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KOTZEBUE'S
VOYAGE OF DISCOVERY.

VOL. I.

LONDON:
Printed by A. and R. Spottiswoode,
New-Street-Square.



L. Clark Jr.

Portraits of Inhabitants of Kotzebue Sound.

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VOYAGE OF DISCOVERY,

INTO THE

SOUTH SEA

AND

BEERING'S STRAITS,

RAREBOOK

FOR THE PURPOSE OF

EXPLORING A NORTH-EAST PASSAGE,

UNDERTAKEN

IN THE YEARS 1815—1818,

AT THE EXPENSE OF HIS HIGHNESS THE CHANCELLOR OF THE EMPIRE,
COUNT ROMANZOFF,

IN THE SHIP RURICK,

UNDER THE COMMAND OF THE LIEUTENANT IN THE
RUSSIAN IMPERIAL NAVY,

OTTO VON KOTZEBUE.

ILLUSTRATED WITH NUMEROUS PLATES AND MAPS.

IN THREE VOLUMES.

VOL. I.

LONDON:

PRINTED FOR
LONGMAN, HURST, REES, ORME, AND BROWN,
PATERNOSTER-ROW.

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TRANSLATOR'S PREFACE.

IN laying before the public a work of such general interest, as Kotzebue's *Voyage Round the World*, the translator does not feel himself called upon to preface it with any laboured recommendation. The circumstances relative to the origin and progress of the undertaking, which have from time to time transpired, through the public journals, have excited a great desire for the publication of these volumes, not merely in Germany, but in England and France. The expedition was known to have originated in the enlarged views of that great patron of the sciences, His Highness Count Romanzoff, Grand Chancellor of the Russian empire, and to have been fitted out with princely munificence at his sole expense. The conductor of the expedition was known to have already made a voyage round the world, with Commodore

Krusenstern, and to have been recommended by him to Count Romanzoff, as eminently qualified for the command of such an undertaking. Extracts from many of the letters that Lieutenant Kotzebue wrote to his father, during his voyage, were published in Germany, and even in England; which not only made the public familiar with the expedition and its objects, but also excited expectations in its favour, which the translator ventures to affirm will be fully satisfied by a perusal of these volumes.

A few words respecting the translation itself may, perhaps, be required.

The first object of the translator has been fidelity to his original: he has not sought to embellish, by superadded ornaments of style and colouring, the unaffected language of a plain, though well educated and accomplished seaman; he has merely endeavoured to put it into such natural and manly language as it would become an English naval officer to write, and as an intelligent reader may peruse with satisfaction.

The scientific parts of a work of this kind being of so great importance to geography and navigation, for the benefit of which sciences such expeditions are expressly un-

dertaken, the most scrupulous attention has been paid to avoid even the smallest error, in the latitudes and longitudes; the bearings of points of the coasts; the measurements of the depths of the sea, of the strength of the currents; and, in short, of every thing expressed in figures. The figures have been most attentively twice collated with the original; and it is hoped that there is not, in this respect, a single erratum. It is judged particularly necessary to impress this point, because the translator has in a few instances been induced to suspect a mistake in the original, which he could not venture to correct. The usual method of marking the degrees of latitude and longitude is, he believes, always to mark the degrees, minutes, and seconds; and if there should be no minutes, but seconds, to put 00' for the minutes, as $15^{\circ} 00' 38''$, and this is the method of notation which sometimes occurs in this work: but there are in the first volume several instances where it is not observed: for instance, page 104., line 8., where we find latitude $30^{\circ} 36''$, longitude $15^{\circ} 20''$; which the translator apprehends should be, $30^{\circ} 36'$, and $15^{\circ} 20'$; and though he has thought it his duty to copy them, he,

however, judges it proper to give this notice. Though the miles mentioned appear to be generally geographical miles, of sixty to a degree, and are sometimes stated to be such, it seems as if, in one or two solitary instances, German miles, fifteen to a degree, should be understood; this refers to the statement of the size of some of the small islands, one of which is spoken of as being a quarter of a mile in circumference, and yet to contain woods into which the author took a walk. If this island were only a quarter of an English mile in circumference, the walk must have been rather short; and it should probably be a German mile (four miles and a half English).

In the orthography of proper names of persons and places, the Edinburgh Gazetteer has been followed for the geographical part; and for the names of Lieutenant Kotzebue's new discoveries, and of the persons whom he has occasion to mention, his own orthography has been preserved, as an attempt to accommodate them to English pronunciation would probably have produced combinations of letters very different from those which an Englishman would form, from hearing them pronounced by the natives themselves. The

translator begs leave to refer to his note, vol. ii. page 410., to which he will merely add here, that *ei* in German is invariably pronounced as *i* long in English ; and *ie* as English *ee*. It may, likewise, be proper to observe, that Lieutenant Kotzebue and Mr. Chamisso differ in some instances in their orthography of proper names, for which the latter, indeed, apologises in his postscript ; but it has been thought the best to retain the orthography of each.

In some few instances, doubts have arisen respecting the true translation of scientific terms. This has been particularly the case in what relates to mineralogy, which is partly caused by the different names given by the German mineralogists and geologists to the same mineral or earth, a discrepancy which is equally found among English writers on the same subject. It is, however, hoped, that the terms employed, if not always strictly and technically correct, will be perfectly intelligible to those readers who are interested in those parts of the work. The translator has, however, much pleasure in stating, that the list of minerals brought home by the expedi-

tion, as given by M. Moriz Von Engelhardt, in the third volume, has been revised by an eminent member of the Geological Society.

H. E. LLOYD.

London, Oct. 16. 1821.

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I. Clark sc.

*Tamaah-maah,
King of the Sandwich Islands.*

VOYAGE OF DISCOVERY.

INTRODUCTION.

Two problems have engaged, for some centuries, the attention of the geographer, and still more of the navigator; the discovery of a Southern Continent; and that of a Northern Passage from the Atlantic to the Southern Ocean, or, vice versâ, from the South Sea into the Atlantic. The first problem was solved by the immortal Cook; who, in his second voyage, exploded the notion of a Southern Continent, the existence of which was thought to be necessary to preserve the balance between the two hemispheres, and in which the

* In compliance with the wish of the author, a pupil of whom I am proud, I prefix some observations to his account of his voyage. This was also the wish of his unfortunate father, my lamented friend, with whom I lived for thirty years together in the most cordial intimacy; whom I loved as my brother, and whose death I shall never cease to deplore, in common certainly with his numerous friends and all impartial persons to whom he was known.

most celebrated geographers of the middle of the last century, for instance, De Broses and Dalrymple, firmly believed, even assigning its limits and probable population. Before Cook, it sunk to the bottom of the ocean, "and, like the baseless fabric of a vision, left not a rack behind!"* The second problem remains, to this day, the subject of hypothetical theories and practical researches. For three successive centuries the connection between the two oceans has been sought in vain; the greatest navigators of all nations have participated in the attempt to solve this difficult problem, but in this, as in all other maritime enterprizes, the English were they who chiefly distinguished themselves. To them we are indebted for the first attempt; with the most laudable perseverance they have continued their exertions, without intermission, up to the present time; and to them we shall, in all probability, be obliged for finally and satisfactorily ascertaining the existence or non-existence of this remarkable passage. Had Cook's life been spared, this object would, perhaps, have been attained; since, if the passage had not been explored by him, he would at least have demonstrated the im-

* Cook, indeed, thought it possible that a continent might exist near the South Pole, because it was his opinion that ice cannot be formed except in the neighbourhood of land, and that, consequently, the immense masses of ice which we meet with in the south polar regions, must originate from a large continent near the South Pole; but he was equally convinced that this south polar continent would never be discovered.

possibility of exploring it ; for that which was impossible to Cook could hardly be possible for another

Russia, too, which, since the time of Peter the Great, has possessed a navy, and never was indifferent to any thing that might tend to the improvement of science, would not be behind other nations in endeavouring to solve this interesting problem ; and during two successive years, three vessels, commanded by the late Admiral Tschitschagoff, father of the present admiral, were employed to search for the passage, exactly in the North, between Greenland and Spitzbergen. This expedition shared the fate of all preceding attempts of the kind, without any blame being attributable to the admiral, any more than to Lord Mulgrave, who was sent from England seven years later, in the same direction, and proceeded only twelve minutes farther to the North than the Russian commander. Cook's third voyage, though not finished by himself, seemed to have put an end to all doubts respecting the possibility of a Northern Passage ; but we do not know whether the great man himself really despaired of it. His researches in Beering's Straits brought him, the first year, to the 70th degree, where the ice hindered him from proceeding ; yet he resolved to renew his researches there the succeeding year ; this design was frustrated by his untimely end, but the resolution he had taken proves that he did not doubt the possibility,

if not of complete success, yet of penetrating farther to the North and East than he had done the year before. Cook's third voyage may be considered as the last attempt made in the eighteenth century to solve the celebrated problem; for the object of Captain Vancouver's voyage was not to look for a Northern Passage, as the title of his work might lead one to suppose, but to undertake an accurate examination of the whole coast of America, from the 30th degree of latitude to Cook's Inlet. If, during this examination, any connection had been found between some deep inlet, and Baffin's or Hudson's Bay, it would of course have been explored by Vancouver. But it was more than probable that no such connection would be found to the South of Cook's Inlet; for, at the time Cook was sent out, it had been recognised that a connection, if it does exist, is not to be found to the south of 65° ; the accurate researches of Captain Middleton, and of Captains Smith and Moore, having proved that a connection with the South Sea from Hudson's Bay was impossible. The extremely careful survey of the west coast of America, by Vancouver, proved that those who drew up Cook's instructions had good grounds for assuming that the passage must be sought to the north of the 65^{th} degree.

Only a few years after the termination of Cook's voyage, a state of things commenced in Europe, which was highly unfavourable to such undertakings. The French revolution brought such a

mass of misery on all the countries of Europe, that they had more urgent wants to attend to, than the undertaking of enterprises, the success of which was so problematical; nay, even in those undertaken during this period, which promised a more certain acquisition to the sciences, the consequences of the all-destroying spirit of the revolution were but too evident. This was the case at least with the voyages of discovery undertaken from France; the expedition, for example, sent in search of La Peyrouse, under the command of one of the ablest officers of the French navy, having dissolved itself before its completion, and that fitted out some years later having likewise failed; at least, the results were not so brilliant as might have been justly expected, from an expedition amply supplied with every requisite: the reason, doubtless, was, that the imperial French marine had not yet returned to the ancient spirit of order. Nay, if we would attribute its failure only to the ignorance of the commander*, who was not at all animated with the spirit of discovery and science, still it may be easily imagined that, under a different order of things, no such choice would have been made. And, then,

* It is remarkable, that in the journal of the voyage of the *Geographe* and *Naturaliste*, edited by Perron, the name of the commander is not once mentioned, as if it had been feared that the name of a man should go down to posterity, whom fate had so undeservedly favoured, as to place him at the head of a voyage of discovery.

what shall we say to the treatment of Captain Flinders? Confiding in the inviolability of the passports given him, not conceiving it possible to disgrace the French government, by the seizure of a ship engaged in a voyage of discovery, Captain Flinders placed himself, and his small vessel, which was in a sinking state, under the protection of the governor, who not only detained him and his ship, but even seized his journals. To deprive a man like Flinders, the greatest seaman that has appeared since Cook, of his liberty at such a time, was equivalent to killing him; in fact, he survived but a short time the cruel inactivity of his imprisonment, in which he was condemned to languish above six years. There are doubtless more dreadful facts to be met with in the records of naval history, but I know of no one that excites more indignation than this treatment of the unhappy Flinders.

The almost uninterrupted wars in which Europe was engaged, and partly, too, the certainty which the last attempts of the English were supposed to have afforded, that a northern passage was impossible, were the causes that this problem had been laid aside as insoluble; and it is a question, whether another attempt would ever have been made, had not Count Romanzoff, who is distinguished for elevated views, and for whom bold enterprises have a particular charm, given the first impulse. He frequently conversed with me on the subject, and expressed his wish to see such an attempt again

made. The political situation of Russia, even previous to the dreadful war of 1812, 1813, rendered it indeed quite impossible, even for the government, to undertake such an enterprise: the Count, however, did not give up the idea of it, and, in order to obtain for himself more information on the subject, as well as to acquaint the captain, to whom the command of the projected expedition should be confided, with all the attempts of preceding navigators, to find a northern passage, as well as with the opinions of those who had particularly studied the subject, I undertook, according to his wish, to draw up a view of all the Polar Voyages since the first attempt of the celebrated Sebastian Cabot, in the year 1497, to the last voyage of Cook. From this view it was evident, that a passage in the north was more than doubtful, but that another attempt, either from the west to the east, or from the east to the west, might perhaps not be a vain enterprise. As soon, therefore, as the war with England was concluded, Count Romanzoff resolved to proceed to the execution of the plan at his own expense.

With respect to the possibility of the success of such an enterprise, so much has been said both for and against it, on occasion of the expedition to the North Pole made by order of the English government, that it seemed unnecessary for me to repeat the arguments. According to my view of the matter, a passage to the north seems impossi-

ble ; so many attempts to approach the pole have been made by the most intrepid navigators of England and Holland, and not one has been able to penetrate to 81°. It is said, indeed, that since the east coast of Greenland has been free from ice, ships have reached 83°, but these rare instances, connected, too, as they are, with a phenomenon, which, in all probability, will be of short duration, namely, the clearing of the coast of Greenland from ice, do not prove the possibility of reaching the pole itself. The case is different with a north-west passage, which seems to be less decidedly impossible. In order to go on sure grounds, it was requisite to seek for this passage as well from west to east, as from east to west; the first way had the advantage, that the western boundaries of Baffin's Bay, and the countries to the north of Hudson's Bay might be explored; which, not much to the credit of the nineteenth century, were still quite unknown: the other, on the contrary, had the advantage, that it included a voyage through the South Sea, and that the examination of the northern coast of America might be of advantage to our possessions in those countries. Count Romanzoff resolved to make both attempts at the same time, only with this difference, that the attempt from west to east should be made by a ship (but not of too large a size), to be dispatched from Russia, and that the other should be undertaken from America, also at his expense,

under the direction of some enterprising American captain, for which purpose the Count had already opened a correspondence with America. This latter attempt, however, was not made; because it was my opinion, that it should not be commenced till the first expedition had returned: it might then have the advantage of being undertaken from Russia; and not by Americans, but by Russians. The expedition fitted out from England two years later, of course rendered the execution of this second part of the plan quite unnecessary. With regard to the attempt to find a passage from the sea of Kamtschatka to the Atlantic Ocean, or from west to east, the endeavours of Captains Cook and Clerke in Beering's Straits, left but little hope of penetrating farther to the north than they had done; but there were parts of the coast of America, both to the north and south of Beering's Straits, which those celebrated navigators could not explore; a circumstance which, at least, left a spark of hope that some inlet might be found in those parts, connected, if not directly with Baffin's Bay, yet with some river falling into the Frozen Sea, (of which we already know two, the Coppermine River and Mackenzie River), from which it would be easier to penetrate into the Atlantic Ocean than through Beering's Straits and round Icy Cape. However little probability there might appear of finding a passage just here, its existence cannot be positively denied, till this part of the

coast, particularly that to the south of Beering's Straits, which is 100 miles in extent, shall have been explored. But supposing that the wished-for discovery of a connection between the two seas should not be made in the intended voyage, yet many important advantages would accrue from it to the sciences, and especially to navigation. —

1. The conviction obtained by a new attempt, that it is impossible to penetrate farther to the north from Beering's Straits than Cook and Clerke have done, and consequently that no passage to the Atlantic Ocean can exist there. 2. The examination of the coast of America, which was not seen by the celebrated English navigator, on account of the shallowness of the water, which was now to be done, as well by water in Baidares, as by land.* 3. In case the examination of the coast of America northward of Beering's Straits could not be continued as far as Icy Cape, which, considering the small size of the vessel, was not possible, except under very favourable circumstances, it was intended to prosecute the examination by land, in order to learn how far the coast extends to the north, and under what degree of latitude it begins to decline towards the east. This land journey could not fail to afford important information

* Captain Golownin was charged, in 1811, to examine this part of America, between Shoal Ness and Point Shallow; but before he could execute this part of his instructions, he was taken prisoner by the Japanese.

respecting the internal state of this wholly unknown part of America, if the inhospitable regions in which it was to be made would allow of its execution. 4. The crossing of the whole South Sea twice, in quite different directions, would certainly not a little contribute to enlarge our knowledge of this great ocean, as well as of the inhabitants of the very numerous islands scattered over it; and a rich harvest of objects of natural history was to be expected, as the Count had appointed, besides the ship's surgeon, an able naturalist to accompany the expedition. The projected undertaking was therefore of the highest importance to science; and, to speak without partiality, worthy of the greatest praise, because it is without a parallel. In the centuries immediately succeeding Vasco de Gama's doubling the Cape of Good Hope, and Magellan's voyage to the South Sea, there were indeed rich individuals who fitted out vessels at their own expense, to make discoveries in the seas so lately made known; but this zeal has long since expired, and besides, the voyages of discovery in early times were not undertaken with such liberal motives as those which inspired the author of this expedition.

It was natural that an individual could not expend any very considerable sum on such an enterprise, and this could least of all be expected from Count Romanzoff, because he already dedicates the greater part of his revenues to the most ex-

pensive scientific and many patriotic undertakings : it was therefore, perhaps, as difficult a problem as the north passage itself, properly to plan such an undertaking, without its exceeding the ability of the Count. It was first resolved to send the timber for a small vessel of 25 or 30 tons on board one of the ships belonging to the American Company, to the north-west coast of America : the officer to whom the undertaking was to be confided, was to embark at the same time with his pilot and some chosen men, and have the vessel put together at Oonalashka or Kodiak. This plan, which would have been the cheapest, was given up, because the frame of the vessel would have taken up too much room on board one of the Company's ships, which are but small vessels. It was then resolved to have a vessel of 70 or 80 tons, with moveable keels, on the plan of the English Captain Shank, built of oak in the imperial dock-yard, by the able ship-builder Rasumoff; this plan, however, could not be executed, and as there is no private dock-yard in St. Petersburg, and the oak timber is exclusively in possession of the admiralty, the only alternative was either to purchase abroad a ship built of oak timber, which would have been too expensive, or to have one built of fir; and as very durable ships are built of this timber in Finland, it was determined to have such a one built at Abo, or Wasa, though it seemed a hazardous experiment, to undertake a voyage which might

last three or four years, on board a ship built of fir. It was likewise determined to build this ship larger than was at first intended, not only because, for the money destined for the purchase of the vessel, one of double the size might be built of fir; but because another circumstance was to be particularly considered, to which, if it had been built of oak, as at first intended, no regard could have been paid. It was now decided that it should traverse the great ocean, and would therefore often come in contact with the inhabitants of the islands already known, as well as of those that might be discovered. Were the ship small, the crew must be small in proportion, and be therefore in danger of being attacked by the savages, of which there have been instances in the South Sea. The size of the ship was fixed at 180 tons instead of 80, with a crew of 20 sailors. Even a ship of 180 tons is certainly small for such a voyage, not from any danger of being swallowed up by the waves in a violent storm, as some readers, who are not seamen, might believe, but from the want of accommodation for officers and men, as well for their repose as for their scientific labours; no trifling consideration on a long and fatiguing voyage; and likewise from want of room for the collections of natural history. On the other hand, the smallness of a vessel designed for a voyage of discovery has advantages which are useful even to the sciences; a small ship, for instance, can approach much nearer

to the shore, and can therefore examine, and more accurately determine many things than it is possible to do on board a large vessel. Thus, for example, in the present voyage, the Coral islands were more accurately and closely examined than was ever done before ; and the discovery of the great bay on the coast of America, to the north of Bering's Straits, which escaped Captains Cook and Clerke, would not have been made with a larger vessel than the *Rurick*.

As conductor of this expedition, I proposed Lieutenant Kotzebue, of the navy, son of the celebrated writer : he had accompanied me when very young, that is, as cadet on board the *Nadeshda* in my voyage, and had laid a good foundation for the service to which he had resolved to dedicate himself ; I had especially remarked that he used to exercise himself in astronomical observations, and in drawing charts, and never failed to take part in the trigonometrical operations, which was of great advantage to him, because he could have no opportunity after the voyage was ended of improving himself in this part of the naval duties ; whereas he could annually improve in practical seamanship, as far as may be done by the navigation of the Baltic : he had also the good fortune, when he sailed, in 1812, under the command of Admiral Crown and Captain Hamilton, from Archangel to the Baltic, to gain, in a high degree, the approbation of both those officers. He had long cherished a wish to

revisit those seas which had first given him a taste for the sea-service: he offered himself to the American Company, to conduct their ship *Suwaroff*, which sailed for their colonies in 1813. The directors of the Company however declined his offer, because they feared that he was too young. Count *Romanzoff*, on the contrary, was so taken at the first acquaintance, with the enthusiastic zeal of this young man in his profession, that he did not hesitate to confide to him the command of the expedition to *Beering's Straits*, not doubting that his zeal was accompanied with the qualifications and knowledge requisite for such an undertaking.

Having obtained, at the beginning of 1814, permission from His Majesty the Emperor, to make a journey to England, I resolved to go by way of Sweden, in order to bespeak the ship at *Abo*, to be built after a design of *Mr. Rasumoff*. Lieutenant *Kotzebue* accompanied me to *Abo*, and at the latter end of May, I contracted with a ship-builder, named *Erick Malm*, to build us, for the sum of 30,000 roubles, a vessel of 180 tons burthen; which should be launched at the beginning of May in the following year. According to the wish of Count *Romanzoff*, it was to be called the *Rurick*. It is but justice to *Mr. Malm*, to say, that he neglected nothing on his part, to build the vessel with a degree of durability, that could hardly be expected from a fir ship; and no greater proof can be given of the excellence of the workmanship,

and the care with which the timber had been prepared, than that, upon an accurate survey after its return, it was found so good, that the purchasers* resolved to send it on another voyage to the South Sea.

I bespoke the astronomical and physical instruments in England of the justly celebrated Troughton; they consisted of several sextants, compasses, two marine barometers, a dipping-needle, an aerometer, several thermometers, hygrometers, &c.; to these I added the log and sounding-machine invented by Massey, a Six-thermometer, a mountain barometer, a camera lucida; the last articles by the ingenious artist, Thomas Jones, a pupil of the celebrated Ramsden, and two telescopes by Tully. I bespoke two chronometers; a pocket chronometer by Barraud, who makes more chronometers than any other artist, and for this reason alone deserves the greatest confidence; the instrument which he furnished was in fact excellent, and very much better than another, which I had bespoke of him at the same price for the Admiralty, which stopped soon after my arrival at St. Petersburg, and was obliged to be given to Mr. Wenham, the partner of Breguel, to be repaired. Each of these chronometers cost 50 guineas. The other chro-

* As Count Romanzoff had no farther use for the ship, he disposed of it to the American Company, with all its tackling, &c., even including the chronometers and astronomical instruments.

nometer I had made by Hardy, who had acquired great reputation by a very fine astronomical clock, which he had made for the Observatory at Greenwich, and by some new inventions, of which I will only mention a new compensatorium. He had, it is true, made only one chronometer in his life; no account of the going of which ever reached England, the ship being lost in her voyage to the West Indies; and for this reason he could not be recommended to me; but I had so high an opinion of the skill of this indefatigable artist, that I got him to make me one. The event proved that I had done right in placing great confidence in his ability; the instrument (a box chronometer) was excellent, as will appear by the account of the voyage. The price was eighty guineas.

Besides the astronomical and physical instruments, and an extensive collection of maps by Horsburgh, Arrowsmith and Purdy, I had the ship provided with numerous other articles indispensably necessary in such a voyage, which are no where to be had better and cheaper than in London; such as surgical instruments, medicines, spices, clothing, &c. The ship was likewise provided with a life, or safety boat, which the English Admiralty had ordered to be built for the Rurick, at my request. During my stay in England I had visited the harbour of Plymouth, and there seen a life-boat of the invention of Mr. Fincham, a master ship-builder. The judicious contrivance, and the small

size of this boat, which was provided with air-chests, made me anxious of having such a one for Lieutenant Kotzebue's expedition ; Mr. Fincham, however, being in the service of the Government, the strictness of the English regulations did not allow him to execute such a commission without the permission of the Admiralty. On my return to London, therefore, I made an application, in writing, to the Admiralty, and received on the same day, an answer from the secretary, Mr. Barrow, who enjoys a most honorable reputation both as a traveller and a writer, stating, that the Lords of the Admiralty had immediately issued an order to build such a boat for Count Romanzoff's expedition, according to the dimensions given by me. This was done, and when the *Rurick* put into Plymouth on her voyage, the boat was delivered to Lieutenant Kotzebue, without any payment whatever being asked for it: the expences of it amounted to 1000 roubles.

A discovery lately made in England, seemed to me too important not to be made use of for the expedition. This discovery, made by Mr. Donkin, consists in preserving fresh meat, vegetables, soup, milk, in short eatables of every kind, for years together, in a perfectly fresh state ; and, what may be thought an exaggeration, but is not so, the meat is better than when fresh, because the tin boxes, in which it is preserved, are filled with strong gravy, which penetrates the meat. I caused

the ship to be supplied with a considerable quantity of these provisions, and they were of the greatest use to Lieutenant Kotzebue and his companions; this meat being often the only refreshment that he had to give to the sick. Mr. Donkin's discovery, though it may not seem important, is undoubtedly one of the greatest use to navigators. Not taking into account the importance of being provided, even for the longest voyages, with fresh provisions, without requiring much room, which could formerly be done, and that for a comparatively short time, only by taking on board a number of living animals, which in ships of war are always in the way, and for which a large stock of food, hay, and water must likewise be taken on board*; and which, in spite of every precaution, may be suddenly lost, for instance, in a storm; passing over these great advantages, the discovery is of the highest importance to the sick, taking it for granted that the preservation of the health of the crew is of importance. Some strong soup, or nourishing diet, can often save the life of a patient, where medicine is no longer of any avail; this is especially the case in scorbutic patients, of whom, in-

* That such a stock may prove dangerous appears from the dreadful example of the Queen Charlotte, of 120 guns, which was burnt in the roads of Leghorn, in 1805. The cause of the misfortune was, that the hay on board, not having been immediately cleared away, was set fire to by a candle carelessly brought near it.

deed, there are now but few on board ships, since it has been found that it is not the living on salt meat, or the sea air, which produces the scurvy, but the want of wholesome provisions, of linen and of clothing, which make it impossible for the people to change their clothes though often wet through; the want of cleanliness, and fresh air in their births; and, above all, the want of due care and attention, which always causes a desponding spirit among the men; whence it results that an opposite mode of treatment is the best preventative of the scurvy. But the measures above enumerated are not yet every where applied to a sufficient extent; and thus we have, even now, dreadful instances of the ravages which this disorder causes on board of ships. In such, the use of Donkin's prepared meat cannot be sufficiently recommended, and is indeed of the highest importance. Could Lord Anson, in his voyage round Cape Horn, in 1740; could our ships in their passage from Archangel to the Baltic, in the years 1812 and 1813, have had a stock of this meat on board, so many men would not have fallen in the prime of life victims to this cruel disease. * Important improve-

* Fresh provisions being extremely dear in the West Indies, the English Admiralty has found it less expensive to supply the hospitals with Donkin's meat from England, than to purchase it fresh on the spot; and when I was in England, in the years 1814 and 1815, a great supply of Donkin's meat was sent to the fleet of Admiral Cochrane, on the coast of America.

ments having been also made in the distillation of sea water *, want of fresh provisions, and sweet water, or fear of the scurvy, can never afford pretexts for delays in port, which are often injurious to the object of the voyage. I cannot help mentioning here the fine discovery of the eminent natural philosopher, Mr. Leslie, to produce ice by means of evaporation, even in the hottest room ; by which it is possible to have, even under the equator, the luxury of a cool beverage, which cannot but have a very beneficial influence on the health, particularly in regions where calms prevail, where one longs in vain for a breath of air to assuage the heat, which debilitates the whole frame. This invention has also been applied to the use of the English navy. All the hospitals in the tropical countries are already provided with extensive apparatus for the production of ice.

With respect to the preservation of the health of the crew during the expedition of Lieutenant Kotzebue, we must do him and Dr. Eschholz, the ship's physician, the justice to say, that they made this an object of their peculiar care, as the result has proved. Notwithstanding a three years' navigation, during which they were comparatively

* Lieutenant Kotzebue saw such an apparatus on board the ship of Captain Freycinet, whom he met with at the Cape of Good Hope on a voyage of discovery. This apparatus supplied in one day sufficient for three days' consumption for the whole crew.

but a short time on shore ; notwithstanding a long abode in the stormy and humid regions of the Kamtschatka seas ; notwithstanding the scanty accommodation which a ship of 180 tons afforded, only one man died during the whole time, and that at the beginning of the voyage : he was in a consumption, and could not have lived long had he remained on shore. The rest all returned home well and hearty, it may be said better, and more hearty than at the time of their departure, blessing their commander and the officers for their attentive and paternal treatment.

Besides the captain, there were on board the Rurick, a lieutenant of the navy, two naturalists, a physician, a painter, and two second mates. Lieutenant Schischmareff was an old comrade and friend of M. Von Kotzebue, and though his senior in the service, he willingly submitted to obey his orders on this voyage. The perfect harmony that prevailed between them during the whole voyage, is honourable to both ; and we owe the successful termination of the expedition equally to Lieutenant Kotzebue for his direction, and to Lieutenant Schischmareff for the support which his captain found in him. During almost the whole voyage, Lieutenant Schischmareff was the only naval officer on board the Rurick*, and none but a sea-

* His comrade fell sick in England, and left the ship at Kamtschatka.

man can form a clear notion of the exertions which an officer must make, who, for three successive years, has to share with his captain only the hardships of a navigation, often dangerous, always difficult, now in the stormy seas of Kamtschatka, now in the icy regions of Beering's Straits, now among the coral chains of the islands of the South Sea. The two mates, Petroff and Cramtschenko, were young men from the pilots' school, who have acquired great skill in their department, and with whom M. Von Kotzebue was perfectly satisfied. It was the business of the latter, in particular, to draw the charts.

Dr. Ledebour, professor of natural history in the university of Dorpat, was chosen for naturalist to the expedition, and he had proposed for his assistant Dr. Eschholz, who was to be also the ship's physician; an office which, on board so small a ship, with a crew of twenty men, among whom much sickness was not to be expected, might be easily made compatible with the employment of a naturalist. Dr. Ledebour's health did not allow him to realize his wish, and M. A. Von Chamisso, of Berlin, accompanied the expedition as naturalist in his stead. He was recommended to the chancellor, by Professors Rudolph and Lichtenstein, as a thoroughly well-informed man, passionately devoted to his department of science; how well merited this recommendation was, and how fortunate the choice proved for Lieutenant Kotzebue

and for the sciences, is manifest from the work before us. Though want of room made it impossible to engage another scientific person for the expedition, Count Romanzoff could not resist the wishes of a learned Dane, M. Von Wormskiöld, to accompany the expedition as naturalist; he desired no salary, if only the expences of his maintenance were allowed him. As M. Von Wormskiöld had made several voyages in the north, as in Norway and Iceland, the expedition might expect the most important advantages from the part he would take in it. M. Von Kotzebue also engaged to obviate the difficulties respecting want of room, and M. Von Wormskiöld embarked at Copenhagen on board the Rurick. On the arrival of the ship at Kamtschatka, he, however, remained there, in order to make himself acquainted with that country, which has been hitherto but imperfectly explored by naturalists.

A young man, of the name of Choris, who had accompanied the well-known naturalist, Marshall Von Biberstein, as painter, in his tour to Mount Caucasus, offered himself as painter to the expedition. The richness of the portfolio which he has brought home, of which but a few specimens could be given to the public, and the praise which has been bestowed upon him by the most celebrated artists of St. Petersburg, as well as by the president of the Petersburg Academy, fully justify the choice of this young and deserving artist.

On comparing the account of the voyage with the instructions given to Lieutenant Kotzebue, it will be observed that several points in them were not executed. In general those who are commissioned to draw up instructions for a voyage of discovery, provide for much more employment than is necessary, because they are well aware, that all cannot be performed, and it cannot be foreseen what part of the instructions must remain unexecuted. This has also been the case with Lieutenant Kotzebue. But what those who planned the voyage, and still more he who commanded it, regrets, is, that the examination of the interior of America, to the north and east of Beering's Straits was necessarily abandoned, for very cogent reasons, which are stated in the account of the voyage. Such an examination, if it can in fact be made in those icy regions, cannot fail to throw a new light on the internal situation of the country, and on its inhabitants; perhaps, too, it would lead to the wished-for final solution of the problem, of the discovery of a communication between the two oceans. The object of Lieutenant Kotzebue has failed, it is true, in this respect; but from the contents of the following pages the reader will be convinced, that the voyage has been as productive of advantages to navigation, natural history, and natural philosophy, as the means employed would permit, and consequently that the highly laudable object of the author of the voyage is fully accom-

plished. . If this truly patriotic man were not otherwise known than by the princely enterprise, the history of which is here to be related, he would even by this alone be entitled to the regard of posterity, with as much right as his father, who has obtained, as a general, immortal honour in the military history of Russia. *

It might perhaps not be beside the purpose to prefix to the account of Lieutenant Kotzebue's voyage the View which, as mentioned in the beginning of the Introduction, I have drawn up of all the voyages towards the north pole, undertaken solely with a view to the discovery of a shorter way to the Chinese and Indian seas. I have judged it best to make but short mention of most of these voyages; but, in the three centuries during which this object has been pursued, so many voyages have been undertaken for the purpose, by English, Portuguese, Spaniards, and Dutch, and some of them are so peculiarly interesting to Russia, that, in spite of all my endeavours at brevity, this View has taken up more space than I thought I could allow it. The history of the voyages towards the north pole makes a distinct branch of the history of navigation and discovery in the north, upon which the elder

* "Whose liberal and patriotic spirit is worthy of the highest admiration," says a celebrated English writer, speaking of the manifold efforts of Count Romanzoff to extend our knowledge of the north polar regions.

Forster has given us an excellent work. Without exclusively following him, I have scarcely been able to make more than a mere extract from these voyages, and must be satisfied with having called the attention of the reader to them. I must also mention here, that the Introduction which I had drawn up to this View of the Voyages towards the North Pole, and which contained, in a few words, the causes which led to these undertakings, and some remarks on the state of navigation and commerce during the hundred years immediately preceding that period, did not satisfy me at the time. I had commenced with the age of the Infant Don Henry of Portugal, and passed over in silence the earlier history of voyages and discoveries. Yet, in my opinion, a short review of those times ought not to be wanting. This vacuum was filled up by my very worthy friend M. Lehrberg, member of our Academy of Sciences, a man profoundly versed in the early history and geography of the north, who, unfortunately for science, has been snatched from us by a premature death. *

* I have just received Barrow's History of Voyages, which was published last year. Barrow's work is, of course, infinitely more complete than mine, not only with respect to the style, and because what I give is but a short view, Barrow's, on the contrary, a complete history of those voyages, but also, because he had at his command the ample collections of voyages published in England, and, as secretary to the Admiralty, all the MS. journals, whereas I was confined to the limited stores of my own library. (Note in 1819.)

Before I conclude, I may be allowed to express a wish, which, in me at least, will be found excusable* ; setting aside the predilection for voyages of discovery which is so natural in me, it may be safely affirmed that the bounds of human knowledge are more effectually extended by them than by other enterprizes which have science for their object. When it is considered what the sciences have gained by the voyages of Cook and his successors, my assertion will not be thought exaggerated. Russia, too, has begun to cultivate this productive field, but only under the reign of Alexander. It was at the very commencement of his auspicious and glorious reign, that the Russians opened the way to distant seas, which they had never before navigated, and so performed their first voyage round the world. † Since that time

* What I here say of a new voyage of discovery is so far useless, as, since I wrote this, (Nov. 1818,) such a one has, in fact, been undertaken by us; but as we have no further account of this voyage, than that two ships are gone towards the north pole, and two towards the south pole, what I have here said of such a scientific voyage may still be not misplaced; and the less so, as the main object of the expedition in question may, perhaps, make it impossible for the commander to pay attention to all that must still be done, to complete the geography of the South Sea, and of the northern coasts of that ocean, of which I have here given a slight sketch. (Note in 1819.)

† It has lately been attempted to deny to the expedition of the *Nadeshda* and the *Newa*, the honour of having been the first Russian voyage round the world; and this because the ships were not built in Russia, and because a commercial company obtained permission to take part in it. I think it scarcely necessary to refute so strange an assertion,

many similar voyages have been successfully accomplished, and though their object was chiefly mercantile, yet none of them has been wholly unproductive in a scientific point of view. A voyage of discovery, however, on a grand scale, exclusively dedicated to the extension of our knowledge of natural history, physics, and geography, is still a desideratum among us; and what moment could be more favourable than the present? At a time when, thanks to the generous sentiments of Alexander, Russia will enjoy the blessings of a durable peace, how could our sailors be better employed than in the prosecution of enterprizes, which must be as honourable to the navy as advantageous to the sciences? We have no want of excellent officers to conduct such enterprizes; only two of my companions on board the *Nadeshda*, besides the commander of the *Rurick*, are now employed, though they possess all the requisite qualifications to be at the head of a voyage of discovery; and when such undertakings are spoken of, who does not think on the enterprising officer, whose first voyage to the South Sea, and the remarkable occurrences in it, have become so interesting to all well-informed persons in Europe, and whose return from a second voyage to the same seas is now so ardently expected? * It is well known that our sailors are the best in the world when they have an opportunity

* Captain Golownin returned from his voyage in Sept. 1819.

to devote themselves exclusively to their profession ; they are nowise inferior in courage, perseverance, and skill, even to the hardy Britons, and in docility and attachment to their officers they far surpass them. I speak from experience. Highly as I admire the courage and the skill of the English seamen, with which I have become acquainted during six years' service, I would still, for a dangerous enterprize, choose only Russian sailors.

No objection can well be made against the utility of a voyage of discovery to the South Sea, as far as the sciences connected with natural history are concerned. Every voyage to distant countries offers a rich harvest of new facts. If this assertion required proof, we need only quote the names of the most celebrated modern travellers, each of whom has contributed to enrich science. Who is unacquainted with the colossal labours of a Humboldt? But I cannot refrain from mentioning another instance. The unfortunate expedition of Captain Tuckey to explore the river Congo, lasted but a few months, and yet it gave occasion to one of the most valuable works on natural history that have appeared in our times. With respect to the geographical part of a voyage of discovery, many persons may be of opinion, that but a poor harvest can be expected. This is partly true ; important discoveries cannot now be made ; here and there an island, or group of islands, which is unexpect-

edly met with, is all that the most fortunate discoverer can now hope for ; yet still a new voyage to the South Sea appears to me to be important ; there are still so many deficiencies to fill up, so many errors to correct. Such a voyage must be considered as the concluding expedition to the South Sea, for the revision of all preceding discoveries. It therefore cannot fail to be important to geography and nautical science : and either the English or the French will certainly soon undertake such a voyage. The coasts of all the continents bordering on that sea, and of all the large islands in it, having been surveyed and laid down with admirable accuracy, nothing now remains but to go into the details, that the South Sea may be as accurately known, as the other oceans nearer to us, and in fact there is employment for several years. Thus, for instance, with the exception of some islands accidentally discovered here and there, we know nothing at all of the great Archipelago of the Caroline islands : the Archipelago of Solomon's islands is in like manner, but very imperfectly explored, notwithstanding the valuable labours of D'Entre Casteaux : this is also the case with Louisiade, respecting which we are still ignorant whether it is joined to New Guinea or not. Through Lieutenant Kotzebue, we have become acquainted with some groups only of an archipelago, which occupies an extent of twelve degrees of latitude, and from the knowledge we have acquired through

him, of the northern inhabitants of those islands, they are highly deserving of a farther acquaintance, since a degree of civilization is found among them which would be in vain sought even in the natives of the Society or Friendly islands. The accurate investigation of this great archipelago alone, is the work of a year at least: but besides the great operations in the South Sea, which we have just enumerated, there are various other parts to be examined that are important, to navigation, at least, as the reader may convince himself by referring to my hydrographical contributions, lately published. There is also no want of investigations which concern Russia more nearly than other nations, who have a right to ask from Russia a more accurate knowledge of these parts. Among these, is first, the examination of the basin formed by the coast of Tartary, and that of Saghalien, and which I have called the "Liman" of the Amur; then the survey of the coast of Tartary from the mouth of the Amur, to Udskey Ostrog; but especially the investigation of the Shantar islands, of which we know little more than their number, and that perhaps incorrectly. In the same manner we have but a dubious knowledge of the northern coast of the sea of Okhotsk, from Okhotsk to the eastward, with its bays such as Ishiginsk, Penshinsk and Taunsk: in the new Russian charts, the first are placed 1° more to the south, without however being certain that the last determination is right; even

the west coast of Kamtschatka requires a new survey, or at least the astronomical determination of some points : our knowledge of the east coast of Kamtschatka is still more imperfect ; from Cape Shipunskoy to Beering's Straits, excepting some capes seen by Captain Clerke, we know neither the latitude nor the longitude of any point on the whole coast. As little are we able to state accurately the extent and situation of the bays of Olu-tora or Anadyr. We know, indeed, the grand outlines of the coast of Kamtschatka, but the details are wholly unknown to us, except from the bay of Awatska, to the south point of the peninsula ; and as we are acquainted with the smallest inlet of the coasts of America, inhabited by savages, of New Holland, New Zealand, and New Caledonia, it seems to be a duty to obtain an equally accurate knowledge of the coasts of north-eastern Asia, inhabited by Russian subjects. We have further no survey, that can be depended upon, of the Aleutian islands : the position of only a few islands of this extensive archipelago is accurately known. An exact acquaintance with these islands, such as we have obtained of the Kurile isles, by the operations of the *Nadeshda* and the *Diana*, would require alone the labours of a whole summer : and then, would it not be desirable to make another attempt to penetrate further into Beering's Straits than has yet been done, in order to double Cook's Icy Cape? and to try whether the projected exami-

ation of the interior of America is to be effected to the east of Beering's Straits.

Doubts have been entertained of the passage of the Cossack Deschneff, through Beering's Straits, certainly without reason, as may be easily proved, from the existing accounts of Deschneff's voyage: yet it would be desirable to proceed from Beering's Straits, to look for Cape Shalatzkoy, which was doubled by Deschneff, but respecting the situation of which we are wholly in the dark. Captain Cook reached, without difficulty, Cape North, though it is nearly 10° to the west of Beering's Straits; and it is a question whether Cape Shalatzkoy is more than 10° to the west of Cape North. It was not at all Captain Cook's design to examine the coast of Asia; an accident brought him thither: the ice preventing him from getting so near to the coast of America as he wished, he steered more to the west, in hopes of doubling the ice, and then again steering his course to the east; and thus he proceeded so far to the west, that he got in sight of the coast of Asia. The nearness of Cape North, which, according to his observations, lies in $68^{\circ} 56'$ north latitude, excited in him a wish to sail round it, in order to cast a view on the more remote coast lying to the east: (*q. west?*) but a strong contrary wind obliged him to give up his plan. Had this not happened, we should perhaps not be now disputing about the situation of the north-east point of Asia. Cook, however, observed no far-

projecting point to the west of Cape North, and he concluded that, at the beginning, at least, the direction of the coast must be quite westerly : it may therefore be inferred, with great probability, that the north-east point of Asia, whether it be called Cape Shalatzkoy, or Shalaginskoy, does not lie in more than the 70th degree of latitude, though in some maps it is laid down two degrees farther north. Can the doubling of a cape, which was effected 170 years ago by a Cossack in a small boat, be thought insuperable by navigators in our times? Certainly not. It is, however, strange that the attempt has never been made. Something quite similar has happened to the English. They considered the sailing round Baffin's Bay as impossible ; doubts were thrown on the credibility of Baffin, whose account very precisely points out the boundaries of the bay ; even ingenious geographers effaced the bay on their charts, without a single attempt having been made since its discovery, *i. e.* 200 years ago, to ascertain the correctness of Baffin's assertions ; till, at length, on the search for a north-west passage, they were examined in the minutest manner, and found exactly as Baffin had described them, with the exception of the longitudes, which could not be accurately determined 200 years ago.

Now, that I am speaking of the labours which we have still to perform, before we obtain a proper knowledge of the coasts of Asia, *i. e.* such as is

commensurate with the present state of the sciences, I cannot help repeating, that on the whole coast of Siberia, from Waygatz' Straits to Beering's Straits, that is, a tract of 130 degrees of longitude, we have not a single point, the longitude and latitude of which is determined by astronomical observations, and that we absolutely do not know how far the northern point of Asia extends, and consequently cannot accurately state the superficial extent of Siberia. I have shown, in another place (Naval Chronicle, October 1814,) what great differences in the latitude are to be found in the newest charts; at which indeed we cannot wonder, since none can be shown to be in the wrong; and how important it therefore is to determine, by astronomical observations, the geographical positions of the principal points of the coast, and the most remarkable capes; but especially the mouths of the rivers flowing into the icy sea.* We are equally deficient in accurate knowledge of the

* The public will be happy to learn, that this wish, publicly expressed six years ago, is at length in the way of being fulfilled. In the month of March this year (1820), Baron Wrangel and M. Von Anjon, lieutenants of the fleet, set out from St. Petersburg; the first to the mouth of the river Kolyma, to determine astronomically the coast to the east and west of that river, and to make an attempt to reach the north-east point of Asia, and, if possible, to double it. The destination of Lieut. Anjon is the mouth of the river Jana; to proceed from thence to survey, in the most accurate manner, the islands to the north of that river, to which group New Siberia, as it is called, belongs.

coasts westward of Waygatz' Straits, to the White Sea, and from the North Cape to that sea.

I think I have now sufficiently proved that a new voyage of discovery to the South Sea promises an ample harvest. What an instructive school, too, would it be for young people who have already dedicated themselves to the sciences, to make such a voyage under the guidance of men of reputation! Almost every country takes advantage of the present happy season of peace, and sends men of learning to remote countries. The English have sent out this year (1818,) two expeditions, each consisting of two ships, in search of a northern passage, which have lately returned: one to survey the coasts of the Mediterranean; three expeditions are sent to explore the interior of Africa: the chief object of which, however, is to find the end of the Niger, which is still veiled in obscurity; notwithstanding the failure of so many attempts to solve this problem, though it is important only in a geographical point of view, this does not deter them from making fresh trials. An expedition is engaged in completing the labours of Flinders, and finishing the survey of the north-west coast of New Holland. In the Chinese seas two ships have been constantly employed for these ten years past, at the expence of the East India Company, in improving the hydrography of that, and the adjacent seas; and not a year passes without new discoveries of importance to the navigation of

those seas. The French also have sent a ship to the South Sea, and an expedition to the interior of Africa; and if no scientific enterprizes are now undertaken by Spain, it is probably owing more to the present disturbed political state of that kingdom, than to any want of zeal and knowledge in a nation which may be but too proud of such seamen as Malespina, Espinosa, Bauza, Tofino, and Cisneros Ciscar. It is not impossible but the question may be asked, what advantage can arise to Russia from such enquiries? whether it is not indifferent to know if Cape Shalutzkoy lies in latitude 70° or 72° ? or, whether it is possible to double Icy Cape or not? There are persons who ridicule the attempt to find a northern passage, and consider it as evidently absurd to think of examining into the errors committed by Mendana, Schouten and Roggewein: in short, who think every thing useless which does not immediately promote an increase of power, and tend to enlarge the political influence of their country. It would not be easy to make a better and more suitable answer to these objections, than by repeating what Barrow has said on occasion of the English North Pole expedition*, since even in England there were persons, who, partly from ignorance, partly from prejudice, or even from ill will towards the persons who had the honour of proposing such an enterprize, expressed their dissatisfac-

* Quarterly Review, vol. xviii. p. 457.

tion at the expedition, in no very liberal manner; and had even made attempts, though in vain, to induce the sailors who had volunteered for the voyage, to desist from their purpose.

“ With equal contempt we notice insinuations of the inutility of the measure. A philosopher should despise the narrow-minded notions entertained by those who, viewing the subject as merely one of profit and loss, are unable to form any other notion of its inutility; and just have sagacity enough to discover, that, if a passage should be found one year, it may happen to be closed the next. We can well imagine that many such sinister bodings were heard when Bartholomew Diaz returned without doubling the Cape of Good Hope, and when Magelhaens had effected a southern passage into the Pacific. Briefly, then, we shall not degrade the noblest and most disinterested enterprize that was undertaken in ancient and modern times, by condescending to justify it to the selfish and calculating horde, whose cavils we have recorded; but to the honourable and liberal mind that thinks the pursuit of science worthy of a great, a prosperous, and an enlightened nation like England, we would say that the point in question involves an infinity of results of the utmost importance to the perfection of science; that the benefits of science are not to be calculated, and that no guess can be formed to what extent they may be carried. Who could have imagined that

the polarity of the magnet, which lay hid for ages after its attractive virtue was known, would lead to a discovery of the New World? And who can tell what further advantage mankind may derive from the magnetical influence so very remarkable, yet so very little understood, or pretend to limit the discoveries to which electricity and galvanism may yet open the way? Had any one, thirty years ago, been bold enough to assert that he would light up our shops and houses, and theatres and streets, with a more brilliant fire than yet had been produced; that this flame should be extracted from common fuel, and carried for miles, if necessary, underground in iron pipes, he would at once have been set down as little better than a madman or an impostor. Both expeditions may fail in the main object of the arduous enterprize; but they can scarcely fail in being the means of extending the sphere of human knowledge; and if they bring back an accession of it, they cannot be said to have been sent out in vain."

Note in 1820. — The accounts published of the results of these expeditions, give the most satisfactory proof that this object has been accomplished, though the northern passage was not found.

KRUSENSTERN.

INSTRUCTIONS

FOR THE ASTRONOMICAL AND PHYSICAL OPERATIONS ON THE VOYAGE TO THE NORTH POLE, UNDER THE COMMAND OF M. VON KOTZEBUE.

Considering the rare occurrence of scientific voyages to distant climates, it is of great importance, especially in expeditions, which, by the spirit of their equipment, and of their conductor, promise unusual acquisitions to geography and the natural sciences in general, that nothing relative to theory be neglected, which may facilitate the labours of the navigator, who is occupied with other cares, and hindered by various difficulties, and may direct his attention to the most useful operations. In itself, indeed, it is difficult to give beforehand any complete indication of the infinitude of diversified forms, under which Nature develops her powers in the production of the actual phenomena; and the instructions for the physical operations of the navigator might be much more conveniently comprised in the simple and never enough to be recommended rule, "attentively to observe, and circumstantially to describe, every unusual appearance," and especially *to measure every thing mensurable*. Notwithstanding this, an imperfect attempt to class the labours of the navigator in this respect, and to guide his efforts to the most important objects, cannot be without advantage to the success of his endeavours.

The labours of the scientific navigator for the promotion of physics in general, come under two principal divisions: "Astronomical Observations," and "Physical Experiments and Remarks." Not only are such expeditions distinguished from ordinary voyages by a more complete and more careful astronomical determination of the daily latitude and longitude of the ship, according to the best methods; but it is in such voyages alone that those observations are possible, which may be of advantage to the sciences. Among the first are comprehended, not only those observations by which the daily place of the ship, or the position of the coasts is determined, but such, also, as, though they properly belong to physics, yet have a particular application in astronomy: the latter, on the contrary, relate more to the natural history of our globe itself, and to the phenomena to be observed upon its surface.

ASTRONOMICAL OBSERVATIONS.

I. DETERMINATION OF THE LATITUDE AND LONGITUDE.

Sufficient instructions are given in the general elementary treatises on navigation, respecting the determination of these essential parts of navigation by the ship's reckoning. We merely observe, that such voyages would be precisely the best calculated to make a trial of new proposals, to supply the place of the common logs. The simplicity of

this universally employed instrument will long secure it a place among the first instruments of navigators ; and the defects it may have, cannot be much lessened, but by more frequently heaving, by oftener measuring the log-line, (duly stretching it), and by the use of sand-glasses going longer than the usual half-minute glasses. The glasses themselves must be compared occasionally with a good chronometer, and particularly when they are not such as, by being hermetically sealed, secure the sand from the influence of moisture. The various methods of deducing the latitude from astronomical observations are likewise known. On a voyage to the north pole, observations on the large fixed stars, and on the planets during the long twilight, might be particularly advisable. The determination of the latitude by lunar altitudes, may, on account of the uncertainty of the time of the greatest altitude, be sometimes wrong by some minutes, even with a good observation, when the moon is near the equator, and her motion in declination consequently considerable. It need not be mentioned, that besides the observation at noon, there cannot be too many observations of the latitude, as well for the purpose of determining the currents, as for laying down the coast. On shore it is advisable to take the solar altitudes, as well for determining the time as for the latitude, with the artificial horizon, complete directions for which are found in many works, for instance in "Bohnen-

berger's Introduction to the Geographical Determination of Places." The determination of the longitude is made partly by chronometers, and partly by lunar distances; with respect to the first, it is well known that the best instruments of this kind, when they are exposed to a considerable and continued change of temperature, gradually alter their rate of going, and it seems too as if the effects of the cold or heat upon the watches do not become observable, till after some days have elapsed, which is probably to be ascribed to a gradual coagulation, or an increased fluidity of the very small portion of oil which these instruments still require, even when the friction is diminished by means of diamonds. When there are two or more good time-keepers, a daily comparison of them is very advisable, partly to determine the longitude by each of them, and particularly because, from the change of their daily difference, the time may be discovered at which they began to alter their rate of going. By degrees one is able to fix in each of them the direction, and in some measure the amount, of the change of their daily going, for a certain increase or decrease of the temperature of the air; and, hence, to deduce the most probable correction of a longitude found. Lunar distances, however, are still the best means of determining the longitude; only they must be observed in considerable numbers, and, if possible, with instruments that magnify power-

fully. In this difficult observation, time must be taken to give the body as firm a position as possible. It is generally advised, in taking the distances from the sun, to look directly at the moon, and to let the sun be reflected ; but, with a good sextant, provided with proper telescopes, it is better not to make any particular rule, but only to consult the convenient position of the body, and never to neglect the indication of the index correction, on the sextant : the observer must take particular care to bring the edges of the sun and moon in contact, without allowing either an interval or a coincidence ; for which purpose the powerful magnifiers are very serviceable. It is a considerable aid to the observer, if the solar and lunar altitudes are measured at the same time with the distances. For making the calculations, Mendoza's tables are to be preferred to all other aids and methods.

Next to the determination of the latitude and longitude, the variation of the magnetic needle calls for the attention of the navigator. Without going into the methods of observing and calculating the azimuth, we merely observe that the local influence of the larger or smaller masses of iron on board the ship cannot be avoided, but by the great number of observations in different parts of the ship ; that the point of the pin which carries the needle, must be now and then examined and sharpened ; and sometimes, to increase the magnetism of the needle, it must be rubbed on a powerful

artificial magnet from the middle to the end, so that the south end of the magnet be applied to the north half of the needle, and the contrary. Flat, broad needles seem to be preferable to the thin and light ones; and hard brass caps, to those of agate, which soon destroy the point of the pin that bears them.

2. SURVEYING AND PLANNING THE COASTS.

Without entering upon full instructions on this important subject, we shall only point out, in general, that mode of proceeding which we have found to be the shortest and most profitable.

The whole operation of surveying coasts depends on the determination of the distances of the principal points of a coast, such as the capes, tops of mountains, and the extreme ends of the land seen. In general, observers content themselves with determining the direction of such points by an approximation to the true bearing by the compass, and noting their distances by the eye; but this method will always be rather uncertain, on account of the unequal transparency of the air. Sometimes, however, it is the only means; and it is not to be denied, that, by practice, a tolerable degree of readiness in such estimations may be obtained, especially for objects not far off; but the method of triangulation always deserves the preference, when it can be employed. The ship's way along the coast serves as the basis of the triangle.

First, then, if possible, let the ship's place, for a fixed time, be determined by astronomical observations. Then sketch immediately, and rapidly, as correct a profile as possible of the coast, (properly speaking, it is better to make this drawing a little before, that it may be ready at the moment of the astronomical determination of the place,) and note down upon it the more important and elevated points, with the letters of the alphabet. Then, with one or two good compasses, determine, by repeated observation, the precise bearing of some remarkable object, which we will call *a*, at the left end of the drawing, and in the same manner, that of the extreme object on the right. With the octant, or a box sextant, measure quickly, one after the other, the angles, *ab*, *ac*, *ad*, &c., which the next marked objects, *b*, *c*, *d*, and so on, to the right, make with the point *a*, which an assistant immediately writes down. (N. B. It is more convenient, and quite sufficient, to make these observations with the naked eye, and to read off the angles accurately within a few minutes. The bearing of the compass must be divided into degrees and parts.) When this is done, the bearing of the first and last points on the profile of the coast are again taken with the compass. The mean of this and the first determination gives the position of these for the time of measuring the angles. All these operations must, if possible, be completed within a quarter of an hour.

After some time is elapsed, for instance, one or two hours, according to the quickness of the ship's going, and the apparent change of place of the objects, the same operation is repeated in all its parts; in which, however, if the appearance of the coast has not much changed, the same profile may be used. The rapidity with which a number of points may be determined, by measuring the angles with a sextant, and the accuracy with which the situation of the end points, and, consequently, of those lying between, may be determined by repeated observations, constitute the essential advantage of this mode of proceeding, which the following remarks may serve to make more complete.

1. As, especially near the coasts, the currents are often considerable, it is of the greatest importance to determine the ship's place as far as possible, by astronomical observations, which, when the weather is clear, may be done for the longitude at least, by repeated solar altitudes with help of the chronometer. Sometimes, too, the latitude can be determined for some other time, besides noon, either by Douwe's well-known method, for which Mendoza's tables afford the best calculations, or by a culmination of the moon, or in the evening and morning twilight with stars; this will likewise afford a means of correcting the ship's reckoning.

2. Take careful note of the changes in the external appearance of the coasts, and the relative alterations in the positions of the more remarkable

objects. Above all, do not fail to seize the moment when a new cape projects from behind another, or retires behind another point of land. While this is doing, you must endeavour, by setting the compass as accurately as possible, to determine the direction of both capes, not forgetting to note also the time of this observation. The results thus obtained have the great advantage, that they are independent of all errors in the determination of the ship's place.

3. It is of equal importance to observe the moment, when one of the objects to be determined appears in one of the four cardinal points, — east or west, south or north. In the first case, if a determination of the latitude can be combined with this observation, the latitude of that point, at least, is secured. Or, if an object passes through the true north or south point, you must not neglect, if the weather is clear, to take solar altitudes to determine the longitude by the chronometer. Neither must it be forgotten, that, in fixing the cardinal points, regard must be had to the variation of the magnetic needle; and it is advisable to note the time by the time-keeper.

4. It must not be neglected, on the succeeding stations, to measure angles by objects, the position of which has been previously determined by the intersection of the angles. It is not only useful to confirm, or to correct the situation of a point by a new line of intersection; but such angles,

from objects already determined, perform the important service, that the place of the ship itself may, on a subsequent measurement of angles, be deduced from them with great accuracy. This advantage is of peculiar value, on occasions when, after irregularly tacking or lying-to during the night, it is required to renew the connection with the points of the day before, and to determine the place of the ship, which is often carried away by currents.

The first thing to be done in entering the data thus obtained in a chart, is the division of the geographical net to which they are to be transferred: for this purpose, it is best, in all cases, to use Mercator's projection, in which both the meridians and parallels of latitude are parallel straight lines, intersecting each other at right angles. The scale on which the chart is to be made is arbitrary, and is partly determined by the accuracy of the measurements, and the number of details to be inserted; but, in most cases, it is to be taken so that the space of one minute of a degree may be so large, as to be very perceptible on the paper, so that a degree of longitude may be half a foot or more; an extent which must be increased in the planning of creeks, harbours &c.; but in copying, the chart may be easily reduced to a smaller scale. First, therefore, let a scale of a degree of longitude be made, and, by this, mark the division of the degrees of longitude on the horizontal edge of the

plan. The extension necessary for any degree of latitude, is found, in the tables of increasing latitudes, (Mendoza's tables, p. 651. *et seq.* Meridional Parts,) expressed in minutes of longitude, whence the magnitudes of the single degrees, or of half and quarter degrees, are obtained by an easy subtraction.

The degrees of latitude having been inserted and divided, the first thing is, to mark upon the chart the complete course of the ship, laying down, as fundamental points, those which have been astronomically determined, and then marking the ship's way between them, according to the log-book. At every corner point of this broken line, the time is to be noted at which the ship was in that station.

You then set out (from the first station) the rhumb, given in degrees, of the first object to the left, and from this line, by means of a good protractor, all the other angles that have been measured. To every line of sight the letters marked in the sketch of the coast are annexed. Then you proceed to the second station, and lay down from that, in the same manner, the angles measured. The intersection of the corresponding lines of sight gives the point where each object is. The angles at the third station give partly new determinations, partly confirmations and corrections of the points fixed by the two preceding measurements. Meantime, the remarks are inserted where

an object appeared in the magnetical or in the true meridian of the ship, or in the east and west points, which may serve either to determine the point itself, or, if its situation be already made out, to correct the ship's route as laid down. Of the same use are the angles, measured according to known objects; of which there must be, at least, two. To make use of them for determining the place of the ship, draw, on very transparent paper, from a point, the three lines that inclose these angles, and move the paper about upon the plan till the three lines of sight intersect the three points in question at once. The centre of these angles is the ship's place. Instead of two angles, more may be employed with advantage in the same manner. This method is more accurate, in proportion as the objects are correctly determined, from which the angles are measured, and the nearer the angles themselves are to right angles.

After a sufficient number of points is determined in the chart, the sketch of the coast, and the direction and distribution of the mountains are inserted by the eye; in doing which, the profile-drawings, mentioned above, are a great help to the memory, which is confused by the continually new forms of the land. It is also advisable, even before the plan is made, which must often be deferred, on account of the rapid increase of the labours of surveying, to make a slight stereographic sketch of the bendings of the coast, and of the ramifications

of the mountains, in the manner of engineers. Many works that treat on surveying, give sufficient information respecting the representation and characteristic indication of the single parts, as trees, woods, rocks, and the best mode of etching mountains.

To avoid confusion, it is more convenient, in the whole drawing, to pay no regard to the variation of the compass, but to lay down all the rhumbs, according to the uncorrected compass; when the work is finished, the meridians and parallels, beginning at the centre, are turned as much as the angle of the variation at that part amounts to.

The survey of bays, roads, and harbours, differs from the general business of surveying a coast, so far only, that the method of land-surveyors may be more applied, and sometimes a base line be measured on shore, from the ends of which the angles to the most important points are in like manner taken with sextants.

Sometimes, too, the distance of a ship lying at anchor, from an object on shore, may be taken as the basis of the triangles; but in this case attention must be paid to the changes which currents and winds produce in the ship's place.

The above described method of determining the situation of the observer, by two or more angles, taken from objects whose position is determined, may be employed with peculiar advantage, when

it is required to take soundings, or to determine the extent of sand banks that lie below water.

An object that deserves the attention of the navigator, is the measuring of remarkable, and lofty mountains. The knowledge of their elevation is not only important to physical geography, but it may serve future navigators to learn, from the measured angle of elevation of the mountain, their distance from it.

There are two principal methods of determining the heights of mountains; the one by the height of the mercury in the barometer, the other by the trigonometrical calculation of the right-angled triangle, in which the horizontal distance of the observer from the mountain, and the angle of elevation under which it appears to him, are given. The barometrical method, even if we leave out of the account the defects inherent in the instrument itself, and the variable elements of the calculation, is not easily applicable in such voyages, because in unknown, thinly peopled, and mostly savage countries, a path is scarcely to be found upon the plain ground, much less over rocks and forests, on the top of a high mountain, never before visited. Only the trigonometrical method, therefore, is left us, and this in but an imperfect degree. Not only is the horizontal distance but approximately determined, but the angles of elevation also cannot be measured at sea with the utmost precision. Still an approximation to an accurate determination is a

gain to science, which is worth the pains of the navigator. First, therefore, let a chart, on Mercator's projection, of the country surrounding a mountain, be made by the above-mentioned method, accurately determining the various stations in which the angles of elevation are measured. The distance of these stations from the point where the summit of the mountain lies, are measured on the scale of degrees of latitude lying on the side, and the minutes (or Italian miles) found, multiplied by 951^t, b, to reduce them to French toises. The measured angle of elevation, if it was taken on board the ship, is to be corrected for the dip of the horizon, and in all cases deduct the twelfth part of the distance given in minutes of a degree, from the angle of elevation, as the amount of the terrestrial refraction. If, then, the distance is not considerable, and the angle of elevation pretty large, we have $h = D \times \text{tang. } e'; t^+$; where h represents the height of the mountain, D the distance measured, (both in toises,) and e' the angle of elevation, rectified by index correction, the dip of the horizon, and terrestrial refraction. But if the distance of the mountain is considerable, regard must likewise be had to the convexity of the earth, and the formula for the calculation of the elevation will then be $h' = D \times \frac{\sin. (e' + \frac{1}{2} c)}{\cos. (e' + s)}$ where c represents the measured distance of the mountain, in minutes

of a degree and tenth parts. An example will sufficiently explain this :

On the 1st of July, 1805, the height of the Pico, in the island of Matana, was measured off the Kurile islands, in latitude $18^{\circ} 6'$ north, and longitude $206^{\circ} 50'$ west from Greenwich. The angle of elevation, after deducting the index correction, and the dip of the marine horizon, was $3^{\circ} 26'$. The horizontal distance of the ship from the middle of the mountain = e was on the chart that was made = $12'$, 4 minutes. We have then $\frac{1}{12} c = 1.0$ min. and hence $e' = (3^{\circ} 26' - 1' 0) = 3^{\circ} 25'$; $(e' + \frac{1}{12} c) = 3^{\circ} 31', 2$, and $(e' + c) = 3^{\circ} 37', 4$; the distance of the mountain in toises = $951, 6 \times 12$ toises, 4 min. = 11800 toises = D . The calculation is, therefore, according to the first formula,

log. D	= 4,07188
log. $\text{tg } e'$	= 8,77600
	<hr style="width: 100px; margin: 0 auto;"/>
log. h	= 2,84788
therefore h	= 704,5 toises.

According to the second formula, we have,

log. D	= 4,07188
log. $\sin. (e + \frac{1}{12} c)$	= 8,78815
	<hr style="width: 100px; margin: 0 auto;"/>
log. $\cos. (e + c)$	= 9,99913
	<hr style="width: 100px; margin: 0 auto;"/>
log. h'	= 2,86090
therefore h	= 725,9 or 726 toises ;

so that the neglecting of the convexity of the earth has here made the height too small by twenty-two toises.

II. ASTRONOMICAL OBSERVATIONS

TO DETERMINE THE HORIZONTAL REFRACTION.

The inquiries into refraction are, it is true, properly of such a nature, that they appear to be more accurate and more delicate observations than seamen are generally supposed to make. Two advantages, however, concur here, which may render the endeavours of the seaman useful to this important element of practical astronomy. On the one hand the effects of refraction are precisely the strongest in those observations, for which the seaman has the best opportunity, and requires such simple arrangements; and, on the other hand, his chief instrument, the reflecting sextant, both by the excellence of the theoretical contrivance, and the perfection in which it is now manufactured by good artists, is peculiarly adapted to measure even small magnitudes with sufficient accuracy, as is proved by the lunar distances and the measurement of the sun's diameter. The increase of refraction by cold affords an additional motive for examining its effects on a voyage to the north pole.

The chief observations which the navigator may make on the effects of refraction, are enumerated in the following instructions:

Let him accurately observe the true time at which the upper and lower limb of the sun, at his rising or setting, touch and quit the horizon, and

compare it with that which may be calculated from the latitude and longitude of the ship at the time, aided by the determination of the time which has resulted from solar altitudes of above ten degrees. He must likewise not neglect to notice the time by the chronometer when the sun has reached the altitudes of $0^{\circ} 30'$, 1° , $1\frac{1}{2}^{\circ}$, 2° , in which, as in greater solar altitudes, he must not be satisfied with a single observation, but repeat the determination of the altitudes every 5 or $2\frac{1}{2}$ minutes the sight vanes, being previously adjusted accordingly. The observation is susceptible of still greater accuracy if the observer is on shore, and can determine the true time by the corresponding altitudes.

When the sun is near the horizon, let his horizontal and vertical diameter be repeatedly measured: at every measurement note the time by the time-keeper, and let an assistant take, at the same time, the sun's altitude. These observations cannot be made on the moon, except when it is at the full.

All these observations must be made with the best sextants, and with good chronometers, and the angles read off with all possible exactness: in fixing the time, even parts of seconds are to be taken into the account. It is also essential, accurately to observe the height of the barometer and of a thermometer freely suspended.

The observation of the rising and setting of the sun and moon may serve for the examination of a

problem which occurs in nautical astronomy, but is seldom applied. “From the time which the diameter of the sun takes to ascend or descend the horizon, to determine the latitude of the ship.” The slow motion in ascension of the constellations in high latitudes appears to make this method applicable, at the most, for those regions.

Lastly, let attention be paid to any instances which may happen to occur of an irregular refraction; for instance, that of a double horizon, by endeavouring to determine the distance between the false image and the true line of the horizon, which are often visible at the same time, one above the other. These phenomena are usually attended with an unequal temperature of the air at various altitudes, and on the surface of the water, so that it must not be forgotten to examine the temperature of the air near the water, and at a greater elevation, on the top-mast for instance, and also that of the water. Similar phenomena, for instance, what is called the Fata Morgana, (French, *Mirage*,) an unusual elevation of sea coasts that are remote, or even below the horizon, likewise deserve the attention of the navigator, who has to take drawings of them, and, if possible, to determine them more precisely by measurements.

III. PHYSICAL OBSERVATIONS.

One of the most interesting physical inquiries relates to an object, which is not only important with a view to the knowledge of our globe, but the more accurate investigation of which may, under certain circumstances, become useful to navigation. This is the remarkable property of the magnetic needle, in the northern half of our globe, to incline its northern end, and, in the southern hemisphere, its southern end. As this inclination increases with the distance from the equator, endeavours have long since been made to measure it in different parts of the earth by means of an instrument called the dipping needle. Ill calculated as the mobility of a ship appears to be for such observations, yet, on the other hand, the advantage possessed by the navigator of visiting the remotest parts of the earth is so great, in respect to this subject, that even imperfect observations are a gain to science. The unsteadiness of the ship is, however, not the only obstacle to obtaining a true knowledge of the dip. A much more important obstacle is the difficulty of making dipping-needles, which, in a not magnetic state, shall remain in exact equilibrium, however turned, be moved by no power but that of magnetism, and be sensible to the smallest gradations of that power. The latter has been attempted to be effected by making

the axis of the needle turn on friction-wheels; a contrivance which, however, has been rejected, as useless, by the latest observers, Humboldt, Biot, and Tobias Mayer, and exchanged for very fine axes running in agate holes. In order to remove the influence of an imperfect balancing of the needles, Cavendish recommended to furnish them with moveable weights, by the due distance of which from the centre, the needle, merely by the effect of gravity, would repose pretty nearly in the inclination which would be produced by the magnetic power in that latitude, that magnetism might the more easily conquer the other obstacles. But not to mention that, by such a contrivance, we are exposed to the suspicion of having ourselves produced the phenomenon which we mean to observe, the balancing of those weights at every considerable change of latitude is no business for the seaman; and, in particular, the careless manner in which those weights are fastened, and exposed to every accidental disturbance, is objectionable. Under these circumstances, there is no general and certain method of finding the true dip of the magnetic needle, but to turn the needle round, and then, by the help of a strong magnet, to reverse its poles, and so to observe the dip in four different positions. The first two observations give the place of the point of gravity of the needle in the vertical direction (in the breadth of the needle); the two last, its distance from the centre

in the horizontal direction (according to the length of the needle). If the artist has so accurately balanced the needle that the centre of gravity is in every direction but very little distant from the centre, which is found by the near coincidence of the four observations, it is sufficient, especially when the dip is small, to take the mean as the true dip. But if there are considerable differences, it is necessary to make a particular allowance for the false position of the point of gravity. The mode of proceeding is as follows :

1. On days when the motion of the ship is small, place the dipping needle on a separate stand upon the deck, as far as possible from the considerable masses of iron on board; (for observations on board ship, it is not a bad way to suspend the instrument in the manner of a compass, between moveable rings;) then turn the instrument, according to the compass, into the direction of the magnetic meridian; put the needle in, and observe the different degrees to which the extremes of its vibrations fall. The mean of these vibrations, if they are not altered during the observation by an accidental motion of the vessel affecting them, gives the first observation, in which we suppose the division to turn to the east: we will call it A. Now, turn the instrument round its vertical axis 180 degrees, so that the circle of division may point to the west; the needle will then turn, and

its lower side come to lie uppermost : the mean of its vibrations in this situation gives the second observation, which we will call a.

2. After this, take out the needle, lay it on a board, in which it is exactly fitted in a groove, which shall protect the axis of the needle. Place the north pole of a strong magnet on the middle of the needle, and, with a pretty strong pressure, pass it in a straight direction over the north end of the needle : (not to get out of the straight direction, it is advisable to fasten a ruler on the board by the side of the needle :) this is repeated several times, care being taken never to rub backwards from the ends of the needle to the centre, or to slip beyond the axis to the other half of the needle. In the same manner, rub with the south pole of the magnet, the south end of the needle ; the poles will then be reversed. Whether it is sufficiently magnetised appears, if, when it is laid in the instrument, it assumes an inclination, which cannot be increased by subsequent repeated rubbing.

3. Repeat, with the needle magnetised to saturation, and with the poles reversed, the experiment described in N° 1, turning the graduated circle of the instrument once to the east, and the other time to the west. Let the mean of the one observation be called B, and of the other, b ; then, if the four observations differ from each other only a few degrees, the true dip is $= I = A + a$

+ B + b; but if they differ considerably, we must seek the true dip by the following formula.*

Let $\text{cotg. } A + \text{cotg. } a = M$; $\text{cotg. } A - \text{cotg. } a = m$

Then let $\text{cotg. } B + \text{cotg. } b = N$; $\text{cotg. } B - \text{cotg. } b = n$; then

$$2 \text{ cotg. } I = \frac{M \cdot n}{m + n} + \frac{N \cdot m}{m + n}$$

It is taken for granted that, by the dip of the needle is understood its distance from the nearest horizontal point, so that the dip is = 0° when the needle lies horizontally, and, on the other hand, has attained the maximum, or 90° , when it stands vertically.

EXAMPLE.

In the harbour of St. Peter and St. Paul, in Kamtschatka, the following observations were made with a dipping-needle, from which the balance balls, (applied on the plan of Cavendish,) were taken off.

The division turned towards the east = $46^\circ 20'$
= A.

The division turned towards the west = $82^\circ 30'$
= a.

After the poles of the magnetic needle were turned, it gave

The division turned towards the east = $66^\circ 28'$
= B.

* By Professor Tobias Mayer, in the Comment. Societatis Reg. Scient. Goett. Math. tom. iii.

Dipping-needle's observations
 made in (Sept.) 1804

The division turned towards the west = $79^{\circ} 10'$
= b.

We have, therefore,

$\text{cotg. A} = 0,9545$ $\text{cotg. a} = 0,5269$ <hr style="width: 100%;"/> $M = 1,4814$ $m = 0,4276$ $\log. M = 0,17068$ $\log. m = 9,38757$ <hr style="width: 100%;"/> $9,55825$ $\log. (m + n) = 9,82718$ <hr style="width: 100%;"/> $\log. = 9,73107$ $\text{num. } 0,53836$ $0,39908 +$ <hr style="width: 100%;"/> $0,93744$	$\text{cotg. B} = 0,4355$ $\text{cotg. b} = 0,1914$ <hr style="width: 100%;"/> $N = 0,6269$ $n = 0,2441$ $\log. N = 9,79720$ $\log. n = 9,63104$ <hr style="width: 100%;"/> $19,42824$ $\log. (m + n) 9,82718$ <hr style="width: 100%;"/> $\log. 9,60106$ $\text{num. } 0,39908$ $\text{cotg. t} = 2 \left(\frac{0,93744}{0,46872} - 1 = 64^{\circ} 53'$
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The arithmetical mean of the four observations gives $63^{\circ} 32'$.

Though this method so certainly attains the object, yet the complete application of it at every new determination of the dip, would be by no means advisable, since the frequent reversing of the poles would not only be troublesome to the navigator, but, probably, detrimental to the needle. It is better to use a needle which is so accurately balanced, that its centre of gravity may coincide, if not precisely, yet as nearly as possible, with the middle of the axis. This operation, therefore, is properly the business of the artist, who, without it,

can scarcely balance his needle, because the effects of gravity always mingle with those of a weak magnetism, which inheres in every piece of wrought iron. On long voyages, it might be useful to reverse the poles at every change of 10° or 20° of latitude, and to correct in proportion the intervening observations. On a voyage to the north pole it will suffice to perform this operation, if possible, at the commencement of the voyage, and at the most northerly observation. It is, likewise, a very good way to take two or more needles, and make with each of them the two observations mentioned under N^o 1.

There is another method of determining the dip of the magnetic needle, by the estimation of the magnetic power of the earth, in different latitudes, by the dipping needle, that is, by counting the vibrations which the needle makes, first, in the magnetic meridian, and then, in the direction from east to west, in a given time; for instance, in ten minutes. Let the number of the first be M , that of the latter, P ; then, according to Laplace, $\text{Sin. } I = \frac{P^2}{M^2}$. Supposing we had found in Kamtschatka the number of vibrations which the dipping needle makes in the direction of the magnetic meridian, or M , in ten minutes, to be = 250, and the number of vibrations which it makes in a direction perpendicular to the magnetic meridian, or $P = 238$, then we have the Sine of the dip $I = \frac{250^2}{238^2}$, and the calculation is as follows :

$$\log. 238 = 2,37658 \times 2 = 4,75310$$

$$\log. 250 = 2,39794 \times 2 = 4,79588$$

$$\log. \sin. 1 = 9,95728. I = 65^\circ 0'$$

Among the general observations, which are no less important to nautical than to physical science, may be especially reckoned the investigations of the atmosphere, with respect to its weight and temperature; the very great simplicity, precision, and commodiousness of the two instruments required for this purpose, the barometer and the thermometer, render them perfectly adapted to be used by sea, and the observations made by their means, serve the attentive seaman to foretel the weather, besides furnishing the meteorologer and natural philosopher with a closer acquaintance with the course of the changes of the weather in general, and with the properties of the atmosphere depending on geographical position.

With respect to the barometer, the observation of it is much facilitated by hanging it judiciously, and lessening the motion of the quicksilver. Yet it requires considerable practice to recognize its real height. It is not sufficient to observe only the maxima and minima of the oscillations of the mercury, but one must often stand for minutes together before the barometer, in order to catch a moment, when the irrational oscillations of the ship and of the instrument, mutually destroy each other, and the mercury becomes, for a moment,

stationary. The number of observations is arbitrary, but three or four at least should be made daily; for instance, at six or eight o'clock in the morning, at noon, and about four or six; and, if it can be, also at ten in the evening. The observation at noon is the most important. It must not be forgotten to compare, before or after the voyage, the height of the marine barometer with a good portable barometer, because, without this comparison, a chief result of the barometrical observations, the determination of the absolute height of the barometer in high latitudes would be lost. It is likewise requisite to notice, at every observation, the warmth of the barometer, by a thermometer fixed to it, or at least hanging near it in the room, and also the temperature of the external air. With regard to the latter, it is to be observed, that the thermometer must be suspended in a place perfectly accessible to the external air, but not exposed to either the direct or the reflected rays of the sun, and in case these conditions cannot be combined, it might be better to have two hanging in different places. On such voyages it is proper to take several thermometers, not only in case of accidents by breaking, but also to have an opportunity of putting into the hands of a diligent observer in remote places, one of these instruments, the observation of which is so easy, and yet attended with such profit to climatology.

Connected with the changes of the atmosphere, is the moving power of all navigation, the winds.

As the observation of them is the hourly occupation of the navigator, it is unnecessary to call it to mind ; yet it would not be beside the purpose to pay attention to the direction of the winds in a vertical sense, in order to learn whether, as some persons pretend to have observed, certain winds blow more from below, and others more from above. The strength of the wind, too, should be more frequently measured, which may be done by means of a wind-gage, on the plan of Bouguer or Woltmann.

The proper theatre, however, of the physical labours of the navigator, is the element itself which he navigates. Notwithstanding the thousands of ships that have traversed the ocean in all directions, far and near, we still know so little of the numerous interesting phenomena of this immense mass of water, which covers two-thirds of the surface of our globe, that this is precisely a main object of every voyage undertaken for the improvement of science. It is, therefore, worth the while to recite in order, the single remarkable properties of it, and to recommend them to the attention of the navigator.

We begin with those phenomena which are of the highest importance, not only to geology, but to navigation — the great mechanical phenomena of the tides and the currents.

The ebb and flood cannot, indeed, be observed on board the ship, for even in a ship lying at

anchor, the constant turnings and changes of place which it experiences, admit of no accurate observation with the lead. But the more do these risings of the sea deserve to be carefully observed upon the coasts. The simplest mode is, to fix up, at a part of the coast, where the water is as quiet as possible, and no surf, an upright pole, divided (best painted) into feet and inches, so that the foot of it may never be dry, even when the water is at the lowest. Sometimes it may be so placed, that the height of the water may be seen from the ship by means of a telescope. With respect to the observations themselves, it is not easy to make too many, particularly at the beginning. (During the high tides in Japan, they were sometimes noted down every ten minutes, and oftener.*) Let the true time be observed, with the force of the prevailing wind, and, as much as possible, the direction of the ebb and flood tides. The observations at the time of new and full moon deserve especial attention. The assertion, often controverted, and partly confirmed, of a decrease, or progressive increase of the mean elevation of the sea, in different parts of the earth, is so very remarkable a fact, that the navigator is urgently requested to pay particular attention to any observations, which may serve to confirm the one or the other assertion.

The second great motion of the sea, viz. the currents, has a most important influence on navi-

* Krusenstern's Voyage, vol. iii.

gation itself, and is no less interesting in a physical point of view. These currents are either local and partial, either constant, or periodical and irregular. The first depend either on local circumstances, contractions of the coast, or the ebb and flood, sometimes on unknown natural causes; the latter are rather parts of the economy of nature in general, and are partly consequences of prevailing winds, perhaps also of the rotation of the earth, of the alternations of cold and heat, of evaporation, and other causes still unknown. Accidental currents may also be caused by storms in the vicinity. The currents in the sea, like those in the atmosphere, seem sometimes to run above each other, for the most part, in opposite directions. On shore they may be easily perceived by their accelerated motion on the coast. It is more difficult to investigate them on board the ship, which is itself carried away by them. There is no fixed point from which to measure this motion, and the usual means by which the seaman determines his change of place, the log, is uninfluenced by the currents in the sea. It is only by combining the astronomical determination of the ship's place with the ordinary ship's reckoning, that it can be discovered how far the ship has been driven from the shore, how far it has been carried by the current. A daily comparison of the results of both methods is, therefore, a necessary occupation for every mariner, who is provided with the

requisite means for astronomical determinations of place, that is, good sextants and chronometers, and skill to use them. The method which has been formerly proposed to lay a boat, as it were, at anchor, to a lead let down to a great depth, is partly troublesome, not always applicable, and, above all, uncertain, because only a very small part of the effect of the current is thereby discovered, and even that not completely, because it is highly improbable that the motion of the sea should take place only at a small depth.

Count Rumford has, by theoretical arguments, rendered it probable that there are in the ocean two main currents, one of which flows on the surface from the equator to the poles, and the other at the bottom from the poles to the equator. It is worth the attention of the mariner to notice all such phenomena as may serve to confirm or to confute this conjecture, as well as to lay hold of those facts that are connected with the motions of the sea, which every where lays the ice to the eastern coasts.

A method which has not yet been sufficiently practised, to get acquainted with the great ocean currents, is the throwing out of well corked bottles, containing a note marking the date, and the ship's latitude and longitude; some of those dispatches have made voyages so remarkable for rapidity and for distance, that frequent repetitions of the experiment are highly desirable, and the mariner

should have many bottles expressly ready, and throw one or two of them overboard ; for instance, at every fifth degree of latitude.

The waves are another phenomenon of the motion of the sea ; the theory of this motion is still so imperfect, the object itself so fleeting and difficult to lay hold of, that even general data of the length, breadth, height, and quickness of those masses of water, which assume besides different forms, would be a useful contribution towards the mathematical part of natural philosophy.

Connected with other nautical operations, and of the utmost consequence to physical geography, is the examination of the depth of the sea. The usual maximum of the soundings of navigators (200 fathoms) is very insufficient, it is true, for such investigations ; and hitherto we know of only two instances of measurements of several hundred fathoms, (Phipps Lord Mulgrave, and Peron). The rarity of these experiments seems to arise from the difficulties in performing them ; one of the principal is the uncommonly strong friction which the sounding line experiences on being drawn through the water for such a length, which greatly increases the labour of drawing it up. As it is chiefly the friction of water against water, and not that on the solid body, which is considerable, a thinner, but strong and smooth line, which, to preserve it from becoming wet, might be thoroughly imbued with oil, tallow, wax, or a mixture of this

nature, would perhaps be advantageous; perhaps a brass wire might be used for the purpose, such as is employed in some places, as at Teneriffe, for instance, in fishing. A more convenient contrivance for drawing up the line, such as a kind of windlass of considerable diameter, might contribute to facilitate this very interesting experiment.

To remedy this and other difficulties, in measuring the depth of the sea, instruments have long since been contrived, which are known by the name of bathometers. Most of these are, at the bottom, no more than repetitions of the proposal of Dr. Hooke, which chiefly consists in the following contrivance. To a long pole of light wood, a heavy weight, for instance a cannon ball, is fastened in such a manner, that, in sinking, it carries the pole with it; but when it strikes the bottom, releases the pole by the knocking out of a hook; so that the pole rises to the surface by its specific lightness. At, first it was attempted to deduce from the time the pole remained under water, the depth which it had reached, but as this implied difficult experiments, and the moment when the pole re-appeared might be easily missed, it was afterwards found better to fasten to it a kind of hodometer (or way-measurer,) such as had been proposed, instead of the common logs, the wheel-work of which was immediately stopped on taking it off. To this, in itself, ingenious idea, nothing is to be objected, but the difficulty of immediately

recognising the pole on its rising again to the surface of the ocean, as it may easily be carried to a great distance by currents; but this objection has been attempted to be obviated by means of flags fastened to it, (*flamme de reconnoissance.*) However, no experiment, at least none that is satisfactory, has hitherto been made with such a machine. We refer the reader to the proposals of Greenstreet, in the Repository of Arts and Manufactures, and to an essay on the subject, by Ciprian Luisius.

Among the peculiar properties of the sea, is, above all, its saltness. It might be inconvenient to examine this by chemical analyses on board a ship; but as the strength of the solution of salt in water increases exactly with its weight, the determination of the specific gravity of the sea-water affords a convenient means of finding the relative quantity of sea-salt contained in it. For this purpose, it is the best way to employ an areometer, which is plunged in sea-water in a vessel. Such an instrument is best for use, when it is so contrived, that with a constant weight fastened to it, it sinks, at a certain temperature, in pure, distilled water to the mark: the weights to be added must be exact aliquot parts of the weights of the whole areometer. We have then only to count at each observation, the value of the weights added, to obtain the specific gravity of the sea-water. As, however, the sea-water becomes $0,00034 = \frac{34}{100000}$ lighter for every degree of heat, by Reaumur's

thermometer, it must not be forgotten to put into the water a good thermometer, graduated by Reaumur's scale, to correct the specific gravity observed, by the annexed table.*

Therm.	Correction.	Therm.
—		+
10°	0,00000	10°
11	0,00034	9
12	0,00069	8
13	0,00103	7
14	0,00137	6
15	0,00172	5
16	0,00206	4
17	0,00240	3
18	0,00275	2
19	0,00309	1
20	0,00343	0

* Care must be taken during the observation, that no considerable bubbles of air hang to the areometer, and they must be removed, either by taking out the instrument, or by clearing them away with a hair-pencil.

Supposing now, that, in order to sink the areometer to the mark, it has been necessary to add $\frac{2}{100} \frac{3}{1000} \frac{5}{10,000}$ the specific gravity of the water = 1,0235, if the temperature of the water at the time was + 14°, 5 R, we have to add to the value found 0,00137, + 0,00017 = 0,00154, by which we have (1,0235 + 0,00154) = 0,02504; if the temperature had been + 7° 3 R, we should have had 1,0235 — 0,00113 = 1,02237 for the specific weight of the sea-water of 10° R. This examination of the sea-water to discover the quantity of salt contained in it, may be of advantage to navigation, as it indicates the influence of large rivers, at a great distance from land; on a voyage to the north, this examination is especially to be made in the vicinity of large masses of ice, to determine whether the water

which is not frozen has taken up the salt which has been precipitated by the ice. As the sea-water has other ingredients besides salt mixed with it, which only chemical analysis can discover, it can do no harm to give some bottles of it to a good chemist.

The very important question of the daily evaporation of the immense surface of the ocean, is connected, in a manner, not yet sufficiently investigated, with the saltiness of the sea-water. The investigations into this point are most easily made with the areometer, by suspending in the open air, a cylindrical vessel containing a portion of water, the specific gravity of which is to be determined from time to time. The surface of the water must also be known, and the temperature of the water and the air be frequently examined between the measuring. But the same water must not be used for several days together, because the evaporation decreases in proportion, as the solution becomes stronger, so that no inference on the evaporation of the sea could be drawn from it.

Another important point towards the general climatology of our globe, is the investigation of the temperature of the sea, both on the surface and below it. A connected series of observations on the temperature of the sea made at the same season of the year, and at the same depth, at the distance of every 5° of latitude from the equator to the pole, would procure us much sooner, and more certainly,

general data on the mean warmth of the earth, than the most ingenious theoretical speculations, and the most laborious and tedious thermometrical observations on shore, where the mean temperature is changed by so many contingent causes.* The temperature of the water at the surface is easily found, by a common thermometer let down a few feet, and immediately drawn up again. To discover the temperature far below the surface, many methods have been proposed; the chief feature in most of which is to use the thermometer with large balls, which are but slowly affected by a change of temperature, and which may be surrounded with wooden caps, and other substances that are bad conductors of heat; and also to leave the instrument a long time below the surface. But the thermometographs are much more convenient for these experiments, especially that which is called from its inventor, Six-thermometer, and indicates the maximum of a preceding change of the temperature. It is to be wished, that a navigator who is provided with such an instrument, would not suffer any calm to pass over, without letting down this instrument to various great depths. Particular pains should be taken to find out that depth at which, as preceding observ-

* We except experiments on the temperature of springs on land, which, when opportunity offers, are never to be neglected, for the purpose of determining the temperature of the earth.

ations give ground to conjecture, the constant temperature of — 1°, 7 R., which precedes the freezing of the sea-water, begins, and then continues to uncertain depths.

Celebrated natural philosophers, (Franklin and Humboldt,) have affirmed, building partly on experiments, that in the vicinity of sand banks and shoals, the sea is colder than where there are none such, and that consequently the thermometer may serve as a warning to mariners. The property of the water to propagate warmth from above, quicker and deeper, and the slowness with which the earth is influenced by external warmth, seem to favour this assertion, at least for the spring and summer months; but, in winter, the contrary is probably the case; at all events, it deserves to be accurately examined by as frequent observations as possible, for which we possess in the Six-thermometer so convenient an instrument.

One of the facts respecting the temperature of the ocean, is the phenomenon of the formation of ice in the sea, on a large scale. The first business of the navigator here, is to determine, by every possible means, the magnitude of the floating masses of ice; respecting the extent of which, the accounts of preceding navigators have given us the grandest ideas. For this end it is necessary to determine by experiments made on the spot the specific gravity of this ice compared with the sea-water; the best way is, to get a largish piece of ice of a pris-

matical or cylindrical form, which is to be put into a vessel, filled with sea-water : the length of the piece immersed, compared with that of the part above the water, gives the proportion in which the visible mass of ice must be magnified, in order to obtain the probable amount of the whole. Faithful drawings of such ice-bergs, which have been formed, by masses of ice piled upon each other, are also desirable, as well as measurements of the thickness of flakes of ice, which seem to have been produced by a single frost. We have already spoken of the areometrical experiments in the vicinity of the new-formed ice. As the meritorious naturalist, Higgins, and, in these latter times, Parrot, induced by experiments on a small scale, have disputed the assertion of navigators, from Forbisher and Davis down to the time of Cook, that the sea-ice contains no salt, a new investigation of this subject on the spot is desirable, which may be made by taking a sufficient quantity of solid sea-ice, and, after washing it, melting it in fresh water, and then examining the specific gravity with the areometer. To obtain further certainty, it might be proper to fill some bottles with such ice, that the water may be chemically analysed.

Lastly, the external visible properties of the seawater, merit the attention of the navigator : its colour, its transparency, and then the shining of the sea at night. With regard to the first, it is to be observed, how far the visible or altered colour

of the water proceeds from a change of depth, from the colour of the bottom, from that of the sky and clouds, from the light of the sun, or from foreign substances swimming on the surface of the water. The transparency of the sea water would be easiest measured by letting down a flat surface, fastened to the plumb line, painted white, with stripes, or letters of black, or other colour, on it. For want of this, a white earthen plate, or a board covered with white stuff, might be used. The depth at which the board became invisible, or the marks upon it undistinguishable in different waters, would show their relative transparency.

The opinions respecting the shining of the sea are so very various, that it is well worth the while to acquire more accurate knowledge of the subject by continued researches; for some persons attribute it to the effects of electricity; others to phosphoric matter, developed from substances in a state of putrefaction; others to living, and, for the most part, microscopic animals; and others, to all these causes together. The fainter shining of the sea most deserves to be enquired into, it having been considered as an electrical or phosphoric development of light from the water itself; and it is especially to be examined whether living luminous animalculæ, only perhaps of a smaller species, or in less numbers, may not be there and cause the light. Perhaps the best way of doing this, would be to filter a sufficient quantity of such

faintly shining water, because, if the light is in the water itself, it must shine afterwards; but if it comes from animalculæ, these will shine in the strainer, if slightly shaken. Whether the light which is observed on dead fish before the commencement of putrefaction, likewise comes from living animals (as is highly probable) is for the natural philosopher to examine in his study with the microscope. It is rather the business of the physiological naturalist, and the chemist, than of the mariner, to analyze the nature of the (often strongly luminous) molluscæ, the medusæ, &c. concerning which Mitchell has published such interesting observations, in the Medical Repository of New York, Vol. IV.

We have yet to mention the luminous phenomena that are observed in the air; these are, the Aurora Borealis, the fire-balls, and the falling stars. In the first, the observer has to determine the height of the arc bounding it, either by the sextant, or, when the darkness of the horizon does not admit of this, by means of the stars which shine through it, also noting the true time. The extent of it on the horizon, the quickness with which it rises above the horizon to different heights, are likewise objects for his observation. A circumstantial description of them, and even a drawing, which looks very well, when done on dark blue paper, with black and white chalk, are contributions to the history of meteors, not to be despised.

The influences which this phenomenon may have on the magnetic needle, as well as its connection with the prevailing weather, are likewise to be attended to. The long-since refuted notion, that a hissing and crackling is heard in the northern lights, hardly deserves to be mentioned. With respect to fire-balls and falling stars, endeavour to mark, on a celestial atlas, the place where such a meteor bursts and disappears, and, when it can be done, its apparent course; from which, by means of the true time, and the latitude of the place of observation, the apparent elevation and azimuth may be deduced, and thence, combined perhaps with an observation made in another place, its distance from the earth may be computed.

These are, in general, the objects to which the navigator has to direct his attention; the methods by which he has to observe them. For many observations the necessary conveniencies will be wanting, and, on the other hand, many phenomena will occur, which are here either passed over, or but slightly touched upon. The navigator's own zeal for enquiry must do the most; his own knowledge, his inventiveness, and a laudable endeavour to make all his efforts useful to the sciences, will be better guides to him than any instructions.

HÖRNER.

Zurich, 20th June, 1815.

PREFACE.

I PRESENT to the Public the History of my Voyage, with much timidity; for I am sensible that few persons will be satisfied with the plain style of a seaman, who, ever since he was thirteen years of age, has lived only in the service to which he has devoted himself. It was, indeed, my intention, to give my observations a value, with respect to the style of the narration, to which they could otherwise make no claim. My good father would have taken upon him the trouble of arranging them. With this hope I hastened to Mannheim. The reader knows what a dreadful catastrophe met me there.

What now supports and raises me amidst the painful feelings which crowd upon me, is the man whose name I pronounce with gratitude and reverence — Count Romanzoff. He needs not his titles and dignities to gain esteem; for the noble

zeal with which he endeavours to extend in every manner the dominions of science, excites respect for him in every heart that knows him. He was the Author of this Voyage, and spared neither pains nor expense to render it beneficial to science. It was he who kindly selected me to execute this honourable undertaking, and it is he to whom I dedicate this Book, and whose indulgence I implore.

KOTZEBUE.

Mäks in Esthonia, April 17th, 1820.

PREPARATIONS.

JANUARY 22. 1815. This afternoon I bid adieu to Reval, my native town; and, accompanied by my crew, consisting of a young and able officer of the name of Kordiukoff, and twenty sailors, set out on my march to Abo. The government had given me permission to pick out the best men, and more volunteers had offered than I wanted, who, with real ardour, were willing to venture every thing with me. Such heroes were, of course, very welcome to me, and inspired me with cheerful hopes for the success of my intended enterprize. We marched away with our baggage, and my heart was light when I was out of the town, for the first step to the honourable undertaking was made. A general joy prevailed among the sailors, who sung and played till they reached their quarters for the night.

January 31. About four in the afternoon we reached St. Petersburg, where I gave the men some days rest. We were here joined by Lieutenant Schischmareff; I had myself chosen him for this expedition, because I had been on terms of intimate friendship with him for many years, and knew him to be a very able officer. I waited on

Count Romanzoff, the author of the whole enterprize, who treated me with so much goodness and distinction, that he infinitely heightened my courage to meet all the hardships that awaited me.

We left St. Petersburg on the 17th of February; and, after a pretty fatiguing march, arrived, on the 19th, at Abo. It seemed to me that we had already given a little specimen of our perseverance and fortitude; for, in truth, a journey on foot from Reval to Abo, by way of St. Petersburg, at this season, would be very unpalatable to many persons. Our joy at the sight of the town was great, and every one longed for the warm stoves; but how were we disappointed! for I myself, with my officers, and my poor sailors, were all put into wretched dilapidated huts, about nine feet square, which were not heated all the winter, and might probably have served as stalls for geese or fowls. I exerted all my eloquence to point out to my landlord that he had quartered us in styes: in vain; he shrugged his shoulders, and said, "that is good enough for Russians." After we had been confined for a fortnight in these wretched cold holes, we obtained better quarters.

The keel of our new ship, the *Rurick*, was laid down; the workmen proceeded diligently, and our daily occupation was to see how they went on.

March 16. By this day's post, the ship-builder received from Count Romanzoff a gold watch, as an acknowledgement for his indefatigable zeal in

building the Rurick with extraordinary care. I consider it as my particular duty publicly to express my thanks to Count Haiden, the chief commander here, for the extraordinary interest which he took in the expedition, and for the advice and assistance with which he kindly favoured us.

May 11. To our great joy the ship is ready, and has been launched to-day. At four o'clock in the afternoon we had divine service, and the Rurick was consecrated by Russian clergy; hereupon the imperial flag was brought amidst a flourish of drums and trumpets, and, with a thousand huzzas, dipped in the river. I must observe that the Emperor, at my request, had had the goodness to allow me the imperial flag (that carried by the ships of war), because it appeared to me that a voyage of discovery, under the mercantile flag, might be exposed to many inconveniences, and even obstacles. I was on board the Rurick when she was launched, delighted with the idea that I might consider myself as the master of her. During divine service we had had a warm rain, which suddenly held up when the ship was being launched, and the sun shone forth in all his splendour; a circumstance which was considered by the spectators as a good omen for the whole voyage. While the ship was on the stocks we had been employed in preparing sails, cordage, &c.: all was now ready, and we exerted our utmost diligence to put the Rurick in a condition to

leave Abo as soon as possible ; for, as I wished to sail from Cronstadt in July, and we had first to go to Reval to take in provisions for this long voyage, we had really not a moment to lose.

On the 23d we left Abo, and arrived at Reval on the 26th, where the stock of brandy was ready for us, and was immediately got on board. Here, too, I received from Captain Krusenstern the necessary astronomical instruments, and two chronometers, which had been bespoke in England, and brought by himself to Reval ; the goodness of them was therefore to be depended upon, as the sequel proved.

On the 16th of June, we sailed from Reval, cast anchor on the 18th, in the road of Cronstadt, and then carried the *Rurick* into the harbour, to equip her completely for the approaching voyage.

July 27th. The ship is at length quite in order, and furnished with provisions for two years ; and we leave the harbour to-day, to begin our voyage in a few days. Count Romanzoff has promised me to honour the ship to-morrow with his presence ; and Dr. Eschscholz, and M. Choris, the painter, who are to accompany us, has sent word that they will be on board to-morrow. Our whole crew now consists of two lieutenants, (M. Kordiukoff having remained at Reval, on account of illness, Lieutenant Zacharin, has taken his place,) three second-mates, two subaltern officers, twenty sailors, the physician, and the painter. At Copenhagen, we expect to

take on board Messrs. Chamisso and Wormskloid, both of whom accompany the expedition as naturalists.

July 29th. The bad weather having hindered Count Romanzoff from coming on board yesterday; he came to day, accompanied by Captain Krusenstern, and soon after came Admiral Moller, chief commander at Cronstadt, and Admiral Korobka. To these two gentlemen also, I here publicly return my thanks; for, without their very effective assistance, it would not have been possible for me to equip the Rurick so speedily, and so well. Count Romanzoff was much pleased with the ship, only she appeared to him rather too small, in which he was not quite wrong, as she is only 180 tons burden; however, so small a vessel has the advantage that we may venture very near to the coast, and may thus give a much more accurate survey of it. The internal arrangement is very convenient, as well for the officers, as for the sailors; for I have given them much room, being convinced that the health of the whole crew greatly depends on it. The Rurick has two masts, and mounts eight guns; viz. two three-pounders, two eight-pounders, and four twelve-pounders. When Count Romanzoff had very kindly taken leave of us, and left the ship, we saluted him with thirteen guns, and gave him three cheers.

CHAPTER I.

FROM CRONSTADT TO COPENHAGEN.

1815 JULY 30th. At five o'clock in the morning we left Cronstadt, favoured by a fresh N. E. wind, and passed by the island of Hochland, at eight o'clock in the evening. Towards noon, on the 31st, we descried the towers of the city of Reval, and I bid adieu to my native land for many years, and perhaps for ever. The wind soon became unfavourable, and remained so till the 3d of August; the island of Gothland lay at our side, and a violent storm from S. W. detained us here. On the following day the wind abated, and turning to the S., permitted us to continue our voyage under full sail. On the 7th, towards noon, we discerned the island of Bornholm; and about four o'clock in the afternoon, sailed past the island of Christiansoe, at the distance of two sea-miles. The fortress hoisted its colours; we saluted with seven guns; which were answered with the same number. The island of Christiansoe is only a naked rock, which the fortress entirely occupies, but yet it presents a very pleasing prospect, as all the buildings seem to rise directly out of the sea.

August 9th. At nine o'clock in the morning,

we cast anchor in the road of Copenhagen, opposite to the fortress. The Rurick saluted with seven guns, and was answered with the same number. To-day, too, I had the pleasure of becoming acquainted with our two companions, M. Wormskloid, and M. Von Chamisso, whom I requested to come on board with their things as soon as possible, as the lateness of the season would not permit a long delay. On the 10th, I had the pleasure of becoming acquainted with the worthy Admiral Löwenör, who has merited the gratitude of navigators, by his valuable chart of the North Sea, to which so many ships owe their safety. I presented myself to the Russian minister, M. Lisankewitsch, who received me with the greatest politeness; and in whose company, I paid a visit to Count Schimmelmann, at his beautiful country seat, near the city.

On the 13th, Count Dohna, the Prussian ambassador, Count Boribell (Bombelles,) the Austrian ambassador, Admiral Löwenör, M. Van Brien, secretary to the Prussian legation, and General Tawast, the Swedish ambassador, favoured me with the honour of a visit. The interior arrangement of the ship, pleased my guests exceedingly, at which I felt myself much flattered, as the whole had been fitted up according to my directions. When they were leaving the ship, we fired thirteen guns, and gave them a loud cheer, which

they returned. Count Bonnet, the French ambassador, had also had the intention of inspecting the ship, but was prevented by an attack of the gout; and, on the other hand, I was obliged to refuse his invitation to dinner, as necessary business detained me on board the *Rurick*. Having learned from former experience, how difficult the business of a ship's cook is in hot climates, and how injurious the climate is to such persons, if they have not had an opportunity to accustom themselves to it before; I took much trouble in procuring a cook, at Copenhagen, who had already made a voyage to the East Indies. We met with a West Indian, whom I engaged for the *Rurick*, and who bore the whole voyage extremely well, notwithstanding he was always before the fire, even under the equator.

August 17th. At four o'clock this morning, we left Copenhagen with a fresh S.S.W. wind, but were obliged to relinquish the hope of passing the sound to day, as the wind turned to the W., and obliged us to cast anchor, at eight o'clock A. M. at Elsinore. In Copenhagen, I perceived that the going of my chronometers had much changed, since we came from Cronstadt. They were examined at St. Petersburg by the astronomer, M. Schubert, who observed that Hardy's chronometer, on the 20th July, was, by mean time, 2h. 8m. 39s, 54 too slow; the daily loss of time 2,18s. Barraud's chronometer, by mean time, 3h. 20m. 31s, 6 too

fast; gained daily 0,86s. I perceived that in Copenhagen, Barraud's lost 18s, and Hardy's 21s. Such a change in the going of the chronometers made me doubtful as to their goodness; but, in the sequel, I had no reason to complain of them.

CHAPTER II.

FROM COPENHAGEN TO ENGLAND (PLYMOUTH).

AUGUST 18th. We had a violent storm from the N.W. all the night, which became more furious at break of day ; it abated towards evening, and our officers were able to send some letters for Cronstadt, on board the Russian frigate, *Cola*, which was then sailing past us.

On the 19th, at ten o'clock in the morning, the wind rose from the south, and we immediately got under sail, in company with a great number of merchantmen. We saluted the fortress of Kronberg, in the Sound, with seven guns, which was answered with the same number, and as the wind blew a fresh gale, we very soon passed the Sound. Our passage to Plymouth was tedious ; we very seldom had fair wind, and nothing whatever happened that could be interesting to my reader ; he will, therefore, permit me to land in England at once.

On the 1st of September we sailed through the Straits of Dover, and cast anchor on the 7th, at noon, in the Catwater, before the town of Plymouth. I chose this port, because it has the advantage that, by a brisk gale, you may reach the ocean in one day.

As soon as we had cast anchor here, I waited upon Admiral Manley, principal commander of this port: he received me very politely, and offered to give us every assistance in his power. Neither did I neglect to announce myself to-day at the Russian consul's, Mr. Hawker, and to give him a written account of all our wants, begging him to take the necessary steps for having them supplied. I am greatly indebted to the active assistance of this gentleman. After I had concluded this business, I paid a visit to Mr. Whidbey, a friend of Captain Krusenstern. This well-informed and very amiable man had made the voyage with Vancouver as chief mate. I recollect with pleasure the days that I spent with him, because his company was equally agreeable and instructive. Mr. Whidbey is now constructing the Break-water at Plymouth, a work that does him much credit.

On the 8th of September I received permission of Admiral Manley to bring my instruments to Mount-Batton, a small, uninhabited spot, only fifty fathoms from our ship. On the following day a tent was erected; I brought my chronometers on shore, and we were able to correct them with all possible convenience.

The 11th. I was invited this evening to a ball at Lord Berington's, whose country seat is two English miles from the town; the road is through a fine cultivated country, and, near the

seat, through a park laid out with a great deal of taste. The company consisted of the principal persons in the neighbourhood; the conversation was unconstrained and agreeable.

The 15th. To-day I received the life-boat, which the English government had ordered for the Rurick: by means of air-chests, which are introduced inside, a boat made in this manner can never sink. This boat was 30 feet long, and rather too large for our ship, our whole crew being scarcely able to lift it into the Rurick, those boats being heavier than others of the same size; and for this reason I was obliged, in the sequel, to leave it at Kamtschatka.

The 20th. To-day I visited the Marine Hospital, and was highly pleased at the order that prevailed there, and the careful attendance of the sick. I was invited to dine with the officers of the 43d regiment; and this mess, of all the officers of the same regiment, from which the Colonel does not exclude himself, appears to me a very excellent arrangement.

The Rurick is now quite ready to leave England, and only waits for a favourable wind.

On the 25th, at 5 A.M., the wind arose from the N.E., when we instantly set all our sails; but we had scarcely left the bay, when the wind changed to the S.W. and became quite unfavourable. In the hope that it would soon change, we plied out of the bay; it was, however, stronger towards

noon, and not more favourable, and at 5 P.M., increased to a violent storm. I only had the top-sails reefed, though the wind was so strong that they ought to have been taken in; but as the storm was blowing directly to the land, we dared not carry too little sail, as the danger of shipwreck would then be inevitable. The dark autumnal night had already set in, when we found ourselves between Eddystone light-house, and the entrance of Plymouth harbour. The storm continued to rage, the waves rose in mountains, and the Rurick, which could no longer keep her place, drove slowly back towards the shore. It was so uncommonly dark that there was as much danger in sailing back to the harbour as in staying in the channel; I chose the latter, in the hope of keeping the ship off shore till day-break. We exerted all our skill, and tried to keep up our courage. The thought of shipwreck, almost at the first step towards our remote destination, was intolerable. The storm continued without abatement all the night; I tried to keep the ship as close to the Eddystone light-house as possible, but we were always driven further from it to the shore; at last we had only a glimpse of it now and then through the intense darkness, which was a sign that we must be near the shore. On the 26th, at 5 A.M., as the violence of the storm was still increasing, the ship was put about; a furious squall of wind broke our wing-transom, (a beam which holds

the mizen-sail,) which put it out of our power to keep the ship by the wind, and we could no longer maintain our place. One of our best sailors was so bruised on this occasion, that, notwithstanding, the greatest attention, it was three weeks before he could render us any service. Shortly after this accident, the day began to dawn faintly through the thick fog, and at least enabled us to become acquainted with our situation. To our no little joy, we discovered that we were in the entrance of Plymouth Bay, and, though it was still pretty dark, we immediately directed our course thither, as the only possible means of saving ourselves. We succeeded, in spite of the bad weather, in reaching the harbour without a pilot, and dropped anchor at 8 A. M. at the same place in the Catwater as we had previously done. Both the officers and the crew were quite exhausted by their great fatigue. Whoever is acquainted with the navigation of the Channel, can form an idea of the danger in which we were all the night. The pilots were astonished that we were able to keep at sea without being wrecked. The only reason I can assign for this is, that the water, driven, indeed, by the storm into the narrow bay, but forced back by the violence of the current, kept our ship from the shore. Our first business was now to put the ship to rights again, as she had suffered much during the storm. A new wing-transom was ready in a few days; and, as the wind began to blow from

the north, on the morning of the 30th, we immediately weighed anchor, and sailed, in the hopes of getting better out of the bay the second time than we had done the first. But we had scarcely got out when the wind turned to the S.W. and put an end to all our hopes. I could not, however, prevail upon myself to put back immediately into the harbour, and I resolved to brave the unfavourable wind; but, as it soon changed to a storm, prudence and duty obliged me to persist no longer, and at 6 o'clock, P. M. we dropped anchor in the bay, behind the new breakwater. The storm and rain continued the whole of this night, and our only consolation in this disappointment, was the similar fate of a Danish brig of war, which had likewise been obliged to put back into the harbour. This ship, which was going to the Mediterranean, had already been several days in the Channel, and had reached Cape Finisterre, when, being very much damaged by the heavy storm, she was obliged to return to England, and to undergo the necessary repairs. At last, on the 4th of October, a steady north wind arose, and we did not delay immediately taking advantage of it: at ten o'clock in the morning we were under full sail. Barraud's chronometer loses 2s, 5, and Hardy's 49s, 0.

CHAPTER III.

FROM PLYMOUTH TO TENERIFFE.

1815 OCTOBER the 5th. We had scarcely passed Cape Lawrence, when the wind rose from the west, and became very strong, and remained so the whole of the day. On the 6th, it settled in the north, and permitted us to make our entrance into the Atlantic Ocean. The voyage seemed to me to be now properly begun, and the most cheerful thoughts were excited, by this idea; all our preceding misfortunes were forgotten in a moment, and I found within myself spirits and strength for the undertaking before me.

October the 9th. We were this day at noon in latitude $44^{\circ} 49' 31''$, and longitude $11^{\circ} 38'$. Towards evening a storm arose, with a violent wind from the N.W. which carried us, the following afternoon, at four o'clock, past the latitude of Cape Finisterre. In the night we observed a mast passing by our ship, probably belonging to some unfortunate vessel that had perished in the late storm. On the 12th, we again had to contend with a very furious storm from S.W., which lasted to the 13th, and drove us back several miles. On the 14th, the wind changed to the north, with very

fine weather, and we were at noon in latitude $39^{\circ} 32'$, longitude $13^{\circ} 3'$. We found a great difference in the temperature of the air, and had 19° heat, according to Reaumer's thermometer. On the 21st we passed the latitude of Gibraltar, when we perceived that the current had carried us in two days twenty miles to the E.S.E. At noon, on the 23d, we were in latitude $30^{\circ} 36''$, longitude $15^{\circ} 20''$. We had a perfect calm, and the sea was covered with red locusts, two inches long, of which we caught a great number. Our naturalists affirmed that they came from Africa, and were probably driven from the coasts by a storm, and perished in the sea; for as we were 600 sea miles from that continent, it could scarcely be supposed that they could have taken so long a flight. On the 25th, at noon, we observed, from the mast-head, the Salvages, which lay in a W.S.W. direction. The chronometers, to my no little joy, gave their longitude accurately, which spoke in favour of their goodness. On the 27th, at noon, we descried the Peak of Teneriffe, which lay 100 sea miles distant from us. A fresh north wind inspired us with the hopes of reaching our intended object on the following day; and, in fact, on the 28th, at eleven o'clock, we cast anchor at the town of Santa Cruz. I immediately received a visit from Don Carlos Adan, the captain of the port, who had filled that office when Captain Krusenstern made his voyage, and was likewise very serviceable to him. He has

also done all that was in his power for the Rurick, and I consider it my duty to thank him publicly for it. My first visit was to the Governor (whose name I have, unfortunately, not noted), who received me very politely, and offered to lend me all the assistance he was able. This gentleman was long in Russia, and seems to be partial to the Russians; he fought under Prince Nassau, as Spanish colonel, in the galley fleet at Biorko, against the Swedes, and received, as a reward for his courage, the Order of St. George of the fourth class, with which, he says, the Empress Catherine decorated him herself. The Governor then invited me for the following day, and I hastened to M. Coluguan, to whom my credentials were addressed. This hospitable man, of whom so many travellers speak with the warmest praise, was at Oratava; his secretary charged himself with my commissions with the greatest readiness; they consisted chiefly in purchasing a sufficient quantity of wine for my officers and crew, which he promised me should all be executed in two days. In the mean time, the worthy M. Coluguan, with the assistance of his men and boats, brought my provisions on board; and I was in hopes of leaving Teneriffe in three days, though I should have much liked to have made a longer stay; but the recollection of Cape Horn deterred me from it, on account of the lateness of the season. M. Von Chamisso and Dr. Eschscholtz made use of these few days for a journey

to Oratava, where they hoped to reap a good harvest in their department. On the 29th I dined at the Governor's, where there was a large party; I presented him with Krusenstern's finely-executed atlas, with the copper-plates, which received general approbation, and excited much wonder, when I informed them that it was engraved in Russia. The Governor resolved to send this splendid work as a present to his sovereign. On the 30th, we were supplied with every thing. We had two kinds of wine, the one at 38*l.* and the other 30*l.* sterling per pipe; the former is said to be the best that the island produces. Our naturalists returned from their journey tolerably satisfied, and I resolved to quit Teneriffe next day. Our crew had eaten much fruit and vegetables during our stay, and we supplied ourselves with a plentiful stock of them for the voyage.

CHAPTER IV.

FROM TENERIFFE TO BRAZIL. — ST. CATHERINE'S.

So many travellers have visited Teneriffe, that, to give a description of it, would only be a repetition of what others have said; and besides our stay was too short to make any interesting observations.

On the 1st of November we left the town of St. Cruz, with a fresh N. E. wind, and flattered ourselves with the hopes, that we should soon lose sight of the Canaries; but we were scarcely ten miles from the shore, when there fell a dead calm, and we beheld the Pico unclouded in all its majesty. After several hours, a faint S. W. wind suffered us to tack between the islands of Teneriffe and Canaria, which we continued to do during the night. On the following morning, we found ourselves at the point, where there is supposed to be a rock, between the two islands; but as we sailed between them several times, I am inclined to believe that it does not exist.

On the 3d, we had already fallen in with the monsoon; and at noon the Pico was scarcely visible. In the neighbourhood of the Cape Verd islands, our crew were seized with a violent colic,

and head ache; the air was extremely sultry; and our thermometer was never below 20° Reaum. These sicknesses soon yielded to the skill of our surgeon, without leaving any bad consequences, and were entirely over when we had got to some distance from the Cape Verd islands. At noon we passed the latitude of the island of St. Antonio, at the distance of thirty-five miles, without seeing it. During the night twenty-five flying-fish fell on our deck, which appeared on our table at dinner, as a great rarity, and were found excellent. These fish frequently fall into small ships, which, like our Rurick, do not rise higher above the water, than they usually fly, when pursued by an enemy; sometimes they strike with violence against the ship's sides, and then fall stunned into the water. As I had not seen the island of St. Antonio, I directed my course so as to come in sight of Brava, the southernmost of the Cape Verd islands, to try the going of my chronometers. A fresh trade wind carried us rapidly forward.

At ten o'clock, at noon, we discerned the island of Brava, rising above misty clouds, at the distance of twenty miles. My chronometers gave the longitude of this island, $10'$ more to the east than marked in Horsburg's chart; and I have reason to believe my statement to be the more correct, because numerous astronomical observations, which were made before and after we saw this island, always gave the same longitude as the

chronometers, so that their goodness is not to be doubted. At four o'clock, we passed the island of Brava, at the distance of five miles, without losing the trade wind. The island is high, and, on the west, rises almost perpendicular out of the sea; it is covered with luxuriant verdure, and affords a very inviting prospect to the navigator. We observed, near the land, in calm water, large and small fish, which leaped sportively into the air: this island, therefore, must abound with fish. Flying-fish are also in abundance, and these have been our constant companions since we have left Cape Verd islands, falling daily on the ship, or flying over it; one of them flew so close past the officer of the watch, that it hit him on the nose with its fin.

November the 13th. To-day we lost the trade-wind, in latitude $9^{\circ} 52''$, and longitude $20^{\circ} 52''$, overpowered by very violent gusts of wind, from S. W., and we were now under the influence of variable winds, which, with calm, rain, and storm, and very violent squalls, plagued us for several days. Our crew, however, were all well, and we had no sick. On the 16th, in latitude $7^{\circ} 31''$, longitude $20^{\circ} 28''$, three cranes flew round the Rurick: one of them fell into the water from exertion; the two others flew round their unfortunate companion, and thus got distant from the ship. On the same day, we saw a small land-bird, which settled on the deck. The land near to us was $5\frac{1}{2}^{\circ}$ distant, and it is sur-

prising how so small a bird could make such a long journey; whence it may be inferred, that we must not always take it for granted that land is near, when we see such a bird. On the 18th, in latitude $6^{\circ} 48''$, longitude $20^{\circ} 28''$, we had the true S. E. trade-wind; but it was so south, that we were constrained to keep a very westerly course.

Since we had left the Cape Verd islands, the current had driven us daily several miles to the S. E.; but to day it changed its course, and began to drive the ship considerably to the west. We sailed to-day over the point where Warleys-bank is said to lie, without seeing it; its existence, therefore, appears very doubtful to me. On the 21st, at noon, in latitude $3^{\circ} 37''$, longitude $22^{\circ} 44''$, we observed a large ship which sailed directly up to us from the south; she hoisted English colours, and seemed as if she wished to speak to us; the Rurick lay to, and immediately a boat approached us with two officers, and asked for news from Europe. This ship, which is called the Bombay, is an East Indiaman, and was bound from Bombay to England. We compared the longitude with our chronometers, and found only 2' difference; the Englishman had begun his reckoning at the island of St. Helena, and, consequently, it could not vary much from the truth.

On the 23d, at eight o'clock in the evening, we crossed the line, in longitude $26^{\circ} 26''$. I had determined to keep this day as a holiday, for which

purpose preparations were made in the morning; towards evening, when the ship was washed, and every thing put into order, it was brilliantly illuminated, the officers and crew being in their best clothes, the passing from one hemisphere into the other was expected in profound and solemn silence; at the stroke of eight the flag was hoisted, and we saluted the southern hemisphere with eight guns, and drank to each other in our best wine; the sailors had excellent punch. Upon this Neptune appeared, and bid us welcome to the south: he baptized every one that had not passed the line before, and I was the only one that had not to undergo that ceremony. The rejoicing was general, and continued the whole evening and part of the night. Half a degree more to the north, and under the equator itself, we found the current N.W. $86^{\circ} 47$ miles in twenty-four hours.

On the 1st of December, in latitude $14^{\circ} 40' 5''$, longitude $33^{\circ} 30''$, the S.E. trade-wind left us, and a fresh north wind set in with rain and frequent squalls. Our second-lieutenant, Zacharin, has been indisposed ever since we left Teneriffe, of an old complaint, and I fear that his health, as well as that of the smith, who, when on board a man of war, fell from the yard-arm to the deck and hurt his breast, will be injured by the voyage.

On the 3d, we were in latitude $18^{\circ} 10''$, and longitude $35^{\circ} 22''$. We caught three bonétos to-day with a harpoon, which were very welcome to us, as

we had been a considerable time deprived of fresh provisions, because our *Rurick* was so small that she could not contain a large quantity. To make the feast complete, I had a tub of sour-kroust opened, which was furnished us at St. Petersburg by the American Company, and was very excellent. In the evening we had a play, of which we gave notice at noon by a play-bill put up at the mast, announcing the *Peasant's Marriage*. The sailors had composed the piece themselves, and acted it to the entire satisfaction of the spectators; the whole concluded with a ballet, and the actors received the applause they merited. Such amusements, on board a ship destined for discovery, may appear foolish to many persons; but, in my opinion, every thing must be done to keep up the spirits of the crew, and to make them less sensible to the hardships of so tedious an enterprize; besides, the disposition of the mind has a material influence on the state of the body, and a cheerful-minded man is in general the more healthy. On Sundays, in particular, I usually undertook something new; the sailors amused themselves several days beforehand with their plans and preparations, and afterwards they had ample matter for conversation and joke. Besides this, we always had our table better supplied on this day; and likewise gave out a double portion of brandy.

The 6th. We were to-day in the neighbourhood of Cape Frio, the latitude of which I was directed

by my instructions to determine ; but as the continued bad weather rendered this impossible, I directed my course to the island of St. Catherine's. On the following day we observed on the surface of the sea, a serpentine streak, about two fathoms broad, of a dark brown colour, which extended as far as the eye could reach. At first sight I took it for a shoal, but when we had let down a boat, and Mr. Wormskloid had examined it, and brought some of the water on board, we found that it was formed of an innumerable number of small crabs, and the seeds of a plant, which, according to the affirmation of our naturalists, grows at the bottom of the sea.

On the 10th, when near the island of St. Catherine's, we were overtaken by a violent storm, which did not abate till the following day ; at three o'clock in the afternoon we descried the continent to the north of the island, and having tacked, during the night, under few sails, on the 12th stood in to the shore. At noon we were between the islands of Alvaredo and Gal ; the weather was uncommonly fine. We sailed by Alvaredo, which lies very high, at the distance of two miles, and were refreshed by the perfume which the wind blew to us from this island, which is beautifully covered with palm-trees, and luxuriant verdure. It is only inhabited by crocodiles, numbers of which swam round the Rurick as we passed it. I fired a gun as a signal for a pilot ; but as none appeared,

we sailed onwards, and at four o'clock in the afternoon cast anchor in the neighbourhood of the island of Santa Cruz, at about the same place as the *Nadeshda* had done twelve years before. We had scarcely anchored, when the serjeant of the fortress of Santa Cruz came on board, and asked the usual questions in the name of the commander, who excused his not appearing on the score of illness. On the 13th I repaired to the town of *Nosstra-Sennora-Dudesterro*, which was only a few leagues distant from the place of our anchorage, to pay a visit to the Governor, Major Louis Mauricia de Silveira. He received me coolly, and did not seem disposed to comply with the orders from Rio Janeiro, to afford every possible assistance to the *Rurick*. The captain of the port of St. Pinto, a most obliging man, assisted me in this embarrassment, and promised to supply my wants as soon as possible. M. Von Chamisso and myself dined at St. Pintos, a country seat, situated in a most agreeable spot; the table was laid out in the open air, under orange-trees; the humming-bird, and others unknown to us, fluttered round the orange blossoms; and, after the monotonous view of the stormy sea, we doubly revelled in this paradise. The Governor, from whom the officers of the *Nadeshda* experienced so much friendship, was now at the Rio de la Plata. In the evening I was again on board the *Rurick*, and made preparations to have my tent erected, on the following day, in the

neighbourhood of Santa Cruz, into which all the astronomical instruments were to be brought. It was put up on a small elevation, under palm and banana-trees, from which we could see the Rurick; behind us arose a high woody mountain: we could likewise take long walks from thence, in the shade of orange and lemon-trees, which sheltered us from the rays of the sun, and often gave too aromatic an odour. The country about the shore was inhabited by the soldiers of the militia, who only render their services in times of danger; at other seasons they employ themselves on their rice and sugar plantations. Their houses are at some distance from each other, and their principal riches consist in the number of their negro slaves, who, like members of the family, work with their masters, and enjoy with him all that his house affords. The negroes in the town, on the contrary, are very unhappy; they are used for the most laborious works, like beasts of burthen; and are particularly employed to beat the rice out of the husks, for which such heavy clubs are given them, that it is with the greatest difficulty that they are able to wield them: they are driven to their work with a whip when their strength fails them; and, besides this, they have very miserable food. By this inhuman treatment, these unfortunate people are degraded to the level of brutes: they seem incapable of reflection or feeling; the sight is dreadful, and inspires commiseration. The

most opprobrious term of abuse, among the Portuguese, is negro! The slaves of the soldiers are quite different men; they enjoy their existence as such, and we had every reason to be satisfied with our neighbours; they behaved very friendly to us, and practised towards us all the virtues of hospitality. The soldiers consider themselves very poor, because it is several years since they have received their pay; it is true they have no money, but they are never in want of the necessaries of life which the island produces; and, therefore, I considered them as very rich and fortunate people. I took up my quarters in a small house near the tent, belonging to the widow of a soldier, and continued to remain on shore, occupying myself with my chronometers. We devoted the evenings to recreation; the good-natured inhabitants usually collected round our tent, and a couple of violins and flutes, which heightened our pleasure, invited them to dance and sing, and gave us an opportunity of observing the grace with which the girls danced the fandango. Immediately after sun-set the air is filled with an innumerable number of fire-flies, which shine in the air like burning points; the large locusts began already to chirp, and frogs of the size of hedge-hogs came out of their lurking places, and may be said to bark like middle-sized dogs. On those who visit this place for the first time, this animation by day and by night, the many beautiful birds and butterflies, and this

luxuriant vegetation, must make a very lively impression. Near our tent flows a small rivulet of very good water, where we could fill our casks with the greatest convenience. We also tried to fish on the sea shore, and always drew up a full net. We found among the fish a number of very remarkable sea-animals, which were welcome to our naturalists, as indeed the country in general afforded them a rich harvest. Ships which intend to sail round Cape Horn, do well to touch at this island, and not at Rio Janeiro; provisions are here cheaper; you enjoy a far better climate; and, above all, have the advantage of being nearer to Cape Horn. The best coffee grows here in abundance, every inhabitant having his plantation close to his dwelling; but the trade, though now allowed, is not considerable, as only few ships come here. The slave trade with the coast of Africa is said to be only permitted to the south of the equator.

While we staid on shore, Lieutenant Schischmareff had the ship put in perfect order for doubling Cape Horn, where many storms undoubtedly awaited us.

On the 26th of December we had all our instruments brought on board, where we found every thing in order, likewise the provisions with which we were provided by the kindness of M. Pinto. On the 27th, he came from the town to wish us farewell; but my intention to leave Brazil to-day was prevented by a great storm. On the 28th, at five

o'clock, A. M. we got under sail, with a very faint land wind. M. Pinto, who had passed the night on board the Rurick, received our hearty thanks for his kindness, and thus we parted from him, and from the shore, where we had passed several very happy days. It was with pleasure that we saw the inhabitants sorry to part with us. My crew, whom I had daily sent on shore to strengthen them for the approaching voyage, gratefully acknowledged the friendly reception of the people, and behaved with propriety, by which they inspired a very favourable opinion of the Russian character. At the house where I had lived, I had a copper-plate put up, on which was inscribed the name of the ship, and the date of the year; by which our hostess felt herself much flattered. Barraud's chronometer now lost in 24 hours 4^s, 4, and Hardy's 49^s, 5.

Lieutenant Zacharin, who, during our stay in Brazil, had lived constantly on shore, was now so far recovered, that his services could be of use to us. The whole crew were now in excellent health, except our smith, who, in spite of all that the physicians did for him, could not recover his health.

CHAPTER V.

FROM ST. CATHERINE'S TO THE COAST OF CHILI.—
CONCEPTION.

1815 ON the 31st of December we were in latitude $34^{\circ} 10'$ south, and longitude $48^{\circ} 3'$ west. We here perceived three large turtles, the appearance of which surprised me very much, as we were at a very great distance from land. Till the 10th of January, 1816, in latitude $45^{\circ} 56''$, longitude $57^{\circ} 2'$, nothing worth noticing occurred; both wind and weather were favourable, and we were quite rejoiced at our rapid progress, until heavy storms announced our nearness to *Cape Horn*; we were exposed to these for six days; the storm was, however, uncommonly furious to-day, raising the waves to a great height, and tossing our little ship from one side to the other. One of the waves, which dashed in from behind, did a great deal of damage, and nearly cost me my life: I was lying on a hen-coop, the storm raging round me, without suspecting any danger, when this wave suddenly seized me and my couch, and swept us together overboard. I must have been inevitably lost, had not some ropes, which were fastened to

the ship, fallen down with me, and caught me as it were in a net. I was stunned, and did not recover my senses till the cable threatened to break, and just gave me time to swing myself on the deck. The coop, with forty fowls, on which I had been lying, together with my pillow, swam in the sea past the ship : I thanked God for my safe deliverance, and patiently bore the loss of the roast fowls, upon which we had all reckoned, for those that were in both the other coops also perished by the violence of the waves. It was not till after I had recovered from my fright, that I discovered the ravages which this unhappy wave had occasioned ; the whole railing against which I had been lying was dashed to pieces, and even the strong timbers of the gallery were broken, and the cannon thrown to the other side ; happily none of the people were in the way, or they would certainly have been killed. With a sorrowful heart I looked around me, the top of my cabin was torn off, and part of the wave had rushed in. I trembled for my instruments and books, the loss of which would have been irreparable. Before I ventured down, I ordered the opening to be nailed up with boards, to preserve the cabin from a second wave. We found the rudder unserviceable for the present, but happily it would bear repairing. Several of the sailors had suffered slight contusions, particularly the man who sat at the helm. I now descended into my cabin to examine into my loss, but, to my

great joy, found that the water had not reached my instruments, which were on a high place; it found its way into the hold, and there had done great damage. After the storm had abated a little, a very considerable quantity of our best biscuit was taken out quite reduced to a pap. This was a very great loss for us, which we could not repair. The water had likewise forced its way into the powder-room, and damaged a considerable quantity of powder.

The 16th of January in latitude $49^{\circ} 5'$, longitude $63^{\circ} 31'$, a fresh north wind, with beautiful weather, brought us nearer to Cape Horn; at noon we sounded, and found 60 fathoms' water, over a bottom of grey sand. On the 19th, at eight o'clock, A. M. we descried Cape St. John, at the distance of forty miles; at noon, the weather being very fine, the frightful country of Staatenland appeared. Cape St. John lay S.W. 12° , 25 miles distant; the current set strong to the E.N.E. Towards midnight we had doubled Staatenland; the wind blew strong from the north. I bent my course to the S.S.W., in order, for security, to keep distant from the shore; and, contrary to the custom of other navigators, I took then a more westerly course, to double Cape Horn as sharp as possible. On the 22d, at four o'clock, A. M. we crossed the meridian of Cape Horn, in $57^{\circ} 33'$ south latitude, which was evidently a great advantage to us; as we had not gone so far to the south as others used

to do. We were surrounded by whales, dolphins, and albatrosses. While we were doubling Cape Horn we were encountered by high storms from S.W., which continued several days, and it was not till the 1st of February, that we succeeded in passing the latitude of Cape Victoria. We triumphed: for now we had no fear of being driven back by westerly storms. On the 11th, at ten o'clock, P. M. we discovered land by moonlight; this was the coast of Conception, in the neighbourhood of the island of St. Mary. We lay till day-break, and then stood in for the bay. I give no description of the appearance of the coast, nor of the entrance to the bay; La Peyrouse has said sufficient on the subject in his voyage. The navigator may be confident of always finding, at this season of the year, at a distance of two degrees from the coast, as well in this latitude as also one degree more to the south, beautiful and serene weather, and south wind; but, on the contrary, if he go more to the west, he may expect to find gloomy weather, and a north wind. It would, therefore, be advisable for ships that intend sailing up the coast, to approach it at once at 42° , as they will certainly accelerate their passage. But this applies only to the summer; because in winter gloomy weather and north winds prevail. At noon we found ourselves already at the entrance of Conception Bay; the wind blew from the south, on

which account we could not reach Talcaguano without tacking.

At three o'clock, P. M. we could see the place very distinctly, where three merchantmen lay at anchor. We hoisted our flag, and by another, which was accompanied by a gun, demanded a pilot; soon after, a boat appeared from Talcaguano, but did not venture near enough to our ship for us to hear any thing that they said. They made all kinds of signs, which we understood as little; and at night-fall they returned to the shore. This distrust surprised us; but we afterwards learnt that it was for fear of pirates, many of which come here from Buenos Ayres, and do great damage on the coast. We tacked till evening, and at eight o'clock, when it had got dark, we cast anchor 30 miles from Talcaguano, in a clayey bottom 12 fathoms deep. On the 13th, at break of day, our sentinels saw a boat near the ship, which hailed us; but we could not understand them: we called to them, "Russians, friends of the Spaniards!" The people at length resolved to come on board, and were much surprised to find us to be Russians, no ship of that nation having ever yet visited this place.

There are numbers of whales in Conception Bay, which spouted out the water; one of them had the boldness to come up about one foot under the surface of the water, and to rest against the Rurick; thus, we had an opportunity of observing him

very closely, and even heard him breathe. It is probably very seldom that they venture so near, that their wonderful magnitude can be contemplated at leisure.

As we had now a pilot, we weighed anchor, and arrived in a couple of hours at the anchoring-place of Talcaguano, about a quarter of a mile from shore, in four fathoms and a half water, on a clayey bottom. We had scarcely cast anchor, when the commander of the place, Don Miguel de Rivas, lieutenant-colonel of the Spanish infantry, and his aide-de-camp, came on board; and, after the first salutation, asked to what nation we belonged? (the Russian imperial flag being quite unknown here.) When he learnt that we were Russians, his surprise was evident, but he was soon very friendly, and said, "As long as the world has stood, no Russian vessel ever showed its flag in this harbour: you are the first! We rejoice in saluting a nation which has sacrificed itself, and, under the Great Alexander, has conquered for the liberties of Europe!" After I had shown him a written recommendation from the Spanish minister, at London, to make him acquainted with the object of our voyage, he immediately offered his services to assist us in every thing, and requested me to acquaint him with my wants. He likewise promised instantly to dispatch a courier to the town of Conception, which is only two leagues distant from Talcaguano, to inform the Governor of my

arrival. My first request was, that he would assign me a place on shore, where I might bring my instruments, that I might try my chronometers. The commander left us, promising to send us an answer to-day, and invited us all for the evening. We obeyed the invitation, and found a very numerous and elegant company of ladies and gentlemen; where we had music and dancing; and where, after the fatigues of the voyage, and the danger of perishing in the waves, near the stormy Cape Horn, we were doubly sensible of the distinguished hospitality of the inhabitants of this beautiful country, which was known to us only by description; and spent a very agreeable evening. Experience alone can give an idea of the feelings which a navigator experiences on such changes of scene.

I must here remark several customs which surprised me very much, and might certainly bring a foreigner into embarrassment. There are in the ball room, on an elevation of two steps, benches covered with red cloth; on these sat the gentlemen and elderly ladies; the young ones had their places on the steps at our feet, and I was quite confused when I observed a handsome young girl, dressed in satin, and diamonds, sit at my feet; but as I soon perceived, that all the gentlemen shared this distinction with me, I took courage, and raised my eyes again. The herb of Paraguay, or rather the leaves of the lau-tree, is known in all the

Spanish settlements, and generally used, instead of tea; (the herb of Paraguay is used in Chili, to the amount of 1,000,000 dollars annually;) but the custom is perhaps not so well known, of presenting this tea in a silver vessel, with a pipe to it, out of which every one in the company takes a few sips, and hands it to his neighbour. When my turn came round, I considered it a duty due to propriety, to imitate those who preceded me, though I found it difficult to suppress a certain dislike, as I was about the twentieth that was to suck at this pipe; but I had scarcely put my lips to it, when I drew them back burnt. I therefore advise every one, to whom tea is presented in this manner, to take hold of the pipe with his teeth. However, the taste of the herb of Paraguay is not bad; it is boiled with sugar, and then kept hot in this vessel over charcoal; it is a sweet aromatic juice which one sips. The inhabitants of Chili are fond of preserved fruits, which are handed about in every company, and always with glasses of water, because it is the custom to drink after taking sweet-meats.

February 14th. The governor, who intended to pay us a visit on board, on the following day, sent his aide-de-camp to welcome us in his name, and to offer us his assistance: the order to give up to me the best house in Talcaguano was already issued. In this he executed the orders of his king, in which he had been commanded to receive the

Rurick well. On the 15th, at ten o'clock, A. M. the guns of the fortress announced the arrival of the Governor, Don Miguel Maria d'Attero, and he soon appeared on board the Rurick, with several inquisitive ladies from the town. I received him with all the honours due to his rank, and he expressed his satisfaction in the most obliging terms; saying, how happy he was in being able to serve us, who belonged to a nation whom he loved and honoured. He likewise requested me to make my wants known to him, that he might issue orders immediately to supply me with every thing I desired. When the Governor left the ship, we saluted him with eight guns.

February 16th. The chronometers and instruments were brought to-day on shore. A handsome house, with a pretty garden, was assigned me; where I could try my chronometers without interruption. Lieutenant Schischmareff, in the meantime, undertook the repairs of the ship: our scientific gentlemen, were, likewise, not in want of employment in this beautiful country.

On the 25th we were invited to a fête at the Governor's, which he had prepared in our honour. To avoid the heat, we rode from Talcaguano early in the morning, in company with the commandant, and several officers. We had an opportunity, in this short tour, to admire the rich and luxuriant nature of this country; the inhabitants, notwithstanding the negligent manner in which they cul-

tivate it, reap an hundred-fold. We often rode through the most beautiful orchards, which, without the assistance of culture, produced the finest tropical fruits. When we appeared on the parade, eight cannon were fired, the military drawn up in parade: the Governor received us in full uniform, and conducted us into the fort. The company consisted of the principal persons in the place, among whom was the Bishop. We drank the health of Alexander I. and Ferdinand VII. with a salute of artillery and flourish of trumpets. The table was laid out in the same manner as at grand entertainments in Europe; ice was brought up in great abundance, which the Governor had the politeness to send for from the lofty Cordilleras, where it was procured with difficulty and danger; it was very refreshing to us natives of the north in the great heat. In the evening there was a ball, which was crowded with elegantly-dressed ladies, of whom there is generally a greater number than of gentlemen. The Chilians receive their fashions from Paris. The tone of society is becoming, and unconstrained. Upon the invitation of Count Reyes, we remained another day at Conception, to be present at a ball at his house. We in the mean time visited the town, of which we have nothing remarkable to say; it is built on a regular plan, yet very deficient in handsome houses, but the number of churches and convents is very great. The size of the town may pretty

well be calculated, according to the number of its inhabitants, which is said to be 10,000 ; the broad river Biobio, on which it is situated, adds much to its beauty. There are now no more Spanish settlements on the other side of the river ; the land is inhabited by Araucanas. Before I left the town, I requested the Governor to honour with his presence a ball which I intended to give at Talcahuano to the principal inhabitants, on the 3d of March.

29th February. Our smith, Ziganzoff, died to-day, after a very lingering illness, in spite of all the attention of our able physician. In the choice of my sailors I had taken particular care to select healthy and naturally robust men ; I had succeeded in all of them, except the smith, who had concealed his illness for fear of not being taken with us. Soon after we had left England he fell into a consumption ; he was not able to leave his bed during our voyage from Brazil to Chili, and died on shore, where he was decently buried, and followed to the grave by Spanish soldiers.

I think it not superfluous to advise every navigator that visits this place, to caution his people in the use of wine. In some of the numerous public-houses at Talcahuano, they mix with the wine the juice of an herb unknown to us, which produces the most horrid effect ; for it throws people into a state bordering on frenzy, which is followed by a general relaxation of the nerves. Several of

the sailors of the Rurick have experienced this. Probably this beverage is calculated to plunder foreigners, as this generally follows the drinking of it. Talcaguano is, for the most part, inhabited by a mixed race of Spaniards and Araucanas, who have no mind for work, and therefore try to get their bread by dishonourable means.

On the 3d of March I had the pleasure of entertaining a numerous company from Concepcion. Early in the morning, when the heat was still supportable, we saw our guests arrive at Talcaguano; most of them were on horseback, which is the usual mode of travelling; even the ladies mounted spirited horses. Others drove in little huts, placed on two-wheeled carts, drawn by two oxen, guided by an Araucana sitting on the roof of the hut. The handsome and elegant ladies, who got out of these ludicrous vehicles, formed a very interesting contrast with their equipages. As early as three o'clock in the afternoon, my boat was in full employment to bring my guests on board the Rurick. They were very much pleased with their reception, and thought the ship very pretty, but surprisingly small. In the evening, I gave the company a ball. As the house assigned to me was too small, I had a magazine near it changed into a ball-room, as well as I could. To two rows of pillars on each side of the building, which served to support it, were tied trees, the tops of which formed a green roof. The garden and the ball-room

were illuminated with lamps, and, at the entrance of the ball-room, was exhibited a transparency. The cypher of Alexander I. appeared in the middle, over which a flying genius held a crown of laurel; in the back-ground a second transparency represented the alliance of the two monarchs, by a pair of clasped hands, over which were the cyphers of Alexander and Ferdinand. The way to the house where we supped, led through the garden, where I had fireworks displayed as we passed, which gave great pleasure to our guests, to whom this was quite a new sight: the illumination also excited universal wonder, as they generally burn no more than five or six lights at their most splendid balls. At table, amidst a salute of artillery, the health of both the monarchs was drunk, and then that of the author of the expedition. The company remained till sunrise, the Governor not retiring till that time.

March 8th. The examination of the South Sea, prescribed by my instructions, would not permit a longer stay in this convenient bay; all the ship's repairs being finished, the instruments were brought on board, and I took advantage of the favourable wind to reach the sea. The commandant of Talcaguano, Don Miguel de Privas, who had been daily in our company, and had taken a liking to the Russians, staid with us to-day, on board the Rurick, till the moment of our departure, when he took leave of us with tears. I

rejoiced heartily when we were again under sail, and I now thought that the more important part of the voyage was beginning, and what had hitherto been done only a prelude.

La Peyrouse, in his voyage, has said so much about Conception Bay, that I could only make repetitions; the bay, however, as a place of refreshment, is to be recommended to navigators, as provisions and fruits of all sorts are in abundance. Chili is an extremely pleasant country, and enjoys an almost uninterrupted spring; during our whole stay we had the most beautiful weather: what surprised me much was a bright lightning, which I observed every evening after sunset in the N.E. over the lofty mountains. Chili produces a pleasant wine; and it is only to be regretted that the Spaniards do not apply more to the cultivation of the country; their absurd jealousy likewise prohibits all trade, except with their own colonies, though they might carry on a flourishing commerce.

CHAPTER VI.

FROM CONCEPTION BAY TO KAMTSCHATKA.

THE fine weather which we enjoyed at Conception, did not yet forsake us. I endeavoured to steer my course so as to sail to the windward of Juan Fernandez, in order, according to my instructions, to reach latitude 27° , and there look for Davis' Land, where Captain Krusenstern supposed it to be. On the 9th, in latitude $35^{\circ} 22'$, longitude $74^{\circ} 4'$, we perceived a bloody colour on the surface of the water, an appearance which was caused by a dead whale, on which a number of sea-swallows were making a repast. On the following day, in $34^{\circ} 27'$ south latitude, and longitude 74° , at six o'clock in the evening we experienced a strange commotion in the air, which made the ship seem to tremble; the noise, which resembled distant thunder, was renewed every three minutes, and continued only half a minute each time. In the space of an hour we observed it no longer; it is probable that an earthquake happened in America at this moment, as our distance from the shore was two degrees, and we only heard the noise from the east.

On the 16th, at noon, in $27^{\circ} 20'$ south latitude, longitude $88^{\circ} 4'$, we were in the neighbourhood

where Davis' Land is supposed to lie, on which account I steered directly westward. For several days we had a steady S. E. wind, which blew very fresh; on which account the current drove us daily from eighteen to twenty miles to the north. On the 20th, as we had already reached longitude $95^{\circ} 35'$, I gave up all further looking for Davis' Land, and directed my course rather more to the south, in the hopes of being more fortunate in latitude $26^{\circ} 30'$ south, in finding Wareham's rocks. We could depend on the certainty of our longitude, as it had been for several days calculated according to the distances of the sun and moon, and agreed with the longitude by the chronometers within a few minutes. It was here we threw a well-corked bottle into the sea, into which a paper was put, with the latitude and longitude of the ship, the date of the year and month, and the intelligence that the Rurick had looked here in vain for Davis' Land. On the 24th, at five o'clock in the afternoon, in latitude $26^{\circ} 29'$ south, longitude $100^{\circ} 27'$ we passed the place where Wareham's rocks are marked on Arrowsmith's chart. Tropical birds and fishes we saw here in numbers; the horizon was clear, but the sailor who sat constantly at the mast-head, declared that he could perceive no rocks. In the evening, during the finest weather, we had bright lightning, which continued for several hours, and sometimes illuminated the whole horizon. With a star-light sky, and fresh east wind,

we continued our course to the west, to discover the island of Sales. Towards morning we observed several sea-fowls, whose numbers increased as we sailed rapidly forward. Soon afterwards, so many pelicans and frigate birds appeared, and fluttered, as if curious, round the ship, that we could no longer doubt the vicinity of land, and in reality the sailor at the mast-head gave us the agreeable news that he descried land. At noon we could plainly see from the quarter-deck, to the S.W. 66° , a small rocky island at the distance of ten miles, and though the longitude differed rather from that given, I could entertain no doubt but that it was the island of Sales. The greatest distance at which this island may be seen is fifteen miles, and then it has the appearance of two groups of rocks lying near each other; but as you come nearer, the low land which unites them becomes visible; its length is about a mile from N.W.W. to S.E.E.; its breadth is not considerable. We very soon approached the island to the south, within three-quarters of a mile, when we could plainly discern with our telescopes all the objects on shore, the sight of which was not very delightful to us, as no friendly green covers the grey rocks, which lie scattered in large masses, and give the island the appearance of a melancholy ruin, inhabited only by sea-fowls. On the N.E. and S.W. points are reefs, against which the surf dashes with violence, and where we looked in vain for the remains of a wrecked ship, probably be-

cause it had been swallowed up by the waves. We found the island of Sales in $26^{\circ} 36' 15''$ south latitude, and longitude, according to the chronometers, which were regulated on Easter Island, $105^{\circ} 34' 28''$ W. I am almost convinced that Wareham's rocks do not exist at all, but have hitherto been confounded with Sales Island. To be quite certain that there was no other island in this neighbourhood, I sailed again to the west, and did not direct my course to Easter Island till after having sailed some degrees without perceiving any thing. We had reached this island on the 28th of March, at three o'clock, A.M., within fifteen miles, and, at day-break, we saw it distinctly before us. After having doubled the south point, we directed our course along the west coast, at a small distance, to Cook's Bay, where we observed columns of smoke ascending, which was probably a signal to the inhabitants of the interior of the country that a ship was approaching. At noon, when we were quite near to Cook's Bay, we observed two boats, each manned with only two islanders, who rowed up to us. I was in great hopes that these people, who had placed so much confidence in La Peyrouse, would give us likewise the same hearty welcome, which, to my great astonishment, was by no means the case. They approached us with fear and distrust, within gunshot; showed us some roots at a distance, but could by no means be persuaded to approach nearer to the ship. The structure of the canoes, of which

we saw several, and which contain only two persons each, correspond exactly with those mentioned by La Peyrouse; they are from five to six feet long, and about one foot in breadth, made of narrow boards joined together, and furnished on both sides with an outrigger. La Peyrouse's opinion is, that the islanders, for want of wood, will soon be quite at a loss for boats; but he is mistaken: it is true we did not discover a single tree on this island, but they build their canoes of drift-wood, which the current brings in great quantities from the coast of America. The bottom being very bad in many places in Cook's Bay, I sent Lieutenant Schischmareff to find out, by means of the lead, a more convenient anchoring-place, during which time I kept the Rurick under sail. The islanders, who had hitherto always followed the ship, conversing aloud, and seeming to be very good-humoured, hastened on shore when they saw our boat put out, which surprised me the more as the inhabitants of Easter Island had previously placed so much confidence in navigators. However, the ship only appeared dangerous to them, for as soon as our boat approached the shore, a number of savages swam up to it, laden with taro roots, yams, and banana fruits, which they readily exchanged for little pieces of old iron hoops. Some dealt very honestly, others cunningly, and one even attempted to obtain something by force. To deter the others from being infected by his bad example,

we fired some small shot at him, which, however, did not prevent them from practising their thievish arts. On a signal given by our boat, that they had found a good anchoring-place, I made a couple of tacks to reach the point, and cast anchor in twenty-two fathoms, on a fine sandy bottom. The Sand-bay lay S. E. 45° of us ; the two rocks were hidden behind the southern point. Our boat now returned, without the islanders venturing to follow it. As it was my intention to land, I had two boats manned for the purpose, and we left the Rurick, seventeen in number, at three o'clock in the afternoon. A great number of savages had assembled on the beach ; they cried, and capered, and made the most singular motions, and seemed to wait our arrival with impatience ; but as they had chosen for their rendezvous the only place where the surf would permit our landing, we could not venture to leave our boats, before they had made room, which they could in no wise be persuaded to do. Amidst laughing and joking they obliged us to put off from the shore, and even pursued us in the water ; but this did not seem dangerous, as they were all unarmed. We had scarcely left the shore, when hundreds swam round our boats, who exchanged banana-fruits and sugar-cane, for old iron ; at the same time making an intolerable noise, as they all spoke with great vivacity at once ; some of them appeared to be very witty, as at times a gene-

ral and loud laughter arose. The spectators on shore, who at last got tired of this scene, amused themselves with pelting us with stones, to which I soon put an end by a few musket-shots. By this I also lost my cheerful company in the water, gained the landing-place, and hastily put some of my sailors on shore. Scarcely had the savages perceived this, when they surrounded us with still more importunity. They had painted their faces red, white, and black, which gave them a terrific appearance, danced with the most ridiculous motions, and contortions of the body, making such a terrible noise, that we were obliged to halloo in each other's ears to understand what we said. I can imagine the impression which this made on Lieutenant Schischmareff, who saw these people for the first time, and thought himself surrounded by so many monkeys; for this new scene surpassed even my ideas, though I was previously acquainted with the inhabitants of the South Sea. In order to disperse them, and to get some room, I had knives thrown among them; but, notwithstanding this, I felt a stone strike my hat. I gave orders again to fire, and this at length enabled me to get on shore. My first business here was to look for the large and remarkable statues on the beach, which were seen there by Cook and La Peyrouse; but, notwithstanding all my research, I only found a broken heap of stones, which lay near an uninjured pedestal; of all the others not a trace

remained. The distrustful behaviour of the islanders, led me to think that some Europeans had had a quarrel with them, and revenged themselves by destroying the statues. It struck me, as something very singular, that in all this bustle on shore, and in the water, we did not see a single woman, of whose importunity preceding voyagers have so often complained. This observation confirmed me in my opinion, that the Europeans must lately have committed many excesses here. After I had fully convinced myself, that these islanders would not allow us to enter their country, we tried to retreat to our boats, which, besides, were insecure in the surf; but even now we were obliged to protect ourselves from their importunity by several musket-shots; and it was not till they heard the balls hiss about their ears that they left us at peace. We gave them some more iron, and then hastened back to the Rurick, as our stay, under such circumstances, would only be loss of time, and every hour was valuable to me. The inhabitants seem to be all of a middle stature, but well made; mostly of a copper colour, very few being tolerably white. They are all tattooed; and those who are so over the whole body, have the appearance of chiefs. We saw here the stuff made of the bark of trees, which is manufactured in most of the South Sea islands, for some of the men wear short cloaks of it; and the women, who stood at a great distance, were entirely wrapped in it. To

judge by the vivacity of these people, they seem perfectly contented with their situation ; they are probably not in want of provisions, as they brought us a considerable abundance of banana-fruit, yams, sugar-cane, and potatoes ; and do not neglect cultivation, as we saw the hills near the bay entirely covered with fields, which, by their various green, afford a very agreeable prospect. The seeds which La Peyrouse gave the islanders have probably not succeeded, as they did not bring us any of their fruits ; we also looked in vain for the sheep and hogs which he left there : a fowl was offered us for a large knife, but was taken away again when we refused the bargain ; a proof how much they value these animals, and how few they have of them. Their habitations are exactly the same as described by La Peyrouse, and the long house, as marked in his map, still stands, as well as the stone-hut on the shore. In general, I believe, that since the time he was there, with the exception of the disappearance of the remarkable statues, no change has taken place ; and of these we saw two, after we had doubled the south-point, but they were of little consequence. At our departure from Easter Island, the inhabitants again pelted us with stones, which they threw after us with the loudest cries, and I was very glad to find ourselves, at seven o'clock, with no bones broken, on board the Rurick, and under full sail.

A piece of intelligence, which explains the hos-

tile behaviour of the islanders, and which was given me in the sequel at the Sandwich islands, by Alexander Adams, I will now communicate to the reader. This Adams, an Englishman by birth, commanded, in the year 1816, the brig *Kahumanna*, belonging to the king of the Sandwich islands, and had before served on board the same brig when it was called the *Forrester*, of London, as second in command to Captain Piccott, (Piggot,) who sold it to the king. The captain of the schooner, *Nancy*, from New London, in America, whose name Adams did not mention to me, employed himself, in the year 1805, in the island of *Massafuero*, in catching a kind of seal, which we call in Russia, *kotick* (sea-cat). The skin of this animal is sold at a high price in the markets of China, and therefore the Americans try to find out their haunts in all parts of the world. This animal was accidentally discovered, and immediately hunted in the hitherto uninhabited island of *Massafuero*, which lies west of *Juan Fernandez*, where criminals are sent from *Chili*. But as this island afforded no safe anchoring-place, the ship was obliged to remain under sail; and as he had not men enough to employ part of them for the chase, he resolved to sail to *Easter Island*, and to steal some men and women, to bring them to *Massafuero*, there to establish a colony, which should regularly carry on the seal fishery. In pursuance of this wicked design, he landed at *Cook's Bay*, where he en-

deavoured to seize upon a number of the inhabitants.

The combat is said to have been bloody, as the brave islanders defended themselves with intrepidity; but they were obliged to yield to the terrible arms of the Europeans; and twelve men, and ten women, fell into the merciless hands of the Americans. Upon this, the poor creatures were carried on board, fettered for the first three days, and not released till they were out of sight of land. The first use they made of their recovered liberty, was, that the men jumped over board; and the women, who attempted to follow them, were prevented only by force. The captain made the ship lie to, in hopes that they would return on board for refuge, when they were threatened by the waves. He, however, soon perceived how much he had been mistaken; for the savages, used to the water from their infancy, thought it not impossible, notwithstanding the distance of three days' voyage, to reach their native country; and at all events they preferred perishing in the waves, to leading a miserable life in captivity. After they had disputed for some time, as to the direction they should take, they separated; some took the direct way to Easter Island, and the others to the north. The captain, extremely enraged at this unexpected heroism, sent a boat after them, which returned after many fruitless efforts, as they always dived at the approach of the boat, and the sea compassion-

ately received them in its bosom. At last the captain left the men to their fate, and brought the women to Massafuero ; and is said to have afterwards made many attempts to steal some of the people from Easter Island. Adams had heard this story from the Captain himself, which was probably the reason he did not wish to mention his name : he assured me that he had been to Easter Island, in 1806, but was not able to land, on account of the hostile behaviour of the inhabitants : he said, that the ship Albatross, under the command of Captain Winship, had met with the same fate in 1809.

According to my instructions, I ought to have visited Pitcairn's Island, and thence to have proceeded westward to 137° ; but as our voyage from Cronstadt to Chili had lasted longer than was calculated in our plans, I was obliged to take the shortest course to Kamtschatka, in order to reach Beering's Straits in time.

April the 8th, latitude $18^{\circ} 6'$, longitude $125^{\circ} 16'$. We observed, to-day, several kinds of sea-fowl, some of which are not accustomed to fly far from land ; besides, we were in a part where I might expect to make new discoveries. I constantly had a sailor at the mast-head, to whom I promised a reward for every new discovery. The cry of Land ! threw us all into the most eager expectations ; the telescopes could not be brought quick enough ; each wanted to see it first, because it must be something new, and I was thinking

already what name I was to give my island, when, behold, the supposed land rose in the form of a black cloud, passed away over the horizon, and carried my flattering hope with it! Only a seaman, who, like me, has new discoveries for the end of his endeavours, and the object of his voyage, can feel how much pain such a mistake must have cost me.

The 10th : latitude $16^{\circ} 39'$ south, longitude $130^{\circ} 18'$. It is very remarkable, that since we left Easter Island, the wind blows principally from the N. and N. E., and the usual S. E. monsoon has not blown at all; the weather is always fine, and uniformly after sunset, there is bright lightning in the north. The nights being warm, we always sleep on deck, to recover ourselves from the heat of the day, a circumstance which occasioned me one night a very unexpected visit. I was awakened by the constant motion of a very cold animal at my side, which, when it writhed in my hand, I first took to be a lizard. This might perhaps have been brought on board at Chili, with the wood. But, on examining, I found that it was a flying-fish, that I had in my hands; and I am probably the first that has caught such a one in bed.

The 13th : in latitude $15^{\circ} 26'$ S., longitude $133^{\circ} 56'$. At six o'clock this afternoon, we were in the place, where the island of St. Pablo is marked in Arrowsmith's chart, without perceiving the least trace of land; and at eight o'clock in the evening,

I steered my course due west, to follow, according to my instructions, the parallel of 15° . Schouten and Lemaire have several islands, that have never since been seen.

The 15th : in latitude $14^{\circ} 41'$, longitude $137^{\circ} 00'$. We observed different kinds of sea-fowl all the day, particularly man-of-war birds and pelicans; and, at five o'clock in the afternoon, were overtaken by heavy rains and gusts of wind from the N.W., which continued for several hours. Such a singular change of wind, in a place where it in general never blows but from the east or S.E., could, in my opinion, be caused only by the vicinity of land. I therefore resolved to sail no further that night. The sky was enveloped in darkness, and it lightened in all parts of the horizon, during which it continued to pour of rain.

The 16th : latitude $14^{\circ} 51'$, longitude $138^{\circ} 4'$. At day-break we continued our course to the west, a high wind from E.N.E. blowing the Rurick briskly forward. At three o'clock in the afternoon, the sailor at the mast-head cried, "Land!" a word which struck me like lightning; at which hope and fear for a new illusion alternated in my mind. But this anxiety did not last long, for I soon had the inexpressible joy of beholding, with my own eyes, the object of my most ardent wish. The land was discovered to the N.N.W., in a W.S.W. course, and we directly steered towards it. The island seemed to us so small and low, that the

grove, which we could plainly discern, seemed to us to rise from the surface of the water. The greatest distance at which this island can be seen from the mast-head is ten miles; and, as we had always been accustomed to see nothing but high land, this contrast made a very singular impression on us. We now doubled the north point, at the distance of a mile and a half; we found the whole island covered with thick bushes, in the middle of which a small lake had a pleasing effect; the shore was surrounded with coral reefs, and the surf appeared so violent, that it seemed impossible to effect a landing. As soon as the sun had disappeared, we quitted this lovely island, which is seven miles long, from N.W. to S.E., and tacked during the whole night under few sails, in order to look at it once more at day-break. The wind varied from N. to N.E., and it is difficult to ascertain why the trade-wind changes its general direction here, as no high land is near. All the sea-fowl went to the island at sunset, and returned again at the morning twilight. I believe that I may affirm, from my repeated experience, that navigators may conclude the nearness of an uninhabited island, when many sea-fowl, particularly pelicans, are seen fluttering about; which, however, only holds good between the tropics. It may likewise be remarked, that at sunset they all go in the same direction, (except those which remain all night at sea,) and, consequently, one might follow

these birds, and discover their home. At day-break we drew nearer again to the island, and doubled the north and west points, at the distance of a mile and a half, and employed ourselves in taking sketches of it. No place of landing was visible, except at the N.W. point, where it might perhaps have been possible to effect a landing, if the waves had not caused too great a surf, by the violent wind from the north. The middle of the island, where the lake is, is very low : the extreme points at the north and south lie higher. It was in vain that we looked for a palm-tree, but the bushes relieved the eye by their luxuriant green. The description of this island corresponds with the Dog Island of Schouten, but it is not certain that it is the same, as our latitude differs by twenty-two minutes ; a mistake which, even at that time, could hardly have taken place. I pay no attention to the difference of longitude, as it was, of course, some degrees wrong at that time. Undoubtedly, several such islands must be near this place, as is proved by the innumerable sea-fowl that we have seen for the last two days, which could not possibly all find room in this one. I therefore called it the Doubtful Island. We found its latitude, calculated from two observations at noon, $14^{\circ} 15' 11''$ south, and its longitude, by the chronometers, $138^{\circ} 47' 7''$; the declination of the magnetic needle 5° east. Schouten, the day before he discovered the Dog Island, had no declination, and

found the island in latitude $15^{\circ} 12' 3''$. At eleven o'clock, our survey was finished; and we were now fully convinced that no landing could be effected without imminent danger, and that the island was only the retreat of sea-fowl. As, according to Schouten, the Dog Island lies more to the south, I immediately steered my course thither, and, after looking an hour in vain for it, again steered to the west. Since we had been in parallel 15° we had continual wind from the E.N.E. and N.E., but in the night accompanied with rain and heavy squalls from the N.W.

On the 19th and 20th of April we made excellent observations between the sun and moon, and I had the extreme pleasure of finding that the longitude by my chronometers agreed so exactly with our observations; but how much was my joy increased, when the cry of "Land," from the mast-head, struck my ear. It was discovered to the S.W., and at noon we could see, at a little distance, a small island, three miles long, which differed from the Doubtful Island, as no lake was visible in it, but a number of cocoa-trees rose majestically above the others. This time I was quite certain, that I could with justice call it a new discovery. We all had a wish to land, and unanimously resolved to satisfy it, in spite of every danger. The ship was immediately brought under the lee, and Lieutenant Zacharin was dispatched to examine what measure we ought to take to satisfy our

wishes, because we soon saw that a boat could not pass through the surf.

This supposition was confirmed by Zacharin on his return ; but two sailors, resolved not to leave the new discovery unexplored, swam through the surf ; a courage which made me wonder the more, as they had not, like the South Sea islanders, the faculty of living constantly in the sea. They landed safely, but did not venture far, as there were many traces of the island being inhabited ; to prove, however, that they had really been on shore, they brought us several cocoa shells, and also a braided cord, which was tied to a pole. I was now seized with a greater desire than ever to land, and resolved, as it was too late to-day, to satisfy it to-morrow, at all events. A pram seemed to me the most convenient for this purpose ; in a moment all the boards and poles on board the Rurick were collected together ; we worked the whole of the night, and at day-break, on the 21st, to my great joy, our pram, which was made large enough to carry one person with ease, was finished. We had tacked, during the night, with a north wind and rain, and as soon as it began to dawn, we approached the shore within half a mile ; two boats were instantly put into the water, and Lieutenant Schischmareff, myself, and our scientific gentlemen, left the Rurick, with our newly-made pram, at seven o'clock, A.M. About forty fathoms from the shore, we anchored our boats, on a bottom of hard coral, in ten fathoms

water, and my two sailors repeated their hazardous attempt, by taking hold of one end of a rope, the other end of which was fastened to the boats, and so effecting a communication with the shore. One now placed himself upon the pram, drew himself along the rope towards the surf, and left it to a rising wave to throw him on shore; the pram was drawn back as soon as the man who had passed over had got firm footing on the beach, and then another began the unsteady passage. At length we were all on shore, except two sailors, who had remained in the boats, all of us more or less hurt, as we could not reach the shore without being washed by the surf over a sharp coral bank. That we were all, of course, wet to the skin, is of no consequence in the tropics. We now went, well armed, into the interior of the island, finding traces of men at every step we proceeded; at length we came to a well trodden foot-path, which fully convinced us that the island was inhabited. Looking around on all sides for fear of a surprise, we continued our way, which led us into a grove, the aromatic odours of which refreshed us, and at length reached a flat spot shaded by palm-trees, where we found a small boat which resembled those in the South Sea, being furnished with an outrigger on both sides. We now found ourselves in a most delightful spot, about the middle of the island, and being overcome by the heat, sat down under some cocoa-trees, and, for the first time in our voyage, refreshed

ourselves with the milk of this fruit. I felt inexpressibly happy in this small spot; inconsiderable as the discovery might be in itself, yet I would not have resigned the pure and heartfelt joy which it gave me, for the treasures of a world. After we had refreshed ourselves a little, we began our journey again, and found some uninhabited huts, in which there were several articles, the workmanship of the savages; and left European goods instead. We no where found fresh traces of men; and some poles, with fishing-nets hanging on them, confirmed me in my conjectures, that the islanders came here at a certain season of the year, for the sake of the fishery. We had traversed the island from north to south in four hours, and, on our return, met with several well-made reservoirs, in which was water of a good taste. It is well known that there are no springs in the coral islands, on which account the inhabitants must content themselves with rain-water, which they collect in large pits dug for the purpose. When we had arrived at our landing-place, I had a bottle of wine opened; which we drank, with loud cheers, to the health of Count Romanzoff, and called the island by his name. Our boats adorned themselves with flags, and fired several guns, and the Rurick, expecting this signal, hoisted the imperial flag, and fired her guns, during which we drank to the health of our beloved Emperor. We reached our boats with the same difficulty as we had landed, and at two o'clock in the

afternoon were safe on board the Rurick, where I distributed the cocoa-nuts which we had brought from Romanzoff Island among those who had remained behind. The whole crew received their double rations, and the sailor who had first descried the island, had six piasters for his reward. We tacked during the whole night under few sails, for we might expect more islands in this part, upon which the ship might be wrecked in the dark, on account of their low situation, and at day-break we continued our course to the west. The latitude of the middle of Romanzoff's Island, by a good meridional observation, with three sextants, is $14^{\circ} 57' 20''$ south; longitude, according to the chronometers, which coincide with the observation, $144^{\circ} 28' 30''$ west. The variation of the magnetic needle $5^{\circ} 36'$ east.

On the 22d of April, at nine o'clock in the morning, land was descried from the mast-head in the N.N.W., to which we immediately steered. This island, with a lake in the middle, above the surface of which many large stones rise, is of the same nature as the other islands; its length from N.N.E. to S.S.W. is eleven, and its breadth only three miles. We doubled the north point at the distance of half a mile, without perceiving any traces of inhabitants, and not a single cocoa-tree. At noon the south point lay east of us; we had an excellent observation, from which we found the latitude of its centre to be $14^{\circ} 41'$ south; longi-

tude, according to the chronometers, $144^{\circ} 59' 20''$ west. I could not doubt but this was also a new discovery. I named it after my former commander Admiral Spiridof. As the island did not appear to me to be inhabited, and as a landing could not be effected but with the same difficulties as at Romanzoff's Island, I determined to lose no time, but to steer to the W.S.W., with the intention of looking at Cook's Palliser's islands, to compare my longitude with his. A fresh east wind carried us quickly towards our object; and, directly after sunset, I lay-to to keep the ship in a spot where I found the sea extremely calm and even; a proof that a number of islands must be in our neighbourhood. But we found the current in this place so extremely strong, that on the following day at noon, the ship had been driven twenty-eight miles to N.W. 82° .

On the 23d of April, at dawn, we sailed further, and ought, according to my calculation, to be, at ten o'clock, near the meridian of Palliser's islands, but rather more to the north; in the hope, therefore, of soon finding the islands, we steered to the S.S.W. In fact, at about half past ten o'clock, land was announced at the right and left. I now steered from the south to the east, a course which must lead me direct into the passage. The land on our right, which consisted of a number of small coral islands, covered with wood, and joined by coral reefs, I declared to be a new discovery. This situation was more to the north than the Pallisers,

which we saw distinctly on the left, and whose meridian we had already passed, which, according to our ship's reckoning, could not be. I again doubted the goodness of my chronometers, when I was comforted by an excellent meridional observation, by which I perceived that the current had played us this trick, and driven us thirty miles to the west. My calculation of the longitude of the Pallisers, agreed with that of Cook, within three minutes. Between our latitude and Cook's there was no difference; I therefore had no reason to complain of my time-keepers. Being fully convinced, that the islands to the S. E. were the Pallisers, and did not need to be inspected, we turned to those newly discovered, which extend in a chain to the S. W., as far as the eye can reach. I shall not speak at length of their situation, because a single look at the chart, which is drawn with great care, explains it better than any words. I am inclined to take those islands for uninhabited, as we saw neither traces of people, nor any cocoa-trees, though we sailed along the whole chain, from the south-west part, at the distance of half a mile from the shore. We enjoyed, during this run, a very pleasant prospect, as we could even clearly see the trees agitated by the wind. The length of the most considerable of these islands, lying at intervals of from one hundred to two hundred fathoms, and united by small coral reefs, is about two miles; the breadth from about a quarter to half a mile;

and all of them, even the smallest, which are perhaps no more than one hundred fathoms long, are thickly covered with the finest trees. It may be conjectured, that these islands form a circle, because, from the mast-head, where we could see the horizon beyond the chain, the sea appeared quite calm, whereas on this side there was a high surf. At noon, we sailed past a small reef, where we could take the altitude of the sun beyond the land; upon this we sailed along the serpentine chain to S.W., till three o'clock in the afternoon, when we again met with a long reef, which forms the southern point, and suddenly runs to the west. At this instant land to the S. S. E. was heard from the mast-head, and I found, on further examining the chain, continuing my course to the N. W., that this long reef was united at the N. W. with other islands. At six o'clock, P. M., we reached the most westerly island of the chain; the length, without reckoning its bendings, is forty miles to this point. Here the land suddenly turned to the N. E., and vanished in the N. As the sun was now setting, we were obliged to leave off surveying for to-day, and tacked during the night under few sails, to continue our work on the morrow. As soon as it dawned, we perceived that the current had carried us far from the land in the E., and brought us to new islands in the west.

On the 24th of April, the islands of yesterday lay to the windward of us, and after tacking for

many hours, all that we gained, was, that we could just see land in the east, from the mast-head. I was therefore obliged, as every minute was precious, to relinquish all further inspection, and called this new discovery, Rurick's Chain. It is really to be lamented, that we were not able to examine the island, which we saw from the point of Rurick's Chain, in the S. S. E. ; but it is sufficient, it exists; and a navigator, who tries his fortune between these dangerous groups of islands, may perhaps finish what circumstances forbid me to inquire into.

Points, astronomically determined, near Rurick's Chain.

Latitude of the N.

point - - 15° 10' 00" S.

Longitude - - 146 34 00 W.

Latitude of the E.

point - - 15 21 00 S.

Longitude - - 146 46 00 W. 146° 31' 00" W.

Latitude of the S. point, where

we ended our survey - - 15 30 00 S.

Longitude - - - - 146 46 00 W.

Declination of the magnetic

needle - - - - - 6 16 00 E.

As soon as I had resolved to give up all farther examination of Rurick's Chain, I directed my course to the west, to the land which we descried, at day-break. We soon perceived that it was similar to Rurick's Chain, and seemed to lie from east

to west. When we had run along the south side, at the distance of half a mile from the shore; I was convinced, that it could be no other than Dean's Island, as marked on Arrowsmith's chart; the eastern point of which coincides with ours, both in latitude and longitude. We sailed quickly onwards, with the assistance of a fresh easterly wind, but could not reach before sun-set the chain of islands, which hitherto always ran in a western direction. Here, also, we observed neither cocoa-trees, nor traces of inhabitants; yet it is scarcely to be supposed, that so great an extent of land, should be uninhabited. We tacked during the night, and on the following day, resumed our survey at the point we left off on the evening before. On the 25th of April, when we had nearly reached the southernmost point of Dean's Island, and clearly distinguished that the chain took a N. E. direction, land was descried in the W. N. W. As Dean's Island lay to the windward, I gave up the further examination of it, and directed my course to the land which was seen in the west, and which appeared to me to be a new discovery. The situation of Dean's Island on Arrowsmith's chart is incorrect; and, besides, it does not appear to have been observed, that this island is composed of a number of smaller ones, joined together by coral reefs. I have so often, in my voyage, found that other groups of coral islands form a circle, that I am inclined to think that it is the same with these.

The direction and extent of Dean's Island, according to our survey, which is principally founded on points astronomically determined, is N. W. 76° and S. E. 76° , and occupies, in this direction, an interval of $72\frac{1}{2}$ miles.

Latitude of the E. point of Dean's

Island	-	-	-	-	15° 16' 30" S.
Longitude of the same	-	-	-	-	147 72 00 W.
Latitude of the S. W. point	-	-	-	-	15 22 30 S.
Longitude of ditto	-	-	-	-	147 19 30 W.
Latitude of the W. point	-	-	-	-	15 00 00 S.
Longitude of ditto	-	-	-	-	148 22 00 W.

We soon arrived at the land in the west, which likewise consisted of a group of small coral islands, connected by reefs, which extended thirteen miles from N. N. E. to S. S. W.; this also was the greatest length of the group, which formed a close circle; in the middle of which, a large lake, with a thickly-wooded island in it, renders this group very easily to be recognized. To this group, which without doubt was a new discovery, I gave the name of the man with whom I made my first voyage round the world: I called it Krusenstern. We had an excellent meridional observation: the N. W. point of Krusenstern's islands lay west of us. We saw Dean's Island in the east, where it took its direction to the N. E., and there vanished in the horizon. We sailed between both, taking our course to the north, and were very glad to have escaped all the dangers of the coral labyrinth,

which have cost many a navigator his life. If the weather had not favoured us in every respect, during our stay among them, the Rurick would undoubtedly have been exposed to many dangers; and, besides, our astronomical observations would have deserved little credit, had not the sun always favoured them. A storm in gloomy weather in these parts would be the inevitable destruction of the ship; and even the possession of an accurate chart of all these groups of islands could not insure its safety, because the current is strong, the land low, and the wind too violent to ply back, if you are so unfortunate as to come too close to a reef. At the distance of a couple of hundred fathoms, the sea has no bottom, consequently the lead cannot give timely notice of the danger. After such a description, every one may conceive our joy, when we again beheld the open sea before us. Notwithstanding all this, and in spite of all these dangers, I would willingly have staid here some days longer, to finish the survey of the several islands, had not the necessity of being at Beering's Straits, at a certain time, made every moment valuable to me; and I therefore, according to my instructions, steered my course to the N. W., where Baumann's islands were supposed to lie.

Latitude of the middle of Krusen-

stern's islands	-	-	-	-	15° 00' 00" S.
Longitude	-	-	-	-	148 41 00 W.

Declination of the magnetic
 needle - - - - - $5^{\circ} 37' 00''$ E.

During the night we had rain and violent wind from the N.E., and considered ourselves very happy in being out of the coral islands; notwithstanding the impetuous wind, the sea was extremely smooth, which made us suppose land to be near us in the N.E., on which account we could only venture to put up a few sails.

I add no proofs that the discoveries are new; the greater part of my readers will not dispute my assertion, and Captain Krusenstern will have the goodness to convince the others, by giving a short view of this, as well as the subsequent discoveries.

April the 28th: latitude $12^{\circ} 2'$, longitude $154^{\circ} 38'$.
 At six o'clock in the evening, we were in the place where Baumann's Islands are supposed to lie, without perceiving any land; we then steered to the N.W., to follow the line where the islands of Roggenwein and Penhoven are supposed to be situated, but, on the following day, we had passed through this part also, without having discovered any thing, which makes me suppose that these islands, whose existence has hitherto been doubted, do not exist at all. I then directed my course to Penrhyn's islands, which were only seen at a distance by their discoverer, and never afterwards explored; but as this was a longer voyage, and would greatly diminish our stock of water, from this day none of us had more than one bottle daily.

On the 30th, at three o'clock in the afternoon, we observed Penrhyn's islands, the nature of which appeared to us to correspond with the other coral islands. At five o'clock, when we were still three miles distant from the southern part of this group of islands, we could plainly distinguish that it was also connected by coral reefs, and formed a circle with a lake in the middle, from which many rocks arose. We were very much astonished to find these islands covered with a thick wood of cocoa-trees; but we were agreeably surprized to see columns of smoke ascending, which indicated to us that this little, and very remote group of islands was inhabited. With the assistance of our telescopes, which we directed to the shore, we soon discovered people running about, and only the setting sun induced us to postpone our examination till the following morning. We tacked near the land in the most delicious weather, and rejoiced at the innumerable bonétos which surrounded the Rurick. On the 1st of May we tried to get under the lee of the group, and, if possible, to effect a landing in a calm sea. Already, at eight o'clock, we found ourselves in still water, only a couple of miles from the shore; and now we could see plainly many people running about, others hastily pushing their boats from the shore, while others, from the more distant islands, were already making their way towards us. The population appeared to me so numerous, in proportion to the island, that I cannot,

even now, think how so many can find subsistence. When I saw the great number of boats coming towards us, I lay to, and we expected, with impatience, to get acquainted with the savages, and likewise to obtain fresh provisions from them in exchange for other articles. Some of the boats, which had from twelve to fifteen men on board, had sails; in each of these was an old man, who was probably the commander of the rowers, who had his neck adorned with a palm-wreath, and was sitting, with much gravity, holding up a palm-branch in his left hand (the emblem of peace among the South Sea islanders). When the boats had approached the Rurick, within twenty fathoms, they stopped, commenced a song, with quite a sorrowful melody, and, after the conclusion of this ceremony, approached nearer, without venturing to come on board. We now found our hopes of fresh provisions disappointed, as, instead of them, the savages only gave us unripe cocoa-nuts for nails, and pieces of old iron, and I therefore, to reap at least some advantage, revoked my former order to take nothing in exchange but provisions, and permitted every body to provide himself as he pleased with articles of the workmanship of the savages. The Rurick was soon surrounded by twenty-six boats, all of which, however, were forced to keep on one side, because my crew was not strong enough to defend the whole ship against the rapacity of three hundred savages. The trade was now carried on

briskly, and with prodigious uproar; many boats upset in the eagerness to be the first with their goods; the most violent disputes, however, always ended with laughing and joking. Those who, on account of the press, could not yet get near to the Rurick, amused themselves in their boats with singing and dancing, and their extremely comic motions, as well as their great dexterity in grimacing, highly diverted us.

As they could not be induced to come on board, the barter was carried on by means of a rope, which was thrown to them, and to which they fastened their goods without distrust, patiently waiting for their pay, which was given to them in the same manner. One of the chiefs, who, at last, ventured so high up the side-ladder of the Rurick, that he could see the quarter-deck, while looking, full of admiration and curiosity, at every new object, was pulled back by the legs by his companions, with loud cries of fear. They all surrounded him when he had got again into his boat; he had much to tell them, making lively gesticulations, and showing them the presents we had made him, to reward his courage. By degrees the boldness of the islanders increased; they stole all they were able, without paying the least regard to our representations, which they only laughed at, and, at length, carried their boldness to such a degree, as to threaten us. Their ignorance of European fire-arms, and their numbers far exceeding

ours, and their being armed with lances, gave them this courage, which they tried to express by their savage cries. As I, at last, was not able to do any thing, I ordered a musket to be fired, and this had its effect; for, in a moment, they all sprung out of their boats, and dived into the sea. The rapidity with which all this was done had a most singular effect; a dead silence immediately succeeded the most terrible noise, and a vast grave seemed to have swallowed them all, till, by degrees, one head after the other became visible on the surface. Terror and astonishment were expressed in every face. They first carefully looked about to see what damage this loud report had done, and it was not till they saw there was none, that they got into their boats again. Their importunity had now changed into modesty: of all our things, nothing pleased them so much as the large nails, and it was only with these that we were able to obtain from them several very neatly-made lances of black wood, and some other arms.

I may compare these islanders, for size and strength, with the inhabitants of the Marquesas; their countenances may also be similar, though the people of the Marquesas islands appeared to me handsomer, and of a lighter colour. I cannot judge of the women, as I only saw two of them, and they were old and very ugly. They are of the same happy and childish disposition as the other South Sea islanders, only their behaviour is more

savage than I have met with in the others. It is very surprising and remarkable, that the inhabitants of the Penrhyns do not tattoo themselves, in which they differ entirely from the customs of the other South Sea islanders; and particularly as they lie so near to the Friendly islands, that they have either their origin from them, or have been driven hither from Washington's islands. But, not to be quite unornamented, most of them have inflicted bloody stripes on their breast and back, which, with their long hair hanging in disorder over them, gives them a very disagreeable appearance. They are all naked; a few excepted, who wear a girdle of badly-worked stuff. They wear the nails very long; and this is probably a principal ornament of the chief people, as I observed several, who let them grow to the length of three inches. That the Penrhyns do not possess the tree, of which most of the South Sea islanders make the well-known cloth, proves that they have no intercourse with the Friendly islands. However, they understood some words of their language, borrowed from Cook's Voyages, which we addressed to them. Their boats, which are badly constructed, resemble those of the Marquesas, being furnished with an outrigger on each side, and carry twelve men conveniently; the sails, of a coarsely woven mat, are adapted only to sail with the wind. I cannot tell whether the island produces any thing besides cocoa-nuts, but these must be in great abundance to judge by the

number of the trees. We observed many women, through the telescopes, who were walking about, and admiring the ship, at a great distance; we did not see a single house, but saw a brick-wall, pretty well joined together. All the fresh provisions, which we had taken with us from Conception, were consumed, with the exception of a small hog, which we had preserved for a feast; this we showed to the savages, who seemed to know it, and very much wished to possess it. We, at last, counted thirty-six boats, with three hundred and sixty men, whose numbers would have increased, if we had remained any longer, as we already saw several canoes coming up to us. I should have very much liked to undertake a landing, but did not dare to venture, on account of the smallness of our crew, as the number of the savages was so considerable, and their behaviour so forward.

Towards noon we had a terrible thunder-storm, accompanied with rain and squalls of wind; the gloomy atmosphere announced a continuance of bad weather, and I resolved to leave the islands; but the savages, fearless of the thunder, had fastened their boats to the Rurick, forcibly to obtain, by this opportunity, some nails, which they tried to pull out of the ship, making such a noise, that it was impossible to hear the word of command. Not to frighten them with a second shot, I ordered all the sails to be set, and the unexpectedly quick motion of the ship, by which

several boats were upset, induced them, at last, to leave us; but they rowed after us for a long time, and, by all manner of signs, gave us to understand that they wished for our return. The numerous population of this small group of islands, the bold spirit of the savages, and their numerous arms, indicated that there must be islands in their neighbourhood with which they had intercourse, and, perhaps, carried on war.

We found the latitude in the

middle of this group - - $9^{\circ} 1' 35''$ S.

The mean between the chronometer and the observed lon-

gitude, which nearly agreed $157\ 34\ 32$ W.

Variation of the magnetic needle $8\ 28\ 00$ E.

On leaving the Penrhyn islands, I attempted to cross the equator, in longitude 180° , a way that was never taken by any navigator, and where new discoveries might be presumed; but this plan I was obliged to give up in the sequel, as the frequent calms delayed my voyage too long, and the intense heat had a very bad effect on our health.

May the 4th: latitude $7^{\circ} 31' 39''$ S., longitude $162^{\circ} 7' 19''$. We had such a heavy rain today, that we were able to catch twelve butts of water, a piece of good fortune, which, considering our small stock, and the dreadful heat, was to us invaluable, and made this rainy-day a festival. For these two last days, we had squalls from all

points of the compass; the current had carried us thirty-two miles and a half to the S. W. in the last twenty-four hours; and we did not fall in, till now, with the true N. E. trade-wind.

May the 8th: latitude $3^{\circ} 14' 34''$ S., longitude $168^{\circ} 25' 33''$ W. Yesterday, and still more to-day, we observed a number of sea-fowls, of different kinds, which, after sun-set, directed their flight to the S.W. In the evening, two of them came on board, and suffered themselves to be caught; and a third had the boldness to fly directly into my hands. After having tied to the neck of the two first a piece of parchment, with the name of the ship and the date of the year marked on it, we set them at liberty; the third was sacrificed for our collection of natural history. These birds are of the species of sea-swallows; they are about the size of pigeons, and entirely black, with the exception of a white spot on the head. I did not doubt, from the great numbers of sea-fowls, but we were in the neighbourhood of many uninhabited islands and rocks; and, if time had permitted, I should have followed the flight of these fowls, and steered S. W.; but the current, which set N. W., carried us in that direction, daily, from thirty-three to forty-five miles, and continued so till we had crossed the equator, on the 11th, in longitude $175^{\circ} 27' 55''$. After several observations, we found the variation of the magnetic needle $8^{\circ} 4' E.$ On the 12th of

May, in latitude $1^{\circ} 17' 46''$ N., longitude $177^{\circ} 5'$, besides numerous sea-fowls, we observed one land-bird; but as land could not even be descried from the mast-head, it is to be presumed, that it must lie very low. The thermometer stood, for several days and nights, at 23° ; a heat which is very oppressive, particularly in a calm. I considered myself very fortunate in not having one man sick on board. In the night, a dolphin, seven feet long, the first on our voyage, was harpooned. We made a trial to eat its flesh, which we found to be very well tasted, much resembling beef, and relished it the more, as we had had nothing but salt-meat on our table for a long time.

May 19th: latitude $8^{\circ} 42'$ north, longitude $187^{\circ} 19'$. I had calculated my course to Kamtschatka, so as to cross the northern part of Mulgrave islands, as they were scarcely known at all, and appeared to me worth an examination. To be certain of not missing them, we sailed two days between the parallels of 8° and 9° , as, according to Arrowsmith's * chart, we could not, in this latitude, pass through the chain without seeing land. At three o'clock in the afternoon, we crossed the chain, according to our calculation, in latitude $8^{\circ} 45' 52''$ north,

* On my return, I became acquainted in London with this celebrated geographer, who assured me, that he had laid Mulgrave's chain down in his chart, after some very uncertain statements of several merchantmen. Even Captain Gilbert's map contains nothing particular.

without perceiving the least spot of land. Our longitude, by our chronometer, which was compared with observations only the day before, and whose accuracy we could not doubt, amounted to $187^{\circ} 47' 14''$. After we had in vain looked round for land, I steered directly to the west, supposing that the longitude of the island was, perhaps, incorrect on the map; but when we had sailed fifteen miles in this direction also, without seeing land, I turned the ship towards the north, for fear of losing the chain entirely, if we proceeded further. On another very accurate investigation of the chart, it appeared to me very little to be depended upon; the opening between 8° and 9° must be larger than is marked on it, as we could otherwise in no case cross the chain without seeing land. We sailed towards the north till sunset, and tacked during the night, that we might not be wrecked in the dark on the coral reefs. The night was uncommonly gloomy, violent gusts of wind incommoded us; and one of them, while the N.E. monsoon was blowing, struck the Rurick so violently on the opposite side, that all the sails, which could not be shifted quick enough, were dashed against the masts. This accident, which might easily prove dangerous, had no worse effect for us, than to tear some of the sails, and one of the ropes, broken by the fury of the wind, gave me a blow on the forehead, which struck me senseless to the ground; in a quarter of an hour, I indeed came

to myself, but remained for a whole hour after in a state bordering on madness, and it was only towards morning that I entirely recovered by the assistance of our skilful physician.

May 20th. We continued our course to the N.N.W. with a faint N.E. wind, and found by a good meridional observation, the latitude to be $9^{\circ} 26' 21''$ north, longitude $180^{\circ} 19' 6''$ west. I now gave up sailing further to the north, and steered directly to the west; because, to judge by the chart, it still appeared probable that the islands might be found in this parallel. I persevered in this course till six o'clock in the evening, when we had made thirty-five miles, but again to no purpose; we discovered nothing. As time would not permit me to remain here any longer, I now bent my course to Kamtschatka, and put off my further examination of these parts till my return from Beering's Straits. In spite of the dangers of these parts, and the very dark night, I resolved, in order to lose no time to hasten forwards, and steered to the N.W.N. under full sail. It was not till the following year that we discovered the dangers which we so wonderfully escaped in this night, having happily passed between low groups of islands at a very small distance.

On the 21st, land to the N.W. was descried from the mast-head, which consisted of several coral islands, and resembled Rurick's chain. At two o'clock, when we were still a mile and a

half distant from the south point, we saw, to our great joy, columns of smoke rise between the cocoa-trees; and as we sailed northward, round the N.E. side of the chain, we observed a number of people on the shore, who were admiring the Rurick with the greatest astonishment. The sailor at the mast-head observed breakers, and I found a long and dangerous coral reef, which was connected with the islands, and stretched far into the sea. If we had had the misfortune to run in the night upon this reef, which is scarcely visible above the surface, our destruction would have been inevitable. We now doubled the N.E. point, and were soon in the high sea, and calm water, and sailed up to the small island in the S.W., while, though only two hundred fathoms from the reef, we tried in vain to reach the bottom with our lead. It was already getting dark, when we were near the small island, and observed people there also. We were obliged to postpone till the morning the examination of this, as well as of a second group of islands in the south, which was just descried from the mast-head. The situation of all these islands is correctly stated in our map. On the 22d of May, at day-break, we continued our course to the shore, but were not able to reach the point at which we were yesterday, till nine o'clock, the current having carried us far to the west in the night. On the island, at the north of which there is a charming grove of cocoa-trees, we observed

people, and a large boat on the beach, which we soon after saw advancing towards us under full sail. I immediately ordered to lay-to, admired the ingenious construction of it; and the surprising skill with which it was managed, increased our curiosity still more, and made us believe that we had to do with a people only half savage. The boat approached the Rurick within a hundred fathoms, where it remained stationary. We counted nine islanders, who showed us fruit, and called aloud to us, and gave us to understand, by signs, that we might follow them to the shore, where they would provide us with fruit. The modest and agreeable manners of these islanders, which differed so entirely from the savage behaviour of those of the Penrhyns, astonished us greatly, as we could not expect to find this in the South Sea, in an island that had never been visited. They were all unarmed, and the strictest subordination was evident: the chief sat on the left side with his legs under him, on an elevation, placed on the outrigger, which was ornamented with coloured mats, having his head adorned with flowers and shell-wreaths. They admired the ship with curiosity and astonishment, pointing with their fingers at objects which struck them particularly, and talking with great eagerness. As I perceived that all my endeavours to entice them on board were useless, I ordered the boat to be launched, in the hope that they would be less

fearful of a small vessel; and, observing every motion of ours, they loudly expressed their surprise, when they saw the boat hauled out of the Rurick. I dispatched Lieutenant Schischmareff, M. Von Chamisso, and M. Choris, the artist, in order to gain the confidence of our savages by presents. They, however, were thrown into the greatest alarm by the arrival of the boat, and, while they were warmly debating whether they should remain, or fly, our people had already come up to them, and tried to insinuate themselves into their favour by friendly gestures and small presents, which the savages readily accepted. Lieutenant Schischmareff, who thought he had already established a friendly intercourse, attempted to get into their boat, to admire the neat work closer; an attempt which quite confounded them; they hastily threw some pandanus fruit, and a handsome mat, which was probably intended as a present in return, into our boat, and then sailed off as quick as possible. We did not succeed in having any further intercourse with them, though they always sailed about the ship, making many signs to invite us to come on shore. But I could not venture to accept their invitation, the island being entirely surrounded by coral reefs, which occasioned a violent surf, and it would have cost me too much time to look for a tolerable landing-place. We admired the rapidity with which their boats sailed close to the wind: it had only one disproportionably large sail, of fine

woven mats, which was in the shape of an acute-angled triangle, the acute angle being undermost. The skill and quickness with which they put about their boat in tacking, deserved the admiration of every seaman.

These islanders were of a black colour, pretty tall, and slender; their straight black hair was tastefully interwoven with wreaths of flowers; their neck and ears singularly ornamented. Their clothing consisted of two curiously-woven coloured mats, tied to the waist; one before, and the other behind, descending to the knee: the other part of the body was naked. One could read the expression of obligingness and good-nature on their countenance; and yet they have some resemblance to the Malays.

Having stayed here till noon, finished the survey of the islands, and had a good observation, I had the sails hoisted, and turned to the south, to examine the second group of islands, which appeared in that direction. The savages sailed round us, and called to us, beckoning us with both hands, and holding fruits up in the air. I lay-to a second time, in the hope that they might, perhaps, pay us a visit now, but was again deceived in my expectation. They lay still, and rejoiced at every movement on board the ship; but the loudest, when suddenly a large sail was shifted, which probably appeared to them a work of magic, as they could not see the ropes by which the sails were

managed. We made them friendly signs to come on board ; but as they only answered by pointing to the land, I gave up all my attempts to open an intercourse with them, and proceeded on my voyage.

We soon had a very clear view of the second group, which likewise consisted of small islands, joined together by coral reefs, and seemed to contain deep water in the middle. This group is separated from the other, by a channel of three miles and a half in length, through which I determined to sail ; a mate, furnished with a good telescope, was to sit at the mast-head, to warn us in time of every danger. We found the channel free from rocks, and of unfathomable depth. At four o'clock in the afternoon we had already sailed round the south point of the group, and had reached the N. W. part, which ended with a long and dangerous reef. This island appears uninhabited ; and though it is thickly covered with trees, not a single palm-tree was to be seen. The population of the other group too, cannot be numerous, as we saw only two boats, and very few people on the shore ; at least it cannot be compared to the numerous population of the Penrhyns. I called the first group Kutusoff, and the second Suwaroff, and I felt myself inexpressibly happy, in being the first who had erected an eternal monument in the South Sea to these two men, who had so highly deserved of their country. Both these groups

together, took up a space of twenty-five miles and a half from north to south : their situation is marked on the chart. By a very good observation, we found the latitude of the channel $11^{\circ} 11' 20''$ N. ; longitude, according to the chronometer, which exactly agreed with that lately observed by us, $190^{\circ} 9' 23''$. The variation of the magnetic needle, $11^{\circ} 18'$ east. At six o'clock in the evening, we were again in the open sea ; and, with the intention of revisiting these parts in the following year, I now directed my course to the N. N. W. to go to Kamtschatka. It would, indeed, have been more prudent not to have sailed during the night, in this quite unknown sea ; but as the necessity of reaching Kamtschatka as soon as possible, obliged us to hasten, we sailed rapidly forwards, under the protection of God. A sailor was constantly obliged to keep watch at the mast-head, who was relieved every hour, and punished severely if another discovered a dangerous object before him. In the night, the watch was removed from the mast-head, to the bowsprit. By these regulations, we could indeed prevent the Rurick from running upon a high-land in the dark ; but rocks, lying under the water, or rising a little above it, could not be avoided, as may be seen by Captain Flinders' voyage, unless heaven itself graciously watched over us.

May 29th : latitude $24^{\circ} 28'$, longitude $197^{\circ} 39'$. The Economical Society, at St. Petersburg, had given me three little boxes of dried meat (called

meat-biscuit,) and one of dried cabbage. This discovery, which had been found useful on shore, was now to be tried at sea, and I was therefore commissioned to open one of the boxes of meat, at the first crossing of the northern tropic; a second, as also the box of cabbage, at the second crossing of the same tropic, and to bring the third back to St. Petersburg. The boxes, which were made of thin wood, were joined together in such a manner, that the air could conveniently penetrate; a mode of proceeding which does not appear to me, well calculated for the sea. And this may be the reason that both the meat and the cabbage were spoilt. When we crossed the northern tropic the first time, we had a box of meat opened; but, on account of its disagreeable smell, it was immediately thrown over-board. Crossing the same circle to-day, the second time, I had a second box of meat, as also the one of cabbage opened, and as they smelt musty, a soup was made of both, which appeared on the officers' table for judgment. We all found it eatable in case of need, but its taste was extremely unpleasant; and the physician affirmed, that it was unwholesome, on account of the half-spoiled ingredients of which it was composed, particularly the cabbage, which contains a certain oil, that had become rancid, and dangerous to health. The meat, which had the taste of spoiled stock-fish, was entirely without strength, and can therefore never be used as a nourishing food at sea.

To take away the bad taste of the soup, I had two tin boxes of English patent meat opened; these contain fresh meat boiled in steam, and are soldered together with so much care, that not the least air can penetrate; on which account, the meat, even after years, cannot be distinguished from quite fresh. Even an epicure would have been satisfied with the dish, which now stood on our table; and how much more we, who had tasted nothing but salt meat, for a length of time.

July 3d. At four o'clock, A.M., when we were in latitude $31^{\circ} 49'$, longitude $200^{\circ} 15'$, both reduced from the observations made yesterday, according to the ship's reckoning, we caught a land-bird, which, in a few hours, after having eaten with great appetite some mill beetles which we gave it, was set at liberty. Large flocks of sea-fowls, among which were numbers of tropical birds, passed us incessantly. The colour of the water had changed surprisingly since noon, and at 4 o'clock, P.M., it was so dirty, that, in the supposition of being near a shoal, I ordered the bottom to be examined with the lead; but it did not reach it, even at the depth of 100 fathoms. Dr. Eschscholtz, who had, regularly every day at noon, examined the temperature on the surface of the sea by the thermometer, found it at this moment $2\frac{1}{2}$ degrees colder, a proof that the depth of the sea had considerably decreased since noon, and that we were probably in the neighbourhood of an unknown land, which was hid by

the thick fog that surrounded us. The water resumed its natural colour during the night, and I hoped to be able to make a closer examination of these parts in the following year.

On the 13th, when we had reached latitude 47° , we were overtaken by a violent storm from the N.W., which continued for twelve hours, with such a degree of cold, that lumps of ice fell from the sails on the deck; we perceived this sudden change of the temperature the more, as we had for several months had 24° heat, both day and night. We had been enveloped in an incessant fog ever since we left parallel 33° .

On the 18th, we ought, according to our calculation, to be in the neighbourhood of Kamtschatka, and when the fog dispersed at 4 P.M., we observed the coast in its winter-dress. We were now at some distance from the coast of Poworotui; and as the weather was entirely clearing up, I was in hopes of reaching the harbour of St. Peter and St. Paul the following day.

On the 19th, at day-break, we took our course, with a favourable wind, to Avatscha Bay; the day was serene, and the high coast of Kamtschatka afforded us a magnificent prospect; its conical mountains rising into the clouds, the sun shining on their snow-covered summits, lay in friendly majesty before us. Towards noon, as we approached Avatscha Bay, we observed, on the high rocks which form the northern part of it, a telegraph in full work; a sight which surprised us, as such useful

arrangements had never been previously thought of at Kamtschatka. The commander of the harbour of St. Peter and St. Paul is informed by the telegraph of the arrival of ships, which can be seen while yet at a great distance, and he thus has time to send boats with anchors and ropes to meet them, which are of very great service in the narrow passage at the entrance of Avatscha Bay. We, in fact, saw the safety-boat coming, but reached the bay with the wind: it, however, suddenly fell, and we were towed slowly into the harbour, where we cast anchor at midnight. Lieutenant Rudokof, who has filled the office of governor for the last two years, had previously come to us in his boat, and politely promised to supply all our wants. Every thing looked quite winterly in the bay, as well as in the harbour, and we looked in vain for a green spot; but the winter is said to have been uncommonly long this year. The day after I arrived there, I found the longitude of the harbour, according to the chronometers, $201^{\circ} 15' 30''$: the true longitude, according to the observations of Mr. Horn, the astronomer, is $201^{\circ} 16' 40''$. The trifling difference of my chronometers, speaks to their goodness, and proves that all the longitudes, determined in this voyage by the chronometers, may be depended upon as accurate.

I shall enter into no description of Kamtschatka, as so many travellers before me have done that already, but merely speak as to our stay there. My first care was to repair the Rurick, which had

suffered much during the storms, the copper, in particular, being much damaged ; for which purpose we received, through Lieutenant Rudokof, the still serviceable copper-sheathing of the old ship *Diana*. * The copper of our ship would certainly not have spoiled so soon, if more care had been bestowed upon it at the fitting-out in Abo. It is to the activity of Lieutenant Rudokof we are obliged, that our ship was ready in so short a time for sailing. Since the time that I was here with Captain Krusenstern, many things have been changed for the better at Kamtschatka. This, also, is principally ascribed to the arrangements of Lieutenant Rudokof, who has done more for the benefit of this country than all his predecessors.

On the 15th of July the ship was ready to leave the harbour, and we only waited for a favourable wind ; the whole crew was in perfect health, except my second-lieutenant, Zacharin, who had been ill during the whole of the voyage. I felt the want of officers very much, as I was constantly obliged to keep watch by turns with Lieutenant Schischmareff, and this personal fatiguing exertion in doing the duty of the ship is not to be expected from the commander of such an expedition, as he can never be in want of employment. This is certainly the first voyage of discovery that has

* The same ship in which Golownin undertook his voyage to Japan ; but on account of its ruinous condition, he was obliged to leave it at Kamtschatka, and continue his journey to Russia by land.

been happily concluded by only two officers. The illness of Lieutenant Zacharin obliged him to remain at Kamtschatka; and now I had to make the dangerous voyage to Beering's Straits, with only one officer; yet this did not make me irresolute, as Schischmareff's eagerness, like my own, was undiminished. Only the impossibility of pursuing my previous plan, which had so agreeably occupied my fancy for a long time, excited my regret; for what could we execute in Beering's Straits, as one of us would constantly be obliged to remain on board.

M. Wormskloid, the naturalist, whom we had brought with us from Copenhagen, also expressed a wish to remain here, with the intention of making discoveries in natural history on the high mountains of Kamtschatka; I therefore recommended him to Lieutenant Rudokof, who readily promised to assist him in his scientific researches, as much as lay in his power.

As my crew consisted of only twenty sailors, which was not sufficient for the undertaking in Beering's Straits, I obtained, at my request, from the commandant, six more sailors, whom I promised to bring back the following year; because it was my intention, after finishing the examination of Beering's Straits, to return to the harbour of St. Peter and St. Paul. The Russian American Company gave me an Aleutian, and this addition of seven men was of very great assistance to me in the sequel.

For such of my readers as are fond of the sciences, I have added, at the conclusion of my first year's voyage, a table, containing the temperature of the sea at different depths. I have made the observations myself, with a good Six-thermometer, and can answer for their accuracy. The graduation, both of the thermometer, and of the Six-thermometer, is according to Fahrenheit. As these observations can only be made in a perfect calm, and that in a boat, so that the sea must also be tranquil, they are among those which are the most rarely made by navigators.

Years and Days.	DEGREE OF HEAT			Tempera- ture of the air.	THE SHIP'S PLACE.		Transparency of the water.
	on the sur- face of the sea.	at the bot- tom of the sea.	Depths in fa- thoms.		Latitude.	Longi- tude.	
1815.	The Atlantic Ocean.				North	West	
Oct. 15	+ 68,5	+ 5s ^o 7	100	+ 71,1	39s ^o , 27	12 ^o , 57'	10
16	69 ^o 1	+ 5s ^o 0	138	72,5	39,4	13 ^o , 8	10
	—	56,0	96	—	—	—	—
1816.	Cape Horn.				South	West	
Jan. 8	54,9	38,8	196	57,6	44 ^o , 17	57,31	8
April 7	South Sea.						
Morning.	78,5	68,5	125	79,2	18,17	124,56	13
	—	57,5	175	—	—	—	—
Noon.	79,6	68,0	125	80,0	—	—	—
April 13	80,0	79,0	10	79,8	15 ^o , 26'	133,42	13
	—	79,0	20	—	—	—	—
	—	78,8	50	—	—	—	—
	80,0	72,0	100	79,8	15,26	133,42	13
	—	56,0	200	—	—	—	—
May 12	82,5	At the Equator.					
		55,0	300	83,0	0	177,5	14
June 1	74,0	North Ocean.			North	South	
	—	62,0	100	75,0	29,24	199,26	10
	—	52,5	300	—	—	—	—
6	61,0	59,5	10	63,0	37,3	199,17	2
	—	56,8	25	—	—	—	—
	—	52,7	100	—	—	—	—
	—	43,0	300	—	—	—	—

After we had sent a courier to the chancellor, with our despatches, and all our journals for our first year's voyage, and waited in vain for the post from St. Petersburg, which usually arrives here at this time of the year, we succeeded, in spite of the contrary wind, in leaving Avatscha Bay.

CHAPTER VII.

FROM KAMTSCHATKA TO THE NEWLY-DISCOVERED
KOTZEBUE'S SOUND, BEYOND BEERING'S STRAITS.

July

~~June~~ 20th. At nine o'clock in the morning we descried Beering's Island; this high, rocky land, covered with snow, affords a most ungenial prospect, and strongly called to my mind our renowned, but unfortunate, navigator, Beering, who found his grave here. We sailed at a little distance from the shore, along the southern part of the island, and afterwards doubled its northern point. On the S.W. side is a small rocky island, which, as yet, has never been marked on any chart. An excellent observation of both the latitude and the longitude, gave us for the northern point, latitude $55^{\circ} 22' 17''$, longitude, by the chronometers, $194^{\circ} 4' 7''$. The S.W. point, latitude $55^{\circ} 17' 18''$, longitude $194^{\circ} 67' 3''$. On leaving Beering's Island, I directed my course to the western part of St. Lawrence Island.

1816

June 26: latitude $63^{\circ} 0'$, longitude $171^{\circ} 43''$. Being favoured by a very good wind, we made rapid progress; but the fine weather left us as soon as we had lost sight of Beering's Island, and a thick fog, with an incessant drizzling rain, were now our constant attendants.

As we had made no observations since we left

Beerling's Island, our situation was uncertain, according to the chart; but, according to the ship's reckoning, we were twenty miles from the S.W. point of St. Lawrence Island. At three o'clock, when the fog dispersed for a moment in the north, we observed the summit of a high mountain to the N.E. 6° ; but, directly after its appearance, the fog became again impenetrable, and we were obliged to remain in this vexatious situation, plying the whole day and night off the coast: the lead showed us the way. The barometer, though the weather was so bad, remained very high.

In spite of all the care that was taken in the building of the Rurick, to prevent the entrance of rats, which occasion so much damage in a sea voyage, I was informed to-day, that one of these guests had made its appearance on deck. A chase was immediately commenced, and we killed three of them, which had probably found their way into the ship in the harbour of St. Peter and St. Paul, which is over-run by these vermin. As such animals were never seen there before the arrival of the Nadeshda, I have, probably, had the successors of my former travelling-companions destroyed.

July June 27th. The fog continued undiminished: my patience was put to a hard trial. I had several times observed, that when the barometer stands high, there is the finest weather on shore; while, about a mile from the coast, the thickest fog prevails. I therefore resolved to steer directly up to the shore, and the attempt succeeded. The lead

showing ten fathoms' water, soon announced that it was near at hand: the thick fog dispersed, the sun shone, the weather was serene, and a ridge of high mountains, covered with snow, appeared before us. The nearest distance from shore was two miles; the direction of the country, E. and W., was hid by the fog; and the *Rurick* lay secure in a small open bay. We observed people and tents on the shore; and the wish of becoming acquainted with the inhabitants of this island, who had never been visited by any navigator, and also to give our naturalists an opportunity of examining this unknown country, induced me to pay it a visit. Two of our four-oared boats were directly put into the water, and we set out, well armed with pistols, sabres, and guns. As the consequences might have proved dangerous, if we had cast anchor in this open bay, the *Rurick* remained under sail, and Lieutenant Schischmareff took the command. The wind blew faintly from the S. W.; the *Rurick* was obliged to stand off a little from the shore, and was soon enveloped in fog. At a small distance from the shore, we were met by a baydare, (boat,) with ten islanders, who approached us without fear, calling aloud to us, and making the most singular motions, holding fox-skins in the air, with which they eagerly beckoned us. We easily perceived their arms hidden in their baydare, and therefore observed the greatest caution. After some salutations, according to their custom, which consisted

in stroking themselves several times with both their hands, from the face to the belly, their first word was Tobacco! — of which I had some leaves, handed to them, which they immediately put into their mouths. I afterwards saw them smoking out of small stone pipes, about the size of a thimble: they repaid my presents with different articles of their workmanship. After this friendly barter, I continued my way to the shore, which seemed to frighten them very much, as they ran anxiously to and fro, and some, probably only women, fled into the mountains. Some of them came up to us bravely enough; but their fear, which they in vain strove to hide under the mask of friendship, was visible. At every thing we did they laughed without bounds; but as soon as any of our motions excited the least suspicion of hostility, they assumed a fierce look; they prepared themselves partly for flight and partly for resistance. Their friendship, however, returned when they perceived their error, and this sudden change from laughing to seriousness, gave their faces, which were smeared with train-oil, an extremely comical appearance. We landed opposite to the tents, followed by the islanders; ten or fifteen of whom assisted us, with great readiness, to draw our boats on shore. This place appeared to us to be visited only in the summer, when the islanders employ themselves in the whale, morse, and seal fishery, as we perceived no settled dwellings, only several small tents, built of

the ribs of whales, and covered with the skin of the morse, which indicate only a short stay. A deep cellar dug in the earth, filled with train-oil, blubber, dried seals' flesh, and morses' teeth, likewise shows that they only collect their winter provisions here. They gave us to understand, by signs, that their real abode was behind the promontory, in the W., whither they invited us. A second boat, coming from the quarter pointed out, in which two women, dressed like men, looked frightfully with their tattooed faces, confirmed this assertion. How much did I regret not understanding their language, as I should then have been able to relate many interesting things concerning these people. In many respects they resemble the inhabitants of Norton Sound, described by Captain Cook; they are of a middle stature, robust make, and healthy appearance: their clothing, which consists of skins, is filthy to the highest degree. My Aleutian, who has passed several years in the peninsula of Alashka, affirms, that there is very little difference between these two people, as well in their language as in other respects. We observed several European utensils of iron and copper. Every islander is armed with a knife, an ell (two feet) long, and adorned with large blue and white glass beads.

While our naturalists were strolling about the mountains, I entertained myself with my new acquaintance, who, as soon as they learnt that I was

the commander, invited me to their tent. A filthy piece of leather was spread on the floor for me to sit on ; and then they came up to me one after the other — each of them embraced me, rubbed his nose hard against mine, and ended his caresses by spitting in his hands and wiping them several times over my face. Though these signs of friendship were not very agreeable to me, I bore all patiently. To suppress their further tenderness, I distributed some tobacco-leaves, which they received with much pleasure, and were going to repeat all their caresses again. I hastily took some knives, scissars, and beads, and thus happily prevented a second attack. An almost still greater misery awaited me ; when, in order to refresh me, they brought forth a wooden trough of whale blubber, (a great delicacy among all the northern inhabitants of the sea coasts), and I bravely took some of it, sickening and dangerous as this food is to an European stomach. This, and some other presents, which I afterwards made them, sealed the bond of our friendly acquaintance. My host, the proprietor of the tent, and probably the chief of his countrymen present, after our meals ordered a dance ; one of them stepped forwards, made the most comical motions with his whole body, without stirring from his place, making the most hideous grimaces ; the others sung a song, consisting of only two notes, sometimes louder, sometimes lower, and the time was beat on a small tambourine.

After I had amused myself, with my friends, in this manner, for two hours, I took a short walk into the interior of the island, but was soon obliged to return on account of the fog. As I feared that it might increase before we reached the ship, I was obliged to quit the island sooner than I should have done had the weather been fine. The savages appeared affected at our leaving them, and promised to visit us on board. The island is called by the inhabitants, Tschibocki; and the country to the east (America) Kililack. That part which we saw had a most dismal appearance; it consists of pretty high mountains, covered with snow. Not a single tree, not even a small bush, adorns the grey rocks, only short grass sprouts up here and there between the moss, only a few stunted plants rise above the ground, and yet many a flower blows here. The arms of the islanders, which they use for the chase as well as war, consist of bows, arrows, and lances; the two latter are furnished with a broad, well-wrought iron head: these, as well as their other European utensils, we afterwards learnt they received from the Tschukutskoi. They do not appear ever to have seen any European, to judge by the amazement with which they beheld us. Nothing attracted their attention so much as my telescope; and when I showed them its properties, and they really saw quite distant objects close before their eyes, they were seized with the most extravagant joy. At two o'clock in the afternoon, we arrived

safe at our ship. We were all satisfied; the naturalist with his collected treasures, the artist with his likenesses of several islanders, and I with my discovery. During the rest of the day we plied to and fro, with a faint S. S. W. wind, without perceiving land, though we were in its neighbourhood; but as the coast declines very regularly, one may approach it with safety, within ten or twelve fathoms, by the assistance of the lead. The bottom is of fine sand and small stones. My intention was to remain till the fog had dispersed, to find the situation of our ship, and then to proceed between St. Lawrence islands and the coast of Asia.

In the evening of the 28th of July, the fog dispersed, we had a serene horizon, and fine weather, but no sun. The west coast of St. Lawrence islands, which extends from S. by E. to N. by W., lay only three miles before us, and we recognized the bay where we had landed yesterday. This lies on the south-western part of St. Lawrence, and is particularly to be distinguished by the small rocky island in its western part. I directed my course along the shore to the north; and we proceeded but slowly, as the S. W. wind was very faint. At ten o'clock in the evening, when it was rather dark, three baydares approached us, each manned by eight or ten men; the ship immediately lay-to, and we soon had many guests on board. The anxiety and astonishment with which they gazed around, clearly proved that it was the

first time that they had been on board an European ship. The first that came up, I recognized to be my friendly host, who hastened to meet me with open arms, rubbing his nose violently against mine, and often passing his greasy hand over my face. For various trifles which I gave my friends, I was obliged to receive some present in return. In fact, we had now a very lively barter ; in half an hour, my sailors had obtained above two hundred kamlaikas (a name which is derived from Kamtschatka, denoting a garment, which is of the cut of a shirt, skilfully sewed together, with the entrails of seals, sea-lions, and morse) for buttons and similar things. This garment, which is put on over the other clothes, keeps off the rain and wet, and is very useful in this climate. I have remarked, that all the people of this region put on their kamlaikas over their warm clothes, in damp weather ; and I myself have often experienced the benefit of it in these northern latitudes.

July 29. A fresh S. W. wind separated us, yesterday, from our islanders. We sailed along the west coast during the night ; and at daybreak saw the northern point of St. Lawrence islands, which, at eight o'clock, lay at the distance of one mile south of us. The promontory is distinguished by a high rock, rising perpendicularly out of the sea ; a little more to the south, a low tongue of land extends to the west, and has a very singular ap-

pearance arising from several *jurtes**, and a number of whale-ribs, which the islanders have set up perpendicularly in the ground, between their dwellings. As soon as they perceived us, they pushed three baydares, each containing ten men, from the shore; left off rowing; when they had approached the Rurick within ten yards; and then, with doleful voices, commenced a mournful song. Upon this, one in the middle arose, holding up a small black dog, and after speaking some words, in an expressive manner, drew a knife, with which he gave the dog a mortal wound, and then threw the poor victim into the sea. After the conclusion of this ceremony, during which the deepest silence was observed in the baydares, they approached the ship, but only a few ventured on board. I found no difference between these, and our friends of yesterday. They call themselves, like them, Tschibocko; and the coast of Asia, opposite to them, they call Wemen. An hour afterwards, we left St. Lawrence islands, and then steered to Beering's Straits. According to my instructions, I ought to have first sailed to Norton Sound; but as this time of the year appeared to me too early, I was in hopes, after the examination of Beering's Straits, to be able to be in proper time in Norton Sound.

July 30th. As soon as we had quitted St. Lawrence islands, the fine weather was at an end, and

* Subterraneous dwellings.

we were again enveloped in thick fog. We took a trigonometrical survey of the west coast of this island, as well as circumstances would allow; but no point has been astronomically determined, as the sun did not give us an opportunity to make any observations. On account of the constant damp weather, part of my crew, notwithstanding all the care I had taken to prevent this disorder, suffered from cold and coughs. They had tea twice a-day; and a constant fire was kept in the hold, to keep them both warm and dry; and they were never allowed to keep on their wet clothes, but obliged to change them, as soon as they were relieved from the watch. Our Russian sailor will never use such precaution of his own accord; he lets his clothes dry unconcernedly on his body, without fearing the dangerous consequences. I had much trouble in accustoming my people to this order; they could never perceive the necessity of it, and it appeared to them, on the contrary, as if they were treated like children.

At four o'clock in the morning, the fog dispersed; King's Island lay at the distance of eight miles before us. Four hours afterwards we could plainly discern Cape Prince of Wales, also the islands of Gwozdeff, and even the Asiatic coast; for, probably, no voyager ever had a clearer horizon than we. The sun now appeared for the first time since we had left Beering's Island, and permitted us to take some altitudes for the chrono-

meters, whose going I found, on close examination, to be unaltered. They gave the longitude of King's Island, only a few minutes different from Cook's determination ; we found its height to be 586 feet.

With the assistance of a fresh south wind, we were already, at two o'clock in the afternoon, between Cape Prince of Wales, and Gwozdeff's islands, of which there are, according to Cook's chart, as well as others, only three. The fine weather gave me the pleasure of discovering a fourth, which is considerably larger than the others ; and, as I took it for a new discovery, I called it Ratmanoff. This gentleman, who is now a captain of the first rank, was lieutenant in our voyage with Krusenstern, and I was under his command. It is very surprising, that neither Cook nor Clerke should have seen this island, as both their courses led them close by it ; and it has occurred to me, that it may have since risen from the sea. From Cape Prince of Wales extends a low land to the west, on which we observed many jurtes and frames built with whalebones, to dry fish on. As we were only three miles from the shore, we could plainly discern a number of people standing together in groups, to admire the wonderful large ship, but without making the least preparation for coming on board. I therefore took advantage of the wind, and fair weather, and sailed along the coast, which takes an E. N. E. direction from Cape Prince of Wales,

consisting of low land, but has a far more pleasing appearance than St. Lawrence Island. The whole low ground is covered with a luxuriant green: there are no trees at all, but some low bushes; and only a little snow on the summits of the mountains in the interior of the country. Many habitations, which cover the coast, indicate a numerous population. A baydare which we saw under sail, had by no means the intention of approaching the ship, but took its course to the north. I kept as close to the shore as the depth, which was scarcely five fathoms, would permit, and therefore I could not have missed any deep bay or opening. The depth increases slowly and regularly, and as the low land is scarcely visible when you are in nine fathoms' water, it is not to be wondered at, that Cook, who kept in this part at the depth of seventeen fathoms, should not have seen the low land at all.

July 31st. After we had continued the survey of the coast during the whole night in clear weather, we cast anchor, at three o'clock in the morning, in five fathoms' water, two miles from the shore. It appeared to me, that a bay ran here deeper into the land, which I wished to explore. At four o'clock in the morning I left the *Rurick*, accompanied by our naturalists, in two well-armed boats, and landed opposite our anchoring-place, near some habitations, in the hope of having some communication with the inhabitants. We went into the jurtes, which are built in a straight line

along the coast, but were at first only welcomed by dogs, which were not at all discomposed by our presence, but came fawning up to us; they appeared to me to be of the same race as those used in Kamtschatka, for drawing sledges. We had already got upon the roof of the jurtes, without meeting with any people; fresh traces, however, which we saw every where showed us, that they were more fearful than their dogs, and had fled at our approach. We now examined the interior of their dwellings, and found them cleanly and convenient. The entrance at the S.E. side was an opening, three feet high, supported by wood, which on the outside was prolonged on each side by mud walls. We entered, first, into an apartment ten feet long, seven broad, and seven high: the walls and the top were covered with wood. To the left-hand, in a pit which extended all along the room, lay pieces of black blubber, about a foot square, and beside these lay sieves with long handles. To the right was a rather narrow pit, two feet and a half deep, and seven long, through the end of which we had to creep to get into an apartment, which was, indeed, six feet high, though not broader than the pit. Now we had a wooden partition before us, in the middle of which was a round opening one foot and a half in diameter, through which we were obliged to creep into a spacious anti-room, the four walls of which were ten feet long, and six feet high; the height increased to-

wards the middle, and at the top was a small four-cornered hole, covered with a bladder, which served for a window. On the wall opposite the entrance, broad boards, fastened one foot and a half above the floor, served for sleeping places, which only took up a third part of the room, and at the side walls they had placed small ladders quite horizontally, to set up their utensils. The walls, and top, consisted of small beams, the visible sides of which were made even. All the habitations were built according to this plan, with the exception of one, where a more numerous family appeared to reside, as this had two more small side-rooms. Their floors are raised three feet above the earth, under which there are store-rooms, and perhaps dog-kennels, as they are only three feet high; the walls and floors are also made of wood: they have likewise windows, but no sleeping benches. Several utensils, and other very neat work of the inhabitants, lay scattered about in their dwellings. I particularly remarked two very neatly made sledges of morse and whale-bones, which likewise shows that they are used to be drawn by dogs. After we had looked about a little, we found that we were on an island seven miles long, and, in the widest place, a mile broad. We took a walk across it, from north to south, and saw clearly, when we were on the opposite coast, that the continent in the east forms a deep bay, where, on three points, the connection of the land

is not to be seen. We were all rejoiced at this discovery, for though we could not expect an immediate passage into the Icy Sea, we had the hope of penetrating far into the country, and there to make important remarks. This island, which lies directly before the bay, forms with the continent in the N.E. and S.W. a narrow passage, and we observed, at this moment, a large and, probably, a leathern boat, with black sails, run into the S.W. entrance of the bay, and then vanish in the east, under the horizon. This event, which greatly increased my pleasure, determined me immediately to sail into the bay, through the N.E. passage, which appeared to me to be broader than the S.W. We hastened to our boats, and took the way to the N.E., along the island. I shall not give a description of the coasts, islands, and bays, discovered by us, as a single glimpse on the very accurate charts belonging to this work, gives a very clear idea of them. After a tour of an hour and a half, we reached the N.E. passage, which we found to be a mile and a half in breadth; the depth in the middle of the channel was eight fathoms; the tide was rising, and the current set into the bay, at the rate of three miles an hour. It was already past noon, and the sailors, who had been incessantly employed ever since four o'clock in the morning, were in want of refreshment; we therefore landed at the N.E. point, where a fire was lighted, and in half an hour an excellent soup was made of English

patent meat. This meat is well adapted for excursions in a boat, as it is contained in tin boxes, and therefore extremely portable. After we had sufficiently refreshed ourselves, we observed two boats, of the same kind as those in the Aleutian islands, each with one man in it, approach us with the greatest rapidity from the opposite shore. They came within fifty paces, when they left off rowing, observing us with attention, communicating all their remarks to each other, and at last began to count us. All our endeavours to entice the Americans, by friendship, and by things which we showed them, to come on shore, were useless; they hit their heads with both their hands, and then fell down, as if dead, probably, to give us to understand, that their lives were not safe in our vicinity. It should seem that they are not acquainted with fire-arms, because they did not keep out of gun-shot, though a number of muskets were standing near us. The clothing of the Americans consisted of the entrails of whales, their appearance was extremely filthy, and their countenances had an expression of cruelty. After they had observed us for a long time, and with much distrust, they threw two darts towards their habitations, probably a signal agreed upon; but we continued our course to the east. The many sandbanks, which are formed by the current, and the current itself, hindered us much in our researches, as we could proceed only one mile in three hours;

I therefore gave up my plan for this year, and resolved to proceed in the following year to a more complete examination in little baydares, which I intended to bring with me from the Aleutian islands. At present the loss of time was of too much consequence to me, as the navigation of Beering's Straits continues only for a short time. This bay received the name of Schischmareff, after the only officer that served under me. I will not, however, say that this inlet forms a bay, because, perhaps, it only divides the foreland into several islands. I called the narrow island after our worthy vice-admiral, Saritscheff. After having doubled the northern point of Saritscheff Island, on our return to the ship, we perceived two boats, each with ten men, which rowed with all their might, to overtake us, and evidently came from the same place whence the two single baydares had been sent before to reconnoitre our force. One of our boats had got on before, and in the one behind was myself, Lieutenant Schischmareff, and four sailors; and the Americans, with their light boats soon came up with us. Their savage cries, and many weapons, made their haste look suspicious; and, in fact, we could scarcely take up our arms, before one of their boats was at our side, and two Americans furiously seized upon ours. With the most piercing cries, and hideous grimaces, they threatened us with their lances, while their second boat was exerting all their strength to come to the

assistance of their comrades. My sailors, who were armed with muskets, waited for the command to fire. I myself threatened them with my gun, pointing it sometimes at one, and sometimes at another ; but this had no effect on them ; they laughed heartily, and only waited for more troops to attempt a serious attack upon us. As our fire-arms, with which they were wholly unacquainted, gave us the superiority, and protected us from every danger, we patiently bore all their provocations, and contented ourselves with drawing our sabres ; this bright, murderous weapon, with which they had been made acquainted by the Tschukutskoi, had the wished-for effect ; they drew back, and contented themselves with following us to the Rurick. On our invitation, they ventured pretty near, behaving submissively and amicably ; but, notwithstanding all the presents which we offered them, they refused to come on board. Their dress consists of a short shirt, made of rein-deer and dog-skins. Some of them are even half-naked, as a summer-heat, even of 10°, is insupportable to them. Their hair is cut short, and the head always uncovered, which I remarked every where on this coast. They wear morse-bones under their lips, which give their already disagreeable countenances a disgusting appearance : upon the whole, they have a far more savage and ferocious expression than the inhabitants of St. Lawrence islands. We observed much

drift-wood on Saritscheff Island, and among it, stems, which were so thick that we could not span them with our arms. We observed at our anchoring-place, which is astronomically determined, that the current constantly runs along the coast to the N.E.; most probably, therefore, the drift-wood comes from the south into Beering's Straits. Favoured by a fair wind and fine weather, we now weighed anchor, and sailed all the night along the coast, at so small a distance, that we could discern every thing there quite distinctly, and could not miss any bending of the land, so that the accuracy of the chart we made here may be relied upon. At the distance of a mile from shore, on a sandy bottom, the depth was regularly from seven to eight fathoms. The land itself was every where the same; it was low, and covered with grass, here and there a little round hill, and, at the distance of fifteen miles, a high mountain, but not covered with snow.

The coast appeared to us to be very much inhabited, as we discovered numbers of subterraneous dwellings.

Longitude, according to the chronometer, $166^{\circ} 24'$; observed latitude of our anchoring-place $66^{\circ} 14'$.

August 1st. We perceived to-day, that the coast took a direction very much to the E.; the land continuing low. At eleven o'clock, we were at the entrance of a broad inlet: the coast vanished

in the E., and high mountains showed themselves to the N. Here the wind suddenly abated, and we were obliged to cast anchor on a clayey bottom, in seven fathoms' water : the nearest land lay to the S. E., four miles distant from us, the current running strong into the entrance.

I cannot describe the strange sensation which I now experienced, at the idea that I perhaps stood at the entrance of the so long sought N. E. passage, and that fate had chosen me to be the discoverer. I felt my heart oppressed ; and, at the same time, an impatience, which would not let me rest, and was still increased by the perfect calm. To satisfy myself, at least, by going on shore, and clearly observing, from some eminence, the direction of the coast, I had two boats got ready, at which our naturalists were highly delighted. We set out by two o'clock in the afternoon ; the depth regularly decreased : half a mile from shore we had still five fathoms. We landed without difficulty near a hill, which I immediately ascended : from the summit I could nowhere perceive land in the strait ; the high mountains to the north, either formed islands, or were a coast by themselves ; for that the two coasts could not be connected together, was evident even from the great difference between this very low and that remarkably high land. From the eminence on which I stood, I had a very extensive view into the country, which stretched out in a large plain,

here and there interrupted by marshes, small lakes, and a river, which flowed, with numerous windings, and the mouth of which was not far from us. As far as the eye could reach, every thing was green; here and there were flowers in blossom, and no snow was seen but on the tops of the mountains at a great distance; yet one had to dig but half a foot deep to find nothing but frost and ice under this verdant carpet. It was my intention to continue my survey of the coast in the boats; but a number of baydares, coming to us along the coast from the east, withheld me. Five of them, each with eight to ten men, all armed with lances and bows, soon landed near us. At the head of each boat was a fox-skin, on a high pole, with which they beckoned to us, uttering, at the same time, the loudest cries. I ordered my crew to be prepared for defence; and went myself, with our gentlemen, to meet the Americans, who, on seeing us approach, sat down, like Turks, in a large circle on the ground, by which they meant to manifest their friendly intentions: two chiefs had seated themselves apart from the rest. We entered this circle well armed, and perceived that they had left most of their arms in their boats, but had long knives concealed in their sleeves. Distrust, curiosity, and astonishment, were painted on their countenances; they spoke very much, but, unfortunately, we did not understand a word. To give them a proof of my friendly sentiments, I dis-

tributed tobacco ; the two chiefs received a double portion ; and they were all evidently delighted at this valuable present. Those who had received tobacco first were cunning enough, secretly, to change their places, in the hopes of receiving a second portion. They prize tobacco highly, and are as fond of chewing as of smoking it. It was a curious sight to see this savage horde sitting in a circle, smoking out of white stone pipes, with wooden tubes. It is very remarkable that the use of tobacco should already have penetrated into these parts which no European has ever visited. The Americans receive this as well as other European goods from the Tschukutskoi. To the two chiefs I gave knives and scissars ; the latter, with which they seemed to be quite unacquainted, gave them particular pleasure, when they remarked that they could cut their hair with them ; and immediately they went from hand to hand round the whole circle, each trying their sharpness on his hair. It was probably the first time in their lives that these Americans had seen Europeans ; and we reciprocally regarded each other. They are of a middle size, robust make, and healthy appearance ; their motions are lively, and they seemed much inclined to sportiveness : their countenances, which have an expression of wantonness, but not of stupidity, are ugly and dirty, characterised by small eyes and very high cheek-bones ; they have holes on each side of the mouth, in which they wear

morse-bones, ornamented with blue glass beads, which gives them a most frightful appearance. Their hair hangs down long, but is cut quite short on the crown of the head. Their head and ears are also adorned with beads. Their dresses, which are made of skins, are of the same cut as the Parka in Kamtschatka; only that there it reaches to the feet, and here hardly covers the knee; besides this, they wear pantaloons, and small half-boots, of seal-skin.

Though the thermometer was only eight degrees heat at noon, it was now summer with the Indians, and they went barefoot and almost without clothing. They collected in troops; and, as I saw more baydares coming from the W., I thought it more prudent, lest I should have to contend with fifteen men against some hundred of Americans, to go on board, whither we were followed by our new acquaintance, loudly rejoicing at the superior celerity of their boats. On the shore, we observed a round tower, built of stone, from three to four fathoms high, and one in diameter; and I very much regret that I was not able to examine it more closely. The Indians would not venture on board, but kept at a little distance from the ship, and sold us many trifles of their workmanship for knives, looking-glasses, tobacco, &c. They would not sell the skins, of which they had many, as we had no long knives to give them in exchange, for which alone they would part with their black fox-skins.

They are very expert traders, haggle obstinately, always consult together, and are infinitely happy when they fancy they have cheated any body. Some old women, who were in their baydares, understood bargaining still better. There was so much laughing and joking during the trading, that it appeared as if we were surrounded by the lively South Sea islanders, instead of the serious inhabitants of the north. Their arms consist of lances, bows, arrows, and a knife, two feet long, in a sheath; this military equipment, which they never lay aside, proves that they are in constant wars with other nations. Their lances, which are of iron, very well wrought, resemble those which the Russians have sold to the Tschukutskoi; the glass beads, also, with which they adorn themselves, are of the same kind as those worn in Asia, which proves that they must be in commercial intercourse with that continent.

At seven o'clock, a faint wind arose from the south, of which I immediately took advantage, weighed anchor, and steered up to the strait. The Americans, who had followed us in their baydares, pointed to their skins, giving us to understand by signs, that we should find plenty of them at the place where we were now going; one of them frequently repeating the words *Janni-ö-ö!* and pointing sometimes to the ship, and sometimes to the entrance. The latitude of our anchoring-place, according to the ship's reckoning, was $66^{\circ} 42' 30''$,

longitude, according to the chronometers, $164^{\circ} 12' 50''$. While we lay at anchor, the current always ran a mile and a half in an hour, to the N. E. The Americans left us with the setting of the sun. We sailed during the night in an easterly direction, while the increasing depth augmented our hopes. I did not stir from deck during the whole night, and awaited the dawn of morning with impatience.

August 2d. At day-break, our expectations were at the highest pitch. I sent a sailor to the mast-head, and he announced, that there was still nothing but open sea to the east. We saw high land in the north, which took its direction to the east, and was a continuation of that which we observed yesterday, to the north of our anchoring-place.

As we now saw low land in the south, the direction of which was likewise to the east, we could no longer doubt, that we were really in a broad channel, at which our joy was indescribable, as we always continued to see the open sea in the east before us. We were obliged to tack, as the wind now turned to the S. E. The weather was delightful, and at noon we were in latitude $66^{\circ} 35' 18''$, longitude $162^{\circ} 19'$. At five o'clock in the evening, we saw land in several places, and our hopes rested now on an open space, between high mountains.

August the 3d. During the night, we reached this place; but, on account of the gloomy weather,

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we were obliged to cast anchor, on a clayey bottom in eight fathoms' water. When it cleared up, towards noon, we found that we were at an opening five miles broad; the shores of which consisted of a high rocky country. We still cherished the hope of discovering a passage into the Frozen Ocean, more particularly as the strait appeared to run without impediment to the horizon. The ebb and tide changed regularly, and the current ran out with more violence than in. The anchor was weighed; we sailed up to the strait, and when we had passed the narrow part, we again cast anchor in seven fathoms. I found an anchoring-place, on a clayey bottom, extremely secure. The reader will find it accurately marked in our atlas. The land that lay to our right in sailing up, was an island, seven miles in circumference. The open sea, indeed, lay before us; but my hope of penetrating far in that direction was diminished, when the boat that was sent out to sound, nowhere found the depth above five or six fathoms. I resolved to let my crew rest themselves for to-day, to be able to undertake an examination of the strait or bay, on the morrow, with fresh strength; and while preparations were making to this effect, we took an excursion to the island, which I called after our naturalist, Chamisso. I did not neglect to take my chronometer, artificial horizon, and azimuth compass, with me. As to the variation of the magnetic needle, we obtained false results. On the eastern part of the

island, extends a low tongue of land, on which we found the variation to be 1° east; the opposite observations with the compass, made from the point of the island to the ship, and from thence to the island, gave for the variation on the point 26° west; the variation on the ship after repeated observations, gave $31^{\circ} 9'$ east; and as this coincides with that which we observed out of the bay, it may be presumed to be the most correct. Without doubt Chamisso Island contains much iron, and that is the occasion of the false result. We had an extensive prospect from the point of this very high island; the land to the south seemed to join every where; in the north, nothing was to be seen but the open sea: on the east, Chamisso Island is separated from the continent by a channel, which is five miles broad in the narrowest part. The surrounding land was high and rocky. Snow was no where to be seen; the mountains were covered with moss; and the shore was clothed in luxuriant verdure. Chamisso Island was of the same nature, where we had had now chosen a green spot, on which we intended to drink tea. I readily confess, that I seldom felt myself happier, than on this spot; to which the idea of being the first European that ever put his foot on this land, may have greatly contributed. The weather was at 12° heat, (a height that the thermometer never arrived at without the sound,) and extremely fine. We found on our tongue of land, under ground,

several store-rooms, lined with leaves, and filled with seals' flesh. Probably, therefore, the Americans in their hunting parties, have their station here; and to mark the place, have erected a small ill-built stone pyramid. The island, which has only a small landing place, rises almost perpendicularly out of the sea; the rocks round about, and the islands to its west, are inhabited by numerous puffins; and the many egg-shells which we found on our way, were an indication that foxes destroyed the nests: hares and partridges were here in plenty; and cranes, on their passage, rested on this island. On places protected against the north wind, grow willows from two to three feet high, and these are the only trees that we saw in Beer-ing's Straits. We perceived also seals as we returned to our ship, which had taken their station on some large stones on the west side of the island.

On the 4th of August, at six o'clock in the morning, I left the Rurick, in company with our scientific gentlemen, and Lieutenant Schischmareff, in two boats, provided with arms, and provisions for several days. I had previously taken some altitudes for the chronometer, and found the longitude of our anchoring-place $161^{\circ} 42' 20''$; latitude, after several observations, $66^{\circ} 13' 25''$. The weather was delightful; the wind blew faintly from the south; we spread all our sails, doubled the cape, lying to the N. W., and then keeping always close to the

land, directed our course northwards along the coast. We found, at fifty fathoms from shore, from two and a half to three fathoms depth, on a very good bottom. Ships may lie at anchor, and undertake repairs as safe here as in the best harbour, particularly as the depth in many places permits them to lie almost close to the shore. We had proceeded about fourteen miles, towards noon, when I landed to take the meridian altitude. The land was high and rocky; on the summit of a small mountain, which we ascended, we discovered that we were on a narrow tongue of land, and that the land in the north seemed to join that in the east, a most disagreeable surprise to us. However, we had still a spark of hope remaining, as the whole junction was not visible. After having taken the necessary angles and observations, for planning the coast, we steered eastward to the opposite side. In the middle of the channel, it was from five to six fathoms; but it decreased so much as we approached the land, that I was afraid of running a-ground. I turned to the north directly to the land, that we had seen at noon, from the summit of the mountain; and when we had approached this within a hundred fathoms, we had only one fathom water. It was already late, and my people were tired; I therefore made the long-boat cast anchor, and we went on shore with the baydare* ; as it,

* A large open boat, quite flat, made of sea-lions' skins. The Kamtschadales, and all the North Americans, use them on

however, could not get quite close, we were obliged to walk twenty fathoms through the water. Preparations were immediately made for a night's lodging; and a soup made of the English patent meat, which was excellent and comfortable in the cool evening. Chamisso Island lay eighteen miles distant from us, to the south: there was land in all directions, except in the east, where a space still appeared open, and I was obliged to give up my fairest hopes of finding a passage. I now thought, as the water was not at all salt in the bay, to find at least a broad river, up which we might penetrate far into the country. The land pleased us but little; it rises from the shore at once to the height of one hundred and twenty feet, and runs then into an extended plain, covered with moss, as far as the eye can reach; only a little grass grows on the declivity of the bank. We had a storm and rain during the night, but were protected from both by our baydare.

August the 5th. The weather being bad, I put off the examination in the east, till a more favourable day, and returned to the Rurick.

The 6th. To-day, I examined the passage to

shore by way of tent, which I have often imitated in my excursions, and found it a very good way. I had this baydare made in Kamtschatka, with the intention of using it in Beering's Straits.

the east of Chamisso Island, and did not find the channel above five fathoms deep.

On the 7th, at eight o'clock in the morning, we left the Rurick, with a fresh south-east wind, to explore the eastern part of the bay. We had already advanced so far at noon, that we could distinctly observe, that the land was united every where: at the distance of a full mile from the shore, the water had decreased to five feet; and the hope of discovering a river also vanished. Happily we found a convenient place for landing; the current having formed a small tongue of land, where there was depth enough for us to approach with our long-boat, and I resolved to remain there for the night. There were two small huts, near our landing-place, which were raised several feet, supported by four pillars, and covered with morse-skin. These huts did not seem constructed so much for continual residence, as for magazines for their instruments, and hunting utensils. We here found very elegantly-made arms. I took several arrows, and put in their stead knives, and a hatchet, on the handle of which, Rurick and the date of the year was carved. Probably the Americans visit this place, at the hunting time. They perhaps also keep rein-deer; as we saw many horns of these useful animals lying on the shore. The land rises a little from the coast, but reaches to a considerable height; and is only covered below with beautiful green, and above with moss.

August the 8th. We had passed a very unpleasant night, for it was stormy and rainy; and as the morning promised no better weather, I resolved to sail back to the ship; but scarcely had we gone half way, when we were overtaken by a violent storm from the south-east: the long-boat drew much water, and we were obliged to return to the landing-place we had just quitted. Being wet through, I had a fire made of drift-wood, which we found every where in plenty; we dried our clothes, and prepared a refreshing soup. It seemed as if fortune had sent this storm, to enable us to make a very remarkable discovery, which we owe to Dr. Eschscholtz. We had climbed much about during our stay, without discovering that we were on real ice-bergs. The doctor, who had extended his excursions, found part of the bank broken down, and saw, to his astonishment, that the interior of the mountain, consisted of pure ice. At this news, we all went, provided with shovels and crows, to examine this phenomenon more closely, and soon arrived at a place where the back rises almost perpendicularly out of the sea, to the height of a hundred feet; and then runs off, rising still higher. We saw masses of the purest ice, of the height of an hundred feet, which are under a cover of moss and grass; and could not have been produced, but by some terrible revolution. The place which, by some accident, had fallen in, and is now exposed to the sun and air,

melts away, and a good deal of water flows into the sea. An indisputable proof that what we saw was real ice, is the quantity of mammoths' teeth and bones, which were exposed to view by the melting, and among which I myself found a very fine tooth. We could not assign any reason, for a strong smell, like that of burnt horn, which we perceived in this place. The covering of these mountains, on which the most luxuriant grass grows to a certain height, is only half a foot thick, and consists of a mixture of clay, sand, and earth; below which the ice gradually melts away, the green cover sinks with it, and continues to grow; and thus it may be foreseen, that in a long series of years, the mountain will vanish, and a green valley be formed in its stead. By a good observation, we found the latitude of the tongue of land $66^{\circ} 15' 36''$, north. Here, too, we obtained for the variation of the magnetic needle a false result, 13° west.

August 9th. We left this place at six o'clock in the morning, with beautiful weather; and I learnt on my arrival on board, that during our absence two baydares had approached the Rurick, but were frightened away by a gun-shot, as I had given orders to let no Americans come near, because so few people had remained on board. I called the bay after our physician, Eschscholtz, as it was he that made the remarkable discovery there. It seemed to be uninhabited, and only visited at a certain time of the year, on account of the hunt-

ing. I do not doubt, that there was a river between the high mountains, which the shoals, however, would not permit us to investigate. In the back ground of the eastern part of Eschscholtz Bay, a ridge of high mountains rises. The ebb continues only seven, and the flood five hours; the water rises to six feet at full moon, is at the highest at six o'clock in the afternoon; and the current runs a mile and three quarters during the ebb, and during the flood, one mile and a quarter in an hour; a difference which is probably occasioned by the melting ice. The ebb and flood change regularly. The current sets with more violence out than in, and sometimes runs two knots. During the high storm from the south-east, on the 8th of August, the barometer stood at 30.00 inches.

August 10th. My intention of leaving the bay at day-break was disappointed by the rain, and so gloomy an atmosphere that no land was to be seen. At four o'clock in the afternoon, it was clearer, and we left Eschscholtz Bay with a fresh S. S.E. wind. I now wished to examine the land in the south; we therefore directed our course thither, and cast anchor when it grew dark, partly not to miss any bending of the coast, and partly to continue the survey the next morning. The land in the S. lay at a distance of seven miles before us: the depth was seven fathoms over a clayey bottom. Chamisso Island lay to the N.E. 41° , eighteen miles and a half. A high and remarkable mountain, the sum-

mit of which was in the form of a cap, lay to the N.E. 82°.

We were visited by a baydare with eight people, among whom was one whom we thought we had seen before; but the Americans treated us very contemptuously, offering us little rags of rats' and dogs' skins in exchange; but when they observed that we laughed at their goods, they also joined heartily in the laugh, talking much to each other, and at last advised us to put the rags in our noses and ears. These also did not venture on board, but constantly prepared for flight, watched all our motions, and left us very well contented after we had given them several knives.

August 11th. At four o'clock A. M. we went under sail in very fine weather. I steered along the coast W. S. W., because I considered the examination of the east unnecessary, as I had distinctly seen the connection of the land from the point of Chamisso Island. We soon arrived at a ridge of mountains, the entrance of which seemed to form a bay; but when I perceived my error on doubling it, I called it Cape Deceit. This promontory, which consists of a lofty round rock, rising perpendicularly out of the sea, is very distinguishable. On the shore was a number of baydares, some of which approached us to barter for trifles; and, by the readiness of the Americans in cheating, I saw that I had double reason to call it Cape Deceit. This time there were two young girls with them,

who wore blue glass beads in their ears, and did not look amiss, though their dress is but little distinguished from that of the men: they wore thick rings of iron or copper on their arms, and their long hair was fastened in a braid round their head. As soon as we had doubled Cape Deceit, the land became low, and vanished in the south. There arose high mountains at a considerable distance, and I directed my course thither in the hope of finding a large river; but as the depth gradually decreased, we were obliged to cast anchor at two o'clock in the afternoon in five fathoms water. To the west, at a distance of six miles, lay low land which takes its direction to the north, and then to the N. E. To the south-east we saw the high land in the neighbourhood of Cape Deceit, which from thence extends to the west, where it gets quite low; to the S. W. was nothing but the open sea. I must here mention two mountains, which served me in my survey as fixed points, they being every where higher than the others. The one lay south-east 14° , and cannot be mistaken on account of its summit, which is in the form of two asses' ears, for which reason we gave it the name of Asses' Ears; the second, the summit of which is of considerable extent, lay to the S. W. 47° ; it continues to run in an horizontal direction, and looks as if the fragments of a ruined castle stood on it, of which some towers were still remaining. These, however, I afterwards recognized to be stone pillars, resembling

those which Saritscheff found on the coast of the Icy Sea. I called this mountain, Devil's Mountain. Every moment being valuable to me in fine weather, I had two boats equipped, and commenced my voyage, with all my company, to the place where there appeared an opening in the sea. I was indeed too late to examine any thing to-day, but we intended, after passing the night on-shore, to proceed at day-break; but scarcely had we got 200 fathoms from the ship, when we were overtaken by a thick fog, which obliged us to return. We observed the current, which, with a rapidity that amounts to one knot and a quarter, ran seven hours out of the opening, and four hours in.

On the 12th, at four o'clock in the morning, we undertook a second tour to the opening in fair weather; but as the depth greatly decreased, we were obliged to take another way, which led us to land in the W., six miles distant from our ship. We landed near a small river, which seemed to have its source from the sea: the land, though it lay pretty high, was marshy. Here our company separated. I, with Lieutenant Schischmareff, followed the coast to the S., to penetrate, if possible, into the opening; our naturalists went into the country to botanize; and the sailors, who remained behind, in the meantime prepared dinner. After proceeding about four miles, we arrived at a cape, where the land suddenly took its direction from S. to W., and became considerably higher; from a hill

ved a broad arm in the W., which ran from the sea into the land, and there wandered in several windings between the mountains, which gave me the hope of navigating in boats, and penetrating far into the country. We likewise observed that the depth, which seemed to increase in the middle, was already, at the shore, deep enough for our boats. Its breadth was between a mile and a mile and a half: the current changed regularly, and ran in many parts at least two knots. We discovered a hut at the distance of 300 paces, from which two Americans, the one an elderly man, and the other a boy of sixteen, both armed with bows, arrows, and lances, approached us. After they had come about half way from their hut, they ascended a hill, where they took their stand; they then drew their bows, and directed their arrows to us, while the old man called out something to us in a roaring voice. As we had still three sailors with us, and this superior force perhaps terrified them, I commanded the others to remain behind, put down my arms, went alone up to the warrior. Scarcely did they see me unarmed, when they also threw down their weapons. We cordially embraced; rubbed our noses frequently together, and I evidently showed them my friendly intentions by giving them knives and looking-glasses. Yet still they could not help conceiving a secret fear, and when I afterwards called my people, their distrust rose to the highest degree; they immediately directed their bows

against my companions, and roared as before. I sent the sailors back, and gave Lieutenant Schischmareff a sign to come to me unarmed. He was received in the same manner as myself, and they then invited us to their hut. We entered a small tent of morse-skins, made in the form of a canoe, where the wife and two children were sitting in a corner. On one side of this habitation were two boats; one was quite a small one, like those used by the Aleutians, and the other a larger one, for ten persons, which serves to transport their tent, together with all their household, from one place to another. That they are employed in the chase, was proved by the various skins which lay about in heaps. The elder boy, with a lively and animated countenance that expressed much curiosity, was particularly attentive; when he observed that we noted down the names of different objects, he took a pleasure in telling us various things, and looked eagerly when we put his words on paper. The wife of the American seemed to have a mind for nothing but my bright buttons, which she strove secretly to twist off; but as she did not succeed in this, she sent her two children, who were entirely wrapped in fur, and crawled about me like two young bears, to try to bite them off. To save my buttons, I gave her a looking-glass; but this occasioned a great dispute, as all the family wanted to look at themselves at once, and for that it was clearly too small. I at length in-

terfered, and made one after the other look at his face, and each of them tried to find the stranger behind the glass, as he did not know himself. The host now spread a morse-skin outside of the tent, on which he invited us to sit, and made each of us a present of a martin's skin, for which he received presents in return, among which the tobacco was particularly welcome. The woman was adorned in the same manner as we have seen some before, with iron and copper rings on the arms, and glass beads in the hair. I took much trouble to make my American comprehend that I wished to know how far this branch might extend. He at last comprehended me, and made me understand his answer by the following pantomime: he seated himself on the ground, and rowed eagerly with his arms; this business he interrupted nine times, closing his eyes as many times, and resting his head on his hand. I learnt by this, that it would take nine days to get to the open sea through this branch. I was so rejoiced, that I gave them more knives, and then hastened to our boats, accompanied by the father and son, who, on my invitation, both went with us. The old man was of a middle stature, robust make, and healthy appearance; like all the other inhabitants, he had high cheek-bones, and very small eyes, as also the two holes below the under-lip, ornamented with morse-bones; these give a particularly disgusting look, when the bones are taken out, as the saliva con-

tinually runs over the chin. They both accompanied us in light skin frocks; their hair was cut close, their heads uncovered, and they went bare-foot. The father might be about forty. We talked a great deal on the way, and picked up many of their words, which have much resemblance with those collected by Cook in Norton Sound. On my questioning whence he had the blue glass beads, an old knife, and the like European goods, he pointed to the entrance of the sound, where people came to them in boats, who gave them the beads, tobacco, and also wood for making their bows and arrows, in exchange for furs and ready-made articles of dress. He knew very well how to instruct me in their manner of dealing: the stranger first comes, and lays some goods on the shore, and then retires; the American comes, looks at the things, puts as many skins near them as he thinks proper to give, and then also goes away. Upon this the stranger approaches, and examines what is offered him; if he is satisfied with it, he takes the skins, and leaves his goods instead; but, if not, then he lets all the things lie, retires a second time, and expects an addition from the buyer. In this manner the dealing seems to me to continue without speaking, and there is no doubt but the Tschukutskoi obtain here the skins for the Russian trade. My three sailors now came up to us, to the great terror of the Americans, who immediately wanted to fly. Their friendly beha-

viour, however, soon conciliated them so much, that we walked arm-in-arm, laughing and joking: this cheerfulness appeared to me to be rather forced, on the part of the savages. Our discourse was interrupted by the appearance of an animal, in many respects similar to the squirrel; but it is much larger, and lives in the earth: it is called in Siberia, Gewraschka. The Americans, who make very neat summer-dresses of the skins of this animal, of which there are great numbers here, call it Tschikschi. We tried to catch it for our collection; but, without the assistance of our friends, who are very expert in running, would scarcely have succeeded. They brought it triumphantly to us, and laughed heartily at our unskilfulness. As we were proceeding farther, I observed a snipe, and wishing to know if my companions were acquainted with fire-arms, and what impression a shot would make on them, I was induced to shoot it. The sound occasioned the greatest fright, they looked at each other, not knowing whether to stay or fly; but, when they perceived that nothing had happened to them, they took courage, and cautiously looked round at my fowling-piece; the old man, who had carried one, without suspecting what he had in his hand, quickly returned the gun to the owner. The dead snipe, which he would not venture to touch, had inspired him with the greatest respect for the terrible instrument, and they could not get over their astonishment at

this extraordinary circumstance. We had nearly reached our quarters when we met M. Choris with his book, in which he had drawn several of the Americans of this part. Our friends were very much pleased at it, and were quite beside themselves, when M. Choris, in walking, sketched the features of the old man hastily on paper, and the son held his sides with laughter when he saw his father's face drawn in the book. We arrived at our quarters, found the soup ready, and cheerfully took our meal without loss of time, while our friends admired the many strange things which met their eyes: they were particularly struck with the use of knives, forks, and plates. They did not eat the meat and biscuit which we gave them, but saved it. As soon as we had finished our meal, every thing was packed up, and we sailed to the opening with a favourable wind. The Americans, who remained on shore, staid a long time in the place where we had dined, and we saw them busily looking about, in the hope of finding something that we might have left that could be of any value to them.

We doubled the promontory, which forms the entrance of the arm, and where the land suddenly takes its direction to the west. But all our endeavours to penetrate far into it were in vain, as we every moment ran upon shoals. Yet I am convinced that there must be a channel, as the depth in many places was from two to three fathoms,

close to a shoal, and the current running two knots. Even the many shoals have been formed by the violence of the current, and this could not possibly exist, if the arm closed soon. The account given by the American may, therefore, be correct; and this branch either extends to Norton Sound, or joins Schischmareff's Bay. After we had wearied ourselves in vain, for several hours, in looking for a passage, we landed near the hut of our friend. I resolved to stop, that my people, who were extremely fatigued, might have some rest: the baydare, which was dragged on shore, was turned upside down, and served us for shelter, and a cup of tea was a real refreshment to us all. Our American seemed rather terrified at his neighbours; he immediately packed up his house and household in the large boat, and, with his family, silently left our side of the shore. I observed how he sometimes rowed with the left, and sometimes with the right arm, probably to avoid the shoals known to him, and how he at last, after many turnings, reached the opposite shore, where our fugitive friend put up his tent.

The water in the arm, which we frequently examined, was saltish. It is impossible to imagine finer weather than we enjoyed to-day; not a cloud obscured the sky, which was of a most beautiful blue, such as is only seen in high latitudes, and the inhabitant of Beering's Straits may also say, nature is beautiful! Towards evening our agreeable re-

pose was interrupted by the call of the sentinel announcing eight baydares under sail. This visit was meant for us ; we had already seen them from an eminence getting under sail in the neighbourhood of Cape Deceit ; but as our arms were in the greatest order, we could await their arrival with composure. The baydares, each with twelve men, landed at the south cape of the arm, directly opposite us, at a distance of a short mile, where they were drawn on shore, and, like ours, served as tents. The Americans made several fires, round which they placed themselves, and their dogs, of which they had many, ran about the shore. Such neighbours might really prove dangerous to us, as my whole company on this excursion consisted of only fourteen men, and the loss of some of my sailors would have made it impossible for me to complete the expedition : yet we had need of some hours' repose. I therefore placed the sentinels with their pieces loaded, and orders to fire on the slightest suspicion, and the rest of us lay down on the ground, each with a loaded musket at his side. The savages sat round their fire crying out and beating their drum.

I gave up for the present the farther examination of this arm, as it would cost me too much time on account of the shoals, and put it off till next year, when I might continue it by means of very small baydares from Oonalashka. I called this bay, the Bay of Good Hope, as I might really

hope to make a very remarkable discovery here. The coasts on the northern part of the arm rise to a considerable height, but gradually become lower the farther one penetrates to the N., where there are many small lakes and rivers. The southern coast of the arm is low, and continues so as far as the eye can reach. It is only in the vicinity of the Devil's mountain, which is fifteen miles from here, that it becomes mountainous. The land is every where green, but has not a single bush on it. We set out on our voyage at one o'clock in the morning; the fire of the savages was burning; we still heard their songs, accompanied by the hollow drum; and this, united with the darkness of the night, concealed our departure from them. After we had worked ourselves out of the channel, we took our way to the ship, and as we could see nothing, were obliged to direct our course by the situation of the land. We had scarcely rowed half an hour, when we struck upon a shoal; it was the time of ebb, and all the places which we had previously navigated with ease, were now changed into sand banks, and we heard the breakers roaring round us. We therefore rowed in another direction; but it was not long before we were again on a shoal, where the breakers threatened to swallow us up. A violent wind rendered our situation still more dangerous, our boat drew much water, we were all exhausted by labour, and I saw no means of escaping death, as we had every moment to expect that

the boat would be seized by the breakers and overturned. The baydare in which our scientific gentlemen were, had got on before us, and some shots as signals of distress which proceeded from them rendered our situation horrible. We answered them with a musket shot, but were not able to go to their assistance. At last the dawning day relieved us all, we could observe the way we had to take to avoid the breakers, and the baydare, also contending against them, was near us. The sailors exerted their last strength to push rapidly through the surf, (the only means of passing without being overturned,) and we were saved. The baydare, which was made of leather, and consequently lighter, got through with less trouble. We could now see the ship distinctly, but the distance was still two miles, and my exhausted sailors had scarcely strength enough to row against the violent contrary wind; but at last this abated also, and after inconceivable difficulties, we reached the Rurick on the morning of the 13th. It is to the courage of the sailors alone that we owe our escape, and I am rejoiced in being able to declare publicly, that during the whole voyage I have had reason to be satisfied in the highest degree with the conduct of all my crew. Their undaunted courage and perseverance in the service has always rejoiced me. Their behaviour was exemplary, and they evidently strove, in known as well as in unknown countries, to leave nowhere a bad impression. In

this manner an arduous enterprize may be undertaken with Russian sailors with pleasure. At five o'clock, A. M., when the wind had quite abated, we received a visit from the Americans in two baydares, who tried to cheat us every way in the sale of some of their small works, and laughed heartily when they could not succeed. They have probably learnt the common rule in trade, to show the worst goods first, from the Tschukutskoi, as the latter from the Russian merchants. As we would have nothing more from them, they took from the lower part of their boats some black fox-skins, but these we could not obtain, as we had no large knives. One of them, a robust young man, whom I took to be the chief, as all his commands were punctually obeyed, ventured on deck, after we had invited him and given him many presents. He was the only one of the inhabitants of the sound that shewed this courage. His astonishment at the sight of so many foreign objects was inconceivable; he looked around on all sides without speaking, and went away in a quarter of an hour to entertain his attentive companions with all the wonders he had seen. We gave him a slate, making him comprehend that we wished him to draw the direction of the cape; he took the pencil, and really drew the cape at the southern entrance of the sound, which he represented as a bending point of land. Upon this he drew a number of habitations, which he called *Kegi*, whither he, in a friendly manner,

invited us. We observed an iron lance in his bay-dare, which we recognized, by the make, to be of Siberian manufacture, where they are only made for the trade with the Tschukutskoi. It was now their time for dinner. A seal which had just been killed was put in the middle; they cut open its belly, and one after the other put in his head and sucked out the blood. After they had sufficiently drunk in this manner, each cut himself off a piece of flesh, which they devoured with the greatest appetite, and it may easily be imagined how their naturally frightful countenance looked after such a repast.

At nine o'clock in the morning we had clear weather, and a moderate east wind, when we immediately weighed anchor, to follow the coast to the north. The latitude of our anchoring-place, by observation, was $66^{\circ} 16' 39''$, longitude $163^{\circ} 41'$. Variation of the compass 27° east. We observed the falling of the water on the coast, which takes a northern direction from the Bay of Good Hope, which we could not approach on account of the shallowness, but only observed it from the mast-head. At ten o'clock we saw the extreme point of the land in the S.W. 85° . This cape was six miles from us, and forms the southern entrance of the sound. I called it after my friend Dr. Espenberg, who made the voyage round the world with me under Captain Krusenstern. From this place I steered, during the night, to the N.E. coast. On the

14th of August, at eight A.M., we reached the promontory, which forms the northern entrance of the sound, which received the name of Krusenstern. What I had taken, on entering the sound, for islands in the north, was very high land; on a low tongue of land which extends from it to the west, were many habitations, and we saw not only people running to and fro on the shore, but also two baydares, which sought in vain to come up with us, as the wind, which blew briskly, had given the Rurick wings. We observed a building on an elevation, resembling a European magazine; the habitations on the tongue of land, which are underground, appeared like little round hills, with fences of whalebones. From Cape Krusenstern, the land forms a bend to the N.E., and then takes its direction to the N.W., where it ends in a very high promontory, which I take to be Cape Mulgrave; according to our determination it lies in $67^{\circ} 30'$. Cook, who had no observation on that day, found by estimation the latitude of Cape Mulgrave to be $67^{\circ} 45'$. This, it is true, is a difference of $15'$; but if it is considered that we, being at a distance of thirty-five miles from the promontory, may easily have made a small mistake in the latitude, and that Cook having had no observation, a trifling error might also have crept into his reckoning; the mean of our two latitudes, which is $67^{\circ} 37' 30''$, may be pretty near the truth. Our longitude of

Cape Mulgrave coincides very accurately with Cook's.

According to my instructions, I was to have looked for a safe anchoring-place in Norton Sound, and from thence to proceed next year further to examine the coast; but as fortune directed me to a hitherto unknown sound, which affords the safest anchoring-places, and where an expedition by land must be far more interesting than in Norton Sound, I consider a voyage thither as quite unnecessary. In compliance with the general wish of my companions, I called this newly-discovered sound by my own name, Kotzebue's Sound. Inconsiderable as the discovery of this sound may be, it is an acquisition to geography, and may serve the world as a proof of my zeal; for, in truth, even Cook has treated this coast rather negligently. I certainly hope that this sound may lead to important discoveries next year, and though a north-east passage, may not with certainty be depended upon, yet I believe I shall be able to penetrate much further to the east, as the land has very deep indentures. This sound must in time afford essential advantage to the trade in furs, as they are in abundance; we ourselves should have returned home with a rich cargo, if trade had been part of our plan. In my opinion, our government might establish several settlements on the coast of Beering's Straits to the north, like the English Hudson's Bay Company, which extends its

trade far to the west of Hudson's Bay. It possesses colonies in the interior of the country, at a very little distance from the new-discovered sound, and will, without doubt, take the advantage of trading there. The navigation of Beering's Straits has hitherto been dangerous, because ships, in case of a storm, or other accidents, knew of no port where they could find protection. This difficulty is now removed, and ships which in future intend to visit Beering's Straits, will find the essential benefit of this discovery. The inhabitants of this country, who have all a very healthy appearance, seem to subsist entirely on the flesh of marine animals, which they, for the most part, eat raw. We saw no fish on all the American coasts; we often threw out our lines, but all in vain; I believe, therefore, either that there are no fish here at all, or that they do not resort here at this time of the year. These people are exceedingly fond of tobacco: they chew, snuff, smoke, and even swallow the smoke.

Doctor Eschscholtz, who daily observed the water in the sound with his areometer, found it very sweet, which probably arises from the melting ice; but perhaps there is a considerable river in its vicinity which escaped our search; upon the whole, we found that the water on the American coast contains much less salt than that on the Asiatic. The prevailing wind this month, which is always violent at the rising of the sun, but abates at its setting, was S.E.; the weather, for the most part,

was serene. I conjecture that, in a S.E. wind, Cape Prince of Wales keeps off the fog from this coast, as you have only to go a few miles out to sea to be involved in the thickest fog. The barometer regularly stands higher in a S.E. than in any other wind, without reference to the weather, of which I will only give one example : during a S.E. wind, and gloomy weather, the barometer stood at 30. 20. ; with a N.E. wind, and most serene weather, it stood at 29. 50. The mean height of the thermometer, out of the sound, was 9° heat, and in it $+ 11^{\circ}$. All this is to be understood of the American coast.

CHAP. VIII.

FROM KOTZEBUE'S SOUND TO OONALASHKA.

Now that we had found a place of refuge for the next year, I wished to pass the few days which this sea allowed for navigation, on the Asiatic coast, in order to become acquainted with its inhabitants, and to compare them with the Americans. I therefore steered my course to the south, on a morning when the wind was E.N.E., to see the land in the neighbourhood of Cape Espenberg. At noon our latitude, by observation, was $66^{\circ} 48' 47''$. Near Cape Espenberg two remarkable hills lay S.E. 18° , and Cape Krusenstern N.E. 22° . The wind ceased, and as we had a perfect calm on the 15th of August, I succeeded in taking several distances between the sun and moon, the longitude calculated from which, and reduced to noon was $165^{\circ} 15' 30''$; that given by the chronometer differed only a few minutes. My intention was to pass near the E. coast of Asia, and from thence to St. Lawrence Bay; but as we had gloomy weather on the 16th and 17th, and a high wind from the S. and S. S. W., we were able to make but little progress.

August 18th. The wind still continued to blow violently from the S., with such a thick fog as we

never had on the American coast with this wind. During the night we had approached the Asiatic coast; the depth had regularly increased to 31 fathoms, and the temperature of the air had changed to such a degree, that it seemed as if we were suddenly removed from a warm climate into a cold one. The thermometer, which, on the American coast, had stood from nine to ten degrees at noon, stood here only at $+ 5^{\circ}$; the water was also sensibly colder, which probably arises from the high icy country: we always found the barometer lower here than in America. The direction of the current was always N. E. in Beering's Straits, and stronger on the Asiatic coast than on the American. A number of whales and morse, which played about us, afforded us a sight that we never had there. The latter have a very singular appearance in the water; as they hold their heads perpendicularly above the surface, their disproportionably long teeth stand quite horizontal. In the morning I observed very dark blue spots, which were distinguished from the colour of the water. For fear of running on a shoal, I had the lead heaved, and we found this spot was occasioned by an innumerable multitude of small marine animals. At three o'clock P. M. the fog dispersed, and East Cape lay at a distance of twelve miles before us to the S. W. 45° . Though the south wind obliged us to tack, yet we hoped to make good way, as the sea was calm. At seven o'clock P. M., East Cape was S. W. 17° ,

and Ratmanof Island S. E. 39° : the weather was gloomy, and the wind fresh.

August 19th. After we had passed a rainy and stormy night in continual tacking, I hoped by our ship's reckoning to be near St. Lawrence Bay. A thick fog which had hitherto concealed the coast, dispersed a little towards noon, and we saw the summit of a mountain at a small distance to the S.S.W.; but how were we astonished, when, on the horizon clearing up, we perceived that this mountain formed East Cape, and thus we had not advanced a step since yesterday. The current, according to our calculation, had carried us fifty miles to N.N.E. in 24 hours, *i. e.* above two miles an hour. I estimate the current on the Asiatic coast in the channel, at the greatest depth, to be three miles an hour when the wind blew fresh from the S. The constant N.E. direction of the current in Beering's Strait proves that the water meets with no opposition, and consequently a passage must exist, though perhaps not adapted to navigation. Observations have long been made, that the current in Baffin's Bay runs to the S., and thus no doubt can remain that the mass of water which flows into Beering's Straits, takes its course round America, and returns through Baffin's Bay into the ocean.

As it seemed to be the will of fate that we should visit East Cape, I steered thither, and kept to the north side, to be protected from the south wind. It consists of very high land, and in many places

is covered with eternal ice, which appears to the navigator, at a small distance, to be only a narrow neck of land, which stretches far into the sea; this is probably the reason that Cook has drawn it in this form in his chart. But at the distance of five or six miles it appears as very low land which unites to the mountain, and deprives the promontory of the form of a tongue of land. At the extreme points of the Cape, in the low land, there is a conical mountain, which rises perpendicularly out of the sea, the summit of which has fallen in, and is open to the sea-side. The black rocks, which are confusedly fallen together, one of which quite in the form of a pyramid, is particularly distinguished, give to this place a frightful appearance. These ruined rocks indicate the revolution which once took place here; for the situation, as well as the appearance of the coast, makes it probable that America was once united to Asia, and that Gwozdef islands are the remains of the connection between Cape East and Cape Prince of Wales. The low land to the W. forms a bend, on which we observed a number of subterraneous dwellings in the form of little round hills, about which were placed a number of whale-ribs. We sailed in that direction, and cast anchor at noon, in $18\frac{1}{2}$ fathoms' water on a clayey bottom: the Jurtes lay to the S.E. 4° , a couple of miles distant; the pyramidical rock S.E. 64° . As soon as we lay at anchor, a baydare with eleven men approached the Rurick; they

rowed several times round the ship without speaking a word, observing it with great attention, but were by no means to be prevailed upon to come on board, though they very well understood our signs; after they had pointed first to some fur and then to their habitations, whither they invited us, they took the way thither; probably therefore they were sent to reconnoitre us. Among their arms we also observed a musket; if the Russian merchants often take the liberty to sell them muskets, it may have very bad consequences for the Russian colony in Kamtschatka, because if such a warlike nation as the Tschukutskoi are furnished with fire-arms, the inhabitants of Kamtschatka must tremble at their attacks.

I immediately gave orders to put out two boats, and at two o'clock we commenced our tour to shore. Their reception of us seemed friendly, though not without distrust, for they would not allow us to go up to their habitations. Fifty men, armed with long knives, came to meet us, and invited us to sit down on skins spread out on the beach, while they formed a circle round us; the other half seemed to be placed as sentinels behind their habitations. This superiority deprived me of the pleasure of examining their huts, and besides made our stay on shore not quite safe; we conversed as well as we were able, and I made a present to the two chiefs, who were apart from the rest, and were sitting near me, of different trifles, and hung a

medal round the neck of each. Their very uncleanly dress, their dirty, savage countenances, and the long knives, gave this group the appearance of banditti; and by their conduct, which by degrees became intruding, I concluded that they had frequent intercourse with the Russians. These people differ little in their appearance from the Americans; their boats and arms are the same, their lances are also furnished with a broad piece of iron like those on the American coast; they likewise wear beads, but only of a smaller kind. The principal distinction between these two people is the morse-bone below the under lip, which the Tschukutskoi do not wear; they may perhaps also be something taller and stouter. The women had probably fled, for we did not see a single one. In an hour we returned again to our ship, accompanied by three baydares, in which were the two chiefs; before these came on board, each of them made me a present of a fox-skin, upon which they came on deck with their attendants without the least fear. They relished our biscuits, with which they drank brandy with great eagerness. They did not smoke tobacco, but took it as snuff, and chewed it. On my invitation, the chiefs, with some others came into the cabin, where every thing seemed indifferent to them, except the large looking-glass, before which they stood as if enchanted. With serious countenance and fixed looks, they contemplated their images, and as one of them moved, and

saw his motion represented in the glass, they were all seized with a shuddering, and, without speaking a word, hastily left the cabin. Another of those on deck was rendered curious by the account of the others; I took him down, he would not venture quite in, but only put his head in at the door, and having perceived himself at first sight, suddenly ran up again. I have often had the opportunity of observing in my voyage, that the northern nations are afraid of a looking-glass, and the southern, on the contrary, behold themselves in it with pleasure.

A light N.E. wind arising in the afternoon, I immediately took advantage of it, and got under sail. We observed at our anchoring-place, that the current ran one mile an hour to the N.E.; it was so inconsiderable, because East Cape covered this part from the south. We had not advanced far when the wind abated, and it carried us gradually to the N.E. Thousands of morse played round the ship, and roared like oxen; among them appeared several whales, which spouted the water high into the air: they all came as close to the Rurick as possible, and did not seem to be in the least afraid of it. An enormous one, covered with shells and sea-weed, spouted the water so high, that the spray came into our faces, a circumstance that was not at all agreeable, as the water had a very offensive smell; and he remained so long above the surface, that a whale-

fisher would have had time enough to have thrown twenty harpoons into his body.

August 20th. We had a faint wind during the night, which became brisk at day-break, and steady in the N.E. We ran, by the log, seven knots; but, according to the compass, advanced very slowly; so that, even with a fresh north wind, the current runs equally strong from the south. We had heavy rain and fog till noon, but sailed directly towards St. Lawrence Bay, and, just when clear weather was absolutely necessary, the rain and fog vanished, and the bay lay before us.

At three o'clock in the afternoon, we turned round the small sandy island, which forms what is properly the harbour, and cast anchor in ten fathoms' water, on a clayey bottom. We observed in the N.E., on an elevation, several tents of the Tschukutskoi; the western point of the low island lay to the S.W. 30° . Two baydares, with twenty men, soon approached us, who were singing very loud, but cautiously kept at a distance, till I beckoned to them in a friendly manner, when they came on board without any fear. I had two boats equipped, to visit them in their habitations, and likewise to fill some of our water-butts; our Tschukutskoi followed us, having received liberal presents, and were highly satisfied. Before we arrived at their habitations, we were obliged to ascend an eminence, where the very fatiguing way through this summer landscape led us over ice

and fields of snow, and through a marshy moor. Ice and snow have maintained their rule here since last year, and in this state we find the whole coast; while, in America, even the summits of the highest mountains are free from snow; there the navigator sees the coast covered with a green carpet; while here, black, mossy rocks frown upon him, with snow and icicles.

It is really a frightful thought to pass one's life here, and yet the inhabitants feel themselves happy and contented, even on this soil, which is deserted by nature. We found twelve summer-habitations, which consist of frames, of long poles fastened together at the top, and covered with the skins of several sea-animals; the fire is made in the middle, and at the top is an opening to let out the smoke. These dwellings were larger than those we had previously seen; they were twelve paces in diameter, and from two to three fathoms high; the inhabitants seemed to belong to a roving tribe, as I inferred, by a number of sledges, in which they had come to collect, during the summer, their stock of whale-blubber, and other marine animals, for the winter. When this business is finished, they return to their herds of rein-deer, in the interior. The huts stood all in a row, and the middle one belonged to the chief, a venerable old man, of a very good appearance, but who had lost the use of his legs. They had, probably out of fear, all retired to their dwellings, where they appeared to me to keep their arms in readiness;

and only the old man sat, a few paces from his tent, with two young men, on a piece of leather spread out, and invited me to sit on his right, as soon as he learnt that I was the commander. His first care was to make me comprehend his question, if I had any one with me that understood his language? But of this I was in want; and only one sailor, whom I brought with me from Kamtschatka, who could understand the language of Kariak, was able to comprehend some of their words, and, by this, he rendered himself pretty useful to me, miserably as he acted the part of an interpreter. They did not understand a single word out of Krusenstern's Vocabulary, which I had with me. I now had the old man informed that we were Russians, and their friends, who had only come for some fresh water, and asked him for some rein-deer. It was very long before my interpreter could translate these words; at length the old man comprehended him, and promised to provide us with rein-deer; but gave us to understand, that it would cost two days, as they had to be driven from the interior. Highly gratified at this assurance, as my crew had tasted little fresh meat since we left Chili, I made the old man several presents; who, though he took every thing readily, expressed his regret that it was not in his power to make us a worthy present in return. On my assuring him, that I wished for nothing, but that he should accept my presents, he shook his head, dissatisfied, and gave orders to

one of his men, who ran into the hut, and soon returned with a fur-dress, which he laid at my feet. But I remained faithful to my resolution, not to accept any thing, and gained his confidence entirely when I presented him with a medal, with the effigy of our emperor, of whose worth I had him informed by our interpreter* ; but he seemed to know him already, as he was extremely glad. The other Tchukutskoi now crept out of their tents ; the men, as well as the women, coming in a circle round us, and looking with great curiosity. A young woman, at the command of the old man, placed before us a dish of whale-blubber ; which I could not prevail upon myself to taste, because the first repast of this kind had given me an invincible dislike to this food. I gained the confidence and favour of the women, to the utmost, when I liberally distributed beads and needles among them : the latter they called *Tetita*. On the repeated invitation of the old man, I entered his tent, where every thing was in the most uncleanly state : a very large copper-kettle stood on the fire. The dwelling was divided by skins, behind which were their warm beds, made of skins ; a tea-kettle, and other iron goods, which they receive from Colima, convince me that a brisk trade is carried on with the Russians. It was pretty late when we left their tent ; when they

* At East Cape one of the Tchukutskoi shewed me a copper snuff-box with the effigy of Catherine II.

frequently repeated the word Taroma, which is used, as well to welcome, as on taking leave.

As far as I am acquainted with the Tschukutskoi, I cannot agree in the general opinion, that they have longer faces, and, in general, nothing Asiatic about them; high cheek-bones and small Chinese eyes are seen in all; and if the heads of some have less of an Asiatic form, it may, perhaps, arise from their proximity to the Russians. The beard is universally wanting, as on the American coast: on the whole, I find so imperceptible a difference between these two nations, that I am inclined to believe that they are descended from one stock. The Tschukutskoi whom I saw here are of a robust make, and above the middle size, an observation which I likewise made there; the dresses in both countries is the same, only the Americans are more cleanly; and their work appeared to me to be executed with more skill and taste. The costume of these people is accurately drawn by our artist; their arms consist of bows, arrows, knives and lances: the latter are entirely made of iron, with copper ornaments. Their knives are of three different kinds; the first, which is an ell (two feet) long, is worn in a sheath on the left side; the second, a little shorter, is kept under the dress on the back, so that the handle projects an inch above the left shoulder; the third knife, which is but half a foot long, is concealed in their sleeve, and

is used only for work. The women tattoo their arms and faces. We observed here, as well as on the opposite coast, that diseases of the eye are very frequent, which may, perhaps, be occasioned by the long winter, as the snow dazzles their eyes in the open air, and in the Jurtes they are affected by the exhalations of the oil.

August 21st. I had all the necessary preparations made for a voyage, which I intended to undertake to-day, to make myself acquainted with the bay, and to examine how far it extended to the west. The weather was too bad in the morning, and when it was clearing up, towards noon we were visited by the inhabitants of the village of Nuniagmo, (where Cook once landed,) with their wives, in six baydares. Before they came on board, they rowed several times slowly round the ship, constantly singing; in each baydare was one beating the tambourine, while a second danced to it, making, at the same time, the most ludicrous motions with the hand, and the whole body. They all came on board the Rurick, (except the women, of whom only one ventured, and of her we took a drawing;) they conducted themselves without showing the slightest distrust; were uncommonly friendly; embraced the sailors; sang and danced with them; and a dram which I gave them increased the already high spirits of the Tschukutskoi. One among them had quite a Russian physiognomy, on which account he was called by the others, the Russian:

some of us were of my opinion, that he was such, and would not acknowledge it: he was distinguished from the others by a thick beard, which, without any fear, he suffered one of the sailors to shave off. I told my guests, that I wished to see their dance on shore, because there was not room enough on board the ship; this was immediately made known to those in the boats, who left the Rurick with the loudest expressions of joy, to make the necessary preparations on shore. I must observe, that the Tschukutskoi and Americans whom we saw were distinguished from all the northern people, by their invariable cheerfulness.

At three o'clock, P. M., we went on shore in three boats, well armed. The inhabitants of Nu-niagmo had bivouacked on a low spot near the tent of my old friend; their baydares were drawn on shore, and quite in a line, so that they might serve in some respect as a defence in case of attack; behind this line were all their arms, in the best order. Probably this precaution has become a rule, on account of the perpetual wars which they wage among themselves and with the Americans; and they did not even neglect it here, though they behaved to us with so much confidence in other respects. They came in a friendly manner to meet us, and invited us to sit down on some skins, which were spread out opposite the baydares. Before the dance began, I gave the women some needles and beads, and the men tobacco-leaves,

and the general joy was much increased by the importance of these presents. The ball now commenced with a solo dance: an old dirty, frightful, ugly woman stepped forward, making the most curious, and certainly most fatiguing, motions with the whole body, without stirring from her position; she distorted her eyes, and made such strange grimaces as excited general laughter. The music consisted of a tambourine, and a chorus of many voices, but had few charms for an European ear. After this followed several men and women, who exhibited themselves separately; but none could equal the skill of the old woman. The conclusion of the ball was distinguished by a very particular dance; twelve women placed themselves close to each other in a half circle, turning their backs upon each other; the whole group sang, and tried to express the contents of their song by motions of the hands and body. After the conclusion of this dance we returned to our ship.

August 22d. We left the Rurick at eight o'clock in the morning, with clear weather, and a moderate S. E. wind, in the long-boat and the baydare, and towards noon, having proceeded twelve miles and a half, we reached the promontory on the south coast of St. Lawrence Island, where M. Saritscheff's survey ends. I resolved to stop here to take the meridian altitude and some angles.

We found the latitude $65^{\circ} 43' 11''$. The variation of the magnetic needle 23 east.

We found several people on the promontory who were on the point of running away; we hastened to detain them by some presents, and gained the confidence of these timid people, to such a degree, that, to our great joy, they made us in return a present of sixteen wild geese and two fresh-killed seals. We did not loose a moment; every one of the sailors now turned cook; five geese were sufficient to satisfy us, and the others were saved for the Rurick. The bay is not inhabited, and only visited by the Tschukutskoi on account of the chase; the geese appeared to have been caught in nooses, and the seals killed with arrows. After these good people had satisfied their curiosity, they continued their way to the east, to the mouth of the bay, and we, being strengthened by the nourishing meal, continued our way to the N. W., where the bay takes its direction between the high mountains. As we could not take the seals into our heavily loaded boat, we left them on shore till our return. We had proceeded three miles when we reached two tolerably high and rocky mountains, inhabited only by sea fowls. I called the one to the east, which is about three miles in circumference, after my first mate Chramtschenko; and the westerly one, which is a little smaller, received the name of Petrof, my second mate. The depth was here above twenty, and between the islands only twelve fathoms. As soon as you have passed the islands, the depth de-

creases to eight fathoms, over a bottom of clayey earth, and here the water is perfectly calm; ships are able to lie close to the shore, which is very advantageous in case of any repairs, as no storm can do them any damage. Having sailed seven miles and a half since noon, we reached the end of the bay, which closes with a round shallow creek, four miles in circumference. Two small rivers of very fine water, which have their source in the high mountains, and fall down in several cascades, empty themselves here. We were obliged to land on the southern promontory, at the entrance of this bay, on account of the shallow water, for which reason I resolved to pass the night here. The sun was still high; our naturalists made use of the opportunity, and I took a promenade on the shore to satisfy my curiosity. I found it here more dismal than in Beering's Straits, though we were there in a higher latitude. A few miserable willows, here and there a stunted plant, scarcely any where a flower; the whole surrounded by high mountains whose summits were covered with snow, and which rose steep out of the water. The rocks consist of granite, which is decomposed by the air, among which I found several pieces of beautiful white marble. I observed in the sand on the shore the fresh footsteps of an uncommonly large bear.

On the 23d of August, at five o'clock in the morning, we left our night's lodging with fine weather, and fair wind, but were obliged to leave our

seals behind, which were half devoured, probably by the foxes and fowls. The Tschukutskoi, who had killed a whale in the meantime, and dragged it on the sand island, were just employed in dividing it. They gave us also some of its blubber, and could not conceive how we were able to refuse such a delicacy. On our arrival on board the Rurick, at eleven o'clock, I received from a deputy of my old friend, the news that three killed, and four living rein-deer had arrived, and he begged that I would accept them as a present from him, and his subjects, and come myself on shore to receive them. We set out soon after dinner, found the Nuniagmos still there, and also the old man and his suite, who was drawn about in a sledge. They first delivered the dead, and then the living rein-deer, beautiful and spirited animals, which, as they were led by long thongs, threw their leaders on the ground, by making high leaps. They became still wilder when they perceived by their smell that strangers were near, and we were obliged to be much on our guard, as they butted furiously with their horns. The old man asked me if they had not better be killed? And scarcely had I given my consent, when in a moment, all four were struck to the heart by their owners, at the first blow, and sunk dead to the ground. I tried to evince my gratitude by several presents, and left the old man and his subjects highly pleased at my liberality.

We were to-day visited by several Tschukutskoi,

who tried to dispose of their goods amidst constant singing and capering. A boy in particular distinguished himself by his lively dancing; and when I gave him several tobacco-leaves for some hazardous leaps, he repeated them again, for which he also demanded to be paid, and made the most frightful grimaces when he was refused. Several of them ventured into the cabin, where the looking-glass filled them with terror: they considered the portrait of my father as the image of a saint, bowing and crossing themselves before it like the Russians. One of them wore a piece of gold-embroidery, which he affirmed to have received from a friend at Colima.

August 25th. My intention of leaving St. Lawrence Bay to-day was disappointed by a south wind; the barometer also fell, and indicated continual bad weather. We received many visits during the day, and, toward evening, five more baydares came down the bay from the south, which we afterwards learnt came from Metschigmenski Bay; these were also with us, and promised, as they only meant to pass the night on shore, to repeat their visit in the morning. They had women, children, and their whole household with them; their chief, an elderly man, had a gun, but it was in a miserable condition. We found the flesh of the rein-deer extremely good.

The Tschukutskoi brought us several times a kind of Sarana, resembling that of Kamtschatka, only it is larger, and has quite the taste of good

potatoes. Though we gave a very good price for it, we were able to obtain but little; from which I conclude, that there is much difficulty in collecting it.

We had a perfect calm on the 26th, which continued till the 27th at noon, when a faint wind arose from the S. E., which, however, increased violently, and, at two o'clock, suddenly broke out in a storm, which raged so furiously, that I was afraid for my cable, and thanked heaven for the safe place in which I lay. It continued till midnight, and then gradually fell: the lowest state of the barometer during this time was 28,70.

On the 28th, towards evening, the weather cleared up, but a fresh S. E. wind did not prevent us from going under sail; the barometer rose to 29,44. In the afternoon, I went on shore, to invite my old friend to come on board. The Tschukutskoi from Metschigmenski Bay bivouacked on the shore. I did not stay with them long, but went to the old man, who was much rejoiced at my visit, but was not to be persuaded, till after a great deal of trouble, to come on board. It was not so much his age, as his fear, that I would take him entirely away with me, that made it so difficult for him to be persuaded. When I wanted to tranquillize him, and make him comprehend, that we had quite contrary wind, he said: "No wind can prevent you, because you sail against the wind!" The Tschukutskoi had been led to this convic-

tion by our boats sailing so close to the wind ; and every time when we put in with contrary wind, they collected on the shore in groups, to admire this phenomenon. The sails of their baydares consist of a square piece of leather, and this, together with the flat construction of their boats, is the reason they are not able to sail, but with a very good wind. He at length resolved to come to the ship. A young, robust Tschukutskoi took him on his shoulders, and carried him with ease up and down hill. While my attention was engaged with inviting the old man, one of the Tschukutskoi of Metschigmenski Bay had taken a pair of scissors by force from one of my people, and drew his knife to secure his booty. This circumstance would certainly have ended in bloodshed, had not chance brought one of the party of my friend, who darted upon the criminal like an arrow, and thus wrested his booty from him. His chief also ran up to restore order ; and when I complained to him, that his people behaved very badly, he led me, instead of giving me any answer, to a circle drawn on the ground, about a fathom in diameter ; here the criminal is compelled to run, at a short trot, always one way. This punishment is as painful as it is singular ; and I do not believe that any body could run long in that manner without falling down. The old man followed me in his baydare, was lifted on board, and accompanied by two distinguished Tschukutskoi, was carried into the

cabin, where they all three behaved so decorously, that they would have served as an example to many Europeans who have visited our ship. The many different objects attracted their attention, and awakened in them, as it appeared to me, very serious reflections. I gave my guests some tea, with the use of which they were not acquainted. They waited to see what I would do with my cup, then followed my example ; and the taste of the sweet tea pleased them very much. The Tschukutskoi live in eternal enmity with the Americans ; and my venerable guest, without hesitation, declared them all to be bad men. As a proof of his assertion, he said, that they behaved friendly as long as they considered themselves weaker ; but robbed and murdered strangers without hesitation, if they were strong enough, and were able to do it without danger ; and, for this reason, he thought they wore knives in their sleeves, and use their wives to entice them. They immediately recognized several portraits, which M. Choris had taken on the American coast, by the bones below the under lip ; and one of my guests cried with vivacity, drawing his knife, " If I meet such a fellow with two bones, I shall pierce him through." When I asked them where the Americans received their iron, he answered, from Colima. They spoke much upon the subject, and all our interpreter was able to make out, was, that the Americans came by water to the north, near Colima, but we were not able to

make out whether they traded with the Tschukutskoi or the Russians. I very much regretted the want of a good interpreter. In half an hour my old friend left the ship; he took my presents with reluctance, because he thought he should not be able to make me a worthy return. I saw no such delicacy in the rest, to prevent them from readily accepting every thing that was offered them. I gave the old man a sheet of paper, on which I had expressed my gratitude for his kind reception; he seemed to comprehend it, after some explanation, and carefully preserved it. I also begged him to have some rein-deer ready for me against next year; which he readily promised, adding, that he then hoped to furnish me with a more abundant supply.

This day, our abode in St. Lawrence Bay ended, and I will conclude with some remarks and observations made here. I consider it as superfluous to give a detailed description of this bay, as it is sufficiently known from Belling's and Saritscheff's Voyages. The country, unfruitful and miserable as it is, appears to me to be rich in fur, of which we saw a great quantity; though the Tschukutskoi would never let us trade for it. We particularly often met with the gewratschka, an animal which builds its habitation (which has two openings) under ground, and is generally sitting before one of them, and whistling. Its skin makes a light summer dress; and the Tschukutskoi, when he wants to

catch it, obliges it, by pouring water into one of the openings, to come out of the other. We also met with a particular kind of mice, which live underground. There appear to be no land-birds, as we did not see a single one.

When a Tschukutskoi admires any thing, he several times repeats the word, *Mezenki*; when he calls any body, he says, *Tumutum*. Our venerable friend informed us, that the time of violent storms was near; and that the last had only been a faint wind. He gave us to understand, that in a real storm, no body was able to stand on their legs, but that they were obliged to lay themselves flat on the ground.

The rubbing of the nose in saluting is not customary here. The whale which had been lately caught, was washed from the shore by the high water, in the late storm, and ran a-ground not far from land, in our neighbourhood; and as they had cut much flesh and blubber from the head, the back part had the preponderance, and sunk to the bottom. It was there about seven fathoms deep, which was about two-thirds of the length of the fish. To me it appeared enormously large; but I was informed at Oonalashka that they were sometimes thirty fathoms long. They are called there, *Aliamak*; and I was told, that the people engaged at the opposite ends of the fish must halloo very loud, to be able to understand each other.

The latitude of our anchoring-place, according

to the mean of several observations, was $65^{\circ} 39' 33''$. Variation of the magnetic needle, $24^{\circ} 45' 0''$. Latitude of the western point of the low island, $65^{\circ} 37' 38''$. Longitude, according to the chronometers, $171^{\circ} 12' 30''$.

On the morning of the 29th of August, a faint north wind arose, of which we immediately took advantage. At noon we doubled the low island, when we had a steady N. N. E. wind, and I directed my course to the eastern part of St. Lawrence Bay, to examine it; after this I intended to steer to Shoal Ness, to ascertain the extreme navigable edge of it. Towards evening, we lost sight of land, the wind became violent, and every indication of a storm, which soon commenced in the N. E. It raged the most violent at midnight; and though our top-sails were close-reefed, yet I feared that the heavy squalls of wind, caused by the vicinity of land, might tear them down; but I was obliged to carry sails to avoid the danger of running on shore. On account of the strong current in this sea, the waves towered high and pointed, and quickly succeeding each other, resembled raging breakers. The little Rurick was never tossed about so violently. She was scarcely laid with one side in the sea, when a second wave laid her on the other; and I cannot conceive how the masts were able to endure such violent motions. It poured of rain, and a darkness, which obliged us to grope at random, together with the cur-

rent and our nearness to land, rendered our situation still more dangerous.

On the 30th of August, at seven o'clock in the morning, the storm abated, and the weather became serene. Towards noon, the wind, which was fresh, changed to the N., and, at eight o'clock in the evening, blew strong from the W. The waves ran high, but regularly. As I supposed we were in the neighbourhood of St. Lawrence Island, I lay to, as I could not depend on our ship's reckoning, on account of the current, and might easily run foul of the island. On the 31st, at four o'clock in the morning, we continued our course to the S. S. E., with a moderate W. wind. The horizon was covered with thick impenetrable fog; and, as the determination of the eastern side of St. Lawrence Island was impossible without considerable loss of time, I resolved to sail past it. It was too important for me to arrive in time at Oonalashka, as I should be obliged to send from thence a messenger to Kodiak, for an interpreter for the next year. Such a messenger goes in a baydare, for three persons, along the southern coast from Alashka. It is impossible to undertake this voyage at a later season of the year; which, even in summer, may be called a hazardous undertaking, as it is not seldom that these boats, or posts, as they are called at Oonalashka, are lost.

At noon we had a glimpse of the sun; and found the latitude $63^{\circ} 13'$, longitude, by the chro-

nometers, according to the ship's reckoning, $167^{\circ} 54'$. From here I directed my course S. by S. $\frac{1}{2}$ E., to examine Shoal Ness. The depth decreased by midnight from nineteen fathoms to fifteen and a half: the bottom consisted of clayey earth. The wind varied from N. W. to N. E.; the weather was dull and rainy.

September 1st. At nine o'clock the wind blew strong from the N. W. The depth was only thirteen fathoms and a half, over a bottom of grey sand. The wind was so violent, that we were obliged to reef all our sails; the barometer announced a terrible storm; all this induced me to give up the examination of Shoal Ness. We were already in a dangerous situation, as the north-westerly storm would not permit us to proceed to the W., the only direction in which we were secure from the shoals. I steered to the S. W. by W. $\frac{1}{2}$ W., with the top-sails reefed, which ought properly to have been taken entirely in, on account of the storm. At eleven o'clock, the depth had already decreased to nine fathoms: my anxiety was great, because our situation was getting worse. Towards noon, we were suddenly again in fifteen fathoms; this depth continued till six o'clock, and increased towards evening; and we escaped from the threatening danger, as the wind also fell, and the sky cleared up during the night.

September 2d. The cheerful rising sun, a sight of which we had long been deprived, announced a

fine day ; the wind blew briskly from the W., and I steered S. by E. to Oonalashka. A little before noon, I took some altitudes ; and the latitude, calculated from them, was $59^{\circ} 42'$; longitude, according to the chronometers, $169^{\circ} 53'$. The depth was twenty-six fathoms, over fine white sand.

The 3d of September. At six o'clock in the afternoon, the island of St. Paul was descried from the crow's nest, to S. W., at a distance of twenty miles ; only three hills were visible, which scarcely rose above the horizon, probably the highest parts of the island, which is said to consist of low land. Many water-fowls fluttered round the ship, and so fearless, that some of them suffered themselves to be caught. On the following day, we sailed past St. George's Island, at a distance of eighteen miles. It lay to the W. of us, and the scarcely dawning day did not allow us to see it more distinctly.

A high N. N. W. wind carried us briskly to Oonalashka. At eight o'clock in the morning, we observed a ship in the S., which was hardly visible in the distance. It was the first we had met since we left Brazil, and we least of all expected it in this sea. When we came up with it, at noon, I hoisted my flag, and the schooner, having done the same, I perceived that it belonged to the Russian American Company. I learnt, by a short conversation, that it had a cargo of skins from the islands of St. Paul and St. George, and was bound with them, to the island of Sitka.

September 5th. After having passed a stormy night, we were, according to the ship's reckoning, twenty miles from Oonalashka; a thick fog, which concealed the land, deprived us of the hope of reaching the harbour to-day: it dispersed a little at five o'clock in the afternoon. We now descried high land at a very little distance, which I took to be the N. E. point of the island of Oonalashka; but, as it immediately hid the land again, we were obliged to stand out to sea, and ply, during the whole night, with a faint N. E. wind, and drizzling rain.

On the 6th, at day-break, the fog dispersed, and the N. E. point of the island, which now lay distinctly before us, was only six miles distant. The navigator seldom has such a frightful and desolate prospect as this island affords, particularly at its N. E. point. Black masses of lava rise perpendicularly out of the sea, to a great elevation, which is covered with eternal ice. The whole island seems to consist of nothing but pointed mountains, lying close to each other; some of which are so high, that their tops rise above the clouds. To-day the prospect was less desolate, as even the highest summits were cloudless, and the sun had painted their icy covers with a beautiful rose-colour. At six o'clock, a faint S. E. wind arose, which, being contrary, obliged us to tack during the day, and the whole of the night, in the vicinity of Oonalashka.

On the 7th of September, a faint, but favourable N. E. wind arose, of which we directly took advantage, steering to Illiuliuk Harbour, where the American Company has a settlement; but we had scarcely approached the entrance of the harbour, which is surrounded by high mountains, when the wind entirely fell. To cast anchor before the entrance is impossible, as no bottom is found at a hundred fathoms; and the momentary gusts of wind, from different directions, render it dangerous to run in, as we might easily be driven on shore. In the mean time, the news of the arrival of a ship in the harbour was made known, and the agent of the American Company, M. Kriukof, approached us with five large four-and-twenty-oared baydares, to tow us into the harbour; an attention which we all gratefully acknowledged, as we should otherwise not have been able to reach it to-day. A great number of Aleutians, in their small single-oared baydares, whom curiosity had attracted, were to us a very singular sight. At one o'clock in the afternoon we cast anchor in the eastern part of Captain's Harbour, opposite to the village of Illiuliuk. A ship lies here extremely secure, and no better harbour could be found in the world, if it were not for the difficulty of getting in and out. M. Kriukof had a bath prepared after the Russian manner, in order to refresh us; and this national bath, which is indispensably necessary for the Russians, after so long a voyage, was the more

agreeable, as it reminded us of our dear native country.

Though there are but twelve oxen at Oonalashka, and the other Aleutian islands, and these belonging to the American Company, yet M. Kriukof had one of them killed to-day, and daily supplied my whole crew with fresh meat; he also furnished us with potatoes, turnips, and radishes, which are the only kinds of vegetables that thrive here, from his own garden. These fresh provisions gave us all new strength, and I had the happiness of seeing my whole crew in perfectly good health. On the 8th of September, in the morning, the small vessel, Tschirik, which we had seen between Oonalashka and St. Paul, ran into the harbour. I learnt from M. Binzeman *, the captain of the vessel, that in very clear weather, an island was to be seen in the S.W. to west, from the island of St. Paul, which he had just left: and that he had made an attempt to find it, but was prevented by the thick fog. M. Kriukof, who lived some years ago at St. Paul, also assured me he had seen land from thence in very clear weather. I have resolved strictly to examine that part in my voyage to Beering's Straits next year; and if this island really exists, I hope I shall be able to find it.

* A Prussian by birth, who has spent the greater part of his life at sea, where he commanded several merchantmen, and is now in the service of the American Company.

According to my instructions, I was to go from Oonalashka to the Sandwich islands, that my crew might have some time to recover themselves from their previous hardships, and that I might supply myself with fresh provision for the approaching voyage to the South Sea. This plan would certainly have been good, if I could with confidence depend on getting them there ; but, according to the news which all the American captains gave me of the Sandwich islands, this was not to be hoped for. Not to come into any embarrassment of this kind, I resolved to sail to California, to give my crew some weeks' rest at the beautiful harbour of St. Francisco, while the ship was being repaired, and supplied with provisions and wood, and from thence to make only a short visit to the Sandwich islands.

I could not stay long at Oonalashka, as the navigation is very dangerous at a later season of the year, on account of the violent storms. I therefore ordered that our stock of water should be taken in as speedily as possible, that we might continue our voyage. In the mean time, I had drawn up a list of all I should want the next year, which I delivered to the agent of the American Company, who, by the command of the directors at St. Petersburg, was bound to supply them. They were as follows :

1st. One baydare of twenty-four oars ; two for one person, and two for three persons. 2. To

have ready fifteen strong and healthy Aleutians, with their entire equipment, who were skilled in the management of baydares. 3. To have kalmaicas of sea-lions' skin ready for the whole crew, which protect the wearer from the rain, and are impenetrable; and, 4. To send somebody immediately to the island of Kodiak, to procure an interpreter, through the agent of the American Company. This last order was the most difficult, as the season was already far advanced, and threatened with constant storms, which expose the small vessel to the greatest danger, as the landing in the open sea is very difficult, and often impossible. However, an interpreter for Beering's Straits was indispensable; the expedition was obliged to be undertaken, and we found three resolute Aleutians, who offered themselves to undertake this voyage.

September 11th. Yesterday, M. Kriukof gave the whole crew a dinner on shore, in honour of St. Alexander's Day; and, in the afternoon, we went to a large subterranean dwelling, where a number of Aleutians had assembled to dance. I readily believe that their dances and sports in former times, when they were still in possession of their liberty, were very different from what they are now, when slavery has nearly degraded them to the level of brutes, and when this spectacle is neither pleasing nor diverting. The orchestra consisted of three Aleutians, with tambourines, with which they accompanied a simple, melan-

choly, tune, consisting of only three notes. Only one female-dancer appeared at a time, who made a few springs, without any expression, and then vanished among the spectators. The sight of these people, who, with mournful countenances, were obliged to dance before me, gave me pain; and my sailors, who also felt themselves uncomfortable, commenced, in order to cheer themselves, a joyful song; and two of them, placing themselves in the middle of the circle, executed a national dance. This sudden transition pleased us all; and a ray of pleasure beamed even in the eyes of the Aleutians, who, till now, had stood with their heads bowed down. A servant of the American Company, who had left his native Russia a robust youth, and had here grown old and grey, now suddenly rushed in at the door, and cried, with his folded hands raised to Heaven, "They are Russians! they are Russians! Oh, dear, beloved, native land!" His venerable countenance expressed his delight; tears of joy ran down his pale, emaciated cheeks, and he concealed himself to indulge in his feelings. The scene deeply affected me; I placed myself in the situation of this old man, while the remembrance of his happy youth, passed in his native country, now pressed with sorrow on his soul. He had come hither, with the hope of passing a comfortable old age in the bosom of his family, and was now obliged, like so many others, to end his days in this desert.

CHAP. IX.

FROM OONALASHKA TO CALIFORNIA.

SEPTEMBER 14th. The preparations on board the Rurick were complete, the water taken in, and we were all ready to leave Oonalashka at day-break; but Dr. Eschscholtz, who had gone out the preceding evening to botanize, had not yet returned. At my request, M. Kriukof sent a number of people, with lanterns, into the mountains, who were fortunate enough to find him before sun-rise. Night having overtaken him in his excursion, he would not venture to descend the steep rocks, but resolved patiently to await the break of day, on the elevated spot which he had attained. Our joy was boundless on the happy return of our amiable and skilful physician; and he had scarcely joined us, when we weighed anchor, and a favourable wind carried us out of the harbour. The weather had been pretty warm during our stay at Oonalashka; the snow, which covered the summits of the mountains, being the only indication of winter. While I was at Oonalashka, the passage between the islands of Akun and Oonemak had been recommended to me as the safest way into the ocean, and I directed my course thither.

On the 15th, at day-break, we sailed round the northern point of the island of Akun, and found ourselves in the strait, which appeared clear and free from danger. The island of Oonemak was directly before us; its majestic, lofty, and conical peak, which occupies the middle of the island, was free from clouds, and we estimated its height at five thousand five hundred and twenty-five English feet. A contrary wind detained us in these parts, and the weather being fine, gave us an opportunity of taking latitudes and longitudes, and enabled us to make a good chart. This strait appears to me so safe, and spacious, that I can recommend it to all navigators. On the 16th, at eight o'clock in the morning, we were in the open sea.

October the 1st. Favoured by a strong wind from N. and N.W., which sometimes blew a storm, we made the voyage from Oonalashka to California in a very short time. At midnight we saw by moonlight the Cap de los Reyes, and at four o'clock in the afternoon dropped anchor in Port St. Francisco, opposite the Presidio. Our little Rurick seemed to throw the Presidio into no small alarm, for as we approached the fortress of St. Toaquin, which lies on a tongue of land, consisting of high rocks, and forming the southern entrance, we saw many soldiers on foot and on horseback, and in the fortress itself they were employed in loading the cannon. The entrance of the harbour is so narrow, that you are obliged to pass the fortress within mus-

ket-shot. As we drew near, they enquired through a speaking trumpet, to what nation we belonged, the Russian Imperial flag not being known here. Having answered that we were Russians, and friends, I fired a salute of five guns, which were answered by as many from the fort. A full hour elapsed after we had cast anchor before they troubled themselves about us; the soldiers had all left the fort, and posted themselves on the shore opposite our ship. It at last occurred to me, that Vancouver had not met with any boats here; I therefore sent Lieutenant Schischmareff, accompanied by M. Chamisso, on shore, to announce our arrival to the commandant, Don Louis d'Arguello, who received the two gentlemen very politely, and promised to supply the *Rurick* daily with fresh provisions. He immediately sent me a basket of fruit, which was a welcome present, after we had been so long deprived of it. As he had already received from his government orders respecting us, he likewise despatched the same day a courier to Monterey, to acquaint the Governor of California of our arrival.

October the 3d. Early this morning I was visited by an artillery-officer, belonging to the *Presidio*, sent by the commandant, accompanied by a priest of the *Mission*. The former offered us, in the name of the commandant, all possible accommodation; the priest did the same in the name of the *Mission*: gratefully accepting these obliging offers, I merely expressed a wish to be supplied daily

with fresh provisions for my whole crew. They found my request extremely moderate, renewed their promise of supplying us with all the refreshments the country produced, and already on the same afternoon sent us a fat ox, two sheep, cabbage, gourds, and a great quantity of fruit. After long abstinence we now enjoyed superfluity, and I congratulated myself on the wholesome diet which would give my crew new vigour for the long voyage they were about to undertake. It is true, that they all appeared to enjoy the most robust health, yet the germ of the scurvy might be already in some of them, because the hardships which they had endured in Beering's Straits, the total want of fresh provision, and the damp weather, were well calculated to lay the foundation of that disorder. To guard as far as possible against this evil, I caused water-melons, and apples, which were here remarkably excellent, to be distributed to them every day in large quantities.

The following day the festival of St. Francisco was to be celebrated in the mission, and the priest invited us all to dinner. This afternoon, accompanied by all our gentlemen, I took a walk into the Presidio, where we were received at the gate by the commandant, Don Louis d'Arguello, and saluted with eight guns, and then conducted to his residence. I found the Presidio as described by Vancouver; the garrison consists of a company of cavalry, of which the commandant is chief, and

has only one officer of the artillery under his command.

The 4th, at eight o'clock in the morning, we all rowed to shore, and went into the Presidio to ride to the Mission, according to our promise, in company with the commandant. The horses were already saddled, and we began our journey, accompanied by ten horsemen, all very fine and expert men, who manage their carbines and lances with the dexterity of our Cossacks. They owe their skill to constant practice, for it is well known, that the military in California serve only to protect the Mission against the incursions of the savages; besides, they assist the clergy to make converts among these tribes, and to keep those already converted in the new faith. The weather was extremely fine, and an hour's ride brought us to our journey's end, though above half of the road was sandy and mountainous. Only a few small shrubs here and there diversified the barren hills; and it was not till we arrived in the neighbourhood of the Mission, that we met with a pleasant country and recognized the luxuriant scenery of California. After passing through a street inhabited by Indians, which is the name given by the Spaniards here to the savage tribes, we stopped before a large building, adjoining the church, the residence of the missionaries, and were received by five priests, of whom three belonged to this Mission, and the two others had come from St. Clara to be present at the

celebration of the festival ; they conducted us to a large, dirty room, plainly furnished, where we were received with much respect. Precisely at ten we entered the church, which is spacious, built of stone, and handsomely fitted up, where we already found several hundred half-naked Indians kneeling, who, though they understand neither Spanish nor Latin, are never permitted after their conversion to absent themselves from mass. As the missionaries do not trouble themselves to learn the language of the Indians, I cannot conceive in what manner they have been instructed in the Christian religion ; and there is probably but little light in the heads and hearts of these poor creatures, who can do nothing but imitate the external ceremonies which they observe by the eye. The rage for converting savage nations is now spreading over the whole South Sea, and causes much mischief, because the missionaries do not take pains to make men of them before they make them Christians, and thus, what should bring them happiness and tranquillity, becomes the source of bloody wars ; as for example, in the Friendly Islands, where the Christians and heathens reciprocally try to exterminate each other. I was surprised at observing, that those who were not baptized were not suffered to rise from their knees during the whole ceremony ; they were afterwards indemnified for this exertion by the church-music, which seemed to afford them much pleasure, and which was probably the only

part they comprehended during the whole service. The orchestra consisted of a violoncello, a violin, and two flutes ; these instruments were played by little half-naked Indians, and were very often out of tune. From the church we went to dinner, where there was abundance of dishes, and wine, which is made by the missionaries themselves. After dinner they showed us the habitations of the Indians, consisting of long, low houses, built of bricks, and forming several streets. The uncleanliness in these barracks baffles description, and this is perhaps the cause of the great mortality ; for of a 1000 Indians at St. Francisco, 300 die every year. The Indian girls, of whom 400 are in the mission, live separate from the men, likewise in such barracks : both sexes are obliged to labour hard. The men cultivate the ground ; the harvest is delivered to the missionaries, and stored in magazines ; from which the Indians receive only so much as is necessary for their support. It serves also for the maintenance of the soldiers of the Presidio ; but they are obliged to pay a very high price for the flour. The women spin wool, and weave a coarse stuff, which is used partly for their ordinary clothing, and partly exported to Mexico, and exchanged for other necessary goods. The costume of the Indians is faithfully represented in the drawings made by M. Choris. This being a holiday, the Indians did no work, but, divided into groups, amused themselves with various pastimes, one of which

requires particular dexterity. Two sit on the ground opposite each other, holding in their hands a number of thin sticks, and these being thrown up at the same time with great rapidity, they immediately guess whether the number is odd or even; at the side of each of the players, a person sits, who scores the gain and loss. As they always play for something, and yet possess nothing but their clothing, which they are not allowed to stake, they employ much pains and skill on little white shells, which serve instead of money.

The coast of California is inhabited by so many tribes, that there are frequently in the Mission, Indians of more than ten different races, each of which has its own language. As we were leaving the Mission, we were surprised by two groups of Indians, which were also composed of different nations. They came in military array; that is, quite naked, and painted with gay colours: the heads of the most were adorned with feathers, and other finery; some of them however had their long disordered hair covered with down, and their faces daubed in the most frightful manner. There is nothing remarkable in their war-dance, and I only regretted that I did not understand the words of their song. The physiognomy of these Indians is ugly, stupid, and savage, otherwise they are well formed, tolerably tall, and of a dark brown complexion: the women are short, and very ugly; they have much of the negro in their countenance, only

that a negro-head may be called handsome in comparison with theirs: they are principally distinguished from the negroes by their very long, smooth, and coal-black hair. The missionaries assured us that it was difficult to instruct them, on account of their stupidity; but I believe that these gentlemen do not give themselves much trouble about it. They also told us, that the Indians came far from the interior of the country, and voluntarily submitted to them, (which we likewise doubted,) that their instruction in religion immediately commenced, and that they were baptized sooner or later, according to their abilities. California is a great expence to the Spanish government, which derives no other advantage from it, than that every year a couple of hundred heathens are converted to Christianity, who however die very soon in their new faith, as they cannot accustom themselves to the different mode of life. Twice in the year they receive permission to return to their native homes. This short time is the happiest period of their existence; and I myself have seen them going home in crowds, with loud rejoicings. The sick, who cannot undertake the journey, at least accompany their happy countrymen to the shore where they embark, and there sit for days together, mournfully gazing on the distant summits of the mountains which surround their homes; they often sit in this situation for several days, without taking any food, so much does the sight of their lost home affect

these new Christians. . Every time some of those who have the permission, run away; and they would probably all do it, were they not deterred by their fears of the soldiers, who catch them, and bring them back to the Mission as criminals; this fear is so great, that seven or eight dragoons are sufficient to overpower several hundred Indians.

Two large rivers flow into the bay of St. Francisco, of which the northern is the most considerable, and is called by the Spaniards Rio-grande. This, according to the account of the missionaries, has not its equal in the world, and is navigable for the largest vessels; its banks are fertile, the climate mild, and the population numerous. The missionaries often make excursions on this river, in large and well-armed boats, to procure proselytes to their faith, in which, however, they seldom succeed, as the Indians there are valiant and well-armed. After taking another cup of chocolate, and thanking the missionaries for their kind attention, we rode away, and reached the Rurick in the evening just as a courier had arrived from Monterey, despatched by Don Paulo Vicente de Sola, governor of Old California. He gave me a very polite letter from the Governor, in which he assured me of his joy at my safe arrival, and promised to come himself to Francisco, as soon as his business permitted him, to convince himself that all my wishes were complied with. At the same time the commandant had obtained leave at my request, to despatch a messen-

ger to M. Kuskof*, to whom I immediately wrote to procure me some necessary articles, which he could easily do, as he traded with the American ships.

October the 5th. The Rurick was obliged to be caulked, the sails to be repaired, and much rotten rope to be changed: the necessary works were favoured by the fine weather. While Schischmareff superintended these, I employed myself with the instruments, which I caused to be brought into a tent erected on shore, where I observed the daily going of the chronometers. Our naturalists were also employed, as there was much room for new discoveries in this country, so seldom visited by learned men. M. Choris was busily occupied in painting; and when the day had thus quickly passed over in various kinds of employment, we assembled in the evening to enjoy the repose of the beautiful climate, in which we were joined by the officers of the Presidio. The soldiers seem as dissatisfied with the government as with the Mission; and this is not surprising, as it is already seven years since they have received any pay, and are destitute of

* M. Kuskof, agent to the Russian American Company, has settled at Bodega, by the command of M. Baranof, who is at the head of all the settlements in America; to supply the possessions of the colony with provisions from thence. Bodega lies half a day's journey by water to the north of St. Francisco, and is called by the Spaniards Port Bodega. The harbour is only for small ships. Kuskof's larger settlement lies a little north of Port Bodega.

almost every article of clothing; besides this, the inhabitants are entirely without European goods, as no trading vessel is allowed to enter any harbour in California; and it is to be regretted, that this fine and fruitful country should thus lie entirely useless.

On the 16th, at five o'clock in the evening, seven guns from the fortress announced the approach of the Governor; and soon after, eight guns from the Presidio, his arrival there.

The 17th. To-day, to our great joy, a large bay-dare arrived from M. Kuskof with all the articles we had asked for. We had the pleasure to entertain the Governor and his suite, at dinner, in our tent. His polite and open behaviour pleased us much and made us very desirous of his acquaintance; and as he also seemed to take pleasure in our company, we saw each other daily either in the Presidio, or with me. He kindly complied with all our wishes, and we were indebted to him, for many agreeable days.

The 18th. Through the bay-dare, which returned to-day, I made known to M. Kuskof, the wish of the Governor to see him here, to speak to him respecting his settlements in Bodega. I was astonished on hearing from the Governor, that there were many Russian prisoners in California; a ship belonging to the Company had ventured on the coast for the purpose of trading; and as this is contrary to the Spanish law, a part of the crew,

who, not suspecting any evil, had ventured on shore, were seized by the soldiers, and dragged to prison. By the express orders of the Viceroy of Mexico, the Governor was not permitted to deliver them up to M. Kuskof; but he would give them up to me, if I would take them away. Unfortunately I was unable to accept this offer, on account of the smallness of the ship; I could only take three men, and therefore chose three Russians, who had suffered for another's fault, and had long been in the service of the American Company. Besides these, I also took Mr. Elliot on board, to leave him, according to his request, at the Sandwich Islands, from whence he might easily get to M. Baranof, at Sitka, by a North American ship. John Elliot de Castro, a native of Portugal, had come to Sitka, on board an American ship, and was there engaged by M. Baranof, to go as supercargo with the trading ship, bound for California, where he was made prisoner with the rest of the crew.

October 23d. To-day, the Governor had prepared us an interesting spectacle, in a fight between a bull and a bear; the latter are here so numerous, that you have only to go a mile from the habitations into the woods, to meet them in great numbers. The species is distinguished from ours, by its pointed head, and its ash-grey colour; they are likewise bolder and more lively than ours. Notwithstanding this, the dragoons here are so active,

and courageous, that they are sent on horseback into the forests for a bear as we would order a cook to bring a goose from the pen. Three dragoons on horseback, provided only with a noose, are sufficient to overpower a bear ; in this kind of chase, they endeavour always to keep him in the middle, and to provoke him. As soon as the furious animal is going to rush on one of the horsemen, the other throws the noose, which is fastened to the saddle by strong thongs, round his fore-leg, and spurs his horse, by which the bear is thrown down ; the other takes advantage of this moment, and throws the noose round his hind-leg, and while he lies without being able to move, the third ties all his four feet together, and he is thus carried home without any danger. In this manner, the dragoons had brought a bear to-day, while others had caught a wild bull in the same mode. The cattle, which are left the whole year in the pasture, become wild ; and when one is to be killed, it is caught in the same manner, by a couple of horsemen, with nooses. The combat between these two animals was remarkable, and though the bull often tossed his raging antagonist on his horns into the air, he was at last obliged to yield.

The 29th. After the Governor had had a conversation with M. Kuskof, who was come according to his request, had satisfied all our wishes, and saw the Rurick ready to sail, he departed for Monterey, accompanied by our sincerest thanks.

Iwan Strogonof, one of the Russians, whom I had taken here on board, had been so much hurt on the chace by his powder-horn taking fire, that he expired in spite of the skill and careful attention of our surgeon.

November the 1st. The Rurick was now again quite in order; the going of the chronometers had been carefully determined, and all the instruments brought on board. We had been abundantly supplied with provisions by the inhabitants; my crew were all in good health, and, favoured by the tide, and a N. E. wind, we quitted our anchoring-place at nine o'clock, saluted the fortress, and at ten o'clock were out of the bay. When we were two miles out at sea, we could still hear the loud howlings of the sea-lions, which were lying on the shore on the stones. Sea-otters are found in great numbers on the coast of California, and as they had never been seen there in former times, it is probable they have come from the Aleutian islands, and the northern part of America, to escape the pursuit to which they are there exposed.

After repeated observations on shore, I obtained the following result.

Latitude $37^{\circ} 48' 33''$ north; longitude, calculated according to the distances of the sun and moon, of which 125 were taken on different days - - - $122^{\circ} 12' 30''$ W.

1816

The dip of the magnetic needle - $62^{\circ} 46' 00''$

The variation of the magnetic
needle - - - - 16 5 00 E.

The mean of our observations in St. Francisco, gave, for the time of high water, at new and full moon, one hour and fifty minutes. The greatest difference in the height of the water, was near seven feet.

After we had gone some distance from land, we had a strong N. W. wind, which is usual on these coasts, and sailed briskly forwards.

CHAP. X.

FROM THE COAST OF CALIFORNIA TO THE SAND-
WICH ISLANDS.

NOVEMBER the 11th: latitude $25^{\circ} 5' 55''$; longitude $138^{\circ} 1' 16''$. A favourable wind from N.N.W. and N.E., which had hitherto accompanied us, left us in the preceding night. Violent gusts from the S.W. continued, united with rain, and the sky totally covered. At eight o'clock in the evening, when it was already quite dark, we observed the sky, in the zenith, for fifteen seconds, so strongly illuminated, that objects on the quarter-deck were as distinguishable as by day-light.

On the 13th, we were already in latitude $23^{\circ} 46'$, without having yet met with the monsoon; on the contrary, the S.W. wind was still more constant, and at last so violent, that we were obliged to take in a couple of reefs. A constant S.W. wind at this distance from the land, between the tropics, is a phenomenon quite new to me, which is worthy of notice.

The 16th: latitude $22^{\circ} 34'$; longitude $140^{\circ} 25'$. At last, after a calm, a wind arose from the N.E., and we had the trade-wind, which we had so long expected; a change which was probably caused by

the eclipse of the sun. As long as the wind continued S. W., we remarked every evening much lightning in the south.

The society of Mr. Elliot de Castro, who possessed much natural understanding, was very agreeable to us. Impelled by a desire to become suddenly rich, he had tried his fortune in all parts of the world; but as soon as he had acquired a little fortune, he lost it again by ill-judged speculations, and was even once imprisoned in Buenos-Ayres, and afterwards in California. I was very much pleased on hearing that Mr. Elliot had, two years before, resided some time in the Sandwich Islands, as physician and chief favourite of the king, Tamaahmaah. The king had made him a present of much land, (which he still considered as his property,) and he succeeded very well; but still striving at wealth, the hope of gain induced him to go to Sitka, to M. Baranoff, where he expected to grow suddenly rich; and in consequence of which, he got acquainted with the prison of California, as my readers already know. Mr. Elliot possesses a real knowledge of medicine, and was for several years surgeon to the hospital at Rio Janeiro. His acquaintance with King Tamaahmaah was afterwards of great service to us.

November the 21st. At one o'clock in the afternoon, we were distant only fifty miles from Owhyee, and were in sight of the mountain, Mouna Roa. By Elliot's advice, I determined

first to sail round the north side of Owhyee, in order to obtain, in Tocahai Bay, where the Englishman, Young, lived, information respecting both the situation of the island, and the present residence of the king. This precaution seemed to me to be the more necessary, because, in case Tamaahmaah should happen to be dead, we ought to know how the people were disposed towards the Europeans. Besides this, the king often lives on the island of Woahoo, and you save a considerable distance by avoiding the southern point of Owhyee, where the lofty Mouna Roa detains the navigator by calms. According to Elliot's assurance, provisions could not be obtained, but by bargaining with the king himself; because the inhabitants have not the liberty of supplying the ships. At sunset, we were near the island; sailed along the north part, kept to the east side during the night, and, at day-break, steered towards the northern point, which, on the 22d, at noon, lay S.W., at the distance of eleven miles. The north-east side of Owhyee affords to the mariner a picturesque, but not inviting prospect. The land rises regularly and gradually to an elevation, which loses itself in the clouds. It is said that the island is not fruitful on this side; but, to judge from the number of columns of smoke which we saw rise, it must be very populous. Elliot assured us, that the piece of ground which he possessed on this side, could only be used as a pasture for his hogs. A canoe,

with two men, rowed towards us; and as I lay-to, in hopes of obtaining some information here, one of the islanders immediately came on board, who offered to sell us a fowl, and some ropes of his own manufacture. Elliot, who understood his language, was directly recognized by him as the Naja (so the king called him), and with much trouble drew from him the intelligence that the king was in the bay of Karakakooa, and Young (Old Hanna) in the island of Woahoo. The reserved and suspicious manner of the savage made us doubt the truth of his statement; and Elliot was of opinion, that some disagreeable circumstance had occurred on the island, which required the greatest precaution. While we were engaged with the islander, the boat, which was fastened with a rope to the ship, was upset, and the man sitting in it fell out, but he immediately seized the rope, and suffered himself to be dragged behind the ship, though we were sailing very fast. We were astonished at the strength of this man; we lay-to, and our dealer leaped into the sea to untie the boat; hereupon both the men had much trouble to right it, and to bale out the water, as the high waves continually dashed over it. As all this was done swimming, the reader may form some notion of their expertness in this art. They were at last seated, but they had no oars, having lost them when the boat upset. An European would not have known how to help himself; they were, however, not at all embar-

rassed, for they found their safety in their strength, and rowed with their hands, briskly forwards. At two o'clock in the afternoon, we doubled the north point, and sailed, at a distance of three quarters of a mile, along the shore, to Tocahai Bay. Ships, which double the north point of Woahoo, must be very careful not to lose the oars, as sudden gusts of wind generally come from shore: some Americans, who were negligent, have lost theirs in this place. We now plainly distinguished the objects on shore, and enjoyed a very pleasing prospect of green fields, and many dwellings, shaded by bananas and palm-trees. We saw here several morais, which belong to the chiefs of these parts, and may be recognized by the stone fence, and the idols placed in them. Several canoes, filled with girls, rowed up to us; but as I had no time to show the politeness due to the fair sex, I sailed quickly on, in order to reach Karakakooa Bay as soon as possible, where I hoped to find Tamahmaah. The north point of Owhyee consists of low land, which rises in a strait line under an acute angle, into the region of the clouds. As soon as you reach these parts, the monsoon has no longer any effect, and you may expect sea and land winds, frequently interrupted by total calms, and light breezes from every point of the compass; this was our case near Tocahai Bay, where the wind entirely died away. We now saw Young's settlement of several houses built of white stone,

after the European fashion, surrounded by palm and banana trees; the land has a barren appearance, and is said to be little adapted to agriculture, as it consists, for the most part, of masses of lava. A canoe, with six people, took advantage of the calm to come on board; and, being the king's subjects, (Kanakas, a name given to the lower class in the Sandwich islands,) they all recognized Mr. Elliot as the Naja; one of them, who had been a sailor on board an American ship in Boston, spoke a little English, and was a clever fellow; he remained on board, at Elliot's request, to pilot our ship. He was of opinion that the king was in Karakakooa, and that Young had been sent on business to Woahoo; he farther told us, that there were lying at anchor two ships at Woahoo, and one at Karakakooa, all with the American flag, of which the latter had lost all her masts in a violent storm near the Sandwich islands. When our pilot learned that he was on board a Russian ship, he became very uneasy; and, on Mr. Elliot's questioning him about the ground of his apprehension, he stated as follows: Five months since, two Russian ships, belonging to the American Company, (the Elemenia and the Discovery,) had stopped here; there had been some disputes between the Russians and the natives, in which the latter, according to the account of the relater, appeared in a very favourable light. When the ships left the Sandwich islands, they had threatened to

return very soon with a strong force, and had likewise mentioned a ship of war, whose views were also hostile to the inhabitants. We now understood the uneasiness shown by the first islander, and it was with much difficulty that Mr. Elliot prevented our savage, who wanted to escape us by jumping into the sea; while we assured him that we had come solely for the purpose of repairing the injury done by our countrymen to his people. I was very glad to have received all this information before my interview with Tamaahmaah, who, being incensed against the Russians, might easily take our ship for the expected hostile man-of-war. I now doubly felt how useful Elliot was to us, as he might become here, in some measure, our guardian genius. A perfect calm detained us this day on the same spot.

November the 23d. We made but little progress all this day for want of wind. Early in the morning we were visited by a canoe, for the purpose of enquiring what our vessel was. They brought us news, at the same time, that the king had left Karakakooa, and had gone to Ti-ututua, a small bay a few miles to the north, where he would only remain for the night, and in the morning proceed farther northward along the coast to the bonèto fishery. I therefore immediately dispatched the canoe to the king with the information, that a Russian ship of war had come with friendly intentions, the commander of which wished to speak

with his Majesty, and therefore requested him not to leave Ti-utatua, where he hoped to arrive tomorrow: the Naja also announced his arrival to the king. During the night a fresh breeze carried us near to Ti-utatua. The current set by day towards the south, and at night towards the north, parallel with the coast, which is a consequence of the land and sea winds.

November the 24th. At day-break we approached the bay; several boats, sent by the king, came to meet us, and I embraced this opportunity of sending Elliot and our gentlemen on shore, to acquaint the king with the object of our voyage. As the island of Owhyee does not afford a convenient harbour, I had determined as soon as I had settled with the king respecting the delivery of the provisions, to sail to the island of Woahoo, where Elliot assured me there was a very safe harbour, not mentioned by any preceding navigator. I left the Rurick, got under sail, and made short tacks close in shore. We saw the American ship which had been lying at Karakakooa, sailing to Ti-utatua, where she cast anchor, though the bay is not secure, being open, and the bottom consisting of corals. At eight o'clock in the morning Elliot had happily executed his commission advantageously for us, and came on board with two of the most distinguished chiefs of the country, of whom one was the queen's brother; and these welcomed us in the name of the king. They were two extremely

tall Herculean figures, whose dress, in the newest fashion of Owhyee, struck us very much, as it merely consisted of a black frock, and a small white straw hat. I learnt from Elliot that the king had really expected the hostile ship of war, and had immediately given orders to station soldiers all along the coast; they were all prepared, and consisted already of 400 men, armed with muskets. The king sent me word that he was very sorry not to be able to visit me on board my ship, as his mistrustful people would not suffer him, but for his own part he had a better opinion of us, after his Naja had acquainted him with the object of our voyage; and, as a proof of his friendly intentions, he invited me to his camp, where he would entertain me with a pig baked in the ground. He had ordered, for my security, that one of the chiefs should remain on board as long as I stayed on shore, and accordingly I rowed on shore at ten o'clock, accompanied by Messrs. Elliot and Schischmareff, and a chief named John Adams.* The view of the king's camp was concealed only by a narrow tongue of land, consisting of naked rocks, but when we had sailed round we were surprised at the sight of the most beautiful landscape. We found ourselves in a small sandy bay of the smoothest water, protected against the waves of the sea; on the bank was a pleasant wood of palm-

* It is the custom here to take the names of the Europeans with whom a friendship has been contracted.

trees, under whose shade were built several straw houses ; to the right, between the green leaves of the banana-trees, peeped two snow-white houses, built of stone, after the European fashion, on which account this place has the mixed appearance of an European and Owhyee village, which afforded us a new, but charming prospect ; to the left, close to the water, on an artificial elevation, stood the Morai of the king, surrounded by large wooden statues of his gods, representing caricatures of the human figure. The back-ground of this valley is formed by the high, majestic Mouna Wororay, the height of which, according to my estimation, is 1687 toises ; it rises on this side pretty steep ; its ascent is varied by green fields and vales, with beautiful woods, between which you frequently perceive very large and overhanging rocks of lava, which give the whole landscape, by this mixture of wildness and cultivation, a most picturesque appearance. A number of islanders, armed with muskets stood on the shore ; the king came to meet us as far as the landing-place, with some of his most distinguished warriors, and when we got out of the boat he came up to me, and cordially shook me by the hand. Curiosity brought the people from all sides, but the greatest order prevailed, and no noise or importunity was permitted. I now stood at the side of the celebrated Tamaah-maah, who had attracted the attention of all Europe, and who inspired me with the greatest con-

fidence by his unreserved and friendly behaviour. He conducted me to his straw palace, which, according to the custom of the country, consisted only of one spacious apartment, and, like all the houses here, afforded a free draught both to the land and sea breezes, which alleviates the oppressive heat. They offered us European chairs, very neatly made, placed a mahogany table before us, and we were then in possession of all the furniture of the palace. Though the king has houses built of stone in the European fashion, he prefers this simple dwelling, not to forsake the customs of his country; he imitates every thing he knows to be useful, and tries to introduce it among his people; palaces built of stone appeared to him superfluous, as the straw houses are convenient, and as he only wishes to increase the happiness, and not the wants of his subjects. Tamaahmaah's dress, which consisted of a white shirt, blue pantaloons, a red waistcoat, and a coloured neckcloth, surprised me very much, for I had formed very different notions of the royal attire. He, however, sometimes dresses very splendidly, having several embroidered uniforms, and other articles of dress. The distinguished personages present at our audience, who had all seated themselves on the ground, wore a still more singular costume than the king; for the black frocks look very ludicrous on the naked body; add to this, that they seldom fit, being purchased of American ships, where the people

are not always so tall and so robust as the chiefs of the Sandwich Islands. One of the ministers had the waist half way up his back ; the coat had been buttoned with the greatest difficulty ; he perspired in his tight state dress ; his distress was very evident, but fashion would not suffer him to relieve himself of this inconvenience. It is very singular that the savages should surpass the Europeans in bearing the inconveniencies which the power of fashion imposes on them. The sentinels at the door were quite naked ; a cartridge-box and a pair of pistols were tied round their waist, and they held a musket in their hand. After the king had poured out some very good wine, and had himself drunk to our health, I made him acquainted with my intention of taking in fresh provisions, water, and wood. A young man of the name of Cook, the only white whom the king had about him, was quick, not without education, and spoke fluently the language of the country ; he had formerly served as pilot on board a ship, but had been settled on the island for several years. He was a favourite with the king, and was in possession of a considerable portion of land ; he acted as interpreter between us. Tamaahmaah desired him to say to me as follows : — “ I learn that you are the commander of a ship of war, and are engaged in a voyage similar to those of Cook and Vancouver, and consequently do not engage in trade ; it is therefore my intention not to carry on any with

you, but to provide you gratis with every thing that my islands produce. This affair is now settled, and no further mention need be made of it. I shall now beg you to inform me, whether it is with the consent of your emperor that his subjects begin to disturb me in my old age? Since Tamaahmaah has been king of these islands, no European has had cause to complain of having suffered injustice here. I have made my islands an asylum for all nations, and honestly supplied with provisions every ship that desired them. Some time ago there came from the American settlement of Sitka some Russians, a nation with whom I never had any intercourse before; they were kindly received, and supplied with every thing necessary; but they have ill-rewarded me, for they behaved in a hostile manner to my subjects in the island of Woahoo, and threatened us with ships of war, which were to conquer these islands; but this shall not happen as long as Tamaahmaah lives! A Russian physician, of the name of Scheffer, who came here some months ago, pretended that he had been sent by the Emperor Alexander to botanize on my islands; as I had heard much good of the Emperor Alexander, and was particularly pleased with his bravery, I not only permitted M. Scheffer to botanize, but also promised him every assistance; made him a present of a piece of land, with peasants, so that he could never want for provisions; in short I tried

to make his stay as agreeable as possible, and to refuse none of his demands. But what was the consequence of my hospitality? Even before he left Owhyee, he repaid my kindness with ingratitude, which I bore patiently. Upon this, according to his own desire, he travelled from one island to another; and, at last, settled in the fruitful island of Woahoo, where he proved himself to be my most inveterate enemy; destroying our sanctuary, the Morai; and exciting against me, in the island of Atooi, King Tamary, who had submitted to my power years before. Scheffer is there at this very moment, and threatens my islands." Such was the account given by the king; for the truth of which I can only say, that Tamaahmaah highly distinguishes every European who settles in his islands, if his conduct be good; and that he is generally known to be an upright and honest man. I am not personally acquainted with M. Scheffer, but have since learnt the manner in which he came to the Sandwich Islands. He had served as physician on board the Suwaroff, belonging to the Russian American Company, which went, in 1814, from Cronstadt to Sitka, under the command of Lieutenant Lasaref. From motives unknown to me, Lieutenant Lasaref left Dr. Scheffer, in 1815, at Sitka, and returned to Europe without a physician. M. Baranof, who generally resides at Sitka, as director of all the Russian American colonies, and whose character is but indifferent,

took him under his protection, and sent him to the Sandwich Islands; with what intention is not known. How he conducted himself there, the reader has been informed.

I assured Tamaahmaah that the bad conduct of the Russians here must not be ascribed to the will of our emperor, who never commanded his subjects to do an unjust act; but that the extent of his empire prevented him from being immediately informed of bad actions, which, however, never remained unpunished, when they came to his knowledge. The king seemed very much pleased on my assuring him, that our emperor never intended to conquer his islands; the glasses were immediately filled, to drink the health of the emperor; he was even more cordial than before, and we could not have desired a more agreeable and obliging host. He conversed with a vivacity surprising at his age, asked us various questions respecting Russia, and made observations. Cook was not always able to translate the words that the king used, which were peculiar to the Owhyee language, and so witty, that his ministers often laughed aloud. One of Tamaahmaah's wives passed by our house, and in a friendly manner, wished me a good morning through the door, but she was not allowed to enter, it being the king's eating-house. With the king's permission, we took a walk, accompanied by Cook, and a guard of honour of five naked soldiers. We visited the favourite queen Kahumanna, mentioned by Van-

couver: we found her with the two other wives, and were very politely received by all. The house which Kahumanna inhabits, is built very neatly, and is very cleanly in the interior; the entrance-hall, in which the three wives were seated, according to the Asiatic fashion, was covered with fine and elegant mats, and she herself was pretty closely wrapped up in the finest cloth of the country. Kahumanna was seated in the middle, and the two other ladies on either side; and I had the honour to be invited to sit down opposite to them, likewise on the ground. They put to me several questions, which I answered to their satisfaction through Cook. Water-melons were brought, and Kahumanna was polite enough to cut one, and hand me a piece. The chief employment of the royal ladies consists in smoking tobacco, combing their hair, driving away the flies with a fan, and eating. Tamaahmaah himself does not smoke, otherwise this custom has become so general in the Sandwich Islands, within these few years, that young children smoke before they learn to walk, and grown-up people have carried it to such an excess, that they have fallen down senseless, and often died in consequence.* They do not want pipe tubes, but the pipe heads, which, according to the custom of the country, they have always hanging at their side, constitute a part of the royal ornaments;

* The tobacco plant, which has been introduced by Europeans, is carefully cultivated, and has become indigenous: the smell is very agreeable, but the tobacco extremely strong.

these were of the size of the largest German pipes, made of dark wood, and mounted with brass, but which only rich people can procure. Kahumanna took a few whiffs with evident pleasure; she then swallowed a part of the smoke, and emitted the rest through her nostrils. Half dizzy she gave me the pipe, and as I declined, she, astonished at my European stupidity, gave it to her neighbour, who, after a short enjoyment of it, gave it to the third wife. As soon as the pipe was emptied, a fresh one was filled, and went round in the same manner. The second employment of the ladies is to dress their hair, which is cut short after their fashion; only over the forehead they let it grow a couple of inches long, smear it with a white sticky substance, and comb it back; the snow white streaks which by this mode rise above the dark brown countenance, give it a ludicrous appearance. All the three queens were very large, corpulent women, who had lived to above half a century, and did not look as if they had ever been handsome. Their dress was distinguished from that of the other ladies by various silk handkerchiefs. Before the door, on a mat, was seated the king's daughter, a tolerably handsome girl; behind her stood a little negro boy, holding a silk umbrella over her head to protect her from the rays of the sun; two other boys, with tufts of red feathers, drove away the flies from her: the whole group had a pleasing effect. When I was about to rise, Kuhumanna held me

back to inquire with much kindness after Vancouver, who, during his stay there, had found Tamaahmaah at variance with Kahumanna, and had reconciled them. She seemed much affected at the news of his death. After we had left the king's wives, we visited his son. Cook informed me that this prince, as successor to the throne, had already begun to exercise the rights of his father, which consist in the fulfilling of the most important taboos.* Tamaahmaah has ordered this from political motives, that no revolution may arise after his death ; for as soon as the son fulfils the most important taboo, he is sacred, is associated with the priests, and nobody dare dispute the throne with him. The prince, as soon as he is admitted into the rights of his father, receives the name of Lio-Lio, that is, dog of all dogs ; and such we really found him. We entered a neat and small house, in which Lio-Lio, a tall, corpulent, and naked figure, was stretched out on his stomach, and just indolently raised his head to look at his guests ; near him sat several naked soldiers armed with muskets, who guarded the monster ; a handsome young native, with a tuft of red feathers, drove away the flies from him, and from his interesting countenance and becoming behaviour, I should rather have taken him for the king's son. Tamaahmaah, who, by his wise govern-

* The first taboo of the king's son consists in this, that nobody is allowed to see him by day ; if any person is so unfortunate, he must expiate his transgression by death.

ment, has acquired permanent glory, and has laid the foundation for the civilization and improvement of his people, ought to have a successor capable of prosecuting with zeal and judgment the work which he has begun. It would be very important for navigation, if the Sandwich Islands were on a level with Europe in civilization; and the English, who have taken these islands under their protection, should take care that, after Tamaahmaah's death, a sensible man may succeed, and every revolution be avoided. Tamaahmaah deserves to have a monument erected to him. The dog of all dogs at last rose very lazily, and gaped upon us with a stupid vacant countenance. My embroidered uniform seemed to meet his approbation, for he held a long conversation about it with a couple of naked chamberlains. I could not learn his age, as no account is kept of it. I guess it may be about twenty-two years, and am of opinion, that his enormous corpulency is occasioned by his constant lying on the ground.

At dinner time, we returned to Tamaahmaah's residence, where I was surprised to see on the shore barges, sixty or seventy feet long, built quite in the European fashion, which are employed to convey provisions from one island to another. Tamaahmaah exerts himself to draw European ship-wrights to his country, and pays them liberally for their instruction. During our walk, we were always accompanied by a number of men and women, joking

and making much noise, but at the same time behaving with great propriety. We were very kindly received by Tamaahmaah, who, after inquiring how I liked the place, ordered wine to be brought, and conducted us to a neat house, built near the morai, where we found the table already laid out, after the European fashion. He pretended, that no pork was allowed to be eaten, in the house in which we had first been, because his wives lived near it ; but Young, who was perfectly acquainted with the king's character, gave me a very different reason: he was of opinion, that the king had chosen the house near the morai, in which he generally holds his sacrificial repasts, for our house of entertainment, because he desired to offer the hog baked for our repast to his gods, out of gratitude for the reconciliation with the Russians. The women dare not be present at the meals of the men, on pain of death ; for which reason every family, besides their dwelling house, has two others, one for the repasts of the men, and one for those of the women. The table was laid only for us Europeans, and the king and his ministers partook of nothing, though they were present ; because, he said, that pork was tabooed (forbidden) to-day. The hog, which was laid on a palm branch, on the middle of the table, was cut up by one of the ministers, with various ceremonies ; and besides this dish, we had sweet potatoes, yams, and baked taro-roots. The king was very talkative during the

entertainment; he sometimes conversed with me, and then with his ministers, who could not refrain from laughing at his conceits. He is fond of wine, but does not indulge in it to excess; and was always anxious to fill our glasses. After having severally drank the health of all his guests, after the English fashion; he desired us to drink the health of our emperor in a bumper; and when this was done, one of his ministers presented me with a collar of coloured feathers, of admirable workmanship, which the king had worn himself on solemn days; as, for example, in time of war. He then said to me, through Cook, though he speaks tolerably good English himself, "I have heard that your monarch is a great hero; I love him for it, because I am one myself; and I send him this collar, as a testimony of my regard." After we had dined, and left the house, the king was very anxious that my rowers should be well entertained; he gave orders to this effect, to one of the chiefs, and the table was immediately laid out again. They were obliged to sit down, and were served with the same attention as had been shown us. The sailors were certainly never in their lives treated with so much ceremony; for each of them had, like us, a Kanaka standing behind him, with a tuft of feathers to drive away the flies. Tamaah-maah's first walk was to the morai; he embraced one of the statues, which was hung round more than the others, with fruits and pieces of a sacri-

ficed hog, saying, "These are our gods, whom I worship; whether I do right or wrong, I do not know; but I follow my faith, which cannot be wicked, as it commands me never to do wrong." This declaration from a savage, who had raised himself by his own native strength of mind to this degree of civilization, indicated much sound sense, and inspired me with a certain emotion. While the king is gone into the morai, nobody is allowed to enter; and during that time we admired the Colossal idols, cut in wood, and representing the most hideous caricatures. Tamaahmaah soon returned, conducted us to the house in which he had first received us; and we took our place as before, on chairs, while the distinguished personages seated themselves on the ground. It was now near the time in which Tamaahmaah was accustomed to dine; he made an apology for eating in our presence, and said, "I have seen how the Russians eat; now you may satisfy your curiosity, and see how Tamaahmaah eats." The table was not set out; but the dinner was ready placed in a distant corner, on banana leaves, which served instead of dishes; particular attendants, bending very low, brought it near to the king, where it was received by a chief, and placed on the table. The repast consisted of boiled fish, yams, taro-roots, and a roasted bird, a little larger than a sparrow, which lives on the summits of the mountains. It is very rare, and is a dish only for the royal table. The king ate very

quick, and with a good appetite, conversing, however, all the time. Instead of bread, he ate the taro-dough, which, when diluted with water, becomes a soft pap; and, though the king possesses very handsome table-utensils, it stands in a gourd-shell at his right hand, in which he dips his forefinger when he eats fish or flesh, and dexterously stuffs a good portion of it in his mouth; and this slovenly way of eating is observed from the king down to the lowest menial. Tamaahmaah, who, during the whole repast, had made use only of his fingers, perceived very well that I attentively observed his motions, and said to me, "This is the custom in my country, and I will not depart from it!"

The bearer of his spitting-tray does not quit him a moment, as he always holds the tray ready, which is made of wood, in the form of a snuff-box, and provided with a lid, which is opened when the king intends to make use of it, and then immediately closed. This careful preservation of the royal saliva, is in consequence of a superstition, that so long as they are in possession of this treasure their enemies are not able to send him any sickness by conjuration. After the king had dined, it was at last agreed what provisions I was to receive from Woa-hoo; they consisted of forty-three hogs, a proportionate number of fowls, and geese, every kind of fruit which the island produces, and as much wood as I wished to have. Tamaahmaah told me that he had

sent for a confidential friend, who should accompany me to Woahoo, and see that his orders were punctually obeyed; besides this, that I must have a companion to be able to put into the harbour of Woahoo, this not being permitted to any Russian ship. This highly generous conduct of a half savage monarch exceeded my expectations, and I was now more fully convinced that, as a king, Tamaahmaah will not be easily replaced, his government being so greatly distinguished for justice, the instruction of his subjects, and the introduction of useful arts. To give him some testimony of my gratitude, I presented him, in the name of the emperor, with two brass mortars (eight pounders) with all their appendages, on the carriages of which the name Rurick, was carved; a present which seemed to give him great pleasure. Besides this, I presented him with a quarter of a pipe of wine, as his stock was exhausted, and promised to send him some iron bars, from Woahoo, which were necessary to build boats. I was very happy in being able to return his presents with articles useful to him. Some very fine large apples, which I had brought with me from California, were quite new to the king. He immediately shared them with his ministers, and, as every body found them very agreeable, the pips were preserved to make a trial, whether these trees would thrive here, of which I make no doubt. The skill of our painter was much admired, he having, with great rapidity, taken portraits of some of the chiefs, which were

extraordinary likenesses. Even Tamaahmaah looked with surprise at the work of M. Choris, but long resisted my entreaties to suffer himself, as they here express it, to be transferred to paper: probably, because he connected some idea of magic with this art. It was not till I had represented to him, how happy our emperor would be to possess his likeness, that he consented, and, to my great astonishment, M. Choris succeeded in taking a very good likeness of him, though Tamaahmaah, in order to embarrass him, did not sit still a moment, and made all kinds of faces, in spite of my entreaties. At five o'clock in the afternoon, we took leave of the king, who again repeated that we should want for nothing in the island of Woahoo. As our companion had not yet arrived, I promised to lay to, near the coast, to wait for him. He considered as a great rarity, a handsome tame horse, which the king had received from America, by an American ship, and which he suffered to run about unrestrained. A number of little boys had trodden the sand on the shore quite smooth, and with the assistance of a stick, had with much skill drawn the Rurick under sail. I was obliged, though with great regret, to part from Elliot de Castro, who had promised to accompany me to Woahoo; but the king wished to have his physician and Naja again about him, and this request I could not refuse. Without the presence of Mr. Elliot, we should probably have fallen victims to the faults of others;

and we indisputably owe to him the friendly reception that we met with here. We had been cruising a couple of hours, and our companion did not yet appear; the sun set, and as our nearness to the coast might be dangerous in the dark, I fired some guns to put the king in mind of us. At eight o'clock, Mr. Cook at length appeared, with our companion, who had been unable to come before, as he lived far in the interior of the island; he was a lively man, endowed with natural understanding, of the name of Manuja, who, though he was not one of the chief people of the country, was, however, honoured in the highest degree with the confidence of the king, which was especially evinced by his entrusting to his care the most valuable European goods, from his store. Cook told us, that Tamaahmaah never regarded the rank of his subjects; that he generally chose his confidants from the lower classes, and was seldom deceived in his choice. He behaves to his great men with justice indeed, but with rigour, and as he places little confidence in them, they are obliged to accompany him on his journeys, by which he deprives them of the opportunity to throw off his authority by a conspiracy. They have not forgotten that Tamaahmaah is the conqueror of their lands, and is now sole monarch, and they would certainly attempt to conquer their property, if he did not know so well how to keep them in his power.

With the assistance of a faint breeze from the

land, which always prevails some hours after sunset, we began our voyage to Woahoo. I advise every navigator who sails from Owhyee to Woahoo, to keep near the coast, where the land and sea-winds blow the freshest; whereas at a distance of several miles from land, calms prevail, which are caused by the Mouna Roa. As soon as you have reached the channel between Owhyee and Mowee, the real monsoon begins, and you may then safely take the course to Woahoo, without being afraid of Mouna Roa. For such of my readers as are not mariners, and who do not know what I mean by land and sea-winds, a short explanation will not be useless. In all high islands, which are exposed between the tropics to the constant monsoon, the coast under the wind, that is, opposite to that exposed to the monsoon, produces, by day, a wind blowing from the sea to the shore; but just the contrary during the night. This phenomenon is easily explained; during the day the land is so heated by the scorching sun, that it is hotter than the sea; hence the air blows from the colder region into the warmer, and causes what is called the sea-wind. In the night it is the reverse; the sea is warmer than the land, and hence arises the land-wind.

On the 25th of November we had a calm the whole day; we could clearly see the islands of Owhyee and Mowee, both of which afford the navigator a majestic prospect, by their gigantic

height : the three high mountains on Owhyee, as well as those on Mowee, rise proudly into the clouds. I had the best opportunity, as well now, as in the second visit which I paid the Sandwich islands, of measuring their height, for I often saw them free from clouds, and give the following mean result of my measurements :

Island of Owhyee, Mouna Roa, 2482,4 toises ;

Mouna Kaah, 2180,1

Mouna Wororai, 1687,1

Island of Mowee, highest peak, 1669,1

During the night we fell into the trade-wind, and sailed so close by the island of Tahoorowa, that we saw a number of fires along the shore. On the 26th, near day-break, we were near the island of Ranai ; but the wind died away now so much that we did not descry the S.W. point of the island of Woahoo till the afternoon, and were five miles distant from it in the evening. As I could not expect to reach the harbour to-day, I resolved to remain during the night in the neighbourhood of Wahititi Bay, with which Vancouver has made us sufficiently acquainted, and in which the new harbour is said to be. They said, in Owhyee, that the current at Woahoo sets so strong to the west, that care must be taken not to get under the wind of the island. But I found it the reverse ; for I discovered, at day-break, that the current had carried us eight miles to the S.E., though the wind

blew very fresh from that quarter, and very high waves agitated the ship.

My companion, Manuja, had become sea-sick during the night, and his servant, a young islander, fourteen years of age, was unable to move. I had taken Manuja to our table, as he always behaved with great propriety, and seemed acquainted with the use of spoons, and knives and forks; and he ate what was given him with a good appetite, was fond of drinking several glasses of wine, and upon the whole behaved so, that it seemed he had often been on board European ships.

Early on the 27th of November, I took the course to the west point of Wahititi Bay, which is not to be mistaken, on account of the conical mountain * there; but the wind was so faint, that we did not double it till near noon. Woahoo is acknowledged, both by Europeans and by the natives, to be the most fruitful of the whole group; it is called the garden of the Sandwich islands, and it has a right to this name, on account of its extraordinary high state of cultivation, united with the greatest natural beauties. The rugged, pointed

* The English call this mountain the Diamond Hill, an appellation derived from the crystals found there, which were taken for diamonds. An opinion still prevails, that this mountain contains diamonds, for which reason the inhabitants are forbidden to visit it. Young gave me one of these crystals, and was of opinion, that even if it were not a diamond it might still be a precious stone.

rocks, which form the south-east part of the island, and rise 529 toises above the level of the sea, take away from those who approach it the belief in the great fertility of the island; but you have scarcely sailed round the Yellow Diamond Hill, when you are surprised by the most beautiful landscape. Close to the shore you see verdant vallies adorned with palm and banana-trees, under which the habitations of the savages lie scattered; behind this, the land gradually rises, all the hills are covered with a smiling verdure, and bear the stamp of industry. You have here the southern part of the island before you, which runs in a strait line of twenty miles in length, from east to west, without any difference in the state of the country. The highest mountain of Woahoo is seen towering in the north-west part, the height of which, according to my measurement, is 631,2 toises. We sailed past the village of Wahititi, near which Vancouver cast anchor in a very dangerous situation, not knowing that he was in the vicinity of a most commodious harbour, and saw through our telescopes the village of Hana-rura, close to which is the harbour of the same name. A canoe, with three men, rowed up to us. Manuja called to the people, jumped into the water, and being an expert swimmer, soon reached the boat, with which he went on shore to announce our arrival to the chiefs, and to send us a pilot, on account of the difficult entrance into the harbour. We were near Hana-

Honolulu

rura, and saw several houses built in the European fashion, which made a singular contrast with the huts of the natives. The environs of Hanarura are very beautiful; in the harbour was a fort from which Tamaahmaah's flag was displayed. Near it several ships were lying at anchor, and the whole would have an European air, if the palms and bananas did not remind us of another quarter of the globe. At two o'clock in the afternoon, the Governor sent us a pilot. He was an Englishman of the name of Hebottel in the king's service; and it was his business to conduct into the harbour all ships which arrived there. We had now come to the entrance, and were obliged to drop anchor according to his desire. The depth was eight fathoms, over a bottom of coral and sand. The situation of the shore causes the wind to blow all day from the harbour, for which reason ships are obliged to wait till the morning, as a calm prevails just before the rising of sun, of which advantage is taken to tow them into the harbour. It was very disagreeable to me to lie here at anchor, as vessels are sometimes inevitably lost in a violent south wind, which is frequent at Woa-hoo. A reef, against which the surge broke violently, was distant from us only a hundred fathoms, and yet this is the only place where you can lie at anchor, because a little farther the depth becomes unfathomable. Besides this, the state of the bottom was so bad, that our cables suffered very much in

the twelve hours that we lay there. The whole coast is surrounded by coral reefs, which in many places extend for a mile or more into the sea; and, behind these, nature has formed the beautiful harbour of Hana-rura, which is protected by reefs on the sea side against the fury of the waves, and might be called the first in the world, if the entrance were not too shallow for large ships. As soon as we had cast anchor, I went on shore to pay my respects to Kareimoku, the governor; but though Manuja had arrived there before us, had declared our friendly intentions, and made the king's commands known, all the inhabitants were terrified and under arms at the sight of a Russian ship of war. At the landing place I was received by Mr. Young,* amidst the most frightful cries of the armed islanders; and when I hesitated coming out of the boat, Young told me that I had nothing to fear, and assisted me himself to come on shore. Accompanied by a number of soldiers, to prevent the importunity of the people, we went to a very neat and pretty house, where Kareimoku and the principal nobility soon after appeared. He, as well as his suite, was dressed in the costume of the country, consisting of a full white dress of a stuff made of the bark of trees, and hung, after the Roman fashion,

* Young, one of the principal confidants of the king, has resided upwards of twenty years on these islands, and was now sent to Woahoo to build the fort. His adventures are well known from Vancouver's voyages.

over the right shoulder; besides this, they have a cartridge-box and a pair of pistols buckled round their naked waist. The whole train came out of the fort, where, in case of an attack, every thing had been prepared for defence. Kareimoku's Herculean figure, united with polished and dignified manners, appeared to great advantage in the Roman costume; his countenance indicated good sense, and as he really possessed a large share of it, the English living here have surnamed him Pitt. He saluted me in the European fashion, shaking me by the hand, and after he had invited me to take a seat, and had also seated himself with his suite, my first care was to remove his mistrust against us. Young made him acquainted with the object of our voyage; his gloomy countenance brightened up a little, and he desired Young to say to me as follows: "The gods are our witnesses, that we never did the Russians any injustice, and yet they rendered us evil for good!" I assured him that every thing done here by Scheffer (about whom he particularly complained) had been contrary to the will of our emperor, and tried to make him easy respecting the future, which he still dreaded. Our conversation ended in his promising me that Tamaahmaah's commands, which were sacred to him, should be obeyed; and that to-morrow morning, at four o'clock, I might fire a gun as a signal for the boats which were to bring me into the harbour. Hereupon we parted on friendly terms.

There were three ships lying in the harbour, two of which, a large three-masted vessel, and a handsome brig, belonged to Tamaahmaah, who had purchased them in exchange for sanders-wood. The three-masted vessel, which bears the name of Albatross, serves at present as a transport for provisions from Woahoo to Owhyee, but will in future be sent under Tamaahmaah's flag with sanders-wood to Canton, to exchange it for Chinese goods. The English government has engaged to respect his flag everywhere, and to support his trade in Canton, and these islanders will undoubtedly make rapid advances in civilization if their trade with Canton prospers. The brig bears the name of the Queen Kahumanna; and, according to its size, can carry eighteen guns: it is built like a ship of war, for quick sailing; and, at present, serves Tamaahmaah in the place of such a ship. This brig, which is said to sail very fast, was originally built by the French as a privateer, and at that time bore the name of La Grande Guimbarde. She was taken by the English, and sold to English merchants, who gave her the name of the Forester of London. Captain Piggot, who had made many voyages in this ship from Western America to Canton, came with her to the South Sea, where the bargain with Tamaahmaah was concluded, as already mentioned. After the sale of the ship, Alexander Adams, Captain Piggot's second officer, entered into the king's service, became her

commander, and, as such, receives a salary of fifty piastres a month, and all kinds of provisions, which are daily sent to him gratis. The crew consists of six Europeans and several natives. The third ship, the Traveller of Philadelphia, under the American flag, was just sailing when I arrived with the Rurick. The owner, whose name is Wilcox, brother to the American consul in Canton, came to pay me a visit. Mr. Wilcox had left Canton several years, and loaded his ship with a cargo of Chinese goods, to carry on a contraband trade with the Spanish colonies, on the west coasts of America; but he was very unfortunate. In Valparaiso he was in danger of losing his ship, and only a fortunate chance saved him from imprisonment. After many fruitless and dangerous attempts to dispose of his cargo in South America, he sailed, exhausted by the long voyage, to Botany Bay, to recover himself, and to take in provisions; and there the governor of Port Jackson gave him a letter from the King of England to Tamaahmaah, with several presents, among which were some handsomely embroidered uniforms. Mr. Wilcox further told me, that a very fine ship was building at Port Jackson, by order of the English government, for Tamaahmaah. From all this it must be concluded that England has taken the Sandwich Islands under her particular protection, perhaps already, in silence, considers them as her property, and will certainly take

entire possession of them as soon as circumstances shall permit. Mr. Wilcox was now determined to sail to the coast of California, to try his fortune there. Before we parted, he gave me an account of a group of islands discovered, in 1814, by the ship *America*, from the United States, commanded by Captain Andrew Walther, in a voyage from the Marquesas to Canton. This group, he said, consisted of low coral islands, overgrown with woods, and was about thirty miles in circumference. The captain found a convenient anchoring-place, on the west side, where he landed to leave some goats in the island. The latitude, by observation, is $3^{\circ} 48' N.$; longitude, according to the chronometers, $159^{\circ} 15'$, west of Greenwich.

The 28th of November. At day-break we fired a gun, and soon after saw the royal pilot, Mr. Hebottel, accompanied by eight double canoes, each manned by sixteen or twenty rowers. In each of them was the owner, here called by the English *Jerri* or chief, to see that order was preserved in towing. Young sat in a small light boat, and directed the whole. The scene on board the boats was very entertaining; they laughed and joked, and even their work was done as if in play, and the islanders appeared like sportive children. We had a perfect calm; the anchors were weighed, and the canoes towed with such strength, that the *Rurick*, by the log, made three miles an hour. In half an hour we reached the harbour, and cast an-

chor, at a musket-shot from the shore, opposite the fortress, in eight fathoms water. Young now came on board, to inform me that the canoes did not belong to the king, and that we must pay every owner three piastres; but, on the other hand, I, as commander of a ship of war, was exempted from paying anchorage.* Though I thought it singular that I should not have been informed of this before, I was obliged to submit to the laws, and pay forty piastres. We had scarcely cast anchor when a great number of native women surrounded the Rurick, some in boats, and others swimming; they all wanted to come on board, and were angry at being refused admittance. I had declared the ship taboo for some days, to be able to do some necessary work. The amiable nymphs sang to us some love-songs, and turned back much astonished at our cruelty.

The 29th. They began to-day to supply us with provisions, according to Tamaahmaah's order. We daily received taro, yams, cocoa-nuts, bananas, and water-melons, in abundance. The hogs are so large, that the whole crew could not eat one in two days, so that more than half of what we received remained over, part of which I salted, and took the other part with me alive. Pork is salted here so very excellently by a Spaniard of the name

* It is a law here, that all merchant vessels must pay, according to their depth, one piastre per foot anchorage.

of Marini, (who has been many years on the island, and was formerly a favourite with the king,) that I brought some of it to St. Petersburg in the best condition. In the Spanish colonies, in America, they do not salt meat, imagining that it begins to corrupt even while salting. In Chili they take for ship-provisions flesh dried in the sun, which is hard and insipid. Particular care must be taken in salting meat in hot climates, to take out the bones, and press out the blood by means of heavy weights.

A misunderstanding enraged the people against us to-day; they were already taking up their arms, and the affair might have proved serious, if Young had not interfered in time. The following was the cause: as the harbour of Hana-rura had never been surveyed by any body, as far as I know, and was certainly known but to very few navigators, I determined to make a plan of it; and therefore sent my first mate, Chremtschenko, who fixed up at certain points long poles, with flags fastened to them. The appearance of these flags incensed the islanders, because Scheffer had once put up the Russian flag, with these words: "I take possession of the island!" and they did not doubt that I also had taken the first step towards the conquest. Young came to me, and earnestly entreated me to remove the flags. I explained my innocent motives, exchanged the ominous flags for brooms, and thus tranquillity was restored. The more to conciliate the confidence of the people, I invited Ka-

reimoku to honour the Rurick with his presence the next day to dinner. The Albatross, commanded by Europeans, and manned with natives, left Woahoo to-day, to bring provisions to Owhyee.

The 30th of November. Kareimoku had accepted my invitation, and came, towards noon, with his wife, Mr. Young, and the principal noblemen (jerries), among whom was the brother of the queen, Kahumanna. Young brought his wife with him; she is nearly allied to Tamaahmaah. Kariemoku's seriousness, now that his distrust was removed, was succeeded by the most friendly manners; he shook me cordially by the hand, and exclaimed several times, *Aroha!* (God bless you.) My guests had all dressed themselves in their best attire. I scarcely recognized Kareimoku, who shone in the dress of an English pilot, with polished boots, and a cocked hat; but all his things were so tight, that he could scarcely move a limb, and the noon-day's heat threatened to stifle him in his costume. Not less proud, but equally distressed, the other jerries moved in their European dresses; and we saw here, sailors, coxcombs, and Moravians, confusedly mixed together. They were in the most painful situation in their gala-dress, and put me in mind of dressed-up monks. In comparison with this the dress of Tamaahmaah's ministers is preferable, as it merely consisted of a frock. This mode has arrived to such a pitch, that some article of Eu-

ropean dress has become a matter of necessity, even to the meanest individual; some wear only a shirt, another has trowsers, and a third parades in a waistcoat. The Americans certainly buy up in their cities all the clothes which are out of fashion, and sell them here to great advantage. One of my guests had on an immensely long coat, with buttons of the size of a tea-cup, which he contemplated with evident pleasure. The ladies, on the contrary, clothe themselves in stuffs (tappa) of their own manufacture, and only the neck is adorned with a silk handkerchief. Mrs. Young, as the wife of an European, is an exception, and dresses in the European fashion, in the most costly Chinese silks. Her pleasing countenance, and her very becoming behaviour, for a half-savage, made an agreeable impression; whereas Kareimoku's wife, tall and rough, behaved in a very unfeminine manner. As the cabin did not afford room enough for so numerous a company, the table was set out on the quarter-deck; but our cooks had, in vain, exerted all their skill to give the islanders a very high opinion of a Russian repast: they ate nothing. Unhappily, I did not know that the pork must first be consecrated in the morai, before it is touched by them; now, not only the pork, but all the dishes were taboo, because they had been dressed over the same fire. There sat my guests in their droll costume, and were fasting spectators of an European dinner, till they were induced, at

last, on my repeated solicitation, to partake of some biscuits, cheese, and fruit; wine and brandy did not seem to be taboo, for they diligently emptied their glasses. The islanders are, unhappily, passionately fond of spirituous liquors; the Europeans have not neglected to diffuse this poison here, and set them a bad example. They, without difficulty, swallowed a bottle of rum in one draught, and it is beyond conception how much they are able to bear of it. The ladies, who were not allowed to eat any thing, as their husbands were present, did the more justice to the wine. Kareimoku did not forget to propose the health of our emperor and Tamaahmaah. The ship, particularly the interior arrangements, was very much admired by all; but Kareimoku surveyed it with the most particular attention. My father's portrait, which hung up in the cabin, being finely painted, deceived my guests so much, that they could not be convinced, till they touched it, that it was not alive. M. Choris showed them Tamaahmaah's portrait, which they immediately recognized, and which gave them a great deal of pleasure. When it was known on shore that we had Tamaahmaah on paper, we were visited daily by a great number of people to see him. At four o'clock my guests left the ship, much pleased at their reception, as I had endeavoured to compensate by presents for the unfortunate dinner. To-day, at sunset, a taboo began for Kareimoku and his most distinguished jerries,

which lasted a night and two days; the higher a person's rank is, the more sacred are the duties he has to perform, and at every new and full moon such a taboo takes place. As soon as the sun approaches the horizon, they go into the morai, and do not leave it till the fixed time has expired. M. Chamisso, at his request, obtained leave from Kareimoku to perform the whole taboo in the morai. Without doubt he is the first European to whom this permission has been extended; and the reader will learn, from his contribution to this voyage, what occurred to him in that sacred place. After having been visited by Kareimoku, the inhabitants were convinced of my friendly intentions, and I could go on shore without any danger. As soon, therefore, as my guests had left the Rurick, I went to Hana-rura, where the inhabitants conducted themselves with great propriety, and were much pleased when I entered their houses, to satisfy my curiosity; the whole family then assembled round me, presented me with refreshments, and were very talkative, and played like children. Tobacco-pipes are found in every hut, and smoking seems to have become an indispensable enjoyment. The houses in Hana-rura, which are sometimes joined together in long rows, and sometimes lie scattered, resemble those of Owhyee. Some Europeans who have settled here, live in houses, which may pass for a kind of medium between those of Europe and of this country. The Spaniard

Marini, who has built a stone house, is to be recommended to every body who visits the island Woa-hoo. He has introduced many useful plants, to the growth of which he pays attention, and is the only one who possesses a tolerably large herd of oxen, cows, and sheep. There are many oxen in the interior of the island, brought many years ago by Europeans; they are said to increase very much, but are now grown so wild, that people go into the mountains to shoot them with muskets. A naked islander every evening drives home Marini's herd, among which are several horses which he has got from America.

There has lived on this island, for above thirty years, an Englishman of the name of Holmes, who formerly occupied Kareimoku's place, and whose honesty is generally known. As all the Europeans who settle here marry native women, the primitive race must one day be lost. My intention of going into the fort was frustrated by the sentinel calling out to me the word *taboo!* I afterwards learnt that access is prohibited to all strangers, particularly Europeans. Kareimoku always resides in the fort, which is not yet finished; and as they are not expert in the use of the cannon, they have chosen for a commandant an Englishman, of the name of George Bekley (Berkley?), who formerly served in a merchantman. The fort itself is nothing more than a square, provided with embrasures; the walls are two fathoms high, made

of coral stone. I paid a visit to Mr. Young, who gave me to read, the letter from King George to Tamaahmaah; the same which Mr. Wilcox had brought from Port Jackson. It was written in the English language, and Tamaahmaah was styled "His Majesty." The following, are the principal contents: "King George of England sends to His Majesty, the King of the Sandwich Islands, his sincere thanks for the feather-cloak, sent to him by the frigate Cornwallis. He assures him of his friendship and protection, and says, that he has commanded all his English navy to respect all ships under the flag of His Majesty, King Tamaahmaah." At the conclusion of the letter, mention is made of the ship building for him in Port Jackson, and of presents sent to His Majesty; and the whole clearly shows, that Tamaahmaah is recognized as a real king by the English government. All the letters which he receives, are given to the care of Mr. Young, who possesses the particular confidence of the king, as well as of the people; but as he is already old and infirm, it is probable that he may soon follow to the grave his comrade Davis, mentioned by Vancouver. The sun had nearly set, when I passed the morai, where Kareimoku, accompanied by Chamisso, and several jerries, was just about to enter. This morai was very quickly erected, near Hana-rura, because the natives were obliged to destroy the old one, which had been profaned by the entrance of

Scheffer's people. The fury of the natives was at that time without bounds; and Scheffer's servants would certainly have lost their lives, but for the interference of Young. The procession, on entering the morai, observed the strictest silence; soon after several persons came out from all the four sides, lifted their hands to heaven, seemed to invoke somebody, by a loud cry, and withdrew, after having repeated this several times. Two fellows now furiously rushed out, ran round the morai in a large circle with all their strength in opposite directions; and I retired, that I might not fall in with them, for in this case their sanctity would have been imparted to me, and I should have been forced to perform taboo in the morai, an enjoyment which I chose to avoid, as my curiosity might be fully gratified by M. Chamisso.

The 4th of December. As I had often expressed a desire to see a Woahoo dance, Kareimoku invited us to one to-day. We were conducted to his house, before which a large space was prepared for the festivity, and which was already surrounded by a number of spectators. Mats had been laid for us on the ground, in the middle of the circle. I observed, that the host was not present, but Young soon came up to me, and said: "The Governor begs to be excused for his absence; but his lady is so very tipsy, that he cannot leave her." Singular as this excuse seemed, it was not the less true, and I was obliged to accept it.

The women here are more addicted to drinking than the men. We took our seat, and the dance immediately commenced. The musicians were four men, who beat with small sticks on a hollow gourd, which produced a noise, that might serve for time to the song. Three dancers by profession, who go from one island to another, and show themselves for money, now stepped forward, entirely naked, except bracelets of hogs' tusks, and half armour for the feet, made of dog's teeth. They placed themselves opposite to us, close to each other; and expressed the words to the accompanying song, by the skilful movements of the whole body. They were particularly skilful in changing their faces every moment, to suit them to the motions of the body. The spectators were enraptured, and at every pause, entered the circle to make presents to the dancers; and, in the end, in their enthusiasm, gave even their silk handkerchiefs. After the men had sufficiently distinguished themselves, the scene changed, and a number of young girls arranged themselves in three rows. Their heads and shoulders were tastefully ornamented with wreaths of flowers; the neck adorned with pearls, and various fantastic things; besides this, they had only the lower part of their body covered with a coloured tapa. This group had a very pleasing effect, as they accompanied the monotonous music with graceful movements. The last rows conformed to the first, and always imi-

tated the movements of the foremost dancers. The whole bore the impression of pure nature, and delighted me more than a skilfully executed European ballet. The theatre was inclosed with a fence of bamboo canes, behind which a small house lay concealed; before it promenaded a large hog, guarded by two Kanakas, and which was stroked with much fondness by the high persons who passed by. I was surprised at these caresses, and was informed by Young, that in that house, resided a son of Tamaahmaah, a child of nine months old, who had been entrusted to the care of Kareimoku for his education; and that this was the taboo hog, which would be sacrificed to the gods, when the young prince, for the first time, performed his sacred duties in the morai. The dance had been given to-day, in honour of the young prince; for, though he is not able to take part in the festivities, and is besides not allowed to be seen before a certain age, yet his high birth requires that feasts should often be given in his honour.

The 6th of December. The repairs of our ship went on rapidly, but we observed that the copper had been again damaged in many places, and that, too, in a part which was so deep in the water that the cleverest diver only would be able to repair it. After my best swimmer had in vain repeatedly tried to nail on a copper-plate, Kareimoku sent us one of his men, who happily accomplished the work. To our great astonishment he

remained under water from three to four minutes, then came up for a moment to take breath, and immediately dived again. His companion handed him the nails, but embraced the opportunity while they were being hammered in to take breath above water. The skilful diver found, on examination, many bad places in the ship's bottom, which could only be repaired by careening.

We were on the very best terms with the inhabitants of Hana-rura; we were daily visited by a great many Jerris, who alone had the permission to come to the Rurick at pleasure, and often brought us presents without accepting any in return. The ship was surrounded by the fair sex from morning to evening. Our sailors, who remained on shore for days together, never had cause to complain of the natives, who always hospitably received them, and even suffered them to remain alone with their wives without any jealousy. As no danger seemed to threaten us on shore, I resolved to make a little excursion on foot, to what the English call the Pearl River, situated about half a day's journey west of Hana-rura. The pearl fishery is prohibited on pain of death, and the king has the sole profits of it. Kareimoku made me a present of some pearls found in this river, which are very beautiful. I informed Kareimoku of my wish to make a journey thither, for which he readily granted permission, and gave me two men for my protection. M. Von Chamisso, who likewise re-

ceived a companion, made an excursion into the interior of the island.

The 8th of December. At nine o'clock, provided with a small compass and a pocket-sextant, I began my journey with Dr. Eschscholtz, and first mate, Chramtschenko, who was to assist in surveying and making plans of the coast. We called at the house of Commandant Beckly, who was to accompany us, where the two soldiers were also ready; they were a couple of robust men, who, for convenience, had divested themselves of all their apparel, and merely retained a silver mounted cutlass as a sign of their profession. As soon as we had quitted Hana-rura, we were obliged to cross a river of the same name, which rises in the mountains, and forms the western boundary of the village. Its breadth, in many places, is fifteen fathoms, and its depth is sufficient to carry the boats which are sent there to take in water. It is the only place where you can take in a stock of water, and would be very convenient for that purpose, if it did not become too shallow at its mouth at the time of the ebb. Regard must therefore be had, in dispatching the boats, to the turn of the tide, so as to contrive that they may return at high water, otherwise they will have to lie twelve hours. The water is wholesome, and of an agreeable taste. The way now lies to the west, through a beautifully cultivated valley, which is bounded towards

the north by romantic scenery of woody mountains, and on the south by the sea. The artificial taro fields, which may justly be called taro lakes, excited my attention. Each of them forms a regular square of 160 feet, and is enclosed with stone all round like our basins. This field, or rather this pond, for such it really may be called, contains two feet of water, in the slimy bottom of which the taro is planted, as it does not thrive except in such a wet situation; each pond has two sluices, to let in the water on one side, and out again at the other, into the next field, and so on. The fields are gradually lower, and the same water which is led from an elevated spring or rivulet, can water a large plantation. When the taro is planted, the water is let off to the depth of half a foot, and a slip of a plant already cut, stuck in the slime, which immediately takes root, and may be gathered in three months. The taro requires much room, because it has very large roots; it has long stalks and large leaves, which, when swimming on the surface of the water, have a singular appearance. In the spaces between the fields, which are from three to six feet broad, there are very pleasant shady avenues, and on both sides bananas and sugar-canes are planted. The taro fields afford another advantage; for the fish which are caught in distant streams thrive admirably when put into them. In the same manner as they here keep river-fish, they manage in the sea with sea-fish,

where they sometimes take advantage of the outward coral reefs, and draw from them to the shore a wall of coral stone, which makes, even in the sea, good reservoirs for fish. Such a reservoir costs much labour, but not so much skill as the taro fields, where both are united. I have seen whole mountains covered with such fields, through which the water gradually flowed; each sluice formed a small cascade, which ran through avenues of sugarcane, or banana, into the next pond, and afforded an extremely picturesque prospect. Sugar plantations and taro fields alternately varied our way, with scattered habitations, and we had gone unawares five miles to the large village of Mouna Roa, which lies in a pleasant valley on the declivity of a mountain. A rapid stream of the same name, which is seen in the distant landscape picturesquely meandering between the rocks and mountains, falls here into the sea. Before the village, which consists of pretty, small houses, built of rushes, lie two groves of cocoa and bread-fruit trees, through which we passed to repose ourselves on the opposite hill. We had here an extended view of the harbour; the compass was set up, and I took some angles with my sextants, at which the inhabitants were thrown into great alarm, because, as Beckly informed us, they now expected to see some work of conjuration. As these islanders seldom see an European, they viewed us with the greater curiosity; they were otherwise a very obliging people,

who did their utmost to show us every attention, danced and rejoiced at our little presents, and were much dissatisfied that we left them so soon. In several houses we heard loud lamentations, and learnt that there were sick men in them, who were bewailed by their wives. A custom prevails here, that as soon as a man becomes ill, his wives and female relations assemble around him, loudly lament his misfortune, tear their hair, and lacerate their faces in the hope of affording him relief, and perhaps effecting his cure; and the custom when a Jerri dies, of burying his chief favourite with him, still prevails. Beckly informed me that the priests had already fixed on those who are to accompany Tamaahmaah, and had not concealed their fate from them, because these victims, proud of their destination, joyfully purchased the honour by the most terrible death. I have myself seen one of the victims, in Woahoo, a man who was always cheerful and happy. On the king's death they are brought bound into the royal morai, where, after various ceremonies, they are deprived of life by the priests.

The river Mouna Roa, which is said to be one of the broadest in the country, has derived its name from the mountain Mouna Roa, in the island of Owhyee, and means, literally translated, "Mountain high." There is said to be a convenient harbour opposite the village, but which has a dangerous entrance between the reefs. After we

had rested ourselves, we pursued our journey, left the shore, and crossed a tongue of land, extending far into the sea, where the road led us over a high mountain. On this height, the monsoon from N. E. cooled the scorching heat, but blew sometimes so violently, that it threatened to precipitate us from the steep declivity. We observed here, several tapa plantations; a tree, of the bark of which, the cloth of this country is manufactured. The preparation of this stuff is very tedious, as the bark must be beaten in water till it becomes sufficiently fine. The old women are employed in this, while the young ones live in idleness, and spend their time in receiving court from the men. Thus, this heavy work is added to the burthen of old age; and the poor old women have nothing left them but the remembrance of their happily spent youth.

After we had walked on two hours, our way led us through a romantic valley, where we seated ourselves under shady bread-fruit trees, on the banks of a salt lake, the owner of which, a distinguished Jerri, derives considerable profit from it, as the banks of this lake are covered with the finest salt. There were on it a species of divers, who, though they are unable to fly, are, however, very difficult to be shot, because, the moment the powder flashes in the pan, they dive. As I wished to have some for our collection of natural history, I sent my companion, who, by shooting a couple of them, proved that the Sandwich islanders are

very good marksmen. Mr. Beckly mentioned to me a species of wild duck, such as we have in Europe, which come here in January, from the north, and brood here, and return home in the beginning of spring. This information, which I could not doubt, as Beckly, from his love of the chase, often remains for days on this lake, led me to suppose that there must be some undiscovered land in about latitude 45° , whence these birds of passage come; for it is scarcely possible to imagine, that they should come the long way from the Aleutian islands, or North America, to enjoy here a second summer.

After having partaken of some refreshment, we again ascended a high mountain, and were, soon afterwards, in a beautifully-cultivated plain, among taro fields, sugar plantations, and banana trees. At this distance from Hana-rura, the capital, we were objects of the greatest curiosity to the inhabitants. A pretty little girl, about six years old, tripped fearlessly around us, and called to the others, who were older, but much more timid: "Come here, and look at these strange white men; what handsome t \acute{a} pa they have on, and what bright things they wear! Don't be so foolish, come here!" I was pleased with the simplicity of this child, and hung a string of beads round her neck, an ornament which embarrassed her. The other children now came up to express their admiration, by clapping their hands, while she regarded herself with

silent pleasure. The scenery is here uncommonly picturesque; fields and villages intermingled with woods of cocoa and banana trees: now an extensive and romantic prospect opened upon us from some eminence, and then we descended again into a peaceful valley. We now walked through an avenue of aloes, as I thought; it was twice as high as a man, and bore a round red fruit; my companion, who observed my attention, immediately plucked some, and begged me to eat them, without guessing how foreign they were to me. I attempted to bite one, but was punished for my lickerishness, for, though I found the taste agreeable, I had my mouth full of little thorns, which gave me pain till the next morning. He regretted, now it was too late, that he had not informed me that the skin must be taken off before they can be eaten. Dr. Eschscholtz, who had remained behind, and did not return till after my accident, was perfectly acquainted with the fruit, and told me that it was no aloe, but a cactus, or Indian fig. We passed the possessions of Young and Holmes, which the king had given them; and which were very considerable, and well cultivated. Though the sun was still high above the horizon, the air was filled with a small species of bats, differing from ours. I shot one flying; the animal fell, and my skill excited general astonishment among the villagers. At five o'clock, we reached our night's quarters, having walked about ten miles, but only six in a

direct line from Hana-rura. We were now in a neat village belonging to Kareimoku, which receives its name of Wanjau, from a rapid rivulet which flows into the sea at this place. I wished to stay there for the night, to embark in the morning for the Pearl River, which was near, and, therefore, ordered my guides immediately to hire a boat; but they looked for one in vain, as the inhabitants had left the coast for some days, to fish. There was but a single boat, which belonged to a Jerri in Hana-rura; and as his people would not venture to let us have it, I was obliged to wait patiently till the following day. The villagers had received orders from Kareimoku to treat us well, and they, therefore, made it their first duty to provide us with a dinner. A young pig was baked in the ground, with taro and potatoes; the taro fields furnished fresh fish; we had provided ourselves with wine; we had an excellent appetite; and our repast, accordingly, seemed princely. Curiosity had attracted a great number of spectators; we gave some of them wine, which they liked extremely, though it was the first time they tasted it; a spirit of cheerfulness animated our guests, and the evening was spent in singing and dancing. We afterwards discovered, that, in spite of all our precaution, a knife had been stolen; and the guides given me by Kareimoku, who were to be answerable for the conduct of the inhabitants, endeavoured, in vain, to discover the thief. The Sand-

wich islanders very seldom rob each other, and such a deed is always punished by the contempt of every body, and sometimes with death; but to rob an European of any thing, acquires them much honour, and they boast of it. The islanders have a very high idea of writing, and a letter is a thing of great value among them; of which, Beckly gave me the following instance. When he resided at Owhyee, he wrote a letter to a friend at Woahoo, and gave it to a Kanaka (peasant) who was going to Woahoo, and who joyfully promised to take charge of it; but he kept it, and preserved it as a valuable curiosity. Some months afterwards, an European ship arrived; the Kanaka did not neglect to hurry with his treasure on board, and to offer it to the captain for a high price. He was, fortunately, an old acquaintance of Beckly's, who recognized his writing, and purchased the letter, which came, by these means, again into the hands of the writer.

Sleeping-places had been prepared for us on very clean mats; the rats, however, which ran over our faces, deprived us of rest, and, after a sleepless night, we received the disagreeable intelligence, that we could by no means obtain a canoe, and were obliged to return home without having seen the Pearl River. In the mouth of this river are several islands; it is so deep, that the greatest ship of the line can lie at anchor a few fathoms from the shore; and so broad, that a hundred vessels can conveniently find room in it. The entrance

into the Pearl River is in the same situation as the harbour of Hana-rura; but the windings between the reefs are, however, said to render a passage more difficult. If this place were in the hands of the Europeans, they would certainly employ means to make this harbour the finest in the world. In the Pearl River there are sharks of remarkable size, and there have been many instances of their having swallowed people while bathing. The natives have made on the banks an artificial pond of coral stones, in which a large shark is kept, to which, I was told, they often threw grown-up people, but more frequently children, as victims. On my journey back I observed half-putrefied swine hanging on different trees; and learnt, that this was a precaution of the herdsmen to prove to their masters that they had died, and had not been killed by them. In the evening, we returned safe to the Rurick.

The 9th of December. To-day, I received an invitation from Kareimoku, through Manuja, to witness a lance-fight. Young, who was very much astonished that the Governor had yielded to my request in this respect, considered it as a mark of very particular favour, and was of opinion that I owed it to my rank as commander of the first ship of war that had been seen at Hana-rura. The Sandwich islanders, as I had frequent opportunities of observing, make a great distinction between a ship of war and a merchantman. They take all kinds of

liberties on board the latter, for they perceive the endeavours of the European merchants to cheat them in every way, and they have, therefore, entirely lost their esteem. Kareimoku would have had very sufficient reason for refusing me the exhibition of the lance-exercise, for, since the conquest of the island of Woahoo, by Tamaahmaah, the inhabitants are always disposed to insurrection, and seize every opportunity that offers. Only persons of distinction are allowed to take part in this exercise, which generally proves serious, as it seldom terminates without some killed, or wounded. Two years ago, when Tamaahmaah ordered one of these warlike spectacles, he had his soldiers at hand, with loaded muskets, who soon put an end to the rising fury. From this it appears, that Kareimoku had reason not to grant me this spectacle, till I promised to aid him with all my crew. The day intended for the combat, is fixed beforehand, that the nobles from all parts may assemble to display their courage and dexterity. There are sometimes above a hundred, who divide themselves into equal parties, and occupy a large place for the scene of combat. Both parties take their positions, and the leader of each advances to the middle of the place. These two, then, endeavour to hit each other with their lances, of which they have several in their hand; each of them tries to avoid the lance of his opponent, by dexterous turns of the body, and both are in constant motion, springing backwards and

forwards, stooping, and, at the same time, always throwing their lances. The parties in the meantime, stand motionless, awaiting the issue; a high spirit animates the party whose leader is victorious, which they consider as a good omen. After this prelude, both sides become animated; troop advances against troop; in a moment, all is activity, and the air is full of blunted lances, for such only, are allowed in this combat. Their art of war consists in breaking the lines of the enemy, in attacking single parts with superior force, and making prisoners; for this reason, a skilful leader never fails to take advantage of his opponent's mistakes, or to induce him by a stratagem to draw his main force to one side, and so to expose the weaker part. If these stratagems succeed, the victory is decided, and the party out-manceuvred submits. The method of proceeding in real battles is precisely the same, with this difference, that the lances are so pointed, as to pierce the enemy at a distance of ten paces; they also hurl stones in their battles, and make use of large clubs of heavy wood. As fire-arms have now been introduced, the use of lances will probably soon go out of fashion. Tamaahmaah is universally acknowledged to be the most skilful lance thrower; he has often, to prove his dexterity, suffered fourteen lances to be aimed at his breast, where every throw would have been fatal, and avoided them all with the greatest dexterity. The renown of his invincible valour made the conquest

of the islands easy to him. When he appeared with his fleet before Woahoo, the king of that island, fled into the mountains, being convinced that the custom of putting the vanquished to death would be practised upon him. "I must die," said he, to one of his confidential friends; "but not by the hands of my conqueror; for I will not let him enjoy this triumph. I will sacrifice myself to the gods." His corpse was afterwards found in a cave on the summit of a mountain.

In the afternoon, we rowed on shore, and found, on the appointed place, above sixty Jerris assembled ready for combat, but their lances, made of the top of sugar-cane, were pretty harmless. They divided themselves into two parties; the combat began, and though Kareimoku, who took a share in it, would not let it come to a decisive battle, there were found, at the conclusion of it, several very dangerously wounded. The sight of this spectacle is very interesting.

The 10th and 11th of December. The Rurick was ready to sail, and nothing detained us at Woahoo but the bad weather, which, during these two days, prevented us from taking on board the provisions, which lay ready for us.

The 13th. As the fine weather set in again, which had always favoured us during our stay here, we hastened to get the provisions on board, which were in such abundance, that the Rurick could scarcely contain them. We received taro, bread-

fruit, yams, potatoes, cocoa-nuts, sugar-cane, and water-melons, besides seventeen swine, some goats, fowls, and ducks. The pork is much better flavoured than the European, which is probably owing to their food, which consists of sugar-cane.

Captain Alexander Adams dined with us to-day, whose conversation, as he was very sensible, and had travelled a great deal, delighted us very much. He told me, among other things, that some years ago an island had been discovered by Americans from the United States, on the coast of California; which, on account of the great number of sea-otters found there, has been named Sea-Otter Island. Its southern point lies in $33^{\circ} 17'$ north latitude; longitude, by lunar distances, $240^{\circ} 50'$ east of Greenwich. Its circumference is between fifty and sixty miles, and there is a very dangerous reef N.N.W. of this island. He farther observed, that while Europe was taking pains to abolish the slave-trade, the Americans are endeavouring to extend it. To purchase slaves they go in American ships to the N.W. coast of America, in latitude 45° , where there is a very numerous population. The savages in those parts, who perceive that they are better paid for men than for skins, pursue this terrible chase, and as they are all provided with fire-arms by the American merchants, it is easy for them to overpower the unhappy races in the interior of the country, and then exchange them on board the ships for clothing. Affecting

instances of filial love are often met with there, and the monsters even profit by it. For example, when a son hears of the captivity of his father, he hastens to offer himself in exchange, and they accept this generosity, as they prefer the youth to the old man. When the ship has been thus filled, it goes to the north, in latitude 55° , where the inhabitants of the coasts purchase the wretches for their service with sea-otter skins, which the Europeans*, rejoiced at the scandalous bargain, sell very dear in China. They also like to abuse Tamaahmaah's confidence, and an American captain, whom he once entrusted with a ship with sanders-wood to bring to China, has not returned. Every year several sailors, on account of bad conduct, are discharged; and as they give only a bad example, and cause nothing but mischief, it is to be expected that the good disposition of the Sandwich islanders will soon be entirely corrupted. The missionaries do them almost more injury, because, by the religious hatred which they excite, they destroy whole nations. † Adams is possessed of the king's highest

* Quære, Americans? — *Note of Translator.*

† Looking over Adams's journal, I found the following notice:—"Brig Forester, the 24th of March, 1815, in the sea near the coast of California, latitude $32^{\circ} 45'$ north, longitude $233^{\circ} 3'$ east. During a strong wind from W.N.W., and rainy weather, we descried this morning, at six o'clock, a ship at a small distance, the disorder of whose sails convinced us that it stood in need of assistance. We immediately directed our course to it, and recognized the vessel in distress to be a Japanese, which

confidence, and has been sent by him, with the brig which was formerly kept at Owhyee, to Woahoo, to prevent any insurrection occurring there. He did not fear any thing in Owhyee, as he was born there, and the gods themselves ordained him king; but the inhabitants of Woahoo seemed very dangerous to him as conquered subjects.

It was made known in Hana-rura that we intended to leave Woahoo to-morrow. We therefore had to-day many visits from distinguished people, who brought us presents, and wished us a happy voyage. The women swimming, surrounded our ship the whole day, and bid their friends a tender farewell. Kareimoku sent to request me, through Mr. Beckly, to salute the fort in sailing past, by which he would in some measure consecrate it; which I readily promised to do.

The 14th of December. At six o'clock this morn-

had lost her mast and rudder. I was sent by the captain on board, and found in the ship only three dying Japanese, the captain and two sailors. I instantly had the unfortunate men carried to our brig, where they were perfectly recovered, after four months' careful attendance. We learnt from these people, that they came from the port of Osaco (in Japan), bound to another commercial town, but had been surprised immediately on their departure by a storm, and had lost their mast and rudder. They had been, up to this day, a sport of the waves for seventeen months; and of their crew of five and thirty men only three had survived, who would have died of hunger." This note is so far remarkable, as it proves that the currents in these seas, *i. e.* north of the tropics, always keep their direction from west to east.

ing, we asked for a pilot by firing a cannon, who immediately appeared, accompanied by several double canoes. The anchors were weighed, the *Rurick* towed out, and as Kareimoku came now on board, I ordered him to be saluted with seven guns, which gave him so much pleasure that he embraced me several times. The fort did not neglect to return my politeness; and, when it was finished, the royal brig *Kahumanna* saluted us; which we returned by an equal number of guns on our side. The European custom had now been introduced into the Sandwich islands. It gave me much pleasure to be the first European who had exchanged salutes with a fort there, and when Hana-rura has once become a flourishing city, people may say, the Russians have consecrated our fort, and its first shot was fired in honour of their emperor, Alexander the First.

At eight o'clock we were out of the harbour; Kareimoku promised to intreat the gods that the sun might guide us by day, and the moon by night, and left us with his companions, who, as they were putting off, gave us three cheers. With a faint easterly breeze we left the shore, and as I was steering S.W., had already lost sight at noon of the highest point of the Island of *Woahoo*.

According to my instructions, I was to pass the winter months in the neighbourhood of the imperfectly known Coral islands, to make discoveries there. I did not make a long plan of the voyage,

as I knew by experience how difficult it is to follow it; if the chief points are but determined, the rest will be filled up during the voyage. I now determined to direct my course from the Sandwich islands in such a manner as to be able to see the two small islands discovered in 1807 by the frigate Cornwallis, on its passage from the Sandwich Islands to Canton. I had reason to believe that their situation had not been accurately laid down, because Captain Krusenstern, in 1804, when they were not discovered, sailed with the *Nadeshda* directly over the point where they are marked down on the chart. The number of sea-fowls which surrounded the *Nadeshda* seemed to be an indication of land near it. After I had found these, I intended to take my course to the Kutsuoff and Suwaroff islands, the inhabitants of which possess large boats, which seemed to indicate that there are other islands in the neighbourhood; I hoped to discover these also, and after this I determined to sail to the Carolines.

OBSERVATIONS MADE DURING OUR STAY AT
WOAHOO.

The mean of our daily observations gave, for the latitude of our anchoring place,	-	21° 17' 57" N.
The mean of lunar observations, which were repeated for several succeeding days, gave for the longitude of our anchoring place,	- - -	157 52 00 W.
Variation of the magnetic needle,		10 57 00 E.
Dip of the magnetic needle,	-	43 39 00

The mean of our observations in Woahoo, gave for the time of high water, at new and full moon, two hours and fifty-five minutes. The greatest difference in the height of the water was six feet. The mean height of the barometer twenty-nine inches, eighty lines. The mean height of the thermometer 75° 0 Fahrenheit. The following is the latitude and longitude of a small island which is said to have been lately discovered. Latitude 28° 15' N., longitude 172° 30' W. I must also add, that Manuja, during our stay in Woahoo, punctually obeyed the orders of the king. He never left the ship without my permission, guarded us against robbery, and was very serviceable in purchasing native curiosities. When I was in want

of any thing, he immediately jumped into the water, and would not rest on shore till he had fulfilled my wishes. For my stock of wood he instantly collected a hundred islanders, who felled, brought it us, and cut it up, which would have fatigued my sailors very much in this hot climate. We made him many presents on parting: he felt himself particularly honoured in being allowed to take charge of the presents which I sent to Tamaah-maah.

END OF THE FIRST VOLUME.

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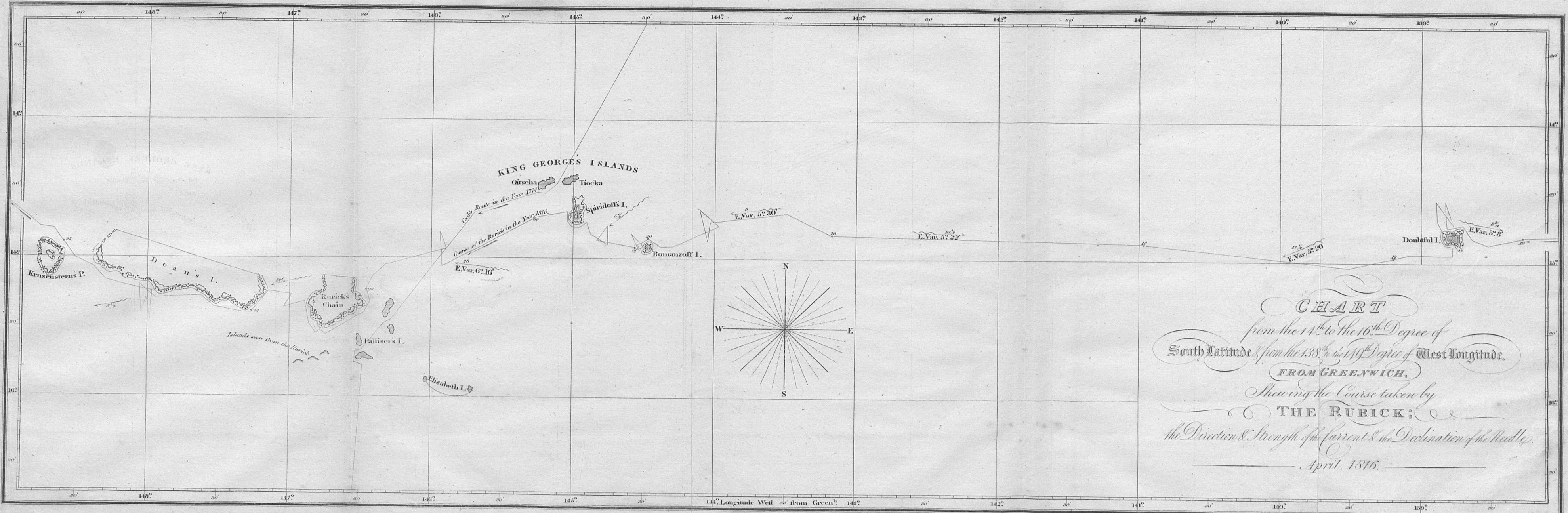


CHART
*from the 14th to the 16th Degree of
 South Latitude & from the 138th to the 140th Degree of West Longitude,
 FROM GREENWICH,*
Showing the Course taken by
THE RURIK;
the Direction & Strength of the Current & the Declination of the Needle.
 April, 1816.

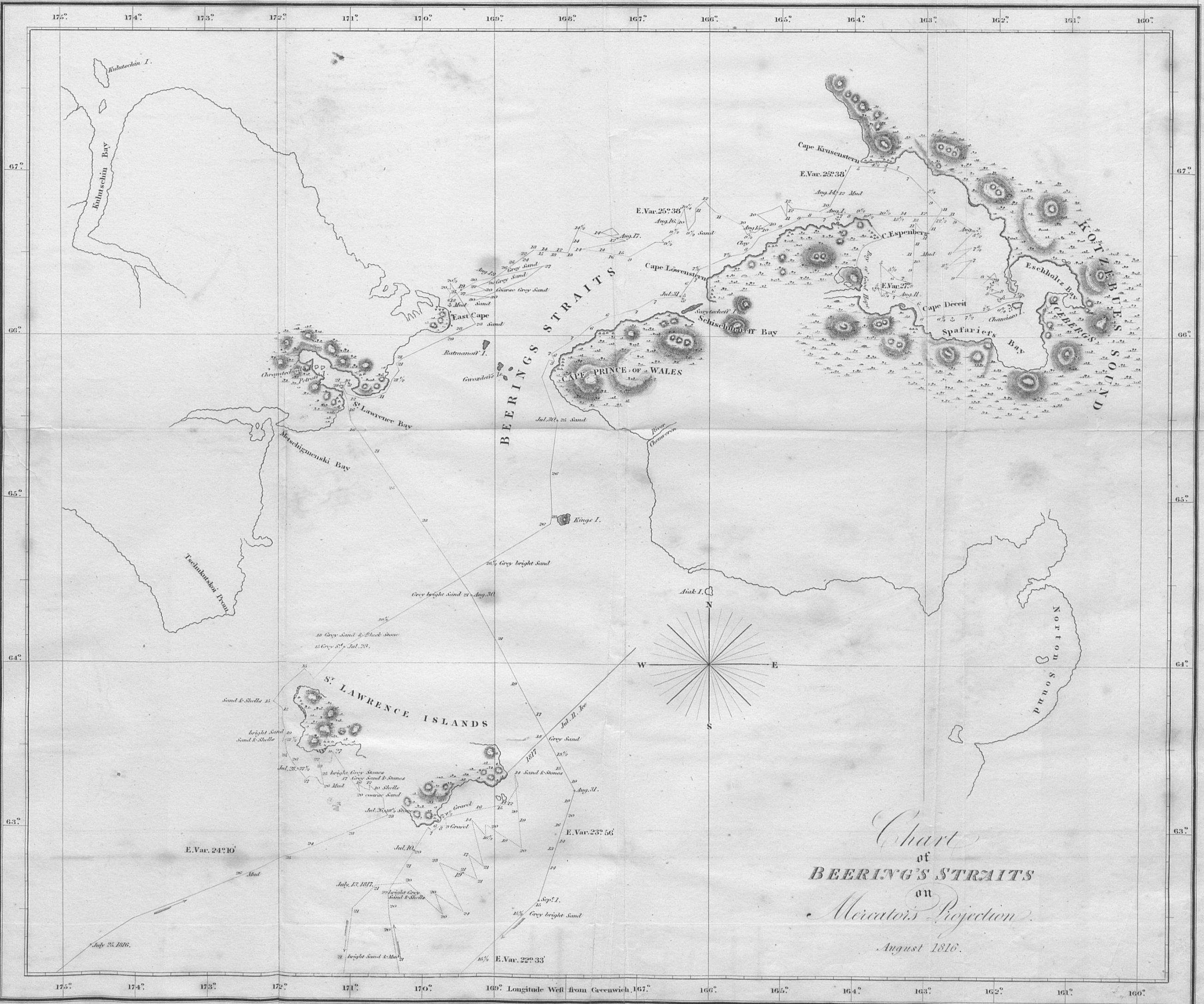


Chart
of
BEERING'S STRAITS
on
Mercator's Projection.
August 1816.