

in session at Berlin, to establish, if possible, the political status of the association. Many hope that it will ratify the purpose of the association to establish free navigation on the Kongo. The Germans also demand free navigation with international control of the Niger, but are opposed by the English, who claim the exclusive jurisdiction and control, although expressing themselves as ready to grant the free navigation of the river to all nations.

The French, under De Brazza, have opened a line of Atlantic communication with the Kongo by the River Ogowe, near the equator, with stations on the Ogowe and the Kongo; thus obtaining an outlet from the valley of the Kongo, north of the territory claimed by the Portuguese. The stations of the French are generally on the north side of the Kongo, while those of the International association are upon the south.

It now seems as if the valley of the Kongo would be the most densely populated part of Africa. Its climate and soil are favorable for white labor. The great drawback is the falls near the mouth of the river; but, to the elevation of land which produces these falls, it owes its favored position. A railway is proposed from Stanley Pool to Boma, a distance of two hundred miles,—the head of navigation from the ocean. The Niger and the Benue are both navigable from their sources far into the interior, and consequently the land in the immediate valley of these rivers is low and unhealthy; while south of the valley of the Kongo the country is probably broken and mountainous, and therefore less fit for cultivation.

The maritime nations of Europe are seeking for the trade of Africa, but there seems to be nothing to warrant expectations of a large traffic with central Africa at once. The tribes, though numerous, are small and have few wants. One or two generations must pass before they can become even partially civilized, and acquire the needs of civilized life. Emigration from Europe must be slow, as Africa is not so well adapted as America and Australia to European emigrants; and not until America is densely populated will the overflowing emigration from Europe seek the heart of Africa. But the time will come when it will be densely populated, and its long rivers, its many and great falls, its immense lakes and high mountains, become the resort of a vast population.

GARDINER G. HUBBARD.

Washington, Dec. 26.

### LAKE MISTASSINI.

PARAGRAPHS are going the rounds of the newspapers, representing that a great lake has recently been discovered in Canada, larger than Ontario, and perhaps as large as Superior itself. If this were true, it would certainly be a matter of great interest, and would naturally lead to the inquiry, how it happened that far-off Lake Superior should have been mapped, with an astonishing approach to general correctness of outline, as early as 1672, while this new lake remained to be discovered more than two hundred years later, notwithstanding the fact that it is at a comparatively short distance from a region where the Jesuits and fur-traders had many posts at the time the Lake Superior map was made.

The immediate cause of the paragraphs in question was undoubtedly a communication made to the geographical section of the British association, at its late meeting in Montreal, by the Rev. Abbé Laflamme, and the reference to this communication by Gen. Sir J. H. Lefroy, in his opening address before the section as chairman of that body. In this address Gen. Lefroy gives the impression that the discovery of this lake is something new and startling. He says, "That it should be left to this day to discover in no very remote part of the north-east a lake rivalling Lake Ontario, if not Lake Superior, in magnitude, is a pleasant example of the surprises geography has in store for its votaries" (*Proc. royal geogr. soc.* for October, 1884, p. 585.). On referring to the communication made to the section by the Rev. Abbé Laflamme, it does not appear, however, that there was any sufficient authority for this statement on the part of the chairman of the section; and, as the matter is one of considerable interest, it may be worth while to look a little more carefully into what is known about the lake in question.

The facts here to be presented will show that we in reality know no more about the size of Lake Mistassini than we did two hundred years ago; the reverend abbé himself, in his communication, doing little more than to say that there is in north-eastern Canada a lake whose dimensions are unknown, but which some persons believe to be of great extent; an 'old trader,' whose name is not given, 'seeing no reason to doubt' that it is 'but little inferior in size to Lake Superior.' There are several statements in the reverend abbé's communication to which exception might be taken; but it is sufficient to call attention to his mistranslation and misconception of the original account of the lake by Father Albanel, who says that it is reported that twenty days would be required to make the tour of it (*pour en faire le tour*). This the Rev. Abbé Laflamme has translated, 'twenty days to walk around it;' thus showing a singular misconception of the nature of the only possible means of exploration and communication in a region like that in question.

This lake, called by the first explorer of that region, Father Albanel, '*le lac des Mistassirinins*,' lies on the north side of the watershed between the St. Lawrence and Hudson's Bay, and is represented on nearly every

map of the region as being the head and reservoir of Rupert's River. Its existence was first made known in the *Jesuit relations* for the year 1671-72. The account there given consists mainly of the journal of Father Charles Albanel, who was associated with Monsieur Denys de Saint Simon and 'another Frenchman' in the exploration of the line of communication (apparently well known to the Indians, but which had never before been traversed by white men) between Lake St. John and Hudson Bay. The geographical details given in this account are exceedingly meagre; the chief items in regard to Lake Mistassini being that it is said to be so large that the circuit of it could not be made in less than twenty days of fine weather; that it is full of rocks, from which circumstance its name is derived; and that there was an abundance of fish and game in the vicinity. It does not appear that Father Albanel's party did more than traverse a small arm of this lake, as they were not on it more than one, or possibly two days.

So far as known to the writer, the first delineation of Lake Mistassini is on a map published by Jaillot in 1685, of which a manuscript copy belonging to the Kohl collection is in the State department in Washington, and temporarily, at the present time, in the possession of Mr. Winsor, librarian of Harvard university. It does not appear, however, from Mr. Kohl's notes attached to this map, whether the original was engraved or printed; but it is said to have been almost entirely compiled from original Canadian authorities. On it the lake in question bears the name of 'Ticmagaming.' That it is really the lake now known as Mistassini will be evident from what is said farther on.

This lake also appears under the name of 'Mistasin' on two maps published by H. Moll in 1715 and 1720. Its shape, however, as indicated on these two maps, is not at all like that given on the Jaillot map; neither is it the same on Moll's two maps. It is clear from the way in which it is represented by the latter, and especially from the manner in which the islands are scattered over its surface, promiscuously and very differently in the two maps, that nothing more was known about it by Moll than that there was a large lake in that position in which were several islands.

In Bellin's map (1744), which is found in Charlevoix, the same lake is given with a very different form from that which had been previously indicated. It is represented as forming three nearly parallel bodies of water with a general north-east south-west trend, and connected with each other by comparatively narrow channels. To the most north-western of these bodies of water the name of 'Lac des Mistassins' is given; to the middle one, that of 'Père Albanel;' and to the more easterly one, that of 'Lac Dauphin.'

In the map which forms the geographical basis of the Canada survey (geological) map (1866), this lake (here called 'Mistiashini') appears with a very different shape from that given on the Bellin map, and has the appearance of being in part laid down from surveys. The north-eastern and eastern portions, however, are indicated by a dotted line, from which the

inference may be drawn that this part of the lake was unknown. It is a remarkable fact, however, that the form of the lake, as given on the Geological survey map, resembles quite closely that which it has on the Jaillot map, showing pretty clearly that the western side of the lake was laid down by the last-mentioned compiler from actual exploration.

This same outline, given on the Geological survey map in 1866, is repeated without variation on the latest general map of Canada, — that published by Stanford, and said to be Arrowsmith's, with additions and corrections bringing it down to 1880. This would indicate that no additions had been made to our knowledge of the geography of that region during the past twenty years. It is a curious fact, however, that on the Arrowsmith-Stanford map, this lake, called 'Mistassinnie,' is moved just one degree farther to the east than it is on the Geological survey map.

On most of the maps on which the lake is given, it is represented as being some sixty or seventy miles in length, or about half the size of Lake Ontario; although it is clearly evident that its eastern side is unknown, both as to form and position. All that is known about its size, beyond this, is the statement of Père Albanel, that it was reported to be so large that it would require twenty days of pleasant weather to circumnavigate it; and the opinions of certain persons, reported by the Rev. Abbé Laflamme, giving it various dimensions, no clue being given to enable one to decide on the relative weight to be allowed to each person's opinion. The Rev. Abbé Laflamme gives his own statement, that there can be no doubt that Lake Mistassini is larger than Lake Ontario; while the 'old trader,' as already mentioned, says that there is no reason to doubt that it is 'but little inferior in size to Lake Superior.' The positive statement of 'Mr. Burgess' is also added, that the lake is a hundred and fifty miles in length: this would be about fifty miles less than Ontario.

After all, we have, in reference to the dimension of Lake Mistassini, no better evidence to fall back on than that of Father Albanel. What number of miles can be allowed as the equivalent of a tour of twenty days of fine weather, the writer, with the experience of seven summers spent in boating and canoeing on Lakes Superior, Michigan, and Huron, with crews of Indians, half-breeds, and *voyageurs*, is unable to say. An ordinary journey of twenty days in a canoe would, perhaps, carry a traveller around a lake half or two-thirds the size of Ontario, which would coincide with Mr. Burgess's statement.

While it is possible that Lake Mistassini may be considerably larger than Lake Ontario, the probabilities are decidedly in favor of its being somewhat smaller. At all events, geographical information in regard to that region, which does not seem difficult of access, is greatly needed.

It is easy to see from the above that the name of the lake about which this note is written has been spelled in as many different ways as there are authors or cartographers who have had to do with it. The spelling 'Mistassini' is here adopted because it is the

simplest, and because it is that form which has been used in the report of the proceedings of the Montreal meeting in the organ of the Royal geographical society. The present writer has, however, never seen it so spelled on any geographical map. It is spelled in three different ways in the publications of the Canada survey, and in the same number of ways in Stieler's 'Hand-atlas.'

J. D. WHITNEY.

### THE TASMAN GLACIER.

A YEAR ago, accounts were published of the attempt in 1882, of Mr. W. S. Green, an Englishman,

without a cloud, during which a good piece of triangulation was executed, the Hochstetter dome ascended (2,840 m.), and material collected for a fairly detailed map on a scale of 1:80,000. The results of the survey now appear as supplement 75 to *Petermann's Mittheilungen* (Der Tasman-gletscher und seine umgebung; Gotha, June, 1884, 80 p.), with a general and local map, a well-executed reproduction of a photograph taken from the medial moraine of the great Tasman glacier, which we copy in reduced form, and several cuts. The glacier was found to be twenty-eight kilometres in length,—three kilometres longer than the Aletsch, the greatest in Switzerland. Its lower part is of moderate slope and slow motion,



THE NEW-ZEALAND ALPS AS SEEN FROM THE MIDDLE MORAINES OF THE TASMAN GLACIER.

to ascend Mount Cook, the highest (12,350) of the New-Zealand Alps. He was accompanied by two practised Swiss guides from Grindelwald, and reached a great altitude over snow and ice, but failed in his main object, chiefly on account of bad weather. A somewhat similar exploration was undertaken in March, 1883, by Dr. R. v. Lendenfeld of Christchurch, New Zealand, accompanied by his wife, three shepherds to serve as porters, and a driver for the wagon in which the supplies were carried up to within a few miles of the Tasman glacier. Bad weather on the approach to the mountains was followed by nine days

greatly covered by moraines. Green described the New-Zealand Alps as equalling or exceeding those of Europe in picturesqueness, but Lendenfeld thinks them inferior. The mountain form is less pronounced, the snow-fields are smaller, and the glaciers are much obscured by morainic rubbish: bushes replace pines, and the flat-bottomed valleys are without villages and fields. The summit of the Hochstetter dome, a sharp edge of hard-packed snow, was reached by Lendenfeld, his wife, and one porter, after a daring climb across a delicate ice-bridge, of which the author's rough figure is here copied. Sitting astride