Sempliki. Awamba, Usongora, Toro, Ahaiyama, Unyampaka, and Anhori, are all districts around the west, north, and east shores of the Lake Albert Edward, three sides of which Mr. Stanley says he has traversed—probably the east, west, and north sides, though it is possible he may have gone round the south side. It is probable that the lake as laid down on our maps is much too large, and that it is comparatively small Mr. Stanley found it to be 15 miles wide at Beatrice Gulf. From the lake he struck south-east to Karagwe and Uzinze, on the south-west and south of Victoria Nyanza, and no doubt found at Mslala the stores which have been accumulating for many months. Thus it will be seen Mr. Stanley has solved one of the few remaining problems of African geography. He has found the south-west source of the Nile, and established the true relations which exist among the great lakes of Central Africa. He has filled up an important blank in our maps, and collected observations which will enable us to understand the physical geography of one of the most interesting regions on the continent. Probably he will be able to tell us what has become of the Alexandra Lake of his former expedition. It may be as well to state that the telegram of Monday was in effect the first part of that of Tuesday, and therefore Emin's safety was not again referred to in the latter.

THE Zanzibar Correspondent of the *Times* telegraphed on November 5 that authentic news had reached Lamu that Dr. Peters and the whole of his party had been massacred, except one European and one Somali, wounded, who are at Ngao. Some say they were killed by Masais, and some by Somalis.

FROM the Journal of the Anthropological Society in Vienna, we take the following conclusions of Dr. B. Hagen, respecting the Malay peoples:—Their great predilection for the sea, which makes them pray to Allah that they may die on sea, seems to render the Malay race adapted for the Polynesian and Further Indian Archipelago. The centre from which they migrated is to be sought in the highlands of West Sumatra, particularly in the old kingdom of Menang-Kabau. Thence the peoples extended slowly eastwards; at first probably the races now to be found only in the interior of the great islands (the Battas in Sumatra, the Sundanese in Java, the Dayaks in Borneo, the Alfurus in Celebes, &c.). These "aborigines" of the islands crushed out a population already in possession, as remains of which the Negritos may be taken. The Malays in the narrower sense occupying Sumatra, Malacca, and North Borneo, are to be regarded as the last emigration from the centre referred to, occurring from the twelfth to the fifteenth century A.D. With the Indians and Chinese, who have been long in intercourse with the archipelago, arose mixtures and crosses, in less measure also with the Arabs. One must not therefore expect the pure racial type, especially in the coast population. The crania of the anthropological collections are too imperfectly determined in respect of their *locale* to be of any service for a judgment of the Malay peoples. Of more value are the measurements of the living begun by Dr. Weisbach and executed by Dr. Hagen in 400 cases. The latter's conclusions are:—(1) The peoples in the interior of Sumatra—the Battas, the Allas, and the Malays of Menang-Kabau—compose a closely allied group always in direct contrast with the hither-Indian peoples, and yet showing just as little community with the Chinese. We must therefore take them for the pure original type, characterizable as follows:—Small, compact, vigorous figure of less than 1600 mm. average size; long arms; very short legs; very long and broad mesocephalous skull of very great compass, with high forehead; a prognathous face 10 per cent. broader than long, with large mouth, and uncommonly short, flat, and broad nose with large round nostrils opening mostly frontwise, and with broad nasal root. (2) The Malays of the east coast of Sumatra and those of the coasts of Malacca indicate a much greater affinity to the Indians than to their tribal peoples of Menang-Kabau. They are plainly therefore thoroughly mixed with Indian blood. (3) The Javanese peoples stand much nearer to the original type of the Sumatrans than to the Malays just mentioned. They show therefore less mixture with Indian, but on the other hand more mixture with Chinese, blood, and the Javanese more so than the Sundanese.

THE second number of this year's "Information respecting Kaiser Wilhelmsland and the Bismarck Archipelago," issued by the German New Guinea Company, contains a description of the north coast of New Guinea, from Cape Cretin to the Legoarant Islands, by the former Governor, Vice-Admiral Freiherr von Schleinitz, with a map designed by him. According to this account, Kaiser Wilhelmsland is subject to the south-east trade wind. This is, however, occasionally relieved by the opposite wind, when, viz., the sun in southing imparts to the Australian continent a temperature higher than that of New Guinea. The temperature, averaging 26° to 27° C., is not so high as might be inferred from the equatorial situation of the land, a fact due in part to the prevalence of the trade wind, which also brings with it a cooling sea-current to the coast, and in part to the considerable elevation of most of the island. The north-west, blowing especially from January to April, comes on the whole with greater force than the south-east. Calms often occur from March to May and from October to December. Precipitation is on the whole copious, but there are many differences according to the local variations in the configuration of the land. The navigation of the coast offers no particular dangers and difficulties, either for steamers or sailing-vessels. Serious storms are extremely rare, nor are there any reefs in the channel proper. Sea currents do not strike direct on the coast, and they are not generally very strong. The tides are inconsiderable, the spring floods keeping under 1 metre.

SOME interesting remains have been found in Hamburg on the site of the new Rathhaus. At a depth of 0 to 0·7 metre the ground was covered to a height of 10 to 15 centimetres with dams of thin willow twigs (*Salix fragilis*), in many places two, sometimes even three, layers above one another, and separated from one another by equally thick earth layers. The building rests on clay, *i.e.* submerged ground, which contained heaps of freshwater shells, *e.g.* *Valvata piscinalis*, *Bythinia tentaculata*, &c., as also *Cardium edule*, *Tellina baltica*, *Mactra solida*, &c. When therefore the dam was made, the water must have been strongly brackish. The interest in this discovery was heightened when there was found, under St. Anne's Bridge, at a depth of 0·5 metre, a regularly paved street of small boulders, such as were still used for stone pavement in all North German towns in the last century. The stone dam was about 5 metres broad, and encased on both sides by thick wooden planks, in order, in the swampy ground, to prevent the slipping out of the stones sideways. The ascertained changes in the level of the North Sea give no positive clue to the age of the Hamburg finds.

THE INSTITUTION OF ELECTRICAL ENGINEERS.

ON Monday evening the first annual dinner of the Institution of Electrical Engineers took place at the Criterion Restaurant, Sir William Thomson, the President, occupying the chair. Many different branches of science were represented on the occasion, and some of the after-dinner speeches rose to a high level of excellence.

Due honour having been done to the usual loyal toasts, and Major Webber and Captain Wharton having responded for the Army and Navy, the Chairman proposed "Her Majesty's Ministers." Lord Salisbury said, in response:—

Sir William Thomson and Gentlemen,—I have to thank you on behalf of my colleagues in the Goverment and myself for the exceedingly kind reception you have given to the kind words in which Sir William Thomson has proposed this toast. I do not feel that I can accept the guise in which he put my name forward. On the contrary, though recognizing, as every individual must do, and as I have especial reason to do, the enormous benefits which electrical science confers upon mankind, I feel that I have reason rather to apologize for my appearance in this assembly. When I look round on so many learned and distinguished men, I feel rather in the position of a profane person who has got inside the Eleusinian mysteries. But I have an excuse. The gallant gentlemen who replied for the Army and Navy were able to show many particulars in which their special professional vocation was sustained and pushed forward by the discoveries of electrical science. But I will venture to say that there is no department under the Government so profoundly indebted to the discoveries of those who have made this science as the Foreign Office, with which I have the honour to be connected. I may say that we positively exist by virtue of the electric telegraph. The whole

work of all the Chancelleries in Europe is now practically conducted by the light of that great science, which is not so old as the century in which we live. And there is a strange feeling that you have in communicating constantly and frequently day by day with men whose inmost thoughts you know by the telegraph, but whose faces you have never seen. It is something more than a mere departmental effect which these great discoveries have had upon the government of the world. I have often thought that if history were more philosophically written, instead of being divided according to the domination of particular dynasties or the supremacy of particular races, it would be cut off into the compartments indicated by the influence of particular discoveries upon the destinies of mankind. Speaking only of these modern times, you would have the epoch marked by the discovery of gunpowder, the epoch marked by the discovery of the printing-press, and you would have the epoch marked by the discovery of the steam-engine. And those discoveries have had an influence infinitely more powerful, not only upon the large collective destinies, but upon the daily life and experience of multitudes of human beings, than even the careers of the greatest conquerors or the devices of the greatest statesmen. In that list which our ignorance of ancient history in its essential character forbids us to make as long as no doubt it might be made, the last competitor for notice and not the least would be the science of electricity. I think the historian of the future when he looks back will recognize that there has been a larger influence upon the destinies of mankind exercised by this strange and fascinating discovery than even in the discovery of the steam-engine itself, because it is a discovery which operates so immediately upon the moral and intellectual nature and action of mankind. The electric telegraph has achieved this great and paradoxical result, that it has, as it were, assembled all mankind upon one great plane where they can see everything that is done, and hear everything that is said, and judge of every policy that is pursued at the very moment when those events take place; and you have by the action of the electric telegraph, combined together almost at one moment, and acting at one moment upon the agencies which govern mankind, the influences of the whole intelligent world with respect to everything that is passing at that time on the face of the globe. It is a phenomenon to which nothing in the history of our planet up to this time presents anything which is equal or similar, and it is an effect and operation of which the intensity and power increases year by year. When you ask what is the effect of the electric telegraph upon the condition of mankind, I would ask you to think of what is the most conspicuous feature in the politics of our time, the one which occupies the thoughts of every statesman, and which places the whole future of the whole civilized world in a condition of doubt and question. It is the existence of those gigantic armies held in leash by the various Governments of the world, whose tremendous power may be a guarantee for the happiness of mankind and the maintenance of civilization, but who, on the other hand, hold in their hands powers of destruction which are almost equal to the task of levelling civilization to the ground. What gives these armies their power? What enables them to exist? By what power is it that one single will can control these vast millions of men and direct their destructive energies at one moment on one point? What is the condition of simultaneous direction and action which alone gives to these vast armies this tremendous power? It is nothing less than the electric telegraph. And it is from that small discovery, worked out by a few distinguished men in their laboratories upon experiments of an apparently trivial character, on matter and instruments not, in the first instance, of a very recondite description—it is on that discovery that the huge belligerent power of modern States, which marks off our epoch of history from all that have gone before, must be held, by anyone who investigates into the causes of things, absolutely to depend. I would venture to hope that this is not all, in its great effect upon the history and government of our race, that electricity may achieve. Whether it so far is good or evil in the main, it must be for the future to determine. We only know that the effect, whatever it is, will be gigantic. But in the latter half of the short life of this young science another aspect of it has been developed—an aspect which I cannot help hoping may be connected with great benefits to the vast community of industrious and labouring men—I mean that facility for the distribution of power of which electricity has given such a splendid instance. The event of the last century was the discovery of the steam-engine. But the steam-engine was such that the forces which it produced could only act in its own immediate neighbourhood, and therefore those who were to utilize its forces and translate them into practical work were compelled to gather round the steam-engine in vast factories, in great manufacturing towns, and in great establishments where men were collected together in unnatural, and often unwholesome, aggregation. Now an agent has been discovered, by which the forces of the steam-engine, stiff, confined to its own centre, can be carried along, far away from its original sources, to distances which are already great, and which science promises to make more considerable still. I do not despair of the result that this distribution of forces may scatter those aggregations of humanity, which I think it is not one of the highest merits of the discovery of the steam-engine to have produced. If it ever does happen that in the house of the artisan you can turn on power as now you can turn on gas—and there is nothing in the essence of the problem, nothing in the facts of the science, as we know them, that should prevent such a consummation from taking place—if ever that distribution of power should be so organized, you will then see men and women able to pursue in their own homes many of the industries which now require the aggregation at the factory. You may, above all, see women and children pursue these industries without that disruption of families which is one of the most unhappy results of the present requirements of industry. And if ever that result should come from the discoveries of Oersted and Faraday, you may say that they have done more than merely to add to the physical forces of mankind. They will have done much to sustain that unity, that integrity of the family, upon which rest the moral hopes of our race and the strength of the community to which we belong. These are some of the thoughts which electricity suggests to one of my trade. Pardon me if I have wandered into what may seem to be speculative and unfamiliar fields. But, after all, the point of view from which we must admire the splendid additions to our knowledge which the scientific men of the world, and especially of England, during this century have made, is, that they have enabled mankind to be more happy, to be more contented, and therefore to be more moral.

Sir Frederick Abel proposed, and Sir George Gabriel Stokes responded for, "The Learned Societies"; and Sir John Coode responded for the toast of "The Professional Societies," which was proposed by Mr. Latimer Clark. The toast of "The Institution of Electrical Engineers" was then proposed by Lord Salisbury. In the course of his response, Sir William Thomson said:—

One very remarkable piece of work they should think of especially this year, and during the last few weeks, when they deplored the loss of one of the greatest workers in electrical science and its practical application that the world had ever seen—Joule. The great scientific discoveries of Faraday, which were prepared almost deliberately for the purpose of allowing others to turn them to account for the good of man, had been going on for about fifteen years, when a young man took up the subject with a profound and penetrating genius most rare in any branch of human study, and perceived relations with mechanical power which had never been suspected before. Joule saw the relations between electricity and force, and his very first determination of the mechanical equivalent was an electrical measurement. His communication to the British Association, when it met in Cork in the year 1841, pointed out for the first time the distinct mechanical relation between electric phenomena and mechanical force. Joule was not a mere visionary who saw and admired something in the air, but he pursued what he saw to the very utmost practical point of work, and he it was who determined the mechanical equivalent of heat. Afterwards he thoroughly confirmed the principle of his first determination of the mechanical equivalent of heat. Both in electricity and mechanical action he laid the foundation of the great development of thermodynamics, which would be looked upon in future generations as the crowning scientific work of the present century. It was not all due to Joule, but he had achieved one of the very greatest monuments of scientific work in the present century. For an Institution of Electrical Engineers it was interesting to think that the error relating to one of the most important electrical elements, the unit of resistance (now called the ohm), as determined electrically in the first place by a Committee of the British Association, and by purely electrical method, was first discovered by Joule's mechanical measurement. It was Joule's mechanical measurement which first corrected the British Association unit, and gave the true ohm.