

## ISLANDS OF CAGAYAN SULU AND SIBUTU.

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Mr. LODGE presented the following

### SKETCH OF THE ISLANDS OF CAGAYAN SULU AND SIBUTU.

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A Washington paper of November 9 contains the following:

#### “THE ISLANDS OF CAGAYAN SULU AND SIBUTU.

“Cagayan Sulu group, in the southwestern part of the Sulu Sea, forms a dependency of the Sultan of Sulu and includes the island of Cagayan Sulu, the two Muligi islands, to the south of it, with Kinapusan, Pomelikan, Bintut, Bisu Bohan, Bohan, Mandah, and Lapun Lapun to the north. Cagayan Sulu alone is inhabited, the smaller islands being alone resorted to for temporary purposes, such as turtle catching.

“Cagayan Sulu, the largest of the group, extends about 8 miles in an east and west and 5 miles in a north and south direction, and (with the exception of the northwest and southeast points, which are steep-to) is fringed by a coral reef extending in some places nearly three-quarters of a mile from the shore; this reef dries in patches at low water, with channels for canoes or rafts between the edge of the reef and coast of the island.

“In the interior of the island are ranges of hills attaining a height of 1,105 feet on the east side, and sloping gradually to the sea.

“It appears thinly populated. The soil and climate are favorable to vegetation and the cultivation of tobacco, sugar cane, hemp palm, yams, bananas, and a variety of fruits and vegetables, but the natives are indolent, and depend chiefly for their subsistence on fish and rice imported from Palawan, for which they exchange cocoanuts and coconut oil.”

Admiral Keppel visited Cagayan Sulu in 1847. He says:

“This island, from its size and population, is next in importance to Sulu itself.

“The scenery which presented itself to us in these wanderings was the perfection of tropical beauty, with just sufficient cultivation to redeem it from the appearance of wildness. As we ran past the

cottages and small villages on the southern shore the inhabitants showed great alacrity in displaying pieces of white cloth, we ourselves keeping a white flag constantly flying, to signify our reciprocity of good feeling and our desire to communicate with them.

"Capt. Sir Edward Belcher, in describing his voyage in these seas, mentions having discovered in the south side of Cagayan Sulu a circular inlet of very deep water, cut off from the sea by a shallow bar. Being very anxious to find this fathomless basin, we kept a good lookout from the masthead, and a spot answering the description having been observed in passing it was determined to send an exploring party the next day. This was done, and on their return they gave such a wonderful account of the before-named curious basin, as well as of its beauty, that it was decided we should return by this route from our cruise, and, anchoring close to the basin, take an opportunity to examine it more carefully.

"On the 17th we came to, in 10 fathoms, about a mile off the south side of Cagayan, and immediately commenced our examination of the curious circular lake before mentioned, of which we had reserved the examination for this opportunity. The entrance is by a gap about 50 yards wide; this, however, is crossed by a bank of coral, which extends along the whole south coast, and at low water is nearly dry, so as to exclude any boat larger than a canoe. Just outside the middle of the bar was a small island of rock and sandstone, with a sufficient shelter of bushes to make an excellent shaded spot for our picnic. On passing the bar we found ourselves inside a magnificent circular lake of deep blue water. Its circumference was about 3 miles. It was completely encircled by sandstone cliffs, upward of 200 feet in height, and nearly perpendicular; their sides were covered with trees and shrubs. In the natural barriers of this remarkable inclosure only two small breaks occurred. One was the gap by which we entered; the other was on the E. N. E. side.

"From the inside the little island at the entrance had all the appearance of having once filled the gap, and looked as if it had been forced out into the sea by some internal pressure. The break which I mentioned on the northeast side did not come lower than within the 70 or 80 feet of the water's edge, and was partially concealed by the thick foliage of the jungle and forest trees. In sounding we found the depth of the water to vary from 50 to 60 fathoms, and it appeared to be as deep at the sides as in the center. Nothing could be more beautifully luxuriant than the growth of the jungle trees of every description, their trunks and branches covered with an endless variety of beautiful creepers in brilliant blossom hanging in festoons to the very water's edge. Over our heads, disturbed by such unusual visitors, numbers of pigeons flew to and fro, while many varieties of the parrot screamed their remonstrances at our intrusion.

"Forming ourselves into small parties, we dispersed, some to haul the seine, some to search for shells, while a third party explored the gap on the northeast side, clambering up without any anticipation of a further treat which was in reserve for them. At a height of about 90 feet another beautiful lake burst on their astonished sight, circular in form, and as nearly as possible similar to that which they had just left. The two lakes were separated by a sort of natural wall, and the spectator standing on its narrow edge could, by a mere turn of the head, look down either on the inner lake at a depth of 30 feet, or on the outer, 80 feet beneath him, almost perpendicularly. The water of the higher or inner lake was perfectly fresh, but it may be observed

that while it is called the 'inner' lake, because we approached it 'through' the other, it is, in fact, very little farther inland than the first.

"This grand discovery being communicated to the other rambling parties, curiosity became here concentrated. Men and axes were procured from the ship, the trees were cut down, and a road made up the gap, and so over to the fresh-water lake. A raft was then constructed, and, together with a small boat belonging to the tender, was very shortly launched upon the upper water.

"It was not until we were afloat on the inner lake that we were enabled to form a correct idea of the beauty of its encircling barriers and of the luxuriant vegetation which graced them. We had then also the best view of the extraordinary gap through which we had passed into it. The sandstone cliffs were more perpendicular on the fresh-water side, assuming the appearance of massive masonry, and the gap might be a large portal 100 feet in height broken through the immense stone wall. The creepers also were here seen to great advantage, some of them falling in most beautiful luxuriance the whole length from the summit of the surrounding heights to the water's edge. The lake may at one time, by some convulsion, have risen and burst through its barriers at this spot into the lower basin, which in turn may, by a similar process, have formed the gap in the outer side and then subsided to its present sea level. Such was the appearance which it had to us.

"Taken altogether, we had certainly here presented to us a great natural curiosity. I should have added that the cliffs on the lake side were intersected at regular distances by a stratum of conglomerate; and the whole scene was so novel and so peculiar as to render description difficult. The natives having spoken of the existence of other similar lakes at no great distance, we explored in the direction to which they guided us, but made no new discoveries. The sacred bottom of the lake was dredged by the conchologists of our party, but without finding any shells."

The English traveler St. John was charmed with the beauties of the island, and writes enthusiastically about it. He visited the picturesque inland lake, and writes as follows:

"We steered for Cagayan Sulu, which is a gem in the ocean. It has three peaks, wooded, but varied by grassy glades, groves of cocoanuts and fruit trees, partly concealing and partly revealing scattered houses and villages. It is, indeed, a picturesque island from every view.

"This island, though formerly a dependency of Sulu, is now independent, and is governed by some of those half-bred Arabs who corrupt and weigh heavily on these countries. It is finely situated in the Sulu seas, and it is both healthy and fertile. The inhabitants appear much the same as those I had seen about Maludu Bay, and, with the exception of some strangers, were civil. The latter were traders who had visited Samboangan, Manila, and other Spanish ports, and were there corrupted by intercourse with the low Europeans and dissipated classes who usually frequent such places; and at one time these men were so insolent that I thought their conduct would become unbearable, till they were quieted by my shooting down a cocoanut, as mentioned in my Limbang journal.

"The most singular spot in this island is near the old crater-looking harbor, mentioned by Sir Edward Belcher, which we entered over a reef. It is almost circular and is surrounded by lofty rocks clothed

with trees, bushes, and hanging creepers, presenting a magnificent wall of evergreen. Rowing to the west side of the bay and climbing to the top of a lofty bank, we had a splendid view of a remarkable, almost circular, lake. The place where we stood was a gap between the lofty cliffs that rose on either hand and appeared to have been formed by the inner waters bursting their boundary and overthrowing the upper defenses of this natural dam. The wooded cliffs continue all around, forming a perfect barrier, now rising to a great height, then sinking to some 50 or 60 feet. The waters, elevated more than 40 feet above the sea, lay in undisturbed repose and presented for upward of half a mile a clear mirror, reflecting back the rays of the sun and the deep shadow of the tall trees."

Guillemard, the naturalist of the cruise of the *Marchesa*, writes rapturously of the climate and natural attractions of the islands:

"Beautiful as are almost all tropical islands, I do not think I have ever seen one more captivating than Cagayan Sulu. Mr. St. John calls it a 'true gem of the ocean;' and as the boat glided over the coral gardens, bright with vividly colored fish, and landed me, gun and collecting box in hand, on the snowy sand, I felt as if I could cast off civilization and European clothes alike and cultivate my mealie patch and grove of cocoanuts with the natives for the remainder of my natural life. It is the feeling that every lover of nature doubtless has on revisiting scenes like these, but in ninety-nine cases out of a hundred we should soon find ourselves sighing for our morning papers and calling the place a 'wretched hole' were we to try the experiment. The sauce of life is variety, and just as the restraint and conventionalities of civilization become after a time unbearable to those of us who have once tasted of the sweets of rough travel, so there are occasionally moments when, even in palm grove and coral land, the thought of a high hat and a white shirt is actually not unpleasing. Habit is, after all, too strong for us, and however often we may succeed in breaking its bonds, there must sooner or later come a time when we are willing once more to adjust the noose around our necks with our own hands.

"I had no wish of this nature in Cagayan Sulu, nor indeed have I ever felt it except when suffering from illness, and I passed through the thick cocoanut groves and found myself in the open bush country beyond, with all the pleasurable feelings of a naturalist when he knows that he is on untrodden ground. The island, which is about 5 miles in length by 4 in breadth, is purely volcanic, and the soil, to all appearances, very rich. It is for the most part low and undulating, the highest elevation being only 1,100 feet, but several extinct volcanoes of small size exist, whose sides, strewn with lumps of slag and scorix, permit only of the growth of coarse lalang grass. In the little valleys or along the seashore the mat-shed houses, elevated on piles, are shaded in pleasant groves of banana, cocoanut, jack fruit, and durian trees. Cultivation appears to be but little undertaken, and, though yam, sweet potato, and tapioca are grown, it is not to any great extent, and the islanders seem to live chiefly upon fruit and fish. The latter are caught in great numbers, for, the island being surrounded by a fringing reef, the natives can coast its shores in all weathers in tolerably smooth water.

"I found both birds and insects scarce during my ramble, so far, at least, as regards the number of species. A beautiful glossy starling (*Calornis panayensis*, Scop.), with a blood-red iris and the plumage metallic green, shot with violet, haunted the cocoanut groves in some

numbers. Its occurrence was interesting from the fact that it is a Philippine bird, which is not found in Borneo. On the beach the blue-and-white kingfisher (*Halcyon chloris*, Bodd.) was equally abundant, sitting motionless on the branches of the trees overhanging the sea, and from time to time uttering its loud, laughing note. One of the most generally distributed of all birds in this part of the world, it is found from the Red Sea to the farther side of New Guinea, and the little patch of turquoise blue that reveals its presence is one of the most familiar objects to the naturalist as he skirts the mangrove-girt creeks of the islands of the Malay Archipelago. Other birds were few and shy, and as it shortly afterwards came on to rain heavily, I returned to the ship. At this time—the changing of the monsoons—there is a good deal of wet weather on the island, and the temperature is comparatively low during cloudy days. In the cabins on board the thermometer registered from 78° to 80° F.

“Our first expedition to the crater lakes, one of the most interesting natural phenomena we met with in the Eastern seas, was unsuccessful, owing to bad weather, but the next day being fine, we started early in the steam launch to visit them again. They are situated on the south side of the island, about 4 miles distant from the southwest point off which we had anchored, and running along shore inside the coral reef, it was not long before we found ourselves at the entrance. It was barely a couple of hundred yards across, and as we glided slowly in, the pale milky blue of the water on the reef suddenly gave place to the deepest sapphire. We had altered our depth from 3 feet to between 50 and 60 fathoms, and it hardly needed a glance at the high surrounding walls and circular shape of the basin to tell us that we were in the crater of an extinct volcano, into which the sea had at some later period irraptured. A little island at the entrance marks its original boundary on the side toward the sea, and from this and the almost unbroken regularity of the basin's circle it is evident that, if the land were at the same level then as now, the sea had to encroach but little to burst into the deep hollow which it fills at the present time.

“The little lake and its surroundings were fairy-like in their beauty, but so peculiar in character and so rich in the tropical luxuriance of foliage as to give an almost theatrical effect. Around us the dense jungle overhung the water, completely precluding any attempt to land, and clothed the steep walls of the crater to a height of 200 feet or more. Giant creepers had sprung from tree to tree and, choking the struggling vegetable life beneath them with an impenetrable mass of foliage, hung in low trailers toward the margin of the water below—a wealth of green of every imaginable shade. It has been said over and over again by travelers that the great masses of color so often seen in the landscapes of the Temperate Zone are in the Tropics rare in the extreme. In the dense forests of the latter the glorious orchids and other flowers which are the pride of our hothouses at home are not in reality uncommon, but they are for the most part hidden by the thick vegetation or perched far out of sight in the forks of some gigantic tree overhead.

“The explorer who penetrates the true primeval forest in a country such as Borneo finds himself at the bottom of a subarbooreal world, if I may be allowed the expression, with whose surface all communication is absolutely cut off. Yet it is just there that all life, whether animal or vegetable, centers. The tiny lorikeets are feeding on the figs or other fruit, and the *Arachnotheras* searching the corollas of



some heavily blossomed tree for their insect prey. But they are almost out of sight, and far beyond the range of the gun of the naturalist. Beneath the forest seems gloomy, dark, and devoid of life. Everything is fighting for the sun and air, in which alone most flowers will come to perfection, and could we only transform ourselves into monkeys, and swing from branch to branch a couple of hundred feet from the ground, we should doubtless get a much more favorable idea of the richness of the flora of the Tropics than our limited powers of locomotion permit us to obtain at the foot of the trees. The fact remains, however, that but few flowers present themselves to the eye, and those who expect to find the blaze of color that a field of buttercups exhibits in England, or an anemone-clothed hill in Greece, will, as Mr. Wallace and other naturalists have already told us, be much disappointed. But everyone who sees tropical vegetation for the first time must be struck by the great variety of tint in the foliage. At home our trees have but little range in the gamut of green. Here they run from a falsetto of vivid greenish yellow to an *ut de poitrine* of a color that is only just not black.

"We steamed across to the eastern side of the crater, and made the launch fast to a huge fallen tree which jutted far out over the water. It was half buried in the rich soil at one end, and was covered with a wealth of ferns and epiphytes. Above us a large creeper with inconspicuous, whitish flowers had attracted an enormous quantity of butterflies, which were apparently limited to that one spot. They were far beyond our reach, and, from a collector's point of view, might just as well have been in the other hemisphere. We had brought with us a trained fishing cormorant we had got some months before in Japan. Life on board ship was evidently a burden to him, and it was resolved to release him here, so while we enjoyed our tiffin he was put overboard to seek his own. Immediately above us a gap in the cliff revealed the probable position of the second lake, and scrambling up by an ascent so steep that, but for the jungle, it would have been impracticable, we found ourselves on a knife edge of rock dividing the two craters.

"The scene was a very curious one, and we could realize at once the delight of Admiral Keppel on his discovery of such an extraordinary natural curiosity. The second lake, though of somewhat smaller size, is more perfectly circular than the western one, and though its southern wall is only a few yards distant from the beach, the sea has, as yet, left it unbroken. The level of the water, which is perfectly fresh, must be fully 40 feet above the sea, and but for the lessened height of the surrounding walls the second lake is almost an exact reproduction of the first. Our only disappointment was that, owing to the denseness of the vegetation, we could obtain no photograph giving any idea of the extraordinary scene that lay before us.

"We scrambled down again in considerable less time than we had taken over the ascent and rowed round to the seaside with the intention of hauling our 'Bertheon' boat through the jungle and launching it on the second lake. But after a hard struggle we had to relinquish the idea, the heat and dense tangle of creepers proving too much for us. The view from the southern side was even more striking than that we had first obtained, though limited by the masses of foliage which, combined with the steepness of the cliffs, prevented our descent to the water's edge. Opposite to where we stood the almost perpendicular crater wall was hidden by enormous creepers, but to our left the deep gap by which we had ascended from the western lake stood

out bare and rocky, the cliffs rising 100 feet or more above the little pass. The water below us lacked the deep sapphire blue of the other basin. We watched its unruffled surface in vain for any trace of the crocodiles which are said by the natives to haunt it in abundance.

"On the 31st of March we paid a third visit to the craters, in company with the Pangerang. We had heard rumors of the existence of a third lake resembling the other two, and were anxious to investigate the truth of them. But as it was said to be in close proximity to the others, we had hardly thought that it could be anything of importance. Not only had Admiral Keppel visited the lakes on two occasions, but Captain Chimmo, during the visit of H. M. S. *Nassau*, in 187—, had completed an apparently accurate survey of the island, so there was but little chance of any further discoveries. Skirting the mangrove and pandanus lined shores, we reached the lakes in heavy rain, and forced our way through dripping jungle to the eastward, when, to our astonishment, at a distance of a few yards only from the second lake, we came upon yet another of an almost exactly similar nature. It was of rather smaller size than the others, being two-fifths instead of three-fifths of a mile in diameter, but the basin was perfectly circular and filled with water to about the level of the second lake. Thick jungle clothed the precipitous sides, but the latter, instead of running sheer down into the water, left room for a small beach, on which some wild bananas were growing. We had no means of trying the depth of the water, but in the other two Admiral Keppel found the bottom at 55 and 39 fathoms, respectively. The torrents of rain that descended prevented our attempting photography, but we returned to the ship much pleased at our unexpected discovery.

"From our friend the Pangerang and other sources we obtained some general information on the island. Colonized originally from Sulu, though at what date appears uncertain, there is still a certain amount of communication with the group of islands as well as with Sandaken, at the northeast end of Borneo. The language is purely Sulu, but many of the people speak Malay, the lingua franca of the Indian Archipelago. Some years ago they suffered much from the raids of Sulu pirates, the last of which occurred in 1863, but these pests, who established their stronghold among the labyrinth of shoals on the south of Tawi-tawi Island, have of late been held in check by the Spanish, and before long will, no doubt, have disappeared. The only trade is in cocoanut oil, but the yam, banana, sweet potato, cotton tree, and tobacco are cultivated. Liberian coffee, cacao, and sugar ought all to do well, and the soil appears to be particularly adapted for growing the two former, but we saw none upon the island. The greater part of the agricultural work is done by the women, while the men employ themselves in fishing, managing their crank dug-out canoes with great dexterity. They also make use of rafts made of large bamboos lashed together—a species of craft that I do not remember to have seen anywhere else in this part of the world.

"One of our excursions was to the summit of a small volcano on the west side of the island. Our path led through the cocoanut plantation, where, if we chose to stand and watch steadily the crowns of the palms, some 40 feet or more above our heads, the restless movements of numbers of brilliant little sun birds could be noticed, their dark forms changing momentarily into a flash of metallic violet as they passed from beneath the shadow of the fronds. They were all one species, *Anthothreptes malaccensis*, a common bird, which, with slight variations in plumage, is found throughout the greater part of

Malaysia. The hill—for, being only 400 feet in height, the volcano can not be dignified by any more imposing title—rises gently in the form of an abruptly truncated cone, and bears evidence of tolerably recent formation, for its slopes were covered by the bright green lalang grass only and the jungle had not as yet succeeded in obtaining a footing.

"In countries farther removed from the equator the traces of volcanic eruptions may remain almost unaltered for centuries, but in these lands of perpetual summer the combined action of a powerful sun and heavy rain rapidly disintegrates the lavas and prepares a surface soil for the reception of seeds. Ere long the sea of tropical vegetation has closed over the spot, and the smaller size of the jungle trees alone reveals it to the traveler's eye. Some months later, while in the island of Sumbawa, we came across a well-marked instance of this kind on the slopes of the huge Tambora volcano, whose terrific eruption in April, 1815, caused the death of 12,000 people. The wavy course of a lava stream, though doubtless unrecognizable on the spot itself, could be traced with the greatest ease from the ship. Nature's wound had no doubt skinned over rapidly enough, but the scar still remained.

"Arriving at the summit we found an evenly shaped crater nearly 100 feet in depth, its sides clothed with trees of no great size. To the south, and quite close to us, lay two other hills, also evidently volcanic. Our elevation, though little enough, was sufficient to afford us a good view of the island, which in every direction appeared to be comparatively free from jungle, though scattered belts of palms and fruit trees were abundant. Ledan, a curiously shaped mountain, rising like a bold hump of rock abruptly from the level country around it, was a very striking object to the east, and farther to the right a sharper peak, hollowed on its southern face, indicated the position of three crater lakes. On our return we gathered large bunches of a jasmine almost exactly resembling our own, but with slightly larger and more fragrant flowers. The mussaenda, with its striking white bracts contrasting with the green foliage and orange flowers, was also very abundant.

"Sibutu Island, the north end of which is in latitude  $4^{\circ} 54' 40''$  N., longitude  $119^{\circ} 27' E.$ , lies W. by  $\frac{3}{4}$  S., about 18 miles distant from the observation islet south of Bongoa. It runs nearly north and south and is about 14 miles long, with an average breadth of 2 miles.

"With the exception of the single peak on the east coast, which has an altitude of 524 feet and is a perfect cone, the island is flat and densely wooded.

"A reef fringes the coast, and then runs nearly 8 miles south of its southern point, when it trends to the westward. This reef is dry at low water and has numerous boulders, sand cays, and blocks of coral on it, while there are some small islets covered with trees near its southwest extreme. This reef is steep to all around, and there is no anchorage; but a ship might stop a tide by dropping her anchor in 15 fathoms due north of the island, when she would swing round within three-quarters of a cable of the fringe reef.

"Our discovery, although perhaps not so interesting as that of the third crater lake, was a useful one, and we devoted the remainder of that and the whole of the following day to making a sketch survey. The shore of Yacht Bay, as we named it, was sandy—somewhat of a rarity on the coral and mangrove girt coasts of the island—and formed an ideal place for a picnic. Behind us the tall jungle threw a pleasant shade over the little beach, whose margin was lapped by a waveless



sea, its only sign of life the almost inaudible swish with which it advanced or retired over the cool white sand. We ate our tiffin beneath a large barringtonia, whose branches, thickly clothed with broad fleshy leaves, stretched far out over the water. The tree was in fruit and flower, and its bright stamened, tassel-like blossoms and large quadrangular nuts carpeted the ground below. The latter is a 'common object of the seashore' in the Malay Islands and is much used by natives to catch fish. The fruit is pounded and thrown into the water, and the fish, rising to the surface in a stupefied condition, are easily secured.

"We were too much occupied to spend our time in searching for objects of natural history, but the forest by the beach seemed silent and deserted. Animal life indeed, so far as we could judge from our short visit, appeared singularly meager in Cagayan Sulu, a fact that is perhaps accounted for by the island being, geologically speaking, of comparatively recent formation. Crocodiles and hydrosauri of course exist, and, according to the natives, the rat and the kraw (*Macacus cynomolgus*), a common Bornean monkey. We did not, however, obtain either of the two latter. With regard to the birds, the few species we collected or identified were interesting, as showing the island to have been peopled with immigrants both from the Philippines and Borneo, though, as might be expected from its proximity, chiefly from the latter country. We were fortunate enough, in spite of the comparative paucity of birds, to find one new species—a pretty thrush-breasted mixornis—closely allied to a Bornean bird of that genus; and on the whole, taking into consideration our two other discoveries, we felt that our visit to this little-known 'gem of the ocean' had not been entirely unsuccessful."

