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VOL. I.

A JOURNEY UP THE BARAM RIVER TO MOUNT DULIT AND THE HIGHLANDS OF BORNEO.

By CHARLES HOSE, Resident of the Baram District, Saráwak, Borneo.*

His Highness the Rajah of Saráwak having communicated to me the wish of the Royal Geographical Society for some account of my journey to the head-waters of the Baram and Tinjar Rivers, I have pleasure in complying with the request.

It may not be amiss to remind even a geographical audience that Saráwak is a State situated on the north-west of Borneo, ruled over by an English Rajah, Sir Charles Johnson Brooke, G.C.M.G., nephew of the original Rajah Brooke, whose career must be known to most of you. The country has been quite recently placed under British protection. The boundary of the State is Tanjong Datu, on the extreme west, long. $109^{\circ} 40'$ E., and the mouth of the Trusan river the most easterly point, long. $115^{\circ} 13'$ E., with a width of about 250 miles inland from the coast. The coast-line is 460 statute miles in length.

I may also recall the fact that in 1881 Mr. W. M. Crocker, who had been Resident of Saráwak, and whose name is intimately associated with North Borneo, read at one of the Society's meetings some interesting notes on Saráwak and Northern Borneo, which will be found in the *Proceedings* for 1881, p. 193. It will be seen from his map that Baram at that date belonged to Brunei and not to Saráwak, and that its geography was almost a blank. It is true that the Rajah did ascend the river for some distance before the province was ceded, but that was merely a running visit.

The Baram River discharges itself into the China Sea at lat. $4^{\circ} 37' 15''$ N., long. $115^{\circ} 59' 30''$ E. Its width at the mouth is about three-quarters of a mile, with sandspits running out on either side to the distance of 2 miles. These sandspits are washed away during the

* Read at the Evening Meeting of the Royal Geographical Society, January 16th, 1893. Map, p. 288.

north-east monsoon, but appear again in the south-west monsoon. About 2 miles out there is, unfortunately, a bar, which prevents vessels drawing more than 7 feet of water from entering the river. There is, however, fairly good anchorage for ships in the bays on each side of the Baram point, so long as the wind is north-east or south-west; but when due west there is no shelter whatever. To give an idea of the volume of water running down, I may state that it is constantly found to be fresh at the distance of 2 miles outside; and very rarely in the driest weather the tide reaches Claudetown, a distance of 60 miles. The land on each side of the mouth consists of alluvial deposits, marshy, and covered with casuarina trees and coarse grass, the latter affording pasturage for deer and wild buffaloes. For the first 15 miles up the river the reaches are long and devoid of interest, excepting for the wonderful growth of the Nipa palms, which line the banks, growing to a height of 30 feet, and from which the natives procure both salt and sugar. The ground is covered with a network of roots, and constantly flooded, the whole country for miles being quite flat. At Pagalayan the land is a little higher, the trees being larger and presenting a more healthy appearance. At this point the depth of the river is in some places as much as 20 fathoms. For the next 15 miles the country consists mainly of grassy plains, which have been formed by the river altering its course, washing away from one side and silting up on the other. The jungle here is dense, thorny, and low, and few inhabitants are found in this locality. At the mouth of the Bakong River—a tributary—small farms have been established, and plantations of fruit-trees and cocoanut palms are dotted about wherever an acre of high land appears. A few miles farther on are lakes of no great depth or size, which have apparently been made by the overflow of the river at various times; and at one very peculiar bend of the river a canal has been cut, thereby saving about 4 miles. The first appearance of really high ground is at Claudetown, the Government station and principal town of the district, situated about 60 miles from the mouth. Here the Chinese merchants have erected magnificent shops and warehouses, and the whole trade of the river is centred at this spot—lat. $4^{\circ} 3' 15''$ N., long. $114^{\circ} 32' 30''$ E.

The fort, standing immediately above the river at the height of about 50 feet, commands a view of the whole township. From this spot Mount Mulu, and, indeed, the whole of the Mulu range is distinctly seen. The Government steam-launch, *Coconut*, is stationed here for up-river use; and the mail-steamer, *Adeh*, calls about once a month, bringing up supplies for the district, such as ironware, crockery, salt-fish, cotton-goods, tobacco, cloth, etc., and taking back cargoes of rattans, gutta-percha, india-rubber, beeswax, edible birds' nests, and camphor. Other steamers that occasionally call at this port are the *Sri Putri*, and the *Bujang Baram*. The *Lorna Doone* leaves mails at the lighthouse on her

journey northward. The jungle in the immediate vicinity of Claudetown is composed of hard and valuable timber, some fine specimens of which are the Meribo trees (*Afzelia palembanica*) measuring 5 feet in diameter, and sound all through. Acres of forest might be felled and conveyed to the river at very little expense. Twenty-five miles above Claudetown is the junction of the Tinjar River, the principal tributary of the Baram; the country around is flat, with dense jungle, abounding with rattans. Here the Chinese have commenced working "shingles" of ironwood, which is very plentiful.

The next place of note is the town of Long Tutau, situated at the mouth of the Tutau River. The races of people living here are the Long Kiputs and Batu Blas; and it is in this locality that the agents

SEA DYAK LONG-HOUSES.

of the various traders in Claudetown, both Chinese and Malay, congregate to barter with the tribes from the interior. Many of these traders build houses upon rafts, which are moored along the banks of the river at every landing stage. In these floating houses they live for months, and even years, until the raft is stocked with produce. They then float down river to Claudetown, sometimes bringing as many as 250,000 canes on one raft. At Long Ikang the high land appears again, mountains sloping down to the river's bank. At Batu Gading the course of the river is through a limestone district, and the scenery is very beautiful. At Long Salai the rapids commence. Here the Baram is about 100 yards across.

Passing on to Long Mari, there are numerous islands formed of pebbles, which are covered when the river is swollen, but at other times

are dry, and form a pleasing feature in the landscape. From here to the mouth of the Akar River the stream flows through a somewhat striking district. On either side are vast sandstone and shale cliffs, rising sheer from the water's edge to a considerable height, narrowing the river in places to about 50 yards. The stream rushes over huge boulders at a terrific rate, causing dangerous backwaters, and sucking down immense logs, which come to the surface at about 100 yards from where they disappear. Giham Tipang is a particularly dangerous rapid, the passing of which is accomplished at very considerable risk; the volume of water dashing over the rocks, and rising in waves 5 or 6 feet high, makes it appear impossible for a boat to pass. The "dugout," however, is tied fore and aft with rattans, and dragged through the middle of the rapids by one half of the men, the others remaining in the boat to work with poles. The noise is deafening, each man shouting at the top of his voice; and after pulling the boat for about an hour, the head of the rapid is reached, and immediately those on the rocks jump into the boat and begin paddling with all their might into some backwater for fear of being carried back over the rapid. For a moment the "dugout" scarcely moves, but at last their united efforts tell, and the boat begins slowly to make way to the nearest bank. Occasionally the current is too strong for them, and feeling themselves carried back, they jump overboard, holding on to the boat with one hand, while with the other they grasp any rock or bush that they can clutch, thus arresting the boat. One of the party then takes a turn with the rattan round the rock, and so makes it fast until they can start again. Sometimes there is nothing to catch hold of, and then, seeing it hopeless to fight against the stream, everyone turns round in the boat, and seizing their paddles and poles, they allow the vessel to shoot over the fall into the seething waters below. The sensation is undoubtedly singular, but it does not last long. The boat is bumped about in all directions, and carried on at a tremendous rate for a few seconds, the water leaping in on either side and the men *kicking* it out continually with one foot. The moment they are over, the vessel quietly glides round to the nearest back-water, and once more you draw your breath freely. Having thus escaped, they smoke a cigarette before making another attempt to drag up the boat.

The soil at the mouth of the Akar River is very fertile, and the mountain scenery is lovely. From here to the mouth of the Salaän River the banks are covered with extensive groves of fruit-trees, many of them unknown to European taste, but including also such as Durian, Mangosteen, and thick-skinned oranges. A beautiful palm-tree, called by the natives "Ijook" (*Arenga saccharifera*), is very abundant in this locality. Passing the mouth of the Salaan, the rapids become less frequent, and the country being more open, one appears to have passed through the mountain-chain. The river is clear and perfectly smooth. At the mouth of the Libbun, however, one meets again with waterfalls

which make the entrance of this river almost impracticable. Looking at the country round, the district known as the head of the Kayan River comprises one vast chain of mountains, mostly having table-land at their summits; and roughly judging, I should say from 5000 to 8000 feet high. On the other side, known as the Kalabit district, grassy plains extend for miles, which are very unusual in Borneo.

The Baram, Rejang, and Batang Kayan Rivers have their sources within a comparatively short distance of each other, as will be seen on the map which I have prepared.

I may here mention that the total revenue of the State of Saráwak in 1891 was \$417,123·96, and the expenditure \$417,487·46; the trade returns for the same year were as follows:

Imports.			Exports.		
	Tons.	Value in Dollars.		Tons.	Value in Dollars.
Foreign . . .	33,794	1,602,075	Foreign . . .	36,674	1,939,884
Coasting . . .	26,792	784,735	Coasting . . .	38,471	709,996
Total . . .	62,586	2,350,810	Total . . .	75,145	2,649,880

I will now give a short account of the journey which I made to Mount Dulit.

On September 14th, 1891, in company with Mr. A. H. Everett, I chartered the steam-launch *Coconut* to convey us and our men as far as it was possible for a small steamer to proceed up river. The nearest route to Mount Dulit is up the Tinjar. This river we entered after about four hours' steaming from Claudetown, and it was not until the following day that it was necessary to take to our "dugouts" (boats most suited to the rapids we should pass), having covered a distance of 90 miles. The following day we paddled as far as the Barawan village of Long Pruan, where we rested for the night, in the house of a man named Taman Liri, who is chief of the Barawans and the Government tax-collector.

On September 16th towards nightfall we reached Long Tisam. Within an easy walk from this village, the Central Borneo Company have commenced working a deposit of sulphide of antimony, which, so far, has been spoken of favourably. We spent the night in the house of one Avan Avit, also a Barawan. Being somewhat fatigued we retired early; and it was not until the next morning that I discovered, at the head of my bed, a large box which I had not noticed the night before, and which proved to be a coffin; and on inquiry I was informed that it contained the mortal remains of the chief's wife! As this may appear strange, I may as well explain that it was the custom of these people to keep a corpse in the house for three months before burying it. They make a large coffin of soft wood, and decorate it with various colours,

obtained from the juice of roots, the whole being elaborately carved. The lid of this coffin is rendered air-tight with a resinous substance procured from many of the Borneo forest trees, and generally known as "dammar." A bamboo about 20 feet long and 3 inches in diameter is then prepared by boring through the joints, so as to form it into what it is really intended for, a sort of drainpipe. One end of this pipe is driven into the ground, the other end is brought through the floor of the house, and inserted in the bottom of the coffin. During the first week after the body has been placed in the coffin, a large torch is kept burning day and night at the head and foot. After about three months a mausoleum is prepared, which is made of hard wood called billian, and raised about 12 feet off the ground on two massive pillars carved with various artistic designs, and figures of men and women. The body is then removed from the house and conveyed with much ceremony to this tomb. Everyone present sends one or more cigarettes made of native tobacco, wrapped in the dried leaves of the wild banana (*Pisang Utan*) to their dead relatives in "Apo Leggan" (Hades). These cigarettes are placed on the top and around the coffin; and, should the body be that of a man, his weapons, tools, and a small quantity of rice, with his "priok" (cooking-pot), are deposited in the tomb with him that he may be able to continue his daily pursuits in the other world. But if of a woman, her large sun-hat, her little hoe—used for weeding in the paddy fields—her beads, earrings, and other finery are placed with her body, that she may not be found wanting on her arrival the other side of the grave. The earrings are especially important, and are usually made of brass or copper, weighing sometimes as much as two pounds each. The lobe of the ear is pierced when the child is about eight months old, and earrings weighing about two or three ounces apiece are hung in the ear. This weight gradually drags down the ear-lobe to a great length, and adding weights yearly as the child grows, by the time she has come to maturity the ears will reach her breasts. I have seen a girl put her head through one of these elongated ear-lobes.

I was once present when the corpse of a boy was being placed in the coffin, and I watched the proceedings from a short distance. As the lid of the coffin was being closed an old man came out on the verandah of the house with a large gong (*Tetawak*) and solemnly beat it for several seconds. The chief, who was sitting near, informed me that this was always done before closing the lid, that the relations of the deceased who had already passed out of this world might know that the spirit was coming to join them: and upon his arrival in "Apo Leggan" they would probably greet him in such terms as these: "O grandchild, it was for you the gong was beating which we heard just now; what have you brought? How are they all up above? Have they sent any messages?" The new arrival then delivers the messages intrusted to him, and gives the cigarettes as proofs of the truth of what he says. These cigarettes

retain the smell of the hands which made them, which the dead relations are able to recognise.

There is another strange ceremony at which I was once present, called "Dayong Janoi," in which the dead are supposed to send messages to the living, but to describe it would take up too much of this paper. It proves, however, that "spiritualism" is of very ancient practice among the Kayans, but it would perhaps be interesting to mention the various abodes of departed spirits, according to Kayan mythology. "Laki Tengangang" is the supreme being who has the care of all souls. Those who die a natural death, of old age or sickness,

NATIVE BRIDGE, BORNEO.

are conveyed to "Apo Leggan," and have much the same lot as they had in this world.

"Long Julian" is the place assigned to those who die a violent death, *e.g.*, those killed in battle or by accident, such as the falling of a tree, etc. Women who die in child-bed also go to "Long Julian," and become the wives of those who are killed in battle. These people are well-off, have all their wants supplied; they do no work and all become rich. "Tan Tekkan" is the place to which suicides are sent. They are very poor and wretched; their food consists of leaves, roots, or anything they can pick up in the forests. They are easily distinguished by their miserable appearance. "Tenyu Lallu" is the place assigned to still-born infants. The spirits of these children are believed to be very

brave, and to require no weapon other than a stick to defend them against their enemies. The reason given for this idea is, that the child has never felt pain in this world, and is therefore very daring in the other. "Ling Yang" is the place where people go who are drowned. It is a land of plenty below the bed of the rivers, and these are the spirits upon whom riches are heaped in abundance, as all property lost in the waters is supposed to be appropriated by them.

But to return to my journey. On the 17th I reached Long Sukong, at which place the rapids commence; and having procured some fresh boatmen we poled as far as Long Masso, where we arrived next day, and spent the night at the head of a rapid. The following day brought us to Long Kapa, which was as far as we could proceed by boat. From this point Mount Dulit stood out very clearly, and having taken my bearings before nightfall, in case the mountain should be enveloped in mist the next morning, we passed the night in the house of one Aban Lia, a chief of the Sibops. These people are skilful in the use of the blow-pipe (sumpitan), and by use of this weapon numbers of monkeys are killed, from which the Bezoar stones are obtained. These stones are held in great estimation by the Chinese, who purchase them readily at a high price, for using as medicine for all kinds of ailments. They are reported to be found both in the intestines and in the gall bladder of the monkey. They are of various dimensions, usually flattened in shape, somewhat oval, from the size of a pea to that of a hen's egg—the largest realising from \$20 to \$25. The monkeys in which these stones are most commonly found are the "*Semnopithecus rubicundus*," and "*Semnopithecus hosei*." A softer form of this stone is also found in the porcupine (*Hystrix crassispinis*). These animals are shot with poisoned arrows, blown from the sumpitan by Sibops and Punans. Sometimes the poison loses its virulence when not quite fresh, and an animal will then carry away the arrow, although it may have pierced its body to the depth of 2 or 3 inches, and it is easily broken off in the animal's movement through the jungle, leaving the poisoned end in the body. Monkeys have been shot, in whose bodies a broken piece of an arrow has been found, covered with a coating of the substance called "Bezoar" stone. The localities mostly frequented by these monkeys are the spurs of large mountains and salt springs, which are common in the interior.

At daybreak we commenced our overland journey, and I was agreeably surprised at the favourable nature of the country, as we met with no swamps, and not very thorny jungles. Having crossed the heads of many small streams, which doubtless have their sources on Mount Dulit, we came to a small hill of about 500 feet, over which we crossed, and before night came on we arrived at a point which proved to be the foot of Mount Dulit.

Next morning, September 21st, we began the ascent of the mountain,

which for the first 1000 feet was very gradual, and at 2000 feet we agreed to make a hut, which would form a storehouse for our rice, etc. This we completed in daylight, and we passed the night there. The following day I sent back all the party except two to fetch the rice and other stores which we had been unable to bring, and they returned next day, each carrying a load of about 40 lbs. Two more journeys back had to be made before all our stores were brought up, during which time I, with the two who remained with me, cut a track to the height of about 4000 feet. Having cleared away the thorns, and constructed rattan ladders in the precipitous places, we returned to the hut, which I shall hereafter refer to as "the store."

I now divided up the party, and taking five men to the altitude of 3500 feet, directed them to make another hut, on a lovely spot just over a cascade, the fall of which was about 30 feet. This spot commands a magnificent view of both Mount Kalulong and Mount Tamuduk. I then returned to the store, leaving the men at the higher elevation to shoot what birds and other creatures they might find. The men at the store I found making preparations for the construction of various kinds of native traps called "jerat." The men visit these traps night and morning, and numbers of animals and ground birds are caught by them. Those most frequently trapped are the little moose deer, *Tragulus napu* and *Tragulus javanicus*, and of the carnivora, *Viverra tangalunga*, *Hemigale hardwickei*, *Felis bengalensis*, *Felis planiceps*, and my new species of "Hemigale," which has been lately described by Mr. Oldfield Thomas as *Hemigale hosei*, was also obtained by one of these traps.

During the next few days I was constantly between the two huts, working one party against the other with the reports of the success each had met with, and late at night I was employed in giving directions as to skinning and drying the specimens obtained. The humidity of the atmosphere made it difficult to keep the skins in good condition, and the want of sun made it impossible to dry them otherwise than by fire. The men showed in many ways that they were interested in the work almost as much as myself, and great was the excitement when the first Bulwer's pheasant (*Lobiophasis bulweri*) was brought in, having been shot by a man at the lower range. This bird we had all seen on several occasions, and heard its curious harsh note constantly around us.

The next morning the men at the higher ground shot a black kijang (*Cervulus muntjac*). The colour of this animal was much like that of a common deer (*Cervus equinus*), and not the least like the common muntjac. It had two tufts of black hair above the eyes. Considerable discussion ensued as to the probability of its being a new species. I took care to preserve the bones, placing them inside the skin for comparison with others. Birds of gay plumage unknown to me were shot daily, and on the 20th I was fortunate in procuring the new specimen which has been described by Dr. R. Bowdler Sharpe as

Calypptomena hosei. This bird was making a noise resembling that of a dove. On the morning of the 25th I had the pleasure of securing a beautiful little barbet, which also had been described as a new species (*Mesobucco eximius*).

The following morning we moved our camp to 4000 feet, and brought down the specimens which we had collected to the store. On the night of October 8th a terrible storm burst over the mountain, and gigantic trees came rolling down the sides carrying all before them; the roar and crash of falling timber made one feel the necessity for great care in the selection of a spot for an encampment, as the fall of some of these huge trees carries large boulders with them, which greatly increases the danger. During the continuance of the storm we all felt very uncomfortable, and decided that it would be best for us to move our camp. Luckily we had taken the precaution to fell the trees that were near, so that we escaped injury. When morning came the storm had spent itself; the mountain stream had become a small river, with waterfalls from 50 feet to 70 feet drop. The noise of one of these near the hut made it impossible to hear oneself speak except by shouting. This stream the day before was so small that we had made spouts of bamboo to lead a few drops of water into a jar that we might procure enough to drink, while now the spray from the fall reached the hut, a distance of about 40 feet.

Early next day I ventured to climb a white sandstone cliff which was directly above us, and was rewarded for my trouble by finding many things of interest. Having scaled this by means of rattan ladders and cords, we came upon a large cave with a long ridge of overhanging rock; the soil underneath this ridge was very dry, but to the surprise of every one, tobacco was found growing in large quantities. We picked some of the leaves, which measured 6 inches across and 13 inches long. This wild tobacco, which appeared to be flourishing, was growing at an altitude of 4150 feet. The Punans, a race of people which live in the jungle, more like animals than human beings, having no houses, cut the leaves of this tobacco into fine shreds while it is still green, and then dry it in the shade. This when sufficiently cured is made into cigarettes. The Punans state that they gather this tobacco two or three times a year, and that it was originally planted by the spirits.

We passed on over great boulders and into the cave, hoping to find some nests of the esculent swallow, which are usually met with in such places. The mouth of the cave was small, and many beautiful ferns and other plants covered the rocks. I collected here several kinds of ferns which I had not met with before; these I sent to Kew. One especially noticeable had a frond 14 feet long. During the time I was looking for ferns, etc., the men were preparing torches made from the bark of the maranti tree, into pieces, of which a kind of gum is inserted, which burns brightly. We then entered the cave, which was very damp and

cold; the continual drip of water from the top, and rush of wind through the cave was very disagreeable. We searched about for some time, and found nothing but a prettily marked snake about 6 feet long, and unlike any of those of the low country. As yet I have not ascertained its name.

We afterwards came upon small bones of birds and animals, which had most probably been killed by the snake. As we proceeded further in, we found small caves and passages on either side, which gave the place a very weird appearance. Turning down one of these passages, we heard in the distance a strange rumbling sound, which caused us all to start, and waving our torches to get a better light, we went on in the direction of the noise to find out the cause. As we got nearer, the sound increased, and we stood still to listen. At this moment multitudes of bats (*Rhinolophus luctus*) flew into our faces, and for an instant we were at a loss to know what had happened. The noise continued, and on approaching a little nearer, we discovered the cause. A small stream of water, from a fissure in the roof of the cave, falling into a deep chasm below, caused a remarkable echo, which was repeated again and again along these passages. We perceived a small streak of daylight overhead, but finding no other way out, we retraced our steps to the entrance, and were glad to get once more into fresh air. We brought back some of the bats, which we had knocked down, and having climbed about 400 feet higher, commenced building another hut, which was finished before dark, leaving us time to return to the camp in daylight. It had been a successful day for everyone. Each man had shot three or four birds, and I had secured a pretty little squirrel with white ears (*Sciurus whiteheadii*).

The next day, Oct. 12th, I took the dry skins down to the store, and the baggage was moved to the new hut at 4500 feet. I returned at night after a hard day's walking, first down and then up the mountain. The new spot appeared to be well-chosen, as on this day the best collection of birds was secured, among which were the following:—Two *Allocotops calvus*, male and female; one *Artamides normani*, two males of *Pitta schwaneri*. Three squirrels, *Sciurus brookei*, and one *Caluptyomena whiteheadi*.

The fauna of Mount Dulit resembles that of Kina Balu in a great number of instances, but it is a curious fact, that all the species above 2000 feet are found at a higher altitude on Kina Balu than they are on Mount Dulit. This I think can be accounted for by the fact, that Mount Kina Balu has been cleared of all the old jungle, and farmed by the natives to a height of about 2000 feet, whilst at Dulit there are no traces of human habitation within miles of the mountain. I think it is reasonable to suppose that many of the Kina Balu birds and animals, which prefer to live in the old jungle, have been in this way driven to a higher elevation.

On October 13th we climbed to the summit and found the altitude registered by my aneroid to be 5090 feet. From this spot we obtained a magnificent view of the distant mountains Mulu, the position of which is lat. $4^{\circ} 0' 15''$ N., long. $114^{\circ} 57' 0''$ E., and, nearer to us, Batu Song with its curious dome-shaped top; Kalulong standing out boldly on the right showing its two high peaks, which seemed no great distance from us. Looking over the Batang Kayan district one sees a vast chain of flat-topped mountains, with one much larger than the rest towering above them, and which I should say was probably 10,000 feet high. Mount Tamuduk, at the head of the Baram River, appeared through the mist, which prevented us from clearly distinguishing its shape. It has, however, a flattened top, and is, as far as I could judge, 7000 or 8000 feet high. The wind and mist driving past on Dulit's summit reminded us of a cold, bleak November morning in England. I spent some time in taking the position of these mountains, which I have worked out as follows:

	Latitude.	Longitude.
Kalulong	$3^{\circ} 7' 0''$ N.	$114^{\circ} 13'$ E.
Mulu	$4^{\circ} 0' 15''$ N.	$114^{\circ} 57'$ E.
Lambir.	$4^{\circ} 13' 0''$ N.	$114^{\circ} 0'$ E.
Tamuduk	$3^{\circ} 12' 0''$ N.	$114^{\circ} 33'$ E.
Pamabo Range	$3^{\circ} 1' 0''$ N.	$114^{\circ} 55'$ E.
Batu Song	$3^{\circ} 42' 0''$ N.	$114^{\circ} 37'$ E.
Subis	$3^{\circ} 48' 0''$ N.	$113^{\circ} 47'$ E.

We then began to crawl about and find our way through the moss, which covered the top of the mountain to the depth of 2 or 3 feet. Each tree had cushions of moss round it, and archways of moss met us in all directions; and everywhere was saturated with moisture. The trees are small and stunted, the highest being only about 20 feet, and about 6 inches in diameter; scanty and with very few leaves. The most striking are the casuarinas, which were growing abundantly on the bare rock, and glistening with the sunlight upon them. Here we found many varieties of *Nepenthes* of various hues and forms, and also several small and pretty flowers, amongst which I found some resembling closely our violets and primulas. *Dendrobiums* were plentiful on the trees. I was surprised to find the top of Mount Dulit was so flat, and on reaching the other side, looking down over the Balaga valley, some mountains at the head of the Rejang River were visible, but the mist had now become so dense that we could see but little. We obtained a few birds, and returned to the hut. The next few days were spent in collecting any specimens we could, amongst them a new Trogon, which has been described by Mr. R. O. Grant as *Harpactes dulitensis*. This, with *Heteroscops luciae*, was shot just below the summit, 5000 feet.

On the evening of October 16th I resolved to make our final camp upon the very summit, and next morning I again went to the top.

Passing along the ridge we pitched upon a spot that seemed favourable, and commenced making a hut, but owing to the trees having no leaves of any size, we were at a loss for materials for a roof. I had, however, brought one small Kajang or leaf-mat with me, expecting some such difficulty, and we managed to pass the night under it; the rain incessantly pouring down, and the position being so cold and wet that sleep was out of the question for any of the party.

We managed to keep fires alight all night, and sat through the dreary time anxiously waiting for daybreak. No one can form a correct opinion of what the shape of Mount Dulit really is until it has been seen from the top. It is evident that this vast table-land provides a home for many living creatures, that would not probably be found on a mountain whose sides were steep and ending in a peak.

On October 18th seven Punans, a tribe residing near the Parah River, on hearing shots, came up to our hut. These are the only natives that ever ascend the mountains of their own accord, and they only in search of india-rubber and camphor. They told me that they had been working in the jungle and recognised me the day before, although we had not seen them. I gave them presents of tobacco, etc., which they much appreciated, and they left us.

The following morning they returned, bringing with them three more, telling me that if I was collecting specimens, they would be willing to assist me with the blow-pipe, ("sumpitan"—or as they call it, "put"). They brought with them a fine monkey (*Semnopithecus rubicundus*) and a horn-bill (*Buceros rhinoceros*), which they had shot with this weapon on their way. I was very glad of their assistance, and they remained with me and procured many valuable specimens both of birds and mammals. One morning one of my Dyak hunters returned, declaring that he had heard a tiger. Being very unwilling to believe this, and wishing to convince them that no tiger exists in Borneo,* I took a Dyak and two Punans with our guns, and having walked half a mile in the direction pointed out to us, we heard a strange booming noise, very loud it is true, but not much resembling the roar of a tiger. I asked the Punans what they thought it was, and they replied "Jawi," toad. As we came up to the spot, the noise seemed to resound through the rocks, and sure enough, between the crevices, was a toad of gigantic size, bellowing lustily. As we tried to catch him, he backed further into his hiding-place until he was out of reach, and we were obliged to give up the hope of securing him; but a few days afterwards we procured a fine specimen of this toad, which measured $14\frac{1}{2}$ inches round the belly, and 3 inches across the head. It had a hard, rough black skin with warty excrescences on the back. These warts contain a poisonous

* I am not aware that a tiger has been found in Borneo, although the skull of one is reported to be in the house of a Singgi Dyak in Upper Sarawak.

fluid, some of which a Punan took, and placing it in the toad's mouth, destroyed the creature, and its skin is now in the British Museum.

I began my descent of the mountain on October 26th, and was glad of the assistance of these friendly Punans, who helped us to carry down my collection. On reaching the store, we packed up and rested there for the night. Next morning we had to travel slowly as the packages were very heavy, and stopping to rest for a short time at a deep pool beneath the waterfall, 1500 feet above the level of the sea, I found that the pool contained small fish (*Gastromyzon borneensis*) which were causing curious marks upon the stones at the bottom. These marks were produced, I found, by the fish adhering to the stone by means of a sort of sucker on its breast which prevented it being washed away by the force of the stream. We tried to catch them for some time with our hands, but without success, when an ingenious Dyak produced a piece of thread, which he tied on the end of a stick, and with a small piece of brass wire which he bent into a hook, it looked as if he meant business. We then searched for worms but found none. The Dyak, however, was not going to give up so easily, and sitting down on a stone, he proceeded to take out his knife and cut small pieces off the sole of his foot! with which he baited the hook, and was not long before he landed a fish, which was, doubtless, unable to resist so tempting a bait. We now all made similar hooks, and applied to our friend for bait. Having caught about half-a-dozen of these fish, I put them in spirit and continued our journey.

In the evening we arrived at the house of Aban Lia, and on going inside I found a musician seated in the middle of the verandah surrounded by an audience of about forty persons. The instrument which he was using was a flute (*silingut*) made of bamboo, on which he played not in the usual way with his lips, but through his nose! The notes produced were softer and clearer than the ordinary flute (*ensuling*) which is played with the mouth, and the man was certainly a skilful performer. Finding, however, that much of his wind escaped through the other nostril, he tore out the lining of his pocket and blocked the offending outlet with a small plug of rag. He assured me that his nose, which was undoubtedly a musical one, was slightly out of order, as he had only just recovered from an attack of influenza, but that sometimes he was able to move his audience to tears.

Next day we paddled down river over the rapids, and continuing our journey through the night, arrived at Claudetown on the evening of the following day, having spent a very enjoyable, and on the whole successful, six weeks in the Highlands of Borneo.

The jungle products of the Baram River are, rattan, gutta-percha, indiarubber, beeswax, camphor, and edible birds' nests. The minerals found in the district are gold, cinnabar, silver, antimony, iron, coal and precious stones.

SKETCH MAP
OF
BARAM DISTRICT
SARAWAK, BORNEO

BY
CHARLES HOSE
1884-1892

Scale of Miles

M^r Hose's Route Red

----- Jungle Paths

Note: Places underlined thus: Baram P. indicate
where Natural History collections have been made.

C H I N A

S E A

C H I N A

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