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THE SCOTTISH GEOGRAPHICAL MAGAZINE.

ON ATTEMPTS TO REACH THE OWEN STANLEY PEAK.

*A Report to the Royal Scottish Geographical Society
on the New Guinea Expedition.*

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As is known to the members of this Society, I left England in 1885 to attempt the exploration of the highest point, in British New Guinea, of the Owen Stanley range of mountains. The circumstances under which I left, and the vicissitudes and misadventures of the expedition before it reached the shores of New Guinea, have been from time to time recorded in this Magazine; but for the sake of the consecutiveness of the narrative, I shall recapitulate its history in a sentence or two.

Leaving London on the 1st of April 1885, I reached Batavia on the 8th of May. After a week's delay, I left for the island of Amboyna, in the Moluccas, a journey of three weeks' duration, to engage there my old head-man Lopes and three other of his kindred, to act as hunters, and to help in the supervision of the coolies from Java, who were to act as carriers. Returning to Batavia on the 29th June, I engaged twenty-five Bantamese coolies, and was ready on the 12th July to embark for Thursday Island, the nearest call-port of the Queensland line of steamers to my destination at Port Moresby, in New Guinea. In opposition to the authority of the Agent-General for Queensland, granted to me in London, I was, without reason, refused permission by the officers of the vessel, on her arrival at Batavia, to embark myself or my company. By an accident to the lighter proceeding with my baggage to the next steamer that arrived, the whole equipment of the expedition was lost. Though almost overwhelmed by this disaster, I continued my journey, but changed my destination to Brisbane. Here hope brightened under the hearty interest taken in the expedition by, and the liberal promises of support of, the late Sir Peter Scratchley, Her Majesty's first Special Commissioner

to the Protectorate, then on his way to Port Moresby. In Brisbane also, a vote made by the Geographical Society of Australasia was placed at my disposal, and helped in restoring the loss sustained at Batavia. Here also I engaged Mr. J. M. Hennessy to act as my second-in-charge, to whom I at once gave over the duty of refitting the expedition, according to my instructions, and of bringing across the Malays to Port Moresby in a steamer engaged for the purpose, while I proceeded in advance with the Special Commissioner to New Guinea, to arrange for their arrival later on.

On the 29th of August I landed from the *Governor Blackhall*, and found myself among, of course, a frizzly-headed race, but, to my surprise, of a light brown, instead of the sooty black colour, as I had expected to find from my knowledge of the inhabitants of MacLuer Inlet, in the north-west. Not less striking to us as new-comers was the unabashed nudity of the men, which is in very marked contrast to the modest demeanour of the women, who are becomingly and even prettily attired in a *rame* or grass petticoat, often of many colours, hanging from the waist to the knees.

There were at that time residing at Port Moresby few Europeans, except the missionaries, Messrs. Lawes and Chalmers. Like so many other visitors to these shores, I am deeply indebted to their kind hospitality for every comfort. For years the mission station has been placed at the disposal of all comers as a rest-house, where Mrs. Lawes dispensed, out of their often enough, in that unproductive land, scanty stores, with abounding generosity, the warmest-hearted hospitality; and to her tender care and nursing not a few visitors owe it that they have left its shores alive. A traveller's bungalow has now been erected by the Government.

On my arrival at Port Moresby I found H.M.S. *Lark*, in command of Lieut.-Commander Pullen, engaged in the survey of the harbour and adjoining coasts. With great kindness he gave me a tracing of his plottings, with a number of stations conveniently situated to serve as a base-line for the triangulation I intended to carry on along my route.

Port Moresby, lying in south latitude $9^{\circ} 27' 33''$, and $147^{\circ} 9' 10''$ east longitude, was discovered in 1873, by Captain Moresby in H.M.S. *Basilisk*. Having been soon after fixed on by the members of the London Missionary Society, the first white residents in the country, as their headquarters, it became on this account the landing-place of all subsequent travellers and visitors to New Guinea. The beneficent labours and conciliatory attitude of these missionaries gradually reduced the at first by no means friendly bearing of the Motuans, as the tribe there is designated, into one of undoubted friendship, so that, when Her Majesty resolved to proclaim her protectorate over the south-eastern portion of the country, Port Moresby was naturally chosen as the chief seat of the Government. As has been described by Captain Moresby, it lies in a magnificent lake-like harbour, in which the largest vessels can anchor in safety. Otherwise, however, it is not so favourably situated for a capital as many other places on the coast, as all communication with the interior is extremely difficult. There is also in the dry season great scarcity of

good water ; and except in the rainy monsoon, when the steep and closely encompassing eucalyptus-dotted hills are beautifully green, the whole landscape within reach of the eye is, as it was on our arrival in the month of September, brown, and as uninviting as well can be. At the north end of Fairfax Harbour, as the inner bay of the port is named, granite and quartz rocks occur ; while the rocks that crop out along the shore, from the village of Hanuabada to the south-eastern headland of the harbour, are of pure silex.

On the 16th September Mr. Hennessy reached Port Moresby, in charge of the Malays and the baggage of the expedition, and on the 25th we started for the interior, which, but for the disaster at Batavia, might have been accomplished nearly two months earlier.

In this communication I intend to confine myself chiefly to a short account of the purely geographical features of the country, in explanation of the accompanying map, which has been plotted from the triangulation carried on during my two expeditions, leaving to a future occasion a discussion of the results arrived at in other branches of science when the observations have been elaborated.

The fixed stations on which the triangulation is based are Matahitu in the Huhunamo range, Mavaralolo, and Pullen's Hill in the coast ranges, Fanny Peak and Muninumu in the plain, with D'Urville Peak in the Astrolabe range.

Crossing the coast range by a saddle under Pullen's Hill, the path descends into an undulating park-like grassy plateau, very Australian in appearance, abounding with wallaby, and dotted with stunted eucalyptus trees, pandans, and dwarf cycads. Probably the yearly habit of the natives of burning the grass, during their hunting expeditions, has had an effect on the growth of the trees. Nearly all the cycads bear marks of having passed more than once through the fire, and the extraordinary vitality of this ancient order it is, probably, that has enabled them to withstand the vicissitudes of so many geological ages. The plateau is interspersed with numerous dome-shaped hills, shooting up abruptly in the Fanny range into singular rocky crags. In the wet season many rivulets meander through this plain ; but in the dry season it is arid and parched, except by the margins of the Laroki River, which flows through its northern portion on its way to the sea in Redscar Bay. In crossing the plain, the eye has always before it the imposing breastwork of the precipitous crags of the Astrolabe range riven between Hombron Bluff and Warirata by the gorge of the Laroki River, which rises to all appearance as an impassable barrier across one's route. Surpassing Muninumu and Gorubada, a detached buttress of the range, about 1300 feet in height, the wall-foot of the Astrolabe is reached, where, on emerging from a dense thicket of trees, the guide points out the way as a narrow path that zigzags up its almost perpendicular face to the summit of the Warirata Cliffs. In this patch of forest the traveller first hears the curious and distinctive *wauk* of Raggi's Paradise bird, and the more melodious whistle-like call of the lovely King-bird. The Astrolabe range is composed of a very rough conglomerate of both rounded and angular fragments, striking in a general north-west and south-east direction, with

a gentle dip easterly, and exhibiting from Hombron Bluff to Mount Lilo the same inaccessible rampart. From Mount Lilo, where it abruptly turns off due south, it loses its imposing proportions, and dwindles as it approaches the sea. The highest eminence of this stately range I have named D'Urville Peak, in honour of the commander of the exploring vessel *Astrolabe*, from which the range derives its name. The conglomerate of which the range is built has been described as a volcanic breccia, but its even stratification over so wide an area, and the presence of water-worn pebbles and pot-stones, besides long, hollow rounded cavities, from which large tree-trunks have evidently decayed out, seem to indicate its sedimentary origin. Ascending by the footpath already indicated, we reach, at 2600 feet, the summit of this Cliff, which in some seasons is quite blue, from the flowers of the pretty gesneraceous *Boea Lawesii*. Standing in a clear day on the top of the Warirata Cliff, a magnificent view can be obtained of all the country between Tupiselei sea village, with the islands sleeping within the reef-barrier, round to Redscar Bay, and inland by the verdured sinuosities of the Laroki, to the rugged crags of Mount Yule, and the serrated summits of Mount Owen Stanley. From Warirata, descending along the edge of the deep chasm of the Laroki River, on the gradual dip eastward of the *Astrolabe* slope, and passing through the house-cluster of Sana-sanagai, we reach Narianumu, the village of the chief Lohia Malaga, a man of weight and importance among the Koiari people, once a noted warrior and still a great hunter, and who, ever since the advent of the white man, has been one of his staunchest and most faithful friends. His village is dominated by the eternal boom of the Laroki Falls, rising up out of the gorge on whose brink his dwelling stands. The bed of the Laroki above the falls can be reached without great difficulty from Narianumu, and, standing on the edge of the vertical precipice, several hundreds of feet in height, over which the river precipitates itself, the vast amount of denudation that has taken place can be appreciated, when one realises that the range-face has been excavated all the way back from Hombron Bluff to the falls, and the *débris* carried away and dissipated. Over the whole eastern slope of the *Astrolabe* are scattered huge detached blocks of the conglomerate of which the range is composed, most of them standing erect with their lines of stratification consonant with those in the cliffs, and their edges and faces sharp and angular as if they had been riven from their attachments and transported hither, and not eroded to their present dimensions. From Narianumu, there is a gentle descent to the Narinoko, an *Astrolabe*-tributary of the Laroki, which runs west to its confluence at the Falls. Surmounting a low range of hills we reach the Laroki River, which comes round from the south-east. On continuing eastward beyond the Laroki as far as the Richardson range, though we have a good deal of eucalyptus, as we have all the way westwards to the coast, the country begins to assume a much less Australian aspect, and we encounter patches of thick tropical forests of giant trees with Malayan affinities, clothed with creepers and orchids. That it was more forest-clad at no distant date, would appear from the large grass-covered patches in which the *Eucalyptus* has established itself, inter-

scattered between the forest belts, the old sites, I doubt not, of cultivated fields purposely denuded of trees by the natives. A few miles beyond the Laroki, the path crosses a small tributary, which, if followed, leads through a defile in the Richardson range to a beautiful amphitheatre, within which is situated the village of Saminumu, the headquarters of the Sogeri tribe, whose chiefs, Yaroga, Goadi, and Biaierekin, were the most upright, kind, and faithful of friends to us during our long stay. Saminumu stands about 1500 feet above the sea, and is surrounded by steep hills attaining an altitude of 3000 feet. My first task on arriving there was to ascend the northern girdle of this amphitheatre to obtain, if possible, a view of the lie of the country towards Mount Owen Stanley. I found at the top an open rocky spot, with a good outlook northward; and from a careful study of the intervening country, I made out a practicable route, I believed, to the mountain, in a northerly direction; so that I decided to go no further eastward, but to plant near Saminumu my first depot. As frequent thunderstorms and heavy clouds hanging over the distant ranges by this time warned us that in the upland regions the rainy season had set in, I resolved to make my rest-camp here till the beginning of the dry season.

In a convention of the tribe, I was granted, with every demonstration of friendship and satisfaction, a grassy knoll on the slope of Mount Otomionumu facing their village, as a site on which to erect my camp. Here, within a few days after our arrival, with their willing aid, stood up, finished and fenced in, my miniature village of four or five substantial houses, on which the natives bestowed the name of the hill on which it stood. From October 1885 to May 1886 it was the centre whither flocked, with no little awe, to see the stranger and his wonderful belongings, tribes whose country no white man has yet seen, who were welcomed and scrutinised with a curiosity equal to their own by the white *Lohiabada*, or chief.

Although my Sogeri camp was situated at an elevation whose zoological features were well known, ornithological collecting and less assiduously the collecting of other groups of the animal kingdom, was daily prosecuted. Of the botanical denizens of the forest, especially of their fruits, we have hitherto had but very scanty knowledge; consequently, every possible hour was utilised in gathering specimens of the vegetation, which were examined with interest for foreshadowings of the type of the flora clothing the yet virgin Alpine summits of the ranges, and possible glimpses into the ancient history of this great island. Meteorological observations were taken with constant regularity, but neither the heat nor the rainfall was so great as I had expected. The greatest pluvial record on any one day was $3\frac{1}{2}$ inches, which fell in about $2\frac{1}{4}$ hours; the highest shade temperature of 100° F., and the lowest night register, *i.e.* 59° F., fell both in December, so that 41° F. was the extreme range of the thermometer during the six months from October. The maximum range recorded in any one day was 40° F.

The survey of the district was carried on by sextant measurements and plane-table observations. But of the fixed stations given me by Captain Pullen, only D'Urville Peak, on the Astrolabe, could be seen

from the accessible hills surrounding my Otomionumu camp. Then to find in so densely wooded a country a summit that commanded a view of two additional stations west of the range was extremely difficult. After long search I found that the peak bearing the name of Koikoko commanded a peep into the lower country below the Astrolabe by the wide gorge of the Laroki River. But before I could set up my instruments and fix its position it required the labour of twenty men for thirty days to clear it of forest. With Koikoko fixed, the base-line from D'Urville Peak to Koikoko enabled me to carry on a fairly accurate triangulation of the eastern side of the Astrolabe. With the loss of one of the angle books in the looting of my camp, which occurred at a later period, the survey of much of the country both to the south of Gawada and east of Meroka has been unfortunately lost, and is therefore still a blank in the map. The wide vale between the Astrolabe and the Richardson ranges might, but for the terrible cliffs of the former, which bar all convenient access, be available for agricultural or pastoral purposes, as the soil is in many places very rich. But east, north, and south of Richardson range, the eye can detect not a single speck of level land; sharp mountain ridges, separated by deep precipitous gorges, scoured by rapid streams full of cataracts and boulders, range behind each other in endless succession. Often these ridges are chopped into isolated blocks of fantastic shape, perpendicular, inaccessible, clothed with virgin forest. While there are vast unoccupied tracts in the neighbouring colonies where equally rich soil, under a better climate, and easier of access, is offered by Nature, disposed more on the horizontal and less on the vertical than in the interior of New Guinea, one may suppose that emigrants in search of new spheres for their energies will prefer to labour where the sweat of their brows must be less wantonly expended. The conglomerate of which the Astrolabe precipices are built up, appears everywhere in the Richardson range, and I observed no other rock till crossing the Crombie River, where soft black slates crop out. The detritus has as yet yielded no gold beyond the most infinitesimal specks.

My Sogeri camp, as I have said, was a waiting station, where, while passing the wet season, we were making ourselves familiar with the natives, and with their language and customs, for the more efficient accomplishment of the task we had set before ourselves. In December 1885, Sir Peter Scratchley, the Special Commissioner, who had given me a promise, in compliance with a despatch of Lord Derby in favour of the expedition, of substantial support, died, leaving the completion of much he had commenced in the hands of his successor. On him I thought I could confidently depend to implement the undertaking of his predecessor. At that time communication with Australia (where Mr. Douglas was residing) was very uncertain and irregular. I felt little uneasiness at his silence till the middle of March had come, the date when my preparations were nearly completed for advancing northwards, whither I had indeed begun to move part of my camp impedimenta. When not a single communication reached me by the beginning of April, I saw that it was impossible for me, unaided, to support the expedition throughout the

months required to carry on the investigations I had prepared myself for pursuing.

I decided, therefore, that it was possible to make a flying visit only to the summit, and to this end, taking with me ten Malays and thirty natives, and accompanied by Mr. Chalmers, whose great ambition it was also to ascend Mount Owen Stanley, I set out on the 12th of April from Otomionumu. By a path to the east of Koikoko, over Richardson's range, we descended by a long spur to an affluent of the Goldie—the Beccari River, a broad swift stream, about $4\frac{1}{2}$ feet deep, on whose banks I observed huge blocks of fine-grained basaltic rocks. From the river a very steep climb up a shoulder of the Justice Fry range brought us to a narrow gateway between towering walls of conglomerate, leading down to the valley of the Goldie. Descending on a knife-edge ridge of great steepness, and in some places almost perpendicular, we arrived at the village of Kaukari, which stands encompassed by rugged peaks and pinnacles.

To Kaukari I was accompanied by the Sogeri chiefs, Yaroga and Biarekin, but this was the *Ultima Thule*, beyond which they would not venture, as the tribes of the Goldie valley were not their *wara-wara*; that is, they were not united to them by ties of relationship or of amity. In order to proceed beyond this village, therefore, it was necessary for us to make friends with the tribes ahead, as they were rather hostilely disposed towards the white man. On our arrival we rendered ourselves, without great difficulty, *personæ gratissimæ* to Gomaradauri, the chief, who by various stratagems at length prevailed on some of the Ebe and Bereka people to visit our camp, and through them their chiefs were eventually induced, partly by curiosity, but mostly by cupidity, to adventure themselves amongst us. By means of tempting presents, conciliatory speeches, and long smokes of the peaceful pipe, we won our way to their affections. Then in the most cautious way, but unfortunately of necessity through the medium of double interpreters, we broached the subject of the "Great Mountain." Immediately there was a conspiracy of silence and of ignorance. Our most persistent efforts only elicited that they did not know the way; that there was a "great river" between us and it; that beyond the river there were no people, and consequently no food to be got by the way; and, above all, that the spirits that dwell on the mountain were the most terrible of beings: they delighted in cruelty, and would suffer no one who approached the mountain to escape alive. Nothing would induce them to go with us. We, however, determined to try the effect of a feast. We afforded them a whole day of gastronomic delight, without one disturbing reference to such uncanny subjects as the mountain, till late in the evening, when, in the good-humour of repletion, we coaxingly plied them again; but with no better result—on no account would they promise to accompany us to the mountain itself. Would they guide us then to the Great Water? If they would, we should be contented; and they could have many tomahawks, and as much salt, tobacco, and red cloth as they liked. At last, on our solemnly undertaking that when the river was reached we should consider that their duty was accomplished, they gave their promise to conduct us. This was ten o'clock on Sunday night. After giving orders for everything to be ready for a move forward at daybreak, we retired to rest

in a very cheerful mood, feeling satisfied that if we once reached the unknown water we should probably find the way open itself up further. Imagine our disappointment when in the very early morning Yaroga, the Sogeri chief, pulled aside our tent flap to tell us that the Ebe and Bereka people had taken their silent departure in the night. It would have been useless to proceed to Ebe; we should have found no one in any of the villages, for our approach would be the signal for them to take to the bush or to some other village in fear of our displeasure at their breach of faith. Could I have counted on the resources promised to me, I should have gone forward with my own party, establishing depots a few miles ahead of each other, whither by repeated relays I could have advanced the stores and furniture of the camp, for the whole season was before me, and, as the crow flies, the distance was not more than 30 miles. But a rapid spurt could only be made by the aid of native carriers. Under the circumstances there was no alternative but to return. It was one of the bitterest disappointments of my life to have to face about for Sogeri again, and have to abandon the expedition for which so much money, and so many months of laborious preparation and instruction, had been spent; and after the Malays had not only gained the confidence and friendship, but acquired surprisingly well the language and ways of the Papuans, and when we had, with a party more carefully trained and equipped than any before us in New Guinea, every chance in our favour of accomplishing what we had undertaken.

Returning to Otomionumu, I gave my remaining time to the closing-in of the Sogeri-Meroka triangulation; and after packing up my collections, which were very bulky, I took my departure for Port Moresby and Australia on the 3d of May.

Soon after my arrival in Cooktown, I had a meeting with the recently-appointed Special Commissioner, at which the position of the expedition was fully discussed. Although he did not see his way to fulfil the promises given to the expedition by his predecessor, he expressed his great disappointment at its abandonment, and gave himself heartily to an effort to enable exploration to be resumed, if possible, at once. He offered £500—if this offer had only reached me at Sogeri, or even before my men had been returned to Java, the expedition need never have been abandoned—if the three Colonial Governments would contribute a like sum before the season was too advanced. Complimentary telegrams were received from some of these governments and from the Victorian Geographical Society, expressing a desire to aid; but it soon appeared that the funds could not be at my disposal before too late in the year to refit. Mr. Douglas therefore appointed me to the post of Government representative at Samarai (or Dinner Island), where (accompanied by Mrs. Forbes) I took up my quarters in the middle of June 1886, led by various promises to believe that, through colonial aid, I should be able to resume exploratory work in the next dry season. At Samarai I remained till the following March. Meanwhile, the Victorian Branch of the Royal Geographical Society of Australia had obtained from their Parliament for the purposes of exploration in the Owen Stanley range a vote of £1000. It was applied for, as the letters of the President and the statements in

the press led me to believe, on my behalf. In the end of March, therefore, relying on Baron von Mueller's correspondence and promises, I was relieved from my duties by Mr. Douglas, and with the munificent offer of a sum equal to that voted by the Victorian Parliament, from the Protectorate funds, I proceeded to Melbourne to confer with the Geographical Society, and make arrangements for the expedition. On my arrival in Sydney and in Melbourne I was surprised to find that grave dissatisfaction existed, unknown and uncommunicated to me, because I had not kept up sufficiently (from my extra-postal retreat) frequent communication with their Society. Yet on the abandonment of the expedition I had given in Queensland, before a large public meeting, an account of my procedure in New Guinea, a *verbatim* report of which was sent to the Australian as to all other interested Societies. At all events, the vote from the Victorian Parliament was asked for after I had returned to Australia, and while I was at the remote station of Samarai in an official capacity, and after all cause for this dissatisfaction had necessarily ceased to exist.

Returning to Port Moresby, I was reappointed by the Special Commissioner to an official post, and in the middle of September last, I was very gratified by receiving his instructions to make a geographical reconnaissance in the direction of Mount Owen Stanley. The Goldie valley had been penetrated a few years before for some distance, by a party of miners with horses, one of whom, happening to be in the government service, was attached to my party. I was instructed to ascend this valley as far as it was possible to take the quadrupeds, and from that point to extend, by survey, our geographical knowledge of the district as much as was possible in two months.

On the 1st of October I started, and, besides Gleeson the miner, my party consisted of George Belford, a bird-collector, who had had a long experience in New Guinea, and two Pacific islanders. From Port Moresby, steering a north-east course, and crossing the plain already described, we forded the Laroki River at its confluence with the Goldie, and pitched our first camp on the further side of the river. Making a short march on the following day, over a succession of low hills, we halted under Mount Seymour-Fort, which stands out as a rugged prominent landmark all the way from the coast. I purposely halted here in order to secure, before entering the Goldie valley, where the coast "fixes" would be lost sight of, a round of angles by which to establish it and Mount Keith—stations on which would centre much of the subsequent survey; for up to this point the sub-Astrolabe district presents few elevations over 300 feet above sea-level. From Mount Seymour-Fort, however, the country eastward and northward assumes that wonderfully shattered and disrupted character which I have described as prevailing beyond the Richardson range. From the hills near the camp, looking up the valley, Mount Alexander,¹ Mount Bates, and Mount Bowdler Sharpe (in Justice Fry range), are very prominent heights, and formed most valuable triangulation stations. As far up as our third camp, the Goldie is a wide

¹ Mount Alexander I have named in honour of W. Alexander, Esq., LL.D., of Aberdeen, the distinguished author of *Johnny Gibb of Gushetneuk*, and a warm supporter of the expedition.

and moderately rapid stream running in a valley, so contracted as to afford only a narrow passage along its banks; but above that it descends between rocky walls, broken by rapids, which necessitated us to diverge widely from our true course, and follow the rough broken and thickly-wooded ridges of the Annabel range, till on encountering the gorge of the Beccari river, our route was forced back again to the main valley at the junction of these two rivers. Here the banks being as unpracticable as before, we had to deviate again on the opposite side of the Beccari ravine, by a long steep spur, of many hours' climb, only to descend again an equally long slope, which was even more trying both to the horses and to ourselves than the ascent, and to the former more dangerous, as the wet and slippery ground was beset with roots and long noose-like palm lianes, in which they were constantly tripping. At the bottom of this slope we again reached the river, describing a long V-formed loop, having to "make good" only a few miles. From this spot for many miles upward, the mountain spurs abutting on the valley drop off in precipitous bluffs; as it was impossible to get out of the valley we had of necessity to pursue our journey in the boulder-beset bed of the river, crossing and recrossing to seize advantage of every shallow margin or sandy patch to ease our own and our horses' limbs. At length, where the river became too blocked by rapids and large deep pools for further safe advance, we found a sandy flat, enclosed in a double bend of the river, environed by grassy slopes with sufficient fodder for our eight horses for several weeks, and pitched our ninth camp on it on the 14th October, not having seen a single native all the way from the coast. In the deep pools of the river there was abundance of cat-fish and mullet, large quantities of which we caught with dynamite. The camp was, indeed, to a great extent, provisioned out of these convenient aquaria. In the river-bed, between our seventh and ninth camps, I observed the conglomerate strata, I have so often mentioned, lying unconformably on the same soft black slate that I saw in the Crombie River, while in the river detritus both were mingled with porphyritic and granitoid pebbles. Repeated washings of the sand, however, along its banks have yielded gold in no appreciable quantity. On ascending to the summit of the cliff-like banks of the river, I discovered to my surprise that our camp was within hail almost of Kaukari, the village where Mr. Chalmers and I were compelled the previous year to turn back. We were, therefore, again amongst the Ebe and Bereka people. Our arrival, however, did not become known to them till I sent a messenger to Ebe village, on the summit of Mount Salvadori, to announce the fact, whence quite a crowd followed him to the camp. I saluted them in their own fashion—by stroking them under the chin—and worked my way to their good-will by various gifts. Some of them were wearing beads I had distributed the year before at Kaukari, and by them I recalled to their memory the feast we had had together there. Remembering their superstitions about the "Great Mountain," I did not broach the subject of our journey thither, till I had accustomed them for some days to our pursuits, by inducing them to accompany me on my botanical and surveying visits to the surrounding hills. They accompanied me to Mount Bowdler Sharpe, a high rocky bluff of the

Justice Fry range, about 4000 feet in height, the only eminence within reach that commanded an extensive view of the country. From here the "Great Mountain" was pointed out to me, and I tried hard to draw from them how the road thither lay, but with no success. From that elevated spot one looked out as if on chaos: the mountains seemed scattered out anywhere and everywhere, without order, or system of ranges, or chains, but hedging anyhow every approach to Mount Owen Stanley. After long scrutiny, by picking my way, by eye, from peak to peak, I eventually selected a route northwards, as hopeful-like as any other, along which I noted and plotted the most distinctive heights, to serve as finger-posts. At length I casually divulged the fact that I was going to the "Great Mountain" to make "a writing" of it as I had done of Mount Bowdler Sharpe. Without suggesting that my auditors should accompany me, I displayed such a wealth of leather straps, red tape, knives, tobacco, and salt, as the reward of those who might go all the way with me, that I had abundance of applications for a place in the caravan. Yet on the day fixed for our departure, not a single Ebean put in an appearance, and I had, after waiting several days, to send to their homes a messenger to fetch them with gentle persuasion. So it was not till the 24th of October that I finally started, with high hopes of success, from camp 9, which I left in charge of "Jack" and "Cæsar," my two staunch Pacific Islanders.

Crossing from the camp to the western bank, and ascending through the village of Ebe to the crest of Mount Salvadori, I for the first time really faced toward the mountain of my destination, steering due north, a course from which we had persistently been forced by the nature of the country. A long steep descent, through a sea of tall grass, on which the sun beat so mercilessly that even the Papuan lads complained of the heat on their heads, though protected by dense mops of hair, led to the rock-walled bed of the Goldie River, whence an equally steep sun-baked and trying climb brought us to the village of Urava, where perforce, through the decision of our carriers, whose will had so often to be regarded as law, we pitched our tenth camp. The Uravans, who had come as far as the river to meet us, received us and the Ebeans in a very amicable spirit. During the evening there was a great coming and going among our porters, and at the hour of blanket-spreading, I remarked on their diminished numbers, but was told they had only gone to sleep in the neighbouring houses of their friends. In the morning, however, I discovered that of those who had started "to go all the way" with us, only two had not deserted. Fortunately the Urava people were good-natured and friendly, and we experienced little difficulty in making up our complement, after an exhibition of the "trade" they would receive for accompanying us. They, however, would only engage to take us to "where there were plenty of villages and food" beyond the "big water, but not to the mountain." From Urava forwards we had the kindly shade of the forest, which we fully appreciated in traversing the incessant rise and fall of the ridges and truncated spurs of the Savage Club Range,¹ which, to have accomplished under a blazing

¹ So named in recognition of the hearty reception given me by this well-known club, shortly after my return from New Guinea.

sun would have been almost beyond the endurance of my party. About two o'clock we attained, at about 4,500 feet, the watershed of the "big water," about which our curiosity had become so excited. At four o'clock en emerging from the scrub of an alluvial plateau after a long descent, we stood by the bank of the Naoro, and were somewhat disappointed to find it a muddy river, not exceeding 40 yards in breadth, and $5\frac{1}{2}$ feet in depth. Although 2000 feet above the level of the sea, it was running placidly, but swiftly, on a level sandy bed; but the sonorous boom of a cataract told us that at no great distance off it had begun its descent into lower country. Traversing a densely wooded level terrace on its northern side, we found ourselves in front of a very steep forest-clad rise. Up this we ascended for hours, and, reaching no villages before sundown, we were compelled to camp on the slope for the night. Next day, continuing the ascent, we reached the summit of Mount Archer, where a large crowd of the people of Uburukara were waiting our arrival, intimation of which I had sent a messenger forward to announce. A long and very rough and broken descent brought us to the village, consisting of a few wretchedly poor dwellings. Here our Urava carriers had fulfilled their contract, and we were now dependent on our new friends for our further advance, which I was very eager to continue. But we were the first white people they had ever seen, and being such objects of curiosity and interest that they wanted to show us off in their own village, so that, instead of moving forward, with the chance of offending them, I was compelled to spread my canvas in their village. As Owen Stanley Peak could not be more than a couple of days distant from Uburukara, I obtained a promise from the Urava people to wait our return from the mountain, when we should go home together. The Uburukarans, after some hesitation, agreed to pack us forward on, as I hoped, our last stage. The road was unusually rugged and broken, and traversed dense jungle, which precluded any view being obtained of the surrounding country. At ten o'clock, however, we reached the bare flat-topped hill of Ginianumu, and with boundless satisfaction, stood with only the easy descent to the Warumi between me and the long spur rising to the summit of Mount Owen Stanley, distant not more than a good day's climb.

The Owen Stanley Peak is a gigantic isolated pyramidal block standing in weird loneliness, detached from the main range, on its own base, culminating in several acuminate rugged central peaks and pinnacles, whence radiate sharp spurs with precipitous flanks, down whose gorges dash impetuous torrents, whose waters filled the air with a ceaseless moan, to join the Warumi and the Naoro. On the topmost of these—Huxley Pinnacle—I have bestowed the name of my honoured master in biology, who, from the deck of H.M.S. *Rattlesnake*, described and named the range in honour of her captain. Coutts Trotter Crag, Abercromby Peak, Sclater's Needle, Wharton Summit, and Mount Walker commemorate the writings, or the interest in New Guinea subjects, of these well-known authors and geographers, while Mount Tryon is named in remembrance of the secretary of the Royal Society of Queensland, which so warmly favoured the expedition.

Eager to proceed, I motioned the party, who had stacked the baggage

in a heap on the ground, to start forward towards the mountain, indicating with my finger the summit. The Uburukarans shook their heads and looked scared, and when, with an impatient gesture, I repeated the order, they began to slink away surreptitiously till I was left alone with only Ginianumu people about me. I tried persuasive tones without effect. They then depicted, in perfectly unmistakable pantomime, their terror of the mountain spirits, and the fearful atrocities of which these gnomes were capable. I tried for the rest of the day to tempt them with a display of coveted trade; I boasted of the wonderful powers of the white man, and displayed the capabilities of his arms. There was no result; they *would not* go to the mountain. To leave one of my party only in charge of the baggage and food supply, and myself ascend with the third man, would be taking on my shoulders too great a responsibility, where the attitude of the natives was so uncertain; while to have attempted to reach the summit alone would have been equally unwise as well as foolhardy. I decided, therefore, to return to the main camp, and, leaving there only one white man with the horses, of which the natives stood in the greatest dread (a guard sufficient, I thought, among a people so friendly as the Ebeans had shown themselves), to renew my attempt on the peak with the other white man and the two South Sea Islanders. Next morning the Ginianumu people packed us back within the territory of the Uburukarans, who seemed greatly relieved and satisfied at our return. We found that our Urava carriers, however, had, with the exception of three, taken "French-leave"; but, with a heartiness that rather surprised me, the Uburukarans offered to transport us back all the way to the Urava country, and we started at once, retraversing the route along which we had come till we reached the Naoro, at a spot named Madilo by them, where I pitched my fourteenth camp. Next morning, the 30th October, we struck camp very early, and when everything was ready for a start we experienced the uncertainty of the Papuan—which makes travel in New Guinea so very difficult, and which convinced me of the soundness of my plans in taking with me the year before my own Malay porters—every Uburukaran had made off, leaving only the three Urava natives to help us to transport the loads of eleven. About a mile or so from the camp the Naoro, contracted between narrow walls, dashes through its iron gates in a wild and deafening cataract, spanned by a fallen tree of gigantic proportions, across which the booted foot must tread warily. To prevent any benefit to the deserters from their perfidy, we threw into the cataract all the impedimenta and surplus stores we could not carry; and, setting a stout heart to the "stey brae," we reached Unarabaiva (a village of the Bereka people on a spur facing Urava), about four o'clock in the afternoon. Next morning, after a long and valuable series of angles had been secured from Origanumu, a village-topped peak close to Unarabaiva, we started for the main camp. It was while descending from this station to the Goldie River, on descrying my tent pitched in the distant village of Ebe, on Mount Salvadori, that I first realised the disaster to my camp (of which an account has recently been given in this Magazine),¹ which crushed the expedition amid such

¹ *Ante*, vol. iv. p. 138.

bitterness of disappointment as one feels whose grasp is frustrated as it clutches at a coveted goal. Of the loss sustained by the loot of the camp, the most irretrievable is that of the angle-books, containing much of the triangulation of the previous year and of part of the present journey.

Wherever it has been possible—and I have used every endeavour to discover them—I have bestowed on the natural features of the country their native appellations. Where it has been impossible to arrive at these with certainty, it has been necessary for the purposes of identification to apply English designations. Mr. Chalmers, who also visited the Sogeri district, has in some of his maps named several of the mountains; but I have been unable to satisfy myself of the identity of his localities, which I much regret, for I am of opinion that priority in the authorship of names should be as respected in geographical as in biological science. Mr. Chalmers' positions being fixed by prismatic compass may have something to do with the inaccuracy of those in the Sogeri region on his map, which ought to coincide, but do not, with many of those fixed by me. In many parts of New Guinea I have found by too frequent experience, that the compass is utterly unreliable from local attraction. At spots distant only a few feet from each other, I have found as great a difference of deviation as 20 to 25 degrees. I feel sure also that on examining the accompanying map, Mr. Chalmers will be satisfied that the point recorded by Rev. W. G. Lawes in the Proc. R. G. S. 1884, as reached by his colleague—*i.e.* $9^{\circ} 2' \text{ S. lat.}, 147^{\circ} 24' 30'' \text{ E. long.}$ —must be inaccurate, as it would place him on the northern side of the Naoro, which had never been reached by a white man before my party had the good fortune to do so. The same regret attaches to my inability to fix the localities visited by Mr. Hunstein. I should have liked if possible to identify the Horse-Shoe Mountain, the designation given by that successful collector to the region whence he brought some of those magnificent birds of paradise, which he had the happy fortune to add to science. In Dr. Finsch's paper (*Ibis*, 1886, p. 238), the district is spoken of as being "in the heart of the Owen Stanley Mountains, between Mount Owen Stanley and Mount Obree." In the sketch-map accompanying that paper, it is placed between the sources of the Goldie and the Beccari rivers, yet somewhat further east than Mount Owen Stanley itself. I should be inclined to assign Hunstein's mountain to the place given to the Justice Fry or Savage Club ranges of my map—probably to the latter, were it not for its elevation of 2500 mètres, which much exceeds the altitude of the ranges delineated by me—certainly of Justice Fry range. The main (Owen Stanley) range, stands much further east than the head-waters of either the Beccari or the Goldie. Mr. Hunstein has probably good reasons for placing his Horse-Shoe Mountain so far east; and this easterly position leaves me no choice, unfortunately, but to omit it from the present map till its *site* has been more accurately plotted.

In closing this paper the pleasing duty remains of offering my grateful thanks for much material support and unfailing sympathetic encouragement to the Royal Geographical Society of London, and, in a very special manner, to the Royal Scottish Geographical Society, whose first, but

poorly successful, emissary it has been my high honour to be. To the British Association, to the Royal Society of Queensland, and to my native city of Aberdeen, I am indebted for their most hearty support. To the Hon. John Douglas and the Government of the New Guinea Protectorate for affording me, in an official capacity, an opportunity of continuing the work in which I had so long taken a deep interest, I render my best thanks. Lastly, to my friend Mr. H. H. Johnston, who, with such kind thoughtfulness, initiated through the columns of the *Times* a fund to repair the disaster sustained by the expedition through shipwreck at Batavia, my most cordial acknowledgments are here offered.

In a few words, then, as the results of the work accomplished in New Guinea, large additions have been made to botanical, and not inconsiderable to zoological, science, as well as contributions of the ethnology of many tribes; while an extensive series of meteorological observations have been tabulated; but in these departments the data for a final report have not yet been completely elaborated. A tract of country has been delineated for the first time, of which the map—for the plotting of which I am responsible, but for whose beautiful delineation the Society is, as heretofore, indebted to the cartographical skill of Messrs. Bartholomew—is now presented to the Society. I trust that in our contact with the natives also, in which we kept before us to uphold the honour, the philanthropy, and the magnanimity of the race we represented, may not be without good result; and that we may have, like the trickling tributaries of a great river that are individually lost to sight in its flood, contributed to the advantage and civilisation of a people that have claimed the affectionate interest of all who have lived longest amongst them, and known them best.

RECENT EXPLORATIONS IN THE TERRITORIES OF THE AFRICAN LAKES COMPANY.

(*With a Map.*)

BY E. G. RAVENSTEIN.¹

A GLANCE at the accompanying map of the country between Lakes Nyassa and Tanganyika reveals the fact that it embodies a large amount of information not to be found on existing maps. For this information we are almost exclusively indebted to officers of the African Lakes Company, whose reports have become available through the kindness and liberality of Mr. James Stevenson. It is not my intention to discuss, on the present occasion, the whole of the materials available for the delineation of the country lying between two of the great lakes of Eastern Equatorial Africa. I shall confine myself to a short notice of some of the more recent explorations.

¹ The map which accompanies this paper was constructed by Mr. E. G. Ravenstein for Mr. James Stevenson, who has liberally presented our Society with a sufficient number of copies for our Magazine.

Source: Geographical Magazine 1910

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