to the description of my guide, for with all my my efforts I could not possibly stand within the door-way long enough for perceiving any thing distinctly, these bathing places are of the same construction, in respect to the scaffolding, &c. with those of the Esthonians taken notice of before.

The sabore, or wooden fence, on the right hand, divided us from the bathing quarters of the other sex, which are exactly like those of the men. As the height of the fence is not at most above five feet, and as here and there a board has fallen down, and the whole being of the roughest kind of carpentry, every where full of chinks and apertures, the scene lies pretty open, even to such as are not troubled with much curiosity. If the former display be so striking, it may easily be imagined that this is no less so, where old and young, handsome and horrid figures, form the most singular groups in the world. In both quarters, all the comers go and strip in the clothes-remise, and then run out of it in all haste, stark-naked, to get a good place on the scaffold in the bath.—When the bathing is over, they come out into the yard with fiery faces and reeking bodies, some jumping into the canal that runs by the inclosure, others sitting down provided with a bucket of warm water for the purposes of the last ablution.

While these are pouring water on themselves, others are wiping themselves with towels. Some recline upon the benches fixed about the yard, others on the bare ground lie basking in the sun. Some frolic about apparently in extatic transports, while others seem enjoying their new vegetation in a state of voluptuous langour. In short, employment and rest, exertion and drowziness, give such an appearance to the whole, that this infinite diversification of attitudes and positions of the human body must interest the delineator of nature as well as the philosophical physiognomist, from their novelty and their variety. A man must be an ocular witness of this extraordinary concourse of his fellow-creatures for forming any clear and perspicuous notion of it. Bashfulness and its concomitant confusion of

of face are here quite ſtrange and unknown. That which in our way of life would be equivocal, dangerous, or diſreputable, is here, from immemorial cuſtom, nothing like it. Where all are alike immodeſt, immodeſty is not immoral. So that is the aſcendant acquired by habit, when men have been familiar with it from their very infancy! An ample and not unfruitful field of ſpeculation for the naturaliſt and the pſychologiſt. I repeat it again:—However commonly dangerous to chaſtity, public baths may at firſt ſight appear, yet nothing can be leſs dangerous than theſe. They ſtifle to a certain degree that delicate ſentiment of modeſty met with in more poliſhed nations: but bodily ſenſuality has no place in the bath. If abſtinence were founded on the delicate ſentiment of modeſty, then indeed it would have but a frail ſupport: but here it reſts on cuſtom.—Never let any one ſhew the ſlighteſt diſpoſition to irregularity, if he would avoid expoſing himſelf to univerſal contempt and ſcorn, and incurring beſides a ſevere chaſtiſement; and actually all allurements ceaſe in the bath. However, it is not to be denied, that ſuch indulgences make it at times more eaſy to fall at other opportunities; yet the ſevere cenſor of morals ſhould never forget that frailties of this kind in Ruſſia require to be meaſured by the Ruſſian ſtandard; and that this ſtandard is ſomewhat ſhorter than that in uſe with a calviniſtical conſiſtory; in other words, the morality of Ruſſia is ſomewhat laxer on this head than in more poliſhed countries.

By the Eſthonians, the bathing-houſe is more frequented in winter than in ſummer. The cauſe is not ſo much that this ſpecies of luxury is then leſs deſirable, but becauſe their ſhort ſummer gives them no leiſure for it; as the poor ſlave is obliged to work the whole week through, day and night, frequently in a very laborious kind of employment. It ſhould likewiſe ſeem that the boor in the ſummer months could not ſo well endure it, on account of the ſtrong perſpirations he then undergoes, as the ſun, in the northern latitudes of Revel, Veſenburg, Narva, &c. remains, during the longeſt days, about eighteen hours and a half above the horizon.

Be the predilection and paſſion for theſe baths ever ſo ſtrong with the Eſthonians, it is far ſtronger with the Ruſſians. Of the regiments that lay in our neighbourhood, both officers and privates uſed the bath from one end of the year to the other, at leaſt once a week. The common people obſerve this practice more devoutly than the rites of their religion. A Ruſſian will rather diſpenſe with his bread than be deprived of the bath. Nay, examples are not wanting of perſons falling ſick when they have been prevented from bathing; and they have been well again on reſuming that practice.

I will now juſt add a few remarks by way of concluſion.

I. The Eſthonian nation lives in a moſt deplorable ſlavery, which is the cauſe of poverty and indigence, of foul and filthy indolence, of the want of ambition and perſonal activity; conſequently, ſince, if the landholder chuſes, the peaſant poſſeſſes no fixed property, and is abſolutely degraded to a beaſt of burden, it appears that the uſe of theſe baths muſt be actually attended by ſalutary effects.

But for theſe bathing-houſes the nation would outgo the Poliſh Jews in dirt and filthineſs, as they even now do what they can to come up with them.

II. As a laic in the art of medicine, I do not venture to determine how far theſe baths have a ſalutary or pernicious influence on the health.

health.—However, it is somewhat curious that the strongest and most robust nations of antiquity were in the practice of using vapour and sweat baths in common with the most longævous nation of our times. At the least the Lacedemonian pyriaterium answers in the main to the description of the Russian bathing-house.—In both an aqueous vapour is excited by means of red-hot flints; in both we find perspiration and friction.—Perhaps the same circumstance obtains with both nations, tending to raise those, that live to grow up, to an herculean durability and force.—Weak constitutions which cannot stand out these and similar horse-breakings, die betimes; whereas those which hold out, and are once inured to them, are less sickly afterwards. Hence I may venture to affirm, at least in general, that the Spartan as well as the Russian, hardened and steeled against wind and weather, would endure hunger and thirst, cold and heat, in private and in public life, better than others.

III. I have frequently been obliged to remark, that the Russian ladies do not so long retain possession of the youthful charms of face as the English, or even the German.—When a lady can reckon up twenty summers, the roses of her cheeks are already faded, though she be otherwise strong and healthy. This is so much the more striking, as the young shoot, from its firm texture, colour, and strength, seemed to promise a longer bloom. Together with brandy-drinking, early marriage, and immoderate enjoyment of love, the frequent use of the sweating-bath may be one of the principal causes of it. For this must necessarily very much widen the delicate channels of perspiration, deprive the cheeks of their elastic plumpness, and by frequently perspiring render them flaccid. Wrinkles are then the unavoidable consequences. To this must be added, that at every bathing the blood is forced by the heating into the extremities. By this glow the skin is parched in winter just as much as it is in summer by the heat of the sun. Hence proceeds a certain burnt redness, which has considerably more of the coppery than of the rosy hue.

IV. Might not bathing-houses or bathing-places be brought into our parts of Europe likewise; and are there no physical and political reasons for such introduction? Is not the want of them a defect in the arrangements of police in behalf of the health and cleanliness of the poor? Might not many a youth be saved alive, who now finds his death by river-bathing, to which his constitution is not hardened? What kind of bath (vapour and sweat bath, warm or cold water-bath, river-bath, &c.) would be preferable locally and personally for us? How should then that which is the most preferable be best constructed? The discussion of these and other questions that readily occur, I leave to those who are more able to do them justice; as in the answering of them I should be afraid of committing mistakes. However, they appear to me not unimportant, the result of them seems not impracticable, and withal easily reconcilable to the views both of the politician and the moralist.

ACCOUNT

ACCOUNT OF A VOLCANO IN THE CRIMEA.

ON the 27th of February, 1796, about eight o'clock in the morning, on a point of land which lies a few miles north of Tamen, a subterraneous noise, resembling thunder, was suddenly heard to proceed from under a small mountain, situated in the district of Putsche, in one of the islands of the Crimea. Soon afterwards, there was seen to arise from the summit of the mountain a thick column of smoke, which changed, after an interval of some minutes, into fire, in the shape of a sheaf, and retained this appearance for the space of half an hour. The mountain then began to throw out, to the distance of a furlong, an argillaceous matter, and a number of stones, in which a mixture of this matter was observable.

On the next day following, the whole surface of the ground lying round the mountain was found to be overspread with this new stratum, reaching to a considerable height. It was not until the third day, that the eruption entirely ceased. During this time, flames were seen to flash out at intervals, and a noise, not unlike that made by boiling water, was occasionally heard in the interior of the mountain. This phænomenon (examples similar to which, according to Boccone and Howel, occur sometimes in Sicily) is the more remarkable, as it serves to throw some light on the physical constitution of the soil of the countries wherein they are found. The circumstance may also be illustrated by the observation, that a number of circular apertures have been noticed, for a length of time past, on certain eminences in the island of Phanagoria, and from these issued, continually, a filthy fluid slime, which is, in many instances, blended with naphtha; an appearance which abundantly justifies the conjecture, that in the internal soil of the island, much combustible matter may be lodged. Former hypotheses made on the subject of volcanoes have certainly received some additional confirmation from the circumstance of this recent eruption.

DESCRIPTION OF THE AMERICAN ISLANDS.

THE American islands, extending eastwards from Kuktal, are, like north-eastern America, for the most part stony and naked mountains, yet among them is very good land, extremely fit for cultivation. Barley, millet, peafe, beans, gourds, parsnips, mustard, beets, potatoes, turnips, and rhubarb, succeed as well as could be desired. For hay, there are plenty of meadow-lands, which produce excellent grass; and in many places the cattle will do very well without hay the whole winter through. The vegetables and plants they mostly cultivate for food, are roots, namely, the sarana, bistort, the root of yellow fern, and kutagar, which last deserves particular observation on account of this circumstance, that, where there are no mice, as here on these islands, it has a very agreeable taste, whereas, where these animals are found, it is so bitter that no man can eat it. Of berries are found there the rasberry, the bilberry, and the blackberry. Morass-berries, or marotka, cranberries, &c. in abundance. Of larger trees, on one half of the island Kuktak, and farther eastward to America, are five sorts, namely: alder, buschwerk, birch, and a kind of ash; and farther to the east, on the islands and bays of

America, besides those already mentioned, are pine-forests and larch-trees. Of the feathered animals we find several kinds of geese and ducks, crows, jays, daws, black canary-birds, there called napoiki, and magpies. Here are also mews, cranes, herns, snipes, divers, sturmvogel, alken, and water-fowls; of sea-animals, the beaver, the shaggy porpoise, whales, and seals; of river-animals, beavers and others. Of land-animals, foxes, wolves, bears, ermines, rein-deer, sables, hares, gluttons, lynxes, tarbagans, and evrashks, wild sheep, and a superior species of porcupine. Of sea-fish they catch rays, scaits, and thornbacks, stock-fish, and herrings. Of river-fish, tshavutsha, keta, nerki, goletz, chaiko, karakalitza, and a peculiar kind of crabs.

The Konæges are well-built, robust, and healthy, people, and have usually a round visage of a swarthy complexion, with generally black, seldom auburn, hair, which both men and women cut round about the head. The wives of the principal personages distinguish themselves from others by combing the hair strait down all round, cutting it close to the eye-brows, and wearing a fillet; some also wear artificial beards, and some again, instead of a neck-kerchief, cover their breasts and shoulders with punctures in the skin. Men, women, and girls, bore a hole through the partition gristle of the nostrils; all likewise pierce their ears, and the lower lip. Some of the males also punctuate their neck, but not many, tho' all cut thro' the under lip, in such a manner that at first sight one is inclined to think they have a double mouth. In the hole bored in the partition of the nostrils they stick a longish bone; and whoever have pieces of ore or coral, hang them in their ears, lips, and nose; which is held to be a great distinction, as well as a beautiful ornament. They never cut the beard; wear no shirt, go bare-foot, and when at home are quite naked, except that before they wear a little apron of fur ornamented with flowers and grass. They are sometimes seen in pellices of beaver, fox or bear fur, of bird's feathers, the skins of evrashes, tarbagans, otters, sables, hares, rein-deer, gluttons, and lynxes. A sort of upper garment they make of the entrails of the porpoise, the seal, and the whale. On the head they wear hats made of pine-roots or grass matted, or instead of caps a piece of wood arched and hollowed out. In catching the marine animals they use arrows which they cast from a wooden board, and in war they employ the bow and the dart pointed with iron, copper, bones, or stone. They have iron hatchets of a peculiar construction: namely, small rude pieces of iron: also pipes, knives of iron and of bone; iron needles, which, till our arrival, were made by the women. Instead of thread they use the dried sinews of animals. Their vessels are of wood, and of the horn of the wild sheep, or of clay and hollowed stone; their large and small canoes, instead of being planked, have their ribs covered with leather. In these they go out to angle on the sea, with hooks of bone, fastened to the ends of a long string of dried sea-cabbage; the stalk of the sea-cabbage being frequently forty fathom in length, and upwards. In the rivers they take the fish by means of a pole with a kind of a net at the end of it, in the opening whereof is a point of bone, iron, or stone, fastened to the wood of the spear by sinews. The red-fish [salmo alpinus] that abound in the bays and bites of the sea, they strike dead in a moment as soon as ever they put their heads above water. Their manner of producing fire is by rubbing two

ſticks together; and inſtead of lamps they have earthen veſſels, wherein they lay a wick of twiſted hay, which is fed by the melted greaſe of ſea-dogs, bears, ſea-bears, whales, or the ſea-cat.

The ſeveral races of Konæges bury their dead with various ceremonies. Some are interred with the beſt of what they had, incloſed in a baidark for a coffin, which is ſtrewn over with earth; with others of the dead a living ſlave is buried. But the Kinaitzes burn their dead, with the ſkins of animals, which the relations are obliged to collect for that purpoſe. For teſtifying their ſorrow they cut off their hair, beſmearing their faces with black. In this manner they mourn their relations, father, mother, brother, ſiſters, and ſuch as were dear to them; and frequently even for an acquaintance with whom they lived in friendſhip; however, they mourn for no one who was their enemy, or only was not their friend, though ever ſo nearly related to them. Popular diſeaſes are not known among them, the venereal excepted; and to the ſmall-pox they are utter ſtrangers. In general they are of athletic habits, and live frequently to a hundred years.

When they expect guests, their cuſtom is to go to meet them, properly ſmeared over with red paint, and hung about with their beſt pieces of dreſs, dancing as they go, to the beat of drum; and bearing their weapons of war; but the guests make their appearance in the very ſame dreſs in which they go forth to battle. As ſoon as they approach the ſea-coaſt, the perſons who give the entertainment jump into the water, breaſt-high, and drag as many baidars and baidarks as they can to the ſhore; then each takes one of the guests on his back, and runs with him to the firſt place prepared for the entertainment and the games; there they ſquat down in due order. And now all are ſilent, till they have ſufficiently eaten and drunk. Their firſt hoſpitable mark of honour, is the giving of cold water all round; then little youths bear about the eatables, which conſiſt partly in a miſh-maſh of the fat of the above-mentioned ſea-animals, partly in the berries before deſcribed, ſometimes mixed, ſometimes unmixed. Then other diſhes are ſerved round, of dried fiſh, called by them yukol; of fleſh of beaſts and birds; of all ſorts always the beſt that can be procured. They know nothing of ſalt. Of all theſe the hoſt muſt firſt eat and drink, otherwiſe the guests would not take of them; from whence we may conclude that at times they may be poiſoned. The hoſt then paſſes the diſh to the guest that ſits next him; who, after taking what he pleaſes, hands it to his neighbour, and ſo on to the laſt. What then remains is brought back to the firſt, who lays it by, in order that afterwards when the time for parting comes, each of the guests may take a portion of it away with him. When they have done eating, they converſe for ſome time, and then begin to play on drums and other ſmall inſtruments; ſome at the ſame time put on a peculiar kind of wooden maſks, variouſly painted, and dance for the entertainment of the guests. The games being ended, they conduct their guests into a building erected expreſsly for ſuch occaſions, capable of containing a great number of perſons. This building in ſome ſort reſembles a ſmall church, but built in a very irregular, rude, and barbarous, ſtyle. Here commences a different kind of paſtime, which laſts as long as the guests continue their ſtay. When any one is weary, he goes to ſleep; and, having had his nap out, mixes again in the ſports, till the company prepares to depart. On

taking leave they receive presents, or make mutual exchanges of whatever they have about them. In these buildings they usually hold their consultations, enter into negociations, form compacts, and in short transact all business of a general nature: but to these meetings their wives are never admitted.

The Konaeges and Tshugatshes speak the same dialect; but the Kinaitzes have a language peculiar to themselves; the latter likewise follow a mode of life entirely different. They dwell in huts of earth, the walls whereof they case with boards; the window is in the cover; for panes of glass they make use of the bladder and other intestines of animals, the little and narrow pieces whereof they neatly sew together with threads made of nerves and sinews; the place for going out of them is upwards from below. They have no stoves, nor are they in want of firing, as these habitations are sufficiently warm without them. Their sweating baths are the same kind of caves in the earth, in which they cleanse themselves with grass and birch-twigs. The heat is produced by stones previously made glowing hot in the kitchen; which method, besides that the heat produced by it is extremely great, has yet this other advantage, that it causes no vapour at all. In general, like the Russians, they are exceedingly fond of hot-bathing. The kitchen belongs to numbers of huts in common, being provided with large apertures all round it, for that purpose. To conclude, their way of life is very thievish; he that can steal the oftenest, the most at a time, and the most dextrously, acquires the greatest reputation. Polygamy is not in use among them. It but rarely happens that a man has two wives; but it is a very common thing for a beautiful and buxom woman to have two or three husbands; who, in that case, are never jealous of one another, but live on the best terms and in perfect harmony. None of these tribes have any land-carriages; neither are there in those parts any animals that could be used for draught. To this assertion dogs may perhaps be an exception; but they are never employed in that manner.

The inhabitants of the coast of America and the circumjacent islands traverse the lakes and rivers in their canoes: of the customs of those that live farther within the country we can say very little. Of the Deity they have not even the slightest conception; and, though they relate that there are two rulers of the world, or sovereign spirits, the one good and the other evil, yet they make no likeness whatever of either; neither do they pay them any worship, and have no sort of idols. Nor have they any thing farther to say of those two beings, than that the good one taught them to make canoes, and that the malignant one is delighted in destroying and wrecking them. Hence we may draw conclusions of the narrow bounds by which their understanding is confined. And yet witchcraft and sorcery are matters of no small consequence among them. Justice and jurisprudence are not only not submitted to any regulations, but they know scarcely any thing about them; in general, they and the irrational animals do not differ greatly in their manner of life. They are of a very warm temperament, especially the women. They are by nature artful and enterprising; in committing and revenging injuries, mischievous and malicious, though they wear the semblance of gentleness and affection. Represent to them any thing in such a manner as that they shall perceive the utility of it; they will set to work at the execution and attainment of it with the utmost activity and diligence, and will assuredly

assuredly never spare themselves in any labour, however arduous, when once they are certified of profit. On the whole, they are a merry, harmless, people, as is evinced by their daily sports and pastimes: from their perpetual and unbounded carelessness all improvements in their domestic concerns are entirely neglected; nay, they have not even an idea of any such thing; and therefore frequently obliged to suffer hunger and nakedness.

CEREMONIES OF A PUBLIC BAPTISM.

NOT many years ago, at Whittlesford, seven miles from Cambridge, forty-eight persons were baptised in the ford of that river, from which the village takes its name.—At ten o'clock of a very fine morning in May, about fifteen hundred people of different ranks assembled together. At half past ten in the forenoon, the late Dr. Andrew Gifford, fellow of the Society of Antiquarians, sub-librarian of the British Museum, and teacher of a baptist congregation in Eagle-street, London, ascended a moveable pulpit, in a large open court-yard, near the river, and adjoining to the house of the lord of the manor.

Round him stood the congregation; people on horseback, in coaches, and in carts, forming the outside semicircles; many persons sitting in rooms of the house, the sashes being open. All were uncovered, and there was a profound silence. The doctor first gave out a hymn, which the congregation sang. Then he prayed for all mankind in general, for the king, queen, royal family, both houses of parliament, the judges, and all civil magistrates, for all ranks and degrees of men, for the prosperity of true religion, and for a blessing on the present service in particular. About half an hour after, the administrator, who that day was a nephew of the doctor, and admirably qualified for the work, in a long black gown of fine baze, without a hat, with a small New Testament in his hand, came down to the river side, accompanied by several baptist ministers and deacons of their churches, and the persons to be baptised.—The men came first, two and two, without hats, and dressed as usual, except that, instead of coats, each had on a long white baize gown, tied round the waist with a sash. Such as had no hair, wore white cotton or linen caps.

The women followed the men, two and two, all dressed neat, clean, and plain, and their gowns white linen or dimity. It was said, that the garments had knobs of lead at bottom to make them sink. Each had a long light silk cloak hanging loosely over her shoulders, a broad ribband tied over her gown beneath her breast, and a hat on her head.—They all ranged themselves round the administrator at the water-side. A great multitude of spectators stood on the banks of the river on both sides; some had climbed and sat on the trees, many sat on horseback and in cariages, and all behaved with a decent seriousness which did honour to the good sense and good manners of the assembly, as well as to the free constitution of this country.

First, the administrator read a hymn, which the people sang. Then he read that portion of scripture, that is read in the Greek church on the same occasion, the History of the Baptism of the Eunuch, beginning at the twenty-sixth verse of Acts ix. and ending with the thirty-ninth.—About ten minutes he stood expounding the verses;

and

and then, taking one of the men by the hand, he led him into the water, saying, as he went, See, here is water, what doth hinder? If thou believest with all thine heart, thou mayest be baptized.—When he came to a sufficient depth he stopped, and, with the utmost composure, placing himself on the left hand of the man, his face being towards the man's shoulders, he put his right hand betwen his shoulders behind, gathering into it a little of the gown for hold: the fingers of his left hand he thrust into the sash before, and the man putting his two thumbs into that hand, he locked all together by closing his hand. Then he deliberately said, I baptise thee in the name of the Father, and of the Son, and of the Holy Ghost; and, while he uttered these words, standing wide, he gently leaned him backward, and dipped him once.

As soon as he raised him, a person in a boat, fastened there for the purpose, took hold of the man's hand, wiped his face with a napkin, and led him a few steps to another attendant, who then gave him his arm, walked with him to the house, and assisted him to dress. There were many such in waiting, who, like the primitive susceptors, assisted during the whole service. The rest of the men followed the first, and were baptised in like manner. After them the women were baptised. A female friend took off at the water-side the hat and cloak. A deacon of the church led one to the administrator and another from him; and women at the water-side took each as she came out of the river, and conducted her to the apartment in the house, where they dressed themselves. When all were baptised, the administrator, coming up out of the river, and standing at the side, gave a short exhortation on the honour and the pleasure of obedience to the divine commands, and then, with the usual benediction, dismissed the assembly.

About half an hour after, the men newly baptised, having dressed themselves, went from their rooms into a large hall in the house, where they were presently joined by the women, who came from their apartments to the same place. Then they sent a messenger to the administrator, who was dressing in his apartment, to inform him they waited for him. He presently came, and first prayed for a few minutes, and then closed the whole by a short discourse on the blessings of civil and religious liberty, the sufficiency of Scripture, the pleasure of a good conscience, the importance of an holy life, and the prospect of a blessed immortality. This they called—a public baptism. There was a private baptism at Cambridge, in the same month of May. The baptist congregation there have a small garden walled in, adjoining to their meeting-house. In the middle of this is an oval baptistry, with steps at each end. The bath and the steps take up the whole length of the garden, and there is a parlour or vestry at each end; so that, on opening the door of one room, you may either walk round the baptistry, or step directly into it, and, passing through it, go up to the opposite steps in the opposite room. The baptistry is filled and emptied by a pump and proper pipes.

CRUELTIES EXERCISED ON SLAVES IN SURINAM.

THE first object which attracted my compassion during a visit to a neighbouring estate, was a beautiful Samboe girl of about eighteen, tied up by both arms to a tree, as naked as she came into the world, and lacerated in such a shocking manner by the whips of two negro

negro drivers, that she was from her neck to her ancles literally dyed over with blood.—It was after she had received two hundred lashes that I perceived her, with her head hanging downwards, a most affecting spectacle. When, turning to the overseer, I implored that she might be immediately unbound, since she had undergone the whole of so severe a punishment; but the short answer which I obtained was, That, to prevent all strangers from interfering with his government, he had made an unalterable rule, in that case, always to double the punishment, which he instantaneously began to put in execution: I endeavoured to stop him, but in vain, he declaring the delay should not alter his determination, but make him take vengeance with double interest. Thus I had no other remedy but to run to my boat, and leave the detestable monster, like a beast of prey, to enjoy his bloody feast, till he was glutted. From that day I determined to break off all communication with overseers, and could not refrain from bitter imprecations against the whole relentless fraternity. Upon investigating the cause of this matchless barbarity, I was credibly informed, that her only crime consisted in firmly refusing to submit to the loathsome embraces of her detestable executioner. Prompted by jealousy and revenge, he called this the punishment of disobedience, and she was thus flayed alive.

A Samboe is between a mulatto and a black, being of a deep copper coloured complexion, with dark hair, that curls in large ringlets. These slaves, both male and female, are generally handsome, and chiefly employed as menial servants in the planters' houses. At my return to the Hope, I was accosted by Mr. Ebber, the overseer of that estate, who, with a woeful countenance, informed me he had just been fined in the sum of twelve hundred florins, about one hundred guineas, for having exercised the like cruelty on a male slave; with this difference, that the victim had died during the execution. In answer to his complaint, so far from giving him consolation, I told him his distress gave me inexpressible satisfaction.

The particulars of this murder were as follow:—During the time that Captain Tulling commanded here, which was a little before I came to the Hope, it happened that a fugitive negro belonging to this estate had been taken upon an adjoining plantation, and sent home, guarded by two armed slaves, to Mr. Ebber; which fugitive, during the time Ebber was reading a letter that accompanied him, found means to spring aside, and again escaped into the forest. This incensed the overseer so much, that he instantly took revenge upon the two poor slaves that had brought him, tying them up in the carpenter's lodge. He continued flogging them so unmercifully, that Captain Tulling thought proper to interfere, and beg for mercy; but, as in my case, his interference produced the opposite effect: the clang of the whip, mixed with their dismal cries, were heard to continue for above an hour after, until one of them expired under the cruel lash, which put an end to the inhuman catastrophe. A lawsuit was instantly commenced against Ebber for assassination. He was convicted, but condemned to no other punishment than to pay the afore-mentioned hundred guineas, which price of blood is always divided between the fiscal and the proprietor of the deceased slave; it being a rule in Surinam, that, by paying a fine of five hundred florins, not quite fifty pounds, per head, any proprietor is at liberty to kill as many of his own negroes as he pleases; but, if he kills those

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of his neighbour, he is also to pay him for the loss of his slave, the crime being first substantiated, which is very difficult in this country, where no slave's evidence can be admitted. Such is the legislature of Dutch Guiana, in regard to negroes. The above-mentioned Ebber was peculiarly tyrannical; he tormented a boy of about fourteen, called Cadetty, for the space of a whole year, by flogging him every day for one month; tying him down flat on his back, with his feet in the stocks, for another; putting an iron triangle or pot-hook round his neck for a third, which prevented him from running away among the woods, or even from sleeping except in an upright or sitting posture; chaining him to the landing-place, night and day, to a dog's kennel, with orders to bark at every boat or canoe that passed for a fourth month; and so on, varying his punishment monthly, until the youth became insensible, walking crooked, and almost degenerated into a brute.—This wretch was, however, very proud of his handsome slaves, and, for fear of disfiguring their skins, he has sometimes let them off with twenty lashes, when, for their robberies and crimes, they had deserved the gallows.

Such is the state of public and private justice in Surinam. The wretch Ebber left the Hope upon this occasion; and his humane successor, a Mr. Blenderman, commenced his reign by flogging every slave belonging to the estate, male and female, for having over-slept their time in the morning about fifteen minutes. The reader will, no doubt, imagine, that such cruelties were unparalleled; but this is not the case; they are even exceeded, and by a female too.

A Mrs. S—lk—r going to her estate in a tent barge, a negro woman, with her sucking infant, happened to be passengers, and were seated on the bow or fore-part of the boat. The child crying, for pain perhaps, or some other reason, could not be hushed; Mrs. S—lk—r, offended with the cries of this innocent little creature, ordered the mother to bring it aft, and deliver it into their hands; then, in the presence of the distracted parent, she immediately thrust it out at one of the tilt-windows, where she held it under water till it was drowned, and then let it go. The fond mother, in a state of desperation, instantly leapt over-board into the stream, where floated her beloved offspring, in conjunction with which she was determined to finish her miserable existence. In this, however, she was prevented by the exertions of the negroes who rowed the boat, and was punished by her mistress with three or four hundred lashes for her daring temerity.—From Stedman's Expedition to Surinam.

SOLOMON AND SHEBA.

A PRIVATE scholar in general passes his life in obscurity; and posterity—a solitary consolation—spreads his name to the most distant regions. But, when a king is a student, the case is reversed. The Queen of Sheba, attracted by the splendour of King Solomon's reputation, or, more probably, urged by the insatiable curiosity of the female, visited this king at his own court, with the sole intention of "asking him questions." The rabbins cannot inform us, if her examination of the monarch was always made in the chamber of audience; there is reason to suspect that they frequently retired, for the solution of many a hard problem, to the philosophic solitude of a private cabinet. But we do not intend by any means to make this work

work (as Lord Lyttleton answered to a curious female concerning his history) "a vehicle for antiquated scandal." The incident we are now to relate passed as Solomon sat surrounded by his court. At the foot of the throne stood the inquisitive Sheba; in each hand, she held a wreath of flowers; the one composed of natural, the other of artifical, flowers. Art, in the labour of the mimic wreath, had exquisitely emulated the lively hues and the variegated beauties of nature; so that, at the distance it was held by the queen for the inspection of the king, it was deemed impossible for him to decide—as her question imported—which wreath was the natural, and which the artificial. The sagacious Solomon seemed posed; yet, to be vanquished, though in a trifle, by a trifling woman, irritated his pride. The son of David—he who had written treatises on the vegetable productions "from the cedar to the hyssop," to acknowledge himself outwitted by a woman, with shreds of papers and glazed paintings! The honour of the monarch's reputation for divine sagacity seemed diminished; and the whole Jewish court seemed solemn and melancholy. At length, an expedient presented itself to the king; and, it must be confessed, worthy of the natural philosopher. Observing a cluster of bees hovering about a window, he commanded that it should be opened: it was opened; the bees rushed into the court, and alighted immediately on one of the wreaths, while not a single one fixed on the other. The decision was not then difficult; the learned rabbins shook their beards in rapture, and the baffled Sheba had once more reason to be astonished at the wisdom of Solomon.

This would make a pretty poetical tale. It would yield an elegant description, and a pleasing moral; that the bee only rests on the natural beauties, and never fixes on the painted flowers, however inimitably the colours may be laid on. This, applied to the ladies, would give it pungency.

IDLENESS AND INDUSTRY.—A STORY.

IN the pleasant valley of Ashton there lived an elderly woman of the name of Preston; she had a small neat cottage, and there was not a single weed to be seen in her garden. It was upon her garden that she chiefly depended for support: it consisted of strawberry-beds, and one small border for flowers. The pinks and roses she tied up in nice nosegays, and sent either to Clifton or Bristol to be sold; as to her strawberries, she did not send them to market, because it was the custom for numbers of people to come from Clifton, in the summer time, to eat strawberries and cream at the gardens in Ashton.

Now the widow Preston was so obliging, active, and good-humoured, that every one who came to see her was pleased. She lived happily in this manner for several years; but, alas! one autumn she fell sick, and, during her illness every thing went wrong; her garden was neglected, her cow died, and all the money which she had saved was spent in paying for medicines. The winter passed away, while she was so weak that she could earn but little by her work; and, when the summer came, her rent was called for, and the rent was not ready in her little purse as usual. She begged a few months delay, and they were granted to her; but at the end of that time there was no resource but to sell her horse Lightfoot. Now Lightfoot, though perhaps he had seen his best days, was a very great favourite:

in his youth he had always carried the dame to market behind her husband; and it was now her little son Jem's turn to ride him. It was Jem's business to feed Lightfoot, and to take care of him; a charge which he never neglected, for, besides being very good-natured, he was a very industrious boy.

"It will go near to break my Jem's heart," said Dame Preston to herself, as she sat one evening beside the fire stirring the embers, and considering how she had best open the matter to her son, who stood opposite to her, eating a dry crust of bread very heartily for supper. "Jem," said the old woman, "what, art hungry?" "That I am, brave and hungry!" "Aye! no wonder, you've been brave hard at work—eh?" "Brave hard! I wish it was not so dark, mother, that you might just step out and see the great bed I've dug; I know you'd say it was not a bad day's work—and, oh mother! I've good news; Farmer Truck will give us the giant-strawberries, and I am to go for 'em to-morrow morning, and I'll be back afore breakfast." God bless the boy, how he talks! Four mile there, and four mile back again, afore breakfast." "Aye, upon Lightfoot you know, mother, very easily; maynt I?" "Aye child!" "Why do you sigh, mother?" "Finish thy supper, child." "I've done!" cried Jem, swallowing the last mouthful hastily, as if he thought he had been too long at supper—"and now for the great needle; I must see and mend Lightfoot's bridle afore I go to bed."—To work he set, by the light of the fire, and the dame, having once more stirred it, began again with "Jem, dear, does he go lame at all now?"—"What Lightfoot! Oh la, no, not he!—never was so well of his lameness in all his life—he's grown quite young again, I think, and then he's so fat he can hardly wag."—"God bless him—that's right, we must see, Jem, and keep him fat." "For what, mother?" "For Monday fortnight at the fair. He's to be—sold!" "Lightfoot!" cried Jem, and let the bridle fall from his hand; "and will mother sell Lightfoot? "Will; no: but I must, Jem." "Must; who says you must? why must you, mother?" "I must, I say, child—Why, must not I pay my debts honestly—and must not I pay my rent; and was not it called for long and long ago: and have not I had time; and did not I promise to pay it for certain Monday fortnight, and am not I two guineas short—and where am I to get two guineas? So what signifies talking, child," said the widow, leaning her head upon her arm, "Lightfoot must go."

Jem was silent for a few minutes.—"Two guineas; that's a great, great deal.—If I worked, and worked, and worked ever so hard, I could no ways earn two guineas afore Monday fortnight could I, mother?" "Lord help thee, no; not an' work thyself to death." "But I could earn something, though, I say," cried Jem proudly; "and I will earn something—if it be ever so little, it will be something—and I shall do my very best; so I will." "That I am sure of, my child," said his mother, drawing him towards her and kissing him; "you are always a good industrious lad, that I will say afore your face or behind your back;—but it wont do now—Lightfoot must go." Jem turned away, struggling to hide his tears, and went to bed without saying a word more. But he knew that crying would do no good, so he presently wiped his eyes, and lay awake, considering what he could possibly do to save the horse.—"If I get ever so little," he still said to himself, "it will be something; and who knows but land-

lord

lord might then wait a bit longer? and we might make it all up in time; for a penny a day might come to two guineas in time." But how to get the first penny was the question—Then he recollected, that one day, when he had been sent to Clifton to sell some flowers, he had seen an old woman with a board beside her covered with various sparkling stones, which people stopped to look at as they passed, and he remembered that some people bought the stones; one paid twopence, another threepence, and another sixpence, for them; and Jem heard her say that she got them amongst the neighbouring rocks: so he thought that if he tried he might find some too, and sell them as she had done.

Early in the morning, he awaked full of this scheme, jumped up, dressed himself, and, having given one look at poor Lightfoot in his stable, set off to Clifton in search of the old woman, to enquire where she found her sparkling stones.—But it was too early in the morning, the old woman was not at her seat; so he turned back again disappointed. He did not waste his time waiting for her, but saddled and bridled Lightfoot, and went to Farmer Truck's for the giant-strawberries. A great part of the morning was spent in putting them into the ground; and, as soon as that was finished, he set out again in quest of the old woman, who, to his great joy, he found sitting at her corner of the street with her board before her. But this old woman was deaf and cross; and, when at last Jem made her hear his questions, he could get no answer from her, but that she found the fossils where he would never find any more. "But can't I look where you looked?"—"Look away, nobody hinders you," replied the old woman; and these were the only words she would say.—Jem was not, however a boy to be easily discouraged; he went to the rocks, and walked slowly along, looking at all the stones as he passed. Presently he came to a place where a number of men were at work loosening some large rocks, and one amongst the workmen was stooping down looking for something very eagerly; Jem ran up, and asked if he could help him. "Yes," said the man, "you can; I've just dropped, amongst this heap of rubbish, a fine piece of crystal that I got to-day."—"What kind of a looking thing is it?" said Jem. "White, and like glass," said the man, and went on working, whilst Jem looked very carefully over the heap of rubbish for a great while. "Come," said the man, "it's gone for ever; don't trouble yourself any more, my boy."—"It's no trouble; I'll look a little longer; we'll not give it up so soon," said Jem; and, after he had looked a little longer, he found the piece of crystal. "Thank'e," said the man, "you are a fine little industrious fellow." Jem, encouraged by the tone of voice in which the man spoke this, ventured to ask the same questions which he had asked the old woman. "One good turn deserves another," said the man; "we are going to dinner just now, and shall leave off work—wait for me here, and I'll make it worth your while."

Jem waited; and, as he was very attentively observing how the workmen went on with their work, he heard somebody near him give a great yawn, and, turning round, he saw stretched upon the grass, beside the river, a boy about his own age, who he knew very well went in the village of Ashton by the name of Lazy Lawrence: a name which he most justly deserved, for he never did any thing from morning to night; he neither worked nor played, but sauntered or lounged about restless and yawning. His father was an alehouse-

keeper, and, being generally drunk, could take no care of his son, so that Lazy Lawrence grew every day worse and worse. However, some of the neighbours said that he was a good-natured poor fellow enough, and would never do any one harm but himself; whilst others, who were wiser, often shook their heads, and told him, that idleness was the root of all evil.

"What, Lawrence!" cried Jem to him, when he saw him lying upon the grass—"what, are you asleep?"—"Not quite." "Are you awake?" "Not quite." "What are you doing there?"—"Nothing."—"What are you thinking of?" "Nothing." "What makes you lie there?"—"I don't know—because I can't find any body to play with me to-day—Will you come and play?"—"No, I can't; I'm busy."—"Busy," cried Lawrence, stretching himself, "you are always busy—I would not be you for the world, to have so much to do always." "And I," said Jem laughing, "would not be you for the world, to have nothing to do." So they parted, for the workman just then called Jem to follow him. He took him home to his own house, and shewed him a parcel of fossils, which he had gathered, he said, on purpose to sell, but had never had time yet to sort them. He set about it however now, and, having picked out those which he judged to be the best, he put them in a small basket, and gave them to sell, upon condition that he should bring him half of what he got. Jem, pleased to be employed, was ready to agree to what the man proposed, provided his mother had no objection to it. When he went home to dinner, he told his mother his scheme, and she smiled and said he might do as he pleased, for she was not afraid of his being from home. "You are not an idle boy," said she, "so there is little danger of your getting into any mischief."

Accordingly, Jem, that evening, took his stand, with his little basket, upon the bank of the river, just where people land from a ferry-boat, and where the walk turns to the wells, where numbers of people perpetually pass to drink the waters. He chose his place well, and waited almost all the evening, offering his fossils with great assiduity to every passenger; but not one person bought any. "Holla!" cried some sailors, who had just rowed a boat to land, "bear a hand here, will you, my little fellow! and carry these parcels for us into yonder house." Jem ran down immediately for the parcels, and did what he was asked to do so quickly, and with so much good will, that the master of the boat took notice of him, and, when he was going away, stopped to ask him what he had got in his basket; and, when he saw that they were fossils, he immediately told Jem to follow him, for he was going to carry some shells he had brought from abroad to a lady in the neighbourhood who was making a grotto. "She will very likely buy your stones into the bargain: come along, my lad; we can but try."

The lady lived but a very little way off, so that they were soon at her house. She was alone in her parlour, and was sorting a bundle of feathers of different colours; they lay on a sheet of pasteboard upon a window-seat, and it happened that, as the sailor was bustling round the table to shew off his shells, he knocked down the sheet of pasteboard, and scattered all the feathers. The lady looked very sorry, which Jem observing, he took the opportunity, whilst she was busy looking over the sailor's bag of shells, to gather together all the feathers, and sort them according to their different colours, as he had

had seen them sorted when he came first into the room. "Where is the little boy you brought with you? I thought I saw him here just now."—"And here I am, ma'am," cried Jem, creeping from under the table with some few remaining feathers which he had picked from the carpet; "I thought," added he, pointing to the others, "I had better be doing something than standing idle, ma'am." She smiled, and, pleased with his activity and simplicity, began to ask him several questions; such as, who he was, where he lived, what employment he had, and how much a day he earned by gathering fossils.—"This is the first day I ever tried," said Jem; "I never sold any yet, and, if you don't buy 'em now, ma'am, I'm afraid nobody else will, for I have asked every body else."—"Come then," said the lady laughing, "if that is the case, I think I had better buy them all." So, emptying all the fossils out of his basket, she put half a crown into it. Jem's eyes sparkled with joy. "Oh! thank you, ma'am," said he, "I will be sure and bring you as many more to-morrow."—"Yes, but I don't promise you," said she, "to give you half a crown to-morrow."—"But, perhaps, though you don't promise it, you will." "No," said the lady, "do not deceive yourself; I assure you that I will not.—That, instead of encouraging you to be industrious, would teach you to be idle." Jem did not quite understand what she meant by this, but answered, "I'm sure I don't wish to be idle; what I want is to earn something every day, if I knew how: I'm sure I don't wish to be idle. If you knew all, you'd know I did not." "How do you mean, if I knew all?"—"Why I mean, if you knew about Lightfoot."—"Who's Lightfoot?"—"Why, mammy's horse," added Jem, looking out of the window; "I must make haste home and feed him, afore it get dark; he'll wonder what's gone with me."—"Let him wonder a few minutes longer," said the lady, "and tell me the rest of your story."—"I've no story, ma'am, to tell, but as how mammy says he must go to the fair Monday fortnight to be sold, if she can't get the two guineas for her rent; and I should be main sorry to part with him, for I love him, and he loves me; so I'll work for him, I will, all I can: to be sure," as mammy says, "I have no chance, such a little fellow as I am, of earning two guineas afore Monday fortnight."—"But are you in earnest willing to work," said the lady; "you know there is a great deal of difference between picking up a few stones, and working steadily every day, and all day long."—"But," said Jem, "I would work every day, and all day long."—"Then," said the lady, "I will give you work. Come here to-morrow morning, and my gardener will set you to weed the shrubberies, and I will pay you sixpence a day. Remember you must be at the gates by six o'clock." Jem bowed, thanked her, and went away. It was late in the evening, and he was impatient to get home to feed Lightfoot; yet he recollected that he had promised the man who had trusted him to sell the fossils that he would bring him half of what he got for them; so he thought that he had better go to him directly: and away he went, running along by the water-side about a quarter of a mile, till he came to the man's house. He was just come from work, and was surprised when Jem shewed him the half-crown, saying, "Look what I got for the stones: you are to have the half, you know."—"No," said the man, when he heard his story, "I shall not take half of that; it was given to you. I expected but a shilling at the most, and the half of that is but sixpence, and that I'll take.—Wife! give the lad two shillings,

and

and take this half crown." So the wife opened an old glove, and took out two ſhillings; and the man, as ſhe opened the glove, put in his fingers and took out a ſilver penny.—"There, he ſhall have that into the bargain for his honeſty—Honeſty is the beſt policy—There's a lucky penny for you, that I've kept ever ſince I can remember."—"Don't you ever go to part with it, do you hear!" cried the woman. "Let him do what he will with it, wife," ſaid the man. "But," argued the wife, "another penny would do juſt as well to buy gingerbread, and that's what it will go for." "No, that it ſhall not, I promiſe you," ſaid Jem; and ſo he ran away home, fed Lightfoot, ſtroaked him, went to bed, jumped at five o'clock in the morning, and went ſinging to work as gay as a lark.

Four days he worked "every day and all day long," and the lady every evening, when ſhe came out to walk in her gardens, looked at his work. At laſt ſhe ſaid to her gardener, "This little boy works very hard."—"Never had ſo good a little boy about the grounds," ſaid the gardener, "he's always at his work, let me come by when I will, and he has got twice as much done as another would do; yes, twice as much, ma'am: for look here—he began at this here roſe-buſh, and now he's got to where you ſtand, ma'am; and here is the day's work that t'other boy, and he's three years older too, did to-day—I ſay, meaſure Jem's fairly, and it's twice as much, I'm ſure."—"Well," ſaid the lady to her gardener, "ſhew me how much is a fair good day's work for a boy of his age." "Come at ſix o'clock, and go at ſix? why, about this much, ma'am," ſaid the gardener, marking off a piece of the border with his ſpade. "Then, little boy," ſaid the lady, "ſo much ſhall be your taſk every day; the gardener will mark it off for you: and, when you've done, the reſt of the day you may do what you pleaſe." Jem was extremely glad of this; and the next day he had finiſhed his taſk by four o'clock; ſo that he had all the reſt of the evening to himſelf. Jem was as fond of play as any little boy could be, and, when he was at it, played with all the eagerneſs and gaiety imaginable: ſo as ſoon as he had finiſhed his taſk, fed Lightfoot, and put by the ſixpence he had earned that day, he ran to the play-ground in the village, where he found a party of boys playing, and amongſt them Lazy Lawrence, who indeed was not playing, but lounging upon a gate with his thumb in his mouth. The reſt were playing at cricket. Jem joined them, and was the merrieſt and moſt active among them; till, at laſt, quite out of breath with running, he was obliged to give up to reſt himſelf, and ſat down upon the ſtile, cloſe to the gate on which Lazy Lawrence was ſwinging. "And why don't you play, Lawrence?" ſaid he. "I'm tired," ſaid Lawrence. "Tired of what?" "I don't know well what tires me; grandmother ſays I'm ill, and I muſt take ſomething—I don't know what ails me."—"Oh, pugh! take a good race, one, two, three, and away, and you'll find yourſelf as well as ever. Come, run—one, two, three, and away." "Ah, no, I can't run indeed," ſaid he, hanging back heavily; "you know I can play all day long if I like it, ſo I don't mind play as you do, who have only one hour for it."—"So much the worſe for you. Come now, I'm quite freſh again, will you have one game at ball; do."—"No, I tell you I can't; I'm as tired as if I had been working all day as hard as a horſe."—"Ten times more," ſaid Jem; "for I have been working all day long as hard as a horſe, and yet you ſee I'm not a

bit tired; only a little out of breath just now."—"That's very odd," said Lawrence, and yawned, for want of some better answer; then taking out a handful of halfpence—"See what I got from father to-day, because I asked him just at the right time, when he had drunk a glass or two; then I can get any thing I want of him—see! a penny, twopence, threepence, fourpence—there's eightpence in all; would not you be happy if you had eightpence?"—"Why, I don't know," said Jem laughing, "for you don't seem happy, and you have eightpence?"—"That does not signify though, I'm sure you only say that because you envy me—you don't know what it is to have eightpence—you never had more than twopence or threepence at a time in in all your life." Jem smiled: "Oh, as to that," said he, "you are mistaken, for I have at this very time more than twopence, threepence, or eightpence, either; I have—let me see—stones two shillings; then five days work, that's five sixpences, that's two shillings and sixpence, in all makes four shillings and sixpence, and my silver penny, is four and sevenpence—"Four and sevenpence—You have not," said Lawrence, roused so as absolutely to stand upright, "four and sevenpence! have you? shew it me, and then I'll believe you."—"Follow me then," cried Jem, "and I'll soon make you believe me; come."—"Is it far?" said Lawrence, following half running, half hobbling, till he came to the stable, where Jem shewed him his treasure. "And how did you come by it? honestly?"—"Honestly; to be sure I did; I earned it all."—"Lord bless me, earned it! well, I've a great mind to work; but then it is such hot weather; besides grandmother says I'm not strong enough yet for hard work; and besides, I know how to coax daddy out of money when I want it, so I need not work.—But four and sevenpence, let's see, what will you do with it all?"—"That's a secret," said Jem, looking great. "I can guess; I know what I'd do with it if it was mine—First, I'd buy pockets full of gingerbread; then I'd buy ever so many apples and nuts; don't you love nuts? I'd buy nuts enough to last me from this time to Christmas, and I'd make little Newton crack 'em for me, for that's the worst of nuts, there's the trouble of cracking 'em."—"Well, you never deserve to have a nut."—"But you will give me some of your's," said Lawrence in a fawning tone, for he thought it easier to coax than to work—"you'll give me some of your good things, won't you?" "I shall not have any of those good things," said Jem. "Then what will you do with all your money?"—"Oh, I know very well what to do with it; but, as I told you, that's a secret, and I shan't tell it any body—Come now, let's go back and play—their game's up, I dare say."—Lawrence went back with him full of curiosity, and out of humour with himself and his eightpence—"If I had four and sevenpence," said he to himself, "I certainly should be happy!"

The next day, as usual, Jem jumped up before six o'clock and went to his work, whilst Lazy Lawrence sauntered about without knowing what to do with himself. In the course of two days he laid out sixpence of his money in apples and gingerbread, and as long as these lasted he found himself well received by his companions; but at length the third day he spent his last halfpenny, and, when it was gone, unfortunately some nuts tempted him very much, but he had no money to pay for them; so he ran home to coax his father, as he called it. When he got home, he heard his father talking very loud,

and

and at first he thought he was drunk; but, when he opened the kitchen-door, he saw that he was not drunk, but angry.

"You lazy dog!" cried he, turning suddenly upon Lawrence, and gave him such a violent box on the ear as made the light flash from his eyes; "you lazy dog! see what you have done for me,—look!—look, look, I say!" Lawrence looked as he came to the use of his senses, and, with fear, amazement, and remorse, beheld at least a dozen bottles burst, and the fine Worcestershire cyder streaming over the floor. "Now, did not I order you three days ago to carry these bottles to the cellar; and did not I charge you to wire the corks? answer me, you lazy rascal; did not I?"—"Yes," said Lawrence, scratching his head. "And why was it not done? I ask you," cried his father with renewed anger, as another bottle burst at the moment. "What do you stand there for, you lazy brat? why don't you move? I say—No, no," catching hold of him, "I believe you can't move; but I'll make you." And he shook him, till Lawrence was so giddy he could not stand. "What had you to think of? what had you to do all day long, that you could not carry my cyder, my Worcestershire cyder, to the cellar when I bade you? But go, you'll never be good for any thing, you are such a lazy rascal, get out of my sight!" So saying, he pushed him out of the house-door, and Lawrence sneaked off, seeing that this was not the time to make his petition for halfpence.

The next day he saw the nuts again, and, wishing for them more than ever, went home in hopes that his father, as he said to himself, would be in a better humour. But the cyder was fresh in his recollection, and, the moment Lawrence began to whisper the word halfpenny in his ear, his father swore with a loud oath, "I will not give you a halfpenny, no, not a farthing, for this month to come; if you want money, go work for it; I've had enough of your laziness—Go work!" At these terrible words, Lawrence burst into tears, and, going to the side of a ditch, sat down and cried for an hour; and, when he had cried till he could cry no longer, he exerted himself so far as to empty his pockets, to see whether there might not be one halfpenny left; and, to his great joy, in the fartherst corner of his pocket one halfpenny was found. With this he proceeded to the fruit-woman's stall. She was busy weighing out some plumbs, so he was obliged to wait; and, whilst he was waiting, he heard some people near him talking and laughing very loud. The fruit-woman's stall was at the gate of an inn-yard; and, peeping through the gate into this yard, Lawrence saw a postillion and stable-boy about his own size playing at pitch-farthing. He stood by watching them for a few minutes. "I began but with one halfpenny," cried the stable-boy with an oath, "and now I've got twopence!" added he jingling the halfpence in his waistcoat pocket. Lawrence was moved at the sound, and said to himself, "If I begin with one halfpenny, I may end like him with having twopence; and it is easier to play at pitch-farthing than to work."

So he stepped forward, presenting his halfpenny, offering to toss up with the stable-boy, who, after looking him full in the face, accepted the proposal, and threw his halfpenny into the air.—"Head or tail!" cried he, "Head," replied Lawrence, and it came up head. He seized the penny, surprised at his own success, and would have gone instantly to have laid it out on nuts, but the stable-boy stopped him,

him, and tempted him to throw again. This time he loſt; he threw again and won; and ſo he went on, ſometimes loſing, but moſt frequently winning, till half the morning was gone. At laſt, however, he chanced to win twice running, and, finding himſelf maſter of three halfpence, ſaid he would play no more. The ſtable-boy, grumbling, ſwore he would have his revenge another time, and Lawrence went and bought the nuts. "It is a good thing," ſaid he to himſelf, "to play at pitch-farthing: the next time I want a halfpenny, I'll not aſk my father for it, nor go to work neither." Satisfied with this reſolution, he ſat down to crack his nuts at his leiſure, upon the horſe-block in the inn-yard. Here, whilſt he ate, he overheard the converſation of the ſtable-boys and poſtillions. At firſt their ſhocking oaths and loud wrangling frightened and ſhocked him; for Lawrence, though a lazy, had not yet learned to be a wicked, boy. But, by degrees, he was accuſtomed to their ſwearing and quarrelling, and took a delight and intereſt in their diſputes and battles. As this was an amuſement which he could enjoy without any exertion on his part, he ſoon grew ſo fond of it, that every day he returned to the ſtable-yard, and the horſe-block became his conſtant ſeat. Here he found ſome relief from the inſupportable fatigue of doing nothing, and here, hour after hour, with his elbows on his knees, and his head on his hands, he ſat the ſpectator of wickedneſs. Gaming, cheating, and lying, ſoon became familiar to him; and, to complete his ruin, he formed a ſudden and cloſe intimacy with the ſtable-boy with whom he had at firſt began to game—a very bad boy. The conſequences of this intimacy we ſhall preſently ſee. But it is now time to inquire what little Jem had been doing all this while.

One day, after Jem had finiſhed his taſk, the gardener aſked him to ſtay a little while, to help him to carry ſome geranium pots into the hall. Jem, always active and obliging, readily ſtayed from play, and was carrying in a heavy flower-pot, when his miſtreſs croſſed the hall. "What a terrible litter!" ſaid ſhe, "you are making here—why don't you wipe your ſhoes upon the mat?" Jem turned round to look for the mat, but he ſaw none. "Oh," ſaid the lady, recollecting herſelf, "I can't blame you, for there is no mat."—"No ma'am," ſaid the gardener, "nor I don't know when, if ever, the man will bring home thoſe mats you beſpoke, ma'am."—"I am very ſorry to hear that," ſaid the lady, "I wiſh we could find ſomebody who would do them, if he can't—I ſhould not care what ſort of mats they were, ſo that one could wipe one's feet on them." Jem, as he was ſweeping away the litter, when he heard theſe laſt words, ſaid to himſelf, "Perhaps I could make a mat." And all the way home, as he trudged along whiſtling, he was thinking over a ſcheme for making mats, which, however bold it may appear, he did not deſpair of executing, with patience and induſtry. Many were the difficulties which his "prophetic eye" foreſaw; but he felt within himſelf that ſpirit, which ſpurs men on to great enterprizes, and makes them "trample on impoſſibilities."

He recollected, in the firſt place, that he had ſeen Lazy Lawrence, whilſt he lounged upon the gate, twiſt a bit of heath into different ſhapes, and he thought, that if he could find ſome way of plaiting heath firmly together, it would make a very pretty green ſoft mat, which would do very well for one to wipe one's ſhoes on. About a

mile from his mother's houſe, on the common which Jem rode over when he went to Farmer Truck's for the giant-ſtrawberries, he remembered to have ſeen a great quantity of this heath; and, as it was now only ſix o'clock in the evening, he knew that he ſhould have time to feed Lightfoot, ſtroke him, go to the common, return, and make one trial of his ſkill before he went to bed.

Lightfoot carried him ſwiftly to the common, and there Jem gathered as much of the heath as he thought he ſhould want. But, what toil! what time! what pains did it coſt him, before he could make any thing like a mat! Twenty times he was ready to throw aſide the heath, and give up his project, from impatience of repeated diſappointments. But ſtill he perſevered. Nothing truly great can be accompliſhed without toil and time. Two hours he worked before he went to bed. All his play hours the next day he ſpent at his mat: which, in all, made five hours of fruitleſs attempts—The ſixth, however, repaid him for the labours of the other five; he conquered his grand difficulty of faſtening the heath ſubſtantially together, and at length completely finiſhed a mat, which far ſurpaſſed his moſt ſanguine expectations. He was extremely happy—ſung, danced round it—whiſtled—looked at it again and again, and could hardly leave off looking at it when it was time to go to bed. He laid it by his bed-ſide, that he might ſee it the moment he waked in the morning.

And now came the grand pleaſure of carrying it to his miſtreſs. She looked full as much ſurprized as he expected, when ſhe ſaw it, and when ſhe heard who made it. After having duly admired it, ſhe aſked him how much he expected for his mat. "Expect!—Nothing, ma'am," ſaid Jem; "I meant to give it you if you'd have it; I did not mean to ſell it. I made it at my play hours, and I was very happy making it; and I'm very glad too that you like it; and if you pleaſe to keep it, ma'am—that's all."—"But that's not all," ſaid the lady, "Spend your time no more in weeding in my garden, you can employ yourſelf much better; you ſhall have the reward of your ingenuity as well as of your induſtry. Make as many more ſuch mats as you can, and I will take care and diſpoſe of them for you."—"Thank'e, ma'am," ſaid Jem, making his beſt bow, for he thought by the lady's looks that ſhe meant to do him a favour, though he repeated to himſelf, "Diſpoſe of them! what does that mean?"

The next day he went to work to make more mats, and he ſoon learned to make them ſo well and quickly, that he was ſurprized at his own ſucceſs. In every one he made he found leſs difficulty, ſo that, inſtead of making two, he could ſoon make four, in a day. In a fortnight he made eighteen. It was Saturday night when he finiſhed, and he carried, at three journeys, his eighteen mats to his miſtreſs's houſe; piled them all up in the hall, and ſtood with his hat off, with a look of proud humility, beſide the pile, waiting for the miſtreſs's appearance. Preſently a folding door, at one end of the hall, opened, and he ſaw his miſtreſs, with a great many gentlemen and ladies, riſing from ſeveral tables.

"Oh! there is my little boy and his mats," cried the lady; and, followed by all the reſt of the company, ſhe came into the hall. Jem modeſtly retired whilſt they looked at his mats; but in a minute or two his miſtreſs beckoned to him, and, when he came into the middle of

of the circle, he saw that his pile of mats had disappeared. "Well," said the lady smiling, "what do you see that makes you look so surprised?"—"That all my mats are gone," said Jem; "but you are very welcome."—"Are we?" said the lady; "well, take up your hat, and go home then, for you see that it is getting late, and you know, "Lightfoot will wonder what's become of you." Jem turned round to take up his hat, which he had left on the floor.

But how his countenance changed! the hat was heavy with shillings. Every one who had taken a mat had put in two shillings; so that for the eighteen mats he had got thirty-six shillings. "Thirty-six shillings!" said the lady; "five and seven-pence I think you told me you had earned already—how much does that make? I must add, I believe, one other sixpence to make out your two guineas."—"Two guineas!" exclaimed Jem, now quite conquering his bashfulness, for at the moment he forgot where he was, and saw nobody that was by. "Two guineas!" cried he, clapping his hands together—"Oh Lightfoot!—oh mother!" Then, recollecting himself, he saw his mistress, whom he now looked up to quite as a friend. "Will you thank them all," said he, scarcely daring to glance his eye round upon the company, "will you thank 'em? for you know I don't know how to thank 'em rightly." Every body thought, however, that they had been thanked rightly.

"Now we won't keep you any longer—only," said his mistress, "I have one thing to ask you, that I may be by when you shew your treasure to your mother."—"Come, then," said Jem, "come with me now."—"Not now," said the lady laughing, "but I will come to Ashton to-morrow evening; perhaps your mother can find me a few strawberries."

"That she will," said Jem; "I'll search the garden myself." He now went home, but felt it a great restraint to wait till to-morrow evening before he told his mother. To console himself he flew to the stable: "Lightfoot, you're not to be sold to-morrow! poor fellow!" said he, patting him, and then could not refrain from counting out his money. Whilst he was intent upon this, Jem was startled by a noise at the door; somebody was trying to pull up the latch. It opened, and there came in Lazy Lawrence, with a boy in a red jacket, who had a cock under his arm. They started when they got into the middle of the stable, and when they saw Jem, who had been at first hidden by the horse.

"We—we—we—came"—stammered Lazy Lawrence—"I mean, I came to—to—to—" "To ask you," continued the stable-boy in a bold tone, "whether you will go with us to the cock-fight on Monday? See, I've a fine cock here, and Lawrence told me you were a great friend of his, so I came."

Lawrence now attempted to say something in praise of the pleasures of cock-fighting, and in recommendation of his new companion. But Jem looked at the stable-boy with dislike, and a sort of dread; then, turning his eyes upon the cock with a look of compassion, said in a low voice to Lawrence, "Shall you like to stand by and see its eyes pecked out?"—"I don't know," said Lawrence, "as to that; but they say a cock-fight's a fine sight, and it's no more cruel in me to go than another; and a great many go; and I've nothing else to do, so I shall go."—"But I have something else to do," said Jem, laughing, "so I shall not go."—"But," continued Lawrence, "you

know Monday is the great Briſtol fair, and one muſt be merry then, of all days in the year."—"One day in the year, ſure there's no harm in being merry," ſaid the ſtable boy. "I hope not," ſaid Jem; for I know, for my part, I am merry every day in the year."—"That's very odd," ſaid Lawrence; but I know, for my part I would not for all the world miſs going to the fair, for at leaſt it will be ſomething to talk of for half a year after—come, you'll go, won't you?"—"No," ſaid Jem, ſtill looking as if he did not like to talk before the ill-looking ſtranger. "Then what will you do with all your money?"—"I'll tell you about that another time," whiſpered Jem; "and don't you go to ſee that cock's eyes pecked out; it won't make you merry, I'm ſure."—"If I had any thing elſe to divert me," ſaid Lawrence, heſitating and yawning. "Come," cried the ſtable-boy, ſeizing his ſtretching arm, "come along," cried he; and, pulling him away from Jem, upon whom he caſt a look of extreme contempt, "leave him alone, he's not the ſort."—"What a fool you are," ſaid he to Lawrence the moment he got him out of the ſtable, "you might have known he would not go—elſe we ſhould ſoon have trimmed him out of his four and ſeven-pence. But how came you to talk of four and ſeven-pence; I ſaw in the manger a hat full of ſilver."—"Indeed!" exclaimed Lawrence, "Yes, indeed—but why did you ſtammer ſo when we firſt got in? you had like to have blown us all up."—"I was ſo aſhamed," ſaid Lawrence, hanging down his head. "Aſhamed! but you muſt not talk of ſhame now you are in for it, and I ſhan't let you off: you owe us half-a-crown, recollect, and I muſt be paid to-night; ſo ſee and get the money ſome how or other." After a conſiderable pauſe he added, "I'll anſwer for it he'd never miſs half-a-crown out of all that ſilver."—"But to ſteal," ſaid Lawrence, drawing back with horror—"I never thought I ſhould come to that—and from poor Jem too—the money that he has worked ſo hard for too."—"But it is not ſtealing; we don't mean to ſteal; only to borrow it: and, if we win, as we certainly ſhall, at the cock-fight, pay it back again, and he'll never know any thing of the matter: and what harm will it do him? Beſides, what ſignifies talking, you can't go to the cock-fight, or the fair either, if you don't; and I tell you we don't mean to ſteal it; we'll pay it again Monday night." Lawrence made no reply, and they parted without his coming to any determination.

Here let us pauſe our in our ſtory—we are almoſt afraid to go on—the reſt is very ſhocking—our young readers will ſhudder as they read. But it is better that they ſhould know the truth, and ſee what the idle boy came to at laſt.

In the dead of the night Lawrence heard ſomebody tap at his window. He knew well who it was, for this was the ſignal agreed upon between him and his wicked companion. He trembled at the thoughts of what he was about to do, and lay quite ſtill, with his head under the bed-clothes, till he heard the ſecond tap. Then he got up, dreſſed himſelf, and opened his window. It was almoſt even with the ground. His companion ſaid to him in a hollow voice, "Are you ready?" He made no anſwer, but got out of the window and followed. When he got to the ſtable, a black cloud was juſt paſſing over the moon, and it was quite dark. "Where are you?" whiſpered Lawrence, groping about, "where are you? Speak to me."—"I am here; give me your hand." Lawrence ſtretched out his

his hand. "Is that your hand?" said the wicked boy, as Lawrence laid hold of him; "how cold it felt."—"Let us go back," said Lawrence; "it is not time yet."—"It is no time to go back," replied the other, opening the door; "you've gone too far now to go back:" and he pushed Lawrence into the stable.—"Have you found it?—take care of the horse—have you done?—what are you about?—make haste, I hear a noise," said the stable-boy, who watched at the door. "I am feeling for the half-crown, but I can't find it."—"Bring all together." He brought Jem's broken flower-pot, with all the money in it, to the door.

The black cloud was now passed over the moon, and the light shone full upon them.—"What do we stand here for?" said the stable-boy, snatching the flower-pot out of Lawrence's trembling hands, and pulling him away from the door. "Good God!" cried Lawrence, "you won't take all—you said you'd only take half-a-crown, and pay it back on Monday—you said you'd only take half-a-crown!"—"Hold your tongue," replied the other walking on, deaf to all remonstrances—"if I am to be hanged ever, it sha'n't be for half-a-crown." Lawrence's blood ran cold in his veins, and he felt as if all his hair stood on end. Not another word passed. His accomplice carried off the money, and Lawrence crept, with all the horrors of guilt upon him, to his restless bed. All night he was starting from frightful dreams; or else, broad awake, he lay listening to every small noise, unable to stir, and scarcely daring to breathe—tormented by that most dreadful of all kinds of fear, that fear which is the constant companion of an evil conscience. He thought the morning would never come; but when it was day, when he heard the birds sing, and saw every thing look cheerful as usual, he felt still more miserable. It was Sunday morning, and the bell rang for church. All the children of the village, dressed in their Sunday clothes, innocent and gay, and little Jem, the best and gayest among them, went flocking by his door to church. "Well, Lawrence," said Jem, pulling his coat as he passed, and saw Lawrence leaning against his father's door, "what makes you look so black?"—"I!" said Lawrence starting, "why do you say that I look black?"—"Nay then," said Jem, "you look white enough, now, if that will please you; for you're turned as pale as death."—"Pale!" replied Lawrence, not knowing what he said; and turned abruptly away, for he dared not stand another look of Jem's: conscious that guilt was written in his face, he shunned every eye. He would now have given the world to have thrown off the load of guilt which lay upon his mind; he longed to follow Jem, to fall upon his knees, and confess all; dreading the moment when Jem should discover his loss, Lawrence dared not stay at home, and not knowing what to do, or where to go, he mechanically went to his old haunt at the stable-yard, and lurked thereabouts all day, with his accomplice, who tried in vain to quiet his fears and raise his spirits, by talking of the next day's cock-fight. It was agreed, that, as soon as the dusk of the evening came on, they should go together into a certain lonely field, and there divide their booty.

In the mean time Jem, when he returned from church, was very full of business, preparing for the reception of his mistress, of whose intended visit he had informed his mother; and, whilst she was arranging the kitchen and their little parlour, he ran to search the strawberry-

strawberry-beds. "Why, my Jem, how merry you are to-day?" said his mother when he came in with the strawberries, and was jumping about the room playfully. "Now keep those spirits of yours, Jem, till you want 'em, and don't let it come upon you all once. Have it in mind that to-morrow's fair day, and Lightfoot must go. I bade Farmer Truck call for him to night; he said he'd take him along with his own, and he'll be here just now—and then I know how it will be with you, Jem!"—"So do I!" cried Jem, swallowing his secret with great difficulty, and then tumbling head over heels four times running. A carriage passed the window and stopped at the door. Jem ran out; it was his mistress. She came in smiling, and soon made the old woman smile too, by praising the neatness of every thing in the house. But we shall pass over, however important they were deemed at the time, the praises of the strawberries, and of "my grandmother's china plates." Another knock was heard at the door. "Run, Jem," said his mother, "I hope it's our milk-woman with cream for the lady." No; it was Farmer Truck come for Lightfoot. The old woman's countenance fell. "Fetch him out, dear," said she, turning to her son; but Jem was gone; he flew out to the stable the moment he saw the flap of Farmer Truck's great-coat. "Sit ye down, farmer," said the old woman, after they had waited about five minutes in expectation of Jem's return. "You'd best sit down, if the lady will give you leave; for he'll not hurry himself back again. My boy's a fool, madam, about that there horse." Trying to laugh, she added, "I knew how Lightfoot and he would be loath enough to part—he won't bring him out till the last minute; so do sit ye down, neighbour." The farmer had scarcely sat down, when Jem, with a pale wild countenance, came back. "What's the matter?" said his mistress. "God bless the boy!" said his mother, looking at him quite frightened, whilst he tried to speak, but could not. She went up to him, and then, leaning his head against her, he cried, "It's gone! it's all gone!" and, bursting into tears, he sobbed as if his heart would break. "What's gone, love?" said his mother. "My two guineas—Lightfoot's two guineas. I went to fetch 'em to give you, mammy; but the broken flower-pot that I put them in, and all's gone!—quite gone!" repeated he, checking his sobs. "I saw them safe last night, and was shewing 'em to Lightfoot; and I was so glad to think I had earned them all myself; and I thought how surprised you'd look, and how glad you'd be, and how you'd kiss me, and all!"

His mother listened to him with the greatest surprise, whilst his mistress stood in silence, looking first at the old woman, and then at Jem with a penetrating eye, as if she suspected the truth of his story, and was afraid of becoming the dupe of her own compassion. "This is a very strange thing!" said she gravely. "How came you to leave all your money in a broken flower-pot in the stable? How came you not to give it to your mother to take care of?"—"Why, don't you remember," said Jem, looking up in the midst of his tears; "why, don't you remember you your own self bade me not tell her about it till you were by!"—"And did you not tell her?"—"Nay, ask mammy," said Jem, a little offended; and, when afterwards the lady went on questioning him in a severe manner, as if she did not believe him, he at last made no answer. "Oh, Jem! Jem! why don't

don't you speak to the lady? said his mother. "I have spoke, and spoke the truth," said Jem proudly, "and she did not believe me."

Still the lady, who had lived too long in the world to be without suspicion, maintained a cold manner, and determined to wait the event without interfering, saying only, that she hoped the money would be found; and advised Jem to have done crying. "I have done," said Jem, "I shall cry no more." And, as he had the greatest command over himself, he actually did not shed another tear, not even when the farmer got up to go, saying, he could wait no longer. Jem silently went to bring out Lightfoot.—The lady now took her seat where she could see all that passed at the open parlour window.—The old woman stood at the door, and several idle people of the village, who had gathered round the lady's carriage examining it, turned about to listen. In a minute or two Jem appeared, with a steady countenance, leading Lightfoot: and, when he came up, without saying a word, put the bridle into Farmer Truck's hand. "He has been a good horse," said the farmer. "He is a good horse!" cried Jem, and threw his arm over Lightfoot's neck, hiding his own face as he leaned upon him.

At this instant a party of milkwomen went by; and one of them, having set down her pail, came behind Jem, and gave him a pretty smart blow upon the back.—He looked up.—"And don't you know me?" said she. "I forget," said Jem;" I think I have seen your face before, but I forget."—"Do you so? and you tell me just now," said she, "half opening her hand, "that you forget who gave you this, and who charged you not to part with it too." Here she quite opened her large hand, and on the palm of it appeared Jem's silver penny. "Where?" exclaimed Jem seizing it, oh where did you find it? and have you?—oh tell me, have you got the rest of my money?"—"I know nothing of your money—I don't know what you would be at," said the milkwoman. "But where, pray tell me where, did you find this?"—"With them that you gave it to, I suppose," said the milkwoman, turning away suddenly to take up her milk-pail. But now Jem's mistress called to her through the window, begging her to stop, and joining in his entreaties to know how she came by the silver penny.

"Why, madam," said she, taking up the corner of her apron, "I came by it in an odd way too—You must know my Betty is sick, so I come with the milk myself, though it's not what I'm used to; for my Betty—you know my Betty," said she turning round to the old woman, "my Betty serves you, and she's a tight and stirring lassy, ma'am, I can assure—" "Yes, I don't doubt it," said the lady impatiently; "but about the silver penny?"—"Why, that's true; as I was coming along all alone, for the rest came round, and I came a short cut across you field—No, you can't see it, madam, where you stand—but if you were here—" "I see it—I know it," said Jem, out of breath with anxiety. "Well—well—I rested my pail upon the stile, and sets me down a while, and there comes out of the hedge—I don't know well how, for they startled me so I'd like to have thrown down my milk—two boys, one about the size of he," said she, pointing to Jem, "and one a matter taller, but ill-looking like, so I did not think to stir to make way for them, and they were like in a desperate hurry; so, without waiting for the stile, one of 'em pulled at the gate, and, when it would not open (for it

it was tied with a pretty ſtout cord), one of 'em whips out with his knife and cuts it——

"Now have you a knife about you, ſir?" continued the milk-woman to the farmer. He gave her his knife.

"Here now, ma'am, juſt ſticking as it were here, between the blade and the haft, was the ſilver penny. He took no notice, but, when he opened it, out it falls: ſtill he takes no heed, but cuts the cord, as I ſaid before, and through the gate they went, and out of ſight in half a minute. I picks up the penny, for my heart miſgrave me that it was the very one huſband had had a long time, and had given againſt my voice to he," pointing to Jem; "and I charged him not to part with it; and, ma'am, when I looked I knew it by the mark, ſo I thought I would ſhew it to he," again pointing to Jem, "and let him give it back to thoſe it belongs to." "It belongs to me," ſaid Jem, "I never gave it to any body—but—". "But," cried the farmer, "thoſe boys have robbed him—it is they who have all his money."

"Oh, which way did they go?" cried Jem, "I'll run after them."

"No, no," ſaid the lady, calling to her ſervant; and ſhe deſired him to take his horſe and ride after them. "Aye," added Farmer Truck, "do you take the road, and I'll take the field-way, and I'll be bound we'll have 'em preſently."

Whilſt they were gone in purſuit of the thieves, the lady, who was now thoroughly convinced of Jem's truth, deſired her coachman would produce what ſhe had ordered him to bring with him that evening. Out of the boot of the carriage the coachman immediately produced a new ſaddle and bridle.

How Jem's eyes ſparkled when the ſaddle was thrown upon Lightfoot's back! "Put it on your horſe yourſelf, Jem," ſaid the lady—"it is yours."

Confuſed reports of Lightfoot's ſplendid accoutrements, of the thieves, and of the fine and generous lady who was ſtanding at Dame Preſton's window, quickly ſpread through the village, and drew every body from their houſes. They crowded round Jem to hear the ſtory. The children eſpecially, who were all fond of him, expreſſed the ſtrongeſt indignation againſt the thieves. Every eye was on the ſtretch; and now ſome, who had run down the lane, came back ſhouting, "Here they are! they've got the thieves!"

The footman on horſeback carried one boy before him; and the farmer, ſtriding along, dragged another. The latter had on a red jacket, which little Jem immediately recollected, and ſcarcely dared lift his eyes to look at the boy on horſeback. "Good God!" ſaid he to himſelf, "it muſt be—yet ſurely it can't be Lawrence!" The footman rode on as faſt as the people would let him. The boy's hat was ſtouched, and his head hung down, ſo that no body could ſee his face.

At this inſtant there was a diſturbance in the crowd. A man who was half drunk puſhed his way forwards, ſwearing that nobody ſhould ſtop him; that he had a right to ſee; and he would ſee. And ſo he did; for, forcing through all reſiſtance, he ſtaggered up to the footman juſt as he was lifting down the boy he had carried before him. "I will—I tell you I will ſee the thief!" cried the drunken man, puſhing up the boy's hat.

It

It was his own son. "Lawrence!" exclaimed the wretched father. The shock sobered him at once, and he hid his face with his hands.

There was an awful silence. Lawrence fell on his knees, and in a voice that could scarcely be heard made a full confession of all the circumstances of his guilt. "Such a young creature so wicked! What could put such wickedness into your head?" "Bad company," said Lawrence. "And how came you—what brought you into bad company?"—"I don't know—except it was idleness." While this was saying, the farmer was emptying Lazy Lawrence's pockets; and, when the money appeared, all his former companions in the village looked at each other with astonishment and terror. Their parents grasped their little hands closer, and cried, "Thank God! he is not my son—how often, when he was little, we used, as he lounged about, to tell him that idleness was the root of all evil."

As for the hardened wretch his accomplice, every one was impatient to have him sent to gaol. He had put on a bold insolent countenance, till he heard Lawrence's confession: till the money was found upon him; and he heard the milkwoman declare, that she would swear the silver penny which he had dropped. Then he turned pale, and betrayed the strongest signs of fear. "We must take him before the justice," said the farmer, "and he'll be lodged in Bristol gaol." "Oh!" said Jem, springing forwards when Lawrence's hands were going to be tied, "let him go—won't you—can't you let him go?"—"Yes, madam, for mercy's sake," said Jem's mother to the lady, "think what a disgrace to his family to be sent to gaol." His father stood by wringing his hands in agony of despair. "It's all my fault," cried he; "I brought him up in idleness." "But he'll never be idle any more," said Jem; "won't you speak for him, ma'am?" "Don't ask the lady to speak for him, said the farmer; "it's better he should go to bridewell now, than to the gallows by and by."

Nothing more was said, for every body felt the truth of the farmer's speech. Lawrence was sent to bridewell for a month, and the stable-boy was transported to Botany Bay.

During Lawrence's confinement, Jem often visited him, and carried him such little presents as he could afford to give; and Jem could afford to be generous, because he was industrious. Lawrence's heart was touched by his kindness, and his example struck him so forcibly, that, when his confinement was ended, he resolved to set immediately to work; and, to the astonishment of all who knew him, soon became remarkable for industry: he was found early and late at his work, established a new character, and for ever lost the name of Lazy Lawrence.

CHARACTER OF ST. ANTHONY THE MONK.

ANTONIUS the Great was by birth an Egyptian peasant. It is affirmed by some that he could read and write; and by others it is denied. In his first youth he would have no intercourse whatever with other boys. He lurked by himself in corners, indulging his sullen humour. No sooner had he lost his parents, but this atrabilious youth made over the estate that fell to him, consisting of no less than a hundred and fifty acres of land, as a donative to the

boors of his village; he sold the furniture of the mansion, and gave the money to the poor. Soon after, forsaking house and home, he retired at first to a solitary place in the neighbourhood, then travelled from one hermit to another, for making himself acquainted with that exalted virtue of which in the sequel he gave his contemporaries the example, and by them the doctrine to the world.

The devil had kindled in the heart of this great saint, very early in life, the fire of wanton lust. Antonius fought against it by day with the weapons of bread and water, and with a hard couch by night. For making his victory over sin and the world more complete, he went and hid himself in a sepulchre, at a considerable distance from the village where he was born. This curious habitation seemed to increase his disposition to sullenness and melancholy, and I need only relate what his most cautious historian says of him, for shewing how much his brain had suffered from this first ascetic attempt. In his sepulchre he was perpetually engaged in imaginary scuffles with the devil; and, in this uneasiness and anxiety of mind, he beat himself so dreadfully against the narrow vault, that his limbs were covered with bruises, insomuch, that he was taken out of his grave for dead, and brought to the village church for interment. Probably he was epileptic. However, scarcely was he come to himself in the church, but he requested, that, regardless of his wounds, they would carry him again into his cavern. Instantly the devil was there; that is, his distemper returned. He renewed the engagement, was wounded afresh, and retained his wounds for a long time after.

Antonius resolved now to repair once for all to the desert, in company with an old ascetic; this latter refused to go, being afraid to engage in so novel an undertaking. Antonius therefore set out on his journey alone, in the thirty-fifth year of his age. He passed the Nile, came into the mountainous country, where, seeing an old ruinous castle, he shut himself up in it, and there remained for twenty years.

All this time, his nourishment consisted of old crusts of bread that were brought him half-yearly, and of water that he found in his castle. His door he neither opened for those who brought him bread, nor for any that wanted to visit him. But, to their terror and astonishment, these people frequently heard a dreadful riot and screaming within. It was their firm belief that Antonius was at fisty-cuffs with the devil; but they probably never heard how foolish he could make himself when he pleased, or how foolish he actually was in his castle. The concourse, however, became gradually so great under the holy walls of this haunted tower, that Antonius at last resolved, after twenty years, at the repeated solicitations of several persons, as the sacred authors inform us, but from irksomeness, as I should suppose, and manifestly for the benefit of his health, to abandon the castle.

His melancholy rage now left him. He became sociable, undertook matters of high concern, assembled about him from all parts hermits like himself, and accustomed them to a mode of living in common. They made their habitations nearer together, and joined one another in their exercises of prayer, and in procuring the necessaries of life. Antonius now performed miracle after miracle upon the sick both in body and soul; and persuaded a great multi-

tude of persons to betake themselves to solitude, though he had hitherto in reality so little reason to extol that mode of life; for, what with his abode in the grave, and in the haunted castle, he was evidently not right in the head.

Many followed his advice, and built themselves huts, which were then called dwellings of solitary monks, (*monasteria*,) amongst the mountains in those parts. Antonius had the inspection of them all, as their common father. This passion for solitude increased from day to day, till he had peopled by degrees the deserts around. It is not unlikely that the persecutions which still continued might attribute considerably to the same effect; but, when peace was again restored to the church, these hermitages were still ever gaining new fugitives from the world. The place where Antonius assembled the first recluses about him was called Phaium, and one of his first, and most famed, and most active, disciples, was the blessed Hilarion.

Hilarion, while a young student of Alexandria, from motives of curiosity came to visit Antonius, and went back, taking with him the monkish habit. St. Antonius, however, was so totally freed from his melancholy, that he was actually grown too social and civil. This displeased the austere Hilarion. The concourse about St. Antonius was insupportable to him; and he expressed his dislike of the disturbances and wranglings of the people who came to this stroker to have devils cast out which they had not in them. Hilarion therefore went back to his native place, to pass his days there alone, far remote from this scene of confusion and noise.—Antonius presented him at his departure with a sheep-skin gown, as a memorial of his friendship; and his esteem for Hilarion was afterwards so great that it was usual for him to ask the people who came to him from Syria, for having their devils cast out, why they had not gone to Hilarion, who understood the ejection of devils as well as himself.

Antonius was now not so much a recluse as rather a preacher of solitude, and a far-famed ejector of devils. The life he led was however still sufficiently austere. On his bare body he wore a shirt of horse-hair, over this a sheep-skin cloak, and a hood on his head. His appearance might possibly be squalid enough, for to wash and cleanse himself was far from his thoughts; and the familiar reptiles that dwelt between his hide and the horse hair were therefore always at liberty to beat the champain. Sometimes he ate about three of the clock in the afternoon, but commonly not till after sun-set; frequently not till after two, three, or four, and even not till after five, days fasting. If he were then terribly hungry, he nevertheless contented himself with six ounces of stale dry bread, soaked in water, and a little salt. At times he would eat a few dates on coming up to a palm-tree. Not till he had reached an advanced age did his disciples find it necessary to treat him once every month with olives, oil, and vegetables.

Antonius kept a table for his patients, as Michael Schuppach does at Langnau. But not so good by far; for he gave his patients and guests nothing more to eat than cabbages of his own planting, and probably these not boiled. Neither was Antonius, at table, half so merry and amusing, and amusable, as Schuppach; for before meals he said twelve psalms by heart, he also repeated the same twelve psalms twelve times, and between whiles twelve times prayed. On rising from table he went again with his guests to prayer, repeated

the twelve pſalms once more, twelve prayers between whiles again; and then laid him down to reſt.

He ſlept on a mat of ruſhes, and ſometimes on the bare earth. But his general cuſtom was not to lie down to ſleep at all, but to watch and pray the whole night through.—At other times, after having ſlept a little, he roſe about midnight, and prayed with outſtretched arms till the riſing of the ſun, and often till three in the afternoon. He was aſhamed of being obliged to eat and to ſleep. This dependence on his body and on his ſtomach was ſo repugnant to him, that, though he at times ſat down with his brethren at table, he would ſuddenly get up, go away, and either faſt, or eat by himſelf. Though he could ſcarcely endure to be ſeen eating, yet he ſometimes would eat with his brethren, only in order to have an opportunity for giving them good advice.

Whenever the ſick aſſailed him in too great numbers, Antonius withdrew himſelf from them, and lived alone, as long as he was able to bear it. But at ſuch times he was occaſionally attacked by fits of irkſomeneſs and diſlike, as we ſee from the various ancient and ſainted authors whom the pious and learned Tillemont quotes. Once, on being ſeized by this ſpiritual death in the deſert, he complained in his prayer to God, that, from being ſo plagued with ennui, he could no longer advance his ſalvation. Antonius had immediately a viſion to reprove him. He ſaw himſelf ſitting at work, then retiring from his work to devote himſelf to pray; then ſitting again, and employed in weaving a mattreſs of palm-leaves, and then praying again. The interpretation of this viſion he found to be, that employment is the beſt preſervative from yawning and ennui. Antonius accordingly ſet about mattreſſes. He employed himſelf likewiſe, whenever he had no devils to caſt out, in gardening and huſbandry.

In the year 312, Antonius fell upon a conceit, which, in thoſe times, was by no means unuſual. He ſuddenly left his ſolitude, and went to Alexandria, in the deſign of getting himſelf put to death by the public executioner. Not ſucceeding in the attempt, he returned in diſguſt to his cell, ſhut himſelf up, would not go out, and refuſed himſelf to the ſight and the converſe of all men. But on the ſick, who ſtill continued to throng about his cell, for the ſake of being cured of their maladies, miracles were now wrought, even though they neither ſaw nor heard the ſanctimonious doctor.

Antonius, however, could not long permit theſe viſits, as they diſturbed his reſt, and, by the reverence they were intended to pay him, wounded his humility; or they appeared to him impertinent and inſipid, as all viſits are that are made to famous men for the purpoſe of gazing at them. He went therefore deeper into the wilderneſs, and pitched upon mount Coltzim, on the border of the Red Sea, as the laſt and moſt glorious term of his career. Water and palm-trees he found on the ſpot; he likewiſe ſowed wheat and made his own bread, that no one might come to him under the pretext of bringing him cruſts. At firſt he had no other company on mount Coltzim than a great troop of devils, who were conſtantly endeavouring to drive him out of his retreat, and who certainly would have written againſt ſolitude, if Antonius had been able to read.

The towering Coltzim ſtood in the deſert which leads to the Red Sea, between Babylon and Heraclea; but between it and Babylon lay ſo frightful and inhoſpitable a deſert, that it was found neceſſary

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to eſtabliſh a camel-poſt for thoſe who it future ſhould come to viſit St. Antonius from the neareſt towns, ſo much as he ſtrove againſt all viſits, and ſourly as he was wont to look at the vile crew of viſitors that flocked to him from all parts.

Otherwiſe, this mountain was agreeable enough; rocky, high, and not above a thouſand paces in circumference. At the foot of it ran a little placid ſtream, the banks of which were ſhaded by a great number of palms. Antonius had here planted vines and trees, and laid out a garden, and cultivated the ground. This cauſed him a great deal of work, but was likewiſe a ſovereign remedy againſt ennui. There would freqüently come a multitude of wild aſſes and other beaſts of the deſert, to drink of the little ſtream; but, on theſe occaſions, they ravaged the garden of Antonius, and deſtroyed what he had planted and ſown. To prevent theſe depredations for the time to come, one day the great ſaint commanded a wild-aſs that headed the reſt to ſtand ſtill before him. The aſs obeyed. Upon this, Antonius gave him a very gentle ſtroke with a ſwitch, and commanded him and his company, in the name of the Lord, not to enter his garden again as long as they lived. And the aſſes contented themſelves with drinking out of the little ſtream, and never came into his garden again.

Antonius the Great had commonly his reſidence in a narrow cave of this mountain, which was no bigger than himſelf. For the ſake of change, however, he had hewn out two cells of the like dimenſions in the rock on the top of the mountain, and provided them with doors. Into one of theſe he retired, when he wanted to free himſelf from the trouble of viſits, which began again to exceed all belief, as ſoon as Antonius was traced out. He had viſits from all ends and corners, of monks and idlers, and ſuch as were afflicted with diſeaſes. To the monks he gave excellent leſſons. The ſick he frequently cured by the efficacy of his faith and the unction of his prayers. Sometimes he cured them, and ſometimes not. And, whenever the latter happened, it made him neither angry nor ſad, as in truth it would ſome had they been in his place; but he gravely and ſententiouſly exhorted them to patience.

From mount Coltzim, Antonius paid frequent viſits to Phaium; where he had gathered about him in little huts his firſt diſciples. However not ſo frequently as he was requeſted; as that place was diſtant a journey of three days and three nights, and as the way led acroſs a deſert, where no water was found. Every five, ten, or twenty, days, Antonius left his holy mountain, and repaired to a place at ſome conſiderable diſtance, named Piſpir, where a number of cœnobites dwelt. Here he very readily received his viſitants. On the arrival of any, he directly aſked, Whether they were ſtrangers? If the monks anſwered, Yes; he inquired whether they were Egyptians or people from Jeruſalem? Now the monks told him lies. For, when people were there to whom Antonius had nothing of conſequence to ſay, they told him they were Egyptians; but, were they perſons of great faith in Antonius, they told him they were people from Jeruſalem. If they ſaid, Egyptians were there, then Antonius would order lentile porridge to be given them to eat; which done, he diſpatched them with a prayer and a ſhort exhortation. If they ſaid, People from Jeruſalem were there, then he was extremely gracious and affable, ſat down, and chatted with them

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the whole night through on matters of ſalvation.—Thus, Antonius was in reality more polite to foreigners than to his own countrymen.

At times, the ſaint went down from his mountain, and took long journies, eſpecially to Alexandria; where great numbers that felt themſelves oppreſſed, implored his interceſſion with the governor. But, as ſoon as ever he had preſented their petitions, he hurried back to his ſolitude.

In the ninetieth year of his age, he made a very memorable viſit to Paul, the firſt hermit, who had already lived ninety years, unknown to all the reſt of mankind, entirely alone, and in the profoundeſt concealment. The old head of the great Antonius was again uncommonly hot in this journey; for the moſt material particulars he relates of it ſhew, that he had been dreaming with open eyes.

On the way he would have it that he had diſcourſed with a monſter. It was half man and half horſe, who beſought him, in the name of a whole herd of them, to call upon God in their behalf. Such monſters a man never ſees when he is right in his head. Then Antonius ſays, that a raven brought him twice as much bread as he had been uſed to bring Paul for ſixty years before. But this is not all; for Paul unfolded to his friend, that his end was approaching; and, that he might ſpare him the painful office of being preſent at his death, begged him to fetch a cloak that he had received for a winding-ſheet as a preſent from Athanaſius. Antonius, on returning with the cloak, took a fancy into his head, that though he found Paul without any ſigns of life, yet that he was not altogether naturally dead, but that he ſaw his immortal part, quite luminous and ſhining, aſcending towards heaven, amidſt hoſts of angels and apoſtles. But what was mortal of Paul, his dead body, he found in the attitude of one kneeling at prayers. He buried him, with the aſſiſtance of two lions.

Antonius muſt have found himſelf weak after this feveriſh journey; for, on coming back to his holy mountain, he choſe two of his diſciples to be his conſtant companions, that they might afford him their ſervices in his increaſing infirmity.

Among the many viſitors that came to Antonius, either in the monaſtery of Piſpir or on his ſacred mountain, there would ſometimes be heretics. But heretics, and eſpecially Arians, Antonius could never endure. Some Arians came to viſit him on his mountain, whom he drove away directly. All heretics in general were ſo dreadfully grievous to Antonius, that ſhortly before his death, he took one journey more to Alexandria, only to curſe the heretics.—Even on his death-bed he ſhewed his intolerant ſpirit in a vehement admonition to his diſciples, wherein he commanded them never to have any concern with a heretic.

From philoſophers alſo Antonius was ſometimes favoured with viſits; and theſe came for the ſake of making themſelves merry with him, and to laugh at him for an idiot and a blockhead. This diſpleaſed him, as may very eaſily be imagined. Caſſianus relates, that ſome philoſophers, who were then known to be much addicted to magic, let looſe a whole pack of devils of the firſt rate upon him, merely by way of inſult. But Antonius, as all the world knows, was ſhot-proof againſt devils of every rank and degree.

A couple

A couple of other philosophers were making their sport of him; but he struck them dumb upon the spot, by casting out a pair of devils before their noses. Other philosophers asked him how he could live without books? Antonius gave them this sublime reply: —"My book is God and nature." At one time likewise he said very excellently:—"A time is coming when all mankind will be fools; and when they shall see a man who is not a fool, they will all rise up against him, as if, because he is not like them, he was therefore the only fool in the world."

An anecdote is recorded in the Coptic martyrology, from whence we may conclude, that Antonius had more than once cast a truly prophetical look into the tablets of futurity. His disciples were one day sitting round him, expressing their admiration at the multitude of persons who devoted themselves to solitude, and the ardour with which they proceeded on the path of piety. Will this last long? said they to Antonius. He answered them with tears, "The time, alas, will come, when monks, instead of dwelling in caves and holes of the earth, will remove into great cities; there they will build themselves palaces, will indulge in good eating and drinking, and be distinguished from other worldlings by nothing except their habit, their cowl, and by an empty glory in the merits of their first founder."

A glorious moral maxim also once on a time proceeded from the mouth of Antonius, when the monks had been severely rebuking a brother on account of some transgression. The delinquent came to Antonius complaining of the hard treatment he had received; the rest of the monks hurried up to him, to pull him away, and abused him more grossly in the presence of Antonius. All this happened when St. Paphnutius accidentally was there. On hearing the horrid noise, he said to the monks: I once saw on the banks of a river, a man sticking up to his knees in a bog; some persons, coming up, reached out their hands to draw him forth, and in this attempt only plunged him in farther, even up to the chin. This is truely spoken, returned Antonius; I perceive, Paphnutius, that thou understandest how souls are delivered.

From the pleasure I take in citing such noble touches, every impartial reader will see, that I am not uncandid towards St. Antonius. In all my life it never cost me any effort to relate what I saw that was really great and good, of a man whose weaknesses I knew and discovered, as soon as I saw something great and good. But the fanatics that take Antonius for a man who through the whole course of his life had the intellect of an angel, are enabled now to see how they differ from me, as I shew them so plainly, that there were many and long periods in the life of this renowned Egyptian boor, in which he was wrong in the head.

Folly does no injury to the reputation; for, notwithstanding this, the report of the heroic life of this rustic reached the court of the Emperor Constantine; who accordingly wrote to Antonius as to a prophet, intreating a visit from him. His fame resounded throughout the world. The authority he had over the minds of men spread itself far and wide; and Antonius, however weak and wretched in his younger years, must certainly have had strong nerves, and force and good lungs as he advanced in life, for talking so many persons out of the desire of the accommodations of life.

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His last journey to Alexandria, in all likelihood, hastened his death. He hobbled thither to curse the heretics, and none ever curse heretics without some gall; which is always dangerous, and at such an advanced age usually kills. What brought M. de Voltaire to his grave in Paris, contributed not a little, as I humbly conceive, to the death of the great Antonius, in Alexandria. The Alexandrians were, like the Parisians, a volatile, curious, airy, and inflammable, people. A strange beast or a great man set all Alexandria in motion. Antonius being at Alexandria for the last time, the crouds of christians and heathens that flocked around him was too much for the poor old creature to bear. All the Alexandrians must have a sight of the great man, who had cast such a quantity of of devils; and several of them went up and shook his gown, in hopes of seeing at least a brace of devils tumble out of it.

Thus ended the long and glorious career of the great Antonius, in the hundred and fifth year of his age. He died on his holy mountain, in the arms of two of his monks, just after his return from Alexandria; leaving to the Archbishop Athanasius one of his hair gowns, to St. Macarius his staff, and to all recluses his example.

Such examples of the most exalted devotion, as Antonius is pretended to have given, soon opened a door to an incredible multitude of Christian fanatics and adventurers. Egypt, Lybia, Syria, Arabia, and Palestine, swarmed with this new species of pietists; they spread themselves even into Ethiopia and Abyssinia. All were disciples of Antonius, and heirs of his lofty virtue. Every one strove, in his native country, to emulate the life and energy of this mighty teacher. One encouraged the other on this thorny path; every one extended this divine philosophy as far as he was able. The disciples of Antonius, and their scholars, were visited from the remotest regions of the world. The sublimity of their life, and their heroic preseverance in it, made them at once famous and humble; for these great men were as desirous of remaining unknown, says Sozomen, as their vain successors are greedy of worldly applause.

Antonius, however, had only found out a little path to heaven, and that not exceedingly frequented. His disciple Pachomius was the first, as is supposed, who pointed out the high way to that blessed abode; for by his institutions in Egypt he was properly the original founder of all the monasteries in Christendom.

ROMANTIC SCENES IN SCOTLAND.

THE way into the country beyond Kildrummy lies through a narrow defile. The road, winding through the rugged precipices of dark and forlorn hills, seems gloomy and forbidding: but, after a few miles, the prospect opens into a large extent of well-cultivated fields, spreading round the town and castle of Towie; and thence is a delightful road along the banks of the Don. The road, following the windings of the river, at every turn presents fresh views of arable lands belonging to seats, seen amidst wood in the openings of the glens; and old castles appearing on the higher grounds give dignity to the landscape.

On quitting the river, the road becomes broken and craggy, leading up among hills the most desolate imaginable; some of them singularly picturesque, composed of rocks of various forms, almost completely

completely bare; diſtinguiſhable only by their bleak brows and melancholy ſhades; which overſhadow the few ſpots of verdure to be found in the vales. On one eminence was a maſſy tomb, raiſed by the pride of a chieftain, who would not ſleep with the vulgar, nor let it be in the power of his vaſſals to put a foot on the earth that covered him.

On gaining the ſummit of a high and ſteep hill, we beheld one of thoſe aſtoniſhing alpine ſcenes, whoſe greatneſs ſo wonderfully fills the mind. The proſpect immediately below was a wide-extended, deep, and dreary, valley, ſpread with brown heath, where verdure ſeemed to be denied; and beyond, a range of the moſt magnificent mountains. Theſe enormous piles ſeem crowded to the ſky: the clouds that broke upon their tops, and floated down the intermediate ſpaces, gave ſtriking evidence of their immenſe magnitude and various diſtance. Their ſhades, mingling with the ſhadows of the clouds that hovered round them, made the vaſt clifts towering above look over the lower region of the air in the moſt auguſt and gigantic forms. Theſe conſtitute part of the hilly regions of Brae-mar.

Deſcending by a rough path of four miles into the bottom of the valley, it was with pleaſure I found the way lead to the banks of the Dee. The pleaſing ſcenes of that ſweet tract have been long celebrated in rural ſong. They are indeed extravagantly wild and charming. Here a luxuriant field of waving green, the huſbandman's hope and joy: there the mountain's hoary brow overhanging the dale, ſhagged with parched timber, the remains of conflagrations in the foreſt. On one hand, a hamlet amidſt bloſſoming trees, the cheerful cottagers attending their flocks and herds: on the other, towering cliffs, whoſe projecting rocks and lofty pines vie which ſhall claim moſt admiration. The river, now ſeen in an opening, gently gliding by rows of willows, ſoftens the ſcene, and reflects the majeſtic landſcape: next minute preſents itſelf an impetuous torrent, claſhing in noiſe and foam down its precipitous and rocky channel.

Theſe noble proſpects, in alternate ſucceſſion, yield equal entertainment all the way to Mar-foreſt. The contraſt is beautifully ſtriking, where the immenſe rugged and broken cliffs, adorned with birch and pine, front the fields and gardens about Invercauld.

A little way above the caſtle of Brae-mar, there is a ſquare tower upon the top of the rock; the rock on three ſides is waſhed by the caſcades of a rivulet, which falls into the Dee. The building is almoſt demoliſhed, but is ſaid to have been a fortreſs and a hunting ſeat, at times the reſidence of the Kings of Scotland.

Over the rivulet there is a ſtone bridge of one arch, having a machine placed on the ſide, for breaking the ice in winter, that the people may be the more readily ſupplied with water.

A few miles from thence to the right, there is a long, romantic, winding, valley, called Glen-quoich, bounded by ſloping mountains, whoſe declivities were formerly covered with wood; but in 1695 a ſaw-mill was built at the mouth of the Glen; and the timber yearly after was cut down and ſold, to a great amount; one only now obſerves, amid the higheſt cliffs, thoſe detached trees the workmen could not reach.

The reſt of the Glen has much the appearance of incorrigible ſterility; yet, on more attentive obſervation, thouſands of young

pines are ſeen forcing their way through the chinks of the rocks, and riſing amid layers of looſe ſtones and gravel, where one would be apt to imagine vegetation would be denied. The ſtream that runs through the glen has waſhed the ſoil from among the ſhelvy rocks which conſtitute its channel, and ſometimes found a paſſage under them: here and there the ſhelves, either originally by nature, or by the whirl of the torrent, vibrated through, and down beneath the circular openings the limpid ſtream ſhews a pebbly bottom.

Now and then the oppoſite hills become precipitous, and approach each other very near. The rivulet, in deep caſcades, falls down beneath the overhanging rocks; and the crags, ſhagged with buſhes and venerable with the remains of decayed trees, exhibit ſome excellent ſpecimens of romantic landſcape, and great variety of uncommon proſpects.

Four or five miles from Brae-mar caſtle, a gothic tower, on the top of a picturesque rock, called Craggan, points out the acceſs into Dale-moor, through ranges of ſtately trees, which ſkirt the bank of the Dee; from the adjacent hill, which commands the full proſpect of that rich valley, the view is exceedingly ſumptuous and delightful. A large and ſpacious plain, finely divided by the windings of the river; enriched with variety of wood; ſurrounded with enormous mountains, the loftieſt pines waving among their craggy cliffs; —preſents the moſt ſingular combination of every rural beauty, with the moſt magnificent ſcenery that nature can exhibit.

The river, flowing on in an eaſy ſerpentine courſe, here and there reflecting the pure azure of the ſky, enlivens the deep ſhade of the over-hanging wood, which finely marks its progreſs through the plain. The water, ſpreading near the gothic tower, forms ſeveral little iſlands tufted with trees, which give a freſh variety to the ſcene. The incloſures of the dale, marked by various rows of trees; and ornamental clumps of planting, riſing near the houſe and gardens, give the whole valley a charming and very ſplendid appearance. On rugged parts of the hills, a tower, a high obeliſk, an hermitage, a pyramidal ſeat, diſtinguiſh ſeveral eminences, and ſhew works of taſte, mingling with the wilder beauties of uncultivated nature. Diſtant farms, prettily divided by hedges, embelliſh the ſkirts of the mountains, and form a charming contraſt with the dark pines above. The brown heath of the ſummits, the purple bloom of the flower, and grey rocks appearing through, give another picturesque effect to the landſcape, and ſet off the fainter tints of the blue miſty mountains which terminate the ſcene. In ſuch a beautiful field, and in ſuch a magnificent incloſure, is ſituated Marlodge, a hunting ſeat of the Earl of Fife. It is in the heart of Marforeſt; an extent of country of about fifteen miles ſquare, reſerved entirely for deer and game, of which it yields the greateſt plenty and variety. The deer, being never diſturbed near the ſeat, come about it in great numbers, without ſhewing any marks of fear: advancing from the thickets, they often croſs the green, and ſtop to feed, on the way to their native mountains. The young fawns, bounding from the copſe, and accompanied by the hinds, deliberately walk along in view. They are often obſerved on the adjacent heights, reſting in the heat of the day; and in the evenings march along the ſides of the dale in companies of twenty or thirty together; the

the ſtags with their branchy horns, and fine ſhapes, are beautiful and entertaining figures in the landſcape.

The deer that are uſed at table are killed in diſtant parts of the foreſt, many miles from Mar-lodge. Theſe hills abound with partridges, black cocks, ptarmigans, and dottrels; and are a rich field of amuſement for the ſportſman; though the ruggedneſs of the grounds makes the recreation to be accompanied with no ſmall fatigue.

About three miles above Mar-lodge, from a rocky glade, one hears the ſound of the Lin of Dee. It is a noble fall of the river: but the precipices, which there confine the Dee, approach ſo near each other, that the cataract is ſcarcely obſervable, until within reach of the ſpray which the fall occaſions: but under the ſhade, and at the foot of a lofty pine, where a ruſtic ſeat is placed for contemplation; the proſpect of good aged trees which hang drooping over the torrent tumbling into the depth below; the loud and continual murmur of the water, echoing in the hollow of the worn rock: the rugged cliffs above, clothed with gloomy groves of pine; all command a ſerious attention, and render the ſcene intereſting and ſolemn. Vaſt logs of wood, ſeen amongſt the foam of the caſcade, are driven with violence againſt the rocks, and, precipitated from ſuch a height, ſound in their fall like peals of diſtant thunder, and make the ſolitude inſpire additional awe.

A mile or two farther up Glen-Dee, a ſingular craggy hill attracts one's notice; it is called Craig-Phatric, and is compoſed of broken rocks, which ſeen to be huge ſtones piled on one another, rather than any ſolid maſs. Between two high and pointed cliffs, into which the front of the mount is divided, there appears beyond, as if within its ſummit, a proſpect of precipices with vaſt trees raiſed from amid the naked rocks; from among theſe a rivulet comes down, and, ruſhing through the chaſm, forms a white torrent playing from rock to rock all the way to the bottom of the hill. The rugged and deep-worn channel, grown dark with the ſlime of ages, is lighted by the daſhing of the water, and the whiteneſs of the ſpray. At the foot of the fall, which plays down the ſteep for fifty or ſixty yards, there is a rural bridge, compoſed of broken trees and ſods, which leads the way to ſome cottages that are ſheltered by the rock. The peaſants that inhabit them cultivate a meadowy plain, which ſtretches thence to the Dee: theſe dwellings, from their very artleſs form, and wicker incloſures, ſcarcely ſeem to diminiſh the wildneſs, but add to the beauty, of the landſcape.

Farther into the foreſt, and near the ſource of the Dee, are many noble glens: deep romantic ſolitudes, encompaſſed with horrid precipices, and where rocky paths lead on the verge of impaſſable ſwamps. In one, a hideous cavern, awful as ever hermit retired to, yawns over the end of a dreary lake. It chills one's blood to enter it.—Leaving Lui-beg, an opener but rocky dale on the left, we ſee a charming valley of meadow-ground, with much fine natural graſs. The ruins of ſeveral ſtone buildings ſhew that it had been once inhabited: but it is now, as the other paſtures of the foreſt, left to fatten the deer. On the ſides of the hills bordering on the valley, are many thouſand ſtumps of trees, the remains of woods which have been floated down Lui-water to the Dee.

From hence, by a narrow path, winding among trees, there is an entrance into a Dale called Derry, singularly wild and picturesque. In the mouth of it rises a mount, exactly according to the model of Tomman-heurich, only the form is a little more varied by the irregular size of the timber which covers it. Within the mount the inclosure of the dale is complete. Ridges of rocky mountains run along its sides, and these, connected at the farther end, form a magnificent boundary to some miles of pretty level ground. The sloping sides of the dale have a peculiar wildness in their appearance, owing to the forest in these parts having in a former age been set on fire: many of the statelieſt trees still remaining, their bare, white, parched, branches, twisted in an innumerable variety of the strangest forms, and contrasted with the heath, are striking objects in the piece of desolate scenery. Numbers of small torrents rushing down the rocks, some of them precipitated over the clifts from a vast height, are united at the bottom of the dale in one common stream, and, forming a considerable body of water, run in serpentine windings, under the shade of those trees with the conflagration had spared.

When travelling through the forest, one can scarcely help being struck with the amazing size and venerable appearance of the more ancient trees. Some of them standing in a kind of solitary majesty, on the higher grounds, at a distance from the woods: others, which, through age and infirmity, have yielded to the winter storms and the ravages of time, are laid along the ground a length of seventy feet, and torn up, with their enormous roots, such piles of earth as look at a distance like ruins, and give the forest a most august and forlorn appearance.

Some were aged, hollow, perforated, trunks, which have not been torn up from the roots, but whose stems and branches are buried round them, still projecting from the soil, and gradually decaying in all the original wildness of nature, have something extremely venerable and picturesque about them. The dark brown furze and grey heath, sprinkled with leaves of bright green; and decked with the variously-coloured and shewy berries of the small shrubs, which already find their soil on the withering timber; make a contrast, like the hoary greatness of declining years with the sprightly sallies of aspiring youth, not to be passed by unadmired: with these, decaying nature is springing forth in other forms; and every trunk is enriched with blossoms not its own.

On the EDUCATION and STUDIES of WOMEN.

WOMEN, whose talents have been much cultivated, have usually had their attention distracted by subordinate pursuits, and they have not been taught that the grand object of life is to be happy; to be prudent and virtuous, that they may be happy: their ambition has been directed to the acquisition of knowledge and learning, merely as other women have been excited to acquire accomplishments, for the purposes of ostentation, not with a view to the real advantage of the acquisition. But from the abuse you are not to argue against the use of knowledge. Place objects in a just view before the understanding, shew their different proportions, and the mind will make a wise choice. "You think yourself happy because

you

you are wise," said a philosopher; "I think myself wise because I am happy."

No woman can be happy in society who does not preserve the peculiar virtues of her sex. When this is demonstrated to the understanding, must not those virtues, and the means of preserving them, become objects of the first and most interesting importance to a sensible woman? I would not rest her security entirely upon this conviction, when I can increase it by all the previous habits of early education: these things are not, as you seem to think, incompatible. While a child has not the use of reason, I would guide it by my reason, and give it such habits as my experience convinces me will tend to its happiness. As the child's understanding is enlarged, I can explain the meaning of my conduct, and habit will then be confirmed by reason: I lose no time, I expose myself to no danger, by this system. On the contrary, those who depend merely on the force of habit and of prejudice alone, expose themselves to perpetual danger. If once their pupils begin to reflect upon their own hood-winked education, if once their faith is shaken in the dogmas which have been imposed upon them, they will probably believe that they have been deceived in every thing which they have been taught, and they will burst their former bonds with indignation: credulity is always rash in the moment of detection.

You dislike in the female sex that daring spirit which despises the common forms of society, and which breaks through the delicacy and reserve of female manners. So do I. And the best method to make my pupil respect these things, is to shew her how they are indispensably connected with the largest interests of society, and with their highest pleasures. Surely this perception, this view of the utility of forms apparently trifling, must be a strong security to the sex, and far superior to the automatic habits of those who submit to the conventions of the world, without consideration or conviction. Habit, improved by reason, assumes the rank of virtue.

The motives which restrain from vice must be encreased, by the clear conviction that vice and wretchedness are inseparably united. It is too true that women, who have been but half instructed, who have seen only superficially the relations of moral and political ideas, and who have obtained but an imperfect knowledge of the human heart, have conducted themselves so as to disgrace their talents and their sex: these are conspicuous and melancholy examples, cited oftener with malice than with pity. The benevolent and the wise point out the errors of genius with more care than those of folly, because there is more danger from the example. I appeal to examples, which every man of literature will immediately recollect among our contemporaries, to prove, that, where the female understanding has been properly cultivated, women have not only obtained admiration by their useful abilities, but respect by their exemplary conduct.

You very prudently avoid alluding to your contemporaries, but you must excuse me if I cannot omit instances essential to my cause. Modern education has been improved; the fruits of these improvements appear, and you must not forbid me to point them out. Instead of being ashamed that so little has been hitherto done by female abilities in science and in useful literature, I am surprised that so much has been effected. Till of late, women were kept in Turkish ignorance;

ignorance; every means of acquiring knowledge was discountenanced by fashion, and impracticable even to those who despised fashion. Our books of science were full of unintelligible jargon, and mystery veiled pompous ignorance from public contempt; but now, writers must offer their discoveries to the public in distinct terms, which every body may understand; technical language will no longer supply the place of knowledge, and the art of teaching has been carried to great perfection by the demand for learning: all this is in favour of women. Many things, which were thought to be above their comprehension, or unsuited to their sex, have now been found to be perfectly within the compass of their abilities, and peculiarly suited to their situation. Botany and Natural History become fashionable among the ladies; and science has "been inlisted under the banners of imagination," by the irresistible charms of genius; by the same power her votaries will be led from the looser analogies which dress out the imagery of poetry, to the stricter ones which form the ratiocination of philosophy.

Chymistry is a science particularly suited to women, suited to their talents and to their situation. Chymistry is not a science of parade, it affords occupation and infinite variety; it demands no bodily strength, it can be pursued in retirement, it applies immediately to useful and domestic purposes; and, while the ingenuity of the most inventive mind may be exercised, there is no danger of inflaming the imagination; the judgment is improved, the mind is intent upon realities, the knowledge that is acquired is exact, and the pleasure of the pursuit is a sufficient reward for the labour.

Dr. Johnson says, that "nothing is ever well done that is done by a receipt." Were I attempting to recommend chymistry to certain Epicurean philosophers, I should say that a good cook was only an empirical chymist, and that the study of this science would produce a salutary reform in receipt books, and must improve the accomplishments of every lady who unites in her person the offices of housekeeper and wife.

Sir Anthony Absolute, the inveterate foe to literary ladies, declares, that, "were he to choose another helpmate, the extent of her erudition should consist in her knowing her simple letters without their mischievous combinations; and the summit of her science be—her ability to count as far as twenty: the first would enable her to work A. A. upon his linen, and the latter would be quite sufficient to prevent her giving him a shirt No. 1, and a stock No. 2."

Sir Anthony's helpmate would, by the proper application of chymistry, mark A. A. upon his linen with an ease and expedition unknown to the persevering practitioners of cross-stitch; and the economy of his wardrobe and of his house would be benefited by science of arithmetic and the taste for order. Economy is not the mean "penny-wise and pound-foolish policy," which some suppose it to be; it is the art of calculation, joined to the habit of order, and the power of proportioning our wishes to the means of gratifying them. "The little pilfering temper of a wife" is despicable and odious to every husband of sense and taste. But, far from despising domestic duties, women, who have been well educated, will hold them in high respect, because they will see that the whole happiness of life is made up of the happiness of each particular day and hour, and that the enjoyment of these must depend upon the punctual

punctual practice of those virtues which are more valuable than splendid. Taste, ingenuity, judgment, are all applicable to the arts of domestic life; and domestic life will be most preferred by those who have within their own minds a perpetual flow of fresh ideas; who cannot be tempted to dissipation, and who are most capable of enjoying all the real pleasures of friendship and of love.

Since I began this letter, I met with the following pathetic passage, which I cannot forbear transcribing:

"The greatest part of the observations contained in the foregoing pages were derived from a lady, who is now beyond the reach of being affected by any thing in this sublunary world. Her beneficence of disposition induced her never to overlook any fact or circumstance that fell within the sphere of her observation, which promised to be in any respect beneficial to her fellow-creatures. To her gentle influence the public are indebted, if they be indeed indebted at all, for whatever useful hints may at any time have dropt from my pen; a being, she thought, who must depend so much as man does on the assistance of others, owes, as a debt to his fellow-creatures, the communication of the little useful knowledge that chance may have thrown in his way. Such has been my constant aim; such were the views of the wife of my bosom, the friend of my heart, who supported and assisted me in all my pursuits. I now feel a melancholy satisfaction in contemplating those objects she once delighted to elucidate."

The elegant Lord Lyttleton, the benevolent Haller, the amiable Dr. Gregory, have all, in the language of affection, poetry, and truth, described the pleasures which men of genius and literature enjoy in a union with women who can sympathize in all their thoughts and feelings; who can converse with them as equals, live with them as friends; who can assist them in the important and delightful duty of educating their children; who can make their family their most agreeable society, and their home the attractive centre of happiness.

Can women of uncultivated understandings make such wives?

Women have not the privilege of choice as we have; but they have the power to determine. Women cannot precisely force the tastes of the person with whom they may be connected; yet their happiness will greatly depend upon their being able to conform their tastes to his. For this reason, I should rather, in female education, cultivate the general powers of the mind than any particular faculty. I do not desire to make my daughter a musician, a painter, or a poetess; I do not desire to make her a botanist, a mathematician, or a chymist; but I wish to give her the habit of industry and attention, the love of knowledge and the power of reasoning; these will enable her to attain excellence in any pursuit of science or of literature. Her tastes and her occupations will, I hope, be determined by her situation, and by the wishes of her friends: she will consider all accomplishments and all knowledge as subordinate to her first object, the contributing to their happiness and her own.

RUNIC

RUNIC MYTHOLOGY,

Translated from the ancient Islandic Tongue. It is attributed to the Sybil of the North; is of the most remote antiquity, as may be gathered from the want of connexion, &c. and, with much sententious simplicity, conveys an idea of the ancient morality and manners.

CONSIDER and examine well all your doors, before you venture to stir abroad; for he is exposed to continual danger, whose enemies lie in ambush concealed in his court.

To the guest who enters your dwelling with frozen knees, give the the warmth of your fire: he who hath travelled over the mountains hath need of food, and well-dried garments.

Offer water to him who sits down at your table: for he hath occasion to cleanse his hands; and entertain him honourably and kindly, if you would win from him friendly words, and a grateful return.

He who travelleth hath need of wisdom. One may do at home whatsoever one will; but he, who is ignorant of good manners, will only draw contempt upon himself, when he comes to sit down with men well instructed.

He who goes to a feast where he is not expected, either speaks with a lowly voice, or is silent: he listens with his ears, and is attentive with his eyes; by this he acquires knowledge and wisdom.

Happy he, who draws upon himself the applause and benevolence of men! for whatever depends upon the will of others, is hazardous and uncertain.

A man can carry with him no better provision for his journey than strength of understanding. In a foreign country, this will be of more use to him than treasures; and will introduce him to the table of strangers.

There is nothing more useless to the sons of the age, than to drink too much ALE: the more the drunkard swallows, the less is his wisdom, till he loses his reason. The bird of oblivion sings before those who inebriate themselves, and steals away their souls.

A coward thinks he shall live for ever, if he can but keep out of the reach of arms: but, though he should escape every weapon, old age, that spares none, will give him no quarter.

The gluttonous man, if he is not upon his guard, eats own death: and the gluttony of a fool makes a wise man laugh.

The flocks know when to return to the fold, and to quit the pasture: but the worthless and slothful know not how to restrain their gluttony.

The lewd and dissolute man makes a mock of every thing: not considering, how much he himself is the object of derision.—No one ought to laugh at another, until he is free from faults himself.

A man void of sense ponders all night long, and his mind wanders without ceasing: but, when he is weary at the point of day, he is nothing wiser than he was over-night. He thinks he is profoundly knowing; being indeed most superficial and shallow. But he knows not how to answer when men pose him with a difficult question.

Many are thought to be knit in the ties of sincere kindness: but, when it comes to the proof, how much are they deceived! Slander is the common vice of the age. Even the host backbites his guest.

One's

One's own home is the beſt home, though never ſo ſmall. Every thing one eats at home is ſo ſweet. He who lives at another man's table is often obliged to wrong his palate.

I have never yet found a man ſo generous and munificent, as that to receive at his houſe was not to receive; nor any ſo free and liberal of his gifts, as to reject a preſent when it was returned to him.

Let friends pleaſure each other reciprocally by preſents of arms and habits. Thoſe who give and thoſe who receive, continue a long time friends, and often give feaſts to each other.

Peace, among the perfidious, continues for five nights to ſhine bright as a flame: but, when the ſixth night approaches, the flame waxes dim, and is quite extinguiſhed; then all their amity turns to hatred.

When I was young, I wandered about alone: I thought myſelf rich if I chanced to meet with a companion. A man gives pleaſure to another man.

Let not a man be over wiſe, neither let him be more curious than he ought. Let him not ſeek to know his deſtiny, if he would ſleep ſecure and quiet.

Riſe early, if you would enrich yourſelf, or vanquiſh an enemy. The ſleeping wolf gains not the prey; neither the drowſy man the victory.

They invite me up and down to feaſts, if I have only need of a ſlight breakfaſt: my faithful friend is he who will give me one loaf when he has but two.

Whilſt we live, let us live well: for, be a man ever ſo rich, when he lights his fire, Death may perhaps enter his door before it be burnt out.

It is better to have a ſon late than never. One ſeldom ſees ſepulchral ſtones raiſed over the graves of the dead by any other hands than thoſe of their own offſpring.

Riches paſs away like the twinkling of an eye: of all friends they are the moſt inconſtant. Flocks periſh; relations die: friends are not immortal: you will die yourſelf: but I know one thing alone that is out of the reach of fate, and that is the judgment which is paſſed upon the dead.

Let not the wiſeſt be imperious, but modeſt; for he will find by experience, that, when he is amongſt thoſe that are powerful, he is not the moſt mighty.

Praiſe the fineneſs of the day when it is ended: praiſe a woman when you have known her; a ſword, when you have proved it; a maiden, after ſhe is married; the ice, when once you have croſſed it; and the liquor, after it is drunk.

Truſt not to the words of a girl; neither to thoſe which a woman utters; for their hearts have been made like the wheel that turns round; levity was put into their boſoms.

Truſt not to the ice of one day's freezing; neither to the ſerpent who lies aſleep; nor to the careſſes of her you are going to marry; nor to a ſword that is cracked and broken; nor to the ſon of a powerful man; nor to a field that is newly ſown.

Peace between malicious women is compared to a horſe who is made to walk over the ice not properly ſhod; or to a veſſel in a ſtorm, without a rudder; or to a lame man who ſhould attempt to follow the mountain goats with a young foal or yearling mule.

He who would make himself beloved by a maiden, must entertain her with fine discourses, and offer her engaging presents: he must also incessantly praise her beauty. It requires good sense to be a skilful lover.

There is no malady or sickness more severe than not to be content with one's lot.

The heart alone knows what passes within the heart: and that which betrays the soul is the soul itself.

If you would bend your mistress to your passion, you must only go by night to see her. When a thing is known to a third person, it never succeeds.

Seek not to seduce another man's wife with the alluring charms of Runic incantation.

Be humane and charitable to those you meet travelling in the mountains, or on the sea.

He who hath a good supper in his travelling wallet, rejoices at the approach of night.

Never discover your uneasiness to an evil person, for he will afford you no comfort.

Know that, if you have a friend, you ought to visit him often. The road is grown over with grass, the bushes quickly spread over it, if it is not constantly travelled.

Be not the first to break with your friend. Sorrow gnaws the heart of him who hath no one to advise with but himself.

Obsequiousness produces friends: but it is vile indeed to flatter one's own self.

Have never three words of dispute with the wicked. The good will often give up a point, when the wicked is enraged and swollen with pride. Nevertheless, it is dangerous to be silent when you are reproached with having the heart of a woman; for then you would be taken for a coward.

I advise you be circumspect, but not too much: be so, however, when you have drunk to excess; when you are near the wife of another; and when you find yourself among robbers.

Do not accustom yourself to mocking; neither laugh at your guest, or a stranger; they who remain at home, often know not who the stranger is that cometh to their gate.

Where is there to be found a virtuous man without some failing? or one so wicked as to have no good quality?

Laugh not at the grey-headed declaimer, nor at thy aged grandsire. There often come forth, from wrinkles of the skin, words full of wisdom.

The fire drives away diseases: the oak expels the stranguary: straws dissolve enchantments: Runic characters destroy the effects of imprecations: the earth swallows up inundations: and death extinguishes hatred and quarrels.

DR. FORDYCE'S REMARKS ON THE HUMANE SOCIETY; WITH THEIR MODE OF TREATMENT IN DIFFERENT CASES.

HOW many opportunities of doing good are lost for want of attention, not for want of ability! What numbers have we known, in affluent circumstances, with the best principles, and the most liberal dispositions, who, though not ignorant of the Humane Society

Society from its first establishment, or of the noble purposes it has answered in its progress, have never yet come forward to promote it! In a country so justly celebrated as Great Britain for the multiplicity, diversity, and vast extent, of its charitable foundations, it seems strange that the list of those who have supported this, a fabric which can advance claims above any of the rest, should not be nearly equal to that of its triumphs over Death, the common enemy of mankind, who, but for its wonderful exertions, must have inevitably robbed the world of more than two thousand lives.—More than two thousand lives! Blessed Heaven! what an idea bursts here upon the mind! I pretend not to pursue it through all the connexions and consequences of the sublime object it presents to our beneficence; but, I am strongly inclined to believe that no person of understanding and sensibility, who is not biassed by prejudice, can read, as I have lately, the "New Inquiry into the Suspension of vital Action" by the very learned and very ingenious Dr. Fothergill, of Bath; or the Annual Report of 1796, by the truly worthy and highly-honoured Dr. Hawes, who had so eminent a hand in founding the Humane Society, *without the deepest conviction of its transcendent utility and importance.* Were it lawful to feel envy on any occasion, I should be tempted to feel it on this, when I mention the name of the happy man, who has lived to witness the marvellous success of a scheme so novel, so beneficial, so grand! May he be spared to see it become, with the continued assistance of his unwearied and disinterested coadjutors, "*the joy and praise of the whole earth!*" The extraordinary fame it has already acquired in foreign, and even barbarous, lands, gives the fairest hope that our wish may be fulfilled.

In the mean time, what imagination can conceive a plan so comprehensive of all that is most interesting to humanity and religion!—in rescuing such numbers of rational and immortal creatures from a premature grave;—in saving them to the state;—in restoring them to the transported arms of their parents, families, and friends, who had just been weeping over them with unutterable anguish;—in preventing the horrid effects of self-murder, a crime now more than ever prevalent;—in furnishing with the means of instruction and reformation multitudes that must otherwise have perished in ignorance and vice!—(What shall I say more?)—in affording the philanthropist, the the patriot, the divine, the philosopher, the physician, the poet, the painter, the skilful mechanic, ample scope for the exercise of their various powers, and the gratification of their respective inclination! If persons of easy fortune, who devote a part of it to other charities, are afraid of adding to their yearly expence one guinea more in support of this, though by no means indisposed to relish the pleasures of the mind or of the heart, I wish them to know, that these may be enjoyed with supreme delight by all who have an opportunity of contemplating the annual festival of the Humane Society; a spectacle, I must needs think, surpassing all that were ever exhibited on the theatre of the universe! Ye sons of luxury, ye daughters of dissipation, hide your diminished heads before the friends of this institution! Boast of your pleasures and your attractions no more! Go and sacrifice, at the altar of humanity, a portion of those superfluous sums, that are now thrown away, without prudence or taste, on gratifications both hurtful and degrading.

If we consult the history of the world, we shall find in no age or country an instance, next to its redemption, in which the dignity of the creature Man, who was deemed an object worthy of such interposition, appeared so conspicuously, as in thus co-operating with the creator God, to produce, with a rapidity that seems miraculous, effects unparalleled for their grandeur, variety, and extent, in the present state, and reaching forward into an endless existence. The suddenness of the transition, from the extreme of evils to happiness beyond calculation, strikes me, I must confess, in a manner which I have no power of describing. Of all that I have read upon the subject, Dr. Fothergill's Treatise on Suspended Animation approaches, in my opinion, nearest to "the height of this great argument." But, nothing less than the eloquence of Heaven, or the duration of eternity, can do justice to the grateful extasies of myriads who shall have been saved from "the second death," or the rapturous congratulations of those who were the instruments of making them "partakers of the first resurrection." He that hath an ear to hear, let him hear; and he that hath a heart to feel, let him indulge its sweetest and noblest sensations, in manifesting, without farther delay, his esteem and his zeal for the Humane Society.

Directions for Recovering Persons apparently Dead, from the Records of the Humane Society.

Instantly dispatch one person for medical assistance,—another to the nearest house, where a fire, warm water, and a bed, with other necessaries, may be immediately obtained.

1. Convey the body, with the head raised, to the nearest convenient house.

2. Strip, dry the body, and clean the mouth and nostrils.

3. Young children between two persons in a hot bed.

4. An Adult.—Lay the body on a blanket, or bed, and in cold weather near the fire. In warm seasons, the air should be freely admitted into the room.

5. It is to be gently rubbed with flannel, sprinkled with spirits; and a heated warming-pan, covered, may be lightly moved over the back and spine.

6. To restore breathing.—Introduce the pipe of a pair of bellows (when no apparatus) into one nostril; the other with the mouth closed, inflate the lungs, till the breast be a little raised; the mouth and nostrils must then be left free:—repeat this process till life appears.

7. Whilst these means are employed, one or two assistants are to throw tobacco-smoke gently into the fundament, with the proper instrument,—or a bowl of a pipe filled with tobacco, lighted, and covered with a handkerchief, so as to defend the mouth of the assistant.

8. Bathe the breast, &c. with hot rum or other spirits,—if no signs of life appear,—the warm bath:—if it can be obtained, the body is to be kept warm with hot bricks, or hot water applied to the palms of the hands, soles of the feet, &c. for several hours.

9. Electricity early employed by a medical assistant.

Suffocation by noxious vapours, or lightning.—Throw cold water often and repeatedly upon the face, &c. at some distance, and with force,

drying

drying the body at intervals. If the body feels cold, apply warmth gradually; and then employ the usual plan of the drowned.

Frost.—The body is not to be carried near the fire—Rub it for some time with snow, ice, or cold water.—Restore warmth, &c. by slow degrees, and, after some time, if necessary, employ the plan for the resuscitation of drowned persons.

Hanging.—A few ounces of blood may be taken from the jugular vein, and cupping glasses may be applied to the head and neck; leeches also to the temples.

Still-born infants.—Blow air into the mouth, through a small pipe or quill, till the breast be a little raised, then gently press the chest, and repeat the process for some time.—Gently rub the body, and foment the breast, &c. with diluted spirits.

Smothered children.—Expose them to a stream of fresh air.—Throw cold water on the face and breast.—The lungs to be inflated, and frictions, &c. for restoration of life.

Excessive intoxication.—The body is to be laid on a bed, &c. with the head a little raised: the neck-cloth, &c. removed.—Obtain immediately medical assistance, as the modes of treatment must be varied according to circumstances.

GENERAL OBSERVATIONS.

1.—If there be convulsions, or other signs of returning life, a tea-spoonful or two of warm water may be given; and, if the swallowing be returned, warm wine or diluted brandy.—Let the person be put into a warm bed, and, if disposed to sleep, he will awake perfectly recovered.

2.—The plan above recommended is to be used for four hours.—It is a vulgar opinion to suppose persons are irrecoverable, because life does not soon make its appearance.

3.—Bleeding never should be employed, unless by the direction of the medical assistants.

In great sinking of the strength, especially in the end of fevers and other acute diseases, patients frequently lie in a state resembling death.—If the bed-clothes be removed, the heat of the body will be immediately dissipated, and every spark of life destroyed.—By not attending to this important circumstance, it is feared the lives of thousands of our fellow-creatures have been sacrificed, and their bodies committed to the grave, who, by a more humane conduct, would have been restored to life.

The Royal Humane Society, established in 1774, have already wrought the preservation of more than two thousand lives, that would have otherwise been irretrievably lost to their parents, to their families, and to the community.

The managers enjoy a heart-felt pleasure in being enabled to declare the immense number of restorations that have been, under Providence, effectuated.

Within the period of twenty years, two thousand and twenty-nine, women, and children, restored to the state; not to speak of the inexpressible transports of pleasure and advantage derived to parents, husbands, wives, relatives, and friends.—Our exertions in the cause of suspended animation are of infinite value to population, as each individual life saved, is the means of adding more lives to the common stock, consequently of increasing the true source of national opulence.

Royal

Royal Humane Society.—This institution has attained three most important objects:—1st, It has dried up a most abundant source of destruction to the human life.—2d, It has added a new province to the medical art; and, by thus enlarging the boundaries of its exertions, has poured new light upon the philosophic eye, and evinced the probability of extending the empire of science to embrace objects of the utmost importance.—3dly, It has considerably tended to promote and diffuse, especially among the lower ranks of the people, an ardent spirit of humanity that must be pleasing to the Christian and the philanthropist.

The managers have not only transmitted the necessary information to form Humane Societies, but they have likewise, at an immense expence, presented the faculty, &c. with their apparatusses, drags, reports, and plans of resuscitation, resident in the different parts under-mentioned, viz.

British Settlements in the East Indies.—Foreign countries: Lisbon, Normandy, Vienna, Copenhagen, Algiers, Jamaica, Barbadoes, Hudson's Bay, Boston, Pennsylvania, Philadelphia, New York, Ostend, and the University of Prague.—England: Sunderland, Liverpool, Lancaster, Shropshire, Cheshire, Newcastle upon Tyne, Whitehaven, Severn, Bristol, Kent, Surry, Darlington, Norwich, Newark, Worcester, Horncastle, Shrewsbury, Northamptonshire.—Ireland: Dublin, Limerick, Waterford, Londonderry, Belfast.—Scotland: Aberdeen, Montrose, Leith, Forth and Clyde Navigation.

Rewards within twenty years have been paid to Receiving Houses and Claimants in 2,906 Cases:

Persons drowned or otherwise suffocated—Restored to life,	1,169
Lives preserved by the drags of the Humane Society, &c.	858
Unsuccessful cases,	879

Remarkable Cases in which the Dead have been restored to Life.

Wednesday night, August 15th, a boy of the name of Thomas, an apprentice to a lighterman, was unfortunately drowned, when bathing in the River Thames. His body was picked up after being in the water near half an hour, when he was taken to the nearest public houses, where every method was used as directed by the Humane Society, and in the space of one hour he was restored to life, and in a fair way of recovery.

On Sunday, the —— August, 1795, a boy fell from a barge into the River Kennet; after being under water for ten minutes, and no assistance could be attained, two of his companions jumped into the water, seven feet deep, and brought him to the shore an apparent corpse. Mr. Lambe attended, and employed the society's process, which, in about an hour, restored the child to life again. The happy circumstance being properly represented to the managers of the Humane Society, the reward was paid to those who so nobly exerted themselves in the restoration of an only son to his almost-distracted and fond parents.

GLASGOW, *Sept.* 3, 1795.—A few days ago the body of a boy, about three years of age, was discovered floating on the Clyde at a considerable distance from the quay in the harbour of Greenock. A young gentleman of this city, who was brought to the quay by the frantic cries of the mother, instantly leaped with his clothes on into the sea, swam to the child, and brought it ashore. The body

was

was immediately carried into a neighbouring house, where, after persevering for some hours in the means prescribed by the Humane Society, it was fortunately restored to life. It is worthy of remark, and we mention it here as a caution, because we know the practice to be but too prevalent, and attended with the most fatal consequences, that no sooner had this child begun to manifest symptoms of re-animation, than the mother, and a great number of her gossips, whom this melancholy event had assembled together, proposed swilling it with whisky, and it was with the greatest difficulty that the gentleman who had been instrumental in its recovery could prevail on them to desist.

READING, *Sept.* 4, 1795.—A few days since, R. Bell accidently fell into the River Kennet. On the alarm being given it was several minutes before the body could be discovered, and was brought ashore apparently dead.—Mr. Lambe was sent for, but circumstances prevented the Humane Society's process being employed for a considerable time; so that it required an hour's perseverance before signs of life appeared.—An only son is happily restored alive to his fond and almost disconsolate parents.

DEC. 23, 1795.—A few days ago, the son of Mr. Moore accidently fell into the River Ovan in England, instantly sunk, and was under water for several minutes; at length, the body was found, and carried, apparently dead, to the nearest receiving house. The various plans of the Humane Society were employed for a long time before life returned.—The accident happened at four o'clock in the afternoon, and at seven in the evening he was insensible and speechless; but at nine his senses returned, and he soon afterwards spoke to the attendants. By the next morning, all alarming symptoms were removed, and the almost-distracted parents have at this time the enjoyment of their only son in perfect health. A strong incitement to continue in similar cases our exertions for several hours, though no signs of life appear.

The lives of Sophia Peatt, an infant, and Many Robson, aged only five years, have been restored by a happy administration of the resuscitative process by Richard Long.

MIDDLESEX.—Richard Long, of Ealing, maketh oath and saith, That on the 2d of June he heard the cry of a child in distress:—That he jumped over the hedge, and ran to a deep ditch; in this water he saw the two children. This deponent supposed they had both rolled from off the bank. He got them out, and laid the infants on the ground in an apparent lifeless state, and afterwards carried both to Mrs. Platt's, the mother of the youngest, and the nurse of the other. The proper means recommended by the society being employed, the children were, by Divine Blessing, restored to life.

Suspension and Resuscitation.—We were called, about nine in the evening on the 26th of the month, to an unfortunate young woman who had hanged herself—half an hour at least had elapsed before she was discovered. We agreed to have the apparently dead body removed to the watch-house, and to employ the various means of resuscitation. Our earnest endeavours and exertions, after a considerable time, were at length abundantly gratified by the appearance of languid signs of life; and by a continuance of the process for two hours, a laborious respiration and pulsation returned. We resolved to persevere in the various means; for, although life had been restored,

restored, her alarming and dangerous situation was not removed. At the conclusion of the third hour, the signs of returning health appeared more favourable; so that it was agreed that Mr. Bliss (Mr. Burnett's assistant) should remain with her, and acquaint us if any alarming symptoms occurred. In about four hours she was able to answer Yes or No to any question that was asked her, and by the next morning she was so far restored as to be perfectly sensible. The account she gave of herself was very distressing. She is a stranger to this place, and, in a most desponding and dreadful state of mind, attempted the horrid act of suicide; but, by the blessing of God, and the assistance of the Royal Humane Society, she is restored to life.

HENRY BURNET, JAMES CRANSHAW, Medical Assistants.

October 5, 1794.

CAPT. CHRISTIAN RIGA *restored to life*.—It is with pleasure I can communicate another instance of the happy effects resulting from a long perseverence in the resuscitative process recommended by our society.

I was called on Monday to a Danish captain, who had fallen overboard; he had been under water several minutes, and was taken up an apparent corpse. A quarter of an hour elapsed before I could arrive. On examining the body, I indulged no hopes of success; but duty demanded, and humanity pleaded strongly in the favour of a foreigner. After an exertion for two hours, I was most amply recompensed. My patient was conveyed to bed in full possession of restored life. I have furnished Capt. Riga with the plans of resuscitation, that he may impress his countrymen with the idea of the blessing of such an institution, and tell them, that, in the exercise of humanity, a British heart knows no distinction.

TO DR. HAWES.—Sir, I was called to an unhappy desponding woman who had thrown herself into the Thames, and after being under water for several minutes was taken out apparently dead, by W. Philby, &c. Mrs. Batty accommodated us with every thing necessary on the occasion. At the time I first saw her she was cold and lifeless; but, by pursuing the methods recommended by your useful society, in about a quarter of an hour a feeble pulse was perceived. She sunk several times after this; and if it had not been for the unremitting perseverance of Mr. Welbank, who remained with her for three hours, there is great reason to fear her recovery would not have been accomplished. This however happily took place. I earnestly recommended Mrs. Batty to the notice of the managers of the Humane Society. JAMES WARE.

We deem it proper to observe on Mr. Ware's success, that, in calamities of this nature, no circumstance, however unfavourable, ought to repress or damp our exertions, in immediately applying and resolutely and vigorously persevering in the means of resuscitation.

The perils of overwhelming waters, pestilential air, and elementary fire, are too often productive of apparent vital extinction; of which last circumstance the subsequent case is a most convincing proof of the utility of this institution.

TO THE REGISTER.—Sir, having observed your generous exertions for the preserving of human beings from dissolution, I think it incumbent upon me to state the case of a young man, who was apparently struck dead by lightning. Being under way near Harwich rocks the 27th of July, there came on a very heavy squall, accompanied

panied with rain, thunder, and lightning. W. Smith was ſtruck motionleſs; and obſerving his hat to be rent in pieces we concluded he was killed; but by perſevering in your plan of reſuſcitation, his life was reſtored in about an hour. For my own part, what with the continuance of the ſtorm, the vapour ariſing from the hold, and the ſight of the youth to all appearance dead at our feet, I confeſs that I fully expected inevitable deſtruction. T. JACKSON.

Intenſe Cold.—John Smithers was ſkaiting on the New River; the ice ſuddenly gave way, and he was inſtantaneouſly ſubmerſed; his companions ſoon reſcued him; but, in conſequence of the intenſe cold, he was to all appearance dead. A gentleman fortunately had the ſociety's plan in his pocket, which was employed with ſucceſs; ſo that the man is now alive, to the inexpreſſible joy of an aged mother, his wife, and ſeven children.

LIFE OF ANTOINE LAURENT LAVOISIER.

ANTOINE Laurent Lavoiſier was born at Paris, Auguſt 16, 1743, and received a learned education; which he ſeduloufly improved. When only three and twenty years of age, the Academy of Sciences, April 9, 1766, preſented him with a gold medal, for his diſſertation on the beſt mode of enlightening, during the night, the ſtreets of a great city. Two years afterwards, he was introduced into that celebrated literary ſociety, to whoſe ſervice he ever after devoted his labours, and became one of its moſt uſeful aſſociates and coadjutors.

His attention was ſucceſſively occupied with every branch of phyſical and mathematical ſcience, the pretended converſion of water into earth, the analyſis of gypſum in the neighbourhood of Paris, the cryſtallization of ſalts, the effects produced by the *grade de loupe* of the garden of the Infanta, the project of bringing water from l'Yvette to Paris, the congelation of water, and the phenomena of thunder and the aurora borealis.

Journeys undertaken in concert with Guettard into every diſtrict of France enabled him to procure numberleſs materials towards a deſcription of the lithological and mineralogical empire; theſe he arranged into a kind of chart which wanted little of being completed. They ſerved alſo as a ground-work for a more laborious work of his on the revolutions of the globe, and the formation of *Couches de la Terre*; a work of which two beautiful ſketches are to be ſeen in the Memoirs of the French Academy, for 1772 and 1787. All the fortune and all the time of Lavoiſier were devoted to the culture of the ſciences, nor did he ſeem to have a preponderating inclination for any one in particular, until an event, ſuch as ſeldom occurs in the annals of the human mind, decided his choice, and attached him thenceforth excluſively to chemiſtry;—a purſuit which has ſince rendered his name immortal.

The important diſcovery of elaſtic fluids was juſt announced to the philoſophical world. Prieſtley, Black, Cavendiſh, and Macbride, had opened to phyſiologiſts a ſort of new creation; they had commenced a new æra in the annals of genius, which was to become equally memorable with thoſe of the compaſs, printing, electricity, &c.

It was about the year 1770, that Lavoisier, struck with the importance and grandeur of this discovery, turned his attention to this inexhaustible fountain of truths, and instantly perceived, by a kind of instinct, the glorious career which lay before him, and the influence which this new science would necessarily have over the whole train of physical researches. Having once entered into this path, till then unexplored, he instantly became an inventor, dissipated a host of errors and prejudices, and became the founder of a new doctrine, the success of which is more than sufficient to eternize his name and memory. No sooner had the discoveries of Black and Cavendish arrived in France, than Lavoisier directed his whole attention to their experiments, the processes of which he repeated and varied in a variety of ways, so as to establish and enlarge the results of the English philosophers. His great object being to announce new facts, or to illustrate such as were already public, he collated and compared his observations, and reduced them into a complete system of doctrine. Towards the end of 1775, he presented to the academy his first chemical performance, under the title of New Experiments relative to the existence of a fixed elastic fluid in certain substances, and to the phenomena which result from its fixation or disengagement.

Dr. Priestley's publication on the different species of air had just made its appearance in London; the vast compass and scope of the doctor's experiments startled at first the friends of Lavoisier, lest his observations should have been in many respects anticipated, and he should thus lose the fruits of his ingenuity and industry. In compliance with the instances of his friends, he accordingly has abridged this work of many of its parts, which may be rather called a syllabus than a complete treatise, and even advances some conclusions which he afterwards contradicted;—an excellent method, however, pervades the whole of it, combined with chastity of experiment, and perspicuity of design. In brief, his processes are described with an exactitude which surpasses every publication of the kind which preceded it; it proposes new methods of operation, changes the very face of chemistry, and operates an entire revolution in the science. Lavoisier appeared to be in chemistry, what Kepler, Newton, and Euler, were in geometry and the mathematics; he changed the modes both of operating and of reasoning, and became the centre of all researches and discoveries, on the subject of elastic fluids, made from 1774 to 1792.

His first production was only a preliminary to the surprising revolution he effected in the science. Perceiving that the extensive views he had opened, and the new modes of experiment he had proposed, had excited universal attention, and created an expectation in the public, of deriving, through his means, results still more considerable and unexpected, he employed all his time in pursuing the labours he had undertaken, and in inventing and procuring exact instruments to accomplish his purpose. His house became a grand laboratory, in which nothing was wanting that could throw light on his researches; and his fortune was appropriated to the improvement of his favourite science. He kept in constant employment a number of the most ingenious artists, for the invention and construction of instruments superior to any made use of before, and of new and costly apparatus of every kind, the most accurate and delicate

licate in its execution. No expence was spared by Lavoisier, in the pursuit of his delightful and useful occupation.

To the advantages of fortune, in the application of which to the well-being of the public, few men were so successful as Lavoisier, he united several others, which he made subservient to his views: he held in his house, twice every week, assemblies, to which he invited every literary character that was most celebrated in geometrical, physical, and chemical, studies; in these, instructive conversationes, discussions, not unlike such as preceded the first establishment of academies, regularly took place. Here the opinions of the most eminent literati in Europe were canvassed; passages the most striking and novel, out of foreign writers, were recited and animadverted on; and theories compared with experiments. Here learned men of all nations found easy admission; Priestley, Fontana, Blagden, Ingenhousz, Landriani, Jacquin, Watt, Bolton, and other illustrious physiologists and chemists of England, Germany, and Italy, found themselves mixed in the same company with La Place, La Grange, Borda, Cousin, Meunier, Vandermonde, Monge, Guyton, and Berthollet. Happy hours passed in these learned interviews, wherein no subject was left uninvestigated, that could possibly contribute to the progress of the sciences, and the amelioration and happiness of man. One of the greatest benefits resulting from these assemblages, and the influence of which was soon afterwards felt in the academy itself, and, consequently, in all the physical and chemical works that have been published for the last twenty years in France, was, the agreement established in the methods of reasoning, between the natural philosophers and the geometricians. The precision, the severity of style, the philosophical method, of the latter, was insensibly transfused into the minds of the former; the philosophers became disciplined in the tactics of the geometricians, and were gradually moulded into their resemblance.

It was in the assemblage of these talents that Lavoisier embellished and improved his own. When any new result from some important experiment presented itself, a result which threatened to influence the whole theory of the science, or which contradicted theories till then adopted, he repeated it before this select society: many times, successively, he invited the severest objections of his critical friends; and it was not till after he had surmounted their objections, to the conviction and entire persuasion of the society, it was not till after he had removed from it all mystery and obscurity, that he ventured to announce his discovery to the world.

Thus was Lavoisier the founder of the French chemical school, the distinctive character of which is, a close and mathematical mode of reasoning in theory, combined with a rigid attention to facts in the management of experiments. This school, in which each individual was at the same time the tutor and the pupil, lasted from 1776 to 1792; the time, however, when it flourished in the greatest vigour, was, from 1780 to 1788. These last eight eight years were signalised by the most important discoveries; and in them, the most material alterations were made, both in the foundation and superstructure of chemistry. Then it was, that ancient theories were exploded; then the vague doctrine of phlogiston vanished before the wand of accurate experiment; then it was, that the doctrine of pneumatics received its entire establishment; its first and last stone

having been laid by the chemists of the French school. The new nomenclature of the science was also the work of a number of French chemists, who combined all the salient points of the doctrine, and moulded it into a methodical and systematic form.

Notwithstanding, however, the assistance which Lavoisier derived from so many eminent personages, it is to him that pertains, exclusively, the honours of a founder; his own genius was his sole conductor, and the talents of his associates were chiefly useful in illustrating discoveries he himself had made; he first traced the plan of the revolution he had been a long time conceiving; and his colleagues had only to pursue and execute his ideas.

In the twenty volumes of the Acedemy of Sciences, from 1772 to 1793, are forty memoirs of Lavoisier, replete with all the grand phenomena of the science; the doctrine of combustion, general and particular; the nature and analysis of atmospherical air; the formation and fixation of elastic fluids; the properties of the matter of heat; the composition of acids; the augmentation of the ponderosity of burnt bodies, the decomposition and recomposition of water, the dissolution of metals; vegetation, fermentation, and animalization. For more than fifteen years consecutive, Lavoisier pursued, with unshaken constancy, the route he had marked out for himself, without making a single false step, or suffering his ardour to be damped by the numerous and increasing obstacles which constantly beset him.

At length, in 1784, backed by the co-inciding opinions of all the most eminent French chemists, he determined to blend, in a single *tableau*, all the different colourings of truth which he had long before pourtrayed distinctively;—this celebrated elementary treatise did not make its appearance till the year 1789. This last work presents the science in a shape completely novel, and serves more particularly to distinguish the manner of Lavoisier from that of Dr. Priestley; it crowns with immortality the glory of Lavoisier. Although the French and English chemists resembled each other not a little in the numbered multiplicity of their experiments on elastic fluids, yet how different were the respective results which they deduced from them!

Many were the services rendered by Lavoisier, in a public and private capacity, to manufactures, to the sciences, and to artists. His domestic virtues, however, should not be wholly passed by; as a friend, relative, husband, &c. his conduct was exemplary:—in his manners, he was unaffectedly plain and simple. Many young persons, not blessed with the gifts of fortune, but incited by their inclination to woo the sciences, have confessed their obligations to him for pecuniary aid; many, also, were the unfortunate, whom he relieved in silence, and without even the ostentation of virtue. In the communes of the department of the *Loire & Cher*, where he possessed considerable estates, frequently would he visit the cottages of indigence and distress; long, indeed, will his memory, and that of his amiable spouse, be cherished there! This virtuous man, so dear to his country, to the sciences, and to the world, was at length suddenly hurried into the tomb, as one of the Farmers-General, from the pinnacle of public and private happiness, by a set of homicides, who made a sport of sacrificing the lives of the best men to a sanguinary idol of their own setting-up!—The pen refuses to recite the particulars of this barbarous butchery.—Honoured shade,

accept

accept the regrets and the palms which every friend of man bears to thy deserved renown; and may the memory of thy virtues, thy genius, and thy courage, live in the bosoms of good men, when the horrid catastrophes which have blackened the history of thy country shall sink into oblivion!

PLAN OF THE ODEON, A NEW DRAMATIC INSTITUTION AT PARIS.

A SOCIETY of the friends of the arts has been formed in Paris, the object of whose association is, to set on foot, at their own charge, a public establishment, to be called *the Odeon*, to organize a dramatic institute, which shall be competent to call forth and employ a number of artists, sufficient for every purpose of theatrical composition and representation: to institute festivals, in honour of genius, and thus to stimulate the talents of the composers and performers, in tragedy, comedy, and music; in fine, to renovate or create all the means likely to be efficacious in improving or embellishing the French theatre. Odeon, or Odeum, literally denotes a place set apart for singing; or a place in which declamation of any kind is expressed by singing.

The Odéon, at Athens, was a magnificent structure, erected by Pericles, where the composers of music contended for the prizes, which were distributed, at the public expence, to the most successful candidates, and where pieces of music were rehearsed, which were afterwards to be sung on the Athenian stage.

Pausanias, Appian, and Vitruvius, celebrate the magnificence of this edifice, in terms of the highest admiration.

Prior to the construction of the great theatre of Athens, the Odéon was also the place of assembly for the poets and musicians, who there recited or performed their pieces. It served also for the repetition, or representation, of works in tragedy and comedy, and of musical compositions.

At Rome were five Odéa, consecrated to the same uses as that of Athens.

The project of the French Odéon has been approved of by the government, which has presented the society that undertakes to carry it into execution with a grant, for the term of thirty years, of the theatre at Paris, in the Fauxbourg St. Germain, which was formerly occupied by the Comédiens François.

On the other hand, the society have made themselves responsible to government, to repair, at their own charges, the theatre of the Fauxbourg St. Germain; to re-establish it in the same condition as formerly; to defray the whole expence of supporting it, during the thirty years of their enjoying the grant; to cause to be represented, on the stage of the Odéon, pieces in tragedy and comedy; operas, dialogue, and comic and historical pantomimes; to engage and concentre in this theatre, as much as possible, the most distinguished theatrical talents of the nation; to invite the same from all the French theatres in foreign countries, and to attach them to the accomplishment of the objects of the society, by the honours and distinctions which they propose to confer.

The dramatic institute of the Odéon is to consist of three classes, through which it is intended that all the pupils of the establishment shall

ſhall ſucceſſively paſs. Young perſons, of both ſexes, whoſe inclinations and talents lead them to the ſtage, as their profeſſion in life, will be admitted into it, from the age of fifteen to twenty-five; thoſe alſo may be initiated who wiſh to aſſume the caſt of actors occaſionally, and only for their own amuſement. This claſs of initiation is deſigned to raiſe up a nurſery of actors, for the Odéon, and for all the theatres of Paris and of France. In the firſt claſs of the Odéon, the pupils will be taught to acquire a conſummate knowledge of the French language, and the moſt correct manner of pronouncing it. They will alſo be taught to make themſelves perfect proficients in the art of recitation or reading, without which it will be impoſſible to attain to perfection in acting.

In this claſs care will be taken to develope and diſcriminate the phyſical and intellectual faculties of the pupils, ſo that each may be enabled to apply himſelf to the caſt or walk for which he ſhall appear to be the beſt calculated by nature.

The pupils of the ſecond claſs are to be inſtructed in the art of analyſing and working upon the different paſſions which agitate, melt, or overawe, the heart of man.

In the third claſs, the hiſtory and plot of dramatic pieces are to be laid open to the pupils; a critical analyſis of theſe is to be entered into, and their excellences and blemiſhes pointed out, and critically enlarged upon.

Thoſe pupils who give proofs of proficiency in the courſe of their inſtructions, ſuch as diſtinguiſh themſelves above their fellows, by their diſpoſitions, their improvements, or their talents, will be entitled to make their début on the ſtage of the Odéon.

The complementary days in the Odéon will be appropriated to the repreſentation of pieces whoſe ſucceſs ſhall appear to have been the moſt marked and conſpicuous. On theſe days the adjudication of prizes, and of crowns of glory, will be made, by the order of government.

Every kind of public ſpectacle being concentred in the Odéon, prizes of various deſcriptions will be awarded to the moſt eminent artiſts, whether authors, actors, or muſical compoſers.

The author, or compoſer, whoſe performance ſhall have been repreſented on one of the complementary days, ſhall be entitled to receive a crown, and an annual penſion of ſix hundred livres.

The adjudication of a crown the third time, ſhall be accompanied with a ſecond penſion of ſix hundred livres.

A ſeventh adjudication of a crown, ſhall be accompanied with a third penſion of eight hundred livres.

The triumphs of each author, or compoſer, can only be acquired on the ſtage of the Odéon; and at the concluſion of the repreſentation of thoſe pieces which ſhall have merited for the candidates ſuch an honour.

The works which ſhall be crowned in the Odéon, ſhall conſtitute, for ever, a part of its repertory. The actors whom the Odéon engages to procure and attach to its eſtabliſhment, being already in the height of reputation, by the ſucceſsful experience of many years, cannot be put on a level, in the diſtribution of prizes, with thoſe pupils of the Odéon who are deſigned one day to replace them.

The prizes will be of two deſcriptions: the firſt of honour and celebrity, for the moſt excellent performers, in which conſummate

merit will gain its just laurels; and the second, of encouragement and emulation, for those whose talents are only ripening towards perfection.

The ancient artists of the theatre Fauxbourg St. Germain, shall alike be entitled to the palms of the victor, and the pensionary rewards appropriated to merit. They shall not be obliged to run through the scale of *accessits* of the Odéon, having already, by their labours, attained the highest point of professional glory and success.

The other artists will have it in their power to gain, in the twenty-five years course of their dramatic career, twenty-three accessits of pre-eminence or superiority; four crowns of honour, a crown of celebrity, a medal, and four pensions or life annuities.

The accessits are designed to be so many steps, by which every actor may proceed, from the first to the second, third, and fourth, crowns of honour, and to the crown of celebrity.

The adjudication of a first crown shall entitle the victor to a pension of the value of two hundred and fifty livres; of a second, to a pension of the same value; of a third, to a pension of four hundred livres, and of a fourth, to a pension of six hundred livres.

These four crowns of honour will entitle the victor to a pension, or life annuity, of fifteen hundred livres.

The fifth crown shall be entitled to a gold medal, as a prize, on which the name of the victor shall be struck. On the exergue this inscription shall be engraved: *Non omnis moriar.*

These triumphal crowns shall be adjudged by the order of government, and in open public assemby. The talents of the victor will thus be consigned to immortality.

On the zeal and laborious efforts of the artists to acquire eminence in their profession, will entirely depend their title to the accessits of encouragement, which are to ascertain their sedulity, and to reward their services.

An accessit of encouragement shall be entitled to a premium of three hundred livres.

Seven accessits of encouragement shall obtain, as a recompence, a first crown, and a pension of two hundred and fifty livres.

Five new accessits of encouragement shall receive a recompence of a second crown, and a second pension of two hundred and fifty livres.

Three new accessits of encouragement shall entitle the receiver to a pension of four hundred livres.

Thus, an artist who shall raise himself to distinction, in the subaltern classes, will be entitled to receive fifteen accessits of encouragement, three crowns of approbation or applause, and a pension, or life annuity, of nine hundred livres.

The payment of the pensions shall be under the guarantee of government; the Odéon, however, defraying the charges out of the income arising from the representations.

The Odéon shall possess a literary journal, the object of which shall be, to announce to the public the pieces which are to be represented in it; this work is designed to be a valuable vade-mecum for such persons as are not in the habit of deciding on the merits of theatrical performances. It will analyse the subject of every piece, and illustrate the art according to which it shall be conducted. It will, moreover, contain judicious critiques by the best appreciators of literary talents. The artists will there discern, at once, the en-

comiums

comiums which they ſhall have merited by the truth, the grandeur, and the beauty, of their acting, and the cenſures which they may incur, in conſequence of the negligences, or involuntary errors, they may happen to fall into, in the courſe of their repreſentation.

THE PHILOSOPHER.

A STRANGE idea for a prince one day entered the head of Tſching-Ouang, emperor of China, of glorious memory. He would abſolutely know what was meant by the word Philoſopher. One would imagine this monarch had very little to do; although, moſt certainly, this amuſement was far better than that of killing flies, which was the very ſerious occupation of one of the ancient tyrants and ſcourges of this unfortunate globe.

The ſlighteſt intimation of a ſovereign is a command. A proclamation was inſtantly publiſhed, that whoever laid claim to the title of philoſopher, ſhould repair to court, and proſtrate himſelf before the imperial throne. Tcheou-Kong, who was the excellent miniſter of this prince, took particular care to ſecond the proclamation, by cauſing the moſt diligent ſearches to be made for——a philoſopher.

The celebrated Cham-Sou had too much vanity to ſuppoſe, that any other than himſelf could aſpire to the honours of the Sage. Proud of having compoſed near a hundred volumes on Confucius, he appeared before his ſovereign with the fulleſt confidence of ſucceſs. He boaſted of his talents, his numberleſs productions, and particularly of his humanity, diſintereſtedneſs, and exemplary piety. But the emperor, upon inquiry, found that he was unfeeling and vindictive; ambitious of being talked of, by whatever means; and wanting, moreover, in politeneſs. "This certainly, is not the man I want," ſaid Tſching-Ouang: "ſend him away." Cham-Sou left the palace, and vented his reſentment in a ſatire againſt the prince, who only pitied this unfortunate man of letters, and laughed at his defamatory libel.

Tſe-e next appeared in the liſts. He wrote with enthuſiaſm. He was fond to accumulate the clouds that obſcured the truth, inſtead of endeavouring to diſperſe them. He had publiſhed a variety of books, all very philoſophical, and—very uſeleſs to mankind. A diſguſting pride was apparent in his moſt trifling actions. Singularity, in particular, diſtinguiſhed him from all other writers; and indeed, he knew the weak ſide of men, and the means to make them ſtare: for this ſame ſingularity had given wings to a reputation, which muſt otherwiſe have crept to the ground, and then ſunk into oblivion. He would not for the world dreſs himſelf like any of his fellow-citizens. He ate his meat hot—becauſe the Chineſe ate theirs cold. They drank their liquor hot—and that was a ſufficient motive to drink his cold. In all companies he would declare how much he deteſted mankind: yet his firſt wiſh, it was evident, was to gain their good opinion. When he was not the ſubject of their converſation, he was wretched; and to ſuch a degree was he infected by this diſtemper of the ſoul, that he envied a malefactor who was about to undergo a capital puniſhment, becauſe that day his crime and merited fate had engaged the whole attention of the city. Beſides, his writings neither enlarged the circle of our pleaſure, nor of reaſon; there was in them not the leaſt appearance of plan, method, or connection.—He

was

was read by all, and understood by none; a circumstance, which, more than any thing else, perhaps, had contributed to make him popular. "A philosopher!" said Tsching-Ouang: "he is indeed a very diverting animal. But take him away, take him away."

Kiong, the most humble of Bonzes, was of opinion, that notwithstanding his absolute renunciation of all terrestrial things, the honour and interest of religion required him to appear at court on this occasion. In the number of his eminent virtues, he descanted on his filthy appearance; his solemn phiz, made yellow by fasting and mortification; his profound ignorance; his absolute uselessness to the world; his grimaces; his *continual contortions*; and, above all, the nails with which his rump was most zealously larded. This sanctified idiot had not the least doubt, that his imperial majesty would admire in him the archetype of true philosophy. Exact, to the most minute point, in the observation of an infinity of superstitious rites, he did not fail to exalt his sect upon the ruins of every other. He took particular care, moreover, to abuse mankind in general; concluding all his invectives by an indirect encomium on his very insignificant person; his excellent qualities; and his actions, worthy to be recorded in the national archives. Nor did he hesitate to declare himself superior to his brethren, the other Bonzes. It is true, that this great man had distinguished himself by the uncommon and inimitable perseverance, to remain twenty years nailed in a niche, his arms raised to heaven, and his head reclining on his left shoulder. The emperor had the patience to hear him, and to count his nails one after another. He had next the goodness to order that his physician should take charge of this religious mountebank, and endeavour to restore him to his senses; for from true virtue and wisdom he was indeed too remote.

"What!" exclaimed Tsching-Ouang, "is there not in all my extensive dominions such a character as I have imagined a sage to be?" "Behold him," said a mandarin, who that instant arrived out of breath. *His triple chin bespoke the ease of health*, and the happiness of unconcern: "Sublime son of heaven," he continued, "behold the model of philosophy. I am occupied only by the care or living: I devote myself to no other study. I make every thing tend to my own self, as to the centre of the universe. All around was created for me alone. I have acquired the most important of all knowledge, the art of being insensible to whatever may disagreeably affect me. I have endeavoured to study pleasure as a science. Ease and tranquillity, in particular, appear to me the supreme good; I delight in a kind of non-existence. By these means I manage the springs of life; being sensible that they will be worn out and decay, if our exertions are carried ever so little beyond ourselves. In fine, I live to myself alone."—The emperor commanded, that they should instantly banish this ridiculous and disgusting egotist from his presence.

In a word, in a capital that contained forty thousand men of letters; in Pekin, where the art of reasoning was found out; there was not a single man to be found, that deserved the name of Philosopher.

The emperor, however, was not discouraged. He left the helm of the state to his brother, and departed with his dear Tcheou-Kong, and two other favourites; disguising the splendour of his rank, and actuated by an invincible inclination to pursue the object of his search.

Behold him then traverſing China with his three courtiers. They were near that ſtupendous wall, at the ſight of which every traveller is in an extacy of admiration. At a diſtance they perceived a hut, on the ſummit of a mountain, which, in other reſpects, appeared to be uninhabited. They were told in the plain, that this was the abode of a philoſopher. Tching-Ouang inſtantly rejoicing at having thus gained the period of his journey, neglected not to return thanks to Tien for this happy diſcovery. He is determined to climb this mountain: his companions are eager to follow him. A kind of ſavage ruſhes from his retreat, and runs to meet them, exclaiming:—"Men, approach not, approach not.—What buſineſs have you here? Will you yet diſpute me this aſylum which the ferocious beaſts dare not invade?" The monarch's curioſity is now augmented. He explains the object of his journey to this ſtranger: he tells him, in ſhort, that he is ſearching every where for a philoſopher.—"If that name," reſumed the ſolitary, "belong to a being that holds the whole human race in abhorrence, you need not go farther: you have found what you want in me. No one can more deteſt mankind. Oh! that they had but one neck, but one head! what a ſatisfaction ſhould I enjoy in ſtriking it off! For twenty years I have inhabited this deſert; and I continually complain to Tien, that he has not ſelected me among the miniſters of his avenging juſtice, to puniſh, and to annihilate, if poſſible, the whole human race.—Be gone inſtantly, or I will transfix your heart with this arrow, with which I kill the animals that ſerve for my wretched ſubſiſtence."

The good monarch took compaſſion on this man. In imitation of the virtuous Emperor Yu, he dropped ſome tears. "He muſt certainly," ſaid he to his courtiers, "have experienced ſome great calamity. Alas! ought there to be one unfortunate man in my empire? Surely I do not take ſufficient care to diſcharge the duties of my rank. This miſerable creature is to be pitied, to be reſpected! He is an afflicted, an exaſperated, miſanthrope! But ah! how different from a philoſopher! Where can this prodigy of human wiſdom exiſt?"

They arrive at one of the moſt renowned cities of China. They found no other ſubject of converſation there, than concerning a great author, the chief object of whoſe ſtudies was morality. He had publiſhed a complete treatiſe on the five duties. Tching-Ouang gained admiſſion to Ouci-Fong, which was the name of this great man. He found him in reality to be a perſon of conſummate learning. His ſentiments were dictated by truth herſelf. His writings breathed throughout the beauty and excellence of virtue, the love of harmony and order, and the veneration and obedience that were due to the laws.—"Let Tien be praiſed," thought the monarch; "I have now found my philoſopher."—But prudence bade him ſuſpend his judgment. He receives farther information. He learns that Ouci-Fong, the nobleſt of the ethic writers, did not practiſe his own admirable percepts; and that, although he was in the moſt opulent circumſtances, he did good to no one.—"I am deceived then," ſaid the emperor, uttering a deep ſigh; "I am deceived! This man certainly can be no philoſopher!"

New reſearches are made; and each is more ineffectual than the former. Tching-Ouang, not a little chagrined, reſumes the road to his capital. His favourites would fain console him under this diſappointment.

pointment. "Auguſt ſire," ſaid they, "you muſt now be convinced, that this phænomenon of human nature can have no exiſtence. If there were a philoſopher, a ſingle philoſopher, on the globe, we ſhould certainly have found him. This object of your ſublime reſearches muſt be a mere chimera." It is decided then that a philoſopher is an imaginary being; and that the "Sublime ſon of Heaven" muſt abſolutely leave this illuſion to the ſons of earth.

During this converſation, in which Tcheou-Kong alone ventured to be of a different opinion, (or, in other words, to diſclaim the language of flattery,) they approach a kind of hamlet, the ſituation of which is charming beyond deſcription. At a ſmall diſtance, in the boſom of a valley, they perceive a houſe, the agreeable plainneſs and ſimplicity of which attract their notice. The auguſt traveller meets a peaſant: "To whom," ſaid he, "does this rural edifice belong?"—"To an odd fellow I think. Nobody can ever put him out of temper. We may play a hundred miſchievous tricks; but do you know how he avenges himſelf? By doing us all the good in his power. Indeed we cannot help loving him. But I know very little of him. I have not lived long in this place."

The emperor is very deſirous to ſee a man of ſuch a very ſingular character, that even ill offices could not irritate him; and who ſeemed, moreover, to be actuated by no ordinary benevolence. They direct their ſteps towards this ruſtic retreat, whoſe ſweet environs diſplayed the unobtruſive charms of modeſty and artleſs nature; while all around ſeemed to evince in ſome degree that active goodneſs, which is the character of heaven. Flocks of ſheep were feeding near the houſe: ſome great trees were diſpoſed in arbours, that paſſengers might recline under their refreſhing ſhade; nor were baſons of tranſparent water wanting, to allay the weary traveller's thirſt.

When the emperor arrived at this delightful abode, he found at the door a multitude of paupers, who were receiving a charitable allowance of rice. He enters. A venerable man, on the verge of fourſcore, is upon his knees. He perceives not Tching-Ouang.—Tſouy (for that was the name of the good old man) addreſſes to Tien this prayer: "O God of gods, what thanks have I to render thee! Thou haſt deprived me of opulence and grandeur; but thou haſt left me a morſel of bread, which I divide with my brethren. Continue to ſhed thy bounties upon this empire. Watch over the happineſs of our auguſt ſovereign; and may my children be worthy to ſerve him, to ſerve their country, to ſerve humanity, and to addreſs their homage to thee! Grant, O Supreme Tien, that I may die in the boſom of my dear family, remembered by them, but forgotten by the world."

The emperor loſt not one of theſe affecting words. But Tſouy, having juſt perceived him and his attendants, inſtantly riſes: "What motive, my worthy travellers, can bring you hither ſo far out of your way?"—"A deſire," anſwered the emperor, "to find out the reſidence of wiſdom and virtue."—"It is not here," reſumed the modeſt old man, "that you will find theſe two uncommon treaſures. You will here behold only the picture of that happy mediocrity, which is the true ſituation of man. But in what can I be uſeful to you? Speak, we will endeavour to ſupply your wants, as far as

Heaven has permitted us to enjoy a pleasure so sweet, so exquisitely pure!" Tsouy presents to Tching-Ouang his four sons, who all gloried in the profession of husbandry; and who were eminent, in particular, for zealously discharging all the obligations of filial piety. They retired a moment, in order to fetch fruits and flowers, which they presented to the emperor, although unknown to them. But titles are not necessary to engage the Chinese to fulfil the duties of hospitality. It has been already observed, that they esteem politeness to be one of the first social virtues, which they are bound to practise to all, without respect of persons.

After a short prayer to Tien, they were seated at table. The emperor could not sufficiently admire the benignity, the affability, of this venerable man, a kind of divine serenity which beamed in his whole countenance.—"How long, my father, have you inhabited this place?"—"Near forty years. I live here unknown. I do as much good as possible; and it is the little I am able to do, that excites the recollection of my misfortunes. Alas! why am I not permitted to extend the proofs of sensibility to all the objects I would relieve?"—"What, have you been unfortunate?"—"I may at least appear so in the eyes of men; but I have unnumbered obligations to adversity. I am indebted to it for compassion, sensibility, and all the pleasures of the soul. It is a counsellor, that feelingly persuades me what I am; that tells me I am a man. Had I not known disgrace, I had never known my heart; I had never enjoyed the ineffable satisfaction of pitying, and sometimes mitigating, the woes of others."—"What is it you mean by disgrace?"—"I was one of the ministers of the deceased emperor, Yu; I sedulously endeavoured to deserve his confidence. But envy could not endure my prosperity: I was the victim of calumny: my enemies gained a superior ascendency over my sovereign. It is so difficult for monarchs to learn the truth. All my employments, and almost all my fortune, were taken from me."

"Did the virtuous Ou-Ouang commit this injustice? Alas! how much then are sovereigns to be pitied?"—"Certainly; and this is an example of it: for never before did emperor exhibit a more perfect image of Tien; and yet this master that was so dear to me"—"You weep, my good venerable sire!"—"I repeat it, I am far from blaming him: it is the common misfortune of kings; for so I may call that insurmountable difficulty, which excludes truth from all the avenues to the throne. I was then disgraced. With the wreck of my fortune I purchased the small field you see; I cultivate it with the assistance of my sons; and I have built a house large enough to exercise hospitality to strangers."—"What! is the emperor dead, without having repaired"—"Once more the emperor was a man: he was deceived: he owed me nothing. I shall never cease the less to revere his memory; and I fervently pray that Tien may shower down his choicest blessings on his son."

Tching-Ouang endeavoured to check his tears. "His son, my good father, his son must one day love you."—"Oh, no, I can never more think of returning to court. I shall die here; and I exhort my family never to quit this retreat. May their eyes and hearts be ever fixed upon my grave, and may their ashes be mingled with mine! May they be content, while they enjoy an innocent life, to gather

the produce of this field; and may they be able to increase their bounties, like the dew of heaven, that enriches the earth."

"But whence it is that you do not enjoy an extensive reputation?" "This is also one of the favours of heaven, for which I daily return thanks. How much is obscurity preferable to rank, to the most splendid name! wisdom and humanity should be dear to us for their own sakes. Virtue ever receives her own reward in the little good she has the happiness to perform. The inhabitants of the next village sometimes divert themselves by damaging my meadows, and breaking my fruit trees."—"And what punishment do you demand for such ungrateful people?"—"I take care of their sick; I relieve their poor; I comfort them in affliction. It is not through malignity but wantonness that they act thus; for in human nature, I am convinced, there is more of weakness than wickedness."—"O admirable mortal!" exclaimed the emperor; "and here," internally thought he, "is at last the philosopher I have so long searched for!" "Admirable! I only discharge my duty. It is my business to forget the faults of others, and amend my own. And besides, which is the happiest man, he who injures, or he that is injured? The latter has only to forgive, and he is certain of a pleasure which the other can never taste."

Tching-Ouang could no longer refrain from tears. "Too susceptible stranger," said Tsouy, "how much does this proof of sensibility affect me!"—"Embrace me, most excellent of men! Yes, I have at last found the long sought for object of our journey. Adieu, venerable Tsouy, you may one day know me." The emperor was profuse in his expressions of joy: "I am at length recompensed," said he, "for all my fatigues. I have discovered this present from heaven, this wonder of human nature. You did right, sage Tcheou-Kong, not to question his existence."

At last they return to the capital; and the emperor, having resumed the administration of affairs, commands that Tsouy and his four sons be brought before him. The venerable man receives the emperor's command with becoming deference: but his sons give way to inquietude and grief. "Doubtless," they said, "our father's enemies are plotting new machinations against him." "Oh my friends," says the good Tsouy, "what have you to fear? You have hitherto lived virtuously; and will it not be easy for you to die? I will set you the example. Come: appear at court with your instruments of agriculture. These are the ensigns of dignity, which you must oppose to those of your persecutors."

Tsouy and his family, conducted to the imperial city, appear before their sovereign, each with a pickaxe or spade. They prostrate themselves, and are ordered to rise. "My father, said the emperor, "do you not recollect me?" Tsouy, lifting up his eyes, is struck with astonishment. He would again prostrate himself before the throne. The emperor descends from it; embraces him with the warmest effusion of soul; and turning to a crowd of courtiers and learned men, whom curiosity had drawn to the palace: "Behold," said he, "the mortal, the celestial man, for whom I have so long sought in vain! Behold the philosopher. Henceforth Tsouy shall be called by no other name."—Tsouy exclaims, "Forgive, me, august sire, if I presume to interrupt you. Where are my writings, that can entitle me to this splendid distinction?" "Your virtuous actions,

actions, my venerable father, your beneficent deeds, are the best of books. If Confucius had been content only to write on wisdom, and had never practised her precepts, do you think he would have merited the name of Supreme Legislator? You and your family shall be honoured with every mark of my esteem. I will endeavour to repair the errors of my father; and his son will glory in being your protector and your friend. Share with Tcheou-Kong the painful cares of government. Assist me both with your enlightened wisdom and support; and, above all, never fear to present constantly before me the mirror of truth."

Tsouy would have declined this exalted honour: "I command you," said the emperor, "in the name of my people, not to deceive my hopes. Imitate, each of you, that excellent minister Chao-Kong, and you will be, like him, the benefactors of the empire." Tsouy could only answer by those delicious tears, the expression of unspeakable gratitude. He, and all his family, enjoyed permanent favour; and he had, moreover, the satisfaction of pardoning his enemies, whose destiny had been committed to his pleasure. He had even the divine felicity of returning good for evil, and of supporting them by his credit with the generous Tching-Ouang.

The Chinese, after their deaths erected two statues to their memory. That of the emperor had no other inscription than these affecting words:

THE BENEFACTOR.

And on the pedestal of the statue of Tsouy, was inscribed that name, which has transmitted his eulogy to posterity:—

THE PHILOSOPHER.

STATE OF MANNERS AND CIVILISATION IN SURINAM.

[From STEDMAN'S EXPEDITION to SURINAM.]

ON the morning of the 22d, an elderly negro-woman, with a black girl about fourteen, entering my apartment, it would be difficult to express my astonishment when she gravely presented me her daughter, to become what she was pleased to term my wife. I had so little gallantry, however, as to reject the offer with a loud laugh; but at the same time accompanied the refusal with a small but welcome present, with which they appeared perfectly satisfied, and departed with every possible demonstration of gratitude and respect. The girls here, who voluntarily enter into these connections, are sometimes mulattoes, sometimes Indians, and often negroes. They all exult in the circumstance of living with an European, whom in general they serve with the utmost tenderness and fidelity, and they tacitly reprove those numerous fair ones who break through ties more sacred and more solemn. Young women of this description cannot indeed be married, or connected in any other way, as most of them are born or trained up in a state of slavery; and so little is the practice condemned, that, while they continue faithful and constant to the partner by whom they are chosen, they are countenanced and encouraged by their nearest relations and friends, who call this a lawful marriage, nay, even the clergy avail themselves of this custom without restraint. Many of the sable-coloured beauties will however follow their own penchant without any restraint whatever, refusing

fusing with contempt the golden bribes of some, while on others they bestow their favours for a dram or a broken tobacco-pipe, if not for nothing.

The hospitality I had experienced on our first arrival in the colony was not confined to that time only: I had a general invitation to visit, besides his excellency the governor, and Colonel Texier the commandant, in more than twenty respectable families, whenever it suited my convenience; so that, though the officers of our corps had formed a regimental mess, I had seldom the honour of their company. One gentleman, a Mr. Kennedy, in particular, carried his politeness so far, as not only to offer me the use of his carriage, saddle-horses, and table, but even to present me with a fine negro-boy, named Quaco, to carry my umbrella as long as I remained in Surinam. The other gentlemen of the regiment also met with great civilities, and the whole colony seemed anxious to testify their respect, by vying with each other in a constant round of festivity. Balls, concerts, card-assemblies, and every species of amusement in their power, were constantly contrived for our entertainment. The spirit of conviviality next reached on-board the men of war, where we entertained the ladies with cold suppers and dancing upon the quarter-deck, under an awning, till six in the morning, generally concluding the frolic by a cavalcade, or an airing in their carriages. This constant routine of dissipation, which was rendered still more pernicious by the enervating effects of an intensely-hot climate, where one is in a perpetual state of perspiration, already threatened to become fatal to two or three of our officers. Warned by their example, I retired from all public companies, sensible that by such means I could alone preserve my health, in a country which has such a tendency to debilitate the human frame, that an European, however cautions to avoid excesses, has always reason to apprehend its dreadful effects.

Dissipation and luxury appear to be congenial to the inhabitants of this climate, and great numbers must annually fall victims to their destructive influence. Their fatal consequences are indeed too visible in the men, who have indulged themselves in intemperance and other sensual gratifications, and who appear withered and enervated in the extreme; nor do the generality of the Creole females exhibit a more alluring appearance; they are languid, their complexions are sallow, and the skin even of the young ladies is frequently shrivelled. This is however not the case with all; and I have been acquainted with some who, preserving a glow of health and freshness in their lovely countenance, were intitled to contend for the prize of beauty with the fairest European. But, alas! the numbers of this last description are so small, that the colonists in their amours most usually prefer the Indian negro and mulatto girls, particularly on account of their remarkable cleanliness, health, and vivacity. For the excesses of the husbands in this respect, and the marked neglect which they meet from them, the Creole ladies most commonly, at a very early period, appear in mourning weeds, with the agreeable privilege however of making another choice, in the hopes of a better partner; nor are they long without another mate. Such indeed is the superior longevity of the fair females of Surinam, compared to that of the males, (owing chiefly, as I said, to their excesses of all sorts,) that I

have

have frequently known wives who have buried four husbands, but never met a man in this county who had survived two wives.

The ladies do not, however, always bear with the most becoming patience the slights and insults they thus meet with, in the expectation of a sudden release, but mostly persecute their successful sable rivals (even on suspicion) with implacable hatred and the most unrelenting barbarity; while they chastise their partners not only with a show of ineffable contempt, but with giving in public the most unequivocal marks of preference towards those gentlemen who newly arrive from Europe; which occasioned the trite proverb and observation in the colony, that the tropical ladies and the musquitoes have an instinctive preference for a newly-landed European: this partiality is indeed so very extreme, and the proofs of it so very apparent and nauseous, that some command of temper is necessary to prevent the disgust which such behaviour must naturally excite, particularly where the object is not very inviting; nay, it was even publicly reported at Paramaribo, that two of these Tropical Amazons had fought a duel for the sake of one of our officers.

SAGACITY OF A SAVAGE DOG.

IN the county of Ulster, neighbourhood of Wawasing, lived one Le Ferre; he was the grandson of a Frenchman, who, at the repeal of the edict of Nantes, was, with many others, obliged to fly his country. He possessed the last plantation of the valley near the blue mountains, (which cross a part of the State of New York,) an enormous chain, which always will be, as it is at present, an asylum for deer. He had nothing to fear in time of war, from the incursions of the inhabitants of those savage countries—for he knew them all, and was very much beloved by them. A pretty fall of water had given him the idea of building a grist-mill there, which was the best of the valley—the same current turned also a saw-mill, to which he carried, upon the winter's snow, the trees that he drew from the neighbouring mountains. This useful stream was then diverted in a manner common enough in this country, to water the fields in its vicinity—and it caused the hay to grow there more abundantly, and the best I ever saw. Half a mile from his door ran the river Esopus, upon the borders of which, nature has fixed the richest soil in America, so well known under the name of *Terre basse* [low land:] It is in that valley that fertility itself has taken its abode—it is there, where every barn becomes a temple of Ceres.

Le Ferre had eleven children, (a circumstance not extraordinary in this country.) The oldest boys, like their father, were skilful hunters. Who could live so near forests without instinctively knowing how to go thither, and take the game which they contain? It is thus that those who live upon the banks of the sea become sailors. Every thing with man is local, his virtues and his vices, his tastes, even his prejudices—there is nothing but sound morality and virtue which is in every country.

He lived with the produce of his land and his mill, happy and tranquil. One of his sons was minister of Wawasing, which was inhabited by none but Dutchmen, descended from the first settlers of New Amstel, at present New York.

Being

Being one day at the houſe of this farmer, the youngeſt of his children diſappeared about ten o'clock in the morning—he was four years old :—The family, alarmed, ſought for him in the river, and in the fields, but in vain!—The frightened parents ſent for the neighbours ; we went into the woods, and ſearched them with the moſt ſcrupulous attention. A thouſand times we called him, but received no other anſwer than thoſe of ſavage echoes. We divided into many parties ; night came on, without our being able to flatter ourſelves with any hope.—The parents, in deſpair, refuſed to return to the houſe ; their terror was without ceſſation increaſed by the knowledge they had of the activity and rage of the wild cats, againſt which men cannot always defend themſelves. They painted to themſelves an hungry wolf devouring the child of their boſoms, and ſpilling upon the ground the blood of their loved infant. What a dark and melancholy night! As ſoon as the day appeared, each of us began to ſeek again, but as unſucceſsfully as the preceding days. They were all in the greateſt diſtreſs, and knew not what to do.—Happily a ſavage, loaded with furs, coming from the village of Anaguaga, (upon the eaſtern branch of the river Suſquehanna) went to the houſe of this planter, with the deſign of repoſing himſelf there. He was ſurpriſed to find nobody at home but an old black woman, who had been detained by her infirmities. Where is my brother? demanded the ſavage of her. Alas! ſaid ſhe, he has loſt his little Derick, and all the neighbourhood is employed in ſeeking for him in the woods. It was then three o'clock in the afternoon.—"Sound the trumpet, endeavour to recal your maſter; I will find his little child." As ſoon as the father was returned, the ſavage aſked of him the ſhoes and ſtockings that little Derick had laſt worn : he commanded his dog to ſmell them ; taking then the houſe for a centre, he deſcribed a ſemicircle of a quarter of a mile, ordering his dog to ſmell the ground every where as he conducted him. They had not gone far, before this ſagacious animal began to bay. That happy ſound darted immediately into the hearts of the diſtreſſed parents ſome feeble rays of hope. The dog followed the track, and ſtill bayed; they ran after him with all their might, but ſoon loſt ſight of him in the thickneſs of the woods. Half an hour afterwards, they ſaw him returning ; the countenance of the dog was viſibly changed ; the air of joy was painted in it ; I was ſure that he had found the child—but, was he dead or alive? What a cruel alternative was this for thoſe poor parents, as alſo for the reſt of the company!—The ſavage followed his dog, who did not fail to conduct him to the foot of a great tree, where the child was lying in a ſtate of weakneſs, approaching death. He took him tenderly into his arms, and made haſte to carry him towards the company, who had not been able to proceed with the ſame quickneſs. Happily the father and mother were in ſome manner prepared to receive their child ; for more than a quarter of an hour they had begun to form ſome hopes ; a weak light had penetrated into their hearts when they heard the firſt accents of the ſavage dog. They ran to meet their brother, from whom they received their dear Derick with an eceſtacy and agitation not to be deſcribed.

PRESENT STATE OF PRINTING AND BOOKSELLING IN AMERICA.

THE advantages arising from the liberty of the press, like a self-evident proposition, stand in no need of proof or illustration. If they did, it would be sufficient to adduce the imperfect state of improvement of South America, where no other knowledge is suffered to be propagated but what is immediately conducive to commercial purposes, and that rarely, unless it tends to the support of unwieldy greatness, the enormity of ecclesiastical power, or the glare of useless wealth. In North America, the whole circle of knowledge is occupied by ingenious industry, which has, for the most part, proved itself the successful candidate for literary fame. The people of North America have now professors in every art and science, with adequate salaries; and, whatever they may want to import, men of eminence in literature are not of the number.

Literary property is now secured in most of the states; and the example will soon be followed by the rest, as security is the best way of encouraging merit and ingenuity; and the Congress, in 1789, by a resolution, strongly recommended this measure.

The people of North America manufacture their own paper, and in sufficient quantities for home consumption; but the price of labour is so extremely high, that it seldom answers to print any works there: at least, they have hitherto seldom ventured beyond their own laws, temporary pamphlets, and newspapers, which every State now print in abundance; the price of these is usually sixpence each; but they are not subject to any duty, and the profit falls into the proprietor's pocket.

The newspapers of Massachusetts, Connecticut, Rhode Island, Pennsylvania, and Maryland, are unequalled, whether considered with respect to wit and humour, entertainment, or instruction. Every capital town on the continent prints a weekly paper; and several of them have one or more daily papers. Of late, in the Northern States, they print a few school-books, and occasionally, in New York, Philadelphia, and Baltimore, print any tract not remarkably large; translations from the French, and a few re-prints from English publications, are all that have hitherto been done there. A miserable edition of Cook's Voyages, printed with types cast there, was more than five years on sale; but of late, Wilson of Glasgow, and Matthewson of Edinburgh, have furnished them with types, better and much cheaper than their own.

About 1789, one Bell, a bookseller in Philadelphia, re-printed Blackstone's Commentaries; but the book is very ill done, and yet sells much higher than those imported. Aitken, a printer there, finished an American edition of the Bible; which, though highly approved, and recommended by a resolution of Congress, was a losing concern. Since this, a Bible for the pocket has been sent over, all composed, in metal, from Fry's, to be printed there upon their own paper. The Travels of the Marquis de Chatelleux have been re-printed at New York, and some few other publications; but they are ill executed, and sell but slowly. Wayland (who went from Middle Row, and who, with all his family, is since deceased of

of the yellow-fever) set up a newspaper upon the plan of the Daily Advertiser, which succeeded very well. He wrote the Reverend Henry Lemoine, the writer of this article, word, that any popular piece upon the subject of liberty had a great sale there; but that serious books would only do as imported, as the people esteemed English-printed books much better than the productions of their own presses.

The wages of printers are very great even now; and progressively so from the extreme parts of the Northern to the Southern States. In New Hampshire, Massachusetts, Connecticut, and Rhode Island, journeymen printers have from three to eight dollars per week; in New York, Philadelphia, and Maryland, from five to ten per week; and in Virginia, North and South Carolina, and Georgia, from eight to twenty, according to their merit and ability.—Printers are the scarcest trades yet in the Southern States.

The greatest booksellers are in New York, Philadelphia, and Baltimore. Northward of New York there is none of any consequence, not any in Boston of note, nor southward of Baltimore, not even in Charleston, the liveliest city in all America. The booksellers all over the continent are generally supplied from one of the above three places, where there are many considerable stores of books daily imported from Europe; and there are few publications that cannot be purchased here, except very heavy and expensive ones, of which they have none. A single book of the value of 5 or 10l. is no-where to be found here; but Gill on the Prophets, Mat. Henry's Works, or Burkitt on the New Testament, easily find purchasers. Watts's Works have been known to produce three times the price for which they sell in London.

The usual currency of sale is at the advance of 50l. and in many instances 100l. per cent. and their sales are very great: it is scarcely possible to conceive the number of readers with which every little town abounds. The common people are on a footing, in point of literature, with the middle ranks in Europe; they all read and write, and understand arithmetic. Almost every little town now furnishes a small circulating library.

Prints are a good article to carry over, and so are engraved copper-plates. Of late a great number have been sent over from here, which have given rise to some useful works now doing there in numbers. Artists in drawing, designing, and engraving, are very rare in America.

Books are sold southward of Maryland, particularly in Virginia and North Carolina, at an extravagant price; not unfrequently at an advance of 200l. per cent. Novels and useful histories are the best articles to be considered here after Dictionaries.

Law-books have the most rapid sales, and that at an excessive price. Newman's Conveyancing has sold in Philadelphia for eight or nine guineas per set, and were bought up immediately. Bacon's Abridgement, a book which, with Blackstone's Commentaries, is highly in repute throughout America, has repeatedly been sold in North Carolina for one hundred hard dollars.—In North Carolina they do not import from Europe, but purchase, at an unreasonable high price, of the northern booksellers, and then sell at an advance of 50l. or, in many instances, 100l. per cent.

Great quantities of various kinds of produce are constantly shipped from the Southern States to Philadelphia and New York for European

ropean books, which are mostly of general history, grammars, dictionaries, and medical articles.

Whatever is useful, sells; but publications on subjects merely speculative, and rather curious than important, controversial divinity, and voluminous polemical pieces, as well as heavy works on the Arts and Sciences, lie upon the importers hands.—They have no ready money to spare for any thing but what they find useful; and, in literary purchases, inquire minutely into the *cui bono* of the article.

Scotch books are not much in repute in North America. English law books, being mostly in folio, are not so often called for as the Irish editions of the same in reduced sizes, which, being more portable, are always preferred for their convenience, for the lawyers to take on their circuits.

The Irish printed books have in every thing a preference throughout this country; and the sale of their books, those on law in particular, is extremely great.

According to an article in the Columbian Magazine, it appears that the demand of foreign books is but inconsiderable. It is very little for French books, and still less for Italian, Spanish, and Portuguese. German books are in some degree an exception; for they sell in places inhabited by the Dutch; but principally books of devotion and school-books. They have very few books but of devotion, and some trivial school articles. The men of learning are as scarce amongst them also. When a Dutchman is not at prayers, he is either at work or sleeping.

Although many well-educated persons here speak French, yet the number of those who read French books is comparatively small. The common people, in the proportion of twenty to one, still prefer old English affairs, and dwell with pleasure on what they term their English ancestors; speak only the English tongue, heartily curse French machinations and politics, and continue still to read and admire old English books.

Books are yet but of small esteem in Nova Scotia and New Brunswick. Few here read at all except professional men, and some foreign gentlemen, and the officers in the army: these are mostly supplied by a small circulating library or two in Halifax. Some few books are imported by the merchants, and sold in common with other goods at their stores; but the whole province, so late as eighteen months since, did not afford a bookseller's shop larger than is to found in one of the smallest country towns in England. The middle and lower order of people do not read; their time is necessarily occupied in the cultivation of an ungenerous and unpropitious soil.

The same observations apply to Canada: the French peasantry are all Catholics, and use no books but religious ones. There was, two years ago, only one solitary bookseller in Quebec, who lived mostly by publishing a weekly Gazette, printed in miserable French and as sordid English; and another in Montreal, supported upon the same terms. In the West Indies, every gentleman almost takes out his own library with him; and what books may be wanted are generally sold in the stores of merchants, who import them from England with other goods, although the capital of each of the islands has one person who calls himself a bookseller, keeps a small reading library, binds, deals in stationary, and keeps a few books, such as he judges

are

are most in demand, which he sells at an advance of 70l. and 100l. per cent.

Such is the literary portrait of a country which threatens to surpass all others in the great and useful science of politics, as well as the liberal arts. This is but the glowing that evinces a kindling flame; which, from what we have seen, we have reason to expect may some future day enlighten and instruct the Old World, whence they have withdrawn themselves.

NATURAL AFFECTION OF ANIMALS.

By the late Rev. GILBERT WHITE, of Selbourn, Hants.

THE more I reflect on the natural affection of animals, the more I am astonished at its effects. Nor is the violence of this affection more wonderful, than the shortness of its duration. Thus every hen is, in her turn, the virago of the yard, in proportion to the helplessness of her brood; and will fly in the face of a dog or sow, in defence of those chickens, which, in a few weeks, she will drive before her with relentless cruelty. This affection sublimes the passions, quickens the invention, and sharpens the sagacity, of the brute creation. Thus a hen, just become a mother, is no longer that placid bird she used to be; but with feathers standing on end, wings hovering, and clucking note, she runs about like one possessed. Dams will throw themselves in the way of the greatest danger, in order to avert it from their progeny. Thus a partridge will tumble along before a sportsman, in order to draw away the dogs from her helpless covey. In the time of nidification the most feeble birds will assault the most rapacious. All the hirundines of a village are up in arms at the sight of a hawk, whom they will persecute till he leaves that district. A very exact observer has often remarked, that a pair of ravens, nestling in the rock of Gibraltar, would suffer no vulture or eagle to rest near their station, but would drive them from the hill with an amazing fury: even the blue thrush, at the season of breeding, would dart out from the clefts of the rock, to chase away the kestril, or the sparrow-hawk. If you stand near the nest of a bird that has young, she will not be induced to betray them by an inadvertent fondness; but will wait about at a distance, with meat in her mouth, for an hour together.

The flycatcher of the zoology (the ſtaparola of Ray) builds every year in the vines that grow on the walls of my house. A pair of these little birds had one year inadvertently placed their nest on a naked bough, perhaps in a shady time, not being aware of the inconvenience that followed. But, a hot sunny season coming on before the brood was half fledged, the reflection of the wall became insupportable, and must inevitably have destroyed the tender young, had not affection suggested an expedient, and prompted the parent birds to hover over the nest all the hotter hours, while with wings expanded, and mouths gaping for breath, they screened off the heat from their suffering offspring.

A further instance I once saw of notable sagacity in a willow-wren, which had built in a bank in my fields. The bird, a friend and myself observed, as she sat in her nest; but were particularly careful not to disturb her, though she eyed us with some degree of jealousy.

Some

Some days after, as we passed that way, we were desirous of remarking how the brood went on; but no nest could be found, till I happened to take up a large bundle of long green moss, as it were, carelessly thrown over the nest, in order to dodge the eye of any impertinent intruder.

A still more remarkable mixture of sagacity and instinct occurred to me one day, as my people were pulling off the lining of a hot-bed, in order to add some fresh dung. From the side of this bed, leaped, with great agility, an animal that made a most grotesque figure; nor was it without great difficulty that it could be taken: when it proved to be a large white-bellied field mouse, with three or four young clinging to her teats by their mouths and feet. It was amazing, that the desultory and rapid motions of the dam should not have obliged her litter to quit their hold, especially when they were so young as to be both naked and blind.

To these instances of tender attachment, many more of which might be daily discovered by those who are studious of nature, may be opposed that rage of affection, that monstrous perversion of sagacity, which induces some females of the brute creation to devour their young, because their owners have handled them too freely, or removed them from place to place. Swine, and sometimes the more gentle race of dogs and cats, are guilty of this horrid and preposterous murder. When I hear, now and then, of an abandoned mother that destroys her offspring, I am not so much amazed; since reason perverted, and the bad passions let loose, are capable of any enormity; but why the parental feelings of brutes, that usually flow in one most uniform tenor, should sometimes be so extravagantly diverted, I leave to abler philosophers than myself to determine.

That there is a wonderful spirit of sociability in the brute creation, independent of sexual attachment, the congregating of gregarious birds in the winter is a remarkable instance. Many horses, though quiet with company, will not stay one minute in a field by themselves: the strongest fences cannot restrain them. My neighbour's horse will not only not stay by himself abroad, but will not bear to be left alone in a strange stable, without discovering the utmost impatience, and endeavouring to break the rack and manger with his fore feet. He has been known to leap out of a stable window, after company; and yet in other respects is remarkably quiet. Oxen and cows will not fatten in solitude; but will neglect the finest pasture that is not recommended by society. It would be needless to instance in sheep, which constantly flock together.

But this propensity seems not to be confined to animals of the same species; for I know a doe, still alive, that was brought up, from a little fawn, with a dairy of cows; with them it goes to the fields, and with them it returns to the yard. The dogs of the house take no notice of this deer, being used to her; but, if strange dogs come by, a chase ensues; while the master smiles to see his favourite securely leading her pursuers over hedge, or gate, or stile, till she returns to the cows, who, with fierce lowings and menacing horns, drive the assailants quite out of the pasture.

Even great disparity of kind and size does not always prevent social advances and mutual fellowship. For a very intelligent and observant person has assured me, that in the former part of his life, keeping but one horse, he happened also to have but one solitary hen.

hen. These two incongruous animals spent much of their time together in a lonely orchard, where they saw no creature but each other. By degrees an apparent regard began to take place between these two sequestrated individuals. The fowl would approach the quadruped with notes of complacency, rubbing herself gently against his legs; while the horse would look down with satisfaction, and move with the greatest caution and circumspection, left he should trample on his diminutive companion. Thus, by mutual good offices, each seemed to console the vacant hours of the other.

ACCOUNT OF THE LEAD-MINES IN DERBYSHIRE, WITH THE MANNER OF WORKING THEM.

LEAD-mines in Derbyshire are of great antiquity, undoubted proof existing that they were worked in the time of the Romans. They may be traced from the Saxon and Norman eras down through successive periods to the present time. The extent to which the business has been carried on at different periods cannot with certainty be determined; but the produce of the mines during the last century has undoubtedly been very considerable. At present, lead ore is found in various parts of the country. Indeed, it has been discovered in different quantity throughout all the tract of lime-stone land; but it is met with in the greatest abundance about ten miles to the north and south of the river Wye.

Veins of lead ore, on account of their position in the earth, are distinguished by the different names of pipe, rake, and flat, works. A pipe-work lies between two measures of lime-stone regularly extending above and below. It consists of several lines or branches running nearly parallel to each other, which have a general communication by means of slender threads, or leadings, as they are called by the miners. The rock is sometimes pierced through by these leadings, which it is thought right to follow, as they often conduct to a fresh range. Should no ore be found on such a pursuit, the breadth of the work is ascertained: its length is indeterminate, depending much upon the dipping of the measures. If this be great, it begins to decline, or cannot be pursued farther on account of water. The rake-vein is found in the chasms or clefts of the lime-stone, and consequently breaks through the measures and sinks into the earth. It sometimes penetrates one hundred and fifty or two hundred yards, generally in a slanting direction; and it has been followed to the distance of four miles from the place where it was first discovered. The flat-work resembles the pipe, but has no leader or stem like that. It spreads wider, and seldom extends above one hundred yards. It is also found near the surface and in the solid rock, and is very weak and poor, being seldom thicker than a man's finger.

The veins of lead ore are generally inclosed in a yellow, red, or black, soil, and are firmly connected with cauk, spar, or some other mineral.—Their direction is not uniform. The pipes, never penetrating the measures, follow the dip of the country in which they are found. The rakes run still more variously; in the High Peak, generally pointing east and west; in the Wapentake of Wirksworth, north and south. Sometimes two veins cut each other at right

angles: sometimes the pipe and rape unite and run together a short way, becoming stronger and richer. It is difficult to determine which of these two veins is most common, or most productive; the pipe, however, seem most generally valuable.

Veins are discovered various ways; sometimes by attention to the nature of the ground, which leads the experienced miner to make a search by boring; often by accidents laying open some branch which rises to-day.—The more the branches which accompany a vein, the richer it is, and when they begin to diminish, it becomes poorer. Also, for the most part, a vein is impoverished when it runs in such a direction as to receive over it a greater number of measures. In working mines, a principal point is to free them from water; the most common and effectual method of doing which is to drive a sough or level from the bottom of some neighbouring valley, as far as the works; where this cannot be done, pumps must be employed, which are either worked by a water wheel, or by a fire engine. Mines are freed from bad air by the introduction of a pipe down the shaft to the work, whence it is extended along the roof of the gallery. The circulation this occasions proves an effectual remedy.

There are numerous and various regulations respecting the rights of miners, and the dues payable for the ore, in different parts of the mining country. The principal tract containing lead is called the King's Field. Under this denomination nearly the whole Wapentake of Wirksworth is comprised, as well as part of the High Peak. The mineral duties of the King's-field have been from time immemorial let on lease. The present farmer of those in the High Peak is the Duke of Devonshire; and of those in the Wapentake of Wirksworth is Mrs. Rolles. They have each a steward and bar-masters in the districts they hold of the crown. The steward presides as judge in the Barmote courts, and with twenty-four jurymen determines all disputes respecting the working of mines.—The courts are held twice a-year; those of the High Peak at Moneyash, and those of the Wapentake at Wirksworth. The principal office of the bar-master is putting miners in possession of the veins they have discovered, and collecting the proportion of ore due to the lessee. When a miner has found a new vein of ore in the King's-field, provided it be not in an orchard, garden, or high-road, he may obtain an exclusive title to it on application to the bar-master. The method of giving possession is, in the presence of two jurymen, marking out in a pipe or rake-work two *meares* of ground, each containing twenty-nine yards; and in a flat work fourteen yards square. But, if a miner neglect to avail himself of his discovery beyond a limited time, he may be deprived of the vein of which he has received possession, and the bar-master may dispose of it to another adventurer. As to the other part of the bar-master's office, that of superintending the measurement of the ore, and taking the dues of the lessee or lord of the manor, it is attended with some difficulty from the variety of the claims, which differ greatly in different places. In general, a thirteenth of the ore is the due in the King's-field, but a twenty-fifth only is taken. Besides this, there is a due for tithe. In mines that are private property, such tolls are paid as the parties agree upon.

The miner, having satisfied the several claims, proceeds to dispose of his ore to the merchant or smelter. There are four denominations of ore; the largest and best sort is called Bing; the next in size,

ſize, and almoſt equal in quality, is named Peſey; the third is Smitham, which paſſes through the ſieve in waſhing; the fourth, which is caught by a very ſlow ſtream of water, and is as fine as flour, is ſtiled Beleand: it is inferior to all the reſt on account of the admixture of foreign particles. All the ore as it comes from the mine is beaten into pieces and waſhed before it is ſold.—This buſineſs is performed by women, who can earn about 6d. per day.

Smelting furnaces are of two kinds, the hearth and cupola. The hearth conſiſts of large rough ſtones placed ſo as to form an oblong cavity about two feet wide and deep, and fourteen long, into which fuel and ore are put in alternate layers; the heat is raiſed by means of a large pair of bellows worked by a water wheel. The fuel is wood and coal. The lead procured this way is very ſoft, pure, and ductile, but a conſiderable quantity of metal remains in the ſlags. Theſe are, therefore, ſmelted over again with a more intenſe fire of coke; but the metal produced is inferior in quality to the former. At preſent, a ſmall proportion of ore is ſmelted this way, only two hearth furnaces remaining in Derbyſhire. The cupola, introduced about fifty years ſince, is of an oblong form, reſembling a long, but not very deep, cheſt, the top and bottom of which are a little concave. The fire being placed at one end, and a chimney at the other, the flame is drawn over the ore placed at the bottom, and by its reverberation, ſmelts it without any contact of the fuel.

The lead when ſmelted is poured into moulds of various ſizes, according to the different markets for which it is intended, Hull, Bawtry, or London. Two of the blocks make a pig. Some of it, however, is firſt rolled into ſheets at works erected for the purpoſe near the furnaces. A conſiderable quantity is alſo converted into red-lead. This proceſs is performed in a kind of oven, the floor of which is divided into three parts.—The middle of theſe contains the metal, and the two others, the fire. The flame being reverberated on the metal, converts it to a calx or powder; which, on being a ſecond time expoſed to the action of the fire, acquires a red colour.

Attempts were made ſome years ago to extract ſilver from the lead; but no ſuch work now exiſts in Derbyſhire. The ſulphur driven off from the ore in ſmelting is collected at two furnaces.

The annual produce of lead from the Derbyſhire mines is not exactly aſcertained, but may be eſtimated at an average of between five and ſix thouſand tons. It is generally thought to be on the decline, ſome of the richeſt mines being either exhauſted, or become more difficult to work; but on the other hand, from the improvements in the art of ſmelting, and more effectual methods employed to clear the mines of water by new levels and improved fire-engines, advantages have been gained that may, perhaps, ſupply the deficiency.

DESCRIPTION OF THE COPPER MINES OF THE PARYS MOUNTAIN IN THE ISLE OF ANGLESEA.

AMLWCH is a conſiderable town upon the coaſt, about two miles from the mine, and almoſt entirely peopled by the miners and their families. The mountain is about a mile in length, and is the property of Lord Uxbridge and the Rev. Mr. Hughes; and the

 fortunate

fortunate discovery of the copper took place a little more than thirty years ago; thus converting a piece of ground, originally of very little value, into one of the most profitable estates in the kingdom.

The substance of the mountain being ore, the work is carried on in a very different manner from the custom of other mines: here are comparatively few shafts or levels, the greater part being quarried out, so as to leave a vast excavation open to the day. There are two of these quarries or mines, which are worked by two different companies; the first goes by the name of the Mona Mine, and is the sole property of Lord Uxbridge; the other, called the Parys Mine, is shared between the earl and Mr. Hughes. The view down this steep and extensive hollow is singularly striking. The sides are chiefly of a deep yellow or dusky slate colour, streaked, however, here and there, by fine veins of blue or green, shooting across the cavern, mingled with seams of greyish yellow. The bottom of the pit is by no means regular, but exhibits large and deep burrows in various parts, where a richer vein has been followed in preference to the rest. Every corner of this vast excavation resounds with the noise of pick-axes and hammers; the edges are lined with workmen drawing up the ore from below; and at short intervals is heard, from different quarters, the loud explosion of the gunpowder by which the rock is blasted, reverberated in pealing echoes from every side. The number of men employed by the two companies is 1,200 miners. and about ninety smelters: the miners are paid by the piece, and earn, in general, from a shilling to twenty-pence a day. The depth of the mine, in the lowest part, is fifty fathoms, and the ore continues as plentiful as ever, and of a quality rather superior to that which lay nearer the surface. With regard to the annual quantity of ore raised, little certain can be mentioned. The Parys mine has furnished from 5,000 to 10,000 tons per quarter, exclusive of what is procured from the sulphate of copper in solution; and, as the two mines employ nearly equal numbers of workmen, they probably afford about the same quantity of ore. Adjoining to the smelting-houses is a rolling-mill, upon the same construction as malt-mills, for grinding the materials for fire-bricks: these consist of fragments of old fire-bricks, with clunch (a kind of magnesian clay found in coal-pits) procured from near Bangor Ferry.

The port of Amlwch is chiefly artificial, being cut out of the rock with much labour and expence, and is capable of containing thirty vessels of two hundred tons burthen: it is greatly exposed, and dangerous of access during high northerly winds, which drive a heavy sea up the neck of the harbour.

The two companies employ fifteen brigs, from one hundred to one hundred and fifty tons burthen, besides sloops and other craft, all of which lie dry at low water. The various articles, the produce of the mines, which are exported, are the following:—I. Coarse regulus of copper, from the smelting-houses. II. The richer copper ore, roasted. III. The dried precipitate of copper, from the vitriol pits. IV. Refined sulphur. V. Ochre. VI. Alum. VII. Green vitriol.

The town of Amlwch, which about thirty years ago had no more than half a dozen houses in the whole parish, now supports a population of four or five thousand inhabitants. The whole of this coast is cut out into bays or recesses of various forms and dimensions, with lofty

lofty projecting promontories, which are, for the moſt part, fine ſheep-walks. A number of iſlands alſo are formed by ledges of rock, many of them a good way out at ſea, and, and, at high water, juſt appearing like black ſpots in the midſt of the waves: many of theſe creeks are ſecure havens for ſmall veſſels, which are protected from weſt and ſouth-weſt winds by the rocks. The village of Cemmaes ſtands upon a little creek opening into a moſt beautiful bay, about a mile acroſs: its entrance into the main ſea is guarded on each ſide by a craggy promontory, the one of grey the other of ſnow-white marble, gliſtening above the green ſea, ſmooth as the ſurface of a mirror, and whoſe ſparkling tranſparency baffles deſcription.

HISTORICAL VIEW OF PORTUGUESE LITERATURE.

[Tranſlated from the German.]

THE character of the Portugueſe bears a ſtrong reſemblance to that of the Spaniards; they poſſeſs the ſame diſpoſition to idleneſs and ſuperſtition, the ſame kind of courage, the ſame pride, but more politeneſs and deceit, which ariſes from the rigour of their preſent government; the ſame national zeal, and, above all, a decided ſpirit of independence, which incites the moſt violent hatred towards the Spaniards, who have been their tyrants, and the Engliſh, who are their maſters.

The manners of the northern provinces of Portugal have a poſitive reſemblance of thoſe of Scotland. Their inhabitants are a fine race of men, free, ſincere, brave, full of prejudices, of national hatred and patriotic love: they are univerſally hoſpitable, and, in the provinces of Entre Minho e Douro and Traz os Montes, there are no inns. In the ſouth, on the contrary, and, above all, at Liſbon, the inhabitants are robbers, miſers, traitors, brutal, fierce, and moroſe, with an external appearance which bears all the characters of their deteſtable natures. Some exceptions, however, are to be met with, particularly among the nobility, whoſe birth is ſuperior to that of the Spaniſh nobles, and who poſſeſs more affable manners, as well as a more communicative ſpirit, which indeed they derive from a more frequent intercourſe with foreigners.

The moſt brilliant period of Portugueſe literature was under the reign of John V. a prince who carried all his undertakings, his ſins, and his penances, to extremes; and who, like Louis XIV. in France, was the chief cauſe of the feeble ſtate in which the nation continues to this day. An uninterrupted peace permitted him to diſſipate his treaſures according to his fancy. He erected ſtately palaces, which coſt immenſe ſums, though they are now forſaken. On theſe ſtructures he employed daily four thouſand workmen, and to adorn them he engaged artiſts of all nations, whom he rewarded extravagantly, and yet no ſingle art attained any degree of perfection in Portugal. As he likewiſe declared himſelf a patron of learning, he was ſoon ſurrounded by literati; but for ſome years before his death, having devoted himſelf to ſpiritual exerciſes, literature ſoon gave place to the more congenial practices of Portugueſe ſuperſtition. In 1720 he inſtituted the Academy of Hiſtory: he attended with the royal family at its ſittings, and was conſtantly informed of the labours in

which its members were engaged. To each of the fifty academicians a certain portion of Portuguese history was assigned for illustration; and, in the event of his death or resignation, the same subject devolved upon his successor. By these means, by the unrestrained use of the most authentic documents, and by the energetic influence of royal support, we might have expected a history, or materials for a history, which no country in the world, except China, could have equalled. The pompous motto of the academy, *Restituet omnia*, was likewise calculated to increase this expectation. But to the present hour nothing has been done; and the *Historia da Academia real da Historia Portugueza*; with the *Colleccaò dos Documentos, Statutos e Memorias da Academia real da Historia Portugueza*, are the only writings it has published. In the year 1733 it received the Blessed Virgin Mary for its patroness, and its members swore to their belief of her immaculate conception in the ducal palace of Braganza. The king himself, as protector of the academy, with the Prince of Brazil, who were witnesses of the transaction, took the same oath on their knees, which was administered by the Marquis of Alegrette, Emanual Telles da Silva, as secretary.

No sooner had the king established this society, and named, either as ordinary or honorary members, the greater part of his courtiers, who, to please him, had become literati, than similar academies started up every where, not only at home, but even in Brazil, where in 1724 the viceroy instituted an academy of sciences at S. Salvador. But, as these in less than half a century all disappeared, it is not necessary to particularize them. I have a collection of learned treatises before me which were read in these academies, some of which I shall here detail, that from them a judgment may be formed of the state of literature in Portugal, at its most brilliant period.

Question. Is the elephant the largest among four-footed animals? an enquiry interesting to theologians, to philosophers, to orators, and poets. Answer, No: the giraffe is the largest.

Question. What part of the human body for several centuries was of little advantage to the state, but is now become most necessary to it? Answer, The nose, since the introduction of snuff, now the most fruitful source of the public revenue.

Question. Whether the sense of seeing or hearing be the most noble? Answer, Every good Christian is bound to give the preference to hearing; because the mysteries of faith are communicated by the ear, not by the eye; for the divine master did not say, *Beati qui viderunt*, but *Beati qui non viderunt*.

Question. Is the world, after having existed so long, now in a state of decay and near its end? Answer, How can a world be near its end in whose most western part eminent men are daily immortalizing themselves by their productions, the fruits of academical rivalship?

Question. Whether for the last three thousand years the life of man is become shorter? Answer, No.

Question. Whether since Adam the stature of mankind has diminished? Answer, Yes.

Question. Which is most advantageous, a high or a low stature? Answer, If diamonds grew on trees, it would be desireable to be tall in order to pull them down; if we trod upon pearls, it would be convenient

convenient to be ſhort in order to gather them: but, as neither of theſe is the caſe, it is beſt to be of middle ſtature.

I ſhall now proceed to give the reader a ſhort hiſtorical view of Portugueſe literature; and for this purpoſe I ſhall avail myſelf of the Bibliotheca Luſitana of the Abbé Diogo Barboſa Machado, in four volumes, large folio, of which the firſt appeared in Liſbon in 1741, and the laſt, containing a ſupplement, in 1759, and which, as the title informs us, contains a notification of all the Portugueſe writers and their works that have exiſted from the communication of the knowledge of the law of grace till the preſent time. The Abbé Diogo Barboſa Machado, is by no means chargeable with ſins of omiſſion: the moſt fugitive pieces and even manuſcripts are enumerated: and to his work is added a very copious index, which has very much facilitated the following ſketch, and which, it is hoped, will give a pretty juſt idea of the ſtate of Portugueſe literature at that time.

Portugal, including all its dependencies in the different quarters of the world, from the birth of Chriſt to the year 1759, has produced no more than 5592 authors. Of theſe Africa claims twenty-eight, Aſia forty-five, America ninety-one, and the iſlands ſixty-five.

Among theſe authors are found thirty-five perſons of illuſtrious birth, namely thirteen kings, ſix princeſſes; the reſt either infants, *princes of the blood, or their natural children.* Beſides theſe are enumerated ſixty-five dukes, marquiſſes, counts, and viſcounts, with a counteſs. Likewiſe fifty-three ambaſſadors, twelve of them however included among the nobility. Of viceroys, ſtateſmen, and generals, thirty-one, of whom five are enumerated among the ambaſſadors. It may be eaſily imagined that the greater part of the remainder will conſiſt of monks and other religious, among whom are found two hundred and eighty-two knights of Malta, of St. Jago, *&c. and fifty-eight nuns.*

The following is a liſt of the number of authors and their works in the different branches of literature.

On the ſacred Scriptures 400 authors have produced 415 works including the tranſlations of the Bible.

On Theology and its various branches there are 2118 authors and 2557 different works.

On the life of Chriſt forty-nine authors have written fifty-two accounts.—*Of theſe, two are entitled* Vida de Chriſto no ventre de Maria—the Life of Chriſt in the womb of Mary.

On the life of the bleſſed Virgin there are 297 works by 248 authors. Manoel de Oliveira Ferreira, author of the "*Poema Epicum de Conceptione B. Mariæ,*" was born in 1711, and compoſed his firſt work in the eleventh year of his age. Iſidoro da Luz writes—"Diſputatio de permanenti viſione intuitiva Dei, quam habuit virgo Maria a primo conceptionis inſtanti."

Of the lives of Saints of both ſexes there are 235 works and 188 authors.

On eccleſiaſtical and civil Law there are 426 authors and 730 works. —Jeronymo da Salva de Araujo has written a treatiſe called "Venus Juridica."

On Philoſophy, Logic, and Natural Philoſophy, including Natural Hiſtory, there are 148 authors and 157 works: among theſe are ſeve-

veral treatises on Aristotle's book of physiognomy, one of them by Pope John XX. or XXI. who was born in Lisbon.

On Metaphysics, Moral Philosophy, and Politics, there are 171 authors and 206 works.

On Surgery 250 authors and 432 works. The plague is the most frequent subject of these. On Inoculation there is one treatise in Latin by Jacob de Castro Sarmento, a Portuguese settled in London in 1721, who never returned to his own country, but published his work in London. Diogo Borges writes a book with this title: "Bonus medicus oportet esse bonus Astrologus."

On Mathematics there are eleven authors, fourteen works. On Arithmetic twenty-six authors, twenty-six works. On weights and measures, twelve authors, eighteen works. On Music, 127 authors, 197 works. These are chiefly compositions of church music; little is to be found on music as a science. John IV. published a defence of it.

On Astronomy and Astrology there are eighty-three authors and 108 works. On Cosmography, Geography, and Chorography, seventy-eight authors, ninety-three works. On Navigation forty-six authors, fifty-three works. On the Art of War seventy-three authors and ninety-three works.

On Architecture, three authors, four works. On Painting, five authors, five works. Art of Riding, fifteen authors, fifteen works. On the Veterinary Art, ten authors, ten works. On Fencing, twenty-three authors, twenty-nine works.

Of translations from the ancient and modern languages of Europe and from Portuguese into others languages there are 419 made by 335 translators—and forty-nine translations made into languages of the three other quarters of the world by thirty-four translators.

Of Grammars of ancient and modern languages there are 174 by 101 authors. On the art of correct writing thirty works by twenty-nine authors.

Of dictionaries there are seventy-six by seventy authors. Here it seems proper to take notice of a very remarkable Portuguese dictionary by Father Bluteau, as the Portuguese language has lost nothing by him although a foreigner. Who would believe that the author of such an immense work, consisting of about ten folio volumes, was a Frenchman, born in Ireland, who passed the one half of his life in Paris, where he even began to compile his dictionary? But it is the unlucky fate of Portugal that things are managed there quite otherwise than in other countries; and hence it happened that the language, though by no means a copious one, possesses a dictionary more bulky than any other language can shew, and that too compiled not by a Portuguese but by an Irishman of French extraction.

The following account of this work is given in the Leipzig Gelehrten Zeitungen for the year 1723." A Lexicon of eight large volumes if well executed is an immense work for one man, particularly if that man is a foreigner. But it is to the praise of the French nation, that Father Bluteau has, without assistance, completed this vast and very useful dictionary. It may easily be supposed that a considerable length of time would be necessary for such a work, and he himself confesses that he has spent on it above thirty years. It was begun in Paris, where also he proposed to finish it, when Don Francisco de Sousa, a captain of the king's body-guard, in the name of the

the whole court, invited him to honour Lisbon with his presence. He was there held in great respect, and the Grand Duke of Tuscany, in 1694, wrote him a very gracious letter concerning this work, a translation of which is to be found in it. There are prefixed a great number of eulogiums in the Latin, French, Italian, Spanish, and Portuguese, languages, and in every variety of verse. The author does not think one preface sufficient for one book; and accordingly we have here no less than ten; as, To the gentle reader; To the uncourteous reader; To the impatient reader; To the Portuguese reader; To the foreign reader; To the impertinent reader; To the foolish reader, &c. In one of these prefaces, which in general are judicious and learned, the author explains his title page, consisting of near sixty words too learned to be understood by the generality of readers. He says he has in it followed the example of Moses, who first says, God created heaven and earth, and afterwards particularises the various classes of beings. He affirms that to make a dictionary is not unworthy even of a king; for Adam, as the first king of the world, made the first lexicon when he gave names to every creature. He says, one must admire the richness of the Portuguese language from his work; as the Italians can make only three, the French only four, volumes of their dictionaries, &c."

On Oratory there are thirty-one authors and thirty-five works; on Rhetoric 300 authors and 381 works—Of letters, 381 authors and 452 works. On medals, inscriptions, devices, emblems, &c. relating to erudition, seventy-eight authors and eighty-three works. In this last article are found treatises on magic, of weights and measures, proverbs, apophthegms and other matters which one would not expect to find there.—Of ecclesiastical Histories 808 by 569 authors. Among these there are twenty-one nuns, who have chiefly written the history of monastic institutions. Alfonso Cameiro writes on this question; Why the martyrs were respected by lions and wild beasts, and not by the soldiery? He likewise answers the question, Why, on the seal of the pope's writs, St. Paul stands on the right of St. Peter?

Of histories there are 1137 by 795 authors. The history of King Sebastian makes a great proportion of these. The attachment of the Portuguese to this prince must once have exceeded all idea: even now the delusion has not ceased, for at this moment there exists a sect, called Sebastianists, who firmly believe that he is not dead, but condemned by God for a certain time to remain unknown in order to expiate his sins: and when these are forgiven that he will again appear in his own country and raise it to its former power and fame.

Of biographical accounts and eulogiums of heroes, saints, and learned men, there are 312 authors and 446 works. Eulogiums on John V. not a few: The rest chiefly on the religious, and on saints, among whom St. Anthony of Padua has the chief place. This saint was born in Lisbon, though Padua has the honour of accompanying his name. He is the undisputed patron of the country, and in this more lucky than St. James of Compostella, who, for the patronage of Spain, had during many years a contest with the Virgin Mary, which on account of her immaculate conception was ended by a bull from the pope, 17th November, 1760, declaring her patroness of the whole Spanish monarchy, without prejudice however to the right

of

of St. James the Apoſtle. Not only is St. Anthony the tutelary ſaint of Portugal, he is actually to this hour field-marſhal general.

Of biographical accounts and eulogiums of female ſaints and learned women there are 110 works by ninety-eight authors.

Of deſcriptions of libraries forty-three by thirty-three authors.—Of Genealogies 408 by 286 authors. Many particular genealogies and ſo many genealogical tables of Portugueſe families, that the Arabians can hardly match them with thoſe of their horſes. The moſt voluminous works of the whole Portugueſe literature are to be found in this article. One of the above 286 authors, Joze Friere de Monterroys Maſcarenhas, writes *Genealogias das Familias de Portugal*, in twenty-four volumes folio.

Of Romances there are 67 authors and ſeventy-four works; theſe conſiſt chiefly of books of knight errantry and novels, many of them written in the Spaniſh language—Of dialogues, fifty-ſeven authors and ſixty-three works—Of State Papers, ſeventy-three and ſixty-two authors—Of defences of perſons and things, as, Apology for the Spaniſh language, Defence of painting, &c. 219 works by 174 authors. Of criticiſm and ſatires eighty-nine works by ſeventy-five authors. On the art of Poetry thirty-three works by twenty-four authors. Of Latin Poetry 399 works 266 authors. Of Poetry (Poeſia vulgar) 1006 works by 712 authors.

Of plays there are 190 by 163 authors. Theſe for the moſt part are ſingle plays. There are fifty-ſeven collections of plays, with ſome by Autos and Loas chiefly in manuſcript.

Formerly there were two theatres in Liſbon, one for the repreſentation of Indian comic operas, the other for Portugueſe plays. The Royal Theatre, which, after the Spaniſh theatre, was the moſt ſplendid and coſtly in Europe, was overthrown by the earthquake at Liſbon, and never afterwards rebuilt. The clergy conſidered this as a juſt judgment on account of the performances there exhibited and the enormous expences laviſhed on it. Why then, ſaid the Count d'Oeyras, afterwards Marquis of Pombal, does the ſtreet inhabited by women of the town remain ſtanding? In the year 1762 there were two theatres in Liſbon, for Portugueſe comedies, or operas, as they were called, becauſe there were ſongs interſperſed in them. No women were allowed to appear: the Prima Donna of one of them was a mulatto; of the other a creole; but as they were good ſingers they were well received. In the grand ballets there were female dancers, who however made no ſprings; they wore a long robe, and in dancing ſhewed the feet as little as poſſible. Signora Roſa Rozelli, an Italian, was engaged as a dancer at a ſalary of 1500 cruſades or about 200l. ſterling; ſhe appeared however but ſeldom.

The court maintains a numerous band of muſic, and among them ſome very good Italian eunuchs and male ſingers, who, during the time of the Carnival, repreſent Italian comic operas, at Salvaterra, ſome miles from Liſbon, on the other ſide of the Tagus. The diverſions there conſiſt of hunting, in which the royal family employ themſelves the whole year over; but at this time ſtrangers are permitted to reſide there, and are furniſhed with horſes out of the royal ſtables; and there they have an opportunity of hunting daily and without any particular ceremony with the royal family. The queen never failed to accompany her late huſband to the chace or to the play, which always began late in the evening, as the king never

chose

chose to go to bed before four o'clock in the morning. On this theatre, likewise, the parts were all filled by men, which however did not appear at all strange, as young and handsome eunuchs performed the women's parts, and so well that they drew many a sigh from the English and other officers that were there in the beginning of the year 1763, before they were apprised of the deception. To crown the diversions of the carnival, during the last days the parts were all reversed: the lover acted the father, and grandfathers performed the parts of children, &c. This gave such inexpressible delight to the spectators that I never saw one laugh louder or more heartily than the queen, who at one exhibition was so overcome that she fell quite breathless into the arms of the king.

Of books half prose half verse there are thirty-six by twenty-eight authors. Translations and illustration and Poets, fifty-eight by forty-seven authors. Translations and illustrations of the Fathers, of Histories and Orations, twenty-nine by twenty-one authors.

Of Miscellaneous works, twenty-nine by twenty-eight authors. These consist chiefly of books on cookery, hunting, the game of chess, and some facetious writings, as, The reckoning of a soldier with a cat; Sketch of a large nose, &c.

The foregoing is a general sketch of Portuguese literature, consisting of about 12,435 writings great and small; the half of which however are manuscripts, known only in the cloisters where they lie. It may easily be imagined, that, in a country where the inquisition exercises such despotic jurisdiction, there can be few anonymous publications; and accordingly among the multitude of books quoted by Father Bluteau, of which he makes a catalogue large enough to fill an ordinary volume, there are only thirteen articles by unknown authors, and these too are collections.

To undertake a work safely, there must be so many licences, and it must be submitted to so many civil and spiritual inspectors, that the first page is generally filled with their authorities. The Italian grammar of Father Lima has no less than ten licences. To the last licence is, at the same time, added the tax for which the book ought to be sold, which is infinitely smaller than the general shop-price in other countries. For instance, one part of Bluteau, consisting of 836 folio pages, is taxed at 1400 reis, 1600 of which make ducat. But it must not be supposed that this or any other Portuguese book is to be had for the small price imposed by the licence office. No where, perhaps not even in Lapland, are books dearer than in Portugal. Excepting the lives of the Virgin, after which I did not enquire, the rest must be bought almost with their weight in gold, and the greater part I asked for in vain. The Geography of Lima I wanted particularly, and could not get it under twelve ducats. Bluteau's dictionary not under sixty, and so of the rest. As a reason, I was informed that there were seldom more than five hundred copies of any work thrown off. Two hundred of these went to Brazil, fifty to Spain, two hundred to the libraries of convents, and that the few which remained became soon so scarce that a great price was always demanded for them.

Had we room to investigate the merits of any particular Portuguese author, Camoens surely would claim the first place; who, in every respect, must be considered as a man of genius, though he may not deserve those unqualified praises which are sometimes lavished on him. Those who call him a Portuguese Homer must certainly

tainly know little either of Homer or Camoens. Virgil was his model, and his poem may well be called, for more reasons than one, a Portuguese Eneid. His anxious imitation of Virgil diminishes very much the pleasure of the reader; and they are only his single beauties, those inexpressibly tender and voluptuous descriptions we so often meet with, which indemnify us for the many ridiculous passages that occur on reading the whole poem.

PRESENT STATE OF LITERATURE IN ITALY.

IT is well known, that in Italy, every city entitled to any consideration, is provided with academies of natural history, of architecture, antiquities, and poetry; an observatory, a gymnasium or institute, &c. and that the greater part of these societies publish their memoirs, containing the result of their investigations, at regular and stated periods. These collections, however, are for the most part circumscribed, more or less within the limits of their own vicinage, and are seldom or ever known to pass the Alps. In fact, the whole stock of Italian bibliography, if we except the libraries Venice and Bassano, is rather tied down to a narrow retail business, than exported in a productive intercourse with foreigners, or even expanded into a respectable internal circulation.

On the same account it is, that the Italian literary journals are neither able to give a competent account of the periodical productions of their country, nor even to support themselves for any length of time. Thus, the *Efemeridi di Roma*, the *Novelle Litterarie di Firenze*, the journal published every month at Venice, by Anglietti, and the *Giornale di Pisa*, by Fabroni, three or four volumes of which are generally published in the course of every year, have experienced in their progress a number of interruptions, so that it is, and has been, exceedingly difficult, and especially for foreigners, to procure complete sets of any of these works.—The *Giornale della Litteratura Italiana*, printed at Mantua, and the *Efemeride Encyclopediche di Napoli*, are publications the most to be depended upon with respect to the regularity of their appearance. This last work, however, chiefly furnishes original pieces, although it also gives, occasionally, some announcements and critiques on new publications. Of the former work, a volume (the fifth) appeared towards the end of the year 1795.

Till lately, a volume, divided into two parts, was published every three months; by a new arrangement, however, two volumes only are now published in a year, that is, one every six months (price 18 paoli, ready money.) It is not possible that this journal, although by far the most complete of any, should be able to present a satisfactory analysis of all the new literary performances which appear in the course of the same year; it gives, however, a concise preliminary notice of them, at the end of every year.

Among the memoirs of literary bodies, those of the Florentine society of Georgiphiles deserve an honourable mention in this place. The active Leopold infused a new spirit and life into this ancient institution; under his auspicious encouragement, the secretary was enabled to draw forth and arrange a prodigious mass of materials, which had been forty years in accumulating, and to publish some of the most interesting. The first volume of these memoirs appeared under the patronage of Leopold, in 1791. A second was published

last

last year, by Pagani, under the title of *Atti della Real Societa Economica di Firenzi, ossia di Georgofili*, in octavo. It comprises the years from 1783 to 1789, inclusive. It is said that a third volume is now in the press, which is to bring the labours of this society down to the present year, and will comprehend two eulogies, the first on Targione-Tozzetti, and the second, on Monetti; thirteen memoirs, among which, two of the chymist Hofer, a learned German, residing in Florence, and one of Tozzetti, on the different materials requisite for the manufacture of paper, &c. are the most remarkable; and a number of extracts.

The Societa Italiana, of Verona, of which the Chevalier Largua, a distinguished chymist, is the president, published last year the seventh volume of its *Memorie di Mathimatica e Fisica*, (at Verona, by Ramanzini, in a quarto of 511 pages, with seven cuts,) consisting of twenty-two memoirs. There is a curious letter of Caldani in it, (professor of medicine at Padua,) on the subject of two pretended hermaphrodites; also a history of the Kermes, and of the use made of it in the middle ages; and a dissertation on the knowledge which the ancients had of the sexual system of plants, by Rossi.

Since the announcement, by Spallanzani, of the discovery of a sixth sense in bats, which, with those animals, is a substitute for sight: all the naturalists of Italy are, if I may use the expression, in close pursuit of this organ. The volume I last mentioned, contains a memoir of Dr. Bonvicini, which announces a similar discovery in snails.

In Verona, is another academy of agriculture and arts, a succinct history of whose transactions is published annually, in the form of a *programme*, by the Marquis Alexander Carlotti. It is printed by Moroni, under the title of *Storia dell' Academia di Agricultura, Commercio, ed Arti, di Verona*. In the same city was published, last year, a pamphlet of twenty pages, in 8vo. entitled, *Osservazione Meteorologiche, Mediche, ed Agrarie, fatte in Verona nell' anno* 1794.

The literary society of Belluno has announced the following question, as a subject of the prize (twenty-four sequins) to be adjudged at their next general meeting:—"What mode can be adopted, likely to prove the most efficacious, in reconciling and harmonizing the Italian Purists, surnamed Cruscanti, and the modern Neologists?" For a number of years past, a new edition of the dictionary della Crusca has been preparing at Florence, on principles more comprehensive than formerly. The new verbs, *sistere, canalizzare, tosleggiare, illeggradire, remareare, riassitiare*, till now the stumbling-block of the Cruscanti, are here cordially admitted and naturalized.

The best Observatory in Italy, is that of Boscovich and De La Grange in the *ci-devant* College of Jesuits, called *la Breza*, at Milan. Schasser, in his Letters on Italy, lately published (*Briefe auf einer reize durch Italien*, vol. ii. page 206), gives it the preference even to that of Greenwich. An interesting description of it is also to be met with in a Voyage to Lombardy, by the Spanish abbé, Juan Andres, published at Madrid, in 1793, under the title of *Cartas familiares del Ab. J. Andres, a su harmano, C. Andres*, a work, in other respects, worthy of mention, and particularly for the accuracy of its descriptions. The *Ephemerides Astronomicæ* of Milan, begun in the year 1775, have been continued up to 1795. The title of the last volume is, *Ephemerides Astronomicæ, Anni 1796, ad meridianum Mediolanensem*

nensem suppeditatæ. Accedit appendix, cum observationibus & opusculis, Mediolani, apud Galeatium, (in 8vo. 218 pages.) The Abbés Reggio, Cesaris, and Oriani, are alternately editors of this work, and enrich it with remarks and occasional dissertations.

Next to the *Ephemerides* of Milan, we may rank the *Tavola delle Efemer. Astron, calcolate col mezzogiorno di tempo medi nel meridiano di Roma, ad uso della specola Gaetani*, published at Rome, by Fulgoni, 1795. This observatory, constructed at Rome, by the Duke di Simonetta Fr. Gaetani, on the summit of his palace, is now under the direction of the Abbé Veiga. P. Audefredi has given a description of it in his Travels.

Among the original productions on the subject of the mathematics and physics, the continuation of the *Elementi d'Algebra*, by Professor P. Paoli, of Pavia; the second volume of which (in 4to. 378 pages) appeared at Pavia, at *Mugmani's*. The *Fondamenti della Scienza Chimico-Fisica*, by *Vin. Dandolo*, at Venice, at *Pepoli's*, 1795, in 8vo. 528 pages; and the *Annali di Chimica e Storia Naturali, ovvera Raccolta di Memorie, fatta da L. Brugnatelli*, are chiefly entitled to notice. The 7th and 8th volumes of this last work (each of 330 pages, in 8vo.) were printed at Padua, in 1795, and are not unknown in other countries, especially to the amateurs of animal electricity. Caldani, Morelli, Valli, Carradori, in conjuction with the editor, defray the principal charges of it.

It is well known, that at the eruption of Mount Vesuvius, June 16th, 1790, there fell out of the air many stones, of considerable size, on the coast of Sienna. This shower of stones has given occasion to a number of polemical writings relative to it. Besides the paper of the Abbé Saldani, that of Dominico Tata, published at Naples by Nobili, under the title of *Memoria sulla Pioggia di Pietra*, (74 pages in 8vo. 1794.) and which assumes that these stones were generated in the air, has met with a most favourable reception from his countrymen.

The recent productions on the subject of Medicine do not seem to be very interesting. Monteggia, who translated the works of Fritze on the venereal malady, has also published his own observations on this disease, under the title of *Annotazioni sopra di Mali Venerii*, at Milan, 1794, in 8vo. Strambio has republished his former Memoir on the *Pellagre*, an endemic disorder peculiar to the inhabitants of the Milaneze, with considerable additions. (At Milan by Bianchi, 1794, in 8vo.) The Oeconomical Society of Verona, among other Memoirs which they have crowned, have published, *Illustrazioni della Terme di Caldiero, nel distritto Veroneze.* (At Verona, by Guiliari, 1795, in 4to.) The physicians Bongiovanni and Barbieri drew up the narrative, which they prefaced with a history of those Hot Baths, not a little interesting to the amateurs of antiquities and philology. A third edition of the *Principes de l'Art des Accouchemens* (Principles of the Art of Midwifery), by Roederer, with eighteen plates, and a considerable supplement, by the translator, Joseph Galletti, appeared at Florence, in 1795, in 4to.

Many years ago, a rich attorney of Rome, Pasquale di Pietro, sent to Paris, at his own charge, a young physician of great promise (Asdrubali), to be under the tuition of the celebrated Le Roy. Pasquale afterwards, with the permission of the pope, founded a professorship, for illustrating the art of midwifery, at the Archi-

gymnasium

gymnasium della Sapienza, at Rome, to the chair of which the same Asdrubali was appointed. Two annual prizes were also founded by Pasquale, consisting of a medal of gold and another of silver, to be awarded to the pupils who should evince the greatest proficiency. Asdrubali manifested no less zeal for the improvement of the art, by taking upon himself the tuition of a number of female pupils, at the hospital of St. Roch. As a last instance of his public spirit, Pasquale founded a school for the instruction of deaf and dumb persons, devoting much of his own time to the duties of the institution. The *Elementi di Ostetricia*, lately published at Rome, by Professor Asdrubali, in two volumes, in 12mo. with cuts, may be farther considered as the fruit of Pasquale's zeal for the improvement of midwifery. This work is more popular in Italy than even the Lezione di Ostetricia, by Valle, and demonstrates Asdrubali to be equally consummate in the theory and practice of his art. His *Pelvimetro digitale*, which he describes in the 35th page of the first volume, is particularly deserving the attention of the faculty.

Count Francis Bonzi, of Rimini, who distinguished himself, in the year 1751, by several Tracts on *Veterinary Medicine*, published, in 1794, the two first volumes of an intended Vocabulary of this science, the letters of which, however, reach only to B. The work, when completed, is to contain at least twelve.

Scuderi, a physician of Naples, in some repute for the philanthropic treatise on the Extirpation of the Small-Pox, published, in 1794, an *Introduzione alle Storia della Medicina Antichа e Moderna*, in 8vo. containing 274 pages. The author, to judge of him by this specimen, does not appear to be very familiar with the most modern medicinal works of Germany, and the other northern nations.

In the department of theology, properly so called, an habitual silence seems to prevail at present: even the bitter source of polemical controversy has been dried up for several years past. With difficulty has the ex-jesuit Zaccaria, (an Octogenary) been able to bring down to a ninth volume his *Raccolta di Dissertazioni di Storia Ecclesiastica, in Italiano o scritte, o tradotte del Francese*. (At Rome, by Salomoni.) This work, begun in 1792, has brought the history of the church no farther than down to the third century.

Pietro Paletta, a canon of Verona, has announced an accurate and detailed History of Heresies (*Storia ragionata delle Eresie*) which is to be executed by the beautiful presses of Guiliari.

VILLAGE MEMOIRS.

ANNE Hurst was born at Witley in Surry: there she lived the whole period of a long life, and there she died. As soon as she was thought able to work, she went to service: there, before she was twenty, she married James Strudwick; who, like her own father, was a day-labourer. With this husband she lived a prolific, hard-working, contented, wife, somewhat more than fifty years. He worked more than threescore years on one farm, and his wages, summer and winter, were regularly a shilling a day. He never asked more; nor was he ever offered less.

They had between them seven children; and lived to see six daughters married, and three of them the mothers of sixteen children; all of whom were brought up, or are bringing up, to be day-

labourers. Strudwick continued to work till within seven weeks of the day of his death; and at the age fourscore, in 1787, he closed, in peace, a not inglorious life; for, to the day of his death, he never received a farthing in the way of parochial aid. His wife survived him about seven years; and though bent with age and infirmities, and little able to work, excepting as a weeder in a gentleman's garden, she was also too proud either to ask or receive any relief from the parish. For six or seven of the last years of her life, she received twenty shillings a year from the person who favoured us with this account, which he drew up from her own mouth. With all her virtue and all her merit, she yet was not much liked in her neighbourhood: people in affluence thought her haughty; and the paupers of the parish, seeing, as they could not help seeing, that her life was a reproach to theirs, aggravated all her little failings. Yet the worst thing they had to say of her was, that she was proud; which they said was manifested by the manner in which she buried her husband. Resolute, as she owned she was, to have the funeral, and every thing that related to it, what she called decent, nothing could persuade her from having handles to his coffin, and a plate on it mentioning his age. She was also charged with having behaved herself crossly and peevishly towards one of her sons-in-law, who was a mason, and went regularly every Saturday evening to the alehouse, as he said, just to drink a pot of beer. James Strudwick, in all his life, as she often told this ungracious son-in-law, never spent five shillings in any idleness; luckily, (as she was sure to add,) he had it not to spend. A more serious charge against her was, that, living to a great age, and but little able to work, she grew to be seriously afraid, that at last she might become chargeable to the parish, (the heaviest, in her estimation, of all human calamities;) and that, thus alarmed, she did suffer herself more than once, during the exacerbations of a fit of distempered despondency, peevishly (and perhaps petulantly) to exclaim, that God Almighty, by suffering her to remain so long upon earth, seemed actually to have forgotten her.—Such are the simple annals of Dame Strudwick; and her historian, partial to his subject, closes it with lamenting, that such village memoirs have not often been sought for and recorded.

ANECDOTES OF VARIOUS JUGGLERS, &c.

IN modern times, persons who could walk over burning coals or red-hot iron, or who could hold them in their hands and their teeth, have often excited wonder. In the end of the last century, an Englishman, named Richardson, who, as we are assured, could chew burning coals; pour melted lead upon his tongue; swallow melted glass, &c. rendered himself very famous by these extraordinary feats. Laying aside the deception practised on the spectators, the whole of this secret consists in rendering the skin of the soles of the feet and hands so callous and insensible, that the nerves under them are secured from all hurt, in the same manner as by shoes and gloves. Such callosity will be produced if the skin is continually compressed, singed, pricked, or injured in any other manner. Thus do the fingers of the industrious sempstress become horny by being frequently pricked; and the case is the same with the hands of fire-

workers,

workers, and the feet of those who walk bare-footed over scorching sand.

"In the month of September, 1765," says Mr. Beckmann, "when I visited the copper-works at Awestad, one of the workmen, for a little drink-money, took some of the melted copper in his hand, and, after shewing it to us, threw it against a wall. He then squeezed the fingers of his horny hand close to each other; put it a few minutes under his armpit, to make it sweat, as he said; and, taking it again out, drew it over a ladle filled with melted copper, some of which he skimmed off, and moved his hand backwards and forwards, very quickly, by way of ostentation. While I was viewing this performance, I remarked a smell like that of singed horn or leather, though his hand was not burnt. The workmen at the Swedish melting houses shewed the same thing to some travellers in the last century; for Regnard saw it in 1681, at the copper-works in Lapland. It is highly probable that people who hold in their hands red-hot iron, or who walk upon it, as I saw done at Amsterdam, but at a distance, make their skin callous before, in the like manner. This may be accomplished by frequent moistening it with spirit of vitriol; according to some, the juice of certain plants will produce the same effect; and we are assured by others, that the skin must be frequently rubbed, for a long time, with oil, by which means, indeed, leather also will become horny."

Of this art traces may be found also in the works of the ancients. A festival was held annually on Mount Soracte, in Etruria, at which the Hirpi, who lived not far from Rome, jumped through burning coals; and on this account they were indulged with peculiar privileges by the Roman senate. Women also, we are told, were accustomed to walk over burning coals at Castabala, in Cappadocia, near the temple dedicated to Diana. Servius remarks, from a work of Varro, now lost, that the Hirpi trusted not so much to their own sanctity, as to the care which they had taken to prepare their feet for that operation.

We are not acquainted with every thing that concerns the trial by ordeal, when persons accused were obliged to prove their innocence by holding in their hands red-hot iron; but are convinced that this also was a juggling trick of the popes, which they employed as might best suit their views. It is well known that this mode of exculpation was allowed only to weak persons, who were unfit to wield arms, and particularly to monks and ecclesiastics, to whom, for the sake of their security, that by single combat was forbidden.—The trial itself took place in the church, entirely under the inspection of the clergy; mass was celebrated at the same time; the defendant and the iron were consecrated by being sprinkled with holy water; the clergy made the iron hot themselves; and they used all these preparatives, as jugglers do many motions, only to divert the attention of the spectators. It was necessary that the accused persons should remain at least three days and three nights under their immediate care, and continue as long after. They covered their hands both before and after the proof; sealed and unsealed the covering; the former, as they pretended, to prevent the hands from being prepared any how by art; and the latter to see if they were burnt. The sacred sealing secured them from the examination of presumptuous unbelievers; for to determine whether the hands were burnt,

burnt, the three last days were certainly not wanted. When the ordeal was abolished, and this art rendered useless, the clergy no longer kept it a secret.—In the thirteenth century an account of it was published by Albertus Magnus, a Dominican monk. If his receipt be genuine, it seems to have consisted rather in covering the hands with a kind of paste than in hardening them. The sap of the *althæa* (marsh-mallow), the slimy seeds of the flea-bane, which is still used for stiffening by the hat-makers and silk weavers, together with the white of an egg, were employed to make the paste adhere; and by these means the hands were as safe as if they had been secured by gloves. The use of this juggling trick is very old, and may be traced back to a pagan origin. In the Antigone of Sophocles, the the guards placed over the body of Polynices, which had been buried contrary to the orders of Creon, offered, in order to prove their innocence, to submit to any trial: "We will," say they, "take up red-hot iron in our hands, or walk through fire."

The exhibition of balls and cups, which is often mentioned in the works of the ancients, as the common art of jugglers, is also of great antiquity. It consists in conveying speedily, and with great dexterity, while the performer endeavours, by various motions and cant phrases, to divert the attention of the simple spectators from observing his movements too narrowly, several light balls, according to the pleasure of any person in company, under one or more cups; removing them sometimes from the whole, and conveying them again back in an imperceptible manner. In general, three leaden cups are used, and as many balls of cork; and to prevent all discovery by their slipping from the thumbs of the juggler, or making a noise, as he must lay hold of them with much quickness, the table before which he sits is covered with a cloth. These small balls were by the ancients called *calculi*; and the cups *acetabula*, or *paropsides*. Casaubon has already quoted most of those passages in ancient authors which relate to this subject; and they have been repeated by Bulenger; but neither of these writers makes mention of the fullest and clearest description given in the letters of Alciphron. We have there an account of a countryman who came to town, and was conducted by a merchant to the theatre, where he saw, with great astonishment, the exhibition of cups and balls. "Such an animal," says he, "as the performer I would not wish to have near me in the country; for, in his hands, my property would soon disappear." The art of oratory, because it deceives the auditors, is frequently compared to that of balls and cups. From the Latin word *gabata*, mentioned by Martial, together with *paropsides*, the French have made *gobelets*; and hence their common expressions *jouer de gobelets*, and *joueur des gobelets*, which they use, when speaking of jugglers.

In all ages of the world there have been men who excited great wonder by extraordinary strength. Instances of this have been already collected; but they do not belong to our present subject. However, above fifteen hundred years ago, there were people who, by applying a knowledge of the mechanical powers to their bodies, performed feats which astonished every ignorant spectator; though it is certain that any sound man, of common strength, could perform the same by employing the like means.

About the beginning of the present century such a strong man, or Sampson, as he called himself, as a native of Germany, travelled over

over almost all Europe; and his pretended art has been mentioned by so many writers, that we may conclude it had not been often exhibited before, and that it was then considered as new. His name was John Charles von Eckeberg; he was born at Harzgerode, in Anhalt, and at that time was thirty-three years of age. When he fixed himself between a couple of posts, on any level place, two or three horses were not able to draw him from his position; he could break ropes asunder, and lift up a man on his knee while he lay extended on the ground. But what excited the greatest astonishment was, that he suffered large stones to be broken on his breast with a hammer, or a smith to forge iron on an anvil placed above it.

This last feat was exhibited even in the third century, by Firmus, or Firmius, who, in the time of Aurelian, endeavoured to make himself emperor in Egypt. He was a native of Seleucia, in Syria; espoused the cause of Zenobia, the celebrated Queen of Palmyra; and was at length executed publicly by order of the Emperor Aurelian. It is of this Firmius, and not of another, who a century after was overcome in Africa by the father of the Emperor Theodosius, that Vopiscus speaks, where he relates that he could suffer iron to be forged on an anvil placed on his breast. For this purpose he lay on his back; but he put himself in such a position, by resting with his feet and shoulders against some support, that his whole body formed an arch, so that he seemed rather to be suspended than to lie at full length. Dr. Desaguliers describes the position thus: "The pretended Sampson put his shoulders (not his head, as he used to give out) upon one chair, and his heels upon another, (the chairs being made fast,) and supports one or two men standing on his belly, raising them up and down as he breathes, making, with his back-bone, thighs, and legs, an arch whose abutments are the chairs." This art has now become so common, that it is often exhibited without occasioning much surprise.

ON THE CLASSES OF NOMINAL CHRISTIANS.

[From WILBERFORCE'S VIEW.]

THE promotion of the glory of God, and the possession of his favour, are no longer recognised as the objects of our higher regard and most strenuous endeavours; as furnishing to us a vigorous, habitual, and universal, principle of action. We set up for ourselves; we are become our own masters. The sense of constant homage and continual service is irksome and galling to us; and we rejoice in being emancipated from it as from a state of base and servile villainage. Thus the very tenure and condition by which life and all its possessions are held, undergo a total change: our faculties and powers are now our own: whatever we have is regarded rather as a property than as a trust; or, if there still exist the remembrance of some paramount claim, we are satisfied with an occasional acknowledgment of a nominal right; we pay our pepper-corn, and take our estates to ourselves in full and free enjoyment.

Hence it is that so little sense of responsibility seems attached to the possession of high rank, or splendid abilities, or affluent fortunes, or other means or instruments of usefulness.—The instructive admonitions, "give an account of thy stewardship,"—"occupy till I come;"

I come;" are forgotten. Or if it be acknowledged, by some men of larger views than ordinary, that a reference is to be had to some principle superior to that of our own gratification, it is, at best, to the good of society, or the welfare of our families; and even then the obligations resulting from these relations are seldom enforced on us by any higher sanctions than those of family comfort, and of worldly interest or estimation. Besides, what multitudes of persons are there, people without families, in private stations, or of a retired turn, to whom they are scarcely held to apply; and what multitudes of cases to which it would be thought unnecessary scrupulosity to extend them? Accordingly we find in fact, that the generality of mankind among the higher order, in the formation of their schemes, in the selection of their studies, in the choice of their place of residence, in the employment and distribution of their time, in their thoughts, conversation, and amusements, are considered as being at liberty, if there be no actual vice, to consult in the main their own gratification.

Thus the generous and wakeful spirit of Christian benevolence, seeking and finding every where occasions for its exercise, is exploded, and a system of decent selfishness is avowedly established in its stead; a system scarcely more to be abjured for its impiety, than to be abhorred for its cold insensibility to the opportunities of diffusing happiness. "Have we no families, or are they provided for? Are we wealthy, and bred to no profession? Are we young and lively, and in the gaiety and vigour of youth? Surely we may be allowed to take our pleasure. We neglect no duty, we live in no vice, we do nobody any harm, and have a right to amuse ourselves. We have nothing better to do, we wish we had; our time hangs heavy on our hands for want of it."

I pity the man who can travel from Dan to Beersheba, and cry "It is all barren." No man has a right to be idle.—Not to speak of that great work which we all have to accomplish; and surely the whole attention of a short and precarious life is not more than an eternal interest may well require; where is it that in such a world as this, health, and leisure, and affluence, may not find some ignorance to instruct, some wrong to redress, some want to supply, some misery to alleviate? Shall ambition and avarice never sleep? Shall they never want objects on which to fasten? Shall they be so observant to discover, so acute to discern, so eager, so patient, to pursue, and shall the benevolence of Christians want employment?

Yet thus life rolls away with too many of us in a course of "shapeless idleness." Its recreations constitute its chief business. Watering places—the sports of the field—cards! never-failing cards!—the assembly—the theatres—all contribute their aid—amusements are multiplied, and combined, and varied, "to fill up the void of a listless and languid life;" and, by the judicious use of these different resources, there is often a kind of sober settled plan of domestic dissipation, in which with all imaginable decency year after year wears away in unprofitable vacancy. Even old age often finds us pacing in the same round of amusements which our early youth had tracked out. Meanwhile, being conscious that we are not giving into any flagrant vice, perhaps that we are guilty of no irregularity, and it may be that we are not neglecting the offices of religion, we persuade ourselves that we need not be uneasy. In the main we do

not

not fall below the general ſtandard of morals of the claſs and ſtation to which we belong, we may therefore allow ourſelves to glide down the ſtream without apprehenſion of the conſequences.

Some, of a character often hardly to be diſtinguiſhed from the claſs we have been juſt deſcribing, take up with ſenſual pleaſures. The chief happineſs of their lives conſiſts in one ſpecies or another of animal gratification; and theſe perſons perhaps will be found to compoſe a pretty large deſcription. It will be remembered, that it belongs not to our purpoſe to ſpeak of the groſsly and ſcandalouſly profligate, who renounce all pretenſions to the name of Chriſtians, but of thoſe who, maintaining a certain decency of character, and perhaps being tolerably obſervant of the forms of religion, may yet be not improperly termed ſober ſenſualiſts. Theſe, though leſs impetuous and more meaſured, are not leſs ſtaunch and ſteady, than the profeſſed votaries of licentious pleaſure, in the purſuit of their favourite objects. "Mortify the fleſh, with its affections and luſts," is the Chriſtian precept; a ſoft luxurious courſe of habitual indulgence, is the practice of the bulk of modern Chriſtians; and that conſtant moderation, that wholeſome diſcipline of reſtraint and ſelf-denial, which are requiſite to prevent the unperceived encroachment of the inferior appetites, ſeem altogether diſuſed, as the exploded auſterities of monkiſh ſuperſtition.

Chriſtianity calls her profeſſors to a ſtate of diligent watchfulneſs and active ſervices. But the perſons of whom we are now ſpeaking, forgetting alike the duties they owe to themſelves and to their fellow-creatures, often act as though their condition were meant to be a ſtate of uniform indulgence and vacant unprofitable ſloth. To multiply the comforts of affluence, to provide for the gratification of appetite, to be luxurious without diſeaſes, and indolent without laſſitude, ſeems the chief ſtudy of their lives. Nor can they be clearly exempted from this claſs, who, by a common error, ſubſtituting the means for the end, make the preſervation of health and ſpirits, not as inſtruments of uſefulneſs, but as ſources of pleaſure, their great buſineſs and continual care.

Others again ſeem more to attach themſelves to what have been well termed "the pomps and vanities of this world." Magnificent houſes, grand equipages, numerous retinues, ſplendid entertainments, high and faſhionable connections, appear to conſtitute, in their eſtimation, the ſupreme happineſs of life. This claſs too, if we miſtake not, will be found numerous in our days; for it muſt be conſidered, that it is the heart ſet on theſe things which conſtitutes the eſſential character. It often happens, that perſons, to whoſe rank and ſtation theſe indulgences moſt properly belong, are moſt indifferent to them.

The undue ſolicitude about them is more viſible in perſons of inferior conditions and ſmaller fortunes, in whom it is not rarely detected by the ſtudious contrivances of a miſapplied ingenuity to reconcile parade with economy, and glitter at a cheap rate. But this temper of diſplay and competition is a direct contraſt to the lowly, modeſt, unaſſuming, carriage, of the true Chriſtian: and, wherever there is an evident effort and ſtruggle to excel in the particulars here in queſtion, a manifeſt wiſh thus to rival ſuperiors, to outſtrip equals, to dazzle inferiors, it is manifeſt the great end of life, and of all its poſſeſſions, is too little kept in view, and it is to be feared that the

gratification of a vain oſtentatious humour is the predominant diſpoſition of the heart.

As there is a ſober ſenſuality, ſo is there alſo a ſober avarice, and a ſober ambition. The commercial and the profeſſional world compoſe the chief ſphere of their influence. They are often recognized, and openly avowed, as juſt maſter-principles of action. But, where this is not the caſe, they aſſume ſuch plauſible ſhapes, are called by ſuch ſpecious names, and urge ſuch powerful pleas, that they are received with cordiality, and ſuffered to gather ſtrength without ſuſpicion. The ſeducing *conſiderations of diligence in our callings*, of ſucceſs in our profeſſion, of making handſome proviſions for our children, beguile our better judgments. "We riſe early, and late take reſt, and eat the bread of careſulneſs." In our few intervals of leiſure, our exhauſted ſpirits require refreſhment; the ſerious concerns of our immortal ſouls are matters of ſpeculation too grave and gloomy to anſwer the purpoſe; and we fly to ſomething that may better deſerve the name of relaxation, till we are again ſummoned to the daily labours of our employment.

Meanwhile, religion ſeldom comes in our way, ſcarcely occurs to our thoughts; and, when ſome ſecret miſgivings begin to be felt on this head, company ſoon drowns, amuſements diſſipate, or habitual occupations inſenſibly diſplace or ſmother, the riſing apprehenſion. Profeſſional and commercial men perhaps, *eſpecially when they* happen to be perſons of more than ordinary reflection, or of early habits of piety not quite worn away, eaſily quiet their conſciences by the plea, that neceſſary attention to their buſineſs leaves them no time to think on theſe ſerious ſubjects at preſent. "Men of leiſure they confeſs ſhould conſider them; they themſelves will do it hereafter when they retire; meanwhile they are uſefully, or at leaſt innocently, employed." Thus buſineſs and pleaſure fill up our time, and the "one thing needful" is forgotten. Reſpected by others, and ſecretly applauding ourſelves (perhaps congratulating ourſelves that we are not like ſuch an one who is a ſpendthrift, or a mere man of pleaſure, or ſuch another who is a notorious miſer), the true principle of action is no leſs wanting in us, and perſonal advancement, or the acquiſition of wealth, is the object of our ſupreme deſires and predominant purſuits.

RECEIPT TO MAKE HENS LAY ALL THE WINTER.

GATHER nettle-tops when going to ſeed. Dry them, and lay them by for uſe. Mix ſome of this with a little broken hemp-ſeed, and pollard, in barley-meal, and give your hens two or three pellets daily throughout the autumn, which will ſtimulate them to lay their eggs all the winter.

LITERARY ANECDOTES.—By Dr. WARTON.

THOMSON and COLLINS.

MY friend, Mr. William Collins, author of the Perſian Eclogues and Odes, aſſured me, that Thomſon informed him, that he took the firſt idea of writing his Seaſons from the titles of Pope's four Paſtorals; ſo that theſe Paſtorals have not only the merit of ſetting a pattern for correct and muſical verſification, but have given

given rise to some of the truest poetry in our language. Collins wrote his Eclogues when he was about seventeen years old, at Winchester-school; and, as I well remember, had just been reading that volume of Salmon's Modern History which described Persia; and this determined him to lay the scene of these pieces in that country, it being productive of new images and sentiments. In his maturer years he was accustomed to speak very contemptuously of them, calling them his Irish Eclogues, and saying they had not in them one spark of *Orientalism*; and was greatly mortified that they found more readers and admirers than his Odes.

The Italian Improvisatori.

Amabæan verses, and the custom of vying in extempore verses, by turns, was a custom derived from the old Sicilian shepherds, and spread over all Italy; and is, as Mr. Spence observes, exactly like the practice of the Improvisatori at present in Italy. They are surprisingly ready in their answers, and go on octave for octave, and speech for speech, alternately, for a considerable time. In Florence they have ever had improviso comedies. It is remarkable that the celebrated Trissino, Leonardi da Vinci, Bramante, and the charming dramatic poet Metastasio, were all Improvisatori.

Dr. Garth.

Dr. Samuel Garth, author of The Dispensary, was one of the first friends of Pope, whose acquaintance with him began at fourteen or fifteen. Their friendship continued from the year 1703 to 1718, which was that of his death. He was a man of the sweetest disposition, amiable manners, and universal benevolence. All parties, at a time when party violence was at a great height, joined in praising and loving him. I hope I shall be pardoned for speaking of his character *con amore*, from my near connexion with one of his descendants; and yet I trust I shall not be accused of an improper partiality. One of the most exquisite pieces of wit ever written by Addison, was a defence of Garth against the Examiner, 1710.

Fairfax.

Among the multitude of English poets who wrote pastorals, Fairfax, to whom our versification is thought to be much indebted, ought to be mentioned. He wrote ten or twelve eclogues after the accession of James I.—They were like those of Mantuan and Spencer, allegorical, and allude to the manners and characters of the times, and contained many satirical strokes against the king and his court. They were lost in the fire that consumed the Banqueting-house at Whitehall; but it is said that Mr. W. Fairfax, his son, recovered them from his father's papers; the fourth of them was published by Mrs. Cooper, in the Muses Library, 1737.

George Lord Lansdown.

Notwithstanding the many praises lavished upon this celebrated nobleman as a poet, by Dryden, by Addison, by Bolingbroke, by Pope, and others, yet candid criticism must oblige us to confess, that he was but a feeble imitator of the feeblest parts of Waller. In his tragedy of Heroic Love he seems not to have had a true relish for Homer, whom he copied; and in the British Enchanters, very little fancy is to be found in a subject fruitful of romantic imagery. "It was fortunate for him," says Mr. Walpole, in his Anecdotes, "that, in an age when persecution raged so fiercely against lukewarm authors, he had an intimacy with the Inquisitor-general: how else would

would ſuch lines as theſe eſcape the bathos? they are in the Heroic Love:

Why thy gods
Enlighten thee to ſpeak their *dark* decrees.

His Progreſs of Beauty, and his Eſſay on Unnatural Flights in Poetry, ſeem to be the beſt of his pieces. In the latter are many good critical remarks and precepts, and it is accompanied with notes that contain much agreeable inſtruction: for, it may be added, his proſe is better than his verſe. Witneſs a Letter to a Young Man on his taking Orders, his Obſervations on Burnet, his Defence of his relation Sir Richard Grenville, a Tranſlation of ſome parts of Demoſthenes, and a Letter to his Father on the Revolution, written in October 1688. After having been ſecretary of war 1710, comptroller and treaſurer to the houſehold, and of her majeſty's privy-council, and created a peer 1711, he was ſeized as a ſuſpected perſon, at the acceſſion of King George I. and confined in the tower, in the very ſame chamber that had been occupied by Sir Robert Walpole. But, whatever may be thought of Lord Lanſdown as a poet, his character as a man was highly valuable. His converſation was moſt pleaſing and polite; his affability, and univerſal benevolence and gentleneſs, captivating; he was a firm friend, and a ſincere lover of his country. This is the character I received of him from his near relation and deſcendant, the late excellent Mrs. Delany, who was herſelf a true judge of merit and worth, of both which he poſſeſſed ſo great a degree.

NEW FOREST, HANTS.

In his Windſor Foreſt, Pope thus alludes to the devaſtation of the New Foreſt by the Conqueror:

The fields are raviſh'd from th' induſtrious ſwains,
From men their cities, and from gods their fanes:
The levell'd towns with weeds lie cover'd o'er;
The hollow winds through naked temples roar, &c.

"I have," ſays Dr. Warton, "the authority of three or four of our beſt antiquarians to ſay, that the common tradition of villages and pariſhes, within the compaſs of thirty miles, being deſtroyed, in the New Foreſt, is abſolutely groundleſs, no traces or veſtiges of ſuch being to be diſcovered, nor any other pariſh named in Doomſday Book, but what now remains. Of late years ſome minute enquiries have been made on this ſubject, by accurate and well-informed judges, who are clearly of this opinion. The Preſident Hainault has given us a more amiable idea of our Norman Conqueror than is here exhibited."

WILLIAM RUFUS.

The moment Walter Tyrrel had ſhot him, without ſpeaking of the accident, he inſtantly haſtened to the ſea-ſhore, and embarked for France, and thence hurried to Jeruſalem to do penance for his involuntary crime. The body of Rufus was found in the Foreſt by a countryman, whoſe family are ſaid to be ſtill living near the ſpot, and was buried, without any pomp, before the altar of Wincheſter cathedral, where his monument ſtill remains. Though the monkiſh hiſtorians, who hated him, may perhaps have exaggerated his vices, yet he ſeems really to have been a violent, prodigal, proud, perfidi-

ous,

ous, ungenerous, and tyrannical, prince.—There was, however, something of magnificence in his building the Tower, Westminster-hall, and London-bridge.

COWLEY.

Disgusted with the business and bustle of the world, and the intrigues of courts, Cowley thought to have found an exemption from all cares by retiring to Chertsey, in Surry, on the banks of the Thames, and the borders of Windsor Forest. Dr. Johnson wrote a Rambler to ridicule his wish to retire to America; and has published a letter, vol. i. of his Lives, page 29, which he recommends to the perusal of all who pant for solitude. His house at Chertsey now belongs to Mr. Alderman Clarke.

DENHAM.

In the memoirs of Count Grammont, 4to edition, page 200, Sir John Denham is charged with the atrocious crime of poisoning his young and beautiful wife. The populace in his neighbourhood said they would tear him in pieces for this abominable act as soon as he should come abroad. In the year 1667, he appeared to have been disordered in his intellects. And in Temple's Works, a very depreciating account of his behaviour is given, vol. i. page 484. In Butler's Posthumous Works, is a satire, entitled, A Panegyric on Denham's Recovery from Madness.

CHARLES I.

Vigneal-Marville, vol. i. p. 252, relates a fact concerning this unhappy monarch, that I do not find mentioned in any history; which, he says, Lord Clarendon used to mention when he retired to Rouen in Normandy; that one of the first circumstances that gave disgust to the people of England, and to some of the nobility, was a hint thrown out by Charles I. at the beginning of his reign, that he thought all the ecclesiastical revenues that had been seized and distributed by Henry VIII. ought to be restored to the church.

DESCRIPTIVE POETRY.

Speaking of the Windsor Forest of Pope, Dr. Warton observes, that several elegant imitations have been given of this species of local poetry. The principal seem to be, Granger Hill; the Ruins of Rome; Claremont, by Garth; Kymber, by Mr. Potter; Kensington Gardens; Catharine Hill; Faringdon Hill; Newdwood Forest; Lewsedon Hill; the Deserted Village, and Traveller, of Goldsmith, and the Ode on the distant Prospect of Eton College.

Pope, it seems, was of opinion, that descriptive poetry is a composition as absurd as a feast made up of sauces; and I know many other persons that think meanly of it. I will not say that it is equal, either in dignity or utility, to those compositions that lay open the internal constitution of man, and that imitate characters, manners, and sentiments. I may, however, remind such contemners of it, that, in a sister art, landscape-painting claims the very next rank to history-painting, being ever preferred to single portraits, to pieces of still life, to droll figures, to fruit and flower-pieces; that Titian thought it no diminution of his genius, to spend much of his time in works of the former species; and that, if their principles lead them to condemn Thomson, they must also condemn the Georgics of Virgil, and the greatest part of the noblest descriptive poem extant; I mean that of Lucretius.

LYRIC

Lyric Poetry.

If we caſt a tranſient view over the moſt celebrated of the modern lyrics, we may obſerve that the ſtanza of Petrarch, which has been adopted by all his ſucceſſors, diſpleaſes the ear, by its tedious uniformity, and by the number of identical cadences. And, indeed, to ſpeak truth, there appears to be little valuable in Petrarch, except the purity of his diction. Proceeding to ſome obſervations on the French lyric poetry, of which Dr. Warton does not appear to be a great admirer, he adds, that it was the opinion of Gray, that "we have had, in our own language, no other odes of the ſublime kind, than that of Dryden on St. Cecilia's Day: for Cowley, who had his merit, yet wanted judgment, ſtyle, and harmony, for ſuch a taſk. That of Pope is not worthy of ſo great a maſter. Mr. Maſon, indeed, of late days, has touched the true chords, and with a maſterly hand, in ſome of his choruſſes."

Productions of early Genius.

Scaliger, Voltaire, and Grotius, were but eighteen years old when they produced, the firſt two their OEdipuſes, and the laſt his Adamus Exul. But the moſt extraordinary inſtance of early excellence is "The Old Batchelor of Congreve," written at nineteen only; as comedy implies and requires a knowledge of life and characters, which are here diſplayed with accuracy and truth. In Alcander, an epic poem, which Pope wrote when about twelve (and which he afterwards, by the advice of Atterbury, deſtroyed) is word for word that couplet on the circulation of the blood, which he afterwards inſerted in the Dunciad:

As man's meanders, to their vital ſpring
Roll all their tides, then back their circles bring.

Guido and Dominichino.

When theſe two celebrated artiſts had each of them painted a picture in the church of St. Andrew, Annibal Carrache, their maſter, was preſſed to declare which of his two pupils had excelled. The picture of Guido repreſented Saint Andrew on his knees before the croſs: that of Dominichino repreſented the flagellation of the ſame apoſtle. Both of them in their different kinds were capital pieces, and were painted in freſco, oppoſite to each other, to eternize, as it were, their rivalſhip and contention. "Guido," ſaid Carrache, "has performed as a maſter, and Dominichino as a ſcholar; but," added he, "the work of the ſcholar is more valuable than that of the maſter. In truth, one may perceive faults in the picture of Dominichino that Guido has avoided; but then there are noble ſtrokes not to be found in that of his rival." It was eaſy to diſcern a genius that promiſed to produce beauties to which the ſweet, the gentle, and the graceful, Guido, would never aſpire.

Imagination.

Voltaire ſays well, "He, that retains the greateſt number of images in the magazine of memory, has the beſt imagination." On another occaſion he obſerves, "The faculty of imagination depends entirely on the memory. We ſee men, horſes, gardens, and other ſenſible objects: theſe perceptions enter our minds by the ſenſes; the memory retains them; the imagination combines them:—and this is the reaſon why the Greeks call the Muſes the Daughters of Memory."

LORD BOLINGBROKE.

When Tully attempted poetry, he became as ridiculous as Bolingbroke when he attempted philosophy and divinity. We look in vain for that genius which produced "The Dissertation on Parties," in his tedious philosophical works: of which it is no exaggerated satire to say, that the reasoning of them is sophistical and inconclusive, the style diffuse and verbose, and the learning seemingly conveyed in them not drawn from the originals, but picked up and purloined from French critics and translations; and particularly from Bayle, Rapin, and Thomassin; together with the assistance which our Cudworth and Stanley happily afforded a writer confessedly ignorant of the Greek tongue, who has yet the insufferable arrogance to vilify, and think he can confute, the best writers in that language.

MISAPPLICATION OF LITERARY TALENTS.

When Fontaine, whose Tales indicated a truly comic genius, brought a comedy on the stage, it was received with a contempt equally unexpected and deserved. Terence has left us no tragedy; and the Mourning Bride of Congreve, notwithstanding the praises bestowed on it by Pope, in the Dunciad, is certainly a despicable performance; the plot is unnaturally intricate, and overcharged with incidents, the sentiments trite, and the language turgid and bombast. The Biter of Rowe is wretched. Heemskirk and Teniers could not succeed in a serious and sublime subject of history-painting. Hogarth's Sigismunda disgraced his pencil.

The modesty and good sense of the ancients are, in this particular, as in others, remarkable. The same writer never presumed to undertake more than one kind of dramatic poetry, if we except the Cyclops of Euripides. A poet never presumed to plead in public, or to write history, or indeed any considerable work in prose. The same actors never recited tragedy and comedy: this was observed long ago, by Plato, in his third book of his Republic. They seem to have held, that diversity, nay universality, of excellence, at which the moderns frequently aim, to be a gift unattainable by man.

We, therefore, of Great Britain, have, perhaps, more reason to congratulate ourselves on two great phenomena: I mean Shakspeare's being able to pourtray characters so very different as Falstaff and Macbeth; and Garrick's being able to personate so inimitably a Lear or an Abel Drugger. Nothing can more fully demonstrate the extent and versatility of these two original geniuses. Corneille, whom the French are so fond of opposing to Shakespeare, produced very contemptible comedies; and the Plaideurs of Racine is so close a resemblance of Aristophanes, that it is not to be here urged. The most universal of authors seems to be Voltaire, who has written almost equally well, both in prose and verse; and whom either the tragedies of Merope and Mahomet, or the histories of Louis XIV. and Charles XII. would alone have immortalized. It might be supposed, that the author of Candide would have been able to produce a good comedy; and that a writer, who draws characters and plans a fable so inimitably well as Fielding in Tom Jones, would have done the same; but both these writers have failed in the attempt.

GEORGE II.

"You ought not to write verses (said George II. who had little taste, to Lord Hervey), 'tis beneath your rank; leave such work to little Mr. Pope, it is his trade."

MUTABILITY OF LANGUAGES.

"All living languages," says Dr. Beattie, "are liable to change. The Greek and Latin, though composed of more durable materials than ours, were subject to perpetual vicissitude, till they ceased to be spoken. The former is, with reason, believed to have been more stationary than any other; and indeed a very particular attention was paid to the preservation of it; yet, between Spenser and Pope, Hooker and Sherlock, Raleigh and Smollet, a difference of dialect is not more perceptible, than between Homer and Appollonius, Xenophon and Plutarch, Aristotle and Antoninus. In the Roman authors, the change of language is still more remarkable. How different, in this respect, is Ennius from Virgil, Lucilius from Horace, Cato from Columella, and even Catullus from Ovid! The Laws of the Twelve Tables, though studied by every Roman of condition, were not perfectly understood, even by antiquarians, in the time of Cicero, when they were not quite four hundred years old. Cicero himself, as well as Lucretius, made several improvements in the Latin tongue. Virgil introduced some new words; and Horace asserts his right to the same privilege; and, from his remarks upon it, appears to have considered the mutability of living languages as an impossible thing. It were vain then to flatter ourselves with the hope of permanency to any of the modern tongues of Europe; which, being more ungrammatical than the Latin and Greek, are exposed to more dangerous, because less discernible, innovations.

Our want of tenses and cases makes a number of auxiliary verbs necessary, and to these the unlearned are not attentive, because they look upon them as the least important parts of language, and hence they come to be omitted or misapplied in conversation, and afterwards in writing. Besides, the spirit of commerce, manufacture, and naval enterprise, so honourable to modern Europe, and to Great Britain in particular, and the free circulation of arts, sciences, and opinions, owing, in part, to the use of printing, and to our improvements in navigation, must render the modern tongues, and especially the English, more variable than the Greek or Latin."

ON THE UTILITY OF WORK-HOUSES.

WORK-houses are of two kinds, or at least are employed for two different purposes. Some are used as prisons for vagrants or sturdy beggars, who are there confined and compelled to labour for the benefit of the society which maintains them; whilst others, sometimes called poor-houses, are charitable asylums for such indigent persons as through age or infirmity are unable to support themselves by their own labour. The former kind of work-houses, when under proper management, may be made to serve the best of purposes; of the latter we are acquainted with none which entirely commands our approbation.

To make confinement in a work-house operate to the correction of vagrants and disorderly persons (and if it produce not this effect it can hardly be considered as a beneficial institution), the prisoners should be shut up in separate cells, and compelled to labour for their own subsistence. A crew of thieves and vagabonds associating with each other is a hell upon earth, in which every individual is hardened in his crimes by the countenance and conversation of his companions;

and wretches who, when at liberty, choose to beg or steal rather than to earn a comfortable livelihood by honest industry, will submit to any punishment which a humane overseer can inflict rather than work for the benefit of others. No punishment indeed will compel a vagrant to labour. He may assume the appearance of it, but he will make no progress; and the pretext of sickness or weakness is ever at hand for an excuse. Hence it is that thieves and strumpets are too often dismissed from work-houses and bridewells ten times more the children of the devil than when they entered them.

To remedy these evils, we can think of no better method than to confine each prisoner in a cell by himself, and to furnish him daily with such an allowance of bread and water as may preserve him from immediate death; for the only compulsion to make such men work seriously is the fear of want, and the only way to reform them is to leave them to their own meditations on the consequences of their past conduct. There are surely very few persons, if any, whose aversion from labour would not be conquered by the pinchings of hunger and the certain prospect of perishing by famine; and it is to be hoped that there are not many so totally divested by every latent principle of virtue as not to be brought by such solitude to a due sense of their former wickedness. Should one or two, however, be occasionally found so very obdurate as to suffer themselves to perish rather than work, their deaths would prove a salutary beacon to others, and their blood would be on their own heads; for we have the express command of St. Paul himself, that, "if any will not work, neither should he eat."

No doubt it would be proper that the meditations of vagabonds confined in a work-house should be directed by the private admonitions of a pious and intelligent clergyman; but it is not every clergyman who is qualified to discharge such a duty. If he be actuated by a zeal not according to knowledge, or if he have not with equal care studied human nature and the word of God, his admonitions will be more likely to provoke the profane ridicule of his auditor, and harden him in his wickedness, than to excite in his breast such sorrow for his sins as shall "bring forth fruits meet for repentance." To render the instruction of thieves and vagrants of any use, it must be accurately adapted to the case of each individual; and, however excellent it may be in itself, it will not be listened to unless offered at seasons of uncommon seriousness, which the instructor should therefore carefully observe.

That such wholesome severity as this would often reform the inhabitants of work-houses, appears extremely probable from the effects of a similar treatment of common prostitutes mentioned by Lord Kames in his Sketches of the History of Man: "A number of those wretches were in Edinburgh confined in a house of correction, on a daily allowance of threepence, of which part was embezzled by the servants of the house. Pinching hunger did not reform their manners; for, being absolutely idle, they encouraged each other in vice, waiting impatiently for the hour of deliverance. Mr. Stirling the superintendant, with the consent of the magistrates, removed them to a clean house; and, instead of money, appointed for each a pound of oatmeal daily, with salt, water, and fire for cooking. Relieved now from distress, they longed for comfort.—What would they not give for milk or ale?—'Work,' says he, 'will procure

you plenty.'—To some, who offered to spin, he gave flax and wheels, engaging to pay them half the price of their yarn, retaining the other half for the materials furnished. The spinners earned about nine-pence weekly; a comfortable addition to what they had before. The rest undertook to spin, one after another; and before the end of the first quarter they were all of them intent upon work. It was a branch of his plan to set free such as merited that favour; and some of them appeared to be so thoroughly reformed as to be in no danger of a relapse."

Work-houses erected as charitable asylums appear to us, in every view that we can take of them, as institutions which can serve no good purpose. Economy is the great motive which inclines people to this mode of providing for the poor. There is comparatively but a very small number of mankind in any country so aged and infirm as not to be able to contribute, in some degree, to their subsistence by their own labour; and in such houses it is thought that proper work may be provided for them, so that the public shall have nothing to give in charity but what the poor are absolutely unable to procure for themselves. It is imagined likewise, that numbers collected at a common table can be maintained at less expence than in separate houses; and foot-soldiers are given for an example, who could not live on their pay if they did not mess together. But the cases are not parallel. "Soldiers, having the management of their pay, can club for a bit of meat; but, as the inhabitants of a poor-house are maintained by the public, the same quantity of provisions must be allotted to each. The consequence is what might be expected; the bulk of them reserve part of their victuals for purchasing ale or spirits. It is vain to expect work from them: poor wretches void of shame will never work seriously, where the profit accrues to the public, not to themselves. Hunger is the only effectual means for compelling such persons to work."

The poor, therefore, should be supported in their own houses; and, to support them properly, the first thing to be done is, to estimate what each can earn by his own labour; for as far only as that falls short of maintenance is there room for charity. In repairing those evils which society did not or could not prevent, it ought to be careful not to counteract the wise purposes of nature, nor to do more than to give the poor a fair chance to work for themselves. The present distress must be relieved, the sick and the aged provided for; but the children must be instructed; and labour, not alms, offered to those who have some ability to work, however small that ability may be. They will be as industrious as possible, because they work for themselves; and a weekly sum of charity under their own management will turn to better account than in a poor-house under the direction of mercenaries. Not a penny of it will be laid out on fermented liquors, unless perhaps as a medicine in sickness. Nor does such low fare call for pity to those who can afford no better. Ale makes no part of the maintenance of those who, in many parts of Scotland, live by the sweat of their brows; and yet the person who should banish all from a charity work-house, would be exclaimed against as hard-hearted, and even void of humanity.

That such a mode of supporting the poor in their own houses is practicable, will hardly admit of a dispute; for it has been actually put in practice in the city of Hamburgh ever since the year 1788.

At

At that period such revenues as had till then been expended in alms by the several church-wardens, and those of which the administration had been connected with the work-house, were united under one administration with such sums as were collected from private benevolence. The city was divided into sixty districts, containing each an equal number of poor; and over these one hundred and eighty overseers were appointed. Actual relief was the first object; but, at the very moment that this provision was secured, measures were taken to prevent any man from receiving a shilling which he could have been able to earn for himself. By methods, which our limits will not permit us to state, the overseers were able to make a calculation tolerably exact of what each pauper wanted for bare subsistence, in addition to the fruits of his own labour. A flax-yarn-spinning manufacture was established, in which the yarn is paid for, not by its weight, but by its measure. The clean flax is sold to the poor at a low price, and a certain measure of yarn again bought from them at thirty per cent. above the usual price; so that the overseers are sure that all the yarn spun by the poor will be brought into their office. Every pauper brings with him a book in which the quantity delivered is carefully noted down, which furnishes the overseers with a continual average of the state of industry among their poor.

As soon as this institution was established, the overseers went through their districts, and asked, in all such mansions as could be supposed to harbour want, if the inhabitants stood in need of support? The question to all such poor as wished for relief, and were able to spin, was, Whether they did earn by their work 1s. 6d. a-week? for experience had taught the inhabitants of Hamburgh, that many poor live upon that sum; and they knew enough of their poor to suppose, that 1s. 6d. avowed earning was equal to something more. If the answer was affirmative, the pauper stood not in need of weekly assistance. If it was negative, work was given him, which, by being paid thirty per cent. above its value, afforded him 1s. 6d. a-week easily, if he was even an indifferent hand. The far more frequent cases were partial inability by age, or weakness, or want of skill. For poor of the latter description a school was opened, and in three months time the business was easily learnt. During that time, the pauper got first 2s. a-week, and every week afterwards 2d. less, till in the twelfth week he got nothing at all but his earnings, and was dismissed, with a wheel and a pound of flax gratis.

The quantity of work which disabled poor were capable of doing in a week was easily and accurately ascertained by a week's trial in the spinning-school. The result was produced weekly before appointed members of the committee, and the sum which the poor could earn was noted down in their small books. The overseer was directed to pay them weekly what their earnings fell short of 1s. 6d. in every such week, when it appeared from their books that they had earned to the known extent of their abilities. From that moment applications became less frequent; and the committee had an infallible standard for distinguishing real want: for whenever the pauper, if in health (if not, he was peculiarly provided for), had not earned what he could, then he had either been lazy, or had found more lucrative work; in either case, he was not entitled to a relief for that week, whatever he might be for the following.

This mode of providing for the poor, which attracted the notice and obtained the eulogium of the minister in the British house of commons,

commons, has for some years been in Hamburgh attended with the happiest consequences. In the streets of that city a beggar is rarely to be seen, whilst those, who stand in need of the charitable contributions of the rich, are much more comfortably, as well as at much less expence, maintained at home, with their children about them, than they could be in work-houses, under the management of mercenary overseers. For a fuller account of this judicious institution, we must refer the reader to Vought's Account of the Management of the Poor in Hamburgh, since the year 1788, in a letter to some friends of the poor in Great Britain.

A NEW METHOD OF PREPARING ARTIFICIAL YEAST.

A METHOD has lately been discovered, of preparing artificial yeast, by which good bread may be made without the assistance of any other ferment. The method is this :—Boil flour and water together to the consistence of treacle, and when the mixture is cold saturate it with fixed air. Pour the mixture thus saturated into one or more large bottles or narrow-mouthed jars; cover it over loosely with paper, and upon that lay a slate or board with a weight to keep it steady. Place the vessel in a situation where the thermometer will stand from 70° to 80°, and stir up the mixture two or three times in twenty-four hours. In about two days such a degree of fermentation will have taken place, as to give the mixture the appearance of yeast. With the yeast in this state, and before it has acquired a thoroughly vinous smell, mix the quantity of flour intended for bread in the proportion of six pounds of flour to a quart of the yeast, and a sufficient portion of warm water. Knead them well together in a proper vessel, and, covering it with a cloth, let the dough stand for twelve hours, or till it appears to be sufficiently fermented in the fore-mentioned degree of warmth. It is then to be formed into loaves and baked. The yeast would be more perfect, if a decoction of malt were used instead of simple water.

It has lately been discovered, that a decoction of malt alone, without any addition, will produce a yeast proper enough for the purpose of brewing. This discovery was made by Joseph Senyor, servant of the Rev. Mr. Mason of Aston near Rotheram; and he received for it a reward of twenty pounds from the Society for promoting Arts, Manufactures, and Commerce. The process is as follows :—Procure three earthen or wooden vessels of different sizes and apertures, one capable of holding two quarts, the other three or four, and the third five or six: boil a quarter of a peck of malt for about eight or ten minutes in three pints of water; and, when a quart is poured off from the grains, let it stand in the first or smaller vessel in a cool place till not quite cold, but retaining that degree of heat which the brewers usually find to be proper when they begin to work their liquor. Then remove the vessel into some warm situation near a fire, where the thermometer stands between seventy and eighty degrees Fahrenheit, and there let it remain till the fermentation begins, which will be plainly perceived within thirty hours: add then two quarts more of a like decoction of malt, when cool, as the first was; and mix the whole in the second or larger vessel, and stir it well in, which must be repeated in the usual way, as it rises in a common vat: then add a still greater quantity of the same decoction, to be worked in the

the largeſt veſſel, which will produce yeaſt enough for a brewing of forty gallons.

Common ale yeaſt may be kept freſh and fit for uſe ſeveral months, by the following method :—Put a quantity of it into a cloſe canvas bag, and gently ſqueeze out the moiſture in a ſcrew-preſs till the remaining matter be as firm and ſtiff as clay. In this ſtate it may be cloſe packed up in a tight caſk for ſecuring it from the air; and will keep freſh, ſound, and fit for uſe, for a long time. This is a ſecret that might be of great uſe to the brewers and diſtillers, who, though they employ very large quantities of yeaſt, ſeem to know no method of preſerving it, or raiſing nurſeries of it; for want of which they ſuſtain a very conſiderable loſs; whereas the brewers in Flanders make a very great advantage of ſupplying the malt-diſtillers of Holland with yeaſt, which is rendered laſting and fit for carriage by this eaſy expedient.

DESCRIPTION OF THE TURKISH SERAGLIO.

THE word Seraglio is commonly uſed by way of eminence for the palace of the grand ſignior at Conſtantinople, where he keeps his court, and where his concubines are lodged, and where the youth are trained up for the chief poſts of the empire. It is a triangle about three Italian miles round, wholly within the city, at the end of the promontory Chryſoceras, now called the Seraglio Point. The buildings run back to the top of the hill, and from thence are gardens that reach to the edge of the ſea. It is incloſed with a very high and ſtrong wall, upon which there are ſeveral watch-towers: and it has many gates, ſome of which open towards the ſea-ſide, and the reſt into the city; but the chief gate is one of the latter, which is conſtantly guarded by a company of capoochees, or porters; and in the night it is well guarded towards the ſea. The outward appearance is not very beautiful, the architecture being irregular, conſiſting of ſeparate edifices in the form of pavilions and domes.

The ladies of the ſeraglio are a collection of beautiful young women, chiefly ſent as preſents from the provinces and the Greek iſlands, moſt of them the children of Chriſtian parents. The brave Prince Heraclius hath for ſome years paſt aboliſhed the infamous tribute of children of both ſexes, which Georgia formerly paid every year to the Porte. The number of women in the harem depends on the taſte of the reigning monarch or ſultan. Selim had two thouſand, Achmet had but three hundred, and the late ſultan had nearly ſixteen hundred. On their admiſſion they are committed to the care of old ladies, taught ſewing and embroidery, muſic, dancing, and other accompliſhments, and furniſhed with the richeſt clothes and ornaments. They all ſleep in ſeparate beds, and between every fifth there is a preceptreſs. Their chief governeſs is called Katon Klaga, or governeſs of the noble young ladies. There is not one ſervant among them, for they are obliged to wait on one another by rotation; the laſt that is entered ſerves her who preceded her and herſelf. Theſe ladies are ſcarcely ever ſuffered to go abroad, except when the grand ſignior removes from one place to another, when a troop of black eunuchs conveys them to the boats, which are incloſed with lattices and linen curtains; and when they go by land they

they are put into close chariots, and signals are made at certain distances, to give notice that none approach the roads through which they march. The boats of the harem, which carry the grand signior's wives, are manned with twenty-four rowers, and have white covered tilts, shut alternately by Venetian blinds. Among the emperor's attendants are a number of mutes, who act and converse by signs with great quickness; and some dwarfs, who are exhibited for the diversion of his majesty.

When he permits the women to walk in the gardens of the seraglio, all people are ordered to retire, and on every side there is a guard of black eunuchs, with sabres in their hands, while others go their rounds in order to hinder any person from seeing them. If, unfortunately, any one is found in the garden, even through ignorance or inadvertence, he is undoubtedly killed, and his head brought to the feet of the grand signior, who gives a great reward to the guard for their vigilance. Sometimes the grand signior passes into the gardens to amuse himself when the women are there; and it is then that they make use of their utmost efforts, by dancing, singing, seducing gestures, and amorous blandishments, to ensnare the affections of the monarch. It is not permitted that the monarch should take a virgin to his bed, except during the solemn festivals, and on occasion of some extraordinary rejoicings, or the arrival of some good news. Upon such occasions, if the sultan chooses a new companion to his bed, he enters into the apartment of the women, who are ranged in files by the governesses, to whom he speaks, and intimates the person he likes best: the ceremony of the handkerchief, which the grand signior is said to throw to the girl that he elects, is an idle tale, without any foundation. As soon as the grand signior has chosen the girl that he has destined to be the partner of his bed, all the others follow her to the bath, washing and perfuming her, and dressing her superbly, conducting her singing, dancing, and rejoicing, to the bed-chamber of the grand signior, who is generally, on such an occasion, already in bed. Scarcely has the new-elected favourite entered the chamber, introduced by the grand eunuch who is upon guard, than she kneels down, and, when the sultan calls her, she creeps into bed to him at the foot of the bed, if the sultan does not order her, by especial grace, to approach by the side: after a certain time, upon a signal given by the sultan, the governess of the girls, with all her suite, enter the apartment, and take her back again, conducting her with the same ceremony to the women's apartments; and if by good fortune she becomes pregnant, and is delivered by a boy, she is called *asaki sultaness*, that is to say, sultaness-mother; for the first son, she has the honour to be crowned, and she has the liberty of forming her court. Eunuchs are also assigned for her guard, and for her particular service. No other ladies, though delivered of boys, are either crowned or maintained with such costly distinction as the first; however, they have their service apart, and handsome appointments. After the death of the sultan, the mothers of the male children are shut up in the old seraglio, from whence they can never come out any more, unless one of their sons ascends the throne. Baron de Tott informs us, that the female slave who becomes the mother of a sultan, and lives long enough to see her son mount the throne, is the only woman who at that period alone acquires the distinction of *sultana-mother*; she is till then in the interior of her prison

prison with her son. The title of *bache kadun*, principal woman, is the first dignity of the grand signior's harem; and she hath a larger allowance than those who have the title of second, third, and fourth, woman, which are the four free women the Koran allows.

This is a description of the grand signior's seraglio: we shall now add an account of the seraglio or *harem*, as it is often called, of the Emperor of Morocco, from the very interesting tour of Mr. Lempriere. This gentleman, being a surgeon by profession, was admitted into the harem to prescribe for some of the ladies who were indisposed, and was therefore enabled to give a particular account of this female prison, and, what is still more curious, of the manners and behaviour of its inhabitants. The harem forms a part of the palace. The apartments, which are all on the ground floor, are square, very lofty, and four of them inclose a spacious square court, into which they open by means of large folding doors. In the centre of these courts, which are floored with blue and white checquered tiling, is a fountain, supplied by pipes from a large reservoir on the outside of the palace, which serves for the frequent ablutions recommended by the Mahometan religion, as well as for other purposes. The whole of the harem consists of about twelve of these square courts, communicating with each other by narrow passages, which afford a free access from one part of it to another, and of which all the women are allowed to avail themselves. The apartments are ornamented on the outside with beautiful carved wood. In the inside most of the rooms are hung with rich damask of various colours; the floors are covered with beautiful carpets, and there are matresses disposed at different distances, for the purposes of sitting and sleeping.

Besides these, the apartments are furnished at each extremity with an elegant European mahogany bedstead, hung with damask, having on it several mattresses placed one over the other, which are covered with various coloured silks; but these beds are merely placed there to ornament the room. In all the apartments, without exception, the ceiling is wood, carved and painted. The principal ornaments in some were large and valuable looking-glasses, hung on different parts of the walls. In others, clocks and watches of different sizes, in glass cases, were disposed in the same manner.

The Sultana Lalla Batoom and another favourite were indulged with a whole square to themselves; but the concubines were only each allowed a single room. Each female had a separate daily allowance from the emperor, proportioned to the estimation in which they were held by him. The late emperor's allowance was very trifling: Lalla Douyaw, the favourite sultana, had very little more than half-a-crown English a-day, and the others less in proportion. It must be allowed, that the emperor made them occasional presents of money, dress, and trinkets; but this could never be sufficient to support the number of domestics and other expences they must incur. Their greatest dependence therefore was on the presents they received from those Europeans and Moors who visited the court, and who employed their influence in obtaining some particular favour from the emperor. This was the most successful mode that could be adopted. When Mr. Lempriere was at Morocco, a Jew, desirous obtaining a very advantageous favour from the emperor, for which he had been a long time unsuccessfully soliciting, sent to all the

principal ladies of the harem presents of pearls to a very large amount; the consequence was, that they all went in a body to the emperor, and immediately obtained the wished-for concession.

The ladies separately furnish their own rooms, hire their own domestics, and, in fact, do what they please in the harem, but are not permitted to go out without an express order from the emperor, who very seldom grants them that favour, except when they are to be removed from one palace to another. In that case, a party of soldiers is dispatched a little distance before them, to disperse the male passengers in particular, and to prevent the possibility of their being seen. This previous step being taken, a piece of linen cloth is tied round the lower part of the face, and afterwards these miserable females cover themselves entirely with their haicks, and either mount mules, which they ride like men, or, what is more usual, are put into a square carriage or litter, constructed for this purpose, which by its lattice-work allows them to see without being seen. In this manner they set off, under the charge of a guard of black eunuchs. This journey, and sometimes a walk within the bounds of the palace, with which they are, however, seldom indulged, is the only exercise they are permitted to take.

The late emperor's harem consisted of between sixty and one hundred females, besides their domestics and slaves, which were very numerous. Many of the concubines were Moorish women, who had been presented to the emperor, as the Moors consider it an honour to have their daughters in the harem; several were European slaves, who had either been made captives, or purchased by the emperor; and some were negroes.

In this group the Europeans, or their descendants, had by far the greatest claim to the character of handsome. There was one in particular, who was a native of Spain, and taken into the harem at about the same age as Lalla Douyaw, who was indeed a perfect beauty. Nor was this lady quite singular in that respect, for many others were almost equally handsome. The eunuchs, who have the entire charge of the women, and who in fact live always among them, are the children of negro slaves. They are generally either very short and fat, or else tall, deformed, and lame. Their voices have that particular tone which is observable in youths who are just arriving at manhood; and their persons altogether afford a disgusting image of weakness and effeminacy. The same gentleman gave us a very curious account of the manners and ignorance of these immured females, from his own observations, when visiting the prince's harem. "Attended by an eunuch (says he), after passing the gate of the harem, which is always locked, and under the care of a guard of eunuchs, we entered a narrow and dark passage, which soon brought us to the court, into which the women's chambers open. We here saw numbers of both black white women and children; some concubines, some slaves, and others hired domestics.

"Upon their observing the unusual figure of an European, the whole multitude in a body surrounded me, and expressed the utmost astonishment at my dress and appearance. Some stood motionless, with their hands lifted up, their eyes fixed, and their mouths open, in the usual attitude of wonder and surprise. Some burst into immoderate fits of laughter; while others again came up, and with uncommon attention eyed me from head to foot. The parts of my dress

dress which seemed most to attract their notice were my buckles, buttons, and stockings; for neither men nor women in this country wear any thing of the kind. With respect to the club of my hair, they seemed utterly at a loss in what view to consider it; but the powder which I wore they conceived to be employed for the purpose of destroying vermin. Most of the children, when they saw me, ran away in the most perfect consternation; and on the whole, I appeared as singular an animal, and I dare say had the honour of exciting as much curiosity and attention, as a lion or a man-tiger just imported from abroad, and introduced into a country town in England on a market-day. Every time I visited the harem, I was surrounded and laughed at by this curious mob, who, on my entering the gate, followed me close to the very chamber to which I was proceeding, and on my return universally escorted me out.

"The greatest part of the women were uncommonly fat and unwieldy; had black and full eyes, round faces, with small noses. They were of different complexions; some very fair, some sallow, and others again perfect negroes. One of my new patients being ready to receive me, I was desired to walk into her room; where, to my great surprise, I saw nothing but a curtain drawn quite across the apartment, similar to that of a theatre which separates the stage from the audience. A female domestic brought a very low stool, placed it near the curtain, and told me I was to sit down there, and feel her mistress's pulse. The lady, who had by this time summoned up courage to speak, introduced her hand from the bottom of the curtain, and desired me to inform her of all her complaints, which she conceived I might perfectly do by merely feeling the pulse. It was in vain to ask her where her pain was seated, whether in her stomach, head, or back; the only answer I could procure was a request to feel the pulse of the other hand, and then point out the seat of the disease, and the nature of the pain.

"Having neither satisfied my curiosity by exhibiting her face, nor made me acquainted with the nature of her complaint, I was under the necessity of informing her, in positive terms, that, to understand the disease, it was absolutely necessary to see the tongue as well as to feel the pulse; and that without it I could no nothing for her. My eloquence, or rather that of my Jewish interpreter, was, however, for a long time exerted in vain; and I am persuaded she would have dismissed me without any farther inquiry, had not her invention supplied her with a happy expedient to remove her embarrassment. She contrived at last to cut a hole through the curtain, through which she extruded her tongue, and thus complied with my injunction as far as it was necessary in a medical view, but most effectually disappointed my curiosity. I was afterwards ordered to look at another of the prince's wives, who was affected with a scrophulous swelling in her neck. This lady was, in the same manner as the other, at first excluded from my sight; but as she was obliged to shew me her complaint, I had an opportunity of seeing her face, and observed it to be very handsome."

It is curious to observe the strange and childish notions of persons who have been totally secluded from the world. All the ladies of the harem expected that our author should have instantly discovered their complaints upon feeling the pulse, and that he could cure every disease instantaneously. He found them proud and vain of

their persons, and extremely ignorant. "Among many ridiculous questions, they asked my interpreter (says Mr. Lempriere) if I could read and write; upon being answered in the affirmative, they expressed the utmost surprise and admiration at the abilities of the Christians. There was not one among them who could do either; these rudiments of learning are indeed only the lot of a few of their men, who on that account are named Talbs, or explainers of the Mahometan law."

It is melancholy to reflect on the situation of these unfortunate women. Being considered as the mere instruments of pleasure, no attention is paid to the improvement of their minds. They have no employment to occupy their time. Their needle-work is performed by Jewesses; their food is dressed, and their chambers taken care of, by slaves and domesties. They have no amusement but a rude and barbarous kind of melancholy music, without melody, variety, or taste; and conversation with one another, which must indeed be very confined, uniform, and inanimate, as they never see a new object. Excluded from the enjoyment of fresh air and exercise, so necessary for the support of health and life; deprived of all society but that of their fellow sufferers, a society to which most of them would prefer solitude itself; they are only to be considered as the most abject of slaves—slaves to the vices and caprice of a licentious tyrant, who exacts even from his wives themselves a degree of submission and respect which borders upon idolatry, and which God and nature never meant should be paid to a mortal.

ORIGIN OF THE METHODISTS.

THE Protestant Methodists form a very considerable body in this country. The sect was founded in the year 1729, by one Mr. Morgan and Mr. John Wesley. In the month of November that year, the latter being then fellow of Lincoln college, began to spend some evenings in reading the Greek New Testament, along with Charles Wesley, student; Mr. Morgan, commoner of Christ-church, and Mr. Kirkham, of Merton college. Next year two or three of the pupils of Mr. John Wesley, and one pupil of Mr. Charles Wesley, obtained leave to attend these meetings. Two years afterwards they were joined by Mr. Ingham, of Queen's college; Mr. Broughton, of Exeter; and Mr. James Hervey; and in the year 1735 they were joined by the celebrated Mr. Whitefield, then in his 18th year.

At this time it is said that the whole kingdom of England was tending fast to infidelity. "It is come (says Bishop Butler), I know not how, to be taken for granted by many persons, that Christianity is not so much as a subject of inquiry, but that it is now at length discovered to be fictitious; and accordingly they treat it as if in the present age this were an agreement among all people of discernment, and nothing remained but to set it up as a principal subject of mirth and ridicule, as it were by way of reprisals for its having so long interrupted the pleasures of the world." The Methodists are said, with great probability, to have been very instrumental in stemming this torrent. They obtained their name from the exact regularity of their lives; which gave occasion to a young gentleman of Christ-church to say, "Here is a new set of Methodists sprung up;" alluding to a sect of ancient physicians which went by

that

that name. This extreme regularity, however, soon brought a charge against them, perhaps not altogether without foundation, of being too scrupulous, and carrying their sanctity to too great an height. In particular it was urged, that they laid too much stress upon the rubrics and canons of the church, insisted too much on observing the rules of the university, and took the scriptures in too literal a sense; and to the name of Methodists two others were quickly added, viz. those of Sacramentarians and the Godly Club.

The principal person in this club, while in its infancy, appears to have been Mr. Morgan, and next to him Mr. John Wesley. They visited the sick, and instituted a fund for the relief of the poor; and the better to accomplish their benevolent designs, Mr. Wesley abridged himself of all his superfluities, and even of some of the necessaries of life; and, by proposing the scheme to some gentlemen, they quickly increased their funds to eighty pounds per ann. This, which one should have thought would have been attended with praise instead of censure, quickly drew upon them a kind of persecution; some of the seniors of the university began to interfere, and it was reported "that the college censors were going to blow up the Godly Club." They found themselves, however, patronised and encouraged by some men eminent for their learning and virtue; so that the society still continued, though they had suffered a severe loss in 1730 in the death of Mr. Morgan, who had indeed been the founder of it. In the month of October 1735, John and Charles Wesley, Mr. Ingham, and Mr. Delamotte son to a merchant in London, embarked for Georgia along with Mr. Oglethorpe, afterwards General Oglethorpe. The design of this voyage was to preach the gospel to the Indians. By this time, however, it appears, that Mr. Wesley had embraced such notions as may without the least breach of charity be accounted fanatical. Thus, in a letter to his brother Samuel, he conjures him to banish from his school "the classics with their poison, and to introduce instead of them such Christian authors as would work together with him in building up his flock in the knowledge and love of God."

During the voyage such a profusion of worship was observed, as we cannot help thinking savoured more of a Pharisaical than Christian behaviour; an account of which, as a similar strictness would certainly be inculcated upon the disciples, and consequently must give a just idea of the principles of the early Methodists, we shall here transcribe from Mr. Wesley's Life. "From four in the morning till five each of us used private prayer; from five to seven we read the Bible together, carefully comparing it (that we might not lean to our own understandings) with the writings of the earliest ages; at seven we breakfasted; at eight were the public prayers; from nine to twelve learned the languages and instructed the children; at twelve we met to give an account to one another what we had done since our last meeting, and what we designed to do before our next; at one we dined; the time from dinner to four we spent in reading to those of whom each of us had taken charge, or in speaking to them separately as need required; at four there were evening-prayers, when either the second lesson was explained, (as it always was in the morning,) or the children were catechised and instructed before the congregation; from five to six we again used private prayer; from six to seven I read in our cabin to two or three of the passengers, of whom

whom there were about eighty English on-board, and each of my brethren to a few more in theirs; at seven I joined with the Germans in their public service, while Mr. Ingham was reading between decks to as many as desired to hear; at eight we met again, to instruct and exhort one another; between nine and ten we went to bed, when neither the roaring of the sea nor the motion of the ship could take away the refreshing sleep which God gave us."

As they proceeded in their passage, this austerity instead of being diminished was increased. Mr. Wesley discontinued the use of wine and flesh; confining himself to vegetables, chiefly rice and bisket. He ate no supper; and, his bed having been made wet by the sea, he lay the floor, and slept soundly till morning. In his Journal he says, "I believe I shall not find it needful to go to bed, as it is called, any more;" but whether this was really done or not, we cannot say.

The missionaries, after their arrival, were at first very favourably received, but in a short time lost the affections of the people entirely. This was owing to the behaviour of Mr. Wesley himself, who appeared not only capricious but frequently despotic. He particularly gave offence by insisting upon the baptism of children by immersion; and his excessive austerity with regard to himself did not tend to give his hearers any favourable opinion either of the superior sanctity or wisdom of their teacher. At last, on account of a difference with Mr. Causton the store-keeper and chief magistrate of Savannah, which ended in a law-suit, he was obliged to return to England.

Thus the cause of Methodism seemed to be entirely lost in Georgia. But Mr. Wesley was soon succeeded by a more popular and successful champion, viz. Mr. George Whitefield; who, having spent his time during the voyage in converting the soldiers with whom he sailed, arrived at Savannah in Georgia on the 7th of May 1738. Here he was received by Mr. Delamotte, was joined by several of Mr. Wesley's hearers, and became intimate with some other ministers. Mr. Ingham had made some progress in converting a few runaway Creek Indians, who had a settlement about four miles from Savannah; but, being obliged to return to England in a few months, this design was frustrated, and the Indians in a few years separated. During the short time that Mr. Whitefield resided at Savannah, he became extremely popular; and indeed the instances of his success in the way of making converts are very surprising. However, he was obliged to return to England in the autumn of that year, that he might receive priest's orders. On his return to America in October 1739, he landed at Philadelphia, and instantly began his spiritual labours as in other places; being attended with astonishing success not only there but wherever he went. Passing through the colonies of Virginia, Maryland, North and South Carolina, the number of converts continually increased; but on his arrival at Savannah, he found the colony almost deserted. He now resumed the scheme he had formerly projected of building an orphan-house; and for this he made the first collection at Charlestown in South Carolina, amounting to about seventy pounds sterling. His zeal in the cause of religion, or of the colony, were not, however, sufficient to procure him the favour of those in power. On his return to Philadelphia, after a short stay at Savannah, the churches were denied him; but he was made ample amends by the success which attended his field-preachings and private efforts. Religious societies were every

where

where set up, and many were converted with symptoms of enthusiasm, different according to their various tempers and constitutions. During this excursion, he was so successful in his collection for the orphan-house, that on his return to Savannah he brought along with him money and provisions to the value of 500l. sterling.

The success in Georgia was now greater than ever; but the many charities which it was essential to supply rendered it necessary in a short time for him to undertake another journey to Charlestown. Here his principles met with the greatest opposition. He had lost the favour of the commissary by his field-preaching, and was denied the sacrament. The opposition, however, was altogether fruitless; the number of converts increased wherever he went, and he now undertook a voyage to New England. In this place also the established clergy were his enemies; but the usual success attended his other endeavours, and procured 500l. more for the use of the orphans in Georgia.

From the year 1741 to 1743, America was deprived of Mr. Whitefield's preachings, he having spent that interval in England; but in 1744 he again set out for the western continent. The remarkable success which had hitherto attended his labours now stirred up many opponents; and these had met with the greater success, as none of the Methodist preachers whom he had left were possessed of such abilities either to gain the favour of those who heard them, or to defend their doctrines against objections. Mr. Whitefield's success, however, was the same as before: he even found means to inspire the military class with such sentiments of devotion, that Col. Pepperell could not undertake his expedition against Louisbourg without first consulting Mr. Whitefield; and great numbers of New-Englanders went volunteers, confident of victory, in consequence of the discourses of their teacher.

From the continent of America Mr. Whitefield took a voyage to the Bermudas islands; and here, as every where else, he met with the most surprising success. Here also collections were made for the Orphan-house in Savannah, which were transmitted to that place. Supposing it to be better for his cause to visit different countries, than to take up a permanent residence in one, Mr. Whitefield left Bermudas in a few months, and did not return to America till 1751, when the Orphan-house was found to be in a very flourishing situation. After a short stay, he set sail again for Britain. Here he remained two years, and then set out on another visit to America, landing at Charlestown on the 27th of May 1754. His presence constantly revived the spirits and cause of his party, and added to their numbers wherever he went. Next year he returned to England; but after labouring in the usual manner, and meeting with the usual success here till the year 1763, he set sail again for America, and arrived at Virginia in the latter end of August. He now visited all the colonies, and found that great progress had been made in converting the Indians. On his arrival at Georgia, matters were found in a very flourishing situation, and he received the thanks of the governor and principal people for the great benefit he had been to the colony; which shews, that the stories which had been so industriously propagated, concerning the avarice of him and other Methodist preachers, were, partly at least, unfounded. In 1765 he returned to England; and in 1769 made his seventh and last voyage

to America, landing at Charleſtown on the 30th of November the ſame year. He was ſtill attended with the ſame ſucceſs; and indeed it is impoſſible to read, without admiration, an account of the efforts made by himſelf and Mr. Weſley to propagate their tenets in the different parts of the world.

For a very conſiderable time Mr. Whitefield was the only Methodiſt who paid any attention to America; and in that country he was more popular than even in Europe. Towards the end of his life ſeveral Methodiſts, having emigrated from Britain, formed diſtinct ſocieties in New York and Philadelphia. Theſe quickly increaſed in number; and, about the time that the war with Britain began, their numbers amounted to about three thouſand in Virginia, Maryland, New York, and Pennſylvania. They would probably have increaſed much more, had it not been for the great imprudence of ſome of their preachers, who introduced politics into their diſcourſes, and thus rendered themſelves obnoxious to the people among whom they lived. Among thoſe who hurt the cauſe in this manner was Mr. Weſley himſelf, who, by writing a piece intitled A Calm Addreſs to the American Colonies, would in all probability have ruined it, had not a gentleman, with whom he was connected, deſtroyed or ſent back to England the whole impreſſion as ſoon as it arrived in America, ſo that its exiſtence was ſcarcely known in that continent. At the concluſion of the war, Dr. Coke, who in 1776 had left a curacy in England in order to join Mr. Weſley, paid a viſit to his friends in America; though it had been imagined that a total ſeparation had taken place between the American and European Methodiſts. This breach was, however, made up by a manœuvre of Mr. Weſley; for no ſooner had the Americans obtained their independence, than he, who had hitherto branded them with the name of rebels, ſent a congratulatory letter on their freedom from the "State and the Hierarchy," and exhorting them to "ſtand faſt in that liberty with which God had ſo ſtrangely made them free." To ſhew his zeal in their ſervice ſtill farther, he gave ordination, by laying on of hands, to ſeveral preachers who were to embark for America, and conſecrated Dr. Coke one of the biſhops of the Methodiſt epiſcopal church in that country. He extracted alſo from the litergy of the Engliſh church one for the American Methodiſts, taking particular care to expunge every expreſſion that had a particular reſpect to the regal authority.

Such proceedings, in one who had formerly profeſſed ſuch extraordinary attachment to the Engliſh church, could not but require an apology; and this was accordingly made in a paſtoral letter tranſmitted to the American ſocieties, and addreſſed "to Dr. Coke, Mr. Aſtbury, and our brethren in North America." In this letter he makes the following defence of his conduct. "Lord King's account of the primitive church convinced me, many years ago, that biſhops and preſbyters are the ſame order, and conſequently have the ſame right to ordain. For many years I have been importuned, from time to time, to exerciſe this right, by ordaining part of our travelling preachers. But I have ſtill refuſed, not only for the ſake of peace, but becauſe I was determined as little as poſſible to violate the eſtabliſhed order of the national church to which I belonged. But the caſe is widely different between England and North America. Here there are biſhops who have a legal juriſdiction; in America

there

there are none, neither any parish-ministers: so that, for some hundred miles together, there is none either to baptize or to administer the Lord's supper. Here, therefore, my scruples are at an end, and I conceive myself at full liberty, as I violate no order, and invade no man's right, by appointing and sending labourers into the harvest. It has indeed been proposed to desire the English bishops to ordain part of our preachers for America; but to this I object. 1. I desired the Bishop of London to ordain only one, but could not prevail. 2. If they consented, we know the slowness of their proceedings; but the matter admits of no delay. 3. If they would ordain them now, they would likewise expect to govern them; and how grievously would that entangle us. 4. As our American brethren are now totally disentangled, both from the state and the English hierarchy, we dare not entangle them again either with the one or the other. They are now at full liberty simply to follow the scripture and the primitive church; and we judge it best, that they should stand fast in that liberty wherewith God has so strangely made them free."

Dr. Coke, on the consecration of Mr. Asbury to the office of a bishop, made another apology. "The church of England (says he), of which the society of Methodists in general have till lately professed themselves a part, did for many years groan in America under grievances of the heaviest kind. Subjected to a hierarchy which weighs every thing in the scale of politics, its most important interests were repeatedly sacrificed to the supposed advantages of England. The churches were in general filled with the parasites and bottle-companions of the rich and great. The humble and most importunate intreaties of the oppressed flocks, yea the representations of a general assembly itself, were contemned and despised. Every thing sacred must bow down at the feet of a party; the holiness and happiness of mankind be sacrificed to their views; and the drunkard, the fornicator, and the extortioner, triumphed over bleeding Zion, because they were faithful abettors of the ruling powers. The memorable revolution has struck off these intolerable fetters, and broken the antichristian union which before subsisted between church and state. And, had there been no other advantage arising from that glorious epoch, this itself, I believe, would have made ample compensation for all the calamities of the war; one happy consequence of which was the expulsion of most of those hirelings, who "ate the fat, and clothed themselves with the wool, but strengthened not the diseased," &c. The parochial churches in general being hereby vacant, our people were deprived of the sacraments through the greatest part of these states, and continue so still. What method can we take in so critical a juncture? God has given us sufficient resources in ourselves; and, after mature deliberation, we believe that we are called to draw them forth.

"But what right have you to ordain?" The same right as most of the churches in Christendom; our ordination, in its lowest view, being equal to any of the presbyterian, as originating with three presbyters of the church of England. "But what right have you to exercise the episcopal office?" To me the most manifest and clear. God has been pleased to raise up, by Mr. Wesley, in America and Europe, a numerous society well known by the name of Methodists. The whole body have invariably esteemed this man as

their chief pastor under Christ. He has constantly appointed all their religious officers, from the highest to the lowest, by himself or his delegate. And we are fully persuaded there is no church office which he judges expedient for the welfare of the people entrusted to his charge, but, as essential to his station, he has power to ordain. "But, do not you break the succession?" The uninterrupted succession of bishops is a point that has long been given up by the most able Protestant defenders of episcopacy. Bishop Hoadley himself, in his celebrated controversy with Dr. Calamy, allows it to be unnecessary. His words are, "To the 13th question I answer, that I think not an uninterrupted line of succession of regularly ordained bishops necessary." He also grants the authenticity of the anecdote given us by St. Jerom, which informs us, that the church of Alexandria had no regular succession from the time of St. Mark the evangelist, the first bishop of that church to the time of Dionysius, a space of two hundred years; but the college of presbyters, on the death of a bishop, elected another in his stead. We are also informed, from the epistle of St. Clement to the Corinthians, written soon after the death of St. Paul, a writer whose works are next in precedence to the canon of scripture, and probably written by immediate inspiration, that the church of Corinth was then governed only by a college of presbyters. And from the epistle of Polycarp to the church of Philippi, written in 116, we also find that the Christian Philippians were then governed only by a college of presbyters. So that the primitive Christians were so far from esteeming the regular succession as essential to the constitution of a Christian church, that, in some instances, episcopacy itself was wholly omitted."

Such was the defence urged by Mr. Wesley for this extraordinary assumption of episcopal powers: a conduct, however, of which he afterwards repented, as tending to make a final separation betwixt his followers and the church of England. Yet it does not appear that this had any bad effect on the minds of his American brethren; for Dr. Coke, on his arrival on the western continent, found the societies numerous and flourishing. His first efforts were directed against the slave-trade; and not only the abolition of that traffic, but the release of all those who were actually slaves at the time, seem to have been his favourite objects. By interfering in this matter, however, perhaps with too much zeal, he involved himself in danger. Some riots took place; and a lady offered the mob fifty guineas if they would give the doctor one hundred lashes. This piece of discipline would have been inflicted, had it not been for the interposition of a sturdy colonel; and the doctor had not only the satisfaction of escaping the intended punishment, but of seeing his doctrine so far attended to, that some slaves were emancipated.

Mr. Hanson, in his Memoirs of Mr. Wesley, observes, that "the colonists, in the infancy of Methodism, conducted themselves with more propriety than the English. There was little or no persecution, nor any thing like a riot, except in one or two instances which have been mentioned as the consequence of the animadversions on slavery; and even these were productive of no mischief. Not a creature was materially injured; no bones were broken, nor any lives lost; which was not the case in this country. Here many thousands of innocent people were subjected to the grossest indignities, and several were eventually sacrificed to the fury of their persecutors.

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"While we commend the Americans for their behaviour in opposition to the brutality of English mobs, it may be proper to inquire into the sources of this distinction. Something of this may have arisen from similarity of sentiment. The Americans, from the first beginnings of colonization, had been accustomed to the doctrines of the old puritans and nonconformists, which in many respects have a near affinity to the Methodistic tenets. The origin of Methodism in America was seldom, if ever, attended, either under the discourses of Mr. Whitefield's or Mr. Wesley's preachers, with those ridiculous effects with which it was accompanied in these kingdoms. Most of the preachers, who went over to the continent, having laboured for some years in Europe previous to their having crossed the water, had exhausted their wild-fire; so that their discourses were more scriptural and rational than those of the primitive Methodists. Another reason may be found in the education of the Americans. As a people, they are better cultivated than the body of the English; they are chiefly composed of merchants and a respectable yeomanry; and there is but a small proportion of that class so superabundant here which we distinguish by the name of mob.

"The only exception we have heard, to their exemption from the extravagancies which in this country marked the infancy of Methodism, is a custom they have introduced in Maryland and Virginia. Frequently, at the conclusion of a sermon, the whole congregation begin to pray and to praise God aloud. The uproar which this must create may easily be conceived. Some, we are told, are great admirers of this species of enthusiasm, in which every man is his own minister, and one sings and another prays, with the most discordant devotion. But we will not dignify such indecency with a name. Its proper appellation is *fanaticism*. We hope, that, for the future, religion will never appear in this country under so odious a form; and greatly is it to be lamented, that, among the friends of Christianity, any such absurdities should arise, to furnish infidels with occasions of triumph."

Mr. Hanson next informs us, that the occupation of the Methodist preachers in America was very laborious. In the course of the day they frequently rode twenty or thirty miles, preaching twice or thrice, and sometimes to considerable congregations. Notwithstanding this labour, however, few or none of them ever thought of returning to Britain. Several reasons may be assigned for the pleasure they took in this laborious exercise. "Their excursions (says Mr. Hanson), through immense forests abounding in trees of all sorts and sizes, were often highly romantic. Innumerable rivers and falls of water; vistas opening to the view, in contrast with the uncultivated wild; deer now shooting across the road, and now scouring through the woods, while the eye was frequently relieved by the appearance of orchards and plantations, and the houses of gentlemen and farmers peeping through the trees; formed a scenery so various and picturesque, as to produce a variety of reflection, and present, we will not say to a philosophic eye, but to the mind of every reasonable creature, the most sublime and agreeable images.

"Their worship partook of the general simplicity. It was frequently conducted in the open air. The woods resounded to the voice of the preacher, or to the singing of his numerous congregations; while their horses, fastened to the trees, formed a singular

addition to the solemnity. It was indeed a striking picture; and might naturally impress the mind with a retrospect of the antediluvian days, when the hills and valleys re-echoed the patriarchal devotions, and a Seth or an Enoch, in the shadow of a projecting rock, or beneath the foliage of some venerable oak, delivered his primeval lectures, and was a "preacher of righteousness to the people."

The American hospitality is supposed by Mr. Hanson to have been another reason for the assiduity of the Methodist teachers, as well as the consciousness of being well employed, and the satisfaction resulting from considerations of public utility. As many of the preachers were men of fervent piety, this reflection would have its full weight; and the instruction of the ignorant and the reformation of the profligate would be considered as the best recompence of their labours. Spreading themselves through the continent, they took in Nova Scotia, Georgia, with the principal places in both Carolinas, Virginia, Maryland, Delaware, Pennsylvania, New Jersey, and New York; numbering upwards of 43,000 members of their society, exclusive of about eighty itinerants, and a considerable number of local preachers, who took no circuits, but assisted occasionally in the neighbourhood of their respective residence.

The large and expensive buildings which the colonists have erected for public worship, almost exceed credibility; and several colleges are founded for the instruction of youth. How far the proposed plan of uniting genuine religion and extensive learning will be carried into execution, time only can discover. It must materially depend on the character of the presidents and tutors, and the provision that shall be made for their support. Men of real erudition will never be procured at low salaries; and it is in vain to attempt establishments of this sort without a liberal provision for the professors in every branch of science. Two of these places are called Cokesbury and Wesley Colleges. How they are endowed, or whether they propose to obtain authority to confer degrees, we are not informed. But perhaps they are rather schools than colleges; which indeed is a circumstance to be wished, as good grammar-schools are of the utmost service to the progress of literature.

The great success which attended the Methodist preachers in America naturally determined Mr. Wesley to try the West-India islands. The Moravians had already attempted to establish their principles in some of these islands; and in 1786 some preachers were sent from the Methodists in England to the West Indies. In many of these they met with success. Societies were formed in Barbadoes, St. Vincent's, Dominica, St. Christopher's, Nevis, Antigua, St. Eustatius, Tortola, and St. Croix, amounting in all to near 5000 persons. At this time the whole number of Methodists in America and the West Indies amounted to about 48,302. These societies consist both of whites and blacks: on the continent they were mostly whites, but in the islands negroes. "But it is to be observed (says Mr. Hanson), that the subjection of the negroes, and the obedience in which they are trained, must inculcate a docility peculiarly favourable to the purposes of a mission." Some of the missionaries went also to St. Vincent's, where they met with some success, and have established some schools, in which their children are carefully instructed in the principles of religion.

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"In January 1789 (says the same author), Dr. Coke paid a visit to Jamaica, and gave them several sermons. As he made but a short stay, it could hardly be considered as a fair trial. Should a mission be established here, as well as in the other islands, which will probably be the case, it is hoped it will be the means of correcting one vice at least, and that is duelling; a savage relict of Gothic barbarity, by which all the islands have for many years been distinguished. Perhaps too it will give some check to the spirit of luxury and dissipation; and teach the planters, if it be found impracticable to emancipate their slaves, at least to treat them with humanity."

It has been debated among the leading men of the Methodistical profession, whether the cause might not be served by sending missionaries to the East Indies and to Africa; but these projects were dropped, as there was no invitation, nor any prospect of success if it had been adopted. A mission has been formed to the new settlement called Kentucky, on the confines of the Indian territories, near the Mississippi. The danger of the missionaries at the time they undertook this service was certainly very great; yet such was their zeal for the cause, that they voluntarily offered themselves: and we understand they have met with success.

While Methodism was thus making rapid progress in America, its teachers were equally indefatigable in Britain. A most remarkable particular, however, occurs with regard to Mr. Wesley himself; for though he had gone to Georgia, as has been already related, to convert the Indians to Christianity, yet on his return to England in 1738, he took it into his head that he, their teacher, was not yet converted: the reason was, that he had not the faith of assurance. This, however, was not long wanting. He arrived in England on the first day of February, and was blest with the assurance on the sixth of March following. This was immediately announced to the public; and the consequence, if we may believe him, was, that God then began to work by his ministry, which he had not done before. Being joined by one Kinchin, a fellow of Corpus, they travelled to Manchester, Holms-chapel, Newcastle in Staffordshire, and other places, where they preached, exhorted, and conversed on religious subjects, in public-houses, stables, &c. sometimes meeting with success and sometimes not. During this peregrination Mr. Wesley certainly displayed a great deal of superstition, which we must undoubtedly suppose to have been communicated to his hearers, and to have caused them to act on many occasions in a very ridiculous manner. An instance follows:—"The next day (says he), March 11th, we dined at Birmingham, and, soon after we left it, were reproved for our negligence there (in letting those who attended us go without either exhortation or instruction) by a severe shower of hail!" About the latter end of March or beginning of April he and his companion began to pray *extempore*, leaving off entirely the forms of the church of England, to which he had formerly been so devoted. The doctrine of instantaneous conversion, which his imagination had suggested to him as a work performed on himsef, was greedily received by some of his hearers, and all the converts to the new doctrine confirmed themselves, and contributed greatly to persuade others by declarations of their *experiences*, as they called them: however, though a knowledge of the saving assurance had been given

given on March 6th, he does not date his conversion sooner than May 24th of the same year.

This new doctrine of an instantaneous, and in fact miraculous, impulse, though greatly relished by the enthusiastical part of the society, was very much disliked by others, particularly Mr. Charles Wesley his brother, who warned him of the mischief he was doing; though he himself was soon converted, and, what is very astonishing, two days before John Wesley himself. The particulars related of these miraculous conversions are truly disgraceful, and could not but bring into contempt the society which consisted of such enthusiasts. "Many (says Mr. Hanson) are represented as falling suddenly to the ground, in horror and agony not to be conceived, and rising again with equal expressions of peace and consolation."—Their conversions were usually attended with these violent symptoms; and, for several years, few meetings occurred where Mr. Wesley presided, without one or more instances of the same kind. It was not possible that such transactions should pass without notice. The confusion that too often prevailed, the emotions of the persons affected, and the exultations of the rest, which were severally animadverted upon, gave great and general offence. Many insisted, that it must either be occasioned by the heat of the rooms, and the agitation of the animal spirits under discourses of the most alarming nature; or that it was mere artifice and hypocrisy.

In the mean time, two of the sons of a Mrs. Hutton, in London, happening to become converts to the new doctrine, this lady was so much offended, that she wrote to Mr. Samuel Wesley, informing him, that she was of opinion his brother John had lost his senses; and requesting, that the next time he came to his house, he, Mr. Samuel, would either confine or convert him. All that could be done, however, to prevent the progress of the new doctrine was insufficient; and the first Methodist society was formed in London, on the first of May 1738, when about fifty agreed to meet together once a-week for free conversation, begun and ended with singing and prayer.

All this time, however, it seems that the conversion of Mr. Wesley was far from being so complete as that of many of his hearers. He had preached and converted others, while he himself was absolutely unconverted. The knowledge of the true saving faith was only revealed to him on the 6th of March, and he did not experience its power till the 24th of May, as remarked above; and even after this, his doubts and fears were still so great, that on the 13th of June he undertook a voyage to Germany, where, in the company of Count Zinzendorff, his faith seems to have been thoroughly confirmed.

On Mr. Wesley's return, Sept. 16th, 1738, he applied himself with the greatest assiduity and success to the propagation of his doctrine. Multitudes of converts were made in various parts of the kingdom; and the reproaches poured upon him by his opponents seemed to have rendered his zeal more fervent if possible than before. It is remarkable, however, that some of his old friends were now so much offended with his conduct or his principles, that they absolutely refused to keep company with him. His original plan seems to have been, to make an union of clergymen, and disseminate his principles by their means. But in this he succeeded so ill, that

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in a letter written in 1742, he wished for a clerical assistant, were he only in deacons orders: but adds, "I know of none such, who is willing to cast in his lot with us; and I scarcely expect I shall, because I know how fast they are rivetted in the service of the devil and the world before they leave the university."—Finding at last that nothing could be done with them, he was obliged to have recourse to lay-preachers; and easily selected those who appeared to have the greatest talents for prayer and exhortation in the private meetings appointed for that purpose. Thus he at once raised himself to be at the head of a sect; as the lay-preachers willingly yielded obedience to him who had the advantages of superior learning and abilities, and was besides in orders as a clergyman; and this obedience he did not fail on every occasion to exact.

If his doctrine had formerly given offence to the established clergy, the appointment of lay-preachers was reckoned much worse; and their being appointed without any form of ordination whatever, which almost all of them were, subjected them to contempt and reproach, which their want of learning, and very often of natural abilities, did not contribute to remove. Thus finding the churches shut against him and his followers, he was obliged to preach in the fields, and made his first essay in this way on the second of April 1739, in the neighbourhood of Bristol; Mr. Whitefield having set him an example the day before.

The success of those ignorant and itinerant preachers, with their absurd and uncharitable discourses and behaviour, so provoked their adversaries, that a persecution was soon commenced against them. Mr. Wesley himself was calumniated in the harshest manner, being sometimes said to be a Jesuit, sometimes an illiterate enthusiast, as the people took it into their heads. Many pretended to answer him in writing, without being able to do so: the consequence was, that their deficiency of argument was supplied by invective, and the most scandalous performances made their appearance. Some of the English clergy so far forgot themselves as to instigate the mob against them, and the most cruel outrages were committed upon them in various places. For some time the persecuted party adhered to the doctrines of passive obedience and non-resistance, which their inhuman adversaries did not fail to take the advantage of.—The less they were opposed, the more insolent they became. The Methodists were frequently in danger of their lives. Men, women with child, and even children, were knocked down and abused with the same undistinguishing fury. Houses were stripped of their furniture, vast quantities of furniture carried off, feather-beds cut in pieces and strewed over the streets, several reputable people were forced into the army, &c. To the disgrace of magistracy also it was found, that, when application was made to the justices of the peace, redress was commonly denied; nor was a stop put to these shameful proceedings without a royal mandate for the purpose.

From the year 1738 to 1747 Mr. Wesley and his itinerants were employed in various parts of England. In 1747 he went over to Dublin, where a society had been formed by one Mr. Williams a clergyman.—Here they proved so successful, notwithstanding the number of Papists, and the violence of their other opponents, that in 1750 they had erected meeting-houses in every part of the kingdom, and had formed twenty-nine circuits, which employed sixty-

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ſeven itinerants, beſides a conſiderable number of local preachers. An invitation was given to Mr. Weſley, in 1751, to viſit Scotland, by an officer in quarters at Muſſelburgh. He accordingly took a journey thither the ſame year; but left the place, after preaching in it once or twice. In 1753 he returned to Scotland, and viſited Glaſgow. Societies were at length formed in that city, as well as at Edinburgh, Dundee, Aberdeen, Inverneſs, and a few other places: but his ſucceſs was by no means equal to what it had been in other parts; for in 1790 the number of circuits in Scotland was no more than eight, which were ſupplied by twenty itinerants.

Mr. Whitefield, the other great labourer in the vineyard, was equally indefatigable, and probably more ſucceſsful than Mr. Weſley. Before entering into orders, he had formed a ſociety of religious perſons at Glouceſter: here he preached his firſt ſermon on the Neceſſity and Benefit of Religious Society; here he became extremely popular, as well as at Briſtol and London, while preparing to ſet ſail for Georgia for the firſt time; and, in all places to which he came, large collections were made for the poor. He maintained the ſame doctrine with Mr. Weſley as to the new birth; which likewiſe gave offence to the clergy when delivered by him, as it had done with Mr. Weſley. In the various intervals of his voyages to America, he employed himſelf with the very ſame aſſiduity in Britain and in Ireland, which we have already taken notice of in the weſtern continent. His ſucceſs was every where prodigious. In 1741 he was invited to Scotland, and preached his firſt ſermon there at Dunfermline. From thence he went to Edinburgh, and preached in ſeveral of the eſtabliſhed churches, but differed with Meſſrs. Ralph and Ebenezer Erſkines; ſo that he, as well as Mr. Weſley, proved unſucceſsful in forming a coalition with any other religious party. In the private way, however, his ſucceſs was very conſiderable, at Edinburgh, Glaſgow, Aberdeen, Dundee, and other places. In 1742 he paid a ſecond viſit to Scotland, and a third in 1748. In 1751 he viſited Ireland for the firſt time; and preached to great multitudes, without being moleſted, even in places where others had been mobbed. From thence he returned to Scotland the ſame year, and ſpeaks in very favourable terms of the attention the people there paid to their bibles. In 1752 and 1753 he again viſited the ſame kingdom, and the laſt time diſtinguiſhed himſelf by preaching againſt the play-houſe in Glaſgow. In 1756 he returned; and, by his animated diſcourſes at Edinburgh againſt popery and arbitrary power, was owned to have contributed very much to the increaſe of courage and loyalty in that country. Next year he again viſited the Scottiſh capital during the time that the general aſſembly ſat, and his ſermons were attended by ſeveral of the members. At Glaſgow he made a large collection for the poor of that city, and from thence took a voyage to Ireland. He was received with the uſual affection by the lower claſſes of Proteſtants; but the Popiſh rabble, exaſperated at the ſucceſs, almoſt murdered him with ſtones. After paſſing through a great part of Ireland, viſiting England and Wales, he paid another viſit to Scotland, where four clergymen now lent him their pulpits. His laſt viſit was in the ſummer of 1758, where his congregations were as large as ever; and it is to his endeavours principally that we are to aſcribe the great number of Methodiſt ſocieties now exiſting in Scotland.

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With regard to the religious principles of Methodists, we cannot enter into any particular detail; neither indeed are there any doctrines peculiar to all included under that name, except the single one of salvation by faith without works. In March 1741, Mr. Whitefield, being returned to England, entirely separated from Mr. Wesley and his friends, "because he did not hold the decrees."—Here was the first breach, which warm men persuaded Mr. Whitefield to make, merely for a difference of opinion. Those indeed who believed universal redemption, had no desire at all to separate: but those who held particular redemption, would not hear of any accommodation, being determined to have no fellowship with men that "were in such dangerous errors." So there were now two sorts of Methodists so called; those for particular, and those for general, redemption.

Not many years passed, before William Cudworth and James Relly separated from Mr. Whitefield.—These were properly Antinomians, absolute avowed enemies to the law of God, which they never preached or professed to preach, but termed all Legalists who did. With them, preaching the law was an abomination. They had nothing to do with the law. They would preach Christ, as they called it; but without one word either of holiness or good works. Yet these were still denominated Methodists, although differing from Mr. Whitefield, both in judgment and practice, abundantly more than Mr. Whitefield did from Mr. Wesley.

In the mean time, Mr. Venn and Mr. Romaine began to be spoken of: and not long after Mr. Madan and Mr. Berridge, with a few other clergymen, who, although they had no connection with each other, yet preaching salvation by faith, and endeavouring to live accordingly, to be Bible-Christians, were soon included in the general name of Methodists. And so indeed were all others who preached salvation by faith, and appeared more serious than their neighbours. Some of these were quite regular in their manner of preaching: some were quite irregular, (though not by choice; but necessity was laid upon them, they must preach irregularly, or not at all): and others were between both; regular in most though not in all particulars.

In 1762, George Bell and a few other persons began to speak great words. In the latter end of the year they foretold that the world would be at an end on the 28th of February. Mr. Wesley, with whom they were then connected, withstood them both in public and private. This they would not endure: so, in January and February 1763, they separated from him, under the care of Mr. Maxfield, one of Mr. Wesley's preachers. But still Mr. Maxfield and his adherents, even the wildest enthusiasts among them, go under the general name of Methodists, and so bring a scandal upon those with whom they have no connection.

At present, those who remain with Mr. Wesley are mostly Church-of-England men. They love her articles, her homilies, her liturgy, her discipline, and unwillingly vary from it in any instance. Meantime, all who preach among them declare, "we are all by nature children of wrath, but by grace we are saved through faith;" saved from both the guilt and from the power of sin. They endeavour to live according to what they preach, to be plain Bible-Christians; and they meet together at convenient times, to encourage

one another therein. They tenderly love many that are Calviniſts, though they do not love their opinions. Yea, they love the Antinomians themſelves; but it is with a love of compaſſion only, for they hate their doctrines with a perfect hatred; they abhor them as they do hell-fire: being convinced nothing can ſo effectually deſtroy all faith, all holineſs, and all good works.

We ſhall conclude this narrative with the words of Mr. Hanſon, which muſt certainly be accounted juſt, whatever objections may be made to ſome parts of the principles or behaviour of the Methodiſts. "If they poſſeſs not much knowledge, which, however, we do not know to be the caſe, it is at leaſt certain, they are not deficient in zeal: and, without any paſſionate deſire to imitate their example, we may at leaſt commend their endeavours for the general good. Every good man will contemplate with pleaſure the operation of the ſpirit of reformation, whether foreign or domeſtic; and will rejoice in every attempt to propagate Chriſtianity in the barbarous parts of the world:—an attempt which, if in any tolerable degree ſucceſsful, will do infinitely more for their civilization and happineſs, than all the united energies of thoſe boaſted benefactors of mankind, the philoſophic infidels."

ALLEGORIES.

HUMAN thoughts are like the planetary ſyſtem, where many are fixed and many wander, and many continue for ever unintelligible; or rather like meteors, which generally loſe their ſubſtance with their luſtre.

I. The underſtanding is like the ſun, which gives light and life to the whole intellectual world; but the memory, regarding thoſe things only that are paſt, is like the moon, which is new and full, and has her wane, by turns.

II. The world is a ſea, and life and death are its ebbing and flowing. Wars are the ſtorms which agitate and toſs it into fury and faction. The tongues of its enraged inhabitants are then as the noiſe of many waters. Peace is the calm which ſucceeds the tempeſt, and huſhes the billows of intereſt and paſſion to reſt. Proſperity is the ſun whoſe beams produce plenty and comfort. Adverſity is a portentous cloud impregnated with diſcontent, and often burſts in a torrent of deſolation and deſtruction.

III. Wit is like a lily. The one is as pleaſing to the ear as the other is to the eye. Wit naturally fades, and, if not timely gathered, ſoon withers and dies.

IV. On the tower of Ambition hangs the dial of induſtry; where the ſun of good fortune marks the time and progreſs of friendſhip on the figure of Ambition.

V. Every man may learn the elements of geography, which is the nobleſt ſcience in the world, from an attention to the temperature of his own mind. Melancholy is the North Pole, Envy the South, choler the Torrid Zone, Ambition the Zodiac, Joy the Ecliptic Line, Juſtice the Equinoctial, Prudence and Temperance the Arctic and Antarctic Circles, Patience and Fortitude the Tropics.

VI. Every little fly, and every little pebble, and every little flower, are tutors in the great ſchool of nature, to inſtruct the mind and better the heart. The four elements are the four volumes in which all her works are written.

VII.

VII. They who take ſelf-love for their guide ride in the paths of partiality, on the horſe of adulation, to the judge of falſehood; but he who prefers the mandate of reaſon, rides in the way of probability, on the courſer of prudence. His journey will then be as pleaſing as the object of it, which is truth, ſhall be ſure.

VIII. Human deſtiny is a nut, of which life is the ſhell, and reputation the kernel. Crack it gently, and you enjoy its whole value entire. But open it roughly, and ten to one you break the ſhell, or bruiſe the kernel, or reduce the whole into one uſeleſs compound.

IX. Prudence, through the ground of miſery, cuts a river of patience, where the mind ſwims in boats of tranquillity along the ſtreams of life, until ſhe arrives at the haven of death, where all ſtreams meet.

X. Spite creeps like a ſnake out of the hedge of deceit, or the ſand-bed of hypocriſy; and, having fermented its venom by baſking in the ſun of proſperity, aims the moſt deadly wound at the faireſt fame.

XI. The mind is a garden where all manner of ſeeds are ſown. Proſperities are fine painted tulips; Innocency, white lilies; the Virtues, ſweet gilliflowers, roſes, violets, and primroſes; Learning ſavoury herbage; Affliction, rue, wormwood, and rhubarb; Pride, Ambition, Extortion, nightſhade and hellebore; Stupidity, poppy; Sloth and Ignorance, briers and thiſtles.

XII. Juſtice ſhould be a man's governor, Prudence his counſellor, Temperance his friend, Fortitude his champion, Hope his food, Charity his houſe, Faith or Sincerity his porter, Wit his companion, Love his bedfellow, Patience his miſtreſs, Reaſon his ſecretary, Judgment his ſteward.

TRIFLING.—If we believe the poets and fabuliſts, who have long trifled with the credulity of the world, an apple ſet all Greece and Aſia on fire.

The greateſt machines often derive operation and effect from the ſmalleſt ſprings.

How many revolutions of infinite moment and magnitude have originated in trifles?

Paradiſe was loſt to Adam, the world to Anthony, innocence to woman, and honour to man, by trifling.

Quench fire in the ember, choak weeds in the root, extinguiſh folly in the conception, prevent conſpiracy by detecting the plot.

Even Ariſtotle, with all his literary and ſcientific ſtableneſs and gravity, praiſes Archytas for the invention of rattles, which, put into the hands of children, prevents their breaking veſſels of uſe.

Youth is the only period in which trifling is connected with innocence, levity with honour, and even paſſion with peace of mind.

In truth, the old, as well as the young, have their rattles of various kinds and deſcriptions. And what is the whole of life, but a ſcene crouded throughout with trifles, trifling, and triflers; in which nothing is to be ſeen but a prodigious collection of apes; or heard, but a ludicrous mixture of laughter and lamentation; or taſted, but a compoſition of honey, ſorrel, and wormwood?

Men are only ridiculous and contemptible when they trifle out of place, interfere with concerns which are not theirs, take cognizance of matters which belong to others, and are ſeduloſly occupied in every one's buſineſs but their own.

We cannot be quiet, or act, or rest, with dignity or grace, but in our own sphere.

The heavens are stretched forth like a canopy to compass the air; the air moveth about the earth; and the earth keepeth her position, her centre, and her course, inviolate.

Heavy bodies ascend not, nor do light ones fall; the seasons interfere not in their succession, day and night encroach not on the province of each other, and the several planets persevere in their adhesion to their respective orbs.

All the parts of the universe are so arranged and linked together, as to render the general system of a regular subordination subservient to the permanent harmony of the whole.

Keep then where you are, and do what you ought; for what should a fish do on land, a star in the earth, or a stone in the firmament?

Let the lawyer plead, the divine preach, the husbandman till the ground, the merchant or mariner go down into the sea, and do business in the great waters, the cobler stick to his last, the tradesman mind his shop, the magistrate govern, and all the people say, Amen.

Yet how many, especially in the metropolis, have no calling, profession, business, or object, but flutter up and down like shades and apparitions?

These are your bucks, your fopplings, your loungers, and your fashionable triflers; and they are as dishonourable as the mark in the forehead of a vagabond, the bald pate of the letcher, the toothless gums of the liquorish, or the hole in the slave's ear.

They plough not, they trade not, they toil not, neither do they go to church or market; they sow not, neither do they reap: yet Solomon, in all his royalty and glory, was not arrayed like one of these.

Why should we bow the knee or do obeisance to such things of naught, such butterflies, such insects with gaudy wings, such gnats as only buzz, but cannot sting.

They are pinned to the community as lace to their clothes; or rather render it filthy as the powder in their hair, or the paint on their skin.

They may be likened to what herbalists call *parasitical* plants, which, spring out of others, and have their juice and nourishment, and vegetable life, from roots which are not their own.

As warts upon the hand, they grow up only to trouble and deface the spot which has the misfortune to produce them.

In short, these phantoms of fashion, after all the bustle and parade they make, are but as idols, which, though dressed up, painted, and gilt, and even adored, are yet nothing in this world.

Thus trifling, like power, though it may dazzle and blaze, and even fascinate for a while, yet sitteth heavy on those who wear it; tortureth those who delight in it, eateth up those who feed upon it, even eateth up itself; and, driving all before it, falleth at last to the ground, and falleth as a mill-stone on all who prefer it, and grindeth them to pieces.

Trifling, however, has sometimes even saved a valuable life.—A cardinal of great merit was once so ill as to be given over by his physicians. His domestics, all eager to serve themselves, presented their persons before him, with a box, a trunk, a cabinet, or

 other

other moveables, under each of their arms, and made their exit ſeverally with a bow. Meanwhile an ape, obſerving, as he ſat by the ſide of his maſter's bed, what was going on, ſpied the cardinal's cap, which he inſtantly ſeized, clapped it upon his head, made his bow with infinite archneſs and ſolemnity, and then retired as the reſt of the houſehold had done. The humorous imitation had ſuch an effect on the riſible faculties of the dying cardinal, that the impoſthume, which threatened his life, inſtantly broke, and his health was happily reſtored.

REMARKABLE CHANGE OF AN AFRICAN'S COMPLEXION.

IN July, 1796, Henry Moſs came to Philadelphia, and returned to Virginia in November following. He produced a certificate of which the following is a copy :—

"I do hereby certify, that I have been well acquainted with Henry Moſs, who is the bearer hereof, upwards of thirty years; the whole of which time he has ſupported an honeſt character. In the late war, he enliſted with me in the continental army, as a ſoldier, and behaved himſelf very well as ſuch.—From the firſt of my acquaintance with him, till within two or three years paſt, he was of as dark a complexion as any African; and, without any known cauſe, it has changed to what it is at preſent.—He was free-born, and ſerved his time with Major John Brint, late of Charlotte county. Given under my hand, the 2d of Sept. 1794.

"JOSEPH HOLT, Bedford county."

He was alſo perſonally known to ſeveral of the other officers of the regiment in which he ſerved, who aſſerted, that he was then black, and that there was no reaſon to queſtion his veracity. When at Philadelphia, the preſident (Waſhington) ſaw him, as well as many others, whoſe notice of him was attracted by the ſingularity of the caſe. He appeared to be a modeſt well-behaved man, and the clear pertinent manner in which he anſwered their various queſtions, left them in no doubt of the truth of ſuch parts of his ſtory as reſted on his own credit. Being aſked a great many, tending to diſcover whether the change had been effected by any alteration in his mode of life or diet, of his health, of cutaneous diſorders, or remedies uſed for their removal, or any other phyſical cauſe? nothing appeared to account for it.

He has all the features common to the African; though not ſo ſtrongly marked. His ſtature is about five feet ſix inches; his age 42 years.—On his face, from the roots of his hair, on the ſinciput, about one inch in breadth, extending by his right ear, with increaſe of breadth under his chin, and upwards, to within two inches of the left ear, is perfectly fair as any European.—From the eye-lids, above both eyes, the African complexion has entirely diſappeared. For nearly one inch in latitude, under the right eye, there is a ſmall white ſtreak; and under the left eye, a broader one. Around his mouth, is a ſtreak of white, ſhaded by another remaining ſtreak of black, reaching nearly to the chin, under which, all round his neck, he has a very fair European complexion.

The lines dividing the black from the white are not regularly defined, but indented and inſulated, the borders appearing as iſlands and peninſulas, as are repreſented on the chart of a ſea coaſt. The whole

whole of his breast, arms, and legs, so far as it was decent to expose them to a mixed company, were of a clear European complexion, interspersed with small specks of his original colour, as freckles on the skin of a fair woman appear in summer. The backs and palms of his hands are also perfectly fair; but on their sides, from the wrists to the ends of his thumbs and fingers, there are stripes of black; and on the outsides of his thumbs and fingers there are spots of it. But generally between the limbs, and wherever skin meets skin, and is covered by clothing, the change is perfect from the colour of an African to that of a fair European; and it was believed, that the whole of the former, then remaining, if accurately measured, would not amount to one square foot.

His hair is undergoing a similar change, from the black crispy wool of the African, to the soft curly hair of an European, wherever the colour of the skin is altered; and in the white parts, it is become soft and long, instead of harsh and short. Upon pressing his skin with a finger, the part pressed appeared white; and, on removal of the pressure, the displaced blood rushed back, suffusing the part with red, exactly as in the case of an European, in like circumstances; and his veins, and their ramifications, had the same appearance. In the borders of the two colours, there appeared no discontinuity, or fissure, in the external surface of the skin; and it seemed evident, that the change was not occasioned by the casting off the *epidermis*, but by the dissolution of the *rete mucosum*, between the *dermis* and *epidermis*: so that he was not sensible of the least obstruction, on the passage of a razor from the black to the white or from the white to the black parts of his face.

He said, that his paternal grandfather was born in Africa, and his grandmother an Indian native of America; that his father (the issue of their marriage) married a mulatto woman, born of an African father and an Irish mother; and that his maternal grandfather was a native of Africa. That about February 1792, he first perceived a change in his skin, about the roots of his finger-nails, which extended to the length of the first joints; that, about two months afterwards, the back of his neck began to change gradually, extending downwards, and round his body, to most parts covered by his clothes; that the alteration was greater in the second than the first year; and that he has not perceived much, if any, progress in the winter, or cold weather. In the latter part of the summer of 1796, it was so rapid on his face and hands, that several who revisited him, after an absence of twelve or fourteen days, discovered a very obvious alteration; and they had no doubt, that if he should live over another summer or two, the change would be completed throughout. He remarked, that, since it began, he has been much more sensible of the heat of the sun on his shoulders, than formerly; and that blisters and freckles have been raised on every part which holes in his clothes had exposed to its action; and also, that he has felt the cold much more sensibly than before.

Such is the history, so far as it goes, of the change of a negro to a white man;—a change, which, had Henry Moss happened to have been a slave, would have furnished an irrefragable argument for annihilating his owner's claim.

LITERARY

LITERARY CHARACTER OF THE NOBILITY AND GENTRY OF IRELAND.

THE gentlemen of Ireland are jealous of the national honour, and abundantly ready at the hazard of their lives to assert it. For such a purpose the pen is a better weapon than the sword or the pistol. One book of merit would produce more defence from the neighbouring nations than twenty combatants. That Scotland should have to boast of at least ten eminent writers for one who appears among us, (when, too, the course of study and the discipline in our university are excellent,) must be ascribed to the truly patriotic attention with which the gentlemen of North Britain cherish and expand every bud of genius which puts forth its promise in their native region. This local partiality may be, and sometimes is, carried rather too far; but the principle generates a great increase of excellent publications, much improvement in science, and fresh incitement to those distinguished authors, whose works, while they reflect honour on their country, contribute to the entertainment and instruction of mankind.

It is lamentable to find in such a nation as this, (Ireland,) in many apparent respects adapted to the encouragement of true politeness, how much its great mistress and teacher, literature, is neglected. There are indeed in our capital some well-chosen and ample libraries, but they are very few and very private. The collection of books is generally the least costly article in the household inventory; the contents of the cellar are often more valuable than the ψυχης ατρειον for the whole family. In Great Britain, the gentry, however dissipated, seldom entirely neglect those studies in which they have been initiated in their early years, and no conversation engages or interests them more than the discussion of works of genius, whether of their own day or of antiquity. A person distinguished by any publication of merit ranks among them in the first class of society, and there is an emulation to protect, encourage, and produce, him. "For my part," says Lord Chesterfield in a letter to his son, "I used to think myself in company as much above me when I was with Mr. Addison and Mr. Pope, as if I had been with all the princes in Europe." This judicious sentiment is very general among the nobility of England. But there seems to be in this kingdom (though with very considerable exceptions) too much of a kind of vandalish pride in disowning scholarship. A gentleman here, who knows much more of a new book (pamphlet and novel excepted) may sometimes as well conceal his knowledge; for his communication will be drowned in claret, which has a better relish than such dry aliment; or he will leave an impression with his company, that he is a pedant or a coxcomb. Yet it is but justice to those very persons to acknowledge, that in their collective capacity they shew great liberality of sentiment. Though as stewards of the public purse they jealously examine all grants of public money, there is no instance of an objection being offered in either house of parliament to provisions made to writers of merit, nay even for their families, when they are left without other support, than the bounty of the nation.

The general neglect of letters is not however a hopeless deficiency, for no people have naturally brighter intellects than the Irish, nor better

better dispositions. It proceeds not from dullness or insensibility, but from inattention. If study could be made more the fashion, we should see the generality of our countrymen not less polished in their understandings, than they are well formed in their persons, and sociable in their tempers. Many of our ladies at this time, without pedantry or affectation of science, would make a distinguished figure in the first literary circles. Ireland has not lost all female talent with Mrs. Greville. That there is no want of native genius and science at this hour, we can produce some bright examples. We have the unrivalled and all-accomplished Burke, the learned and excellent editor of Shakespeare, the author of the best comedy produced in this country; and the best translator of a great Roman Historian, who, till the appearance of Mr. Murphy's Version, seemed to set our language at defiance. But, alas! they have migrated to a more congenial region. When books become more our occupation or amusement, all that is wanted will follow. The face of most things among us is daily altering and improving. The mind in its turn will become undoubtedly the principal object of cultivation.

On the PHENOMENA of the WATER-SPOUT.

THE best account of the water-spout which we have met with is in the Phil. Transf. Abridged, vol. viii. as observed by Mr. Joseph Harris, May 21, 1732, about sun-set, lat. 32° 30′ N. long. 9° E. from Cape Florida.—"When first we saw the spout (says he), it was whole and entire, and much of the shape and proportion of a speaking trumpet; the small end being downwards, and reaching to the sea, and the big end terminated in a black thick cloud. The spout itself was very black, and the more so the higher up. It seemed to be exactly perpendicular to the horizon, and its sides perfectly smooth, without the least ruggedness. Where it fell the spray of the sea rose to a considerable height, which made somewhat the appearance of a great smoke. From the first time we saw it it continued whole about a minute, and till it was quite dissipated about three minutes. It began to waste from below, and so gradually up, while the upper part remained entire, without any visible alteration, till at last it ended in the black cloud above: upon which there seemed to fall a very heavy rain in that neighbourhood.—There was but little wind, and the sky elsewhere was pretty serene."

Water-spouts have by some been supposed to be merely electrical in their origin; particularly by Signior Beccaria, who supported his opinion by some experiments. But, if we attend to the successive phenomena necessary to constitute a complete water-spout throughout their various stages, we shall be convinced, that recourse must be had to some other principle in order to obtain a complete solution.

Dr. Franklin, in his Physical and Meteorological Observations, supposes a water-spout and a whirlwind to proceed from the same cause; their only difference being, that the latter passes over the land and the former over the water. This opinion is corroborated by M. de la Pryme, in the Philosophical Transactions, where he describes two spouts observed at different times in Yorkshire, whose appearances in the air were exactly like those of the spouts at sea, and their effects the same as those of real whirlwinds.

A fluid

A fluid, moving from all points horizontally towards a centre, muſt at that centre either mount or deſcend. If a hole be opened in the middle of the bottom of a tub filled with water, the water will flow from all ſides to the centre, and there deſcend in a whirl: but air flowing on or near the ſurface of land or water, from all ſides towards a centre, muſt at that centre aſcend; becauſe the land or water will hinder its deſcent.

The doctor, in proceeding to explain his conceptions, begs to be allowed two or three poſitions, as a foundation for his hypotheſis. 1. That the lower region of air is often more heated, and ſo more rarefied, than the upper, and by conſequence ſpecifically lighter. The coldneſs of the upper region is manifeſted by the hail, which ſometimes falls from it in warm weather. 2. That heated air may be very moiſt, and yet the moiſture ſo equally diffuſed and rarefied as not to be viſible till colder air mixes with it; at which time it condenſes and becomes viſible. Thus our breath, although inviſible in ſummer, becomes viſible in winter.

Theſe circumſtances being granted, he preſuppoſes a tract of land or ſea, of about ſixty miles in extent, unſheltered by clouds and unrefreſhed by the wind, during a ſummer's day, or perhaps for ſeveral days without intermiſſion, till it becomes violently heated, together with the lower region of the air in contact with it; ſo that the latter becomes ſpecifically lighter than the ſuperincumbent higher region of the atmoſphere, wherein the clouds are uſually floated: he ſuppoſes alſo that the air ſurrounding this tract has not been ſo much heated during thoſe days, and therefore remains heavier. The conſequence of this, he conceives, ſhould be, that the heated lighter air ſhould aſcend, and the heavier deſcend; and as this riſing cannot operate thoughout the whole tract at once, becauſe that would leave too extenſive a vacuum, the riſing will begin preciſely in that column which happens to be lighteſt or moſt rarefied; and the warm air will flow horizontally from all parts of this column, where the ſeveral currents meeting, and joining to riſe, a whirl is naturally formed, in the ſame manner as a whirl is formed in a tub of water, by the deſcending fluid receding from all ſides of the tub towards the hole in the centre. And as the ſeveral currents arrive at this central riſing column, with a conſiderable degree of horizontal motion, they cannot ſuddenly change it to a vertical motion; therefore as they gradually, in approaching the whirl, decline from right to curve or circular lines, ſo, having joined the whirl, they aſcend by a ſpiral motion: in the ſame manner as the water deſcends ſpirally through the hole in the tub before-mentioned.

Laſtly, as the lower air neareſt the ſurface is more rarefied by the heat of the ſun, it is more impreſſed by the current of the ſurrounding cold and heavy air which is to aſſume its place, and conſequently its motion towards the whirl is ſwifteſt, and ſo the force of the lower part of the whirl ſtrongeſt, and the centrifugal force of its particles greateſt. Hence the vacuum which incloſes the axis of the whirl ſhould be greateſt near the earth or ſea, and diminiſh gradually as it approaches the region of the clouds, till it ends in a point. This circle is of various diameters, ſometimes very large.

If the vacuum paſſes over water, the water may riſe in a body or column therein to the height of thirty-two feet. This whirl of air may be as inviſible as the air itſelf, though reaching in reality from

the water to the region of cool air, in which our low summer thunder-clouds commonly float; but it will soon become visible at its extremities. The agitation of the water under the whirling of the circle, and the swelling and rising of the water in the commencement of the vacuum, renders it visible below. It is perceived above by the warm air being brought up to the cooler region, where its moisture begins to be condensed by the cold into thick vapour, and is then first discovered at the highest part, which being now cooled condenses what rises behind it, and this latter acts in the same manner on the succeeding body; where, by the contact of the vapours, the cold operates faster in a right line downwards, than the vapours themselves can climb in a spiral line upwards: they climb however; and, as by continual addition they grow denser, and by consequence increase their centrifugal force, and being risen above the concentrating currents that compose the whirl, they fly off, and form a cloud.

It seems easy to conceive, how, by this successive condensation from above, the spout appears to drop or descend from the cloud, although the materials of which it is composed are all the while ascending. The condensation of the moisture contained in so great a quantity of warm air as may be supposed to rise in a short time in this prodigiously rapid whirl, is perhaps sufficient to form a great extent of cloud; and the friction of the whirling air on the sides of the column may detach great quantities of its water, disperse them into drops, and carry them up in the spiral whirl mixed with the air. The heavier drops may indeed fly off, and fall into a shower about the spout; but much of it will be broken into vapour, and yet remain visible. As the whirl weakens, the tube may apparently separate in the middle; the column of water subsiding, the superior condensed part drawing up to the cloud. The tube or whirl of air may nevertheless remain entire, the middle only becoming invisible, as not containing any visible matter.

REMARKS ON THE POETRY OF SPAIN AND PORTUGAL.

ESTEBAN Manuel de Villegas was born in the city of Nagera, Old Castile, in the year 1595; the reigns of Philip II. and III. were generally favourable to literature, yet neither the claims of illustrious family, nor of distinguishing abilities, procured patronage for Villegas, and his long life was spent in continual hopes, and continual disappointment. At the age of fourteen, he became a student at law at the university of Salamanca. Villegas must have regretted, in his age, the employments of his youth: for those hours that should have been sacrificed to the civilians, were given to the Greek and Roman poets; nor could the title he acquired, of the Spanish Anacreon, atone for after-years of fruitless expectation, embittered by the difficulties of a narrow fortune.

His "Delicias" were, as he himself tells us, in the first of them, written at fourteen, and corrected at twenty. They form the second book of his Eroticas, or Amatory Poems, which he published at Nagera, in 1618.—These poems are said to unite in themselves the sweetness of Anacreon, the simplicity of Theocritus, the ease of Horace, and the elegance of Catullus. In fine, (says the editor of Parnaso Espanol,) he has displayed whatever constitutes a great poet, rendering himself the first of his own nation, and equally the most celebrated

celebrated of antiquity. Something muſt be allowed for the prodigality of a Spaniard's praiſe; ſomething for the age and country in which Villegas wrote; and ſomething for the errors of a work, "written at fourteen, and corrected at twenty." The poems are trifling, like their ſubjects, playful and elegant.—One, perhaps the beſt of the ſeries, addreſſed to a ſtream, has lately been tranſlated. The following is attempted in the Anacreontic metre of the original, varying, however the uniformity of cadence, which would otherwiſe weary an Engliſh ear:—

TO WINTER.

Enough, enough, old Winter!
Thou workeſt to annoy us,
With cold, and rain, and tempeſt,
When ſnows have hid the country,
And rivers ceaſe to flow.
The flocks and herds accuſe thee,
And even the little ermine
Complains of thee, old Winter!
For thou to man art freezing,
And his white fur is warm.
The beaſts they couch in cover,
The birds are cold and hungry,
The birds are cold and ſilent,
Or with a weak complaining
They call thee hard and cruel.
But not to me, old Winter!
Thy tyranny extends;
For I have wine and muſic,
The cheerful hearth and ſong.

The reputation of theſe poems has been ſeverely attacked, in an eſſay, prefixed to the poſthumous poems of Don Joſeph Iglerias de la Caſa, printed at Salamanca, 1793. "The Delicias of Villegas (ſays the anonymous writer) are the firſt poems of their kind which obtained celebrity in the Spaniſh language. Our author has likewiſe exerciſed himſelf in the ſame line of compoſition, and he has excelled his model in the beauty and ſelection of his images, and more particularly in the ſweetneſs and nature of his ſentiments. For, although Villegas may have poſſeſſed a feeling heart, he knew not how to develope it in his verſes. The fame of this writer, like that of many others, is merely the fame of tradition; not founded upon his real merit, but upon the opinion of ſome perſon, who knew how to impoſe upon the mob of readers. This aſſertion may appear ſomewhat bold, if we conſider when Don Vicente de los Rios publiſhed and panegyrized Villegas. Then, perhaps, his poems were a model of good taſte, but in what a ſtate was our literature then! What ſhould be ſaid of a poet, whoſe verſes are full of ridiculous tranſpoſitions, low words and phraſes, forced and obſcure metaphors, ill-timed alluſions, and pedantic erudition, that are bald of imagery, and totally devoid of feeling? Theſe faults mark every part of every work of Villegas; and notwithſtanding the Greek name (Eroticas) in the title-page, you never hear in them the language of love. It avails not, my friend, to be learned in Greek and Latin, if good taſte be wanting. Let us undeceive ourſelves; Villegas would have been

been forgotten by this time, had it not been for the harmonious cadence of his verses; there indeed he is excellent."

The censure of the essayist is too unqualified. Of all poems, such as are entitled Amatory are most devoid of feeling. Petrarch and Hammond are distinguished by fantastic nonsense, and whining dullness; and, wherever Cupid is subpœnaed into a poem, his evidence is sufficient to prove, that the poet was not in love. A bee mistakes the lips of Lydia for a rose. Lydia sees Cupid asleep, and steals his bow and arrows. The poet adjures the stars to tell Lydia that her forehead is more polished than silver, and her teeth whiter than pearls. If an author abandons himself to write upon such subjects, you are not to expect human feelings.

Strange and uncouth metaphors are undoubtedly to be found in the poems of Villegas. He addresses a stream, "thou who runnest over sands of gold with feet of silver."—"Touch my breast (says he), if you doubt the power of Lydia's eyes, you will find it turned to ashes." He has hyperbolized the Spanish hyperbolical salutation, "may you live a thousand years!" and wishes that the young grandee, to whom the first of his Delicias is addressed, may enjoy more years than there are days in an age, drops of water in the ocean, and grains of sand on the shore. "Thou art so great (says he), that thou canst only imitate thyself with thy own greatness."

Anacreon may be read with pleasure in the translation of the Spaniard who has been honoured with his name; nor will he, who peruses the version of Villegas, remember to its disadvantage the harmony of Grecian cadence. He has likewise introduced hexameters and Sapphics, with success, into his native language; and even the critic who so severely attacks the Eroticas, calls his Sapphic ode to Zephyrus most beautiful, (*bellissima oda.*) A translation of this piece into English Sapphics has been lately published in the same work with his Lines to a Stream. From Salamanca, Villegas returned to Nagera, his native place: here he lived with his mother, then a widow, and availed himself of leisure and retirement to follow his favourite studies, till his marriage.

Villegas now bade adieu to poetry, and applied himself to such studies as were likely to be more esteemed and better rewarded. Two folio volumes of classical criticism, entitled *Variæ Philologiæ*, yet remain in manuscript, to witness his learning and industry; and he began the more laborious task of commenting upon the Theodosian Code. But no exertion of genius, or of industry, could procure him such patronage as he deserved and wanted; and when, in his old age, experience had convinced him of the vanity of his hopes, he employed the latter days of his life in translating the Consolations of Philosophy, fully participating, perhaps, the proud and melancholy feelings that comforted Boethius.

END OF THE THIRD VOLUME.