due to the Canadians" (p. viii.), are as follows: "*Mit-ass, n.* Cree, Mitas (Anderson). Leggings. A word imported by the Canadian French (p. 17). *Sis'-ki-you, n.* Cree (Anderson). A bob-tailed horse (p. 23). *Totoosh*, or *Tatoosh, n.* Chippeway, totosh (Schoolcraft). The breasts of a female, milk. *Totoosh lakles* [*la graisse*], butter."

The other words, the second of which is clearly Algonkian, Gibbs thus describes: "*Moos-moos n.* Klikatat *músmus;* Chinook, *emúsmus.* Buffalo, horned cattle. The word, slightly varied, is common to several languages. Mr. Anderson derives it from the Cree word *moostoos*, a buffalo, and supposes it to have been imported by the Canadians; but Father Pandosy makes *músmus* Yakama" (p. 17). "*Wap pa-too, n.* Quære, *u. d.* The root of the *Sagittaria sagittifolia*, which forms an article of food; the potato. The word is neither Chinook nor Chihalis, but is everywhere in common use" p. 28). "*Le-pish'-e-mo, n.* Quære, *u. d.* The saddle-blanket and housings" (p. 15).

The last of the above three words is most likely of mixed French and Algonkian etymology.

In the "Manual of the Oregon Trade Language, or Chinook Jargon," published by Mr. Horatio Hale in 1890, the following words occur without their Algonkian origin being indicated:

Lepishemo (lipishímo), saddle housing (p. 47).
Mitass, J [argon] (mitás), leggings (p. 48).
Totoosh, J [argon] (totúsh), breast, udder, milk (p. 52).

And the English-Chinook vocabulary yields the following, of which the origin is likewise not noted:

Breasts, *totoosh* (p. 54).
Butter, *totoosh lakles* (*la graisse*, Fr.), p. 23.
Leggings, *mitass* (p. 57).
Milk, *totoosh* (p. 58).
Potato, *wappatoo* (p. 59).

The word *moosmoos* also finds place in Professor Hale's vocabulary, with the meanings "buffalo, cattle, ox," and is set down as [Chinook] (p. 48). The words of Algonkian origin which are to be found in the vocabulary of Chinook, as given by the above authorities, are consequently: *Kinni-kinnik*, [*le*] *pishemo, mitass, siskiyou, totoosh, wappatoo.*

Regarding the etymology of these loan-words, the following may be said:

Kinni-kinnik. Derived directly or indirectly from Otcipwē. The cognates are Otcipwē (Baraga) kiniginige, "I am mixing together something of different kinds." (Cuoq) *kinikinige*, "mêler ensemble des choses de nature différente." The radical is seen in Algonkin (Cuoq) kinika, "pêle-mêle" = Cree *kiyekaw.*

Lepishimo. This word evidently consists of the French article *le* and a radical [*a*]*pishemo.* This latter corresponds to the Otcipwē (Baraga) *apishamon*, "anything to lie on; a bed; *apishemo*, "I am lying on something." Compare the western Americanism *apishamore*, which Bartlett (Dict. of Americanisms, 1877) thus defines: "*Apishamore* (Chippewa, *apishamon*). Anything to lie down on; a bed. A saddle-blanket made of buffalo-calf skins, much used on the prairies."

Mitass. Directly or indirectly (through French-Canadian) from Otcipwē or Cree. The cognate words are: Otcipwē (Baraga), *midâss;* Algonkin (Cuoq), *mitas;* Cree (Lacombe), *mitâs.* The word exists in Canadian-French in the form *mitasse.* Dr. Franz Boas kindly informs me that "legging" in Chinook and Clatsop is *imētas.*

Siskiyou. Though this word is assigned a Cree origin by Mr. Gibbs, its etymology is very uncertain. Blackfoot *sakhsíu*, "short," and Cree *kiskikkuttew*, "he cuts in two," offer themselves for comparison, but with no certainty.

Tatoosh, totoosh. From Cree or Otcipwē. The cognate words are: Cree (Lacombe), *totosim*, "mammelle, pis;" Otcipwē (Baraga), *totosh*, "breast, dug, udder;" Alkonkin (Cuoq), *totoc*, "mammelle."

Wappato, wappatoo. From Cree or Otcipwē. The cognate words are: Cree (Lacombe) *wâpatow*, "champignon blanc;" Otcipwē (Baraga), *wâbado*, "rhubarb;" Algonkin (Cuoq) *wabato*, "rhubarbe du Canada." It is in all probability a derivative from the root *wap-*(*wab-*), "white."

Another word may be added to the list, viz., *pāpūs* (*papoose*) = child. This word is used by the speakers of Chinook in eastern British Columbia. The Algonkin origin of the word has been disputed by some, but there is every reason to believe that it is connected with the root seen in the Massachusetts *papeississu* (Eliot) = "he is very small;" *peisses* (Eliot), "child;" *pe-u* (Eliot), "it is small." From this root there seems little doubt that the word *papoos* or *papoose* found in Roger Williams, and in Wood ("New Engl. Prospect"), has been derived, as Dr. Trumbull points out.

It might be remarked that the words *kinni-kinnik, lepishemo, mitas, totoosh, wapato*, and *papoose* were all heard by the writer in western British Columbia in the summer of the present year, so they are still in use as part of the jargon. The word *siskiyou* was not heard and is probably obsolescent.

It is a remarkable and an interesting fact that the Algonkian family of languages has borne its part in the formation of the curious jargon of the Pacific coast of North America. The presence there of these words is due in part to isolated Otcipwēs and Crees who have crossed the Rockies, and to the French-Canadian half-breeds in whose language these words are also to be found.

A. F. CHAMBERLAIN.

Worcester, Mass., Oct. 24.

Auroral Phenomena.

ON Sept. 9 there was seen at Lyons, N.Y., a band of light narrower than the Milky Way, arising from the western horizon and passing nearly vertically through the constellations of the Northern Crown and Lyre, just south of the zenith, and thence downward at times to the eastern horizon. There was an aurora at the time in the northern sky, but this band maintained its position throughout the evening entirely independent of the display, although varying somewhat in brightness in sympathy with the aurora and evidently being itself of an auroral nature. On Sept. 10 and 11 an aurora was visible in Great Britain, and, as appears from descriptions in *Nature* for Sept. 17 (p. 475) and Sept. 24 (p. 494), a band of light similar to that which constituted such a remarkable feature in the display at Lyons was likewise seen in that locality also. Other instances have been noted by the writer in which some peculiarity of form or color has attended an outbreak of the aurora on both sides of the Atlantic.

There is this evening in the western sky a magnificent display of red light similar to the sunset glows which attracted so much attention a few years since. Three-quarters of an hour after sunset the entire western heavens are lurid red, resembling the reflection from a conflagration.

M. A. VEEDER.

Lyons, N.Y., Oct. 29.

Chautauqua and other Iroquois Names.

MR. ALBERT S. GATSCHET has kindly sent me his paper on the "Origin of the Name Chautauqua," of which he says, "All the information above was obtained from J. N. B. Hewitt, in Washington, D.C.," but I may be permitted to add a few words on this and other names. I may premise that I have a list of about 1,200 Indian names of places in New York, about half of which are either obsolete, or applied to places little known. Many local names can be obtained of the Indians on any reservation.

First, of pronunciation, in which Mr. Gatschet's informant differs from other authorities. It is a little too positive to say that "To spell it 'Chatakwa' would conform better to scientific orthography, for the first two syllables are both pronounced short." Having but accidentally used the name in conversation with my Onondaga friends, it is of little importance to say that they gave it the usual pronunciation, for I was simply trying to get its meaning. Others, who have given it attention, are quite decided on this point. Mr. O. H. Marshall was an acknowledged authority on local Indian names. In his "De Celoron's Expedition to the Ohio," he gives several forms. Among these, Alden wrote it as pronounced by the Seneca chief Cornplanter, "Chaud-daukwa." Mr. Marshall adds, "It is a Seneca name, and in the orthography of that nation, according to the system of the late Rev. Asher Wright, long a missionary among them, and a fluent speaker of their language, it would be written 'Jah-dah-gwah,' the first two vowels being long, and the last short." Mr. L. H.

Morgan gives the name in all but the Oneida dialect, and with but slight variation. In all he makes *a* sound as in far. The French spelling would prove but little, but Sir William Johnson wrote it "Jadaghque," and thus it appears on Lake Erie, on the boundary map of 1768.

Mr. Marshall took notice of the various meanings ascribed to the name, as "The place where a child was swept away by the waves;" "the foggy place;" "the elevated place;" "the sack tied in the middle;" but preferred the one given him by "Dr. Peter Wilson, an educated Seneca." This was "where the fish was taken out;" agreeing with the meaning furnished Mr. Gatschet. As Mr. Marshall's paper is not accessible to all, I copy the tradition, which is very simple, as given by Dr. Wilson. "A party of Senecas were returning from the Ohio to Lake Erie. While paddling through Chautauqua Lake, one of them caught a strange fish and tossed it into his canoe. After passing the portage into Lake Erie they found the fish still alive, and threw it in the water. From that time the new species became abundant in Lake Erie, where one was never known before. Hence, they called the place where it was caught Jah dah-gwah, the elements of which are Ga-joh, 'fish,' and Ga-dah-gwah, 'taken out.' By dropping the prefixes, according to Seneca custom, the compound name 'Jah-dah-gwah' was formed."

Mr. Gatschet simply reverses this story, taking the fish from Lake Erie. On the other hand, we have another careful writer, Mr. Morgan, interpreting the name as the "Place where one was lost."

From various old documents it is evident that the name was applied to the lake and also to the nearest spot on Lake Erie. It first appears in De Celoron's journey, but was evidently in use before. A lead plate, which the Indians purloined from him, was marked by mistake to be placed at the confluence of the Ohio and the Tchadakoin, July 29, 1749. In the one buried, this was corrected to the confluence of the Ohio and Kanaaiagon, now the Conewango. De Celoron reached the Chatakouin portage July 16, 1749, "and arrived at the end of the portage, on the banks of Lake Chatacoin, on the 22d."

It is quite probable that the portage terminating at Chautauqua Lake on the one hand, gave the name to the landing on Lake Erie on the other, according to Indian custom. This spot is often referred to about that time. Stephen Coffen, in 1753, being then with a body of French, "arrived at Chadakoin on Lake Erie, where they were ordered to fell timber, and prepare it for building a fort there." M. Morang liked the place no better than De Celoron had done, "the river of Chadakoins being too shallow to carry any craft with provisions, etc., to Belle Rivier." M. Mercie found another place at Erie, "fifteen leagues to the south-west of Chadakoin." Others used similar terms. On his map of 1758, M. Pouchot applies the name to the Conewango, calling the stream flowing from the lake the River Shatacoin. He seems singular in this, as Chautauqua Creek had been thus called but a few years before.

Mr. Gatschet explains the use of the prefix T'ka, much as Morgan does. The latter, however, invariably gives the full sound, Tecar, or Teka, instead of the shortened, which is customary. In first taking down names from the Onondagas I did the same, being anxious to have every syllable fully pronounced, but soon found that this did not give the word sound. In this case that is best preserved by T'kah, which I have long used.

The discrepancy in the translation of Indian words is at first surprising, but many are purely the fancies of white men, and these are as persistent as any. Thus, in a familiar instance, Skaneateles, which means "long lake," is pertinaciously rendered "beautiful squaw." Cayuga is an instance where the Indians themselves do not agree, for it was translated "at the mucky land" for Mr. Morgan. David Cusick says it means "mountain rising from water," while Albert Cusick translated it for me as "where they drew their boats out of the water." I am inclined to think this difference may be more apparent than real, all possibly referring merely to an incident in the Hiawatha legend.

Indian names in New York come from very trivial things, and probably always have. Honcoye, "a finger lying," is a case in oint. The amputated member, lying in the way, was a matter of comment or description, and affixed itself to the village more than the place. Once the name of a town it migrated with the town. The favorite village name of Ka-no-wa-lo-hale, "head on a pole," was used in more than one place at the same time.

I have noted one curious thing in Indian pronunciation, that they do not always pronounce names among themselves as they do to the whites, so that error is often perpetuated on the best of authority. An Onondaga never pronounces the name of his nation in conversation among the whites as he does among his own people, but invariably gives *a* the long instead of broad sound, which he always uses in his own language in this word. I do not know how this commenced, but it was long ago, and may have come from early attempts to conform to supposed rules among us. It is a curious fact, however, and shows the need of care in taking down words.

Among the sonorous names preserved in New York, very few are poetical, and where they are made such, with rare exceptions, their correctness may be suspected. They are seldom unaltered, letters being changed or syllables dropped. In a large proportion of cases they are rendered in the Mohawk dialect west of Albany, as that people was most directly in contact with the colonists. Thus we frequently find Mohawk pronunciation in the territory of the Onondagas and Senecas

As in the case of Chautauqua, names are often taken from one place and applied to another. Schenectady, "Beyond the pines," is an instance. It belongs to Albany, but became expressive when used in either way. When Corlaer bought Schenectady the Indians knew it as Schonowe, 'the great plain." The name of Onondaga followed the various removals of the village, and this is true of most of the Seneca towns. As with us, the same names would co-exist. The Oneidas had, among their lakes, Skaniadoris; the Onondagas, Skaneateles; the Senecas, Skaneatice; all meaning a long lake, but not necessarily large. The allusions to hemlocks, in the same way, are quite frequent.

One cause of confusion in the interpretation of names is the similarity of sound. The name of Canastota is probably rendered correctly Kanetota, "a pine tree standing alone;" but the Onondagas know it as Kanosta, "the frame of a house," which they greatly admired when the first one was built there. A facetious friend has suggested a Latin derivation from *canis totus*, the whole dog, which would do quite as well as many interpretations of Indian names. Occasionally one meets with a name strongly suggestive of European origin. Two of these are quite noteworthy. One is that of Tappan, a well known personal name with us, but also that of an early Indian tribe, living on Tappan Bay, on the Hudson River. Of this Heckwelder long ago wrote, "This is from the Delaware language, and derived from Thuphane, or Tup-han-ne, 'Cold Spring.'" The other is the name Seneca, which appears on Dutch maps as early as 1614. The Dutch knew the Iroquois only as the Mohawks and Senecas, and used the names by which the Algonquin tribes called them. Both divisions had strong cannibal tastes, and for this were held in abhorrence by other nations. The Mohawks were known in New England as "men-eaters," and the name of the Senecas seems to have had much the same meaning elsewhere. Of course it is no more an Iroquois word than Maqua or Mohawk. It may come from the radical word *sinni*, "eat," and probably does.

Niagara has no allusion to the falls, but is simply a "neck," suggested by its connecting two great lakes. It takes many forms, and the Neutrals called it On-gui-a-ah-ra in 1640, having a village there of the same name. As the name of Erie means a cat, I had some doubt, for a time, whether Cusick's translation of another name of Lake Erie, Kau-ha-gwa-rah-ka, "a cap," might not be a misprint, but it is correct. There were several names, of course, for that lake. The Onondagas know Lake Ontario as the lake at Oswego, but in the middle of the last century they called Lake Erie Sa-hi-qua-ge, which the English rendered Swee-ge. The carrying place at Niagara was then known as Och-swee-ge. Oswego river first appears by this name in 1670, with French spelling, and where the present Seneca River leaves Cayuga lake. Father Raffeix said, "The river Choueguen, which rises in this lake, soon branches into several canals." The French sometimes prefixed the letter *O*, but their pronunciation

must be allowed for in all Indian words we have from them. The English usually called the Oneida and Oswego Rivers the Onondaga. In a similar way Genesee River was often termed the Seneca.

These notes need not be carried further, for it is my present purpose merely to direct attention to a few points. Examination will show that large numbers of Indian names are still in use, but with no better meanings than our own.

W. M. BEAUCHAMP.

Baldwinsville, N.Y., Oct. 31.

Battles and Rain.

IN *Science* for Oct. 16 I quoted the only part I had then seen of the now rather famous reference by Plutarch to the occurrence of rain after great battles, and I then considered it as having the meaning commonly ascribed to it. Mr. Powers, however, now tries to show that the commonly accepted meaning is erroneous, and supports himself by the original passage. It seems to me that the ordinary view is correct, and that Mr. Powers, by omitting a portion and by an incorrect interpretation of the passage, has been misled. I will give the passage as translated by Langhorne, italics, punctuation, and all.

"From these writers [historians] we learn, that the Massilians walled in their vineyards with the bones they found in the field; and that the rain which fell the winter following, soaking in the moisture of the putrefied bodies, the ground was so enriched by it, that it produced the next season, a prodigious crop. Thus the opinion of Archilochus is confirmed, that *fields are fattened* with blood. It is observed, indeed, that extraordinary rains generally fall after great battles; whether it be that some deity chooses to wash and purify the earth with water from above, or whether the blood and corruption, by the moist and heavy vapors they emit, thicken the air, which is liable to be altered by the smallest cause." Dryden's translation begins this last statement as follows: "It is an observation, also, that extraordinary rains pretty generally fall after great battles," etc.

It will be seen at once that the last part of this statement by Plutarch has a very different meaning from the first. It would be a remarkable climate that would permit the blood to remain on the earth, or thicken the air with moist and heavy vapors, six months more or less. The extraordinary rains referred to must have occurred very soon after the battle. These served to soak the corruption (which would begin in a very few hours in that climate) and the blood into the surface soil, and thus tended to purify the surface, as Plutarch says. The rains of the subsequent winter carried this material still deeper, and enriched the crops. Plutarch does not connect the two rains together, but rather carefully separates them by the clause referring to Archilochus. The rains of the winter following were evidently gentle, long-continued, and crop producing, and not like the earlier extraordinary rains immediately after the battle and lasting, probably, a few hours only. It would seem as though a good understanding of this earlier view may help prove the falsity of the later regarding explosions and rain.

H. A. HAZEN.

Washington, D.C., Nov. 3.

BOOK-REVIEWS.

Christopher Columbus and how he received and imparted the Spirit of Discovery. By JUSTIN WINSOR. New York, Houghton, Mifflin, & Co. 8°. $4.

NOW that the fourth centenary of the discovery of America is close at hand, books relating to that event, and to the man who brought it to pass, are likely to be abundant. We doubt, however, if any of the rest of them will equal in interest and importance this work of Mr. Winsor. It is written in the spirit and with the methods of the best historical criticism, and with a sincere endeavor to discover and state the real truth. On the one hand, it presents the significance and results of Columbus's work in a clear and impressive light, while on the other it endeavors to set forth with historical fidelity the lineaments of his character. Its literary merits, too, are considerable, the style being strong and incisive, yet at the same time clear and easy flowing. The opening chapters, which treat of the documentary sources from which the life of Columbus has to be learned, are somewhat too technical for the ordinary reader, and similar passages occur in some other parts; but the narrative portions of the book are as interesting as they are instructive. We need not dwell, however, on these features of the book, as the events of Columbus's life are too well known to need recapitulating here, and Mr. Winsor does not profess to have discovered any new sources of information. He has simply followed the original authorities, so far as these are now available; and the merit of his work lies in the fidelity and skill with which he sifts his authorities and interprets the facts.

The first thing that we wish to know about any prominent historic character is the nature and significance of his life work and its effect upon the world. In the case of Columbus the significance of his work was far different from what he himself supposed, and its ultimate results such as he never dreamed of; yet he was none the less the master spirit in the work of discovery, and is entitled to all the honor which that distinction can give him. How great and far-reaching the results of his work were is clearly set forth by Mr. Winsor, especially in his appendix, in which he traces the history of succeeding discoveries down almost to the present day. He shows, as others have shown, that Columbus's ideas about the sphericity of the earth and the possibility of reaching Asia by the west were derived from earlier thinkers, and adds, "There was simply needed a man with courage and constancy in his convictions, so that the theory could be demonstrated. This age produced him." Mr. Winsor makes little account of the alleged discovery of America by the Norsemen, though he does not deny the possibility of such discovery; but he thinks that the story of their voyages could have had no influence on Columbus, and was in all probability unknown to him. In connection with his account of Columbus's voyages and those of his contemporaries, and also in recounting the discoveries since his day, Mr. Winsor lays before us a great number of ancient maps, in which the growth of geographical knowledge can be clearly traced. Indeed, his treatment of the scientific aspects of his subject is as full as could be desired.

But the feature of his book that will excite the most interest is his estimate of Columbus's character, which is emphatically iconoclastic. He evinces no spirit of hostility to the great navigator, though he has some some sarcastic remarks about Irving, De Lorgues, and other biographers; but he shows by well attested facts that Columbus was far from possessing the nobleness of character that has usually been attributed to him. He says very truly that a man like Columbus ought to be judged by a high moral standard — the standard of all ages; but that when so tried the great discoverer is found wanting. The principal charge brought against him is that he originated and persistently followed the practice of enslaving the native Americans and of selling them as slaves in the markets of Spain, thereby becoming the originator of American slavery. This accusation, though by no means new, is supported in this book by overwhelming evidence, so that it is hard to see how any fair-minded man can deny or palliate it; and it throws a very dark shadow over the fame of Columbus. Mr. Winsor also charges him with deceit, cupidity and arrogance, and there is, unfortunately, great difficulty in rebutting these charges. His final judgment on the man who discovered the New World is as follows: "Its discoverer might have been its father; he proved to be its despoiler. He might have given its young days such a benignity as the world likes to associate with a maker; he left it a legacy of devastation and crime. He might have been an unselfish promoter of geographical science; he proved a rabid seeker for gold and a viceroyalty. He might have won converts to the fold of Christ by the kindness of his spirit; he gained the execrations of the good angels" (p. 512).

The world is so accustomed to the opposite view of Columbus's character that many readers will reject the portrait that Mr. Winsor has drawn of him; but we incline to think that it is the one that will eventually be accepted by impartial minds. In any case Mr. Winsor's narrative and arguments are worthy of all attention, and we heartily commend his book to our readers.