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The Conquest of Ruwenzori.

By DOUGLAS W. FRESHFIELD.

ON January 12 our member H.R.H. the Duke of the Abruzzi read before the Royal Geographical Society, in the presence of its Patron and Vice-Patron, his Majesty the King and H.R.H. the Prince of Wales, an account of his recent explorations and ascents in the Ruwenzori range. The Duke's narrative has been printed in full in the February number of the 'Geographical Journal.' With the leave of the Duke and the Council of the Society the illustrations and map that accompany it are here reproduced. I propose to take the opportunity to join with them a few notes on the results of this most successful expedition.

I shall imitate the Duke of the Abruzzi in avoiding any lengthy discussion as to the identification of Ruwenzori with Ptolemy's Mountains of the Moon. It is enough for me that its snows feed two of the Nile lakes. But I may point out the sort of rumours which two hundred years and more ago were recorded in Arab chronicles. For it is highly probable that stories of the same kind reached the Greek geographer

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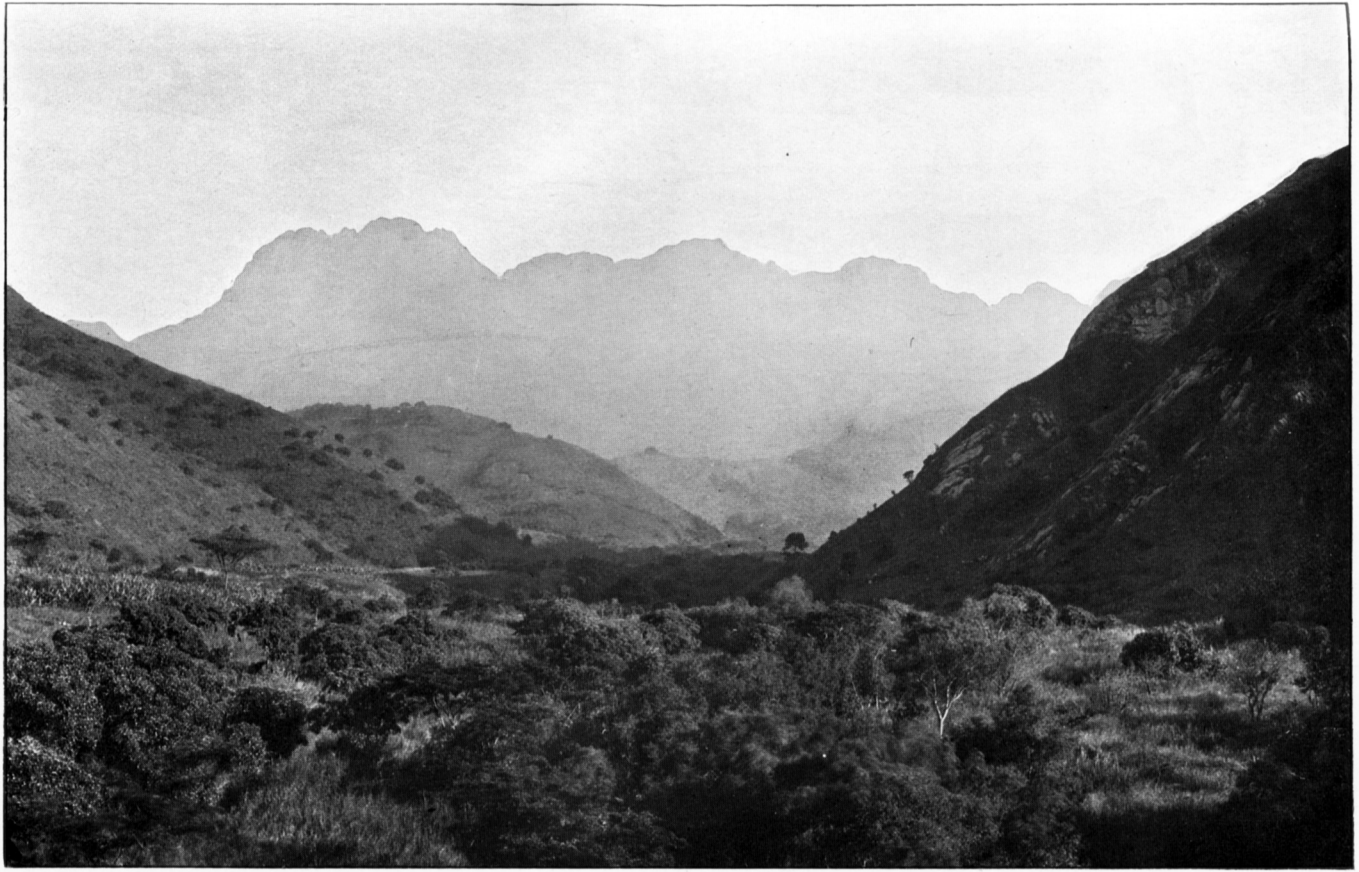

MOBUKU VALLEY BETWEEN IBANDA AND BIHUNGA AND PORTAL PEAKS.

and were the ground of his long disputed assertion that the lakes of the Nile are fed by eternal snows.

In A.D. 1686 an Arab compiler, quoted by Sir H. M. Stanley,* undertook to describe from earlier authorities the legendary snows at the Nile sources. I make here a few extracts from his compilation :—

'Others say that the Nile flows from snowy mountains, and they are the mountains called Kaf.'

'. . . This chain has peaks rising up into the air and other peaks lower. Some have said that certain people have reached these mountains and ascended them, and looked over to the other side, where they saw a sea with troubled waters, dark as night. . . . Some say that people have ascended the mountain, and one of them began to laugh and clap his hands and threw himself down on the further side of the mountain. The others were afraid of being seized with the same fit, and so came back. It is said that those who saw it saw bright snows, like white silver, glistening with light. Whoever looked at them became attracted and stuck to them until he died, and this science is called human magnetism' (*sic*).

'It is said that a certain king sent an expedition to discover the Nile sources, and it reached copper mountains, and when the sun rose the rays reflected were so strong that the men were burnt. Others say that these people arrived at bright mountains, like crystal, and when the rays of the sun were reflected they burnt them.'

Here we have a curious combination—references to snow-burns, mountain sickness, and one might almost add to the 'amor scandendi.'

It is, surely, rather a large claim on our credulity to insist that these graphic details were all pure inventions of the happiest kind and had no connexion with the corresponding local facts.

I turn from legend to discovery. The accompanying map supplies us for the first time with a clear picture of the upper region. Its characteristic is the absence of any continuous snowy chain and the number of relatively small glacier-clad blocks or *massifs* separated by gaps 2,000 ft. below them. In the upper region no extensive névés are found; the gneiss summits carry frozen caps, the substance of which heat and consequent infiltration rapidly turn into ice. A conspicuous and peculiar feature are the cornices supported by icicles which have grown into ice columns, till, looked at from below, they recall in

* *In Darkest Africa*, vol. ii. pp. 280–1.

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form the cliffs of Staffa. There is little or no permanent snow apart from glaciers, but here and there an avalanche lies unmelted among the exuberant vegetation. As in most regions of similar geological structure (the Maritime Alps, the Adamello group) rock basins abound, and not a few have escaped from being choked by alluvial deposits, and contain still tarns, which reflect the snows and waterfalls of the highest peaks in a framework of giant Senecios and white Everlastings. Of these tarns the Bujuku Lake appears to be the most fascinating. The rocks everywhere are much weathered, and easy to climb.



MOUNT STANLEY: MARGHERITA AND ALEXANDRA PEAKS.

The glacier slopes present no difficulty to the mountaineer. The Duke's party met with but one serious obstacle, and that because they took a short cut from one to the other of the highest peaks. The final slope of the Margherita Peak seems to have been found of the nature of that of the Wetterhorn in its worst state.

With his excellent Cormayeur guides and porters the Duke made a thorough sweep of the snows. Fourteen summits were scaled, and those that remain are of secondary importance. The finest expedition left is probably the glacier pass between the Alexandra and Moebius Peaks, the western

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KING EDWARD PEAK, SEEN FROM THE N.W., FROM THE CAMP, N.W. OF SCOTT ELLIOT PASS, NEAR THE ELENA GLACIER.

side of which may be studied in the excellent illustration opposite p. 288 in Dr. Stuhlmann's book 'Mit Emin Pasha ins Herz von Afrika.' The illustration on p. 296 of the same work can, by the help of Signor Sella's photographs, be recognised as King Edward's Peak. The westernmost summit of Mount Stanley, conspicuous from Butiti, is also unnamed and unclimbed, and the W. rock-face of King Edward's Peak should afford a good climb. The extent of the glacier region being so small and the snow level being only 2,500 to 2,000 ft. below the peaks, two could often be climbed in a day. The weather was far from perfect, but it was more than tolerable. This is proved by the photographs. Moreover one of the views shows that there was scarcely any water in the Mobuku torrent at the spot below Kichuchu where we found it unfordable and had to build a bridge. Midsummer is clearly the Ruwenzori season.

In one respect the Duke was unlucky. He never when on the highest summits enjoyed a view of the great lakes or a clear horizon. Now Ruwenzori can be seen in intervals in the rains from as far as Mbarara, some seventy miles to the east as the crow flies. The explanation may be—at any rate this explanation is suggested by the tales of previous travellers—that during the dry season on the mountain haze obscures the lowlands. Most of those who have approached Lake Albert Edward speak of its fogs. When we passed it the air between the storms was gloriously clear, except about Ruwenzori, and we saw distinctly the Sfumbiro volcanoes. Dr. David, the Belgian traveller, tells us that he saw them and the lake from a point 1,400 ft. below the top of Ruwenzori on its western slope.

With regard to the traces of ancient glacial action Dr. Roccati, the geologist who accompanied the Duke, confirms and enlarges my observations with the authority of an expert. He sees distinct traces of moraines on the steep slope at the mouth of the upper Mobuku valley, five miles from and 6,500 ft. below the existing glacier. With regard to the blocks scattered still lower in the level valley at Ibanda, he, like me, hesitates to express a definite opinion as to their mode of transport. I shall be interested to ascertain if he is disposed to entertain my hypothesis of a flood caused by the bursting of a subglacial reservoir.

As regards the practical uses Ruwenzori may prove to have for Uganda, it will be discovered, I imagine, that it is not in the valleys below the snows but on the broad upland slopes at the northern end of the chain that sites for

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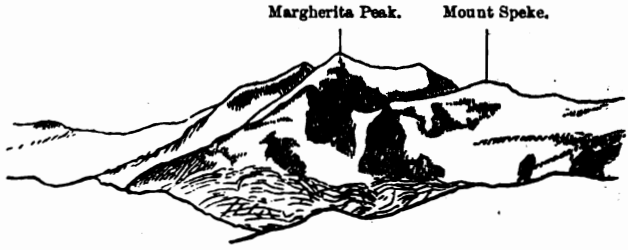
European cultivation and for a sanatorium may be found in the future.

I would ask map-makers to bear in mind two physical facts often misrepresented. The Kafuru Straits, connecting Lakes Albert Edward and Ruisamba, are only 700 to 800 yards wide and many miles long. They are more accurately shown in Sir H. Johnston's maps than by any other cartographer. Next, the Ruwenzori range ends to the N. in a bold spur thrown out into the Semliki valley, and there is a deep recess between this and the escarpment which runs N. from the neighbourhood of Fort Portal to the southern end of Lake Albert.

With respect to the main characteristics of the glaciers of the Nile, it will be seen that my own first impressions have been, as a whole, confirmed. The highest peaks reach very nearly 17,000 ft.—the elevation Mumm and I conjectured on the spot. I may note, parenthetically, that I did not (as



MOUNT STANLEY AND MOUNT SPEKE FROM BUTITI.

has been quoted) assign to them 18,000 ft., but put the *possible limits* of their height as 16,500 and 18,000 ft., inclining myself towards the lower figure. I estimated the glacier region to be included in a circle twelve miles in diameter; on the Duke's map it is reduced to ten. As to the permanent snow level, 14,400 ft., I am in exact accordance with the Duke. The snowy mass we saw from Butiti proves, as I wrote in May last, to be composed of the tops of the highest peaks (Mt. Stanley) seen over Duwoni (or Mt. Baker). This summit is rightly known as 'Johnston's Duwoni,' since it is the peak he drew from Ibanda. But some confusion has arisen from the fact that when at the head of the Mobuku valley Sir H. Johnston thought the summits to the E. of the icefall were identical with those he had seen from Ibanda (see Johnston's 'The Uganda Province,' vol. i. pp. 158 and 187).

On the other hand Dr. Wollaston's report led me into the erroneous belief that the highest peaks were not on the water-

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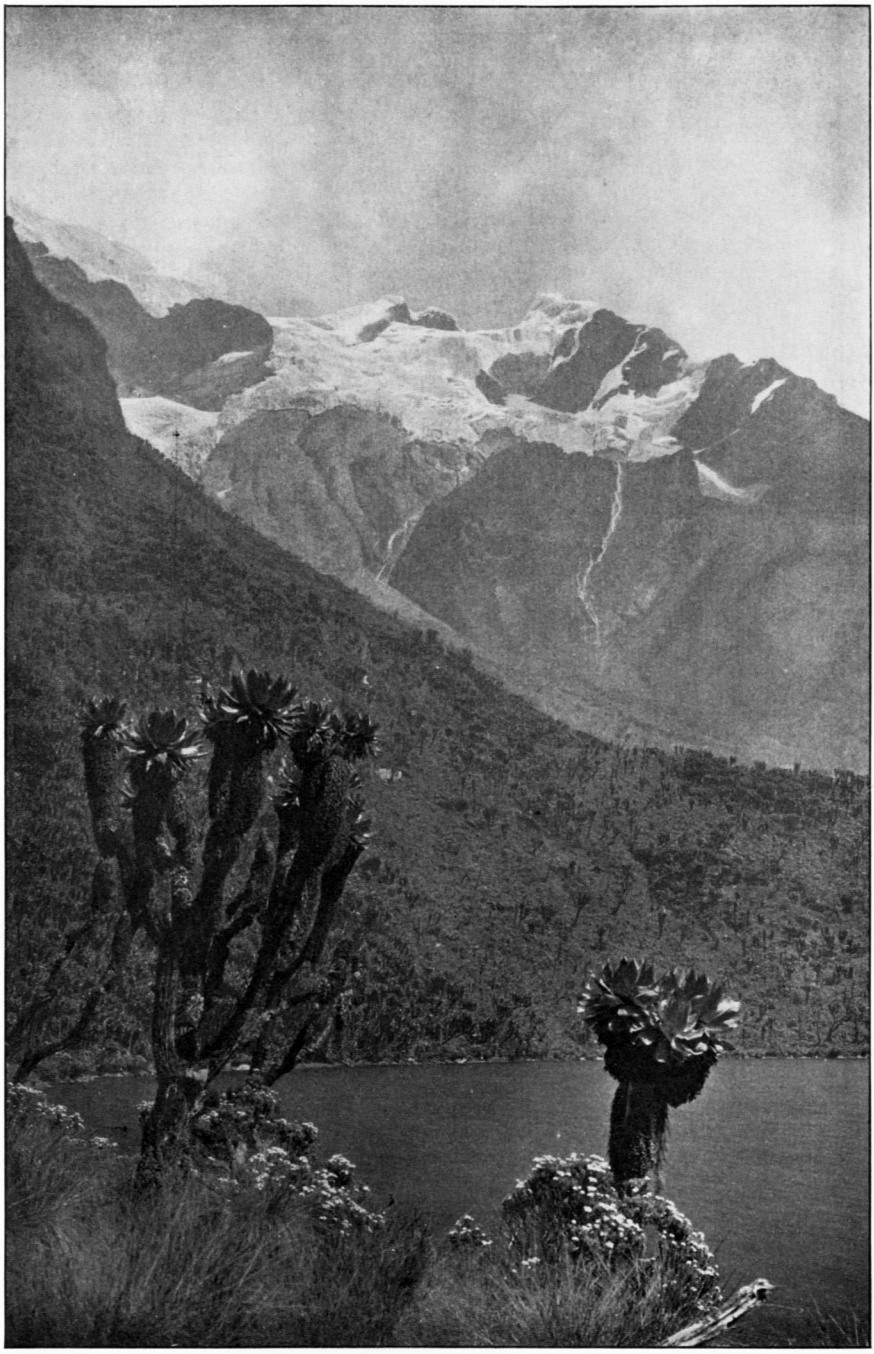

QUEEN MARGHERITA AND QUEEN ALEXANDRA PEAKS FROM LAKE BUJUKU.

shed. The Duke has cleared up and established the topography of the inmost portion of the group by his discovery of the importance of the long Bujuku valley. When we passed its opening mists and rain storms hid the landscape; but it is strange that it should altogether have escaped the British Museum party, for whom it might have proved a happy hunting ground during the weeks they spent at Bihunga. The Duke has also shown that all previous travellers were in error in regarding the crest at the head of the Mobuku Glacier (Moore Glacier) as part of the watershed.

The route of the Italian expedition can be followed on the map. Grauer's Gap was first reached and Kiyanja (King Edward's Peak) climbed from it. The Buamba Pass (Freshfield's Pass) was then crossed and the western flanks of King Edward's Peak traversed to the Scott Elliot Pass, whence all the summits of Kanyangungwe (Mount Stanley) were climbed. The party then proceeded in a northerly direction across the heads of the western valleys to Duwoni (Mt. Speke) and Mt. Emin, and recrossing the watershed explored the heads of the Bujuku valley and climbed two more outlying ice-clad summits, Mt. Gessi. They were forty days in the mountains.

Captain Behrens, R.E., has, with the advantage of the more exact positions ascertained by the Italian party, recalculated the heights he had trigonometrically measured, with the following results:—*

	Captain Behrens' Heights.	Duke of the Abruzzi's Heights.
Margherita Peak . .	16,619 ft.	16,815 ft.
Alexandra Peak . . .	16,543 ft.	16,749 ft.
Mt. Speke	15,846 ft.	16,060 ft.
King Edward's Peak . .	15,748 ft.	15,988 ft.
Mt. Emin	15,554 ft.	15,647 ft.
Mt. Gessi	15,258 ft.	15,647 ft.
Mt. Luigi di Savoya . .	none	15,286 ft.

In the foregoing remarks I have been greatly assisted by the superb panoramas and photographs presented to me by

* The Anglo-German Boundary Commission values for the two highest peaks were determined by seven rays each from different stations, the means of which were taken as the result. The remainder were obtained from one ray only, all rays being observed from one station of the Anglo-German Boundary Commission triangulation. The Duke of the Abruzzi's positions for these summits, therefore, have been used as a basis in the calculation by Captain Behrens. There would seem to be some error about the height of the Yolanda Peak (Mt. Gessi), the height of which is the result of boiling-point readings. With this exception all the Duke's heights depend

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my former companion in the Himalaya, Signor Vittorio Sella. The perfect panorama from King Edward's Peak (Kiyanja) is a masterpiece of mountain photography, which rivals his 'Caucasus from Elbruz' or his 'Kangchenjunga from the North-West.'

It is not uncommon, even in unexpected quarters, to find it assumed that 'a mountaineering party' is incapable of rendering any return to geography and science. Mountaineers may point, in Ruwenzori, to an instance where they have succeeded, after many experienced travellers, who were not mountaineers, had failed, in lifting the veil of centuries and giving the world accurate knowledge of a most interesting and fascinating region—the Snows of the Nile. The Duke of the Abruzzi and Signor Sella have done for the region above the snow level what Sir H. Johnston had previously done for the lower zone of forests and flowers.

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upon mercurial barometer observations referred to Bujongolo as a lower station, the height of Bujongolo above Fort Portal having been previously determined by a series of barometer readings extending over a month, reduced as nearly as possible to the same time, at each place. The height of Fort Portal above Entebbe was in the same manner determined by a comparison of mercurial barometer readings taken at these two places, but in this case the series of readings extended over a period of three months. The following are the figures for these three places :—

Entebbe	3,862 ft. (barometer cistern)
Fort Portal (near Collectorate) .	5,026 ft. (barometer cistern)
Bujongolo	12,461 ft.

The height of the barometer cistern at Entebbe depends upon the surface of the lake being 3,726 ft., but according to Captain Behrens, R.E., of the Anglo-German Boundary Commission, the lake is only 3,720 ft. As the height of Fort Portal, which was the first station to be determined after leaving Entebbe, has not yet been definitely fixed trigonometrically, some correction may have to be made to the height of Bujongolo, which depends upon Fort Portal, and consequently to the heights of the peaks depending upon Bujongolo; but probably the necessary correction will, in any case, be small, since the barometric results agree (with one exception, for which reasons can be given) within 100 to 200 feet of the trigonometrical determinations of Captain Behrens. In addition to the barometer observations Captain Cagni fixed the height of the Cagni Peak above Bujongolo by theodolite vertical angles, and from the summit of this peak took vertical angles to the other peaks. The heights resulting from these observations agree very closely with the barometer determinations.

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THE PEAKS, PASSES & GLACIERS OF RUWENZORI.

to illustrate the paper by

H.R.H. THE DUKE OF THE ABRUZZI.

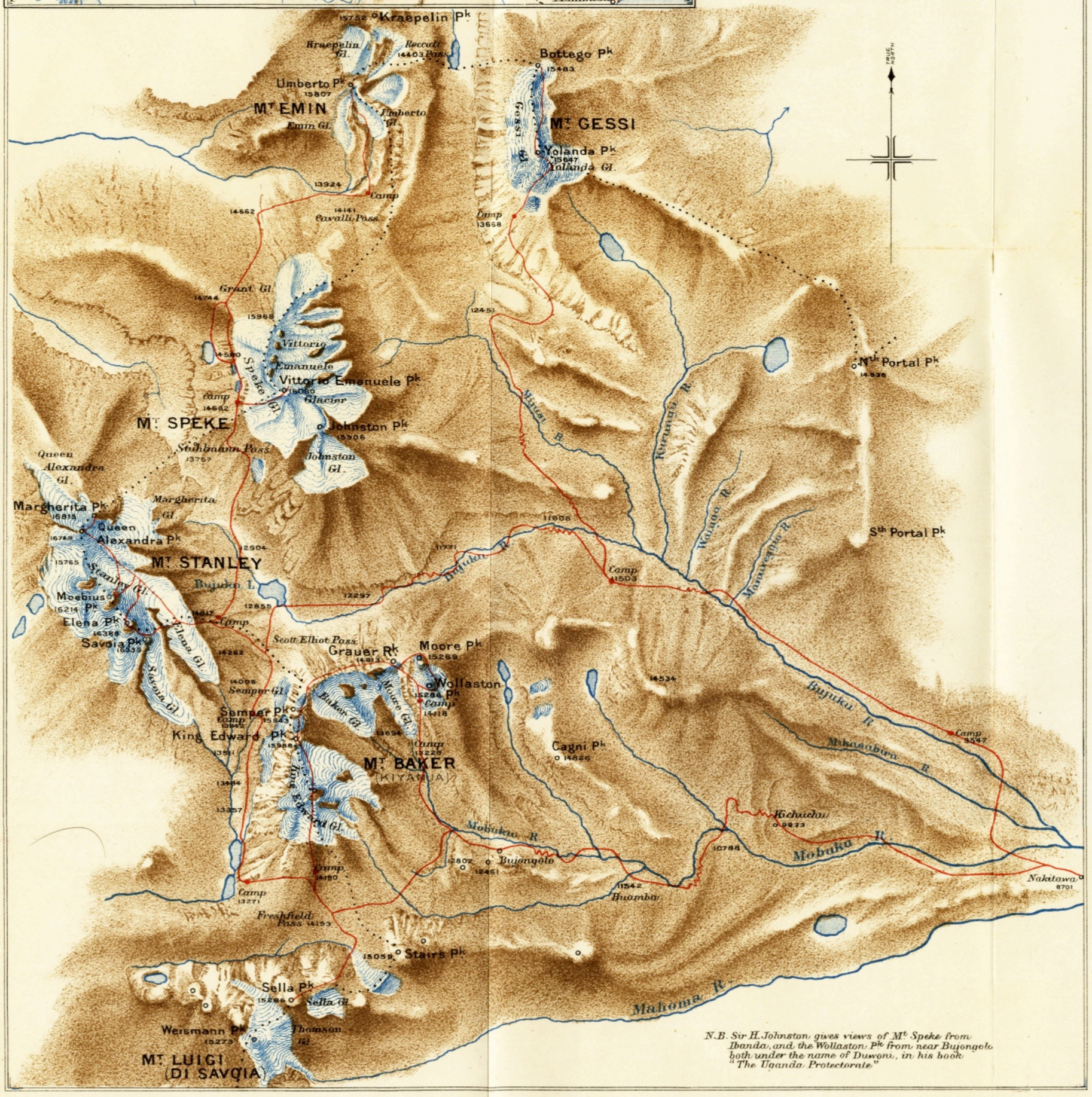
Scale 1:50,000 or 1·27 inches = 1 mile.

0 ½ 1 2

Heights in Feet. *Route* —

Watershed .....





N.B. Sir H. Johnston gives views of Mt Speke from Ibanda, and the Wollaston Pk from near Bujongolo both under the name of Duwoni, in his book "The Uganda Protectorate"

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