THE SCOTTISH GEOGRAPHICAL MAGAZINE.

TO THE VICTORIA NYANZA BY THE UGANDA RAILWAY.[1]

By Commander B. Whitehouse, R.N.

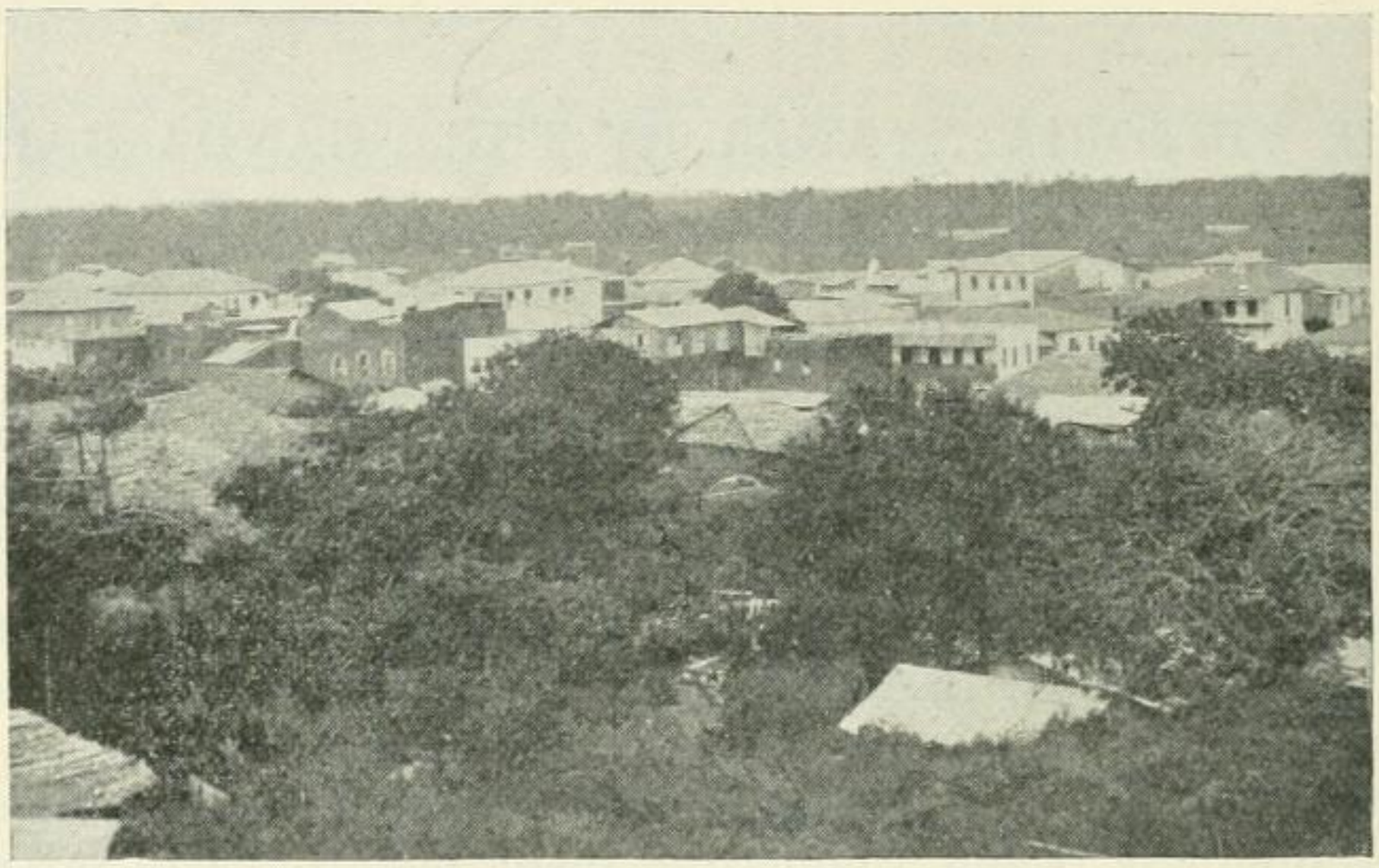
(With Map and Illustrations.)

The Chief Engineer of the Uganda Railway and his staff arrived at Mombasa on 11th December 1895; plate-laying began on the mainland on 5th August 1896, and the first locomotive reached the lake shores on 19th December 1901. So little has ever been said about this railway that few people have any idea of the circumstances under which it has been built.

When the first survey parties arrived, there was a great scarcity of water on Mombasa Island, condensing plant had to be telegraphed for and worked steadily without ceasing for four years. Harbour works had to be built at Kilindini. Except for caravan work and survey parties there was no local labour obtainable. Emigration under contract is not permitted by law from India to East Africa; a special Act allowed the importation of twenty thousand men from India, principally Punjabis, all of whom had to be supplied with food from their own country. While in the low country officers and men suffered greatly from fever, smallpox often appeared, the engineers' strike in England made it difficult to obtain material and locomotives. Officers had to learn the two languages in use on the line. Famine among the natives lasted for nearly two years. The line had to climb to a height of 7900 feet at mile 355 at the Kikuyu Escarpment, then descending to 6000 feet at mile 430 at Lake Elmenteita, had to again climb to 8320 feet at mile 490 on the Mau ranges, descending to the lake at a level of 3726 feet above the sea at mile 582 over a route for most of the last 100 miles that previous to September 1898 no European had ever

[1] Read before the Society of Arts, January 20th, and published in the Society's *Journal*, February 14th. The paper was also read before the Scottish Geographical Society, February 13th.

trodden. No railway has ever been built under such extraordinary conditions or caused such radical changes in the country through which it has passed. Till other railways are constructed the whole of the trade of that part of Central Africa must come to it. The way the country has been opened up by it is very marked; rupees are in constant use where previously only beads, cloth, and wire were asked for. The journey from Mombasa to Port Florence, on the opening of the whole line, will take two and a half days, and allowing another day for the steamer journey of 148 miles to Mengo, the capital of Uganda, we have a total of three and a half days, instead of about seventy by the old caravan route. All the privations, delays, and trouble of the caravan road are things of the past, and travellers now pass through the country in a first-class sleeping carriage at a charge of threepence per mile, with rates for their goods that compare most favourably with



An overhead view of Mombasa. (From *The Sphere.*)

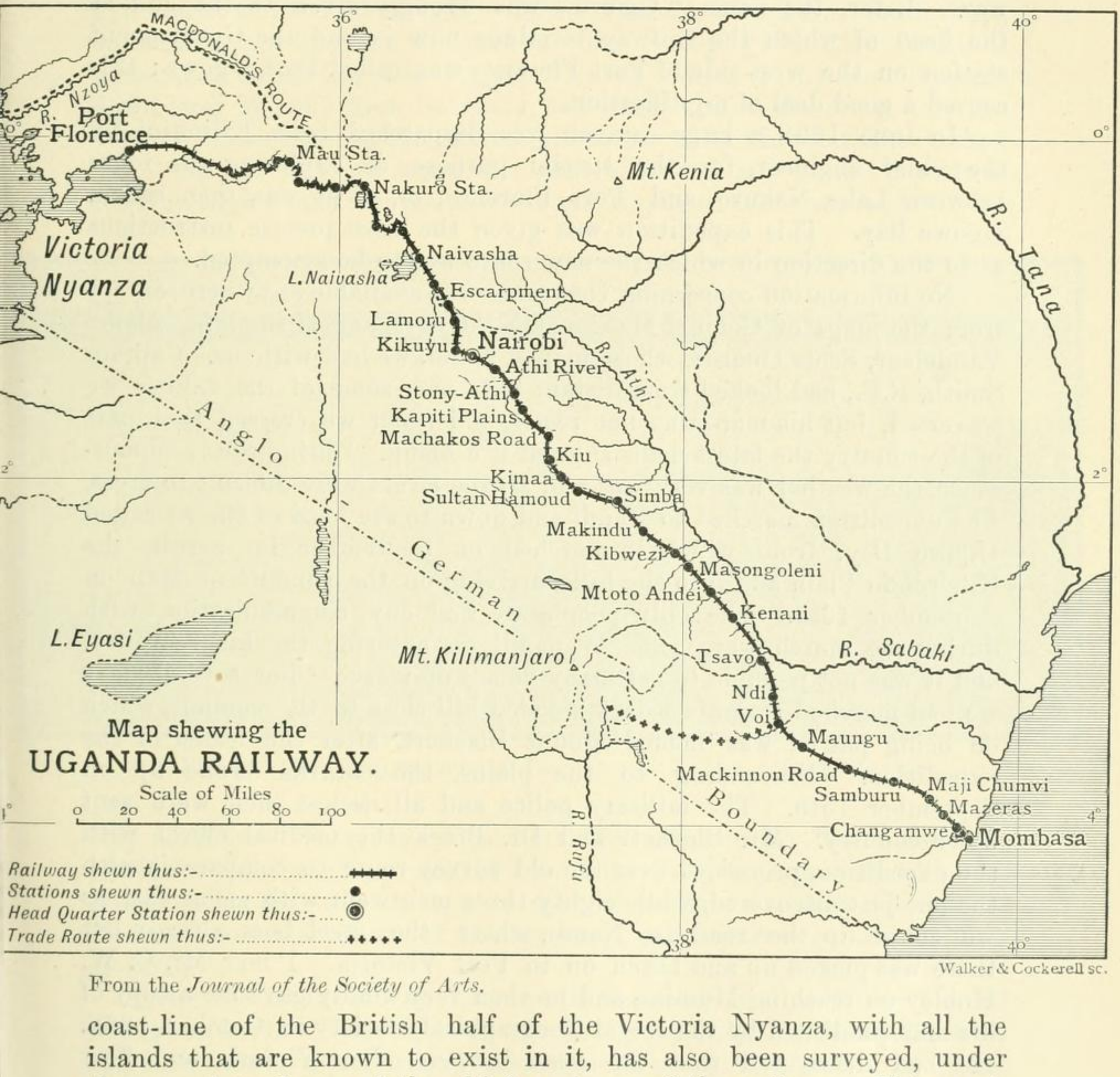
some of the other railways in Africa. Cable messages can be sent from any station on the railway, and a telegraph line has been laid into Uganda from Port Florence by the Railway Telegraph Staff.

The line of the railway is laid along the shortest route from the port of Mombasa to the most eastern point of the lake (see map[1]). It is also on the shortest route to the first proposed terminus at Port Victoria. Between Port Florence and Port Victoria there are no great obstacles in the way of further extensions except the Nzoia River, which would have to be bridged in any case. When Port Florence was first visited by the railway survey parties in 1898 the Kavirondo tribes on each side of it were having constant fights on a small scale. The only intercourse was carried on by women, who did all the trading. The tribe inhabiting the Nandi plateau, about 2300 feet above the lake, occasionally descended on the Kavirondo people, cleared up a village or two, and drove off as many cattle as possible. On one occasion the surveyors, wishing to make arrangements through the Protectorate

[1] This map should be compared with that which appeared in the *Magazine*, October 1901.

officers for buying up a village that the centre line cut through, afterwards found that the Wanandi had saved them the trouble, the village having disappeared in the interval. Hill tribes here, as usual all over the world, are more warlike than those in the plain, but now they are all beginning to understand that they must behave better.

Beyond the great additions to our knowledge of the country which have arisen from the actual surveys for the line, the whole of the



From the *Journal of the Society of Arts.*

coast-line of the British half of the Victoria Nyanza, with all the islands that are known to exist in it, has also been surveyed, under the superintendence of the chief engineer of the railway. This work was found to be necessary owing to the discovery in 1898 from the railway surveys, that the east side of the Lake differed very much from what it was supposed to be.

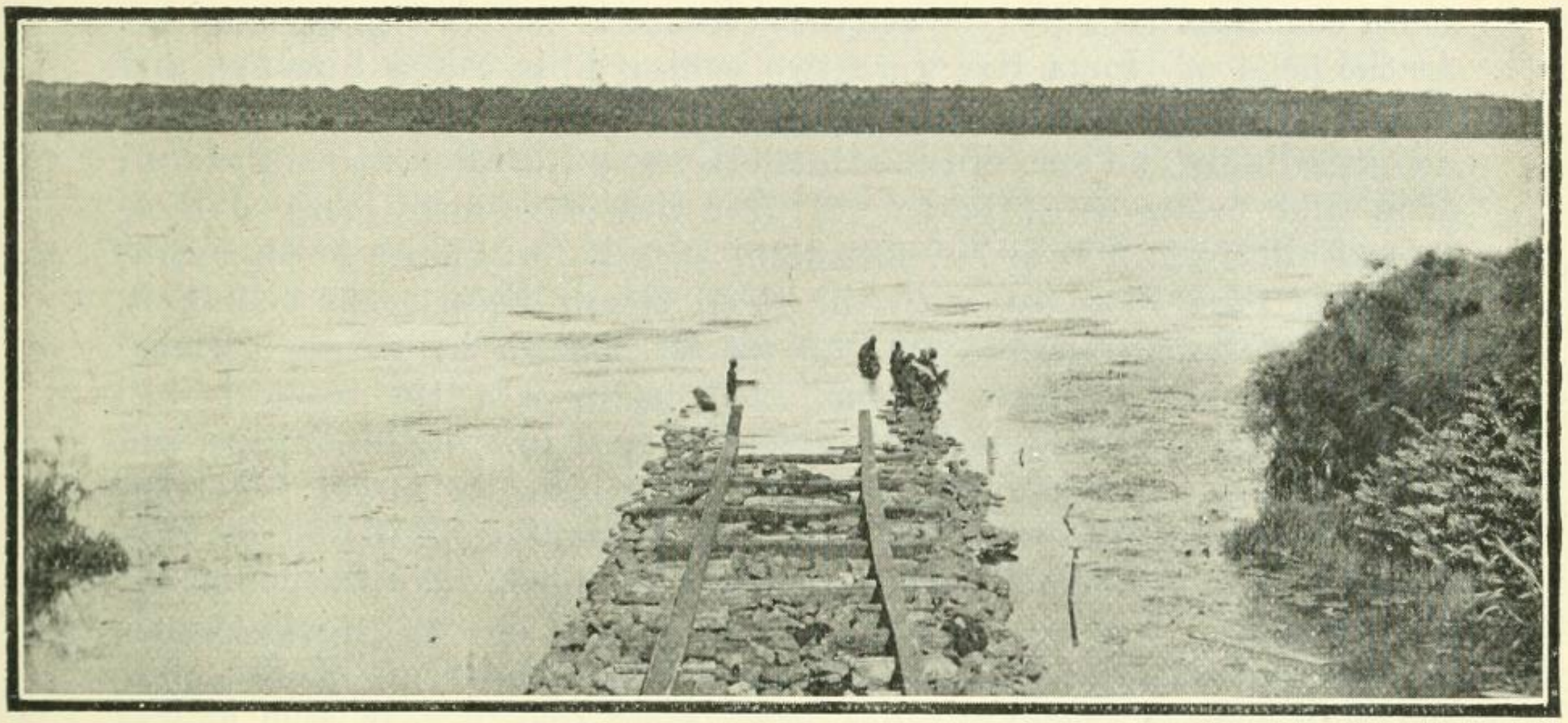
In Sir Henry Stanley's memorable journey of 1875, he visited a bay which he called "Ugowe Bay," and which was looked on as the most eastern point of the Lake. Sir Henry had, of course, very few opportunities compared to those enjoyed by the surveyors sent out

by the railway. After our survey, specially equipped for the purpose, I can gladly testify to the fact that his journey round the Lake in a small boat, with a few men and no force at his disposal, was a most venturesome piece of exploration, and not the least part of an altogether remarkable journey. The narrow and land-locked entrance of the great gulf of Kavirondo was evidently passed by him without being noticed, a thing remarkably easy to do when travelling in a small boat as he was. Later, the name "Ugowe" was wrongly given to the gulf at the head of which the railway terminus now is, and the Government station on the west side of Port Florence was called Port Ugowe; this caused a good deal of mystification.

In June 1898 a large caravan was despatched from Kilindini by the chief engineer, for the special purpose of exploring the route between Lake Nakuro and Port Florence, or, as it was then called, Ugowe Bay. This expedition was given the most precise instructions as to the direction in which the new route was to be attempted.

No information concerning this route was available anywhere except from the maps of Colonel Macdonald's Surveys, and of the late Colonel Vandeleur, Scots Guards, whose map of Nandi we had with us. Captain Smith, R.E., had looked from distant hills over some of the valleys we traversed, but his map was not ready, and when we crossed that part of the country the latest maps showed it a blank. During the reconnaissance, the weather was very wet and all the rivers were difficult to cross. The expedition marched to Nandi and down to the head of the so-called Ugowe Bay, from which it marched on September 1st across the Kavirondo Plain and into the hills, arriving on the summit of Mau on September 13th. The only people we had any communication with during the march were some Wanandi, on entering the hilly country, and it was not possible to get many names of places. For several days we had marched towards a dark wooded hill close to the summit, which on being passed was named Mount Blackett, after the leader of the expedition. Descending to the plains, the caravan broke up on September 15th. The military police and all useless men were sent down country. Mr. Blackett and Dr. Brock, the medical officer with the expedition, proceeded over the old survey route to compare it with the one just discovered, while eighty-three men went with me as fast as we could up the road to Nandi, where the steel boat already left there was picked up and taken on to Port Victoria. I met Mr. C. W. Hobley on reaching Mumias, and he then very kindly gave me a copy of his map published by the Royal Geographical Society in October 1898. He had discovered that the coast between Port Victoria and Port Florence differed from what it was thought to be, but unfortunately he missed Ugowe Bay, and the Kavirondo Gulf was still shown as a large, open bay, and still called Ugowe; what he thought were islands was really the mainland of Kasagunga and Kisingere—a very easy error to make from the other side of the gulf, especially if the weather was at all misty. Directly the chief engineer heard the reconnaissance had succeeded, he came up country as fast as possible with Mr. J. R. Baass, Superintendent of Surveys, and Mrs. Whitehouse accompanied the party.

The three parties met at Port Victoria on October 23rd, 1898, just as the steel boat *Vice-Admiral* was ready for work. Port Victoria was examined in case the terminus should have to be built there, then the chief engineer went round in the *Vice-Admiral*, examining and mapping the coast all the way to the present terminus, the rest of the parties marched overland, and we all met at Port Florence on October 31st, 1898. The caravans went on to Kitoto's to buy food for the march over the new route, while the boat party visited Nyakach to examine Kach Bay; on landing, not knowing we were so close to the Miriu River (which I understand from Captain Gorges, Uganda Rifles, is the one he came down later in 1899 from Naivasha, and which the Walumbwas call the "Sondo"), we climbed the nearest hill to see what the coast-line looked like. On our way we heard the rush of water, and found the Miriu River in high flood; the people were greatly surprised to see us, but were



Port Florence, the railway terminus on Lake Victoria Nyanza. (From *The Sphere*.)

very amiable. We returned to Port Florence, and on November 3rd, 1898, the chief engineer marched to Kitoto's and proceeded with the other parties over the new route. Survey parties were despatched to it directly after his return to headquarters, and trains are now running along it.

After the survey of the future port was completed, the *Vice-Admiral* was taken back to Port Victoria. From the hills near the Miriu River we had seen there was apparently a continuous coast-line right up to Homa.

I should say here that on my return to headquarters I found a copy of Mr. Gedge's map giving Mr. Jackson's route to Uganda in 1890, and this showed Homa as a point of the mainland. As I wished to be quite sure, the boat instead of returning along the north shore was taken south from Ndere Island towards two very conspicuous trees on the opposite shore. That night we camped at Homa Point, the people being quite friendly. Next day the boat crossed Homa Bay to Soklo, in Usau, and as the coast-line was getting most interesting, it was decided to stop there,

so that a good view could be got from the summit of an adjacent hill. Most fortunately a man called Katizai was found here, who had once been in a caravan to the coast and knew a little Swahili. He was rather old, but managed to get to the top of Sahanga Hill next morning, over a thousand feet above the lake; then it was found that instead of being an open bay with a mouth twenty miles across, we were in a land-locked gulf forty miles long, and that the so-called islands were mainland with hills towering over 3000 feet above the lake. Close behind were the Ruri Hills, afterwards visited and found to be about 1800 feet above the lake. North was the Kakanaga Range with Gembe Peak, afterwards visited and found to be 2488 feet above lake-level. West of that was the Gwasi mountain, afterwards one of the main points of the Lake Survey, and found to be 3370 feet above the lake and the highest hill on the British shore. East was Homa Mountain, its northern conical peak over 1700 feet. Hundreds of villages were in sight, and to the south countless bush fires showed the presence of natives in great numbers. At the head of Homa Bay were two conical hills, called Simenya and Asago, afterwards visited and Ugemi, the district they were in, found to be an exceedingly fine one. Inside Homa Bay was Ruri Bay, and at the head of it and below us sprinkled all over Usa, were many curious little conical hills from 200 to 700 feet high. Nearly forty miles to the north-east was Port Florence, with the steep Nandi Escarpment behind it. North was the entrance to the gulf, almost shut in by a very curious-looking island, Rusinga; beyond that again was the conical hill "Serawongo," 470 feet, noticed by Sir Henry Stanley in his voyage, and afterwards an important trigonometrical station in the survey. Farther north were the hills of Inyala, over the Government station of Port Victoria, with the Samia Hills to the right of them, while to the left lay many islands. Katizai, the old traveller, pointed out his chief's village, and then gave us the names of all the districts and their chiefs; after checking them at dozens of other places, more than a year later, he was found to have made only one mistake. Passing on up the coast, the mouth of the gulf was crossed, and the second entrance to it, Mbita Passage, only 280 yards broad, and afterwards a favourite camp, was sketched in. As we were travelling with orders to return with the greatest despatch, Ugowe was not then found, but a bay as we passed was seen to be much larger than when sketched in during misty weather on our trip down, and noted for special examination later. We marched from Port Victoria across country to Port Florence and Kitoto's. Lake Gangu was reached on the first day, and we camped by a curious heap of rocks just east of it called Ndere. Meeting Ugada, chief of Usakwa, at his village, I offered to take his son Obamba to the coast; as he spoke Swahili very well, he was most useful everywhere, and was certainly the smartest native I met in Africa. On arrival at Kitoto's there were too many sick men in the caravan to attempt the rivers and hills of the new route, so the loads were sent up to the caravan road at Nandi and food was bought for the journey down at Rongo villages on the Umbe River, a little east of Kitoto's kraal. The people became very friendly, and as it was Christmas time we organised the first athletic

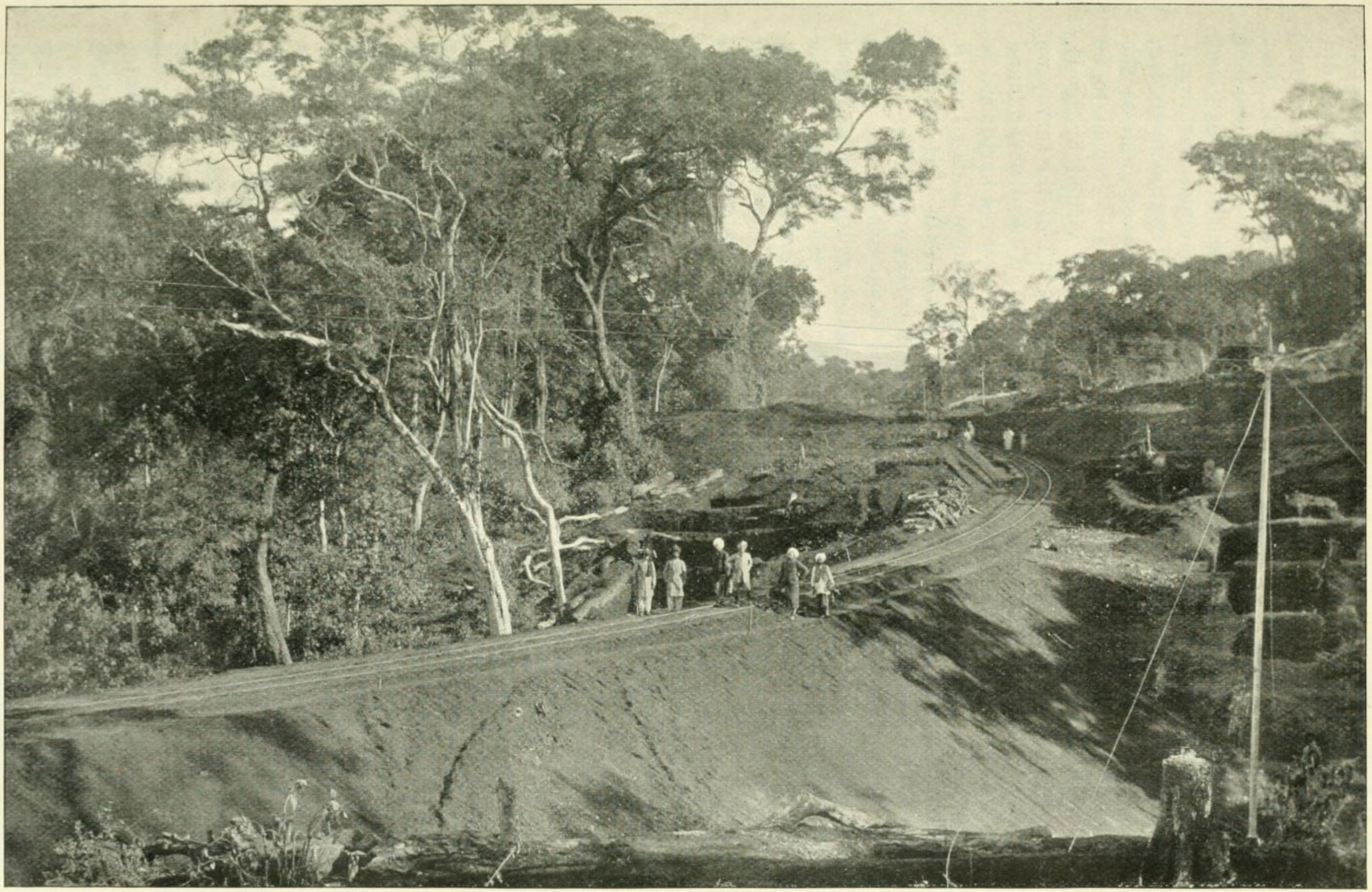
meeting ever held in Kavirondo. A big store was afterwards built by the railway just across the river, and food supplied to our survey parties for many months. Kitoto, said to be once the head chief of Kavirondo, is an avaricious old fellow, with very little authority over his people ; in fact, on all the lake coast of Kavirondo the chiefs have little power, every man seems to do what is right in his own eyes. Finding a better road up to Nandi than we came down, we marched up there, and so down to railhead, then at Kimaa, mile 264.

The Lake survey was commenced at the end of 1899, and it cleared up all geographical questions concerning the coast-line in British territory. The survey was carried out in thirteen months, during which about 2200 miles of coast-line was mapped. Life at the Lake was then very different from what it had been. Survey parties were close to, the telegraph wire was at Port Florence and was being laid into Uganda headquarters ; a big caravan under Mr. Barton-Wright, assistant-engineer, was carrying up the three thousand loads of the steamship *William Mackinnon*, and engineers were building her. We went by train to the Kikuyu Escarpment, and by mule cart to Mole, being taken on by porters from Mole over the new route. If anything was wanted it could be telegraphed for, and when we returned to our head camp we generally found mails waiting for us. A great amount of information was obtained about the new country south of Kavirondo Gulf ; a warlike tribe, the "Kisi," inhabiting that part of the map marked Kosova, was heard of by that name for the first time. All round the coast, from Nyakach to Kadem, natives pointed to the same direction, and spoke of this tribe as they do of the Wanandi. Gembe and other hills near it, over 2000 feet, were ascended, and also several more in Utegi, Karungu, and Kadem. Cairns were left on most of them, as well as on Pyramid Island in the Ugingo group of islets.

I had never been able to find any one who knew "Ugowe," though asking for it on every possible occasion. Kioto himself said there was no such place anywhere near him ; Obamba, when passing Lake Gangu on our way from Port Victoria, pointed over to the west, and said, "That is Uhandas." Most unfortunately he was not asked the usual question : "Is that the chief's name or the name of the district ?" This should always be done, as names of chiefs are often given to districts by mistake. It was seen by this time that Ugowe could not be at Port Florence. When going north to Port Victoria, I sent for some Usakwa people at Uyawe, and with my interpreter and the head man of Uyawe, named Akeni, who spoke Swahili very well, asked them where the mouth of the Yala was ; they said farther up the coast. Then they were asked, "What is the name of the place where the water of the Yala passes into the lake ?" They all said "Ugowe." We went on next day to the biggest bay in Kadimu, and camped on its south shore. In the evening Utonga Hill was climbed to get a view. Natives from it pointed out the district boundaries of Usakwa and Kadimu. The district Kadimu must be Sir H. Stanley's Nakadimu. Next day we went to see the Yala River. Natives said it was two hours' march ; it turned out to be three hours and a half hard walking. We covered there and back, a distance of

twenty-two miles. Passing the head of the gulf, all the natives said there was no river there, as shown on the old map. It was thought they must be wrong, but they insisted and said the river mouth was farther up at Ugowe. To show we really had been to the river, it was photographed up stream and down. As we were leaving, a man came up and I asked him for some of the names of the villages round; he spoke Swahili, and said, "I remember you; you are the master of Obamba, and I am his friend. My name is Uyo, and I saw you often at Inyala with Mr. Foaker." It was very nice to meet an acquaintance in such a place. Next day we camped inside Usangi Hill at a place called Nangera. Mr. Hunter's report that there was no river at the head of the big bay was very puzzling, but natives said the river was just round the other side of Usangi Hill at Ugowe. The interpreter and some people from the villages were taken up the hill in the evening. On getting close to the top we were astonished to see a big lake below us. "This is Ugowe," said the interpreter, "the Yala River comes round that hill; there are the villages of the Ugowe chief, and there is the water of the Yala, passing to the Lake." The people with us confirmed all this. As usual, to show there was no mistake about our having been there, the camera was put up, and photographs taken all round the compass. Next day we went to Ugowe, and landed by the mouth of the river, which was full of fish-traps. The chief came to see us and said he knew me. This was surprising, but he explained, through the interpreter, not having much Swahili himself, that he had seen me "building a dhow" with Mr. Foaker, a Protectorate officer at Inyala, Port Victoria. We asked his name; he replied, "Uhanda." He said he knew Obamba, and that he had gone with me to my country. On asking the name of the place, he said, "Ugowe." Asked if it was all Ugowe, he replied, "No, only just here, this is all Kadimu"; and every name we had heard was verified over again. We told him we were very pleased to meet him indeed; that we had been chasing him and his country for the last two years, and now having found him intended to hand him down to posterity. The camera did the rest. We arranged with him to pass the *Vice-Admiral* through the fish-traps in the river next day, and she was taken round Ugowe Lake. Then thinking we could see the Yala River from the top of Ramogi Hill we went up there, and found there was another lake on the east side of it, called Ramboyu. Hearing the Yala River did not run into that, we went round Ramboyu Lake determined to find out where the end of the river was. After a long walk over the hills to a place called Ndiwo, we saw where the river ran into the swamp. Ramboyu, Ugowe, and Gangu appear to be open places in the same swamp.

On reaching Port Victoria I sent for Namoja, the chief of Inyala, and the chief Govedo, otherwise known as Fisi, who lived close to the old Government station, and asked them if they knew where Ugowe was. A crowd of people came with them, and many of them spoke Swahili. They chattered together, mentioning the name of the last officer at Port Victoria; then one man asked if I meant the place the white men had gone away to. The question was repeated, and they all said they did not know any place called that. Then I asked if they knew the name



Cutting on the Uganda Railway. Mile 346.

of the place the white men had gone away to, and none of them did. Then if they knew a man called Uhanda, and they all did. Where did he live? "In Kadimu." What was the name of his village? "Ugowe." Then they were asked why they were such foolish people as to say their friend lived at Ugowe, in Kadimu, after they had just said they did not know where Ugowe was. The chief said, in an injured tone, "That place is close to, we thought you were talking of some place far away." As usual, to make sure, I went up a hill near the old Government station, and took a photograph of Ugowe Bay in the distance, as well as the panorama of all the coast north and south. As there still seemed to be doubt in some minds that we had found the place visited by Sir H. Stanley, on our way back to Port Florence at the end of the survey we visited two small islets north of Rusinga Island. We had never found Sir H. Stanley's "Bridge Island," from which he proceeded northward to Ugowe Bay. If a natural bridge could be found at these islets I knew it would of course settle the question for good, as to get to Port Florence he would have had to go south-east instead of northwards. We had a good breeze out to the islets from Uyawe, and to show that there was no doubt about our having been there, a photograph of south Bridge Island was taken, which shows that there are hardly any trees left on it. The islet is forty to fifty feet high, and was covered with birds' nests, mostly cormorants; on examination the cave reported on the other islet was also found to be an arch. There are a great many natural arches on the Lake; one smaller one quite close to Entebbe.

The weather on the Lake is often very misty, which stops triangulation a good deal, but when clear, objects can be seen at very great distances.

From Gembe Peak, 2488 feet above lake-level, angles were taken to the big tree at Bagete on Buvuma Island, which was plainly seen with the theodolite telescope at seventy-eight statute miles distance. This tree was afterwards visited. Precautions were taken on landing in Buvuma, as the natives have a bad character. A crowd of from four hundred to five hundred soon gathered, and many more were seen streaming in from all directions over the hills. These interesting people looked very truculent, and their well-known expertness with slings and stones is visibly stamped on the heads of many of them. Of the nearest fifteen, no less than twelve had their heads battered in, the scar generally taking the shape of a large Maltese cross. An old stone fort was found on the top of Ndwasi Hill in Bugaia Island, which had evidently been built as a place of retreat from the Wavuma. Other defences were seen on many other islands, but this was the largest, and having many storehouses in it, was quite capable of standing a siege if put into order. The chief of Bugaia said it was a very old fort.

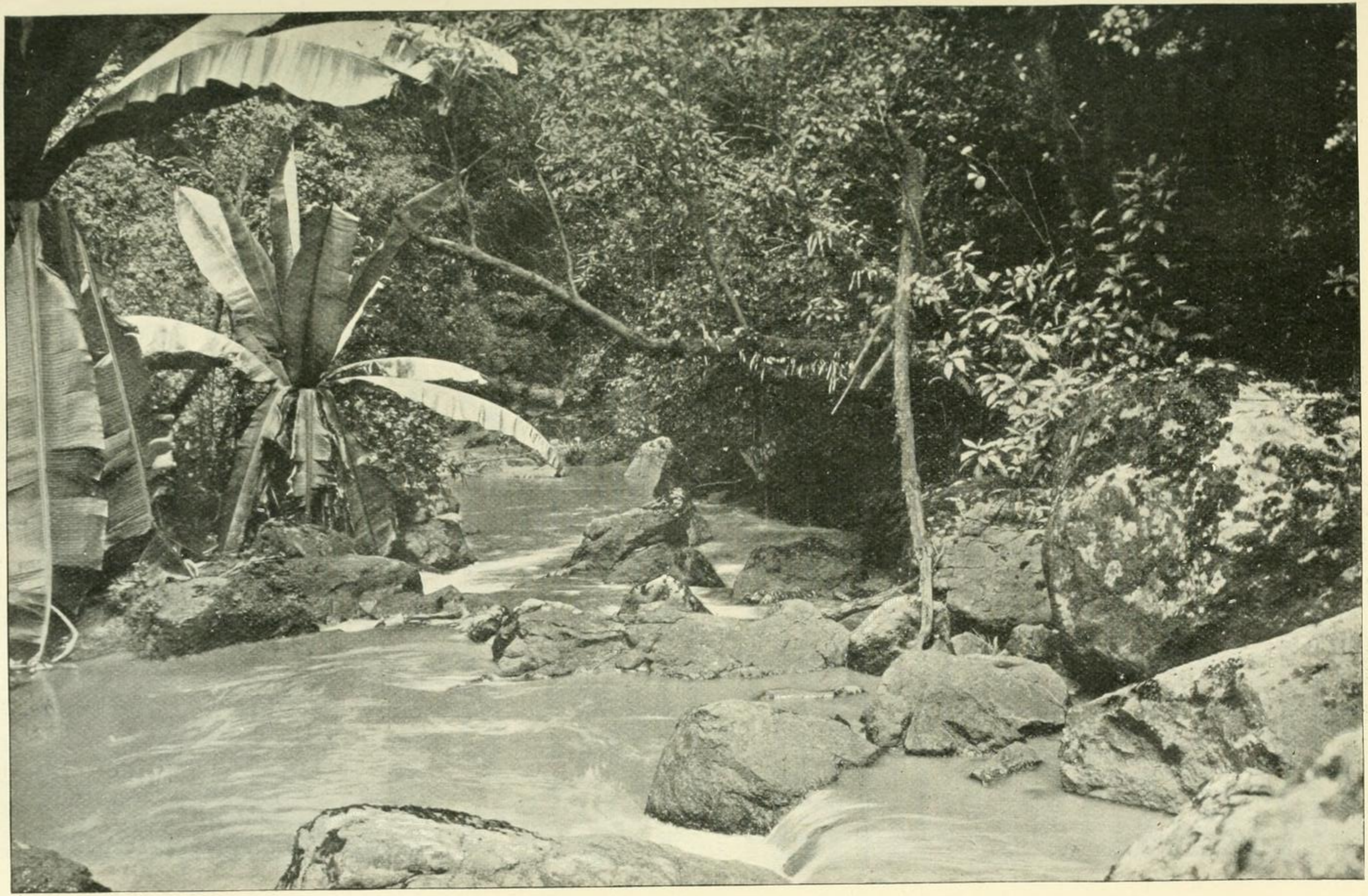
To go back to the railway, as already said, the want of water was very serious during construction up to Voi; it is different now, as water is pumped up from the Mwachi River, some distance from the line to Mazeras Station, mile 16. A pool of water was found by the surveyors above Maji Chumvi Bridges, formed by a natural ledge of rock lying across the bed of the stream; it was very brackish, but better than nothing. There was no more water till the Taru Desert was crossed, but

a small pool sometimes existed on the top of a rocky hill at Maungu, mile 83. There was another pool on a higher hill some distance to the south. Soon after the line reached Voi River, which according to all accounts never ran dry, it got perfectly dry, but water was obtained from the swamp above the bridge, one mile beyond the station. The C.M.S. have a station on the Sagalla Hills, called by caravan porters the Ndara Hills. The next water used was that of the Tsavo River, mile 133. This river runs in a great hurry, and joining the Athi River below the bridge, forms the Sabaki River, which runs into the sea a little north of Mombasa. It was at Tsavo that two lions created such a panic by carrying off twenty-eight coolies, the number of Africans killed not being ascertainable. The line from here is very uninteresting. If passed during the day, the snow-capped mountain Kilimanjaro is often seen to the south. Several small streams which occasionally run dry are crossed, but at Kibwezi, mile 195, there is a pretty little river running through an artificial bed made by the Scottish Mission, which has now moved its quarters to the Kikuyu Hills. After leaving Kibwezi, the grey thorny bush becomes more open. Game of all descriptions is constantly seen close to the line. From the Tsavo River to the Kedong River, except within a ten miles circle from Kikuyu Fort (an old Government station, now given up) the railway runs through the Game Reserve of East Africa. Beasts of prey can be shot on the railway limit (that is, a mile each side of it), and a reward is paid for every lion shot between certain stations. This reward of one hundred rupees is given, as lions have caused much trouble on the line—the worst case being that of Mr. Ryall, the Acting Superintendent of Police of the railway. A lion had become a confirmed man-eater at Kimaa, mile 257. Mr. Ryall, travelling with two other gentlemen, had his inspection carriage cut off at Kimaa, on purpose to try and shoot it. As the story has already been told, and is a very dreadful one, it will be enough to say that the lion got into the carriage in the night, killed Mr. Ryall without taking any notice of the other two gentlemen; and the door shutting (the slightest push would be sufficient to close it), it carried off Mr. Ryall through one of the windows. One hundred pounds reward was at once offered for the man-eater, and a lion was afterwards caught in a trap by Mr. Costello, of Makindu Locomotive Staff. As further trouble ceased with this capture, the reward was paid for it. Passing travellers have thought on some occasions that all the game had disappeared from the Athai Plains. My experiences are quite different. For the last five days I was at Nairobi I went out to shoot a little meat for some of the men who had been up at the Lake with me. Coming over the plains in the train from Nairobi we saw a vast number of Thompson's gazelle, several herds of harte-beest, about twenty ostriches, dozens of bustard, and a good many wilde-beest; a cow giraffe and her calf were on the Athi River just below the bridge. I was told that two days before I got there five lions had crossed the line at the down points of Athi River Station early one morning. The men in charge of the pump by the river told me a lioness and two cubs had crossed the down end of the bridge the night before. Within five miles of the station I shot what I

wanted without trouble, seeing wilde-beest, harte-beest, Grant's, Thompson's gazelle, and Impala in great numbers, as well as five hyenas and several ostriches. Plenty of lions were heard every night, while close to where I was were herds of some thousands of zebra. I also got twenty-five sand grouse, five spur fowl, and three bustard ; there are plenty of fish in the river, very like Mahseer, and they give good sport with light tackle and a gold and silver spoon. The morning I went back to Athi River Station, a lioness was shot near it by a visitor from England. Considering this place was at the edge of the reserve, and within very easy reach of Nairobi, game has evidently not quite disappeared. The game laws are now very strict; a game licence for a Government officer costs £10 a year; the number of animals allowed to be shot are limited. Settlers, traders, and missionaries also £10 a year for still more limited numbers. Visitors who come to shoot have to pay £50 for a limited number of beasts in each Protectorate. Many species are protected altogether, and there are many restrictions that intending sportsmen should make themselves familiar with before going there.

There are a large number of rhinoceri in places along the line. As a rule they do not interfere with travellers that let them alone. In some cases, of course, they are dangerous, but it was easy to get close to many for photographs. It is often said that a rhinoceros will charge the person that he gets the wind of; such is not my experience. I walked close up to the first I saw by accident—a cow and its calf. They certainly got my wind at a distance of less than twenty yards, but after looking at me for a few seconds they both bolted. On another occasion, on the Athi Plains, one came up towards us, and, stopping less than two hundred yards away, watched the caravan go by, with the wind blowing straight from us to him. Probably he was used to seeing Masai and other natives, and rhinoceri in less frequented places might have been more dangerous. Two are allowed to be shot by licence. It is very poor sport shooting them, but, like the hippopotamus, they are a cheap present to gain the natives' good-will in famine time. One shot at Kin was entirely eaten that day, and the next morning we found some poor starved creatures picking off what flesh was left on the head, and eating it raw. The famine along the line in 1898-99 was very bad, and it is hardly surprising that the starving people should have tried on some few occasions to get at the flour stores of the permanent way gangs. It must be dreadful to see a line of camps with plenty of food stretching along a famine-stricken country, and not to be able to share any of it.

Masai Natives, showing the characteristic ornaments. (From *The Sphere*.)

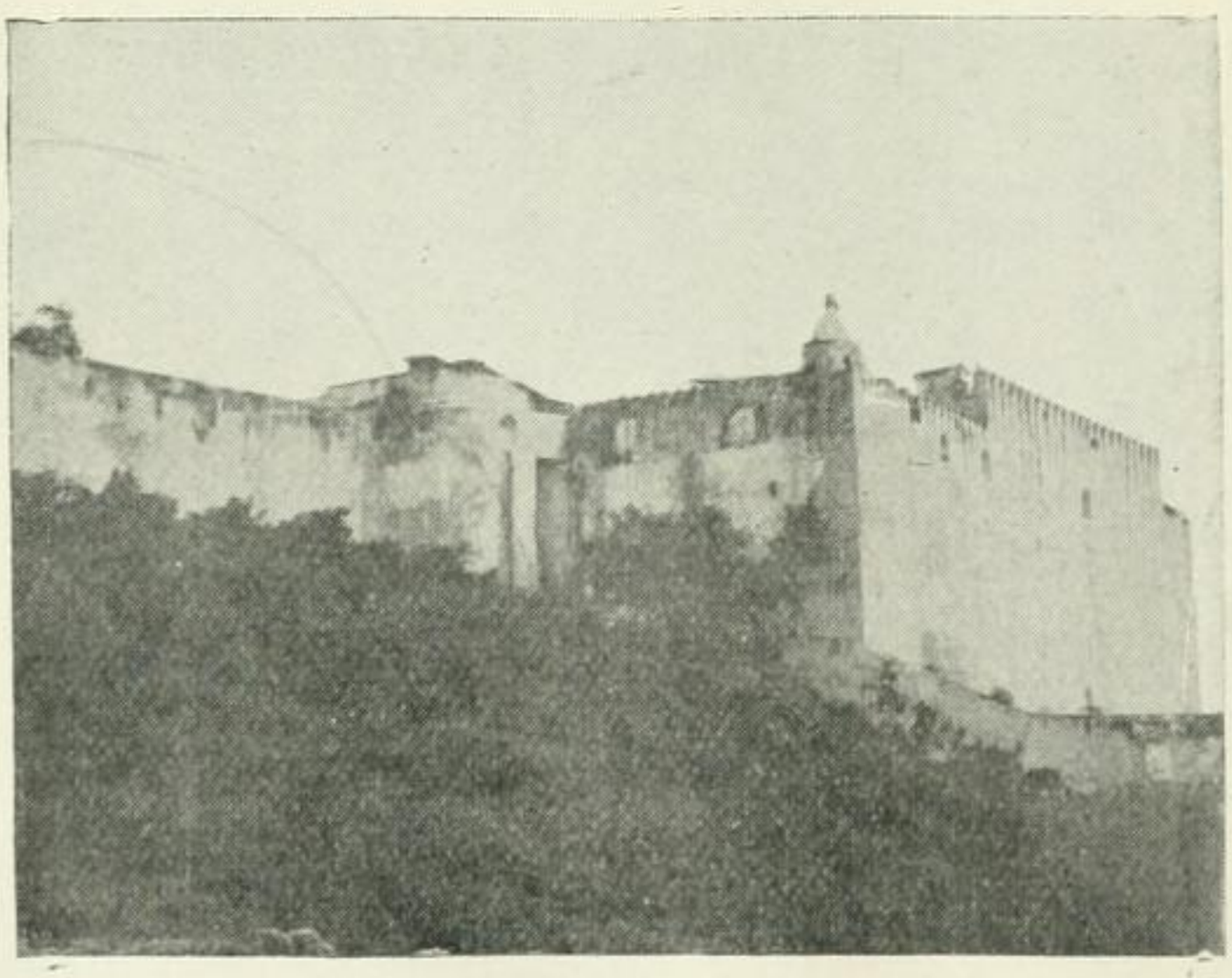


On the Londian River.

There are many different tribes along the line. The most useful people at present in Africa are the Swahilis, the Seedie boys of the men-of-war and the mail steamer. Most of them are Mohammedans; but they are not very particular over their religion. Porters are drawn from many tribes, from Uganda right down to the coast. If they are kept any time inactive they get very lazy, and have to be hunted round before they will go to work again. The Swahilis are very good men for caravan and survey work. Great things were prophesied as to what the Masai would do to the railway when it reached their country; but they turned out to be the most amiable of all the tribes. Some few are herdsmen to people connected with the line, and some of the boys become servants for a time, but I have never heard of any working on the line, and such work would be very much against their ordinary habits. They have not very good physique as a rule, and are far below the Zulu in that respect; those round Naivasha were the finest met with. The so-called Masai that were employed in guarding the telegraph wires in the Nyando Valley when we marched down on our return from the Lake, were the weediest-looking natives I have ever seen in any part of the world, but it was said they were not real Masai. The kraals visited never gave any inducement to visit them a second time. The Wanandi are a very warlike race; the finest young man I ever saw in Africa was in Nandi; he passed us carrying his shield and spears, walking as if he owned the country and knew it. The Wakavirondo are dreadful cowards, with very few exceptions (such as Obamba). At any sudden movement they will scatter like a flock of sheep.

The climate of the district the line passes through is pleasant, from Sultan Hamoud Station, mile 238, to the lower part of the Nyando Valley, mile 550. From above mile 33, bad nights such as have to be endured on the tropical coasts of Africa and India are never experienced.

Coffee grows well in Sesse and Uganda, and rubber grows everywhere. Hardly any island was visited west of Buvuma, that had not Landolphia rubber vines growing on it. Very good fibre is grown in East Africa and Uganda. Castor-oil plant grows everywhere, and, if trees of it are allowed in gardens, they become a nuisance, as they spread so very quickly. Tobacco grows well, especially in Nandi, and is much used by all the people. Good crops of potatoes and all kinds of English vegetables can be easily raised round Nairobi. Uganda itself and Budda appear to be very good agricultural countries, and



Mombasa—the old Portugese Fort. (From *The Sphere.*)

Nandi certainly looks like a very fine planting country. Kikuyu will, of course, become settled in before Nandi, as Nairobi is the most important place in the country next to Mombasa. Its population is roughly about 5000. There was no one there till the railway made its appearance, the headquarters of the Ukamba province being then at Machakos, some distance to the south-east. Very good gardens can be made on the Kikuyu hills, and it is easy to irrigate them. Most of the potatoes used on the coast and Zanzibar are said to come from France. There is no reason why they should not all be grown in Kikuyu, one day by rail from Mombasa.

Being right on the Equator, the sun is, of course, very powerful. The best results seen on the Lake were obtained in a shaded garden. The produce was quite up to the ordinary English standard, and this although the soil of that particular garden was certainly the poorest met with. A week's dry weather under such a tropical sun will do more damage than a month's dry weather in England. Irrigation from the east side of Mau ranges to the Kavirondo Plains would not be difficult; there are many streams, and Mau being the highest part of the country they are rarely dry, owing to the heavy rainfall and mists. There is enormous motive power running to waste at the Ripon Falls and the river below it, which consists of rapids and cataracts for a considerable distance down. There are also several rivers along the railway route, which could be utilised in the same way.

Apparently there is no difficulty in getting cheap labour in Uganda by people who intend to stay among the natives for some time. The Wakikuyu are beginning to understand work—many of them are now used for breaking up ground and clearing forests. The ballasting of the line near Nairobi and all the drainage of the railway township has been done with native labour. No labour was obtainable at first, as the people knew nothing about it, but it seems there will be a good deal available in the future. The occupation of the porter having gone, he will soon be forced to labour for a living, and no doubt a considerable number will eventually take to work on the line. For further railway extension there should be a good deal of local labour procurable. Waganda would certainly work well in their own country on earthworks.

There is a good deal of fever, which is not surprising in a new tropical country in which before the advent of the railway living could hardly be called comfortable. The worst kind, known as Blackwater fever, the engineers have been singularly free from, for from among about fifty employed on the line for the last five and a half years, there has been only one slight case, and yet they have been engaged in what is always supposed to be the worst thing for health in the tropics, namely, turning up virgin soil. White people appear to be generally safe from the smallpox the tribes occasionally suffer from. European children can live a pleasant life at Nairobi, and Mombasa itself is said to have a pleasanter climate than Bombay; knowing both well, Mombasa seems to me to be the cooler.

The Lake region is a very stormy one, and a day never passes

without thunder, while a storm can always be seen somewhere, although they never last long. During the first survey of Port Florence, in 1898, there were seventeen violent storms during the twenty-one days; tents were constantly blown down; this causes a lot of sickness which will not be met with when proper houses are built.

The ideas of the Lake fishermen are very primitive; no nets were ever seen, fences of reed and grass are made on the shore and at the mouths of all rivers, with traps at close intervals along them; these are visited at least twice a day; fish-pots are also much used, and drift about in all directions, often several miles from the shore, and canoes visit them constantly. Very large screens of light reed work, made on the principle of the seine-net, and laid out with rafts are used with considerable success. A row of fish-pots takes the place of the purse. In Kavirondo they were never hauled right up on the beach as our

The Fish Market at Mombasa Harbour. (From *The Sphere.*)

seines are; the screen is brought very close in, and then men and women scoop about inside it, catching the fish in their baskets, and driving them to the centre part of the screen into the baskets fixed there. It is curious to see natives wading about with hippopotami not far from them. In Uganda, Sesse, and Buddu a still more primitive screen of banana leaves is used exactly as a seine is. The ropes are well made of grass, and float on the surface; many were seen over a quarter of a mile long. The screen is sometimes laid out and allowed to drift a long distance before it is finally hauled ashore. Dried fish is a great article of trade all round the Lake, but the trade is not likely to extend beyond its shores.

A curious point about the Lake natives is, that although they have fairly good canoes, they appear to be absolutely ignorant of sails. Only one mast was ever seen, and that was evidently an imitation of our boats, which always travelled with the masts up, and no sail was used on it.

Very curious swarms of insects can be seen on the Lake; they

appear to hatch out of the water far out in the Lake, and come ashore before the southerly winds. The insects are rather less visible than the ordinary grey mosquito. Swarms were seen more than twenty-five miles distant, like the smoke of ocean steamers; at first they were taken for smoke from low islands out of sight, as they were seen on several occasions about the same spot; next they were mistaken for water-spouts, which are often seen on the Lake. A series of photographs of them were taken, but not very successfully. On the outer islands these insects are a great nuisance. The air is quite darkened with them as they drift past. The natives catch them by waving baskets round their heads, then collecting them from the bottom, they pound them up into a kind of rissole, and after exposing them to the sun for some time, eat them. We also on several occasions suffered from great swarms of what appeared to be the common May fly, particularly on one occasion at Luambu, the western island of the Sesse group, where they stopped theodolite work for some time. Mosquitoes were, of course, very bad in swampy places, but 1900 was better than 1898; the Lake in 1900 was at an extraordinary low level, and the shores, in consequence, were much drier, with fewer mosquitoes. The waters of the Lake at Port Florence have been referred to as stagnant; they are, of course, at rest, and more or less stagnant everywhere, except just at the mouths of rivers and narrow passages where the action of the wind causes currents, and at the Ripon Falls. At Port Florence the water is made worse by the hippopotami, and the fishermen that are constantly stirring up the mud. In 1898 twenty-five hippos together were often seen close to the boat at the mouth of the bay. It is a mistake to consider Port Florence any worse than many other places round the Lake. There are excellent building sites on the hills on the east side of the harbour. Kavirondo Gulf, with its narrow entrance, is naturally muddy on account of the rivers that run upon it—one of which, the Ulambwi, was only discovered during the late survey. All the water of the Lake near the shores is more or less muddy; it is quite muddy all along the west shore and between the Sesse group and Uganda. The head of Berkeley Bay is just as muddy as Port Florence.

On Mr. E. G. Ravenstein's map giving part of Sir Henry Stanley's route we found marked "Marija Islands reported by Stanley three miles east of Kiuwa not to be identified." They were identified at once from the mainland the first time they were seen—a chief was asked the name of some small islands, and he said Marida or Marija; they were afterwards visited and found to be four in number, and to be just where Sir Henry Stanley put them, viz., three miles east of Kiuwa Island.

The Kagera had apparently more water in it than the other rivers we visited, but it winds very much, and it will probably not be much used. The *Vice-Admiral* was taken about three miles up it. A steam launch, now wrecked, that belonged to an English firm, has been a considerable distance up it. No steam launch could go up any of the other rivers we saw.

The language of the country in the future will certainly be Swahili. The natives round the east coast are picking it up very quickly. We

found many speaking it at Mbitu Passage on our way back to head-quarters, but none could speak a word of it when they were first visited. Swahili is the most useful language in the country, and it seems to be a very good thing that its use is extending so fast, as the number of languages in use at present causes much confusion to travellers.

A JOURNEY FROM QUETTA TO MASHHAD BY THE NEW NUSHKI-SISTAN TRADE-ROUTE.[1]

By the Right Hon. THE EARL OF RONALDSHAY.

WITH a view to travelling along the recently opened trade-route between India and Persia, across Baluchistan, I journeyed to Quetta at the end of October 1900, reaching that place on the 1st November. Here I spent ten days making final preparations, and engaged the servants I required to accompany me as far as Mashhad. These consisted of seven Indian servants and a daffidar and three sowars of the local levy from Nushki, to act as escort. By the 9th everything was ready, and I started off my caravan of baggage camels in charge of the servants and sowars, keeping behind with me the Baluchi daffidar Ralmat Khan and two of my Indian servants with our ponies and riding camels. This to give the caravan a day's start and to enable us to get through a long march on the morrow.

A curious white mist hung over Quetta on the morning of the 10th, hiding it from view as I cantered along the road accompanied by Ralmat Khan and the servants on their camels. After leaving the main road a few miles from the town, we made our way by a camel track over flat stretches of sand and gravel, covered for the most part with brown tufts of aromatic wormwood, with ridges of barren hills running parallel on either side. Here and there we passed small villages, mere clumps of low, flat-roofed mud huts, whose existence must inevitably come to an untimely end should the country ever be visited by anything like prolonged rain; miserable evidence of human existence, low and squat-looking, with no apparent aperture beyond an ill-shaped hole, presumably the door.

In parts the track was very stony, and anything beyond a walk out of the question; but at others sand took the place of stone, and we were able to go along at a canter. At sixteen miles we passed the levy post of Girdi Talab, and another sixteen brought us to Kanak, where I found my camp and spent the night.

Kanak is a levy post such as exist, or are in process of construction, at intervals of from fifteen to fifty miles, the whole way from Quetta to Sistan. They consist of mud forts known as "thanas," built square and with an erection in one or more of the angles in the form

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[1] A paper read before the Society on February 6th. See map illustrating next article.