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Through Africa from the Cape to Cairo

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About halfway between this obstruction and the summit there is another spot impracticable for laden mules and ponies. As to this fact we had not been enlightened by the Uz Bashi, or headman, of Tir, who returned to his village together with all the other men who assisted in getting the caravan up the rocks, thus leaving us in the lurch. This delayed the march considerably, as there were no extra men to assist, but the descent on the other side of the pass taxed the caravan-men and their charges severely. The gradient is very steep, and a recent slight fall of snow had so covered the rocks, stones, and shale that no track could be discerned, so we had to find our own way down. Men and animals continually fell down, especially at the foot of the very steep part where the narrow valley was for some distance a mass of sloping and slippery ice, on which they had to travel as best they could. We had hoped to reach some inhabited place before dark, but the difficulties of the march necessitated bivouacking on the mountain-side, where there was fortunately sufficient grass and a fair amount of partially dry yak-dung, the only available fuel. The old Pathan, Mohammed Amin, and his section of the caravan did not reach this inhospitable spot till after nine o'clock, having left all the baggage higher up. Wonderful to relate, the barometer, which was carried by one of the Pathans, survived this day's most trying march. The next day dysentery attacked Dalbir Rai, the sub-surveyor, and as little or no milk was obtainable, it was necessary to have him carried to Yarkand, where we arrived on January 20. Almost as soon as he recovered from this attack, rheumatism attacked him in a mild form, no doubt the result of exposure in the mountains. The latter also had its effect on me, and aided by a Chinese dinner which the Amban of Yarkand invited me to, and which was served in an open courtyard with a temperature considerably below freezing-point, proved too much for my constitution, which is not seasoned to a meal consisting of more than twenty-five dishes, washed down by the most evil-smelling hot and raw spirit that my nasal organ has ever been near.

(To be continued.)

THROUGH AFRICA FROM THE CAPE TO CAIRO.*

By EWART S. GROGAN.

THERE is a saying in South Africa that "every one who has once drunk dop (a brandy made in the Cape) and smoked Transvaal tobacco will, in spite of all inducements to the contrary, in spite of all the abominable discomforts inseparable from life in Africa, continually return to the old free untrammelled life of the veldt."

Anything more ridiculous than the possibility of my return to

* Read at the Royal Geographical Society, April 30, 1900. Map, p. 264.

Africa never occurred to me as I wearily munched my ration of everlasting bully beef and rice during the Matabele war of '96, and, after three weeks of dysentery and an attack of hæmaglobinuric fever, I shook my fist at Beira from a homeward-bound steamer, happy in the thought that never again should I set eyes on those accursed sands. Thirteen months later I stood on those same sands with my friend Mr. Sharp, having made up our minds to explore the little-known country between Tanganyika and Ruwenzori, and, if possible, to continue our journey down the Nile. Wars and rumours of wars in many of the countries to be traversed, and Khartum in the clutch of the Khalifa, rendered the success of our enterprise extremely problematical; and as failure is unpardonable, we wisely refrained from announcing our intentions.

From the Cape to the Zambezi is perhaps better known to most English people than many parts of England, and consequently I will pass over this stage, confining myself to a very few remarks on the Gorongozo country of Portuguese East Africa.

The river Pungwe, as every one knows, flows into the channel of Mozambique, forming with the river Busi the extensive bay on which Beira, the port of Rhodesia, is situated. Thirty-six miles in a straight line from Beira the railway crosses the Pungwe to a spot called Fontesvilla, on the right bank. Four miles above this the Pungwe flows in two channels; the left, which is the larger, is called the Dingi Dingi, the enclosed island being about 40 miles by 6. Twenty miles above the lower junction an important tributary called the Urema flows into the Dingi Dingi, bringing down the drainage of the east and north-east slopes of Gorongozo's hills and the drainage of the vast swampy Gorongozo plain; consequently, even in the dry season the Urema has a considerable body of water. Its main feeders are a wide sandy river from the east, and a smaller stream called the Manza, also from the east, and the Umkulumadzi, which brings the main volume of water from Gorongozo's hills on the west. Between the Dingi Dingi and the Urema there is a triangular patch of forest, with a network of deep water-troughs; these, even in Mr. Mahony's time (Mr. Mahony has been in this country for about nine years), were lagoons with much water, and the natives went from village to village in canoes. Now, with the exception of a few deep water-holes, they are dry, the canoes may still be seen rotting on the dry bed, and the crocodiles, the few that have survived, lead a precarious existence in the moist grass that grows along some of the deeper channels. This, coupled with the fact that the swamps a few miles to the north are visibly diminishing, proves that even in this district, remote as it is from the centre of disturbance, there is a constant and rapid process of upheaval.

The quantity of game in all this country is incredible. Crossing the great plain just as the waters were falling and the new grass growing

up, we saw over 40,000 head of game, mainly blue wildebeeste, from one point; and during our stay of five months, besides many fine heads of buffalo and various species of antelope, we shot seventeen lions and captured alive five cubs, three of which are now disporting themselves in Regent's Park. Another curious point about this country is that the Urema, which was till lately navigable for about 50 miles in small boats, is now totally blocked by a vegetable growth similar to the famous Nile "sudd," but without the papyrus, which, I believe I am correct in saying, is practically confined to the Nile system, though there are a few papyrus swamps round Kivu.

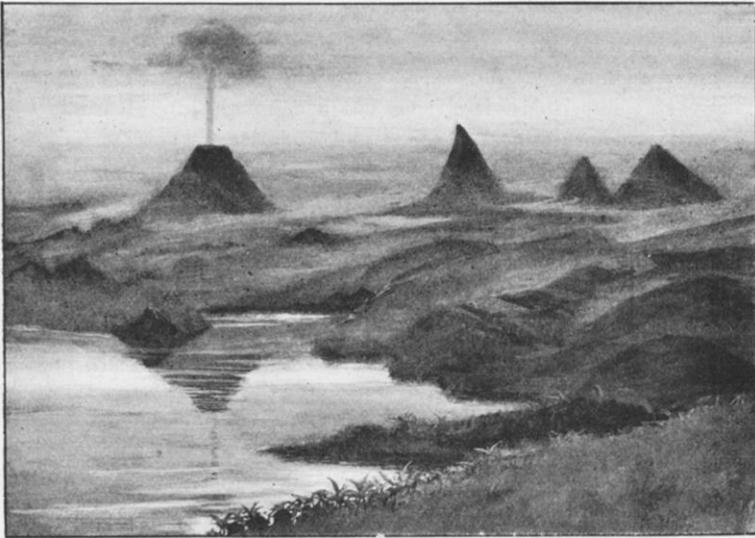
We began our real forward movement when we left the Zambezi in October, 1898; thence we travelled by the Shire river to Chiromo, the port of British Central Africa situated at the junction of the Ruo and Shire. Thence by steamer on the Shire to Katunga, whence the road leads overland *via* Blantyre to Matope, as about 120 miles of rapids render the river unnavigable. From Matope to Karonga, at the north end of Nyasa, there is an uninterrupted waterway of about 500 miles. Thus far is merely a question of taking a first-class ticket with one of the rival transport companies, of which the African Flotilla Company, despite the heavy handicap of being late in the field, is rapidly forging to the front.

From Chiromo, where I had to wait for some loads that had gone to Delagoa bay by mistake, I crossed the Ruo and spent some time in exploring the mountain mass of Chiperoni, while Sharp hurried on to Karonga to arrange transport to Tanganyika.

Chiperoni, which had previously, I believe, only been visited by Messrs. Harrison and Kirby, the well-known big game hunters, is 6000 feet high, and a conspicuous landmark for many miles round. The main peak, with a broad terrace 500 feet from the summit, is situated in the east side of a huge basin formed by surrounding peaks, the chief of which is Makumbi on the north-west; the bottom of the basin is a forest-clad plateau about 2000 feet above the surrounding plains. The mass is drained by the Ruo, Liadzi, Zitembi, Machinjiri, and Misongwe, all of which flow into the Shire. The inhabitants, who have a supreme contempt for the Portuguese, their nominal masters, are a branch of the Wakunda, and are possessed of domestic swine and pigeons, and they cultivate the pineapple and rice, besides the ordinary grains of the country, millet and maize. They suffer much from goitre, and I observed many albinos. The results of inbreeding, inevitable from the isolation of families in mountainous countries, such as leprosy and other diseases, are very noticeable.

On arrival at Karonga I found that Sharp had left for Ujiji, to obtain dhows on Tanganyika. After a fortnight's delay in obtaining porters, I followed along the Stevenson road. The march to Kituta, at the south end of Tanganyika, is most uninteresting; however, I broke the

monotony by a short trip with Mr. Palmer, the assistant collector at Mambwe, to the Chambezi, which is the real source of the Congo. This district has been recently thoroughly explored by Mr. Wallis, who laid the results of his experience before this Society. But there was still a portion unknown, the vast swamp that lies at the junction of the Chambezi and its main feeder the Chosi, known to the natives as Luwala. It is a triangular patch of territory of about 1500 square miles, and quite uninhabited, a few natives only coming to fish as the waters recede after the rains. Unfortunately, the rains had broken, and we were prevented from penetrating far into the interior by the depth of water. All the streams that flow south-east from the plateau and fall



THE VOLCANOES FROM LAKE KIVU; VIEW FROM SOUTH-EAST.

into the Luwala, mingle and lose themselves in the swamp, and eventually drain out by the Mwenda.

From Kituta I went to Mtowa, the chief station of the Congo Free State on Tanganyika, by the small steamer belonging to the African Lakes Corporation, while I sent my boys and the loads to Ujiji on a dhow that Sharp had sent down. On arrival at Mtowa I found Sharp more dead than alive with fever, in the care of the late Dr. Castellote, the medical officer of Mr. Mohun's telegraph expedition, who had rescued him from Ujiji, where he had been very ill. Two days later we crossed to Ujiji, and after a few days of the lavish hospitality of Hauptmann Bethe and his colleagues, we collected our safari of 130 Manyema carriers and started up the lake by land. Sharp got a slight sunstroke, and my fever became so bad that we arrived at Usambara more dead

than alive. However, Lieut. von Gravert obtained cattle for us, and a team of boys to carry me in a machila to the highlands of Kivu.

The Rusisi, which flows out of Kivu, empties its water into Tanganyika through five mouths, four of which are close together, while the fifth is close to the north-west corner. The enclosed deltas are very swampy and partly covered by tropical forest, and are said to be the feeding-grounds of numerous elephants, a large proportion of which are reported as tuskless. The northern end of Tanganyika is very shallow; we saw hippopotami walking on the bottom at a distance of at least 2 miles from the shore. The lower end of the Rusisi valley for a distance of 20 miles has risen quite recently, geologically speaking, deposits of shells in a semi-fossilized state being visible on all sides. The valley rises very gradually till 20 miles south of Kivu, when the increase in altitude is very abrupt; though this might be manœuvred, for railway purposes, by making use of the winding valley to the east. The Rusisi itself has cut a channel through the hills on the west in a succession of rapids and cascades. There are signs of the above-mentioned eastern valley having been the old bed of the river. Immense walls of mountains shut the valley in on either side, walls that continue practically unbroken to the outflow of the Nile from the Albert lake. The Germans have cleverly availed themselves of the opportunity afforded by the five years' chaos on the Belgian frontier. They have pushed three posts forward, two on the river itself, and the third on the south point of Lake Kivu. The latter is at least 40 miles over the treaty boundary. With the thoroughness characteristic of German undertakings, they have despatched Dr. Kandt to investigate the possibilities of the country.

The tail of Kivu is a network of islands, which culminate towards the north in the large island of Kwijwi. The coast-line must be something enormous, rivalling, I imagine, the coast-line of any other water in the world of the same extent. On the east coast two long arms run for several miles inland, and thousands of winding lochs radiate in every direction, dotted with islets and broken up into countless little bays and creeks. The lake is very deep, and contains neither crocodiles nor hippopotamus; this also applies to all the small lakes and rivers in this neighbourhood; but there are enormous numbers of large otters, and the typical bird is the demoiselle crane. Numerous fish resembling a carp are caught and cured by the natives; but there appeared to be no large fish such as are found in Tanganyika. The whole surrounding country is packed with small hills, which appear to have been sprinkled on with a pepper-pot till not a single one more could find room. The majority of them are not connected with ridges of any sort, consequently it is necessary to perpetually ascend and descend; and the valleys, which are very narrow, are often filled with papyrus swamps. The hills are covered with magnificent pasture, which affords grazing

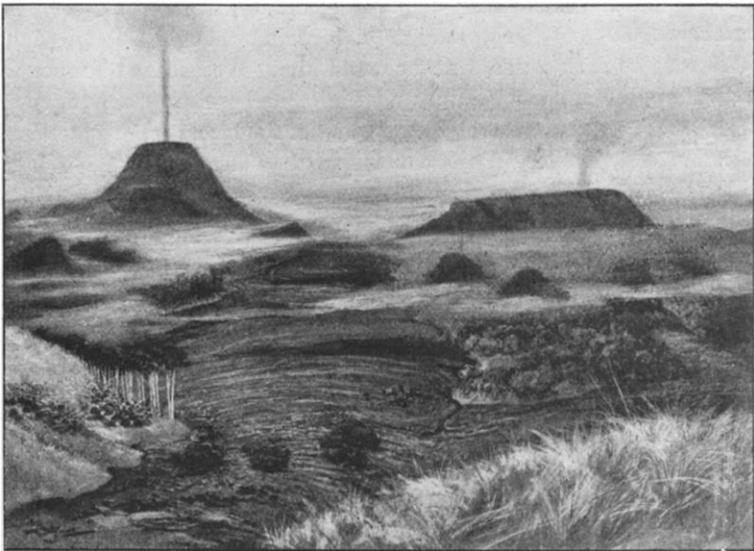
for the large herds of cattle owned by the Watusi. The people are known collectively as the Waruanda, and society is divided into two classes. The Watusi, who are similar to, if not identical with, the Wahuma, are the aristocrats. They are presumably descendants of the great wave of invasion of Gallas that penetrated in remote ages as far as Tanganyika; they are a purely pastoral folk, breeding a long-horned cattle, with which they live, preferring slavery even to separation from their beloved beasts. Two to a hundred of these gentlemen are to be found in every village; they do no work beyond milking and butter-making, and when in need of tobacco, grain, or other necessaries, quietly relieve the aborigines of the country, whom they call Wahutu, of what they require. The Wahutu are abjectly servile to the Watusi, but presumably, from the satisfaction that we gave to the inhabitants by a slight difference of opinion that we had with Ngenzi, the satrap of Mukinyaga, not totally in accord with their taskmasters. In the time of the late king of Ruanda there was a very formidable and far-reaching feudal system, the provinces being administered by satraps (native name *ntwala*), who were directly responsible to the *kigeri*, or king, each village being in itself governed by an *mtusi* (*sultani*), who was responsible to his *ntwala*. All the cattle belongs to the king absolutely, but was held in trust by his satraps, who again parcelled it out among the minor Watusi. The Wahutu appear to be merely hewers of wood and drawers of water, and to be allowed as a favour to assist in the herding of the goats and cattle. A few months before our visit the old king had died, and the kingdom was divided between his two sons, one of whom had his headquarters at the north-east corner of the lake, while the other lived to the east of the highest of the volcanoes.

The civilizing influence of the northern influx is conspicuous in the terracing of the hills for cultivation, rudimentary efforts at irrigation, enclosing of villages and cultivated lands by hedges, and even in the formation of artificial reservoirs with side troughs for watering cattle. The scenery of Kivu is superb, a happy blend of Scotland, Japan, and the South Sea islands. The track we followed often led over hills 1500 feet above the lake, and from some of our camps we looked down on the vast oily expanse of water deep-set in its basin of innumerable hills, dotted with a thousand isles, stretching far away till it was lost in the shimmering haze of the northern shore, where crisp and clear towered the mighty mass of Kirunga, whose jet of smoke alone broke the steel-blue dome of sky. At the north-east corner of the lake the hills stop, and the country slopes gradually from the lake-level to the base of the volcanoes, broken only by scattered dead volcanic cones still perfect in form. The eastern portion of this plain is densely populated, and grows enormous crops of maize, hungry rice, millet, sweet potatoes, peas, beans, and edible arum, wherever there is an open space between the endless banana plantations. The western portion, which has been

recently covered by a lava-stream, is not yet sufficiently disintegrated for cultivation, though it already supports a heavy bush growth which bursts from every crack and cranny in the lava-blocks.

The main volcanoes are six in number, two of which are active; the other four have long been extinct. Owing to the impossibility of obtaining representative names for them—I obtained as many as thirty-six for the highest in one camp—I have ventured to name the most important to prevent confusion. Of the two western peaks, which are sharply separated from the other four, the higher peak, generally described as Kirunga, I have called Mount Götzen, after Count Götzen, who discovered Kivu and made the ascent of the peak to the main crater, which is still mildly active. The second one, which has formed since Count Götzen's visit, I have called Mount Sharp, after my fellow-traveller, Mr. A. H. Sharp. Count Götzen mentions considerable activity on the far point of the north-western ridge, and, according to the natives, two years before our arrival in the country there had been a terrific eruption, in the course of which the volcano formed; its crater appears to be enormous, and must be several miles in extent. The lava flowed in two main streams towards the north, and there was a minor overflow to the south-west. The largest stream flowed down by the *arête* between Mounts Götzen and Sharp, a small overflow running, as I have mentioned, south-west, while the main volume poured down into the south end of the Ruchuru valley, down which it flowed for a distance of about 30 miles, working close up to and filling the small bays of the eastern terrace. Shortly after another wave followed over the same course, leaving a sharply defined terrace when it cooled. Then there appears to have been a terrific vomiting forth of huge blocks of lava and ash, which in places are piled to a height of 30 feet on the top of the main lava-stream. The forest with which the valley was clothed was entirely engulfed in the stream's course, while the forest on the sides was blown down by the attendant whirlwinds. The natives informed me that whole herds of elephants were destroyed; I myself saw the bones of one that had been forced up to the top by the edge of the stream. As far as I could gather, the eruption had been very sudden, but I found it extremely difficult to obtain much information beyond the fact that suddenly there was darkness as the darkness of night, when all became fire, and terrible and wonderful things happened of which there can be no words! As in all things that the native cannot understand, there was a distinct aversion to talking about it; all my questions met with a similar response, and they rapidly changed the subject. The other main stream which flowed down the north-west slope was of enormous extent, but as I merely crossed it, I had no opportunity of accurately estimating the area covered. Besides a small branch about 400 yards wide, the width at my crossing was about 2 miles, and this was well on the slope of the hill; further down, where

it met the eastern main stream, the width of the two combined cannot have been less than 15 miles. In the plain to the north of Kivu, in the pass between the two blocks of volcanoes, and on the slopes to the north, owing to the porous nature of the ground there is no water; yet in spite of this there is an enormous population, the necessary water being obtained by tapping the stems of the banana palms. The moisture is retained by the ground, and consequently the forests that clothe the slopes of the volcanoes are wildly luxuriant and impenetrable to everything but the elephant. When hunting and following close on the tracks of an elephant, we had to cut our way with a native axe, without which no one moves a yard; for hundreds of yards at a time



THE VOLCANOES MOUNT GÖTZEN AND MOUNT SHARP, FROM THE NORTH-EAST.

one never touched the ground, but was climbing along the prostrate tree-trunks and dense growth, which of course the elephant would take in its stride. More desperate work or more dangerous hunting it would be impossible to conceive.

Although the forests were full of elephants, it was only after a week's terrible work that I found; and then I had to fire at him at 2 yards, as if I stepped back I could no longer see him. It was impossible to creep to either side of him, so impenetrable was the undergrowth, and I had perforce to take the shot as it was, or lose the chance. The effect on the sportsman of firing a double 4-bore at such close quarters can be better imagined than described; as for the elephant, I believe he is still running. The next day I followed up another, and, after

knocking him down three times, was furiously charged, and either kicked or carried by the rush on to some thorn tree 10 feet above the ground, my gun being picked up 10 yards away in the opposite direction, full of blood; I could not see him till his head was right above me, when I pulled off both barrels of the .500 magnum that I was carrying; this evidently turned him. I was pulled down from my spiky perch by my niggers, who, seeing me drenched with blood, thought I must be dead, till an examination proved that it was the elephant's blood. On resuming the chase, he got my wind again, but, fearing the charge, merely let off some superfluous steam in throwing trees about, a performance that so impressed me, that I have never tackled an elephant with any degree of comfort since. After ten minutes of this exhausting display he fell down, but pulled himself together again and went straight away, and though I followed him till it was too dark to see, I never found him. We had had neither food nor water all day, and it rained all night, necessitating a hungry and chilly vigil, during which I had ample time for calm reflection—reflection which ended in the conclusion that elephant-hunting in the scale of sports might be placed between croquet and marbles. Sharp, after losing two stone in herculean efforts, never even saw one, and gave it up in disgust.

Of the four main peaks of the eastern mass of volcanoes, all of which are extinct, the highest I have described as Mount Eyres, after Mrs. Eyres, of Dumbleton Hall, Evesham, Sharp's sister, without whose help and encouragement we should have failed to bring our trip to a satisfactory conclusion. The other high peak I have described as Mount Kandt, after the distinguished German scientist, who is making a most elaborate study of the whole region. Nearly every morning there was snow on these two peaks, and the height of Mount Eyres must be nearly 13,000 feet (?), as during my elephant-hunting, when I explored all the north-west face, my aneroid registered on one occasion more than 11,000 feet. Leaving the elephant, I made a rapid tour to establish the identity of Mfumbiro, which is conspicuously marked on most maps, with the height added, and I ascertained for certain what I had been led by the Germans to suspect, namely, that Mfumbiro has never existed outside the imagination of the British statesman. Mfumbiro, it will be remembered, was accepted by us from the Germans as a counterpoise to Kilimanjaro, which we gave to them in our usual open-handed manner in the boundary agreement between British East Africa and German East Africa. The forests of these volcanoes are a branch of the great Aruwimi forest, and the home of numbers of pygmies, who hunt the elephant and search for bees, trading the meat and honey with the Waruanda for grain, spear and arrow heads, and knives; while the Waruanda buy their bows and arrows complete, the dwarfs' work being much superior to their own.

When making the circuit of the two active volcanoes, I had an unpleasant experience with a tribe of cannibals called the Baleka, who made what had lately been a delightful and thriving district most undesirably warm. Their superfluous attentions and the absence of food prevented me from exploring two small lakes that I saw to the west, and from determining whether the large stream which I could see issuing from the southern lake flowed into Kivu or down the other side of the watershed direct into one of the tributaries of the Congo. Four days' continual marching, during which I and my ten boys suffered much from hunger, took us out of the country in time to warn Sharp, who was coming round the south of Mount Götzen to meet me with the rest of the caravan. Joining forces again, we returned through the pass once more, and started down the Ruchuru, or, as it is here called, the Kako valley. The Kako rises on the north slopes of the volcanoes, and, becoming further north the Ruchuru, flows into the Albert Edward lake; hence its headwaters are the true source of the Albert Nile. Curiously enough, the source of the Victoria Nile is only 40 miles south of this, the headwaters of the Nyavalongo, which is the main tributary of the Kagera, the main feeder of the Victoria lake, rising a few miles from Kivu. Thus within six days we passed the two actual sources of the Nile, which, rising close together, but flowing in different directions, enclose such a vast tract of country before they finally merge at the north end of the Albert lake preparatory to the long voyage *viâ* Khartum to the Mediterranean. The height of the crest of the pass is 7000 feet, and the ground quickly falls away to the north till one drops to the dead level of the vast Albert Edward plains.

When exploring with a small number of followers, I observed some ape-like creatures leering at me from behind banana palms, and with considerable difficulty my Ruanda guide induced one of them to come and be inspected; he was a tall man, with the long arms, pendant paunch, and short legs of the ape, pronouncedly microcephalous and prognathous. At first he was terribly alarmed, but soon gained confidence, and when I asked him about elephant and other game, he gave me most realistic representations of them and of how they should be attacked. I failed to exactly define their social status, but from the contempt in which they were held by the Waruanda their local caste must be very low. The stamp of the brute was so strong on them that I should place them lower in the human scale than any other natives I have seen in Africa. Their type is totally distinct from the other people's, and, judging from the twenty to thirty specimens I saw, very consistent. Their face, body, and limbs are covered with wiry hair, and the hang of the long powerful arms, the slight stoop of the trunk, and the hunted, vacant expression of the face made up a *tout ensemble* that was a terrible pictorial proof of Darwinism. The pigmies are of

No. II.—AUGUST, 1900.]

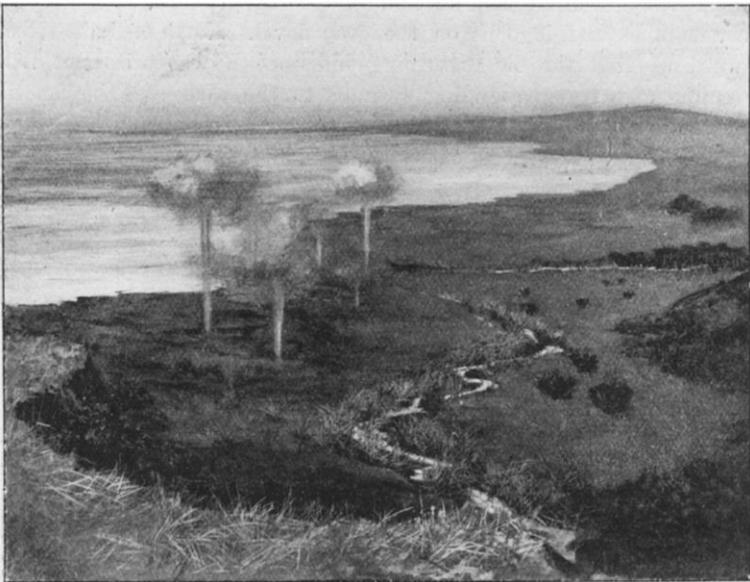
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similar build, but have the appearance of full-grown, exceedingly powerful men compressed, and with much more intelligent faces. The pigmies are to these ape-like beings as the dog-faced baboons are to the gorillas. Probably they are, like the pigmies, survivals of former inhabitants of the country, the difference in their type depending on the surroundings in which they have had to struggle for existence. The true type of pigmy is a magnificent example of nature's adaptability, being a combination of immense strength, necessary for the precarious hunting life they lead, and compactness indispensable to rapid movement in dense forest where the pig-runs are the only means of passage. While I was with the main caravan I never saw either a pigmy or one of these creatures, and to study them it is necessary to go almost unattended; this obviously entails great risk, and it is consequently very difficult to find out much about them. They both have the furtive way of looking at you characteristic of the wild animal, and though I had one of these curious men with me for a week when I made the circuit of the volcanoes, he would always start if I looked at him, and he followed my every move with his eyes as would a nervous dog; he refused an offer of cloth for his services, and suddenly vanished into the forest without a word, though several times afterwards I found him watching me even when I had returned to my camp on the base of Mount Eyres.

On the last spur of the volcanoes there is a chief called Kahanga, of some little importance, who has, to a great extent, emancipated himself from the yoke of the Watusi; and further down the Ruchuru valley the people are still more independent, till one comes to a thickly populated area two days from the Albert Edward, where the chiefs deny that they owe any allegiance whatever to the Kigeri. The west side of the valley is covered with heavy forest, while the east side is undulating grass land, till 15 miles from the lake, when the country settles down into one vast plain. The Ruchuru here has become almost too salt to drink, and the vegetation changes abruptly in character, the luxuriant forest growth giving way to thorn scrub and candelabra euphorbia, the beginning of the blighted desolation characteristic of the Albert Nile valley—scrub, mimosa trees, fan palm, and euphorbia alternating till the region of the borassus, which begins at the upper junction of the Bahr-el-Giraffe.

Where the Ruchuru flows into the Albert Edward there is a large extent of reedy marsh, peopled by a race of fishermen who appear to be identical with the curious Wanyabuga, who inhabit the similar country at the entrance of the Semliki into the Albert lake. They are both quite distinct from their neighbours, and are now isolated. I am inclined to think that they too are survivors of past races, who are making a last stand for existence in these impenetrable wastes, where, leading an amphibious life that does not bring them into contact with the

more sturdy races who have supplanted them, they may yet give an important clue to the ethnological problem of Africa. Unfortunately, the difficulty of approaching these timid and retiring peoples, and the thoroughness with which contiguous peoples assimilate the prevailing tongue, the study is one of great difficulty. The lake itself is rapidly diminishing in extent, and it will be seen that our map of the east coast has materially modified the supposed form. Two very recent levels are clearly defined, from which it would appear that the upheaval has taken place in fits and starts. The most recent level would give the lake an additional 120 square miles. The insignificant size of the euphorbia on this level compared with that on the next terrace argues



THE GEYSERS, ALBERT EDWARD NYANZA.

that the last movement has taken place very recently, historically speaking. The vegetation appeared to me to correspond in age to that which I have mentioned as having grown on the great lava-beds poured out by the eruption previous to that of three years ago.

Two streams, the Sasa and the Ntungwe, flow to the Albert Edward east of the Ruchuru, but lose themselves in an extensive marsh. The old lake-bed is rendered impassable by pits of fire, and huge jets of smoke, shooting up from all directions, bear witness to the extent of the volcanic activity. Even to unscientific observers like ourselves, it was evident that the country between Kivu and the Albert Edward is the key to the whole modern geographical and geological problem of Africa,

as probably Ruwenzori is the key to the problem of the past. To summarize: the Rusisi valley for 60 miles is obviously the old lake-bed of Tanganyika. Lake Kivu has been lifted up with the gradual rise centring round and radiating north and south from the volcanoes. The surrounding hills still enclose papyrus swamps at the lake-level, and some of these, having been pushed up by local movement, have become dry lawns.

I can only describe the Kivu region as having the appearance of having bubbled. The north shore of Kivu is flat and slopes gradually up to the volcanoes, sloping down gradually again on the north side, till the dead level of the lower Ruchuru valley is reached—another obvious lake-bed, part of which was drained dry but yesterday. A few small lakelets even are held still on this northern slope, and there are many marshes and lagoons on the dead level. North of Lake Albert Edward we find the old disturbing influence Ruwenzori. But Lake Ruisamba and its surrounding swamps to the east and the Semliki valley to the west carry on the idea. The northern half of the Semliki valley is a dead level with many swamps, and then comes the Albert lake.

The lakelike reach of the Nile, narrowing at the Dufile rapids (another centre of disturbance in remote ages), and again widening till the swamps of the Rohl Bahr-el-Ghazal, Bahr-el-Jebel, and Bahr-el-Zaraf, which can only be adequately described as a reed-grown sea, is a further indication of the probability of an existence of a vast inland sea, or arm of the sea, of which the great African lakes of to-day are but a fragmentary survival.

The east coast of the Albert Edward lake is practically uninhabited; a very few miserable natives live in the dense thickets of thorn bush, and their huts are most carefully concealed. Their staple crop is the sweet potato, and they spear fish and kill an occasional hippopotamus in traps. They complained of having been raided by the people of Ankoli. On arrival at the north end, Kaihura ferried us and all our belongings across the narrow neck of Lake Ruisamba. Their canoes are similar in make to the canoes of the Waganda, but not of such elaborate design, being made of axe-hewn boards sewn together with banana-fibre cord; they are very capacious, and are so well fitted that they leak much less than would be expected from their construction. The Sudanese officer at Katwe entertained us for two days, when, having recovered sufficiently from the severe fever from which I had been suffering, we started for Toro, and six days later arrived at Fort Gerry, the headquarters of the district. There are immense numbers of elephant in Toro, and we went up to the Msimba river, which flows into the south-east corner of Lake Albert, for a fortnight's shooting. Being white men, we had the privilege of paying a £25 licence, which enabled us to shoot two elephant; but our sport was spoilt by bands of Waganda, who had crossed the

frontier and were shooting indiscriminately anything with a trunk, regardless of sex or age. Needless to say they paid nothing. Nothing could be more acceptable than game laws and game preserves intended to restrict the indiscriminate shooting of big game; but before the Government is capable of enforcing them or even of knowing when they are ignored, I think they are premature. Here, to my great regret, Sharp was forced to return home, and I had to continue my journey alone. Thirty of our Manyema volunteered to go on with me as far as Wadelai, and with this reduced caravan I marched by the little volcanic lakes Vijongo and round the northern spur of Ruwenzori to the Semliki valley, which I crossed, climbing up again on to the Congo plateau. Here, on the west side of Mboga, I stayed for three weeks hunting elephant, my best tusks being 98 lbs. and 86 lbs.; these, curiously enough, were obtained the same day from two single-tusked elephants, one being a right tusk and the other a left, and each measured 7 feet 10 inches.

In this country the prevailing type of elephant differed considerably from the Toro and Nile type. Full-grown bulls carrying 70, 80, and 90 lbs. tusks stood no higher than 9 feet at the shoulder; whereas two of the other type I measured were a full 11 feet 6 inches, and several over 11 feet. The ivory was also quite different—the Mboga tusks being long, thin, and almost straight, very white, and free from cracks; as opposed to the curly dull white tusks, covered with small cracks, of the heavier beast. The tusks of the Mboga elephant are set in the skull at a different angle and hang straight down, giving the beast the appearance of having three trunks; while the tusks of the more general type curl out in front almost at right angles.

The Balegga who inhabit the hills to the north, and who were suffering terribly from the effects of the long drought, looked upon me as a great institution, and swarmed down in hundreds for the meat. A weird sight it was. Stark naked savages, with long greased plaits of hair hanging down to their shoulders, were perched on every available inch of the carcass, hacking away with knives and spears, yelling, whooping, wrestling, cursing, and munching, covered with blood and entrails; the new-comers tearing off lumps of meat and swallowing them raw, the earlier arrivals defending great lumps of offal and other delicacies, while others were crawling in and out of the intestines like so many prairie marmots. Old men, young men, prehistoric hags, babies, one and all gorging or gorged, smearing themselves with blood, laughing, and fighting. Pools of blood, strips of hide, vast bones, blocks of meat, individuals who had not dined wisely but too well, lay around in bewildering confusion, and in two short hours all was finished. Nothing remained but the great gaunt ribs like the skeleton of a shipwreck, and a few disconsolate-looking vultures perched thereon.

Returning to the Semliki, I followed the valley down to the Albert

lake, and eventually arrived at the scene of the relief of Emin. Here it was impossible to obtain food; the natives had been raided and shot down by the Congo State soldiers, and had fled to the marshes and reed-beds of the Semliki mouth. After some difficulty, I persuaded them that I was of the same tribe as Colonel Lugard, and being satisfied by the production of his photo, their confidence in me was complete. As this territory is British, the charge against the Belgians is a serious one, and I am perfectly convinced that the gist of their accusations is correct; minute inquiries and cross-questioning failed to detect a flaw, and the tale, which was repeated to me in districts as far distant from one another as Mboga and Kavalli's, tallied in all respects, even in the numbers of women and cattle driven off and men killed. At five distinct villages, three of which were Wanyabuga villages and two Wakoba villages, I was assured that the old women were treated with the greatest cruelty. Three distinct tribes, the Balegga, Wanyabuga, and Wakoba, told the same story. This I considered sufficiently conclusive, as there is very little intertribal communication, and it could not have been "a put-up job," as my Balegga informants were 60 miles away from the others.

The journey up the west coast presented considerable difficulties, as after Kahoma the hills descend abruptly into the water, rocky headlands alternating with semicircular beaches (the deposits of the numerous streams which flow down into the lake). In parts the lake is exceedingly shallow, reeds growing at a distance of 2 miles from the shore; and the deposit brought down by these numerous mountain torrents must be enormous. This coast is of value for the magnificent timber that grows in all the gorges. Transporting the loads round the headlands in two tiny dugout canoes holding one load at a time was tedious work, and I was exceedingly glad to arrive at Mahagi, where the hills recede once more. From Wadelai, the British post on the Nile, I went to Afuddu (opposite Dufile) in a dugout canoe, and thence overland to Fort Berkeley (the old Bedden), our advance post. Inspector Chaltin, the able administrator of the Welle district of the Congo and the gallant conqueror of the Dervishes at Rejaf, kindly took me down to Kero, their advance post on the $5\frac{1}{2}$ parallel, in one of their numerous steel whale-boats. Thence I travelled to Bohr with the Commandant Renier, who was sent to find news of the steamer with Captain Gage, Dr. Milne, and Commandant Henri, which had been away three months on a reconnaissance towards Khartum.

Bohr had been recently evacuated by the dervishes, and the strong fort was still in good preservation. Throwing away everything but absolute necessaries, I started with thirteen men on my 400 miles tramp through unknown swamp with many misgivings. The first two days the Dinkas were quite amenable to treatment, having been in contact with white men before. But afterwards I had a very anxious

time with the natives, as in places they were in enormous numbers, and, having never seen a white man, were quite ignorant of his ways, and even of the use of a gun. For some distance on the edge of the marsh there is a clearly defined stream, which loses itself in the vast lagoons that form near the upper junction of the Bahr-el-Zaraf. Many winding lagoons run for miles inland. When I passed they were stagnant, but I am inclined to think that they are really the outlets of tributary streams. The number of elephant on the edge of the swamp was prodigious, and they formed a serious impediment to our march, as they refused to move out of the way. Nearly every morning we wasted an hour or two shouting and throwing stones at solitary



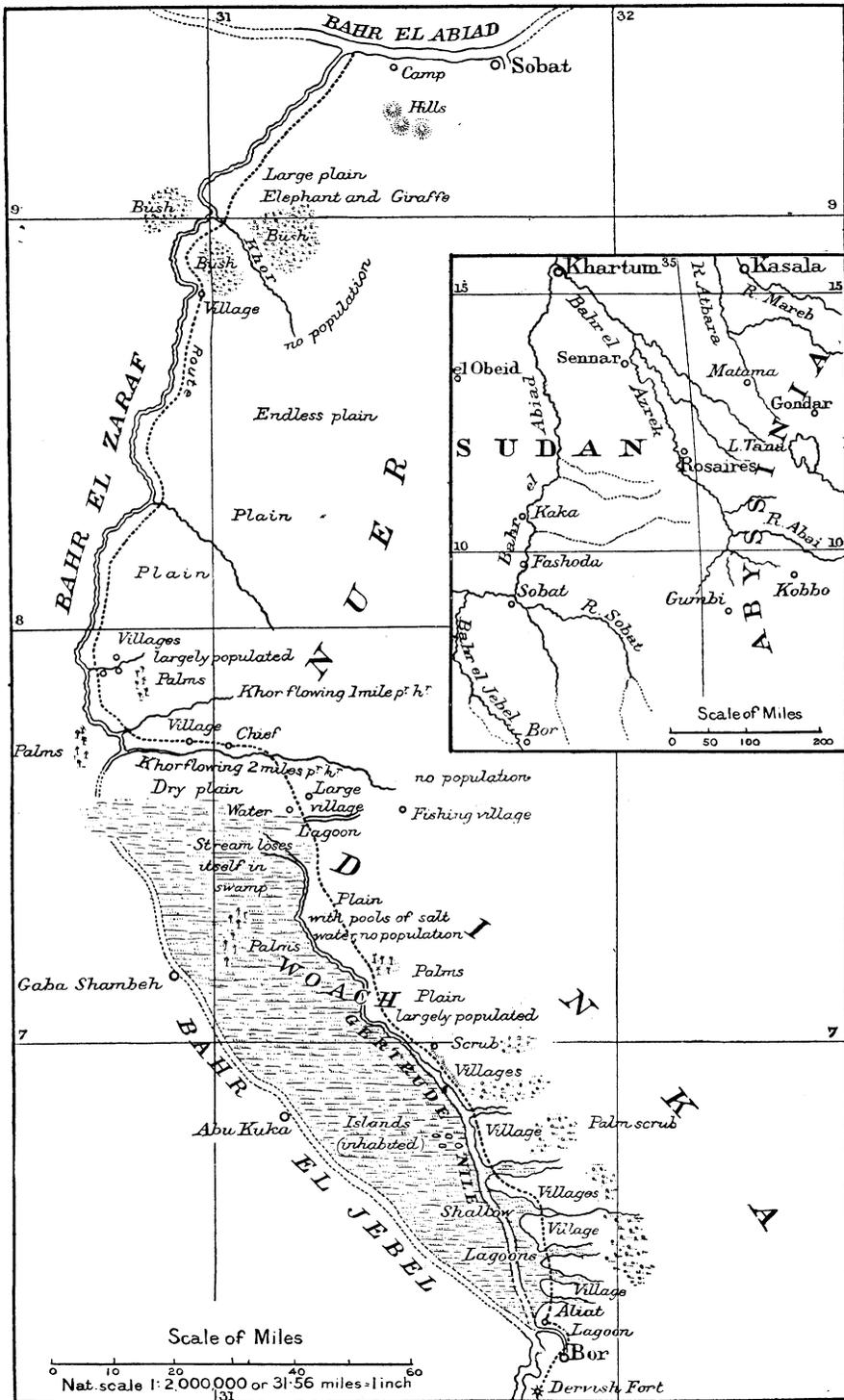
RUWENZORI, FROM THE WEST.

old tuskers and herds of younger elephant. One old fellow resented our terms of opprobrium and charged the caravan, but was turned with a shot from my double .303. Banks and banks of hippopotami lay in every direction, but other game was scarce. The mosquitoes were appalling, and rapidly killed off two of my boys who had been sick; and the flies by day were even worse.

The Dinkas have enormous droves of cattle, which they value very highly; they never kill them for food, but from time to time tap the blood, which they drink greedily. They are of colossal stature; some of the herdmen I saw must have been very nearly 7 feet, and in every settlement the majority of the men towered above me, while my boys seemed the merest pigmies by their side. They smear themselves with a paste made of wood-ash to protect themselves from the bites of the

mosquitoes, and the long lines of warriors threading their way in single file through the marsh appear like so many grey spectres. They are absolutely nude, considering any sort of covering as effeminate. Their invariable weapons are a long club made of bastard ebony, a fish lance, and a broad-bladed spear, and the chiefs wear enormous ivory bracelets. The southern Dinkas cut their hair like a cock's comb, and the northern Dinkas train their hair like a mop. Both bleach it with manure.

Six days from Bohr the bush recedes 40 miles from the main channel of the Nile, and the swamp appears limitless; even from an anthill 30 feet high I could see nothing but a vast sea of reeds north, west, and south—not even the remotest suggestion of the far bank. At the curve of the swamp, before the dry ground again turns west towards the junction of the Bahr-el-Zaraf, there is a tribe quite distinct from the Dinkas, presumably the Woatsh, of whom Sir Samuel Baker heard rumours. They are much smaller, and are ichthyophagic, possessing no cattle. The whole population of each village turned out in force and accompanied me to the next village, singing a wild ear-piercing chant, and continuously pointing to the sun. I suppose they imagined I had just left there. Some of the villages are far inland, and the women come long distances for water. I met many groups of them filling their pitchers, and they invariably treated me to a somewhat embarrassing dance; it was characterized by the wildest abandon, and terminated in every one hurling themselves in a mass on the ground and then dashing off in all directions into the bush, uttering shrieks impossible to describe. When I showed them beads or cloth and attempted to purchase food, they ran away, hiding their faces, and refused to look at them, thinking they were fetish. Even at night bands of natives would approach and chant to me, so that I was greatly relieved to once more enter the land of the Dinkas, who, even though rather obstreperous, at least refrained from singing. A remarkable thing was the extraordinary manner in which the Dinkas contrived to conceal their enormous herds of cattle until they were quite sure of my intentions; they kept them quiet by lighting small smoke fires under their nostrils, and we often walked right into the middle of a cattle village before we were aware of their proximity. A few miles north of the upper junction of the Bahr-el-Zaraf, a considerable stream flows from the east, which I am inclined to think flows from the marshes in which the Pibro, the large affluent of the Sobat, rises. For 30 miles at least it flows due east to west, and I am sure that it cannot rise in the Gondokoro hills, as suggested by Justus Perthes' map. Any drainage that comes from these hills must, from the contour of the country, flow into the Nile or into the marsh by the long lagoons that I have already mentioned, or down the other side of the watershed into the Sobat. Should my surmise as to the source of this affluent prove correct, the country between the Zaraf and Sobat is an island. The natives at Bohr



THE SWAMPS OF THE DINKA COUNTRY.

assured me that there was no water for many days east, and there was a considerable amount of water coming down the affluent in question. This would suggest that the streams passed by Lupton Bey in his journey east of Lado either drain into the Nile south of Bohr, or, what is more probable, into the marshes of the Pibro.

This Kohr is the northern boundary of the Dinkas. Shortly before reaching it, I was treacherously attacked by the inhabitants of the village near which I had camped. They gave some trouble in camp during the evening, but appeared quite friendly in the morning, and turned out to the number of about one hundred to accompany me on the march, as had often happened to me before. Sometimes there were fully one thousand natives with me; they took me as a huge jest, and wanted to see as much of it as possible. I had noticed that they were crowding round me, when suddenly they started, killed my best man with a spear-wound through the heart, and broke the skulls of two more; the rest threw down their loads and bolted, my small boy with my revolver among the rest. A quick right and left laid out the chief and his prime minister, and I swung round just in time to dodge a spear and to ward a blow at my head from a club, which felled me to my knees. I responded by poking my empty rifle in the pit of his stomach, and the ensuing pause gave me time to slip in a cartridge and finish him. The rest then drew off to about 300 yards, which they evidently considered a safe distance. An enormous man of about 6 feet 6 inches, who had caused most of the trouble in camp, tried to lead them on again, and if he is still alive, he knows more about the effects of a dum-dum bullet than most men. I should much like to have given them a severe lesson, but, as I had very few cartridges, I knocked another gentleman off an anthill at long range; and, having thus given them an idea of the uses of a gun, made forced marches out of the country, fearing that they might return in overwhelming numbers. One of my boys, who lagged behind for a few moments despite my repeated warnings, vanished completely.

The Nuers are similar in appearance to the Dinkas, but rather smaller; they wear iron earrings, some of which were a foot in diameter, and cultivate their hair with the greatest care, binding it up with rings of cowries. Their method of showing respect, as with the Dinkas, is spitting on the object of their attentions. The last ten days of the march were terrible. Far as the eye could reach, one vast shimmering waste of burnt reed, sun-baked mud, and marabout storks; the Zaraf flowing between parallel mud-banks, lined with crocodiles; never a native, never a living beast, with the exception of the dismal hippos, solemn marabouts, and screaming kites; no trees, no bushes, no grass, nothing even to boil a cup of tea; and our diet of hippo meat or pelican steak, with no bread or even grain, was rapidly telling on our health: so that it was a moment of intense joy when I unexpectedly met Major

Dunn, of Major Peake's sudd-cutting expedition, who was up the Zaraf shooting.

It was difficult to realize that it was at last over. From the Sobat to Cairo was covered in a fortnight of wild hospitality, a distance equal to that which had necessitated eighteen months of weary toil. The maps were worked out with a watch and prismatic compass and aneroid; to regulate my errors, I took Usambara, Vichumbi, and Katwe as fixed points. We were unfortunate in having to leave our theodolite behind for lack of transport, and in losing our sextant and boiling-point thermometer in a raid that the Waruanda made on us one night at the beginning of our trip. The exceedingly hilly nature of part of the country traversed added to the difficulty of judging distance covered. However, I trust that the maps will more or less serve the purpose for which I intended them—that of clearly showing what difficulties the railway and telegraph will have to contend with—such as physical features, labour, and supplies. The immense difficulties of transport, and the work entailed in keeping a caravan thoroughly in hand, which is so essential when travelling without an armed force, precluded all possibility of making collections; and our photographic apparatus was spoilt by the negligence of the transport company that undertook its delivery. We are proud to be able to say that on one single occasion only we found it necessary to take food from the natives; they had all fled, and I took out ten men and cut about thirty bunches of bananas. I have always believed that more can be done with natives by tact and firmness than by a display of force, which makes them believe that their country is threatened; and certainly they nowhere imagined that we, with our ten rifles, had any warlike intentions. On only two occasions was I compelled to take life, and that in self-defence when actually attacked. Attacking people in case they may attack you, I have seen recommended, but I think it a superfluous and questionable precaution. Even the people of whom Sir Henry Stanley writes, “Marching to Wadelai would only be a useless waste of ammunition,” I found perfectly tractable, and that although they have since his visit been subjected to the disturbing influence of the Belgian raid on Kavalli, and of the twenty rounds that I took with me I found it unnecessary to use one.

Before the reading of the paper, the PRESIDENT said: This evening we have the pleasure of welcoming our young friend Mr. Grogan, who has succeeded in making a most important and interesting journey from the Cape to the Mediterranean. That has been done by him for the first time, and so far as geographical work is concerned, he has much here to tell us, especially in the region north of Lake Tanganyika.

After the reading of the paper, the following discussion took place:—

The PRESIDENT: Mr. Grogan has mentioned to me the immense importance it was to him to have had such a travelling companion as Mr. Sharp, and he felt it as a great loss when Mr. Sharp had to leave him to return by way of Uganda.

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SKETCH MAP
OF
CENTRAL AFRICA

BETWEEN THE REGION OF
LAKE TANGANYIKA
AND ALBERT EDWARD NYANZA

illustrating the journey of
EWART S. GROGAN

1899.

Scale of Miles

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Nat. scale 1:1,000,000 or 15.78 miles = 1 inch.

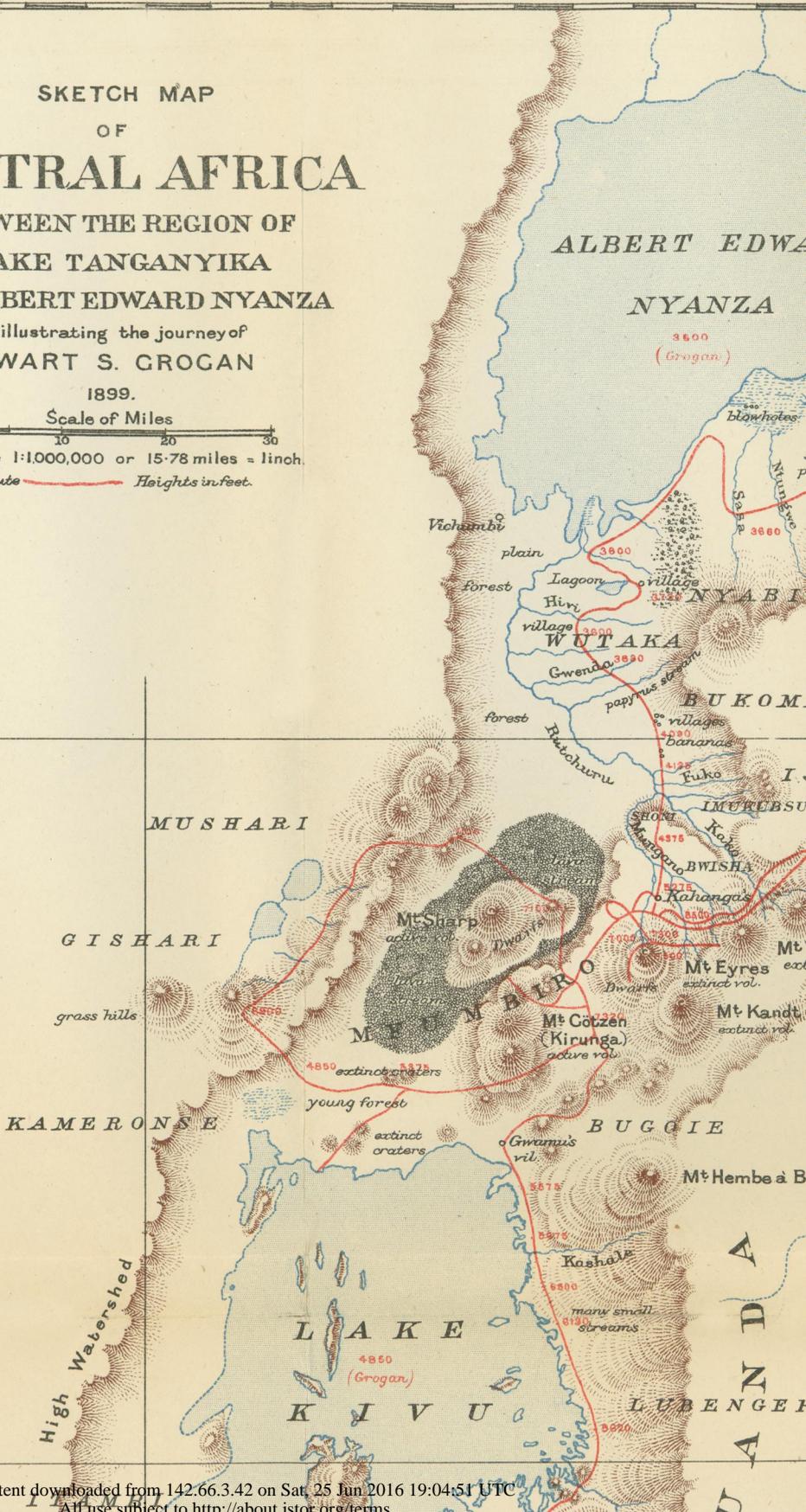
Route ————— Heights in feet.

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AFRICA

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KIVU

ALBERT EDWARD
NYANZA

3600
(Grogan)

L. RUISAMBA

KAIHURA

Katwe

Kazingus

Sparse
population
village
villages

VI SEGWE

blowholes
bush
village
water
pools
of
Ruhate's
sparse
population

Vichambi

plain

forest

Lagoon

Hiri

village

3600

WUTAKA

Gwenda

3820

forest

Rutshuru

papyrus stream

BUKOMA

villages

bananas

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Mt Chamberlain
extinct volcano

Mt Watt
extinct vol.

Mt Eyres
extinct vol.

Mt Kandt
extinct vol.

Mt Cotzen
(Kirunga)
active vol.

Mt Sharp
active vol.

Mt Hembé a Bugogo

4850
extinct craters

4850
young forest

4850
young forest

BUGGIE

Gwamui's vil.

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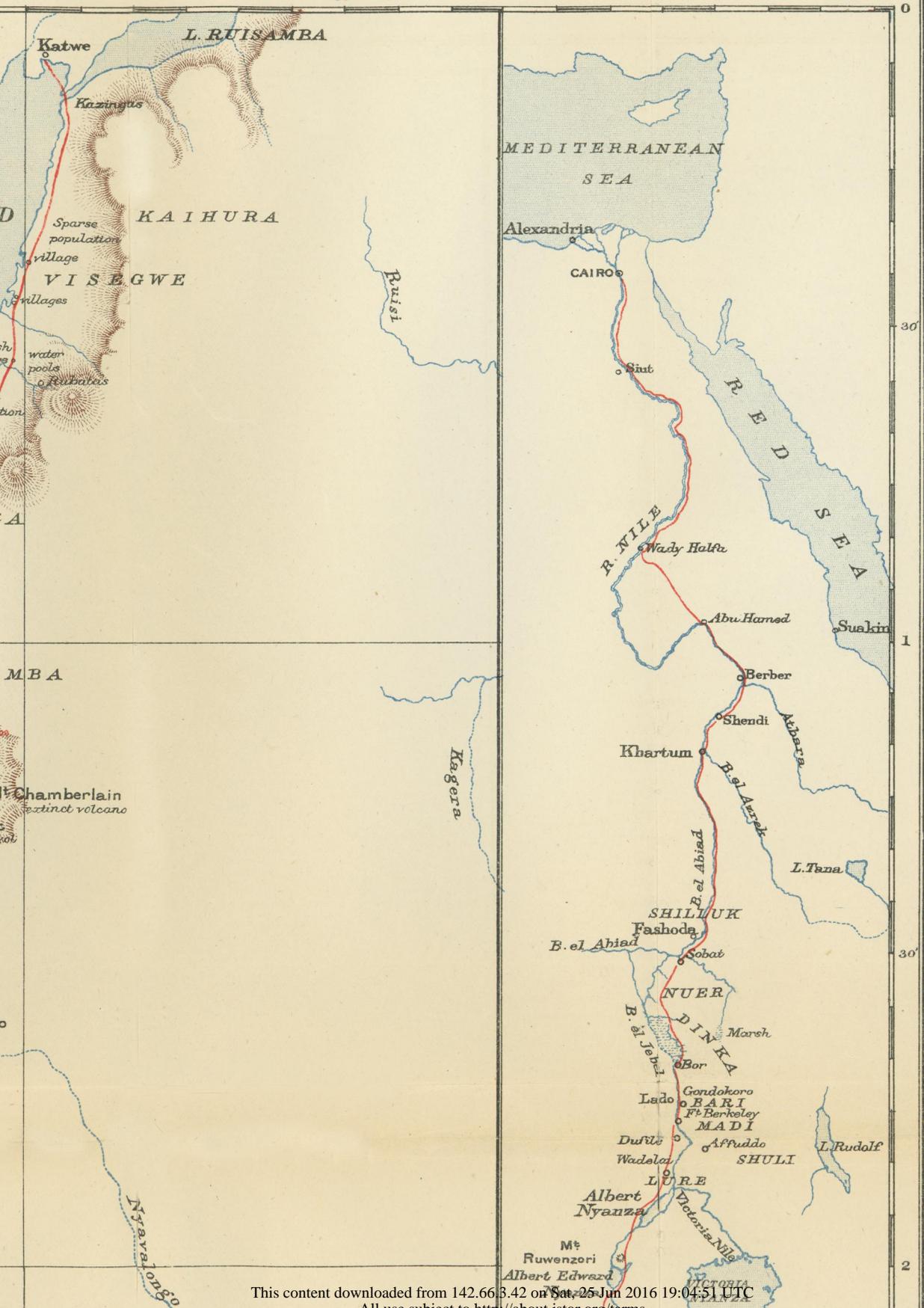
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