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# THE SCOTTISH GEOGRAPHICAL MAGAZINE.

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## ISLANDS OF MELANESIA.

BY R. H. CODRINGTON, D.D.

(*Read at Meetings of Society, Edinburgh and Glasgow, February 1889.*)

THE name Melanesia has been given to a considerable portion of the West Pacific, extending from New Guinea to Fiji, and from the Equator to nearly the Tropic of Capricorn. My own knowledge of this island region is confined within much narrower limits; I have only seen and visited the Solomon Islands, as far as Ysabel, in about 7° S., the Santa Cruz group, the Banks' Islands, the New Hebrides, and the Loyalty Islands; and with the southernmost of these I have little acquaintance. But I have several times passed through these groups, coming up from New Zealand and Norfolk Island; coming first upon the coral terraces and stiff upstanding pines of the Loyalty Islands, and then crossing to the islands of the New Hebrides, whose volcanic origin is unmistakable, in which and the succeeding groups active volcanoes are never long out of sight.

I. DISCOVERY.—The history of the discovery of these islands is certainly very interesting. We owe the knowledge of them to Spanish, French, and English voyagers, whose explorations from first to last have stretched through three centuries. To the Spaniards we owe the discovery of the Solomon Islands, the Santa Cruz group, the Banks' Islands, and the Northern New Hebrides. The French added, much later, to the discoveries of the Spanish. The English found the great mass of the New Hebrides and New Caledonia, and have filled with lesser discoveries the charts of all the groups. The Dutch discovered Fiji.

The earliest, and certainly the most interesting, discoveries were those of the Spaniards; the two voyages of Mendana, and that of Quiros and Torres. The recent work of Dr. Guppy has related and discussed at length the discoveries of Mendana as told by Gallego. For my own

part I must say that, except in the nautical particulars in which I am by no means at home, I do not recognise in this Journal of Gallego anything more valuable than what has before appeared in the collections of Burney and Dalrymple. If the Journal were one contemporary with the voyage it relates, its authority would of course be beyond question; but I am convinced that it was written, in the form in which Dr. Guppy gives it, long after. A proof of this appears to me in a single word. A chief of the first island discovered in the first voyage, Ysabel, "is termed in the Journal the Taurique Meta." But Taurique is evidently Te Ariki, in the common Polynesian language of the E. Pacific, "The Chief:" and in the account of the second voyage of Mendana, more than a quarter of a century later than his first, we are told that the chief of the newly-found Santa Cruz, Malope, called himself Taurique (Te Ariki), using the word used at the present day in the neighbouring Reef Islands. The Journal of Gallego therefore introduces in Ysabel in 1567 a word "Taurique" heard in Santa Cruz, where it is heard now, in 1595; and it cannot, I think, be taken to be more than a composition made long after the events it records, though it contains, no doubt, much noted down at the time.

Mendana then, despatched by the governor of Peru, came down in 1567 upon the great island of the Solomon group to which he gave the name of Santa Ysabel de la Estrella, the first Melanesian land known to Europeans. From thence the voyagers under his command discovered and named the great islands Malaita, Guadalcanal, San Cristoval; with the lesser islands, Savo, unmistakably that then named Sesarga, Florida with its islets,<sup>1</sup> Ulawa, and the lesser islands near San Cristoval.<sup>2</sup> There is, naturally enough, a good deal of difficulty in fitting the names given by the Spaniards to the islands and parts of islands seen by them as they cruised about; but there is no doubt that the islands then discovered are those which form the SE. part of the group to which Mendana himself gave the name of Solomon. I will now touch upon one or two points of interest which present themselves when one compares the present, or very recent, state of things in those islands with that represented by these earliest discoveries. It must be understood that in the 300 years that elapsed between Mendana's discovery in 1567 and my own first visit to these islands in 1863, there had been nothing, or almost nothing, done by European voyagers or traders to influence the character of native life. It is most interesting to inquire whether the natives of the latter part of the nineteenth century are the same as those found in the same islands in the latter half of the sixteenth century. We have, it is true, to allow for errors of observation and description, for faults of memory, for embellishments and exaggerations; but still the account of Mendana's first discoveries is historical.

*Place-names.*—It is well known to be a difficult thing to obtain on a first visit the true native names of islands, especially of large islands,

<sup>1</sup> Buena Vista, which is Vatilau; San Dimas, San German, Guadalupe, not ascertained.

<sup>2</sup> Das Tres Marias, 3 Sisters, Olu Malau; San Juan, Ugi; Santa Ana, Owaraha; Santa Catalina, Owarii.

and of villages or landing-places. The inquirer is pointing to the island as a whole, and is given the name of the district opposite him; he obtains the name of an islet between him and the main land; he mistakes the name of a man for that of the village where he lives. Large islands generally have no native name at all. We should not then expect to find many place-names now recognisable; but there are some in the Spanish account of the discovery about which there can be no doubt. The great island which I have been accustomed to hear called Malanta, had, according to the Spaniards, the native name of Malaita. At the present day it is called, all along its western side at any rate, by the one name of Mala, or Mara; a singular thing for so large an island. Beyond the south-eastern end of Mala lies what is now called Ulawa, plainly the name written by Gallego Uraba. This is particularly interesting, because the interchange of *l* and *r*, *b* and *v*, which belongs to the Spanish language, is carried to confusion by the natives of this island. The Spaniard, at any rate, did not fall into the common mistake of hearing and writing Ulaua. The large island to which the Spaniards gave the name of San Cristoval, or Cristobal, has no native name, but is best known by the name of that part of it, the mountainous mass of which is most conspicuous at a distance, Bauro, which is no doubt represented by Gallego's Paubro. Of the two islets which lie off the eastern end of this large one, Gallego names one Aguaré. The Spanish *gu* represents *w*; the true name of the islet is Owarii, which is much better represented by the Spanish Aguaré than by the Yoriki of the charts, or the Orika obtained by Dr. Guppy, probably from a resident trader. There is, besides, the name of Sabo, misapplied, but doubtless that of the island now called Savo. We may conclude, then, that the names of the Solomon Islands generally have not changed. Very few native words are given—chiefly names of persons. It may be said that these personal names are such in form as are heard in these islands now. Gallego gives apparently only one native word not a name. He speaks of the *benaus*, *panales*, *panays*, which are no doubt the *pana*, a kind of yam with prickles on the vines.

*Weapons.*—In the use of weapons, if Gallego's account is correct there must have come about a considerable change. The natives are represented as attacking the Spaniards with bows and arrows, though darts are spoken of in San Cristoval. Within the last twenty-five years no visitor to those parts of the Solomon Islands would have seen bows and arrows used in fighting, except in Malaita. The natives have bows, but their fighting weapon is the spear. Their warfare is Homeric, an occasional Bowman lurks behind. At Ulawa, Gallego speaks of the natives coming on with their shields, which do not go with bows and arrows. In this matter I have little faith in Gallego.

*Cannibalism* was evidently practised according to the Spanish account. In Ysabel and Florida it would not be seen now by a voyager; what there has been there of late years on the coast would never be conspicuous; in San Cristoval it would be observed.

*Nakedness* is said by Gallego to have been complete; Figueroa says the people wore something. At the present time, except in Malanta, absolute nakedness would not be found.

I conclude that the population found by the Spaniards is the same as at present, and that there has been no change in their condition and habits, except perhaps that the use of the bow in battle has been superseded by that of the spear.

I come now to the second voyage of Mendana, undertaken in 1595 for the colonisation of the Solomon Islands, and resulting in the discovery of Santa Cruz. An attempt was made to form a settlement; but the death of Mendana, and the general sickness of the party, caused the abandonment of the project after two months. We have ample details of this visit, and it is remarkable in this case how the account given corresponds with what is now observed. It is only within the last few years that, by the courage of the present Missionary Bishop of Melanesia, Bishop John Selwyn, the island of Santa Cruz has again become open to friendly approach. Bishop Patteson had before noted, in his visits of but a few minutes on shore, that all was as Mendana had seen it. After the first discovery, Carteret was apparently the only voyager who approached these islands. When they had been again visited, the death of Bishop Patteson, and of Commodore Goodenough not long afterwards, at the hands of the natives, shut out friendly communication for a time. They are now open again, and I have examined the narrative of Mendana's visit to these islands with natives of the group, whose comments were certainly interesting. I will mention one singular point. The Spaniards, failing in getting the people of the main island of Santa Cruz to learn their language, sent to kidnap (after the fashion so constantly practised) some boys from the neighbouring Reef Islands, whom they thought they had observed to be more intelligent than those of Santa Cruz. When I related this to a mixed group of Santa Cruz and Reef Island boys, I was assured that the Santa Cruz people still consider the Reef Island boys sharper than their own, because it is the custom of their fathers to take them with them on their voyages. There has been a certain inclination to ascribe to this short stay of Spaniards in the island the introduction of the loom with which they weave their mats, and of anything else in which a difference is observed; but all these things appear in the Spanish narrative.

The third Spanish voyage was that of Quiros and Torres in 1606. Quiros, who had accompanied Mendana, had still the object of recovering and colonising the Solomon Islands. Fortune, however, made him the discoverer of the New Hebrides, where he believed himself to have found the great Australian Continent in the island which now bears the name he gave of *Espiritu Santo*. Before, however, he had discovered anything considerable, he had obtained information at Taumaco from the natives concerning as many as sixty islands known to their voyagers. Some of these are easily identified—Sikaiana, Stewart Island; Tokelo; Nupani, Pileni, Reef Islands near Santa Cruz; Manicolo, no doubt Vanikoro, the scene of the wreck of *La Pérouse*; Tucopia, properly Chikopia; Guaytopo, Waitopo. All these are islands inhabited by people of Polynesian race, great voyagers, to this day retaining their Polynesian tongue, though

where they lie nearer to large islands of Melanesian population, they have lost their distinctively Polynesian physique. Among the names of islands known to Taumaco navigators is Pouro, in which one is at once disposed to find the Bauro of San Cristoval. But certain arrows were described as brought from thence, which in these days, at least, would have a more likely origin in the New Hebrides, with which, I think, they must have been acquainted. We are told, moreover, that Quiros understood at Taumaco that they were acquainted with Santa Cruz.

At any rate the information he received led Quiros to seek for the large island he hoped to find in the south; and his discovery of *Espiritu Santo* was preceded by that of the Banks' Islands, as they were afterwards named by Bligh, one of which, *Santa Maria*, still bears its Spanish name; the others, probably including *Aurora* of the New Hebrides, were *San Raymundo*, *Los Portales de Belen*, *La Vergel*, *Las Lagrimas de San Pedro*, *El Pilar de Zaragoza*, probably *Mota*, and *Nuestra Señora de la Luz*, now *Star Island*, *Merlav*. When Quiros and his companion *Torres* parted at *Espiritu Santo*, the latter saw the group of five islands which are known as the *Torres Islands*.

The French expedition under *Bougainville*, in 1768, added *Aurora*, *Pentecost*, *Lepers' Island*, and *Malikolo* to the known islands of the New Hebrides, called by him the *Great Cyclades*, and afterwards the great islands of *Choiseul* and *Bougainville* to the *Solomon group*. In the next year *Surville* passed through the *Solomons* without fresh discovery. The disastrous voyage of *La Pérouse* followed in 1785.

In his second great voyage in 1774, *Cook* filled up most of what was unknown of the mass of Melanesia by his discovery of the *Southern New Hebrides*, the *Loyalty Islands*, and *New Caledonia*. *Bligh*, in his wonderful boat voyage after the mutiny of the *Bounty*, passed through and named the islands of the *Banks' group*. *Fiji* had been long before discovered by the Dutch.

It may be reasonably supposed that the readers of the narratives which relate to us the discovery of lands and people hitherto unknown, must sometimes pause to wonder what the people discovered thought of their discoverers. To the Spaniards of the sixteenth century, and to the English of the eighteenth, that there should be new islands and new nations in the distant ocean was nothing surprising; they would indeed have been surprised if none such had been found. But these new-found people, wholly ignorant of the great world to which they belonged, what did they think of these strangers? We have the narratives of the discoverers, who as freely as their successors, even unfortunately to the present day, put down to the treachery of the natives every conflict that arose. We have, however, in some cases at any rate, two accounts; for example, in the first voyage of *Mendana*, the treacherous attack of the natives of *Guadalcanar*, according to one narrative, is shown by the other narrative to have been, in fact, the angry assault of those whose sons and brothers had been kidnapped by the Spaniards. But it is plain that the natives

were generally at first friendly, and often afterwards—we may suppose sometimes without provocation—hostile. I think that we may understand the attitude of the native mind. There are many Melanesians of whom it is now easy to inquire what they thought of the first white men who visited them. They will, in many cases, answer that they thought they were ghosts. And we must remember that they knew of no other men but themselves, and supposed, therefore, that there were no other ghosts than those of their deceased fellow-countrymen. I have been taken for a ghost myself. It is true that Melanesians, like other people, have a dread of ghosts; but still, as Melanesians generally look to the ghosts of their deceased great men as the objects of their worship, it is natural that they should receive them with respect and in peace. But it cannot be long before it becomes clear that these are not ghosts at all. What are they, then?—men? No; for if they were men they would be black; if they were men they would belong to the world, and these have come from beyond the utmost bounds of ocean, beyond the foundation of the sky. They are, then, spirits of some kind, not men alive or dead, demons of strange power who will do mischief, bring disease and famine; it is best to drive them away. Why, I have asked, did the Santa Cruz people shoot at Bishop Patteson's party in 1864, when certainly no white visitors had as yet given them cause for revenge? Because, it was answered, the elder men said that these strange beings would bring nothing but harm; and as to shooting at them, they were not men, and the arrows could not do them much harm. It is sad to think how correct too often the judgment of the old men has been proved to be.

II. In going through, however briefly, the history of these discoveries we are met with difficulties and doubts about names. It would be tedious to go through these Melanesian Islands with their names; but it will be interesting, I think, to consider them a little. (1.) It is interesting to observe how the geographical names tell of the nation of the discoverers and of the feelings with which the discoveries were made. The Spaniard is remembered in Guadalcanar, San Cristoval, Santa Cruz, Santa Maria, Espiritu Santo, which are marked with his language and his religion. When Bligh named the Banks' Islands, there was partly the matter-of-fact reference to shape—Sugarloaf Island, Saddle Island; partly the personal memorial of Sir Joseph Banks and himself. Cook, in the same way, gave his English names, recalling Britain in his New Hebrides and New Caledonia; commemorating friends and patrons in Sandwich, Shepherd Islands; and with great good sense keeping native names wherever he ascertained them, Api, Tanna, Eromanga, Malikolo, Anaitum. The French names have been hardly used; a few remain, but many have passed into English—Star Island, Aurora, Pentecost. (2.) Orthography is, of course, in native names difficult; such are hard to ascertain in their right application, hard to catch in their true sound, hard to express in our letters. It is a very rare thing, I think, for an Englishman to get the right name at first; there is no security till a native writes down the word himself; and after that but very few will pronounce it right. When the name is one given by Europeans it is a

simple rule to write it in the language to which it belongs, *Contrariété*, *Espiritu Santo*, *San Cristoval*. (3.) There is much philological interest, of course, in the examination of native names, and with that ethnological and historical. Has the Solomon Island *Bauro* any connection with the *Bouro* of the Malay Archipelago? Is not the *Futuna* of the New Hebrides named after the *Futuna* of Horne's Island? Are not the names of the largest islands in the Fiji and Banks' groups identical, *Vanua Lava* and *Venua Levu*? If such questions can be answered, we learn certainly a good deal about the origin and mutual relation of the inhabitants. But another point of identity is much more important; I mean the practice, universal in Melanesia and in Madagascar, of combining the preposition meaning "at" with the name of a place, in *Anaiteum* equally with *Antanánarivo*.

III. To the voyager in these Melanesian Islands who has no special geological learning, the generally volcanic character of them is very apparent. He may think that the lofty island of *Guadalcanar*, rising to 8000 feet, or the high mountains of *Espiritu Santo* or *New Caledonia*, may have some other origin, but he cannot miss the volcanoes vigorously active, or still throwing out clouds of steam; and he can hardly help observing that many islands have the shape of those that are still active, or look like ruins of volcanic mountains in various stages of decay. He will be ready, therefore, to believe that very much is volcanic which does not clearly appear to be so.

There are four active volcanoes among the islands of which I am speaking:—*Yazur*, on *Tanna*, *Lopevi*, *Ambrym*, and *Tinakula*, near *Santa Cruz*. That at *Tanna* is comparatively well known, and has often been visited, being not lofty, and easily accessible.

The vast cone of *Lopevi* rises to an apparent point 5000 ft. above the sea. When I first saw it in 1863 I was told that it had never been seen by Europeans to show any signs of activity; but in the same year I saw it smoke, and it has since thrown out burning ashes.

*Tinakula*, as it is called, though the native name of it is *Tamami*, is again a perfectly-formed cone, rising to a height of 3000 ft. It has of late years been exceedingly active, throwing out glowing masses of lava which roll down into the sea. When *Mendana* was forming his settlement at *Santa Cruz*, nearly 300 years ago, the point of the cone was blown off.

The huge volcano of *Ambrym* has no cone visible, but apparently an enormous crater which, from the size of the mass of smoke that ascends from it, may be two or three miles across. It occupies the middle of the island at a height of 2500 ft., the centre of vast rugged fields of lava hitherto unapproachable. Round the circumference of the main mass of the volcano there rise recent cones no longer active, covered with forest from their peaks down the beautiful curves in which they sink to the sea. I know no scene in Melanesia more lovely than that which is viewed from *Rodd's Anchorage* under one of the largest of these lateral mountains, where the awful desolation of the main volcano is out of sight. There is no volcano in Melanesia that can compare with *Ambrym*.



It requires a much closer acquaintance with the islands than I possess to know in how many places in these islands volcanic action is yet alive. When Mendana discovered Savo the volcano was active. Some years ago I gathered there, that about fifty years before that a considerable eruption had taken place, and the natives were expecting another. There is a steaming vent, and a hot stream runs down; the Florida people say they hear rumblings from Savo and see smoke. I know of nothing else now active in the Solomon Islands.

In the Banks' Islands Vanua Lava is always steaming from its sulphur springs. Great lateral cones have been thrown up on the N. and E. sides, now quite extinct, but the streams which rise in the central mass run warm and stinking to the sea, and powder the rocks with sulphur. In the neighbouring island of Santa Maria there are steaming vents on the ridge which marks, I suppose, the edge of the ancient crater, now a lake, and on the hill Garat, that has been thrown up within it. There is also a group of hot pools, sulphurous jets, and basins of boiling mud within the encircling ridge; from which hot streams pour down to the lake beneath.

Bligh Island, Ureparapara, is a remarkable example of the type of Amsterdam or St. Paul's Island in the South Indian Ocean. The sea enters the ancient crater, the ridge of which rises to nearly 2000 ft.; and on the slope of that the volcanic heat still finds a vent.

Meralava, Star Island, is a massive cone abruptly rising from the sea to a height of 3000 ft., so steep that it surprises one that it should be inhabited. From below, the cone appears to terminate in a cup with a broken lip. Some years ago a native lad from a neighbouring island told me that he, with a companion, had mounted to this ancient crater. They found within it a bare plain, with a lake of black water, covered with a thick, dark cloud. A heavy darkness filled the place, a huge bird soared round their heads; awe and horror fell upon them, and they turned and fled. In the year 1884, however, Bishop Selwyn and Mr. Palmer of the Melanesian Mission ascended and explored the crater, and found that a comparatively recent cone had been thrown up within it. This was no doubt active when Quiros discovered this island, and found it to be a volcano, of which, probably, he had seen the light in the night-time, since he named it *Nuestra Señora de la Luz*. There is now no memory of an eruption, or any appearance of activity.

In the New Hebrides the volcanic action has not yet exhausted itself on Lepers' Island, but I know no other island there in the same condition.

All these volcanic islands, whether still in active operation, or now fuming out their latent fires, or long ago extinct, have dead and living coral round their bases: in most, I suppose, the island lies a ruined mass; old cones fallen to pieces, heaps of matter ages ago thrown up, lateral cones perhaps keeping much or something of their form; all now covered from shore to summit with forest growth. Such islands appear throughout. Some of them, I understand, are of immense antiquity, some are recent. I think it probable that they may be roughly classified according to the use in them of stone or shell implements, of chert or obsidian. But all alike have coral forming a certain proportion of their mass, the

rock of coral formation varying according to its age. In most cases I suppose a skilled observer could easily determine how the coral rock lies, and what proportion the core of volcanic rock bears to that which has formed upon it. When an island has had one or more steady periods of upheaval, elevated terraces of coral appear, as in Futuna and the Loyalty Islands; in Florida there is a cliff face white as chalk. The figure of Mota in the Banks' group tells its own story. There is the primary cone, with its shoulder of later discharges; the coral that had grown upon its base to a certain depth below low tide has been brought into view in one steady period of upheaval. Ashore, on the raised surface, are blocks of volcanic stones, and ravines cut deep through the ancient coral by torrents from the mountains above, show the species, such as madrepora, of which it is composed; on the beach, water-worn fragments of both coral and volcanic rocks lie among the living coral. In the Torres Islands, terraces formed by successive upheavals are conspicuous; but here there is no appearance of the volcanic core. At least in one of them, the natives dig for the volcanic stone that will bear heat for their ovens. Whether the land in these islands generally is now in course of elevation, I cannot say, but in the Banks' group it is; there is a patch between Mota and Motalava which has become more shallow within my recollection.

I know not whether there are in this part of Melanesia what are properly called atolls. There are lagoon islands of very different character. The Reef Islands of Santa Cruz show flat patches of coral and sand resting on the reefs; in such an example as Nakapu the lagoon is two miles across and the island lies upon the edge. In the Matema group the very irregular loop of the reef carries on it several disconnected islets; of which two in close neighbourhood are inhabited very characteristically: Nifolole by a score or two of Melanesians with their own peculiar tongue, Fenualoa, as the name will show, by men of Polynesian language, and no doubt colonists from the Eastern Pacific. On the other hand Rowa, in the Banks' group, has a very irregular reef, five miles long, with four small islets on the bight, of which one is inhabited; but this is formed upon a jagged point of volcanic rock, to all appearance the fragment of the edge of a sunken crater.

Florida in the Solomon group is peculiar, and calls to mind the mainland of the Aru Islands as described in Mr. Wallace's *Malay Archipelago*, because it is divided into three parts by two channels.<sup>1</sup> I say that the island is divided into three parts, because, though the northernmost channel is pretty wide, there is one name, Nggela, by which the whole is called by the natives and their neighbours, and no native name for either of the parts by itself; and because on the spot the country and the people are one, though traders have begun to speak of the Floridas instead of Florida. I feel sure that this is the island to which Mendana gave the name of Florida; and to the Spaniards certainly, sailing by, it would appear as a single island. It is characterised by sharp ridges, on which, now as then, many of the villages are perched, and by great barren patches of coarse grass or reeds. There is at one place the

<sup>1</sup> Observe the separation of Mara-masiki from Mara-paina by a similar channel.

apparent fragment of a crater, and at another, as I have said, a white cliff the like of which I have seen nowhere else in Melanesia; but the ribs of the island are of limestone. In this a remarkable cavern, called the *suku*, has been explored by Bishop Selwyn.

I should mention a rare feature in the physical geography of these islands. I have spoken of the lake which occupies the middle of Santa Maria in the Banks' group, filling up, as may reasonably be supposed, the crater of the volcano which has formed the island. There is nothing that I have heard of in the Melanesian islands to compare with it; it is, I suppose, quite five miles long, the still steaming mountain Garat having been intruded into it. I was the first European to pass along its shore and to visit the splendid waterfall by which it pours into the sea; and I may be allowed, therefore, to speak of it with interest. But one cannot but think that so large a body of fresh water will some day repay its first scientific investigator with curious forms of life. Its name, moreover, the *tas*, is identical with that of one of the great lakes of Madagascar, Itasy.<sup>1</sup>

There is a much smaller lake in Vanua Lava in the same group (which has been seen by Rev. J. Palmer of the Melanesian Mission), the waters of which are discharged by two fine cascades. Another in Lepers' Island has been visited by Rev. C. Bice. It cannot be very far across, and at the edge furthest from the shore is a volcanic vent, the home of the spirit who governs the island ghosts. Men will go up there and climb a tree at the nearer margin, and call to Nggalevu to show that he is there, and a column of steam will shoot up from the distant shore in answer.

Bishop Selwyn has in this last year visited Tikopia, and found there a remarkable lake separated from the sea by a bank and covered with large water-lilies.

IV. I may venture a few words on the natural history of Melanesia, so far as I know it. The great rarity of mammals will surprise no one at all acquainted with the Pacific. There are *rats* everywhere, that have probably accompanied the natives in their canoes, and *bats* and flying foxes in great numbers. *Pigs* were seen almost everywhere at the discovery of the islands: the very common name of them, *puaka*, in the Pacific, has been rather absurdly derived from the Spanish "puerco," still more absurdly from the English "porker." The most common Melanesian word connects them with the Malay Archipelago. *Dogs* also were not uncommon before the introduction of them by Europeans; a common

<sup>1</sup> The native story concerning this lake is well worth telling. Where the lake now is was once a great plain covered with forest. Qat, the legendary hero of the group, cut down one of the largest trees on this plain, and began to shape it into a canoe. His brothers laughed at him, asking how he could ever get his canoe down to the sea? He answered that they would see by-and-bye. When the canoe was finished Qat took into it his wife and his brothers, and collected the living creatures of the islands, even those so small as ants, and then shut all inside. A deluge of rain came down, the hollow plain became full of water, Qat's canoe tore out a way for itself into the sea by the channel through which the waters of the lake now pour in the great waterfall. There was an expectation of a future return of this canoe, and some years ago, when a small trading vessel was seen standing in for the waterfall, the old people cried out that Qat was come again. There is no doubt that this story was current before the people heard of Noah and his ark.

name of them, *kuri*, may as well be derived from "cur." An opossum or *cuscus* is the one indigenous quadruped, and its distribution is remarkable. It is common in the Solomon Islands, but does not reach to Santa Cruz. It is said to be present in Espiritu Santo alone of the New Hebrides, where Quiros reported that there were goats.

I have not the least belief in the existence of anthropoid apes. The natives generally in the islands, small and great, have stories about the men of the woods, *orang utan*; but they are fully believed, where there is anything of real belief, to be men. Whether these stories are founded on the fact of the existence of the *orang utan* or monkeys in the regions from whence the Melanesians came is another, and interesting, question.

The distribution of the white *cockatoo* is very curious. Abundant in the further Solomon Islands, they stop short at the two straits that separate respectively Guadalcanar and San Cristoval, Malanta and Ulawa. One would suppose that a few miles of sea would be no considerable obstacle to a bird, but so it is; the *cuscus* crosses both straits, and the *cockatoo* is left behind.

There is a remarkable bird that I believe is found in each of these groups—a megapod, a relative of the mound-building brush turkeys of Australia. Mr. Wallace describes these birds of more than one species as he saw them in Celebes and the Moluccas. I cannot say whether there be two species in Melanesia, but the habits of the bird are very different in different places. I am not aware that they make a mound anywhere. In the Banks' Islands and the New Hebrides they lay their eggs in the hollow of a decayed tree, or in a heap of rubbish that they have scratched together. These birds in the Banks' Islands are called *malau*, and the megapods studied by Mr. Wallace in Celebes are *maleo*, with by no means an accidental resemblance. He remarks that the difference in appearance between the sexes is so slight that it is not always possible to distinguish it without dissection. In Savo the natives boldly declare that there is no such distinction at all—that all are hens. At Savo, and also in some other islands, these birds come out of the bush to lay their eggs, and to look after them, twice a day as the natives say. It is a curious thing that at Savo these birds, without any attempt at domestication, become the property of individuals; that is to say, the sandy patch in which they burrow is divided off into distinct properties, the owners of which only have a right to the eggs.

*Fowls*, when I first knew the islands, were common, *i.e.* the native breed like game-fowl. They are now extinct in all the more commonly visited places, the introduced English birds having driven them away and destroyed them. They still, however, abound in Santa Cruz, where the Spanish discoverers observed them.

*Crocodiles* or alligators are abundant in the Solomon Islands and in Santa Cruz; they are known in the Torres Islands, Banks' Islands, and perhaps the Northern New Hebrides. At any rate their name is known, *i.e.* some form of *via* or *vua*, the Malay *buaya*, Malagasy *voay*. In Ysabel, at any rate, the natives declare that the crocodile has four eyes. These hideous reptiles have certain superstitions connected with them; they share with sharks the reputation of becoming the abode or the representatives of departed souls. *Snakes* are not very abundant, nor often

poisonous. It is singular that at Mota, in the Banks' Islands, there are no land snakes, and the natives declare that if brought there they will not live. There is a common and curious superstition about an amphibious snake that haunts the shores; it is believed to have the power of changing itself into the form of a young man or woman to tempt one of the opposite sex. I must mention the *eels* in the *tas*, the lake of Gaua, Santa Maria. They are immense. The natives dig pits at the edge of the lake when the water is low, into which the eels enter when it is high. When the water is again low they spear them. It is the custom in those parts to measure any remarkably large object with a bit of line or bark, breaking it off at the length, and to hang up the measure in the common hall. One of these was shown me, the girth of an eel not of the very largest size, but 30 inches round.

*Frogs* are abundant in the Solomon Islands, but do not come further towards the east. Lizards are abundant everywhere; are in some islands eaten, while some species are very much dreaded.

When Mendana settled for two months at Santa Cruz, and again when Quiros spent a month in the great bay of Espiritu Santo, both of them declare that there were no *mosquitos*. Such are abundant now. The discoverers were no doubt exaggerating the excellencies of the lands they had discovered, yet there must be some meaning in this. It is a singular thing that one name for the mosquito prevails from the Asiatic continent throughout to Fiji. Can it be that this torment of tropical life has been carried about from one source? I think not. But the Spanish discoverers may have meant by mosquito the small house-fly, which was certainly unknown in the Pacific till European intercourse introduced it. The odious blow-fly is too common, with generally the same name throughout Melanesia.

I cannot venture to say anything about the Flora, but I will mention two things which follow on the habits of the people: the areca palm, the nut of which is chewed with the betel leaf; and the pepper, the root of which makes the well-known *kava* drink. It is a remarkable thing that, as I believe, there is no place in Melanesia in which the use of both these narcotics prevails as a native custom. The use of the betel is universal in the Solomon Islands and Santa Cruz, and comes as far eastward as Tikopia. In the Banks' Islands, New Hebrides, and Fiji, it is unknown. The pepper, the betel, grows naturally in the New Hebrides; the areca, of which the nut is chewed with the betel, is, I believe, wherever it is used, exotic, and not indigenous; although there are various species of palms which, to the inexperienced, look the same. One may safely say that the palm, with the use of the nut, has been brought from the West, from the Asiatic side of the Pacific, and belongs to the connection of the Melanesian people with the race commonly called Malay. I do not myself believe in any intercourse in the way of commerce of the modern Malays with the people of the Solomon Islands, but the use of the betel has spread eastwards, as I said, to Tikopia. It would be a point of knowledge worth ascertaining how far westwards this way the use of the betel has spread, and whence it may be supposed to be derived. The use of *kava*, the infusion of the root of the *Piper methysticum* has no doubt come into Melanesia from the Eastern Pacific,

where, as is well known, the Polynesians are devoted to its use. It is certainly a new introduction into the Banks' Islands, in one at least of which it was quite a novelty within my recollection. The Tikopians are Polynesians, and do not use it, nor do the Polynesians of the Reef Islands of Santa Cruz, who have been settled in those islands for certainly more than 300 years, for Mendana found them there. Is, then, the use of kava one that has spread westwards into Melanesia within comparatively modern times? In Madagascar, so closely connected with Melanesia, I cannot learn that either the betel or the kava are used by the natives.

I think it is probable that most people are little aware with how much skill and care those whom we call savages carry on their cultivation in these regions in which unassisted nature might seem bountifully to provide for human wants. A native garden of yams diligently weeded and trained is a beautiful sight. Captain Cook saw, with surprise, in New Caledonia, works for irrigation, which is practised also where water abounds in the Banks' Islands and the New Hebrides. That these are ancient arts is shown by the use of the same word in the Malay Archipelago and in the New Hebrides for a dry garden as opposed to one which is irrigated. The cultivated varieties of fruit-trees and plants are very numerous. In the little island of Mota there are 80 varieties of cultivated yams recognised and named. How many well-known varieties of bananas have their own names I cannot tell; but a native knows them by the look of their stems and leaves.

I say nothing of the natives themselves, except this, that I believe there is a common underlying identity of race as of speech, which displays itself through the amazing multiplicity of languages and dialects, and the great diversity and admixture of the people. I believe that to talk of Malay influence either on the speech or the race is an anachronism; but two currents of influence are, I think, plainly traceable, on which float respectively the betel-nut and the kava root, one ancient, continual, broken in the direction of its course, from the Asiatic side; the other comparatively modern and direct from the Polynesian islands of the Eastern Pacific. The ethnology and philology of Melanesia is to be studied together with that of the whole ocean world which lies between Asia and America; but the most fruitful course of study will not be turned eastwards towards Polynesia, but westwards all along to Madagascar, though that be close to Africa itself.

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## DR. LIVINGSTONE AND LAKE BANGWEOLO.

(*With Maps.*)

BY E. G. RAVENSTEIN, F.R.G.S.

THE map of the Bangweolo, first given to the world after Dr. Livingstone's death, differs so widely from the representations given of that lake on the more recent maps, that it is well worth while to inquire into the reason of this, quite apart from the fact, that anything connected with Livingstone's work in Africa is sure to enlist the sympathy of the geographical public.