

and frequent communications in respect to matters which come under their cognizance.

Second, *Science* aims to gather like reports from the best British and foreign sources in respect to the advancement of knowledge in other countries. In respect to work which is done abroad, where there are so many excellent journals, we cannot be so full as we are in respect to the investigations of our own countrymen; but, as science knows no geographical restrictions, our columns are open to intelligence from every part of the globe.

Third, in presenting what we have to say, our purpose is to be brief, as becomes a journal published weekly; alert in selecting those topics which are of the most immediate interest; accurate, or we should soon lose all standing in the scientific world; and readable, by which we mean that the articles written by specialists in their several domains shall be phrased in terms comprehensible, without a dictionary, to those whose studies and pursuits are in very different fields.

Fourth, in the discussion of important questions, or in the expression of opinions on disputed points, *Science* endeavors to be free from the influence of any school or clique, to speak only in the interests of advancing truth, and to suggest such methods as will promote the economical employment and enlargement of scientific funds, the diffusion of sound ideas among the people at large, and the suppression of all needless animosities.

As for the future, we are hopeful. Our arrangements for receiving and printing such communications as we wish to lay before our readers were never better than now. Our contributors, many of whom we have never personally seen, and who are scattered far and wide over this land, have never been in better accord with the editorial staff. Our subscription list is enlarging, and our pages now come before the principal workers in all departments of science. But we are free to add, that if *Science* is to be all that it should be, all that we desire to make it, there must be a more liberal financial support. Those who have furnished the capital requisite to begin and to

sustain for a period the publication of a journal which they believed would be of the greatest utility cannot be expected to continue their support indefinitely, unless they are sustained by the cordial support of individuals and associations who are interested, quite as much as the directors of *Science*, in the perpetuation of the influences which we now represent.

We therefore ask our readers and friends, and especially our contributors and subscribers, to continue during a third year their hearty and outspoken good will.

THE KONGO.

TEN years ago Stanley left Zanzibar for the great lakes of eastern Africa, intending, if possible, to cross the continent, and ascertain if the Luluaba of Livingstone was the Kongo. We then knew little of central or western Africa. The courses of the streams and mountains dotted on the map were derived from imagination or the vague reports of natives. Schweinfurth had explored Sudan and Darfur and the western branches of the Nile; but nearly all of Africa south of Algeria, and west of the Nile and the great lakes, was unknown. Since then, Stanley has followed the course of the Kongo nearly two thousand miles, from the great lakes of western Africa to the ocean.

The English have explored the Niger and its tributary, the Benue, nearly to Lake Tschad; while Capt. Cameron has crossed from Zanzibar, south of the watershed of the Kongo, to the Atlantic at Benguela. The Portuguese, under Messrs. Capello and Ivens, and De Serpa Pinto, starting from Benguela, 12° south latitude, about three hundred miles south of the Kongo, have traversed the continent between the 12th and 15th degrees of south latitude, and explored a vast tract of country and the valley of two great rivers running north, but were prevented by the natives from following them to their junction with the Kongo.

We have now a general knowledge of Africa from 10° north of the equator to the Cape of Good Hope, including central and south Africa; leaving only the territory south of Algeria, the western Sudan beyond Darfur, *terra incognita*. Into this region the French are travelling from Algeria, and the Germans from Egypt; and soon the whole of Africa will be explored, so far as its general features are concerned.

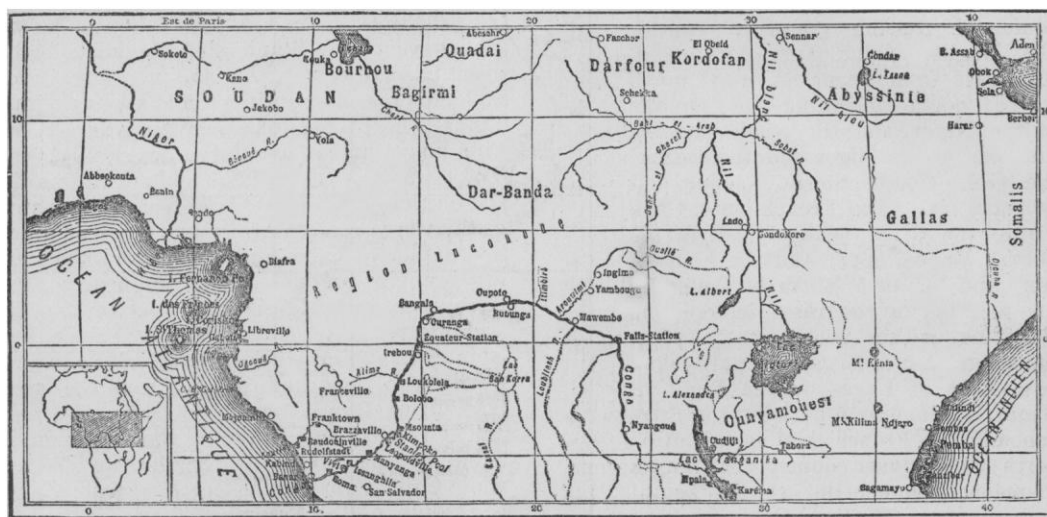
The western coast of Africa has long been

known to the slave-trader and the English cruisers. Since the suppression of the slave-trade, Portuguese, English, Dutch, and French traders have established factories or trading-stations at many places on the coast from 17° north to the Cape. On the Niger and its tributary, the Benue, are many English stations; and small steamers run regularly up and down these rivers, carrying in the cotton of Manchester, and bringing away the products of Africa. Within the last two years the Germans have established trading-stations at three different places on the western coast.

This country has been regarded as the most unhealthy portion of the world, lying under the equator; the soil low and marshy; the cli-

both sides of the equator, with a free navigation above Leopoldville, according to Stanley, of 4,520 miles. In its valley there is an abundance of flowing streams. The drinking-water is magnificent; the temperature delightful, the thermometer ranging from 87° at noon, to 60° at two A.M. The land is rich, and adapted to the growth of most tropical and semi-tropical products, among which are India-rubber, gums, sugar, and cotton. The country is probably as healthy as the fertile prairies of our own great west, and capable of raising immense crops of all the tropical productions.

There are two seasons, — a wet and a dry. In the rainy weather a large part of the day is pleasant, storms arise suddenly and with little



CENTRAL AFRICA, WITH THE COURSE OF THE KONGO.

mate moist, damp, and malarious; the abode of all kinds of tropical fevers. The Kongo was barred by great falls near its mouth, and was so unhealthy, that out of a party of fifty-one, under English officers, who explored the river in 1816, only one returned alive. Now on the Kongo, above the falls, are between forty and fifty trading-stations, with small steamboats running from Leopoldville on Stanley Pool, three hundred miles from its mouth, to Stanley Falls, nine hundred miles from Leopoldville. While on the coast the country is low, flat, and unhealthy, south of the equator it rises a short distance from the coast, until it reaches a level of from twelve hundred to fifteen hundred feet. The Kongo, king of African rivers, and second only to the Amazon in the volume of its waters, occupies an elevated plateau on

warning, thunder roars, lightning flashes, wind blows with great fury, rain pours down in sheets of water for an hour or two; then as suddenly the clouds pass away. On the coast the rainy season lasts from November to March; but in the interior, rains commence earlier, and continue later.

There appears to be no great variety of races among the natives; though the tribes are very numerous, each, with a different dialect, living in constant warfare with its neighbors. Here are the dwarfs and many tribes of cannibals. The tribes inhabiting the coast have long been acquainted with the Portuguese and English traders; furnishing ivory and slaves in exchange for beads, fire-arms, ammunition, rum, and a little cotton cloth. These tribes, though anxious to trade with the whites, are opposed

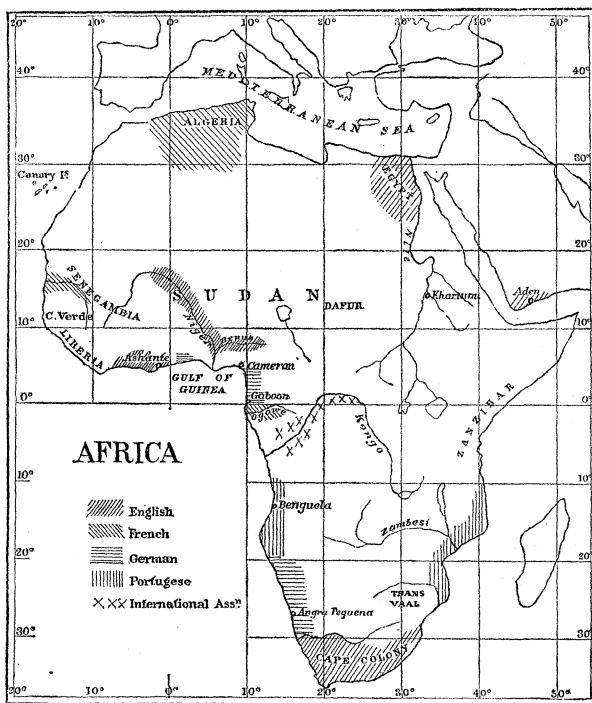
to their travelling through the country, preferring to hold all the trade of the interior in their own hands. The natives in the interior are generally well disposed to the white man, and ready for trade.

Which of the great powers shall control this trade is a question now agitating the civilized world. The Portuguese first discovered the western coast of Africa. They claim the territory from latitude $5^{\circ} 12'$ south to $18^{\circ} 5'$ south, including the mouth of the Kongo River, running from the coast indefinitely into the interior. Their northern boundary-line crosses the Kongo at Isangilla, about one hundred and fifty miles from the mouth. By the right of discovery they claim jurisdiction over the mouth of the Kongo and all commerce passing out of its mouth. The English claim large portions of the coast from about 6° or 8° north to 18° north, including the mouths of the Niger and the Benue, the Gold Coast, Sierra Leone, and Senegambia. The French claim Cape Verde, the River Senegal (14° to 17° north), Cape Lopez, and the Gaboon from about 4° or 5° north of the equator to as many degrees south. The Germans, within two years past, at the suggestion of Bismarck, have taken possession of Lagos on the Bight of Benin, of Cameroon between the English and the French claims (about 5° north), and a vast country near Angra Pequena, commencing at 23° south, and running to Cape Colony, about 29° south, inland to Transvaal,—a territory said to be as large as Germany, Belgium, and Holland united. They have established over forty factories on the coast.

Almost all the western coast of Africa is now claimed by these four great powers. Portugal claims the exclusive control of the navigation of the Kongo; England, exclusive control of the Niger. A year ago Portugal proposed to make a treaty with England by which the respective rights of these powers to each of these rivers should be recognized. Great opposition was made, both in England and on the continent, to this alliance, and it has been abandoned.

The International association of Africa was formed in 1877 in Belgium, about the time of the return of Mr. Stanley from the 'dark continent.' Its headquarters are in Brussels.

The object of the association is to acquire, by treaties with the natives, territory for the use and benefit of free states established under the care and supervision of the association. For this purpose it is declared that no custom-house duties are to be levied upon goods or merchandise brought into the territory, and that no greater rights will be granted to the citizens of one nation than to those of every other; that the Kongo, the great highway into central Africa, shall remain an international



OUTLINE-MAP OF AFRICA, SHOWING THE PORTIONS OF THE COAST CLAIMED BY EUROPEAN NATIONS.

river, open to all civilizing influences, and to the legitimate commerce of every land. It is established to promote the public good, not private gain. It has made treaties with many different tribes, and founded thirty stations on the river. At these stations factories are established, and trade carried on by merchants with the natives. This association is unlike any other ever organized. The United States was the first to recognize its nationality, in April, 1884. Since then it has been recognized by several other European nations.

At the invitation of Bismarck, a conference of the leading nations of the world is

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