

surprise to most people. The pressure was generally high (except during the three last days), and the temperature slightly above the normal. On the Atlantic side the rainfall was moderate, with many warm, fair days. [See page 108.]

Notes on earthquakes.—February 5, 6^h 20^m a. m., slight shock, ENE-WSW., duration 2 seconds, intensity II.

MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of Señor Manuel E. Pastrana, Director of the Central Meteorologic-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in advance of their publication in the Boletín Mensual. An abstract, translated into English measures, is here given in continuation of the similar tables published in the MONTHLY WEATHER REVIEW since 1896. The barometric means are now reduced to standard gravity.

Mexican data for February, 1902.

Stations.	Altitude.		Temperature.			Relative humidity.	Precipitation.	Prevailing direction.	
	Feet.	Inch.	Max.	Min.	Mean.			Wind.	Cloud.
Chihuahua	4,669	25.20	77.0	30.2	55.2	36		e.	
Guadalajara (Obs. del Est.)	5,186	24.89	78.3	41.0	62.2	46	T.	nw.	
Guanajuato	6,640	23.62	79.7	38.8	60.8	43		w.	
Leon (Guanajuato)	5,906	24.23	79.5	33.6	59.4	49	T.	ene.	
Mazatlan	25	20.92	77.2	58.5	67.5	77	0.04	nw.	
Merida	59	29.88	100.4	48.9	73.8	64	0.13	ne.	
Mexico (Obs. Cent.)	7,472	24.91	76.6	37.8	57.9	43	T.	ne.	w.
Monterrey (Sem.)	1,626	28.13	94.8	40.3	63.1	52	0.43	w.	
Morelia (Seminario)	6,401	23.89	77.9	39.2	59.4	57	0.03	ws.	sw.
Puebla (Col. Cat.)	7,125	23.26	71.6	41.0	59.7	55		csc.	
Puebla (Col. d Est.)	7,118	23.28	74.1	32.2	56.3	53	T.	ene.	
Queretaro	6,070	24.09	77.9	37.1	60.3	46	T.	w.	
Saltillo (Col. S. Juan)	5,399	24.68	73.6	39.4	56.1	54	0.04	uw.	
S. Isidro (Hac. de Gto.)	8,812	21.89	68.9	50.9	50.7	48	0.19	w.	
Toluca	5,078	25.03	82.0	43.2	62.2	53	T.	se.	
Zapotlan									

CLIMATOLOGICAL DATA FOR JAMAICA.

Through the kindness of Mr. Maxwell Hall, the following data are offered to the MONTHLY WEATHER REVIEW in advance of the publication of the regular monthly weather report for Jamaica:

Jamaica, W. I., climatological data, January, 1902.

	Negril Point Lighthouse.	Moisant Point Lighthouse.
Latitude (north)	18° 15'	17° 55'
Longitude (west)	78° 23'	76° 10'
Elevation (feet)	33	8
Mean barometer 7 a. m.	29.971	29.967
3 p. m.	29.927	29.925
Mean temperature 7 a. m.	72.7	
3 p. m.	80.3	
Mean of maxima	82.9	
Mean of minima	71.2	
Highest maximum	88.0	
Lowest minimum	66.0	
Mean dew-point 7 a. m.	69.0	
3 p. m.	71.2	
Mean relative humidity 7 a. m.	87.0	
3 p. m.	74.0	
Total rainfall (inches)	1.32	6.86
Average wind direction 7 a. m.	ne.	ene.
3 p. m.	nne.	nne. n.
Average hourly velocity (miles) 7 a. m.	11.6	12.3
3 p. m.	12.5	15.4
Average cloudiness (tenths):		
7 a. m. Lower clouds	1.8	1.9
Middle clouds	2.5	2.5
Upper clouds	2.0	1.2
3 p. m. Lower clouds	1.6	2.5
Middle clouds	1.6	2.5
Upper clouds	0.9	1.1

NOTE.—The pressures are reduced to standard temperature and gravity, to the Kea standard, and to mean sea level. The thermometers are exposed in Stevenson screens.

Comparative table of rainfall for January, 1902.

(Based upon the average stations only.)

Divisions.	Relative area.	Number of stations.	Rainfall.	
			Average.	1902.
			Inches.	Inches.
Northeastern division	25	20	5.40	8.26
Northern division	22	55	3.34	7.69
West-central division	26	23	2.37	4.37
Southern division	27	31	1.70	2.39
Means	100		3.20	5.68

In taking the average rainfall, Mr. Hall uses only those stations for which he has several years of observations, so that the column of averages represents fairly well the normal rainfall for each division, while the column for the current month represents the average rainfall at those same stations. The relative areas of the divisions are very nearly the same, and are given in the preceding table as expressed in percentages of the total area of Jamaica. The number of rainfall stations utilized in each area varies slightly from month to month, according as returns have come in promptly or not, but will not differ greatly from the numbers in the second column of the table.

Jamaica, W. I., climatological data, February, 1902.

	Negril Point Lighthouse.	Moisant Point Lighthouse.
Latitude (north)	18° 15'	17° 55'
Longitude (west)	78° 23'	76° 10'
Elevation (feet)	33	8
Mean barometer 7 a. m.	29.967	29.959
3 p. m.	29.912	29.918
Mean temperature 7 a. m.	73.4	76.8
3 p. m.	80.6	82.4
Mean of maxima	83.3	
Mean of minima	70.7	
Highest maximum	86.0	
Lowest minimum	62.0	
Mean dew-point 7 a. m.	69.3	
3 p. m.	72.6	
Mean relative humidity 7 a. m.	87.0	
3 p. m.	76.0	
Total rainfall (inches)	0.10	6.80
Average wind direction 7 a. m.	9.9	7.4
3 p. m.	14.1	8.9
Average hourly velocity (miles) 7 a. m.	var.	var.
3 p. m.	var.	var.
Average cloudiness (tenths):		
7 a. m. Lower clouds	0.4	2.3
Middle clouds	5.0	2.2
Upper clouds	0.1	1.0
3 p. m. Lower clouds	0.0	1.1
Middle clouds	5.4	2.2
Upper clouds	0.8	1.0

NOTE.—The pressures are reduced to standard temperature and gravity, to the Kea standard, and to mean sea level. The thermometers are exposed in Stevenson screens.

Comparative table of rainfall for February, 1902.

(Based upon the average stations only.)

Divisions.	Relative area.	Number of stations.	Rainfall.	
			Average.	1902.
			Inches.	Inches.
Northeastern division	25	21	4.91	5.43
Northern division	22	47	2.32	3.97
West-central division	26	21	2.71	1.92
Southern division	27	33	1.80	0.98
Means	100		2.94	3.06

THE TERM INDIAN SUMMER.

By ALBERT MATTHEWS, Boston, Mass., dated December 15, 1901.

[Continued from January REVIEW.]

In 1851 Francis Parkman wrote: "The summer had long since drawn to a close, and the verdant landscape around

Detroit had undergone an ominous transformation. Touched by the first October frosts, the forest glowed like a bed of tulips; and all along the river bank, the painted foliage, brightened by the autumnal sun, reflected its mingled colors upon the dark water below. The western wind was fraught with life and exhilaration, and in the clear, sharp air, the form of the fish-hawk, sailing over the distant headland, seemed almost within range of sportman's gun.

"A week or two elapsed, and then succeeded that gentler season which bears among us the name of the Indian summer; when a light haze rests upon the morning landscape, and the many-colored woods seem wrapped in the thin drapery of a veil; when the air is mild and calm as that of early June, and at evening the sun goes down amid a warm, voluptuous beauty, that may well outrival the softest tints of Italy. But through all the still and breathless afternoon, the leaves have fallen fast in the woods, like flakes of snow, and everything betokens that the last melancholy change is at hand."⁷³

In the same year Sir John Richardson said: "With regard to the progress of the seasons, the 'Indian summer,' as it is called, brought us three weeks of fine weather after our arrival in September."⁷⁴

In 1852 Thackeray made one of his characters, who is supposed to be writing early in the eighteenth century, observe: "In our Transatlantic country we have a season, the calmest and most delightful of the year, which we call the Indian summer: I often say the autumn of our life resembles that happy and serene weather, and am thankful for its rest and its sweet sunshine."⁷⁵

Writing of the climate of San Francisco, Dr. H. Gibbons said in 1855: "As regards the influence of the seasons on vegetation, the common order is reversed. The entire absence of rain in the summer months parches the soil, and reduces it almost to the barrenness of a northern winter. The cold sea winds of the summer solstice defy the almost vertical sun, and call for flannels and overcoats. When the winds cease, as they do in September and October, comes a delightful Indian summer. In November and December the early rains fall, and the temperature being moderate, vegetation starts forth, and mid-winter finds the earth in lovely green and spangled with countless flowers."⁷⁶

In 1855 Lieut. J. M. Gilliss, in his work on Chile, remarked: "All through March, and the larger half of April, unexceptionable fine weather lasts, though the atmosphere is less transparent by day than during the other seasons, and copious dews at night show its increasing relative humidity. About the close of the former month, or in the first half of the latter, there are usually from ten to fifteen days when it assumes that peculiar appearance between smoke and dry fog which is so notable at the 'Indian summer' of North America. During its continuance there is scarcely any wind; and, as the temperature after noon rises to summer heat, with its fresh southerly breeze, the air is more enervating than at the latter season. Here the resemblance between the two hemispheres ceases. Unlike the North American 'Indian summer,' of which, its continuity once broken, there is no return until the following year, the Chilean 'verano de San Juan'⁷⁷ is often interrupted by a renewal of the periodic winds with greater force, or by clouds; and after a day or two, there succeeds another interval when the air is tranquil and smoky."⁷⁸

On October 30, 1856, W. H. Prescott wrote: "Our autumn

villeggiatura has been charming, as usual,—the weather remarkably fine,—many of the days too *Indian-summerish*, however. The vegetation has been remarkably fresh to a late period, from the great rains, and then fading or rather flushing into a blaze of glorious colors, which, as they passed away, and the fallen leaves strewed the ground with their splendors, have been succeeded by wider reaches of the landscape and the dark-blue mountains in the distance."⁷⁹

On November 8, 1857, Thoreau observed: "I see also the swamp pyrus buds, expanding sometimes into small leaves. This then is a regular phenomenon. It is the only shrub or tree that I know which so decidedly springs again in the fall, in the Indian summer. It might be called the Indian-summer shrub."⁸⁰

On December 13, 1857, J. L. Motley wrote from Nice, France: "As I have never been in the tropics, I cannot get used to this constant flood of warm sunshine, cloudless and almost oppressive day after day, in what certainly are not generally considered the genial last weeks of the year. We have been here about six weeks, and there have been but two or three cloudy days, and those were warm rainy ones, all the rest as warm and as fine as our best days in early October. Warmer than those, because there is always a lump of ice stirred in at night into the American Indian summer."⁸¹

In 1857 Lorin Blodget said: "Where the autumn does not differ largely from the quantity of rain at other seasons, as in New England and farther northward, there are still intervals of the serene and beautiful weather so prevalent on the plains. The popular designation of *Indian summer* is universal, and it is held certain that one such period, of some days' duration, will occur in October in every year. In Canada this phenomena is in striking contrast with the weather which succeeds it; a few days of singularly mild, soft, and quiescent weather, attended with a dense atmosphere of smoke and dry haze, break up suddenly in a violent snowstorm, perhaps, with severely cold, clear weather."⁸²

In 1857 Wilson Flagg remarked: "The season of the fall of the leaf commences, in general, about the twentieth of September, and varying with the character of the weather, continues until near the third week in November. It occupies a space of about two months, and may be divided into three periods. The first includes the time between the twentieth of September and the middle of the next month, when the maple, the ash, the tupelo, the creeper, the hickory, the beech, and the chestnut are in their full splendor. During this period the yellow, orange, and scarlet hues predominate in the tints of the foliage. The second period occupies a space of about two weeks from the end of the first, when the oaks have fully ripened their tints, and many of the trees just named have become leafless. This period is remarkable for a predominance of red, crimson, and purple hues in the color of the foliage; and it lasts until about the seventh or tenth of November. The third period commences with a succession of severe frosts, that destroy all the remaining tints of the forest, and change them into one uniform and monotonous brown. This period may be said to terminate with the early snows of winter, and is remarkable, in some years, for a series of warm days which have been called the Indian Summer. * * *

"As late as the second week in November we can seldom find one of our indigenous trees with any green leaves upon it, unless it be a young tree, under the protection of woods. The third period has now commenced; and the fall of the leaf is nearly completed. * * * But amid the general desolate appearance of nature, the scarlet berries of the prinus are conspicuous among the wild shrubbery; and the wych-hazel, clad

⁷³ History of the Conspiracy of Pontiac, p. 404.

⁷⁴ Arctic Searching Expedition, ii, 97. Sir John reached Fort Confidence, in latitude 66° 54', on September 15, 1848 (i, 335, 336, ii, 63).

⁷⁵ Henry Esmond, 1869, p. 452.

⁷⁶ In Ninth Annual Report of the Smithsonian Institution, pp. 235, 236.

⁷⁷ "St. John's summer. So named in the Argentine republic, though St. John's day is June 24. I never heard a Chileno designate it."

⁷⁸ The United States Naval Astronomical Expedition to the Southern Hemisphere, i, 90.

⁷⁹ Life, 1864, p. 380. Prescott was then at Pepperell, Mass.

⁸⁰ Autumn, 1894, p. 233.

⁸¹ Correspondence, 1889, i, 206.

⁸² Climatology of the United States, p. 233.

in a full drapery of yellow blossoms, stands ready with joyful hues to welcome the Indian summer.

"The Indian summer, which arrives during this third autumnal period, if it comes at all, is a brief period of warm weather, that sometimes greets our climate in November, after the fall of the leaf, and not as many suppose in October. It is probably caused by the sudden check to vegetable perspiration, by the fall of the leaves. * * * The warm spell that follows is the true Indian summer, and may last from five to eight days. During one of these spells of fine weather I have sometimes heard the crickets chirping merrily as late as the eighteenth of November."⁸³

In 1857 Whittier wrote:

"And summer days were sad and long,
And sad the unaccompanied eyes,
And sadder sunset-tinted leaves,

And Indian summer's airs of balm;
She scarcely felt the soft caress,
The beauty died of loneliness!"⁸⁴

⁸³ Studies in Forest and Field, pp. 277-286. My attention was called to this passage by Mr. Henry C. Merwin, of Boston. What Flagg says of the foliage is worthy of remark. Some New England writers insist that the Indian summer comes late in November, and yet assert that the brilliant foliage is a chief feature of the season. But throughout New England the foliage has lost its brilliancy by the end of October or beginning of November. We apparently have our choice of two propositions: If Indian summer and the foliage at its height are coincident, then Indian summer can not come late in November; or if Indian summer comes late in November, then the Indian summer and the foliage at its height are not coincident. The error, which is not made by Flagg, is merely due to that looseness of statement already commented upon.

In 1872 Flagg returned to the subject, and it is curious to note certain changes in his views. He then wrote: "After the fall of the leaf is completed, then, according to tradition, comes the Indian Summer, — a fruitful theme both for poets and philosophical writers, but of which no one knows anything from experience. It may, after all, be only a myth, like the halcyon days of the ancients, the offspring of a tradition that originated with certain customs of the Indians, and which occasional days of fine weather in the autumn have served to perpetuate. It is certain that we have now in the Eastern States no regular coming of this delightful term of mildness and serenity, this smiling interruption of the melancholy days of autumn. We are greeted occasionally by two or three days resembling it after the first cool weather of October, and these short visits are in some years repeated several times. But a true Indian Summer, attended with all the peculiar phenomena described by some of our early writers both in prose and verse, rarely accompanies a modern autumn. It has fled from our land before the progress of civilization; it has departed with the primitive forest. I will, however, for the present, set aside all my conjectures of its mythical character, and treat it as a matter of fact.

"The Indian Summer, if such a season was ever known, was a phenomenon produced by some unexplained circumstances attending the universal wooded state of the country that existed for many years after its settlement. According to the most apparently authentic accounts, it did not arrive until November, nor until a series of hard frosts had destroyed all the leaves of the forest. It then appeared regularly every year. At the present time people know so little about it that they can not name the period of the autumn when, if it were not a thing of the past, it should be expected." (Woods and By-Ways of New England, pp. 315-319.)

Flagg goes on to say that "the true Indian Summer was a period of very mild weather, lasting from ten to fifteen days," and that "a warm period in October or December or January is not an Indian Summer, which belonged to November, and is only a relic of the past." In the same work Flagg makes some statements which the reader should be cautioned against accepting. He says:

"The whole continent, at the time of its discovery, from the coast to the Great American Desert, was one vast hunting-ground, where the nomadic inhabitants obtained their subsistence from the chase of countless herds of deer and buffalo. At this period the climate had not been modified by the operation of man upon the forest. It was less variable than now, and the temperature corresponded more definitely with the degrees of latitude. * * * It was then easy to foretell what the next season would be from its character the preceding years. Autumn was not then, as we have often seen it, extended into winter. The limits of each season were more precisely defined. The continent was annually visited by the Indian summer, that came, without fail, immediately after the fall of the leaf and the first hard frosts of November. This short season of mild and serene weather, the halcyon period of autumn, has disappeared with the primitive forest." (Pp. 3, 4.)

Is it possible that the writer had been favored with a special revelation

In 1859 John G. Palfrey observed: "Some of the aspects of nature are of rare beauty. No other country presents a more gorgeous appearance of the sky than that of the New-England summer sunset; none, a more brilliant painting of the forests than that with which the sudden maturity of the foliage transfigures the landscape of autumn. No air is more delicious than that of the warm but bracing October and November noons of the Indian summer of New England."⁸⁵

In 1860 Prof. H. Y. Hind said: "In the afternoon of this day [16 October] a snow storm commenced which continued all night, and covered the ground with nine inches of snow. The thermometer was at the freezing point, but Mr. Mackenzie stated his conviction that the 'Indian Summer' not having yet occurred, the snow would soon disappear and we might have fine weather for ten days or a fortnight; a prediction borne out by the rapid disappearance of the snow on the following day, and the occurrence of beautiful weather with frosty nights to near the end of October. * * * Indian summer began on the 21st. The weather was warm, 'smoky,' and very delightful."⁸⁶

In 1860 J. V. Ellis, speaking of New Brunswick, said: "As the season advances towards the autumn months, the summer still lingers, as if regretting to quit the scenes of beauty it has created—and then is produced the 'Indian summer,' a season of rare and exquisite loveliness, that unites the warmth of summer with the mellowness of autumn."⁸⁷

About 1862 Thoreau observed: "Plants soon cease to grow for the year, unless they may have a fall growth, which is a kind of second spring. In the feelings of the man, too, the year is already past, and he looks forward to the coming winter. It is a season of withering; of dust and heat; a season of small fruits and trivial experiences. But there is an aftermath, and some spring flowers bloom again. May my life be not destitute of its Indian Summer!"⁸⁸

Writing of Vancouver Island in 1865, M. Macfie said: "The protracted dryness of summer often imparts to the soil a parched appearance, but it is rather pasture lands than crops that suffer from this influence. The refreshing showers of autumn, however, lasting till the middle of November, clothe the grass a second time with verdure, which it retains till after Christmas. The later part of the fall is known as the Indian summer."⁸⁹

In 1867 Prof. J. E. Willet wrote: "The season when it appears and the period of continuance of Indian Summer, seem, from the above, to be slightly different in different countries.

"In North America, it occurs in September, October, or November in different years. It is sometimes confined to one well-defined period of two or three weeks, as at Fort Confidence, in September and October, 1848. [See the extract dated 1851.] But more commonly it is extended through one-half or more of the autumn; presenting a series of smoky days, followed by a period of variable weather, to be restored again in full force for a short time, running thus interruptedly through two months or more. * * * Another point worthy of remark, is that there are individual days of smoky

which enabled him to speak with such assurance? If not, whence came this minute knowledge of the meteorological conditions which prevailed in America four centuries ago?

⁸⁴ Mable Martin, iii, Poetical Works, i, 203.

⁸⁵ History of New England, i, 14.

⁸⁶ Narrative of the Canadian Red River Exploring Expedition, ii, 66, 68. Professor Hind also says: "Indian summer is a phenomenon of constant yearly occurrence and marked characteristics in the north-west. * * * The characters of Indian summer are more decided in the north-west than in the neighbourhood of Lake Ontario. Sounds are distinctly audible at great distances; objects are difficult to discern unless close at hand; the weather is warm and oppressive, the atmosphere hazy and calm, and every object appears to have a tranquil and drowsy aspect." (ii, 383, 384.)

⁸⁷ First Prize Essay: New Brunswick, As a Home for Emigrants, p. 18.

⁸⁸ Excursions, 1894, p. 448.

⁸⁹ Vancouver Island and British Columbia, p. 181.

weather, distributed through the whole year and undistinguishable from Indian Summer, in any particular, except the time of duration. Were they prolonged for a week or two, we should have Indian Summer in nearly every month of the year, and the phenomenon would cease to be regarded as peculiarly autumnal."⁹⁰

In 1867 Dr. O. W. Holmes remarked: "The seasons had been changing their scenery while the events we have told were occurring, and the loveliest days of autumn were shining now. To those who know the 'Indian summer' of our Northern States, it is needless to describe the influence it exerts on the senses and soul. The stillness of the landscape in that beautiful time is as if the planet were *sleeping*, like a top, before it begins to rock with the storms of autumn. All natures seem to find themselves more truly in its light; love grows more tender, religion more spiritual, memory sees farther back into the past, grief revisits its mossy marbles, the poet harvests the ripe thoughts which he will tie in the sheaves of verses by his winter fireside."⁹¹

In 1869 J. W. Foster observed: "That delicious season known as 'Indian summer' is often prolonged into December, when a calm, soft, hazy atmosphere fills the sky; through which, day after day, the sun, shorn of his beams, rises and sets like a globe of fire. This peculiarity is observed as far north as Lake Superior, but is most conspicuous and protracted in Kansas and Missouri, but does not extend south, into the lower latitudes of the United States."⁹²

In the same year Mrs. Stowe said: "When the apples were all gathered and the cider was all made, and the yellow pumpkins were rolled in from many a hill in billows of gold, and the corn was husked, and the labors of the season were done, and the warm late days of Indian Summer came in, dreamy and calm and still, with just frost enough to crisp the ground of a morning, but with warm trances of benignant, sunny hours at noon, there came over the community a sort of genial repose of spirit, or sense of something accomplished, and of a new golden mark made in advance on the calendar of life,—and the deacon began to say to the minister, of a Sunday, 'I suppose it's about time for the Thanksgiving proclamation.'"⁹³

In 1874 A. Davidson and B. Stuvé remarked of Illinois: "*The Climatology of the State*, in common with other countries of the same latitude, has four seasons. * * * Autumn, with slowly diminishing heats, terminates in the serene and beautiful season known as Indian summer. Its mild and uniform temperature, soft and hazy atmosphere, and forests beautifully tinted with the hues of dying foliage, all conspire to render it the pleasant part of the year."⁹⁴

In 1881 George Milner, an Englishman, remarked: "As autumn proceeds, we watch anxiously for that season of respite which in America is known as the Indian Summer, and in our own country as the Little Summer of St. Luke—a time of warmth and stillness and beauty, in the midst of which we would fain linger. * * * The eighteenth of October is the festival of St. Luke, and it is on that day, or near it, that the serene weather usually arrives."⁹⁵

In 1882 the late J. A. Symonds wrote: "If I am doomed to decline now, I can at least say that in the five years since I came here [Davos, Switzerland] dying, I have had a very wonderful Indian summer of experience. The colours of life have been even richer, my personal emotions even more glowing, my perception of intellectual points more vivid, my power over style more masterly, than when I was comparatively vigorous."⁹⁶

In 1883 Dr. Holmes said: "In October, or early in November, after the 'equinoctial' storms, comes the Indian summer. It is the time to be in the woods or on the sea-shore,—a sweet season that should be given to lonely walks, to stumbling about in old churchyards, plucking on the way the aromatic silvery herb everlasting, and smelling at its dry flower until it etherizes the soul into aimless reveries outside of space and time. There is little need of trying to paint the still, warm, misty, dreamy Indian summer in words; there are many states that have no articulate vocabulary, and are only to be reproduced by music, and the mood this season produces is of that nature. By and by, when the white man is thoroughly Indianized (if he can bear the process), some native Haydn will perhaps turn the Indian summer into the loveliest *andante* of the new 'Creation.'"⁹⁷

In 1884 Professor Huxley observed: "We must begin to think seriously about getting out of the hurly-burly a year or two hence, and having an Indian summer together in peace and quietness."⁹⁸

In 1886 Dr. C. C. Abbott remarked: "October 30. * * * A few warblers congregated in the big locusts in the yard, and offered a chance to take an observation from within doors. There were black and white tree-creeping warblers, a black-throated blue, and two myrtle birds. These gave me hopes that an autumn flight of warblers may wind up the month, or be the prominent features of November's Indian summer."⁹⁹

In the same year Bela Hubbard wrote: "Hard frosts which put a period to vegetable growth, come from about the first to the end of October, being very variable, but such always precede the period which has been designated *Indian Summer*."

"This soft season so full of poetry, if not of romance, is among the very uncertain things of this uncertain climate. Often successive autumns pass which afford scarcely a day that may justly claim the designation. November, its special season, is often anything but golden. A few, bright, sunny days beam out along its course, and cheat us with an expectation that is doomed to disappointment. * * * Here [Detroit] too, and in the region of the lakes, its visits have become somewhat like those of the angels, though it has not deserted this, its favorite abode, altogether, as is the case in the Puritan's land. But so many years pass with so little semblance of it, that many even here are apt to look upon its existence as fabulous."

"Yet the Indian summer is no myth. It often breaks upon us from the very midst of storm, frost and snow, true to the tradition, that there must first be a 'squaw winter'¹⁰⁰ before we can have an 'Indian summer.' At once the icy blasts are locked securely in their northern caves, the snow melts and the earth dries under a genial sunshine. The calm, still atmosphere is filled with a smoky haze, which hangs like a veil over the landscape. Day after day succeeds of most

⁹⁰ The Seasons, in Pages from an Old Volume of Life, 1891, pp. 165, 166.

⁹¹ Life and Letters, 1900, ii, 73, 74.

⁹² An October Day, in Upland and Meadow, p. 386. Two years later Dr. Abbott wrote: "When or why the term 'Indian' was applied to the occasional brief spell of pleasant weather in November, I cannot determine. It is not a happily chosen one; certainly. * * * As I understand it, the true 'summer' week must occur in November, and a very marked hazy condition of the atmosphere is an absolutely essential feature." (The American, 1888, vi, 88, 89.)

¹⁰⁰ This is the only example of this term known to me in print. Miss Mickle writes from Toronto that formerly she wondered whether it was not a newspaper manufactured term, but her brother "who has spent many summers in the north and north-west of Canada" tells her that "the term is used by the guides and Indians in those regions." Miss Ellen D. Larned of Thompson, Conn., writes me that she was once told that a New Jersey lady (of New England parentage) reported the term "as handed down in her family. The Indians gave this name to the cold weather that precedes the genuine Indian Summer. After a light fall of snow that stood on the ground some hours," this lady "remarked, 'Now we have had our *squaw winter*—there is snow enough on the ground to mark a rabbit's track,' and a few days after they had the spell of Indian summer, confirming the prophecy."

⁹⁰ American Journal of Science, Second Series, xlv, 342.

⁹¹ Guardian Angel, 1891, p. 164.

⁹² The Mississippi Valley, p. 205. Cited in the Century Dictionary.

⁹³ Oldtown Folks, 1896, i, 386, 387. Cited in the Century Dictionary.

⁹⁴ Complete History of Illinois, p. 20.

⁹⁵ Country Pleasures, pp. 232-237.

⁹⁶ Biography, 1895, ii, 203.

delicious, dreamy softness; not enervating like the heats of summer, but exhilarating to soul and body. For the rains and the frost have purified the atmosphere, rendering it elastic and bracing. The sun's rays have lost their power to oppress, and bring only enjoyment. How softly his beams fall on all surrounding objects,—the gold without the glitter. What a delicious atmosphere; we can almost fly in it!"¹⁰¹

Prof. R. Owen has recently said: "Although we have the high authority of Lieutenant Maury for the statement that this phenomenon sometimes occurs in the New England States, and even extends as far as Labrador, yet in its most persistent and characteristic form, namely that of haziness, rather than fog, and disappearance whenever the sun comes out with its meridian force, the Indian Summer seems more peculiarly a continental climatic condition not often found on seaboards, which partake rather of the so-called insular climate."¹⁰²

In 1891 S. Perley wrote: "A season peculiar to New England is that known as the Indian summer, which occurs in October and continues only two or three weeks. It comes after the early frosts, when the wind is southwest, and the air is delightfully mild and sweet. The sky is then singularly transparent, pure and beautiful, and the fleecy clouds are bright with color."¹⁰³

In 1898 the Australian novelist, writing under the name of R. Boldrewood, observed: "Cool nights, bracing mornings, and mild Indian-summer-like days."¹⁰⁴

On the birthday of Queen Victoria in 1899, Alfred Austin addressed her in a poem called *An Indian Summer*, from which the following stanza is taken:

"Long may the Indian Summer of your days
Yet linger in the Land you love so well!
And long may we who no less love You dwell
In the reposeful radiance of your gaze,
A golden sunset seen through Autumn's silvery haze."¹⁰⁵

From the evidence which has thus far been presented, it is seen that the term Indian summer first made its appearance in the last decade of the eighteenth century; that during the next decade the expression "second summer" was used, indicating that there was no generally accepted designation for the supposed spell of peculiar weather in autumn; that this spell itself was first noted shortly before 1800; that the term Indian summer became established about twenty years after its earliest appearance; that it was first employed in western Pennsylvania; that it had spread to New England by 1798, to New York by 1809, to Canada by 1821, and to England by 1830; that the term is not merely an Americanism, but has become part of the English language in its widest sense, having actually supplanted in England expressions which had there been in vogue for centuries, and is now heard among English speaking people throughout the world; that it has been adopted by the poets; that it has often been employed in a beautiful figurative sense, as applied to the declining years of a man's life; and that it has given rise to much picturesque if also to some flamboyant writing. In short, to write in praise of the Indian summer is now a literary convention on three continents. So varied a history in little more than a century is certainly remarkable.

If, as we have seen, the term Indian summer is popularly

¹⁰¹ Memorials of a Half Century, pp. 557-559. My attention was called to this passage by Professor Abbe.

¹⁰² American Meteorological Journal, 1889-1890, vi, 392. Another communication on the subject will be found in the same volume, pp. 530, 531. I am indebted for these references to Mr. A. Lawrence Rotch of the Blue Hill Observatory.

¹⁰³ Historic Storms of New England, p. viii.

¹⁰⁴ Romance of Canvass Town, p. 71. Cited in the Oxford Dictionary.

¹⁰⁵ Victoria The Wise, 1901, p. 41. Cited in the Oxford Dictionary, where also is quoted an extract from J. C. Morison, Service of Man, 1889, p. 128. The late J. Payn in some novel said that "Mrs. Jenmynge [was] in an Indian summer (delightful state) of rapture." (In J. M. Dixon's Dictionary of Idiomatic English Phrases, 1891, p. 171.)

used in an indefinite way, no less vague and uncertain are most of the explanations which have been advanced to account for its origin. The earliest suggestion appears to be due to Charles Brockden Brown, the first American novelist, who, in his translation of the passage cited above from Volney, added in a note: "Its American name it probably owes to its being predicted by the natives to the first emigrants, who took the early frosts as the signal of winter."¹⁰⁶

It has already been sufficiently insisted on that there is no evidence to show that any one, native or foreigner, had any knowledge of the Indian-summer season until late in the eighteenth century; much less is there reason for supposing that the season was "predicted by the natives to the first emigrants." Nor is it apparent why the colonists should have taken "the early frosts as the signal of winter," for had they not done so they would have been singularly lacking in their powers of observation.

In 1812 the Rev. James Freeman, whose revision of the Anglican liturgy in 1785 is held to have marked the beginning of the Unitarian movement in New England,¹⁰⁷ brought forward another explanation. He said:

"The southwest is the pleasantest wind, which blows in New England. In the month of October, in particular, after the frosts, which commonly take place at the end of September, it frequently produces two or three weeks of fair weather, in which the air is perfectly transparent, and the clouds, which float in a sky of the purest azure, are adorned with brilliant colours.

"This charming season is called the Indian Summer, a name which is derived from the natives, who believe that it is caused by a wind, which comes immediately from the court of their great and benevolent God Cautantowwit, or the southwestern God, the God, who is superiour to all other beings, who sends them every blessing which they enjoy, and to whom the souls of their fathers go after their decease."¹⁰⁸

This view has often since been repeated and is sometimes referred to as the "New England tradition"¹⁰⁹ with respect to the origin of the name. If we turn to Roger Williams's Key into the Language of America, first published in 1643, we shall find the following passages:

"Lastly, it is famous that the *Sowwest* (*Sowanu*) is the great Subject of their discourse. From thence their *Traditions*. There they say (at the *South-west*) is the Court of their great God *Cautantowwit*: At the *South-west* are their *Forefathers* soules; to the *South-west* they goe themselves when they dye; From the *South-west* came their *Corne*, and Beanes out of their Great God *Cautantowwits* field: and indeed the further *Northward* and *Westward* from us their *Corne* will not grow, but to the *Southward* better and better. * * * Pitch *Sowwanishen*. It will be *Southwest*.

"*Obs.* This is the pleasingest, warmest wind in the Climate, most desired of the *Indians*, making faire weather ordinarily; and therefore they have a *Tradition*, that to the *Southwest*, which they call *Sowwanu*, the gods chiefly dwell; and hither the soules of all their Great and Good men and women goe."¹¹⁰

It is certain that Freeman had these passages in mind, and it is equally certain that Freeman's remark about the Indian

¹⁰⁶ View of the Soil and Climate of the United States, 1804, p. 210.

¹⁰⁷ B. Wendell, Literary History of America, pp. 121, 122, 281.

¹⁰⁸ Sermons on Particular Occasions, Note to Sermon viii, pp. 277, 278.

¹⁰⁹ So called by a writer in 1833 (American Journal of Science, xxvii, 140). Thus within twenty-one years this view had, in the popular mind, grown into a "tradition."

¹¹⁰ Key, 1666, pp. 84, 85, 171. In another place Williams says that scarcely one Indian in a hundred will kill a crow, because "they have a tradition, that the Crow brought them at first an *Indian* Graine of *Corne* in one Eare, and an *Indian* or *French* Beane in another, from the Great God *Kautantowwits* field in the *Southwest* from whence they hold came all their *Corne* and Beanes." (P. 174). I am indebted to Mr. W. W. Tooker of Sag Harbor, N. Y., for calling my attention as long ago as 1898 to the passages from Williams's book bearing on Freeman's view.

summer is an interpolation of his own, as there is no trace of it in Williams, who does not even so much as mention the autumn. Upon examination, then, this so-called "New England tradition" turns out to be, properly speaking, not a tradition at all, but merely a misapprehension on the part of Freeman of what Williams had said nearly a century and three quarters earlier. Hence this explanation of the origin of the name, being founded on a mistake, can not be accepted as adequate.

It often happens that a notion which is advanced by its originator as a suggestion merely, is soon spoken of as a certainty, and in course of time comes to be regarded as an established fact. We have now to consider an admirable illustration of this familiar process. In recent years it has again and again been asserted that the Indian summer derived its name from the burning of the woods and the grass by the Indians. The earliest allusion to such an idea known to me is in the following passage, written by Dr. D. Drake in 1815:

"The cause of this smokiness is supposed to be the conflagration, by the Indians, of withered grass and herbs on the extensive prairies to the north-west, and hence perhaps the name of the season."¹¹¹

The most striking feature of this remark is its cautiousness. Drake says that the cause of the smokiness is *supposed* to be the burning of the prairies, and hence *perhaps* the origin of the name of the season. The question of the burning of the woods is worthy of some attention. Writing of New England in 1634, W. Wood said:

"The Climate in Winter is commonly cold and dry, the Snow lies long, which is thought to be no small nourishing to the ground. For the *Indians* burning it to suppress the underwood, which else would grow all over the Countrey, the Snow falling not long after, keeps the ground warme, and with his melting conveighs the ashes into the pores of the earth, which doth fatten it. * * * It being the custome of the *Indians* to burne the wood in *November*, when the grasse is withered, and leaves dried, it consumes all the underwood, and rubbish."¹¹²

In a Description of the New Netherlands, written in Dutch in 1656, Adriaen Van der Donck remarked; "In short the autumns in the New-Netherlands are as fine as the summers of Holland, and continue very long. * * * The wild geese, turkeys and deer are at their best in this season, and easiest obtained, because of the cold, and because the woods are now burnt over, and the brushwood and herbage out of the way. This is also the Indian hunting season, wherein such great numbers of deer are killed, that a person who is uninformed of the vast extent of the country, would imagine that all these animals would be destroyed in a short time."¹¹³

Writing of Virginia in 1724, the Rev. H. Jones observed: "As to the Weather, the Spring and Fall are not unlike those Seasons in *England*, only the Air is never long foggy, nor very

cloudy; but clear, sometimes of a bluish Colour, occasioned by the thin Smoak, dispersed in the Air, from the Flames of Woods and Leaves, which are fired in Hunting, to drive the Beasts from their lurking Places; or in the Spring to burn the old Leaves and Grass, that there may be the better Pasture the next Summer."¹¹⁴

In 1782 Jefferson, alluding to certain "bodies of warm air" often met with in Virginia, said: "They do not happen in the winter when the farmers kindle large fires in clearing up their grounds. They are not confined to the spring season, when we have fires which traverse whole countries, consuming the leaves which have fallen from the trees."¹¹⁵

Writing from St. Genevieve, La., February 10, 1808, C. Schultz, Jr., said: "In the fall of the year, when the grass and woods are generally dry, the country on both sides of the river [Mississippi] is almost continually on fire in some place or other. This principally proceeds from a custom the Indians have of clearing the woods for hunting; which it effectually accomplishes by consuming all the grass, weeds, and underwood, with which they are obstructed."¹¹⁶

There is abundant evidence that the Indians burned the woods and underbrush in the autumn, but they also did so in the spring—just as Americans do at present, and smoke caused by forest fires is by no means peculiar to the autumn; hence, while the Indian-summer season may have derived its name from this practice, there is no proof that such was the case.

In 1824 we meet with what is certainly the most curious explanation of the origin of the name which has ever been advanced. In that year the Rev. Joseph Doddridge wrote:

"THE INDIAN SUMMER.

"As connected with the history of the Indian wars of the western country; it may not be amiss to give an explanation of the term 'Indian Summer.'

"This expression, like many others, has continued in general use; notwithstanding its original import has been forgotten. A backwoodsman, seldom hears this expression, without feeling a chill of horror, because it brings to his mind the painful recollection of its original application. Such is the force of the faculty of association in human nature.

"The reader must here be reminded, that, during the long continued Indian wars, sustained by the first settlers of the western country, they enjoyed no peace excepting in the winter season, when, owing to the severity of the weather, the Indians were unable to make their excursions into the settlements. The onset of winter was therefore hailed as a jubilee, by the early inhabitants of the country, who throughout the spring, and the early part of the fall, had been cooped up in their little uncomfortable forts, and subjected to all distresses of the Indian war.

"At the approach of winter, therefore all the farmers, excepting the owner of the fort, removed to their cabins on their farms, with the joyful feelings of a tenant of a prison, on recovering his release from confinement. All was bustle, and hilarity, in preparing for winter, by gathering in the corn, digging potatoes, fattening hogs, and repairing the cabins. To our forefathers, the gloomy months of winter were more pleasant than the zepthers of spring, and the flowers of May.

"It however, sometimes happened, that after the apparent onset of winter, the weather became warm; the smokey time commenced, and lasted for a considerable number of days.

¹¹⁴ Present State of Virginia, pp. 49, 50.

¹¹⁵ Writings (Ford), iii, 181. In Maine, and doubtless in other parts of the country, there are frequently days in July and August which not only appear smoky, but on which the smoke is patent to the duller olfactory nerves. The smoke is due to forest fires. I mention this obvious fact because some writers seem to think that a smoky (or apparently smoky) appearance of the atmosphere is confined to the autumn months.

¹¹⁶ Travels, 1810, ii, 69.

¹¹¹ Natural and Statistical View, or Picture of Cincinnati and the Miami Country, p. 110. This remark raises two points: First, as to the origin of the name; secondly, as to the cause of the alleged smokiness. The second point is beyond the scope of this paper, but a single comment is permissible. In 1858 Joseph Henry wrote:

"Though the first announcement of the proposition by some of our earlier meteorologists that the peculiar condition of the atmosphere known as 'Indian summer' might be produced by the burning of the prairies, was not thought deserving of any comment, yet the advance of science in revealing the facts just stated renders this hypothesis by no means unworthy of attention." (Scientific Writings, ii, 257.)

The proposition spoken of by Professor Henry does not appear to have originated with the meteorologists, and he was certainly wide of the mark in saying that it "was not thought deserving of any comment." The proposition received frequent comment, and those interested in it can easily satisfy their curiosity by looking up the numerous references given in this paper.

¹¹² New England's Prospect, 1865, pp. 8, 17.

¹¹³ Collections of the New York Historical Society, Second Series, 1841, i, 183. My attention was called to this passage by Mr. Tooker.

This was the Indian summer, because it afforded the Indians another opportunity of visiting the settlements with their destructive warfare. The melting of the snow saddened every countenance, and the general warmth of the sun chilled every heart with horror. The apprehension of another visit from the Indians, and of being driven back to the detested fort, was painful in the highest degree, and the distressing apprehension was frequently realized."¹¹⁷

This theory stands wholly by itself, is unsupported by corroborating evidence, and its value is not easily determined. Doddridge actually lived in the region which he describes, and it would seem as if he ought to speak with authority. On the other hand, during the period to which he alludes—the years from 1763 to 1783—the very term itself is not known to have been in existence, Doddridge wrote from the recollection of more than forty years, and his book was published long after the Indians had ceased to be a serious factor in Virginia and Pennsylvania. His statement that the early settlers "enjoyed no peace excepting in the winter season" needs qualification. There can be no doubt that during the months of January and February the Indians were generally quiet, but this was not always the case, and some of the most famous of the Indian raids were made in the dead of winter—such, for instance, as that upon Lancaster, Mass., which occurred February 10, 1676. But it was not until late in December¹¹⁸ that the settlers could hope for a respite, and it can easily be proved that Indian raids frequently took place in September, October, November, and early December,¹¹⁹ be-

¹¹⁷ Notes, on the Settlement and Indian Wars, of the Western Parts of Virginia and Pennsylvania, from the Year 1763 until the Year 1783, inclusive, pp. 265, 266. This account was reprinted in S. Kercheval's History of the Valley of Virginia, 1833, pp. 253-410; in the New England Historical and Genealogical Register, 1849, iii, 26; in the Sixty-Second Annual Report of the Regents of the University of the State of New York, 1849, pp. 385, 386; and has often been referred to. De Vere, in his Americanisms, 1872, pp. 27, 28, attributes the account to Kercheval; but this is an error, as Kercheval is quoting Doddridge.

¹¹⁸ Writing from Sunbury December 30, 1780. M. Smith said that an Indian attack had been made near Wyoming on the 6th of that month, and that another attack was intended, but added: "We are lately in hopes they will not be able to make their Intended Stroke, as the River & Creeks are now pretty high & Driving thick with ice, but we fear they may hover on our Fronteer Dureing the Winter and Give us an early Stroke in the Spring." (Pennsylvania Archives, viii, 691.)

Writing from the same place February 28, 1782, Col. S. Hunter said: "As the Spring is now Approaching and the deep snow going off the Ground, * * * I have the Oppertunity of conversing with a number of the Inhabitants, which Realy declares to me that they intend to move of from the Frontiers (or at least to put their familys all out of the way of danger,) as they Expect the Cruel Hostill Visits from their unmercifull Enimys Early in the Spring that they have Experienced this three years past." (Ibid. ix, 503, 504.)

Writing from Portland, Me., December 7, 1746, the Rev. T. Smith said: "Sunday. Thin meeting, and growing more and more so. Public worship is like to drop; for in the summer people fear to come, because of the Indians, and in the winter they cannot come." (Journal, 1849, p. 126.)

¹¹⁹ The following extracts are all purposely drawn from the Pennsylvania Archives, because the documents there printed relate to the section of the country written about by Doddridge, and the letters quoted were all written between 1763 and 1783, the period covered by Doddridge.

"On the 13 Inst. we have had, in a place in this County called the Great Cove, five persons Kill'd & Six missing." (Col. J. Armstrong, November 21, 1763, iv, 138.)

"In short there is very few Days there is not some murder committed on some part of our fruntears." (Lt. A. Lochry, November 4, 1777, iv, 741.)

"An Indian War is now raging around us in its utmost fury." (T. Smith and G. Woods, November 27, 1777, vi, 39.)

"The Indians * * * have still Continued to Destroy and Burn Houses, Barns and Grain." (Lt. A. Lochry, December 6, 1777, vi, 68.)

"I * * * beg leave to acquaint you what confusion these Frontiers is in at present, in regard of the Indians Committing Hostilities; there has been two men kill'd & scalped by them leatly, * * * but our People pursued them (as there had fell a snow which enabled our men to track), and killed two of the Indians." (Col. S. Hunter, January 14, 1778, vi, 175, 176.)

"The enemy within these ten days have come down in force and invested Wyoming." (Col. T. Hartley, November 9, 1778, vii, 81.)

sides, as already stated, occurring occasionally in January and February. Nothing is more rash than dogmatically to reject an account merely by reason of its seeming improbability, but the only safe attitude at present to take toward Doddridge's theory is one of scepticism.

The next suggestion was put forward in 1833 by some unknown Baltimorean, who said: "Probably the appellation of Indian, is derived from the circumstance of this period of the year, being selected by the aborigines of the country as their hunting season, to which it is highly conducive, not only on account of the plenty and perfection of the game, but also in consequence of the haziness or obscurity of the air, which favors a near, and unsuspected approach, to the object of pursuit."¹²⁰

Two years later, Dr. Lyman Foot thus commented on the above passage: "Now, so far as our knowledge extends, and we have been pretty well acquainted with the western and north western Indians for the last thirteen years, it is the season of all others in which Indians hunt the least. * * *

"All who are acquainted with the western and north western Indians, know, that during the month of April or May, according to the latitude in which they reside, they collect together at what they call their villages, or towns. * * *

"Here they plant their corn, and a few other vegetables, the squaws performing all the labor, while the men spend most of their time in fishing. They rarely hunt, during the summer months, till ducks and geese begin to abound and to be in good condition, which is from the latter part of August to the first of November, during which time they kill great numbers of them in the waters contiguous to their villages.

"Thus they live from about May to November, collected together by hundreds—sometimes even hundreds of families.

"After gathering their corn and wild rice, if in a rice country, drying their fish, and packing in small sacks provisions for a long march; they prepare for what they call their winter's hunt. That is, they entirely desert their villages, and disperse in small bands to every part of the country, diving into the darkest forests, and ascending the various streams to the remotest parts of their territory, where they pass the winter in hunting and trapping animals, whose skins are valuable, and the flesh of which serves them for food."¹²¹

"I am Just informed that Capt. Clark, * * * was attacked by Simon Girty & a party of Mingoos." (Gen. L. McIntosh, January 29, 1779, vii, 173.)

"On the 21st of last month a little girl was killed and another of about seventeen years of age taken prisoner by a party of Indians." (Col. D. Brodhead, October 9, 1779, xii, 164.)

"The Last Ninth Day of Sept. the Enemie Indians Did Attacked one of our Militia post." (Lt. Col. H. Gelger, September 12, 1781, ix, 396.)

See also Pennsylvania Archives, ix, 657; xi, 206, 209; xii, 179, 180, 189, 271; and Pennsylvania Colonial Records, ix, 43, 44; xi, 342, 347, 382, 403; xiii, 169, 417.

¹²⁰ American Journal of Science, xxvii, 140.

¹²¹ American Journal of Science, 1836, xxx, 8, 9. Dr. Foot also said:

"We have taken considerable pains to ascertain from the Chippeways, Menomines, Winnebagoes and others, whether they know, or notice, what we call Indian summer, and if so, what they call it. * * * If you ask an Indian in the fall when he is going to his hunting ground, he will tell you, when our fall summer comes, or when the Great Spirit sends us our fall summer—meaning the time in November which we call Indian summer. And they actually believe that the Great Spirit sends this mild season in November, after the cold fall rains, for their special benefit."

There is some discrepancy in Dr. Foot's remarks. He has just asserted that the autumn "is the season of all others in which Indians hunt the least;" and if such is the case, why should the Indians be going to their hunting grounds in November?

Dr. Foot's article has undergone strange perversions. In 1895 Frank N. Jones wrote: "Those who, in the early years of the settlement of the country by the whites, were at all conversant with the western and northwestern Indians, are said to have known that during the month of April or May, according to the latitude in which they dwelt, they were accustomed to collect together at what they called their villages or towns." (The Bostonian, iii, 170-174.)

The notion that any of the early settlers were "at all conversant" with the western and northwestern Indians, is amusing; and statements

That the Indians did hunt in the autumn, is certain; but then they hunted at other seasons as well,¹²² and there is no evidence to connect Indian summer with the hunting of the Indians.

We have next to consider two suggestions which, in their vagueness, recall the one made by Brown in 1804.

In 1842 Z. Thompson wrote: "It has been said, though we do not vouch for its truth, that it was a maxim with the aborigines of this country, which had been handed down from time immemorial, that there would be 30 smoky days both in the spring and autumn of each year; and their reliance upon the occurrence of that number in autumn was such that they had no fears of winter setting in till the number was completed. This phenomenon occurred between the middle of October and the middle of December, but principally in November; and it being usually attended by an almost perfect calm, and a high temperature during the day, our ancestors, perhaps in allusion to the above maxim, gave it the name of *Indian Summer*."¹²³

In the same year J. F. Watson remarked: "The aged have given it as their tradition, that the Indians, long aware of such an annual return of pleasant days, were accustomed to say 'they always had a second summer of nine days just before the winter set in.' From this cause, it was said, the white inhabitants, in early times, called it the 'Indian summer.'"¹²⁴

As with Drake in 1815, so with Thompson and Watson in 1842, the striking feature is the caution with which these suggestions are made. So too is it with another suggestion of Watson's in the same work: "It was the favourite time, it was said, of the Indian harvest, when they looked to gather their corn."¹²⁵

This is one of the most plausible theories which have been advanced, it has met with a wide acceptance, and the fact that the term "Indian harvest"¹²⁶ was once in vogue certainly does not detract from its plausibility. If, however, we examine into the history of this term, we find that it was once current from 1642 to 1737, but in New England only; that by it was meant not the harvest gathered by the Indians, but merely the harvest of Indian corn or maize, that grain being so called to distinguish it from English corn or wheat, and

like those of Mr. Jones, which are more or less frequently made by the commentators, are of course derived from Dr. Foot's article, with the addition of attributing to the early settlers what was written in 1835.

¹²² In 1744 A. Dobbs, writing of the Home Indians, said:—"The *Indians* West of the Bay, living an erratic Life, can have no Benefit by tame Fowl or Cattle; they seldom stay above a Fortnight in a Place, unless they find Plenty of Game. When they remove, after having built their Hut, they disperse to get Game for their Food, and meet again at Night, after having killed enough to maintain them for that Day; they don't go above a League or two from their Hut. When they find Scarcity of Game, they remove a League or two farther, and thus they traverse through these woody Countries and Bogs, scarce missing one Day. Winter or Summer, fair or foul, in the greatest Storms of Snow, but what they are employed in some kind of Chace." (Account of the Countries adjoining to Hudson's Bay, p. 41.)

Referring to the origin of the Indian war of 1774, R. Butler wrote on August 23 of that year: "2dly. They were preparing for a great Summer Hunt, which I can't Interpret into any hostile Intent by them." (Pennsylvania Archives, iv, 569.)

Writing from Fort Pitt, July 3, 1786, Col. J. Harmar said: "One John Bull (called by the Indians Sheebo) informs me that he left Detroit on the 29th of April, in company with one hundred Moravian Indians, men, women, and children, who are at present about four miles from Cuyahoga. That they have crossed the lake with the intention to settle near their old towns on the Muskingum, where a party of these Indians were formerly massacred; but as they are too late in the season for planting, their design is to remain and hunt near Cuyahoga until fall." (St. Clair Papers, 1882, ii, 13.)

¹²³ History of Vermont, i, 16.

¹²⁴ Annals of Philadelphia, ii, 362.

¹²⁵ *Ibid.*, ii, 362.

¹²⁶ For a full discussion of this term and the evidence on which the opinion expressed in the text is based, see a note in *The Nation* of March 8, 1900, lxx, 183, 184.

that the term became obsolete more than half a century before the expression Indian summer is known to have come into existence. There is, therefore, absolutely no historical connection between the two terms. Finally, though of course the time for harvesting the maize varied in different parts of the country, it nowhere appears to have been later than about the end of October; yet the Indian-summer season, indefinite as we have seen it to be, is generally placed in the month of November.¹²⁷

Our next theory brings us back to Indian mythology. In 1839 H. R. Schoolcraft wrote: "Mudjekewis and nine brothers conquered the Mammoth Bear, and obtained the Sacred Belt of Wampun, the great object of previous warlike enterprise, and the great means of happiness to men. The chief honour of this achievement was awarded to Mudjekewis, the youngest of the ten, who received the government of the West Winds. He is therefore called Kabeyun, the father of the winds. To his son, Wabun, he gave the East; to Shawondasee, the South, and to Kabibonokka, the North. Manabozho, being an illegitimate son, was left unprovided. When he grew up, and obtained the secret of his birth, he went to war against his father, Kabeyun, and having brought the latter to terms, he received the government of the Northwest Winds, ruling jointly with his brother Kabibonokka the tempests from that quarter of the heavens.

"Shawondasee is represented as an affluent, plethoric old man, who has grown unwieldy from repletion, and seldom moves. He keeps his eyes steadfastly fixed on the north. When he sighs, in autumn, we have those balmy southern airs, which communicate warmth and delight over the northern hemisphere, and make the *Indian Summer*."¹²⁸

¹²⁷ Very recently Dr. Edward Eggleston has expressed a different view, writing: "The season for reaping the familiar English grains was called by the emigrants the English harvest, the later ingathering of maize was the Indian harvest. From this distinction, perhaps, came the name Indian summer for the season of balmy weather that befalls in the autumn when a halcyon stillness pervades the hazy air and the whole landscape lies enchanted. The name was probably of merely agricultural origin, but is nowadays full of poetic associations with the delicious season and a vanished people." (Transit of Civilization from England to America in the Seventeenth Century, 1901, pp. 103, 104.)

Mrs. Wallace writes from Albany that her father was very well acquainted with Brant, who said that the Indian summer was the "Indian's summer" because at that time they gather the corn, the nuts, etc., that ripen in the first frost and are gathered in the following warm spell of weather. In addition to what has been said in the text, it may be pointed out that grain is harvested and nuts are gathered when they are ripe, regardless of the degree of temperature. Brant died in 1807, and in such letters written by him as I have seen (in his *Life* by W. L. Stone and elsewhere) there is no allusion to the subject.

¹²⁸ *Algie Researches*, ii, 214, 215. So far as I am aware, this passage (which was reprinted by Schoolcraft in 1856 in *The Myth of Hiawatha*, p. 88) has never before been quoted or referred to in connection with Indian summer. In 1861 the Rev. Peter Jones, whose Indian name was Kahkewaquonaby, gave this definition: "*Shahwundais*, m.; the god of the south, who makes the summer" (*History of the Ojebway Indians*, p. 162); but Jones did not speak of the Indian summer in connection with *Shahwundais*. On the other hand, Schoolcraft did not allude to the Indian summer when relating the stories of Manabozho.

Under date of October 20, 1854, Longfellow wrote in his journal: "The Indian summer is beginning early. A charming tradition in the mythology of the Indians, that this soft, hazy weather is made by the passionate sighs of Shawondessa, the South." (*Life*, 1891, ii, 277.)

In the following year Longfellow elaborated this notion in *Hiawatha* (*Poetical Works*, 1886, ii, 128, 129), as follows:

"Shawondasee, fat and lazy,
Had his dwelling far to southward,
In the drowsy, dreamy sunshine,
In the never-ending Summer.
He it was who sent the wood-birds,
Sent the robin, the Opechee,
Sent the blue-bird, the Owaisa,
Sent the Shawshaw, sent the swallow,
Sent the wild-geese, Wawa, northward,
Sent the melons and tobacco,
And the grapes in purple clusters.

Schoolcraft's first wife was a half breed Ojibway or Chipeway woman,¹²⁹ and it would seem as if he ought to have been familiar with the legends and traditions of that tribe. But I can find no earlier allusion to the legend than its mention by Schoolcraft in 1839, at which time the term Indian summer had been known among the whites for forty-five years, and had for nearly thirty years enjoyed a great popular vogue. It is difficult to avoid the conclusion that in the passage from Schoolcraft we have an account dressed up by the white narrator; and if such is the case, not much reliance can be placed upon it.¹³⁰ At all events, it is certainly unwarrantable to assume that an alleged Indian legend, unheard of until 1839, explains the origin of a term which had already been in existence among the whites for nearly half a century.

In 1861 we get from the Rev. Peter Jones, himself an Indian, another explanation of the origin of the name. He wrote: "This Nanahbozhoo now sits at the North Pole, overlooking all the transactions and affairs of the people he has placed on the earth. The Northern tribes say that Nanahbozhoo always sleeps during the winter; but, previous to his falling asleep,

"From his pipe the smoke ascending,
Filled the sky with haze and vapor,
Filled the air with dreamy softness,
Gave a twinkle to the water.
Touched the rugged hills with smoothness,
Brought the tender Indian Summer
To the melancholy north-land,
In the dreamy Moon of Snow-shoes."

¹²⁹She was the daughter of Mr. Johnson, an Irishman, and of his wife, Oshauguscodaywaygua, herself the daughter of Wabajek, a Chippeway or Ojibway chief. In his Sketches of a Tour to the Lakes, pp. 181-190, T. L. McKenney gives some details about Mr. Johnson and his family.

¹³⁰Scholars now look askance at Schoolcraft. Dr. Frank Russell of Harvard University writes me that "we do not consider Schoolcraft reliable as a final authority." Mr. Lucien Carr of Cambridge writes me that Schoolcraft "is not always trustworthy." Prof. A. F. Chamberlain of Clark University writes me that "while I would hardly say that Schoolcraft made up the myth, he was quite equal to so doing." In 1867 Parkman, referring to Schoolcraft's extensive work on the Indian Tribes, said: "It is a singularly crude and illiterate production, stuffed with blunders and contradictions, giving evidence on every page of a striking unfitness either for historical or philosophical inquiry, and taxing to the utmost the patience of those who would extract what is valuable in it from its oceans of pedantic verbiage." (Jesuits in North America, p. lxxx.)

In 1868 Dr. Brinton wrote of the same work: "Mr. Schoolcraft was a man of deficient education and narrow prejudices, pompous in style, and inaccurate in statement. The information from original observers it contains is often of real value, but the general views on aboriginal history and religion are shallow and untrustworthy in the extreme." (Myths of the New World, p. 40.)

In 1883 Horatio Hale, writing of the Onondaga chief Hiawatha, said: "This legend, or, rather, congeries of intermingled legends, was communicated by Clark to Schoolcraft, when the latter was compiling his 'Notes on the Iroquois.' Mr. Schoolcraft, pleased with the poetical cast of the story, and the euphonious name, made confusion worse confounded by transferring the hero to a distant region and identifying him with Manabozho, a fantastic deity of the Ojibways. Schoolcraft's volume, which he chose to entitle 'The Hiawatha Legends,' has not in it a single fact or fiction relating to Hiawatha himself or to the Iroquois deity Taronhiawagon. Wild Ojibway stories concerning Manabozho and his comrades form the staple of its contents. But it is to this collection that we owe the charming poem of Longfellow; and thus, by an extraordinary fortune, a grave Iroquois lawgiver of the fifteenth century has become, in modern literature, an Ojibway demigod, son of the West Wind, and companion of the tricky Paupukewis, the boastful Iagoo, and the strong Kwasind. If a Chinese traveler, during the middle ages, inquiring into the history and religion of the western nations, had confounded King Alfred with King Arthur, and both with Odin, he would not have made a more preposterous confusion of names and characters than that which has hitherto disguised the genuine personality of the great Onondaga reformer." (The Iroquois Book of Rites, p. 36.)

Evidently we can not accept a legend merely on the authority of Schoolcraft. A slight inaccuracy in Hale's statement, however, may be pointed out. Schoolcraft's The Myth of Hiawatha (or The Hiawatha Legends) was published in 1856, a year after the appearance of Longfellow's Hiawatha; hence, it is not "to this collection that we owe the charming poem of Longfellow." As already stated, it was from Schoolcraft's Algic Researches that Longfellow obtained his view of the Indian summer.

fills his great pipe, and smokes for several days, and that it is the smoke arising from the mouth and pipe of Nanahbozhoo which produces what is called 'Indian summer.'" ¹³¹

According to Brinton, Nanibozhu is "the same deity that reappears under the names *Manabozho*, *Michabo*, and *Messou*, among the Chipeway tribes."¹³² Nanibozhu rejoices in a great variety of names, the meanings of which are not known with certainty. That the story was exceedingly popular is evident from the many allusions to it during three centuries¹³³, but unfortunately we obtain no version of it by an Indian until well into the nineteenth century. Prof. A. F. Chamberlain, who has made a special study of the legend, pertinently remarks: "It is matter of regret that the Nanibozhu tales have not all come down to us or been recorded in the language of the Indian narrator himself. Had we the *ipsissima verba* in the various Algonkian dialects, it is reasonable to suppose that much that is archaic and ancient in speech would be forthcoming. We cannot be certain that folk-etymology has not been at work. * * * No doubt each narrator tells the story in his own way, omits some points that seem to him of little value or interest, and by and by inserts into the legend incidents which do not occur in its archaic form. Then he may deem it necessary to give a local coloring to the tale, and may be willing even to point out the exact spots where the events narrated took place. It is only by possessing accurate accounts of these myths from different sources and in different dialects, that we shall be able to determine with reasonable accuracy what the oldest form of each particular legend actually was. Unfortunately most of them have been recorded in English or

¹³¹History of the Ojibway Indians, p. 35. In 1868 Dr. Brinton wrote: "From the remotest wilds of the northwest to the coast of the Atlantic, from the southern boundaries of Carolina to the cheerless swamps of Hudson's Bay, the Algonkians were never tired of gathering around the winter fire and repeating the story of Manibozho or Michabo, the Great Hare. * * * In many of the tales which the whites have preserved of Michabo he seems half a wizzard, half a simpleton. * * * What he really was we must seek in the accounts of older travellers, in the invocations of the jossakeeds or prophets, and in the part assigned to him in the solemn mysteries of religion. * * * In the autumn, in 'the moon of the falling leaf,' ere he composes himself to his winter's sleep, he fills his great pipe and takes a godlike smoke. The balmy clouds float over the hills and woodlands, filling the air with the haze of the 'Indian summer.'" (Myths of the New World, pp. 161-163.)

The "moon of the falling leaf" is, according to Jones, October. (History, p. 136.) It is clear that Brinton drew his account of the Indian summer from Jones, to whom indeed he refers in a note.

Miss Mickle of Toronto sends me the following modern version: "When the summer is past and all the fruits are gathered, for everything has grown and ripened and is dying, then the great Manitou knows that his work for the year is over, and being weary he goes to Manitoulin Island to rest and smoke his pipe in peace before the winter comes. And as he lies there smoking, the fire in his pipe warms the earth, and the smoke of it spreads over the nations and covers every lake and hill. It is believed that Manitoulin Island was so named from this legend, but of that I am not sure."

For references to Manitoulin Island, see the Jesuit Relations and Allied Documents, lv, 132, 321; N. Perrot, *Mémoire sur les Mœurs, Coustumes et Religion des Sauvages de l'Amérique Septentrionale*, 1864, pp. 126, 290; A. Henry, *Travels*, 1809, p. 36; T. L. McKenney, *Sketches of a Tour to the Lakes*, 1827, p. 164. There is no allusion by these writers to the smoking Manitou of Miss Mickle's version.

Mrs. Mary C. Judd writes from Jefferson, Wis., that she knows of only one term given by the Indians to Indian summer,—namely, *Menabozho's* summer, which is the name among the Chippeways. She adds that a number of tribes, such as the Mandans and some others located in Dakota, have no name for the season, as it means little to them.

¹³²Essays of an Americanist, 1890, p. 131.

¹³³See the Jesuit Relations and Allied Documents, v, 154-156, 285, vi, 156-158, l, 288, liv, 156, 200; Charlevoix, *Histoire et Description Générale de la Nouvelle France*, 1744, v, 416, vi, 64; Perrot, *Mémoire*, &c., pp. 3-8, 12, 19, 160, 176; W. Strachey, *Historie of Travels into Virginia Britannica*, 1869, pp. 98, 99; Schoolcraft, *Algic Researches*, i, 134-174, *History, Condition and Prospects of the Indian Tribes*, v, 418-490; A. Henry, *Travels*, 1809, pp. 212, 213; T. L. McKenney, *Sketches of a Tour to the Lakes*, 1827, pp. 302-305; J. Tanner, *Narrative*, 1830, pp. 192-194, 322, 351-368; D. G. Brinton, *Myths of the New World*, 1868, pp. 160-169; W. J. Hoffman, *American Anthropologist*, ii, 215-223, iii, 243-258; A. F. Chamberlain, *Journal of American Folk-Lore*, iv, 198-213, v, 291.

French only, and not in the native tongue of the Indian narrator."¹³⁴

The earliest allusion which I have been able to find in these stories to the smoking of Nanibozhu is in a passage written May 21, 1852, by the Rev. Peter Jacobs (Pahtahsega), who said: "We encamped for the evening near the mountains and point called by the Indians, Nanahboshoo. * * * There is a large stone here, near the Nanahboshoo mountains, which is very remarkable. The stone looks as if some man had sat on the rock and made an impression on it, as one would on the snow in winter. This was not carved by any Indian, but it is very natural. The impression is very large, and is about six times as large as an impression made in the snow by a man. The Indians say that Nanahboshoo, a god, sat here long ago, and smoked, and that he left it for the west. Every time the Indians pass here, they leave tobacco at the stone, that Nanahboshoo might smoke in his kingdom in the west. The Indians tell many traditions respecting Nanahboshoo, and of his wonderful deeds."¹³⁵

There is here no trace of Indian summer, and the allusion to this season, in connection with the tales of Nanibozhu, appears to be due to Jones. In other words, we do not meet with the Indian summer in this legend until sixty-seven years after the first appearance of the term among the whites. There is no evidence known to me to show that such a season was recognized by the Indians, or that if it was recognized by them it had a particular name, and in no book relating to the Indians have I found the slightest allusion to the Indian summer until 1839.¹³⁶

In 1889 the editors of the Century Dictionary observed: "The name is due to the fact that the phenomena of the Indian summer are much more distinctly marked in the region chiefly occupied by the Indians at the time this term became current than they are in the more eastern regions, to which the white population was chiefly limited prior to the beginning of the present century."

As we are not informed either when or where the term first became current, this passage offers no definite point for discussion. We are, however, told that the Indian summer is "a period in autumn characterized by calm and absence of rain," and that "this condition is especially well manifested in the upper Mississippi valley." If from this we are to infer that,

¹³⁴ Journal of American Folk-Lore, 1891, iv, 194, 195, 196.

¹³⁵ Journal, Boston, second edition, 1853, p. 16. This passage is referred to but not quoted in Professor Chamberlain's article. The places mentioned by Jacobs are on the border of Lake Superior. In 1809 A. Henry wrote: "From Mamance to Nanibojou is fifteen leagues. Nanibojou is on the eastern side of the Bay of Michipicoten. At the opposite point, or cape, are several small islands, under one of which, according to Indian tradition, is buried Nanibojou, a person of the most sacred memory. Nanibojou is otherwise called by the names of Minabojou, Michabou, Messou, Shaetae, and a variety of others, but of all of which the interpretation appears to be, *The Great Hare*. The traditions, related of the Great Hare, are as varied as his name. * * * I have heard many other stories concerning Nanibojou, and many have been already given to the public; and this at least is certain, that sacrifices are offered, on the island which is called his grave or tumulus, by all who pass it. I landed there, and found on the projecting rocks a quantity of tobacco, rotting in the rain; together with kettles, broken guns, and a variety of other articles. His spirit is supposed to make this its constant residence; and here to preside over the lake, and over the Indians, in their navigation and fishing." (Travels, pp. 212, 213.)

It will be observed that Henry speaks of Nanibozhu as buried under an island in Lake Superior, that Jacobs makes the hero god leave Lake Superior for his kingdom in the West, and that Jones represents him as sitting at the North Pole. Professor Chamberlain writes me that "the smoking Nanibozhu may be authentic," but adds that he is unable to give any further information in regard to the legend.

¹³⁶ I desire to emphasize this fact, which is certainly remarkable. In the Nanibozhu tales we are introduced to a difficult and intricate problem, and one that can be adequately treated only by those who have a special knowledge of Indian mythology. It is possible that a minute study of these tales will lead to some more definite conclusion than, with the evidence at present in my possession, I feel able to reach; and these tales are commended to specialists as a subject for inquiry.

in the opinion of the editors, the term first became current in the valley of the Mississippi, the opinion must be pronounced erroneous; for, as we have seen, the term was employed in Pennsylvania, New York, and New England before it reached the Mississippi valley.

More recently another suggestion has been offered. The Indians were deceitful, and the uncertainty as to the Indian character became a by-word, and hence, by a poetical transition, the short seasons of pleasant weather in November may have been known as "Indian summers" because the pleasant weather could not be relied upon and was sure to be followed by some sudden and severe cold northerly winds and snow.¹³⁷ This suggestion is interesting, but the present writer does not know of any evidence by which it can be supported.

There are perhaps no words or phrases which are so difficult to trace to their origin as those which are, or may be, or are supposed to be connected with the Indians. Few Indians before 1800 could write, of the few who could still fewer did, and of the few who did none appear to have written about their own people.¹³⁸ Consequently our knowledge of the languages, religions, myths, legends, traditions, and manners and customs of the Indians come to us through the whites; and among peoples which have no literature of their own it is notoriously difficult to arrive at true accounts in regard to such matters. There is certainly no lack of variety in the theories which have been discussed, but however it may appear to others, it does not seem to me that any one of them has any substantial basis in fact. It is possible that the name will some day be traced to an Indian myth or legend; but we can not at present say with certainty that the allusions to the Indian summer in those tales related by Schoolcraft and by Jones are genuine, and the evidence points to the conclusion that these allusions have found their way to the Indians from the whites.¹³⁹ We shall, therefore, be obliged to suspend judgment with respect to the origin of the name of the Indian-summer season until fresh evidence as to the early history of the term is produced.¹⁴⁰

¹³⁷ This suggestion has occurred to Professor Abbe, whose words I use, and also to others. Miss Mickle calls my attention to a passage written by Martha Bockée Flint in 1900: "In our early history, in the days of lurking ambush and midnight onslaught, 'Indian' was the synonym of deceit, and the mellow sweetness of these fall days * * * was not to be trusted." (Garden of Simples, p. 137.)

¹³⁸ The Rev. Samson Occom printed a sermon in 1772, and the famous Joseph Brant made several translations from English into Indian and contemplated writing a history of the Six Nations, but unfortunately this intention was never fulfilled. (See his Life by Stone, 1838, ii, 288.) It is not until well into the nineteenth century that we get books about Indians by Indians.

¹³⁹ A curious illustration of this process is contained in the letter sent by Mrs. Judd. Referring to the Chippeways, she writes that Menabozho "is their Manitou of every day life and happenings, and the Chippewa children call Santa Claus by this name."

¹⁴⁰ Dr. Murray writes me: "It would be interesting if the real history of the American Indian Summer could be made out, but the history of such phrases is often irrecoverable—not from any want of diligence, but because no diligence can discover that of which no record was made at the time. There is no more possibility of discovering the origin of every word and phrase, than there is of discovering the history of every old house, the name of its builder, the workmen employed, etc."

Some odds and ends may be brought together in this note. In 1872 some unknown person said: "All this accords with the theory to which allusion has been made as that of a member of the club to whom Mr. Flagg dedicates his book, and which * * * may be here stated to import that in late October, when the early colonists thought the winter had fairly set in, the Indians said, 'No, no; there will be summer yet.' And when the mild days came, Carver and Standish and others said, remembering, 'Lo! the Indian summer!'" (Harper's Magazine, xlv, 297, 298.)

In 1880 Moncreux D. Conway wrote: "And what is a Martin summer? It is what, dear reader, you would call an Indian summer. As that was said by the aboriginal American to be the smile of the Great Spirit, this was said by the original Christian of Touraine to be the smile of St. Martin." (Ibid. lxi, 383.)

Some reader may wish to look up the following references: American Journal of Science, x, 204, xviii, 66, 67. Second Series, i, 168, 189; L. F.

That the term Indian summer was introduced into England from this country is made certain from the evidence presented in this paper; but, singularly enough, before the American expression found its way across the Atlantic, and even before the American expression made its appearance in the United States, there occurred in an English writer an example of the term Indian summer itself. Writing from London July 12, 1778, Horace Walpole said: "Has not this Indian summer dispersed your complaints?"

Is it possible that this is an anticipation of our American expression? Did Walpole have in mind the North American Indians, the West Indies, or India? Some further passages from his letters throw light on these questions. On August 22, 1778, he again wrote: "I hope this Elysian summer, for it has been above Indian, has dispersed all your complaints. Yet it does not agree with fruit; the peaches and nectarines are shrivelled to the size of damsons, and half of them drop. Yet, you remember what portly bellies the peaches had at Paris, where it is generally as hot."

On September 5, 1779, Walpole remarked: "Lady Blandford * * * told me when I expostulated with her, that the machine was worn out, and that life was of no value when uncomfortable. She has persisted perfectly cool and in her senses, begging for laudanum, suffering dreadfully, and the more, as you may imagine, from our late more than West Indian heats."

Finally, on August 16, 1780, Walpole observed: "My own little landscape is brown and parched. A sultry east wind has reigned for eight-and-twenty days, and left us neither grass nor leaves. This is the third summer that our climate has been growing as Asiatic as our Government; and the Macphersons and Dalrymples, I suppose, will hail the epoch of the introduction of camels and dromedaries in lieu of flocks of sheep; yet a Russian fleet riding in the Downs is a little drawback on our Ottoman dignity."¹⁴¹

It will be observed that these letters were written in the months of July, August, and September. Clearly, therefore, Walpole could not have had in mind, even if he knew about it, our supposed autumnal spell of peculiar weather, for though that has been stated to occur in every month from September to January, yet no one as yet has been rash enough to place it in July or August. Taking into consideration the high temperature of those three summers, the allusion both to the West Indies and to India, it seems tolerably certain that those two parts of the world were connected in Walpole's mind with intense heat, and that his "Indian summer" was merely a chance phrase giving expression to this association of ideas.¹⁴²

Kaemtz, Complete Course of Meteorology, 1845, p. 283; Proceedings of the American Association for the Advancement of Science, xi, 203; Rear Admiral R. Fitz Roy, The Weather Book, 1863, pp. 76, 166, 167; Harper's Magazine, 1864, xxx, 124, 125; American Cyclopaedia, 1876, xv, 466; K. C. Kwong, Dictionary of English Phrases, 1881, p. 527; Signal Service Notes, No. IX, Weather Proverbs, 1883, pp. 89, 104; The Bizarre, iii, 30; American Notes and Queries, ii, 268, 269, v, 185, 226, viii, 32, 33; R. Inwards, Weather Lore, 1893, p. 8; B. W. Green, Word-Book of Virginia Folk-Speech, 1899, p. 199.

¹⁴¹ Letters, 1891, vii, 94, 112, 246, 425. I am again indebted to Mr. E. P. Merritt for calling my attention to these passages.

¹⁴² What seems to be precisely the same idea is found in a letter written from New Jersey by an Englishwoman. Under date of April, 1820, Frances Wright D'Arusmont remarked: "The close of the winter, for one may not term it the spring, is here decidedly the least agreeable season of the year. Siberian winds to-day and Indian heats to-morrow, and then driving sleet the next day, and so on, from heat to cold and cold to heat, until the last finally prevails, and all nature bursts into sudden life as by the spell of a magician." (Views of Society and Manners in America, 1821, p. 451.)

Last spring Professor Abbe suggested that "some early traveler who had been in India and had experienced the dry, hazy weather of the dusty Indian plains recognized nearly the same kind of sky in our Indian summer haze." Of the British officers who served in America during the Revolutionary war, some, like Cornwallis, afterwards had distinguished careers in India, but probably few had been in India before their Ameri-

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

- Science*. London. Vol. 15.
Clayton, H. Helm. The Daily Barometric Wave. P. 232.
Scientific American Supplement. New York. Vol. 53.
Myers, Carl E. Aerial Navigation Problems. P. 21859-60.
 — London Fogs. P. 21880.
Maunder, (Mrs.) Walter. The Polar Rays of the Corona. P. 21887.
Bell, Arthur H. The flight of a Hallstone. P. 21903-4.
American Inventor. Washington. Vol. 8.
Claudy, C. H. Wind Velocity and Direction. No. 13. Pp. 1-3.
 — The Kite in Meteorology. No. 14. Pp. 1-3.
Geographical Journal. London. Vol. 19.
 — Precipitation on Mountain Slopes. Pp. 192-194.
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Shaw, W. N. Experiments on Ventilating Cows. Pp. 344-345.
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Crookes, William. Radio-Activity and the Electron Theory. Pp. 400-402.
London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. London. 6 Ser. Vol. 3.
Sutherland, William. Ionization, Ionic Velocities, and Atomic Sizes. P. 161-177.
Kirkby, P. J. On the Electrical Conductivities Produced in Air by the Motion of Negative Ions. P. 212-225.
Chappuis, P. Notes on Gas-Thermometry. P. 243-247.
Proceedings of the Royal Society of London. London. Vol. 69.
Wilson, W. E. The Effective Temperature of the Sun. Pp. 312-320.
Symons's Meteorological Magazine. London. Vol. 37.
 — Dust Showers on the Southwest of England. Pp. 1-4.
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Teisserenc de Bort, L[éon]. Étude des variations journalières des éléments météorologiques dans l'atmosphère. Pp. 253-256.
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Sebillant, — Sur une chute de pluie observée à Périers. [Note.] Pp. 324-325.

can campaigns. As for travelers, the only one I can recall in this country before 1800 who had previously been in India was Thomas Twining. He sailed from India in 1795, landed in Philadelphia in April, 1796, visited Baltimore, Washington, and New York, and sailed for England in June. While here he kept a journal, which has recently been published, but it contains no allusions to climate. (Travels in India a Hundred Years Ago, with a Visit to the United States, London, 1893, pp. 347-448; and Travels in America 100 Years Ago, New York, 1894.)