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Notes on a Journey to Mount Roraima, British Guiana.

By H. I. PERKINS.

(Read at the Evening Meeting, April 27th, 1885.)

Map, p. 560.

I HAD some hesitation in accepting the invitation to address you this evening on the subject of the ascent of Mount Roraima, not that I fail to appreciate the honour which it confers upon me, but I am conscious that in doing so, I am standing in the position which should be occupied by the originator and chief of the expedition, in which I took only the secondary part. However, as it has been represented to me that a brief narrative of the principal events of our journey would be of interest at the present moment, I will endeavour to give it to you in a condensed form, and I must ask you not to consider it as in any way forestalling the more complete and detailed account from the able pen of Mr. im Thurn, which will doubtless shortly be laid before the Society.

In every previous case where travellers had succeeded in reaching the vicinity of the mountain, they had been compelled to retrace their steps almost immediately owing to want of food. Profiting by these adverse experiences, we took care to guard against a like misfortune befalling us, by so timing our expedition as to arrive when the fields of cassava, the staple food of the Indians, were ready for harvest, and thanks to the modern improvements in the matter of tinned meats, we were not at the mercy of the native hunters.

Leaving Georgetown on the 14th October, I joined Mr. im Thurn for the long inland journey to the mountain, at Bartica Grove, a small missionary settlement at the confluence of the Mazaruni and Essequibo rivers, on the evening of the same day.

Two days later we commenced our journey, our party consisting of eighteen hands—Indians and half-breeds—distributed amongst three boats. We took three pilots with us in an extra boat as far as the head of the set of rapids and falls that lies between Bartica Grove and the mouth of the Potaro river. At the falls the Essequibo is about two to three miles in width, is broken up into numerous narrow channels by small islands and rocks, which render the navigation at once difficult and dangerous, though nature seems to have attempted to make up for it by increasing the beauty of the country; for one sees in places delicious cool shady retreats where the smooth dark mahogany coloured water, intensified in its tint almost to blackness, reflects the overhanging branches of the trees and the short stretches of silvery white sand that edge the stream; and again, in contrast, spots where the bright tropical sun blazes down fiercely on a mass of rushing seething waters, that whirl and eddy and foam in their efforts to pass the sharp rugged rocks that bar their passage to the sea. Above the falls, as it was the dry

season, we saw huge yellow sandbanks extending for miles, and as the boats passed close to them we saw the tracks made by the fresh-water turtles whilst in search of some convenient place to deposit their eggs.

From Gluck Island we made the best of our time, travelling daily till we reached the mouth of the Potaro river on the 21st, when we slept at the foot of the Tumatamari cataract, about six miles up. This took us the whole of the ensuing day to ascend, owing to the size and number of the boats and packages. On Thursday the 23rd we arrived at the Ichowra Mission, established in 1881 by the Rev. W. E. Pierce, who lost his life on his return journey to the Grove in the Marihi Falls of the Essequibo river in September of the same year.

We had calculated on obtaining as many extra hands, and boats of a size smaller and more convenient than our own, as we might require, from the large number of Indians who had come from various localities to meet the Bishop of Guiana and his party who were then visiting Ichowra; but here we were slightly disappointed, for though we were fortunate in the men who took service under us, we could not get anything approaching the number we actually wanted; and this led to many delays, which shortened our visit at the mountain itself, as our stock of provisions was necessarily diminished while real progress was not being made. Perhaps our greatest piece of good fortune was in securing the services of a Makusi Indian chief named "Laink," "Lonk," or "Long," whose village, containing some 300 or 400 persons, is situated on a hill summit near the Ireng river, about 10 miles from Mount Curiaring, and is called Konkarmo. He promised to see us safely there, and gave us his word that he would get us some Arekuna Indians to take us thence to Roraima itself.

We had determined to go by water to Chinebowie, an Indian village on the Potaro river, about a day and a half's journey from the Kaïeteur Fall, and to walk thence to Roraima. With this idea we left Ichowra on Monday, October 27th, and by nightfall had reached the foot of the Pacatout Cataract, where we camped. Early on the next day we repaired the path across the portage, which is about half a mile in length, putting down rollers or logs of wood wherever required, to assist the boats in their passage over the ground, and, that finished, transported most of the baggage to the further end of the path.

The boats had now to be taken over, but this had to be put off till the following day, when we left Pacatout, and reached Amutu Fall, where we found the portage path blocked and in a state of disorder, which took us quite half a day to clear up, and we then took the two smaller boats and their cargoes over to the other side above the cataract.

Unfortunately we had to leave our biggest boat behind here, for it came into contact with a sharp-pointed tacuba—dead, fallen, hard-wood tree—which ripped a hole in its side, and rendered it quite useless for the time; so we proceeded on our journey in the other two the same day

as far as Warrotu Cataract, and on from thence to the Tukoie landing, which is, so to speak, at the foot of the Kaieteur Fall, though, in reality, it is about $2\frac{1}{2}$ miles away from the fall by a rough bush path. We at once sent back the boats to bring on the rest of the baggage and the remainder of the hands whom we had left in charge at Amutu.

On the 3rd of November we moved our camp from Tukoie to the top of the Kaieteur Fall of the Potaro river, to a spot about 150 yards from its actual edge. Here we remained four days and a half whilst the men were bringing the loads from Tukoie landing to our camp.

Close to our camp we found two corials or canoes made of whole trees with the heart dug out and opened wide by artificial means. They belonged to an Indian at Chinebowie, to which place we were bound, so packing them as full as we safely could we left the Kaieteur on Friday, November 7th, and reached Chinebowie the following day, where we were detained five days and a half, whilst the remainder of the luggage left behind at the waterfall was being brought to us.

Here, I regret to say, I was obliged to leave my chronometer, which afterwards deterred me from taking observations for longitude. I had tried my utmost to obtain a chronometer watch for this purpose, but had been unsuccessful, and there was insufficient time to get one from England, so as a last resource I had to get a ship's chronometer, which required an immense amount of care when carried about, and I could not therefore trust any one with it, but had to carry it always myself. I had been able to protect it against any sudden jars whilst we were travelling in the boats, but afterwards, during the journey from Tukore landing to the Kaieteur, I experienced the greatest difficulty in carrying it safely, more particularly in the steepest portions of the path, where it was by no means easy to walk even when untrammelled by such a thing as a chronometer, and here it got several severe jolts, so that I saw at once it would be hopeless to expect the instrument to maintain its regularity of rate, which was at the time I received it almost infinitesimal, losing a tenth of a second per day, and determined to leave it at the first safe place we met with.

We left Chinebowie on the 14th of November, and had for the first three days to walk through the bush, our course being for the first two days south-west by west, and afterwards, on the third, due south-west, along southern spurs of the Pacaraima Mountains, camping each night at the side of a small stream, and tying our hammocks to the trees with a piece of waterproof cloth stretched over them as a protection from the rain and night dews.

On the 16th we reached Araiwaparu Partamona village, of three houses, situated on the side of a lofty hill some 2000 feet high, and stayed there the whole of the next day in order to rest the men, who were tired by their walk through the forest and in great need of a halt.

Resuming our journey on the 18th, our path led us through a magni-

ficent savannah country resembling the English downs, rolling away for miles and miles on all sides, some of the hill-tops being quite 2500 feet above the level of the sea. The savannah grass, of which there are several kinds, does not grow to any great length, and consequently the walking is extremely enjoyable, as there are no trees to impede one's progress, and there is no necessity, as is the case in bush walking, to be constantly on the alert for overhanging branches that impede one's way.

The types of feature amongst the Partamonas are not attractive, the men having for the most part large mouths and flattish noses with small unintelligent eyes, and longish wild unkempt hair, in which they present a great contrast to the Makusi Indians, who are, as a rule, handsome men, and wear their thick straight black hair neatly and evenly cut by a razor. Some of the Partamona women are when young not ill-looking, and we noticed some who were quite pretty; neither men nor women wear a superabundance of clothing, a loin-cloth or lap, and sandals made of the leaf stem of the Eta palm constitute the dress of the men, while the women content themselves with a broad bead apron of red, white, and blue beads; the splendid thick hair of both sexes furnishes an ample protection from sunstroke.

Indians always look their best when in their natural costume, but most of them, if not all, dearly love to wear European clothes which never become them. Their houses are cone-shaped and quite watertight; the conical roof rests on a circular wall of kneaded clay, and is also supported by a pole in the centre, and is generally composed of the leaves of the Eta palm (*Mauritia flexuosa*), neatly laid one over the other. There are no windows to these dwellings and consequently it is nearly always pitch dark inside, for the only means of lighting are by two doors, one large one in front and a smaller one in a direct line opposite to it at the back of the house; this latter is made for the women and children to escape by in the case of any unwelcome visitor or enemy appearing at the front. They light fires all over the floor, not unfrequently one under each hammock, and the roof in consequence is of a glossy black, which preserves the leaves as the smoke drives away the larvæ of insects that feed on them, and keeps the house quite dry and warm.

In the morning we always experienced a cold biting north-east wind that seemed to die away as the sun rose, and changed to the southward as the day grew warmer.

We learnt from Lonk that we were quite close to his village, which we reached the following day, the 19th, travelling in a southerly direction some 12½ miles from Euworra-eng. It is placed on a hill-top, but the view is shut in on all sides by greater heights. We were greeted with great cordiality by the whole population, some 300 in number, each of whom, men, women, and children, insisted on shaking hands with us.

The morning after our arrival at Konkarmo, we paid off the Makusis whom we had employed from Ichowra, and induced Lonk to send thirty of his men back to Chinebowie along with three of the Partamonas from Euworra-eng to bring on the rest of our baggage, left behind for want of porters.

On the Sunday following, the 23rd of November, we paid a visit to the Ireng river which flows at about four miles' distance from the settlement in an easterly direction through the savannah. It is here about 120 yards wide, and was then extremely shallow from the drought, but was a beautiful sight; to the right a small cataract was surging and foaming, and below it the froth floating down rapidly between the pretty stretches of white sand and banks of red jasper pebbles looked like lovely white birds in the bright sunlight.

Near the river we obtained pieces of a dark coloured rock, a kind of serpentine, of a purple hue, called by the inhabitants of the district yarowah, and worked by them (by Lonk's immediate relations in particular) into stone axes and toys such as whistles and models of chrysalises and bottles and animals. They do not now use these stone implements for domestic purposes, as they procure those of iron manufacture from the Portuguese traders on the Rio Branco and elsewhere. This art of stone implement making seems to have been kept alive in Lonk's family from time immemorial, for on our asking him where he had learnt to make stone axes, he replied that his fathers had done so before him, and the process had been taught by father to son for generations.

So far as we could discover, the following seems to be the usual method adopted by these people in making these things. They nearly always select a stone which in its rough state almost resembles the object they desire to manufacture, and when this is not possible the stone is worked into an approximation of the required shape by chipping with a knife or cutlass, in the absence of which a harder sharp-edged stone would be used; when this has sufficiently reduced the size of it, it is rubbed on another rock harder than itself, by which means the rough exterior changes into large triangular or oblong facets whose edges are again ground till other and smaller facets are formed, and this process continues until the stone becomes of the right form and weight, and the rough edges then remaining are removed by a gentler friction, which leaves the finished implement quite smooth.

Lonk made for im Thurn a stone axe, a whistle, and two models, one of a fish and one of a bottle, also a very good imitation of a chrysalis, but he would not go with us when we went to the Ireng on the Sunday as he demurred on the ground that it was God's day, and he said he would have to hold service in his church, a neat structure of wood built on log pillars about three feet from the ground, with a clean-looking floor of beaten bark, and roofed with the Eta palm leaves. It is about

60 feet long by 25 feet broad, provided with benches made of whole logs of wood, and an altar with two or three steps leading up to it; the entrances, of which there are two, are furnished with large notched logs to serve as steps. In this edifice Lonk used to hold service from three to five and six times a day, according as his fancy took him, notice having been previously given by blowing a cow's horn, obtained from the Brazilian cattle farms. The service consisted of the Lord's Prayer, the Creed, and the Ten Commandments being read aloud by Lunk, and repeated by all the worshippers in the Makusi language, who had learnt the words by hearing them said frequently.

Lonk probably acquired his knowledge at the Potaro Mission, and found it added greatly to his importance among his fellow tribesmen, though it would perhaps be unfair to say he made any illicit use of his access of power.

So frequently were the services held that it was often difficult to obtain men to work, and particularly so when we required a huntsman to procure fresh meat for us; however, that was not so great a nuisance as when they began to say the Commandments, &c., over to each other at 2 o'clock in the morning, as frequently happened, for then there was no possible chance of sleep.

On Wednesday, November 26th, the men sent to Chinebowie returned with the rest of the baggage, and in the meantime the Arekunas who were to take us to the mountain put in an appearance; their chief, a dirty looking ruffian named John, affirmed positively that he knew the way perfectly, but we were deceived by him, for when we had crossed the Cotinga or Quateng river, about two days and a half's journey distance from Roraima, he showed an utter ignorance of the path.

The first night from Konkarmo, which we left on the 28th of November, we slept at Wutsa, after a march of 12 miles; the country being savannah land the whole way to Roraima of the same undulating character as we had first met on leaving Araiwaparu. Sunday, the 30th, we reached the Cotinga or Quateng river, which forms part of the boundary between British Guiana and Brazil. It is a sluggish stream with high clay and sand banks, and rises north of Roraima.

The 1st of December, our first day in Brazilian territory, we camped to the south-west of, and quite close to Waetipu, a splendid mountain towering above the general level of the tableland some 3000 or 4000 feet, with bold sharp outlines ending in a well-defined peak, on its south side free from forest, the savannah continuing quite up to its summit, though densely wooded on its N.N.E. and north-west.

From a lofty range of hills some 3600 feet high, we had a splendid view of Waetipu, Roraima, Kukenam, Marima, and two small mountains near Waetipu, named Hormi and Mucuripa; the curious square flat tops of Roraima and Kukenam, with their dark precipitous cliffs, adding a grand and peculiar effect to the whole landscape. On the 2nd of

December we arrived at Toroiking or Ipelemuta, an Arekuna village of four houses situated on the left bank of the Arapu river.

Here we made the acquaintance of the Arekuna chief, a fine old man of about sixty, named Simon, with his son and other children, as he called them, though they numbered at least fifty, who, he informed us, were at our service, and some half-dozen of whom we afterwards employed to cut a path for us on the mountain itself. John our Arekuna guide now said he knew the path no further, and in consequence Mr. im Thurn engaged some of Simon's children to carry our loads to Teruta, a village at the foot of Roraima, about eight or nine miles to the west of Toroiking, which we entered on the 4th.

The view from here is magnificent, as the village is placed just in front of Roraima, giving a sight also of Kukenam; it is situated on a high hill 3751 feet above sea-level, but is dwarfed by the gigantic walls of rock near it, Roraima being about four, and Kukenam about three miles from it. Each mountain seems like a huge impregnable fortress, built on a mountain top 7000 feet high, with walls from 1200 to 1800 feet in height.

The portion of Roraima facing Teruta is four miles long, and of Kukenam about the same. In wet weather their summits are wrapped in dark clouds, and after the rain is over and the clouds have dispersed the water can be seen casting itself over the cliffs in splendid falls that only by being seen can be at all imagined. At a distance of four to five miles they look like delicate white threads against the dark background of sandstone rock. The two mountains are separated by a wide gorge, and in this clouds of dense white mist accumulate, and gradually creeping up as the day advances enshroud their summits something after the manner of the "tablecloth" of Table Mountain.

On six different occasions had the mountain been visited before this journey of ours.

In November 1838 it was discovered and its position determined by the brothers Robert and Richard Schomburgk, who stayed some twenty-five days in its neighbourhood and who visited the same spot below the summit as ourselves, for we met an old Indian woman at Teruta village at the foot of Roraima, who pointed out where "Sambrook," as she called them, had been. It was next seen in 1869 or 1870 by Mr. Chas. Brown, who was employed about that time by the Government of British Guiana to make a geological survey of the colony. He did not go to the same point as we did, and had to retire after a day's stay, from want of provisions. Messrs. Boddam-Whetham and McTurk attempted to scale the mountain in 1877. They saw the ledge by which we reached the top, but deemed it impracticable of ascent, owing to two apparent interruptions in its course. Their food supply also would not permit of a long stay and they had to retire unsuccessful.

Soon after this Messrs. Flint and Eddington, two travellers in British

Guiana visited the mountain. They also, I believe, saw the ledge, and fearing the same difficulties as Messrs. Boddam-Whetham and McTurk, did not attempt the climb. Then Mr. Whitely in 1883, whilst collecting birds in the district, built himself a hut on the mountain side, and cut a path to the face of the cliff. He saw the ledge, and in last year's August number of the Society's 'Proceedings' furnished a paper on his experience, illustrated by sketches, one of which is meant to represent this same ledge.

Very soon after Mr. Whitely left Roraima, Mr. Siedl, who had come to collect orchids, &c., arrived at the mountain in February 1884, where we found him, when on his second visit, and took up our quarters close to him on the mountain side.

Roraima has not been seen on every side, the north-west at present not having yet been viewed by any one, and it would perhaps be quite safe to say that no side but the south-western has been thoroughly scrutinised with a view to finding a means of access to the summit. For on the parts of the mountain other than the south-west there is dense forest, and the paths through this are at a distance of five or six miles or more from the cliff face, so that any one passing along these roads would be unable to see distinctly and clearly a ledge of small size against the cliff, if even able to see at all through the dense bush on all sides, and it is a curious fact that our ledge is on the most easily approached side of the mountain.

On this first visit to the upper portion of Roraima the ledge of rock appeared to us extremely easy to climb, except in two places: the first where the bush that covered the ledge appeared to end suddenly, leaving the cliff bare and naked, and giving the ledge the appearance of being interrupted, and consequently impassable; and in the second place where a waterfall from the summit falls on the ledge and has cut a gap in it, so that there seems to be a deep wide hole, which it would take great trouble to bridge over. But on the whole it seemed so easy to climb the mountain here that we concluded, as previous travellers had not attempted it, that there must be some insuperable difficulty of which we were not aware.

On the south and south-west sides, Roraima is for the most part devoid of trees. Teruta village lies, so to speak, at the foot of the mountain, though the cliff portion is about four miles distant. Between Teruta hill and Roraima flows the Kukenam river, which rises in Kukenam Mountain and descends from the summit in a splendid fall of about 1300 feet. From the Kukenam river Roraima slopes up at an angle of about 20° to 4500 feet, and then at 30° to the commencement of the forest-covered portion at 5890 feet; from here to the cliff face the incline is 15° steeper to about 7200 feet, and the remainder is perpendicular cliff. At about 5600 feet we found a large piece of swampy ground filled with most exquisite varieties of orchids and ferns, and also

the *Utricularia Humboldtii*, which grows to greater perfection here than on the Kaieteur savannah. Here also we found the *Heliamphora* or pitcher plant, whose cup-shaped leaves were full of water; it bears a delicate white flower without smell.

We reascended the mountain on Sunday, December 7th, and built our houses, one for ourselves and one for the men, at an altitude of 5405 feet above sea-level, close to Siedl's hut.

On the 10th, with Mr. Siedl, we went up a path cut by Mr. Whitely in 1883 to the face of the cliff, and on our way, at 6410 feet, found a lovely flowering plant, the *Leiothamnus Elizabethæ* of Schomburgk; it has deep carmine star-shaped flowers, with a white star centre, the points of which radiate down the petals. At 6841 feet we rediscovered another exquisite flower, first found by Richard Schomburgk, an *Utricularia*, with a large deep crimson blossom. The plant grows on the branches of trees and is about two to three inches in height; the bloom, when out, completely hides the stalk, and is about an inch and a quarter long by half an inch wide; sometimes there are two flowers on the same plant, but usually only one. The appearance of one of these bright blossoms on the sombre tree-branches has a most peculiar effect, and one's admiration is divided between the brightness of the flower and the wonderful energy of the tiny plant that produces it. Pursuing our way, we reached the cliff at 12 o'clock, nearly three hours from the start, the way being extremely rough and steep, over roots and trunks of trees and bare rocks; at times we could hear water running among the stones under our feet.

There are no trees of any very great size growing on that portion of the mountain, but the varieties of ferns are very numerous and beautiful, varying from small filmy to tall tree ferns, some 20 to 30 feet in height; but the plant that seemed to awaken for the time as much interest with us as any other was the *Rubus Schomburgkii*, or Roraima blackberry, which greatly resembles the English bramble; we gathered several bunches of the fruit, which possibly does get sweet, but none of those we obtained were at all eatable.

From the portion of the cliff reached we had a good view of the ledge we had seen on the 5th, and though partially obscured by the intervening bush it seemed quite easy of ascent.

The height we reached this day was 7350 feet, determined by boiling-point thermometer, and it took us $3\frac{3}{4}$ hours to return to our hut, a distance of about $2\frac{1}{2}$ miles, as we frequently stopped to collect ferns and other plants on our way.

On the 11th we ordered the Arekunas to cut a path to the foot of the ledge from the edge of the savannah, and if possible to continue it as far as the summit. After a day's work they returned, saying they had finished the road, but we afterwards found they had left off from fear of Makunaima, the great spirit, just at the point where the ledge joins the

upper sloping portion of the mountain. This was on the 14th, when we reached 7756 feet above sea-level, and found our way suddenly barred by a precipice of 120 feet. A heavy mist too arose, and it became bitterly cold, with the rain falling in torrents, which rendered our return journey dangerous, and the path slippery and muddy.

The next few days were occupied in surveying the country round the mountain and preserving plants; it was still too wet and slippery to enable us to make any further attempt on the mountain, but learning from Simon, the Arekuna chief of Toroiking, that the rainy season was about setting in, we determined to make use of the first fine morning we might have; and on the 18th December, which dawned most auspiciously for us, we left our house after an early breakfast at 7 A.M., reaching the cliff at 8.30, where we waited for about half an hour, and then set forward along the ledge, the path keeping much the same the whole way over rocks and roots and trunks of trees, and sometimes along the slippery leaning stems of the trees, using our hands and knees for some portion of the way.

The Arekunas we had with us hung back when we got thus far, and for a long while would not proceed until by dint of a great deal of persuasion, and the promise of a taste of ardent spirits, we prevailed on them to accompany us; we had, however, to send one of the men from the Pomerun, a half-negro half-Indian, to go first and lead the way, cutting a path as he went on. In this way we reached the waterfall, which to our great surprise we found extremely easy to pass, as the ledge was not cut away by the action of the water falling on it, and fortunately there was very little water coming over, being more like a very heavy shower, which wet us to the skin immediately. The foothold around the spot was extremely precarious, being worn quite smooth and slippery by the constant moisture and falling water.

From this fall to the top, the last portion of the ledge slopes at an angle of 30° , and is in places quite 20 or more yards in width; it is covered by a dense growth of moss, and in spots, tall coarse grass, which gives way here and there to flowering plants and small shrubs. Of the flowers one in particular, a species of heath, took our fancy by its dark pink blossoms of six petals, about the size of a halfpenny, which lay in quantities along our path. So occupied were we in securing each new treasure, that we had almost gained the top before being aware of it, for near the summit the ledge loses its steepness and is, so to speak, merged into the top itself.

A curious sight met our eager gaze as we passed the boundary line of the unknown; on all sides were grouped rocks of shapes unimaginable—weird, strange, and fantastic—first a row of huge oblong stones that looked like rude cannon placed there to guard the approach; further on another rock like a giant's umbrella on a short thick stem of about four or five feet in height, and others like miniature castles

and ruins of old churches, leaning so much that had they not been solidly connected portions of the enormous sandstone bed, they would have fallen. We saw no lake, however, but several pools of water here and there. The vegetation on the summit was extremely scanty and insignificant; there being no trees, only small bushes from three to six feet in height, growing at long intervals, and with the exception of a few scrubby orchids, two species of thick-leaved ferns, and a variety of the red *Utricularia* from below, there was no other plant there, owing no doubt to the absence of soil: for it is not possible for earth to collect on the summit as it would be almost immediately carried over by the rain-water which finds its way over the edge of the enormous cliff soon after it has fallen in most splendid waterfalls, some of which have a clear fall of 1500 feet.

We had no sooner accomplished the ascent than an impenetrable cloud of mist enveloped the whole of the upper part of the mountain, entirely obscuring the view, and rendering it difficult to see beyond 40 or 50 yards in any one direction, and putting a limit to our wanderings. After boiling the thermometer, which registered 197° Fahr., the average of five readings, and gave the height (allowing for difference of temperature from sea-level) as 8600 feet, we returned to our hut.

We left our house on the 22nd of December, and moved to Teruta, whence we proceeded as rapidly as possible to Konkarmo, Lonk's village, which we entered on the 31st of December, and found a large collection of Makusis from small villages near Konkarmo, engaged in making Christmas. We arrived at the Kaieteur Fall on Friday, January 9th, 1885, and in Georgetown on the afternoon of the 31st, having been absent three months and sixteen days.

Should the further exploration of the summit of Roraima be ever determined upon, it would be necessary to take into consideration the difficulties to be encountered in reaching the top when carrying baggage, more or less heavy, for we found it a stiff enough climb untrammelled as we were with anything of the sort; moreover, the foundation of the path is composed mainly of a mass of loose rocks with deep crevices and holes between them over which is spread a network of tree roots on which one has to tread, and sometimes the way lies up the trunk of a fallen tree, where in damp weather the footing is extremely slippery.

Supposing, however, that every load had safely reached the top, one or more of the burdens being a tent, for it would be imperative to carry them as there are no trees to be found, and huts could not therefore be built, and hammocks, in which every traveller in that region sleeps, could not be slung up, but would have to be laid on the ground.

On account of the absence of trees also, it would be next to impossible to cook one's food, unless a kerosine stove were taken up, and it would require a very large and certainly too heavy a one to cook the salt fish

and rice on which the labourers, who would have to be numerous, as I shall show later, subsist.

Again, there is reason to believe the cold at night would be intense, for, as before stated, the average minimum night temperature was 49° , and once fell as low as 45° . This was inside the bush on the edge of the savannah, at only 5400 feet, where the huge cliff to some extent sheltered the spot. But on the top, 3200 feet higher, there would be nothing to stay the cold wind, and no fire to provide artificial heat; perhaps the white men of the party would not feel it so much as the blacks, and particularly the Indians, as the last named almost invariably light a fire near their hammocks before retiring for the night, and become quickly demoralised when they have to face the cold, and in the event of their becoming disheartened it would be adding greatly to the unpleasantness of the situation, if not necessitate a retreat.

So far as it was possible to discover, it appeared to us that it would not be easy, if at all feasible, to visit every part of this marvellous mountain, the flat top of which is at a rough estimation some 30 square miles in extent, without numerous appliances for ascending and descending the many small precipices into which the once flat surface has been worn. Ropes and rope-ladders would be required, and as there is nothing to fasten the ladders to, it would be necessary to have a number of men at the top to hold them while the others got down, and of course these men would have to be left behind until the return of the others. If this had to be done often, it would naturally take a large number of men for the purpose, though perhaps a way might be found by which the necessity for rope-ladders would be done away with; however, this would mean a long *détour* and consequent loss of time, which could be ill afforded, as the food supply would diminish steadily the whole time, and there would be no chance of replenishing it, except by obtaining fresh stores from below, as there are no animals whatever on the summit.

Another difficulty to be apprehended lies in the fact that the frequent and sudden mist that often envelopes the mountain, and is generally prevalent, would stop all excursions for the time being, for it is not possible to see more than 50 or 60 yards in any one direction when the day is foggy, and an exploring party would be in danger of losing sight of their camp if they attempted to wander any distance from it.

These few observations are based upon what we actually noticed when on the mountain-top; but as we were there only three hours, a more lengthened stay and actual experience of the difficulties mentioned may perhaps prove the task of exploring the whole of the summit of Roraima easier than I have conjectured it to be.

Previous to the reading of the foregoing,

The PRESIDENT (Lord ABERDARE) said it would doubtless be remembered that the expedition conducted by Mr. im Thurn to Roraima was suggested by Sir Joseph Hooker, and that the Royal Geographical Society, the Royal Society, and the British

Association took an interest in it and found the necessary funds. Mr. im Thurn was accompanied by Mr. Perkins, who had written a paper giving an account of the expedition. Mr. Perkins had not accepted the invitation to prepare the paper without hesitation, inasmuch as he was naturally reluctant to do anything which might seem to anticipate the interest with which Mr. im Thurn's account of the expedition would be received; but he had skilfully contrived to give an account of the nature of the journey without forestalling the more scientific details which it was hoped Mr. im Thurn himself would give; unfortunately Mr. im Thurn was taken ill on his return to the coast. Mount Roraima had long presented an interesting problem to geographers and natural philosophers. It was known to be an isolated mountain nearly 9000 feet in height, the last 1500 to 2000 of which was a precipice up which it was supposed to be impossible to climb. It was surrounded by a number of other isolated mountains of a similar character, but Roraima was the highest of them all. Sir Joseph Hooker and others expected that a careful examination of the top of the plateau would afford some very interesting results. It was considered probable that the flora would be different from that of the plain, and similar to that which existed in old time. To some extent these anticipations had been rewarded by the discoveries made by Mr. im Thurn. The obstacles to reaching the top and remaining there were very great, but no doubt, now that Mr. im Thurn had led the way, others would follow, and before many years were passed an exhaustive examination would be made of the lofty plateau.

After the paper,

Sir JOSEPH HOOKER congratulated the Society upon the clear and unpretending account which had just been read of the expedition to Mount Roraima. That mountain had for forty years engaged his attention. He first heard of it from his friend Mr. Robert Schomburgk on his return from exploration in that region. He had long hoped that the time would come when some visitor to Guiana would be sufficiently instructed and educated to make good use of the expedition to the mountain. Mr. im Thurn was a public school boy at Marlborough, and was the life and soul of the natural history class there. Being desirous of pursuing natural history he applied to him (Sir Joseph Hooker) for an appointment, and he obtained for him the position of Curator at the Guiana Museum. That he exchanged for a magistracy up the Pomerun river, where he was within reach of Mount Roraima. He (Sir Joseph Hooker) wrote to him and said, "Did it never occur to you that the mountain may be ascended?" and the reply received was, "I am sure it can be, but it will cost a great deal of money." He wrote again to him saying that he was sure the Royal Geographical Society and the Council of the Royal Society would readily engage to make up any loss in the matter of funds, to which Mr. im Thurn replied that his own resources would be willingly placed at the disposal of the expedition. Unfortunately Mr. im Thurn had been taken ill, and he had only received two letters from him since his return from the mountain, both written in pencil in his hammock.* His collections would be of great value ethnographically, botanically, and geologically. Mount Roraima resembled the Khasia Mountains near the Bay of Bengal, which rose abruptly about 200 miles from the sea and extended for 400 miles. On the top of those mountains 600 inches of rain fell annually, and there was no vegetation except tufted grass. There were also remarkable rocks, weather-worn by the rain. The Khasia Mountains were gneiss and granite, but Mount Roraima was sandstone. In conclusion he expressed an earnest hope that ere long Mr. im Thurn would be able to supplement the paper that had been read by Mr. Perkins.

* M. im Thurn's paper (*ante*, p. 497) was not received until after the close of the Session.—[ED.]

PART OF BRITISH GUIANA

Showing the Route Explored
by

M^r Everard im Thurn

TO M^t RORAIMA

1885.

Scale of English Miles