


THE
ANTANANARIVO ANNUAL
AND
MADAGASCAR MAGAZINE.


A RECORD OF INFORMATION ON THE TOPOGRAPHY AND NATURAL PRODUCTIONS
OF MADAGASCAR, AND THE CUSTOMS, TRADITIONS, LANGUAGE,
AND RELIGIOUS BELIEFS OF ITS PEOPLE.



EDITED BY THE
REV. J. SIBREE, F.R.G.S.,
AND
REV. R. BARON, F.L.S.,
Missionaries of the L.M.S.



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. *The Editors do not hold themselves responsible for every opinion expressed by those who contribute to the ANNUAL, but only for the general character of the articles as a whole.*

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OVER NEW GROUND:

A JOURNEY TO MANDRITSARA AND THE NORTH-WEST COAST.

SINCE the retirement of Mr. Pickersgill in 1882 from the Mission at Mojangà, the churches and schools in connection with the London Missionary Society in the Ibòina District had been left until the closing months of last year (1886) without either visitation, help, or superintendence of any kind. This was due, not to any desire to abandon the work which Mr. Pickersgill commenced, but to the disturbed state of the country in consequence of the war which continued so long between the French and the Malagasy, and which was carried on perhaps with more vigour on the north-west coast than in any other part of the island. The Imérina District Committee, however, determined, as soon as circumstances permitted, to send one of their missionaries to this district to re-organise the churches and schools in so far as a brief visit would allow, to encourage the people in their profession of Christianity, and to report generally on the condition of the work. Accordingly I was asked to undertake the journey and, on my way, to visit the churches and examine the schools in Antsihànaka and Màndritsàra, Mr. Peill accompanying me as far as Antsihanaka. Having given an account of the churches and schools elsewhere, and on more than one occasion, I shall, in the present paper, confine my remarks to a description of the country, etc.

A journey of this kind, although by no means attended by the dangers and hardships almost inseparable from African travel, is not without its trials, and the first thing to do there-

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fore is to lay in a stock of patience and readiness to "rough it," without which articles you had better stay at home. You must not be too fastidious about the houses you sleep in, even though you should have a dozen black pigs as sharers of your bedroom; you must not be alarmed at the risky craft you may occasionally have to cross a river on, with your body somewhat below and somewhat above water. If your bearers are taken ill or sometimes turn obstinate; if the road leads through mud and mire, or is rendered dangerous by the presence of marauding bands of robbers; if you have to travel with the thermometer at 140 F.; if a thunderstorm overtakes you and soaks you through, you must endeavour to bring your mind to the exigencies of the situation and to make the best of it. Travelling in England and in Madagascar are two totally different experiences. Here, it is needless to say, there are neither roads, railways, hotels, coaches, nor other conveniences of civilization, and consequently there are numerous little difficulties to contend with that are altogether unknown in our own favoured isle. Difficulty number one is that of getting together your luggage; number two is that of securing your bearers; others will follow in good time. As for difficulty number one, it is greater than it seems. When Gordon was sent to Egypt, he was on the Continent the day before his appointment, on the next he was on his way to Khartoum. You cannot do things in a hurry here, however; despatch is an exotic that has not yet taken root in Madagascar. Even in Antananarivo you have to send here and there and everywhere before you find the articles you need. If you want a tin trunk, you have to hunt up a tinsmith, who lives in some unnamed back lane. If you want a pair of boots, you must send your man to find a shoemaker, who resides in some unknown quarter, and who, when found, is as likely as not to be engaged in *fànompòana* (compulsory and unpaid government service) and not able to attend to the job; or who, if free at the time, comes to bargain with you (a most trying proceeding), generally asking much more than he finally accepts. Then there is the hiring and securing of your bearers. They are easily hired, but not so easily *secured*, unless you pay them unreasonably high wages. The difficulty is rendered all the greater if the journey is through a part of the island not often traversed, or through territory where malarial fever rages, or if it is to be undertaken at a time which will render absence from Antananarivo necessary during the *Fandroana* festival. Before leaving for the north-west, I wrote down the names of nearly twice as many men as I needed, in order to secure a sufficient number; but when it came to actually starting, the majority of them did not appear. On the

morning I was to leave Antananarivo one of the men came to say that he was sorry to have to beg off, but that he had some *fanompoana* to do; another man came to tell me that his master had died suddenly, so begged to be excused; and a third said that a peculiar disease had overtaken him: it began in his toes, passed through his feet, up his legs, and gradually mounted upwards until it reached the crown of his head, when it slowly descended again to his toes, only to return to the crown of his head and back again, like the rise and fall of a thermometer! Several of the men I took with me were Mozambiques, who, as rule, prove hardy, hearty, and trustworthy.

We left Antananarivo on Tuesday, September 7th; but on reaching the foot of the hill on which the Capital stands, the two hindermost men called out that a couple of bearers of luggage had disappeared, so one of them was sent off to seek the missing individuals; but being a long time away, his companion ran after him to see what had become of him, when he appeared from an unexpected quarter, and in turn had to go after his fellow. They thus kept up a mutual chase, to our great amusement, for fully half an hour, and in the end, when the men were actually counted, it was found that none of the bearers were missing, but that the two last men had simply forgotten to count themselves.

After four or five days' travelling over the bare hills of Imerina, we reached the village of Ambòdinòka in Antsihanaka. Here Mr. Peill and I commenced a series of school examinations which lasted a fortnight, the result of which both pleased and astonished us. These examinations were held in six different centres, viz. at Ambodinonoka, Ampàrafàravòla, Ambòhijà-nahàry, Tsàrahonénana, and Anòsimbòahàngy.

The people on the western side of Lake Alaotra were, at the time of our visiting them, in a state of great distress on account of deprivations committed by large bands of Bàra or Sàkalàva marauders. Several villages had, a few days previous to our visit, been pillaged by these desperate robbers. At one of them, Ampàndrana, a band of these robbers had recently carried off 900 oxen and 45 women and children, and had speared six of the men who dared to offer resistance. In another place, 3000 oxen and some half-dozen women and children had been swept off. We felt a little trepidation while spending the night at Ambòhitròmby, for only a week before, a village immediately to the north, and three days before, one to the south, had been attacked by the robbers. Ambòhitromby consists of some fifty or sixty houses, but there were not more than about a dozen individuals sufficiently courageous to stop

in the village during the night. The great bulk of the inhabitants, especially the women and children, had resorted to the marsh, where, hidden away among the tall rushes, they had erected temporary huts. Many of the villages were thus deserted at night. It may easily be imagined in what a state of fear and anxiety these poor Sihanaka were living. Many of them had lost their wives and their relatives and slaves. Those who have not travelled much in Madagascar, especially in the border lands between the Sakalava country and the centre of the island, have little idea of the extent to which the people suffer from the raids of these desperate highwaymen, who generally go in such large numbers and so well armed that the people are entirely at their mercy. For many hundred miles along the western border-land rapine and murder are committed by these robber bands with impunity from year to year. And there is no redress. The authorities seem to be helpless in the matter. So great is the danger of a night surprise (and indeed of a mid-day surprise even) in some of these places, that the people form underground passages with a secret entrance from each house, by which they can make good their escape in case of need. The very difficult and intricate entrances to some of these villages, with the thick and impenetrable barriers of prickly-pear and other thorny shrubs, are witnesses to the wild and unsettled nature of many parts of the country.

The great plain of Antsihanaka has more than once been described; suffice it then to say that the greater part of it consists of an immense marsh, some 30 or 40 miles long by about 15 wide, covered with a dense mass of vegetation composed, for the most part, of *Hérana* (*Cyperus latifolius*, Thouars), *Zozoro* (*Cyperus æqualis*, Vahl), *Bàraràta* (*Phragmites communis*, Trin.), and *Vòndrona* (*Typha angustifolia*, L.). At the north-west corner of the marsh is Lake Alaotra, about 15 or 20 miles long, by three or four wide. It cannot, however, be very deep, as water weeds may be found at the close of the dry season nearly across its surface.

Now there is one very interesting fact which I discovered with regard to this lake, and that is, that it once extended over an immense tract of country, not only over the marsh and the flat lands on the western and southern parts of the Sihanaka plain, but over an extent of territory at least 200 miles in length, and perhaps 15 or 20 miles in average breadth; that in fact its northern limit reached at a remote period farther north than 15° , $30'$ Lat. (how much farther I cannot say), and as far south as 19° Lat., and that, moreover, the height of the lake, as it for-

merly existed, actually reached 1140 feet above the present surface of Alaotra. The proofs of the former extension of the lake are as follows: to the west of the lake an old terrace several hundred feet above Alaotra (though how many I cannot say) may be traced for a long distance in a northerly and southerly direction. Not only so, but old lake bottoms may be seen at various heights above the lake. There is first the marsh, a great part of which is still flooded when the water is high; then the level grassy plain fringing the marsh, where great herds of cattle are pastured; then other more or less level tracts rising at successive heights above the plain and visible here and there, showing where the water has once been. To the north of Anosimboahangy and Ambàtobè again, old lake terraces and lake bottoms exist in abundance and are most distinct. One of these is eight or nine miles long and 800 feet above Alaotra. A mere glance at some of them is sufficient to shew their character.

Anosimboahangy is a village (or rather, a cluster of villages) situated on small islands in an extensive marsh, surrounded on all sides by an almost continuous terrace. This marsh, once a lake (which is nearly 600 feet above the present surface of Alaotra), and occupying a depression in the country, has been left up among the hills on the sinking of the waters. Further north still the ground rises, and though it has mostly been under water, few distinctly level lake bottoms are visible. They have become old and defaced with age. On all these lake beds smooth waterworn pebbles, iron nodules, and here and there conglomerate and sandstone, may be found. In one place, where a good part of the low hill (*tanètj*) has been eaten away, there is a horizontal layer of large rounded stones. We did not discover in any of these terraces or lake beds any fossils, though a year or two ago, in Ankay plain (the southern extension of this ancient lake), I found numerous fossil leaves, fruits and stems of plants (see ANNUAL No. VII. p. 61). To the north-east of Mandritsara, however, there were in the old lake beds innumerable tubular holes, $\frac{1}{2}$ in. to $\frac{3}{4}$ in. diameter, and a foot or more deep, filled up with hardened earth which might be taken out in short ruler-like pieces. These holes may possibly have been the homes of a burrowing mollusc. To the east and west of this extensive sheet of water long ranges of hills (though not absolutely continuous) stretch far away to the north and south. Now these ranges form the remnants of an immense arch or great mountain wave, which geologists call an anticline. This arch has not only been worn off by the denuding agents of time (not improbably, in the first instance,

by the action of the sea waves taking advantage of a fissure), but has also been deepened into a longitudinal trough, of which Alaotra probably lies in the deepest portion. Indeed this arch (or trough, as it is at present) forms an integral part of the framework of the country, and was doubtless produced during the period when the island was being uplifted from the sea. At the north-west end of Lake Alaotra there are one or two outcrops of basalt, but I could see no volcanic cones. Quartz is extremely abundant in the northern and eastern parts of the plain, and the rocks, for the most part, about the northern end of the lake contain a large percentage of magnetic iron.

About twenty or thirty miles to the north of Ambatobe, at a place named Anàlaròamàso, there is a considerable deposit of siliceous sinter, which has embedded within it particles of sand and pebbles. Ten or twelve miles further north again there is a second deposit of a similar character, where there is also a circular hollow, with a border of sinter. This has doubtless once been a geyser, whence the water with the silex in solution has issued. In one or two places also we saw what appeared to be miniature craters. Another point is perhaps worthy of mention with regard to this part of the island: it is that the inner line of forest (the one on the eastern confines of Imerina) does not, as marked in maps of Madagascar, join the main line of forest to the north-east. It ends somewhere to the west of Amparafaravola. Probably it was continuous with it at one time, since forests in Madagascar are so ruthlessly destroyed by the natives.*

After leaving Ambatobe, the road passes through uninhabited territory, the next village, Ambàlavàry, being four days' journey to the north. The country, for the most part, is well wooded, and a great part of it is covered with forest, the thickest part of which is to the north of the valley known as Andàlanafindra. The comparatively level country and the good wide pathway render travelling pleasant, and never did I more enjoy a journey through a Malagasy forest than I did through that between Andalanafindra and Ambalavary. Various trees and plants, not found in Imerina, make their appearance here. There was a fern which was particularly striking, and which I had never seen before. It was a climbing fern, clinging close to the trees which it made its habitat. Most of the leaves were button-shaped, about $\frac{1}{2}$ in. in

* At one of the villages Mr. Peill and I visited we counted the young trees that had been used in making the palisade round it, and we found that about 10,000 had been thus employed. These are renewed every eight or nine years. When in Bétsiléo I remember seeing a road which had been cut through the forest in order to drag a gravestone through it. About 25,000 trees had been thus destroyed. These, however, are not the only ways by which the forest is being consigned to destruction.

diameter, and thick and fleshy. These were probably the young ones; but those in fructification were about 3 in. long, and $\frac{1}{4}$ in. wide. Close to our encampment in the valley of Andalanafindra there was a human skeleton, that of a soldier who, returning home from the war, was taken ill on the road, and was left by his companions to die alone. Soon after leaving the forest, several very level lake beds may be seen at various heights. On one of the lowest of these, close by the road-side, there is a crater-shaped hollow. It is as remarkably perfect and regular in outline as it could possibly be, and it is impossible to account for it except by volcanic action.

A little further on in front rose Ambiniviny, the noblest mountain I ever saw. It is one vast precipice, rising from the valley below to the height of fully 2000 feet. It is almost enough to make one dizzy to look up at it; it must be simply awful to look down from its summit. Ambiniviny is the abrupt northern end of a long ridge of gneiss running in a N.N.E. direction for a distance of about 30 miles. From Ambiniviny the ridge takes a sudden sweep round to the N.N.W., forming a precipice several miles in length; but, with the exception of the break in the hills to the south of Ambalavary, the range, more or less regularly, continues north and, some of the people say, runs as far as Antomboka, at the extreme north of the island.

The road descends some 1400 or 1500 feet through this break in the range, until the village of Ambalavary is reached. We are now in what may be called the Mandritsara valley, which is bounded on the east by what appears to be a range of mountains, but which is in reality an elevated plateau (nearly 2000 feet above the valley) and the bed of the old lake mentioned above. In descending into this valley either from the south or east there is quite an abrupt change in the character of the flora. The Tamarind, *Adàbo* (*Ficus sp.*), a species of *Ròtra* (*Eugenia sp.*, a large tree), *Sakòana* (*Sclerocarya sp.*), and other trees, none of which are found in any but the warmer parts of the island, become common and occupy all the valleys and river courses. The Mandritsara valley is *not* volcanic, as has been supposed. There are numerous short hill-ranges and detached hills of a black and barren aspect, but these consist of gneiss, occasionally fissile in structure and weathering into spheroids. Crystalline limestone and graphite are also found in one or two places near Mandritsara.

We slept at Ambalavary, at the eastern foot of Ambiniviny, where the chief occupation of the people, who are Hova, is the manufacture of rum, which is drunk to a fearful extent by almost all the Malagasy tribes. It is not merely the Bètsimisa-

raka who are given up to intoxication; drunkenness abounds quite as much among the Sakalava, Bara, etc. It is only after travelling in various parts of the island that one begins to realize how almost universal is the love of the people for *tàaka* (native rum).

It may be as well to state here that the town marked on the map *Màrotandràno* (not *Màritandràno*) ought really to be *Isòaniadanana*. It is a town of perhaps 100 or 150 houses, sufficiently important to possess an officer with 11 honours as its governor. *Marotandrano* is a Sakalava village of some thirty houses, a little to the west of the road. To the east of the road again there is a village of about 20 houses inhabited solely by Mozambiques. Of these three elements of population the Sakalava much preponderate; then come the Hova, next the Mozambiques or *Makòà*, or *Zàzamànga*, as they prefer to call themselves. It seems that these 'Sakalava,' so called, are not really such, and that the name is a misnomer given them by the Hova. Their tribal name is *Tsimihèty*, and they are in no way allied to the pure Sakalava.

We next proceeded to *Mandritsara*, the most important town in this part of the country. It is about 15 or 16 miles north of *Isoaniadanana*, and consists of about 300 houses. The population consists of Hova and *Tsimihety*; but on the southern bank of the river *Mangàrahàra*, which flows at the foot of the low hill on which *Mandritsara* stands, there is a town of some fifty houses inhabited entirely by Mozambiques. There is really no district known as *Mandritsara*, and what is marked as such on the maps should be *Andròna*, the southern boundary of which is *Ampantàkamàrorèny*, and the northern, the *River Sofia*. One thing that struck me with regard to this part of the island was the scantiness of the population. I expected to find a considerable number of good-sized villages, whereas *Mandritsara* and *Isoaniadanana* seem to be the only two of any importance. There are, however, a good many scattered hamlets of from six houses and upwards even within comparatively short distances of *Mandritsara*.

Leaving *Mandritsara* the road leads over the south-west end of *Bèmolàly* ('much soot,' or 'besooted'), a mountain almost as black and forbidding as its name implies, though it is only one of many such in this part of the country. The character of *Bemolaly*, however, is somewhat redeemed by the presence of two shrubs, bearing perhaps the prettiest flowers I have seen in Madagascar. One of these is a *Bignoniad*, with tufts of large yellow trumpet-shaped flowers at the ends of the branches. But its fruit is as uninviting as its flowers are attractive,

being covered with numerous grappling hooks about an inch long, exactly like a four-pronged anchor. It is almost impossible after taking hold of it with the hand to get it off again without its tearing the flesh. The plant flowers when it is bare of leaves. The second shrub, an Apocynad (probably a species of *Pachypodium*), is a succulent thorny plant, much swollen at the base of the stem, which, like the last, is five or six feet high. From a tuft of leaves at the end of the branches there proceeds a bunch of gorgeous scarlet flowers. Both these plants grow on the bare rock, where it is exposed at the surface. They would make real ornaments in conservatories. Mango trees of enormous size, though not so large as those on the west coast, are very abundant in the valleys here; and the fruit must literally rot from an insufficiency of consumers.

On the first day after leaving Mandritsara we saw two or three flocks of the small green parrakeets, sometimes called love-birds (*Psittacula cana*, Gm.); and also a flock of guinea-fowl. The parrakeets, which have a very swift flight and are gregarious, are only found in the warmer parts of the island. The guinea-fowl, though not inhabiting the highest regions of the country, ascend to a colder climate than the parrakeets dare venture to. Both these birds are extremely abundant in the western parts of the island.

On the second day after leaving Mandritsara we entered a region of granitic gneiss, which soon passed into a pinkish granite, in many parts porphyritic, and in one or two places rising into dome-shaped bosses. One of these is surmounted by two blocks of stone, at one of which Radama I., in one of his military expeditions, is said to have practised his hand as a marksman. Near another of these bosses, which rises out of the valley to the height of perhaps 100 feet, there is a piece of what is evidently calcined gneiss raised on end, so that its dip corresponds with the face of the granite. The calcination is very marked, and numerous mineral crystals (chiefly garnets) have been developed in it. This granite therefore is eruptive and not metamorphic.

The fan-palm known as *Sàtramira* first makes its appearance here and continues almost to the sea-coast. It is a tree about 12 feet high and is probably a species of *Hyphæne*. The fruit is largely used by the Sakalava in the manufacture of rum. The tree divides into two, three, four or more branches, which rise from the very surface of, or even somewhat under, the ground, so that they seem almost like separate trees forming U-shaped figures.

We spent the night of the second day after leaving Mandri-

tsara at Ambòdìmanàry, a small village of six or seven houses on the northern bank of the river Sofia, and at the southern foot of the Sàhantòana mountain. The river Sofia is here a wide but shallow stream. There is no town named Sofia, as marked on the maps, neither is there, properly speaking, a town named Bèfandriana, as also given on the maps. Befandriana is the name of a mountain, and also the name of the district. What is given as the town of Befandriana is really Isombòana, sometimes called Andròvanimàvo, because the governor of the district (who, by the way, is under the governor of Antsihanaka), a Sakalava of 11 honours, is named Ramàvo. This is one of the very few places where there is a non-Hova governor. The river Isomboana, rising a little to the east, flows past the south side of the town. It joins the Ankazambo (which flows a mile or two south of the town); the Ankazambo joins the Tsínjomòrona, which flows into the Doròà; and this last empties itself into the sea somewhere between the river Anjingo (given on maps as Antsingo) and the Sofia.*

From Isomboana onwards to the sea the country becomes comparatively level (or rather, covered with innumerable very low hillocks from 20 to 50 feet high), with a low hill-range away to the west, and an isolated mountain here and there. The valleys between the hillocks are mostly occupied by marshes or ponds. A long valley of some 15 to 20 miles runs to the south, and a range of mountains immediately to the east runs for away to the north. The strike of the gneiss is in a northerly direction, with a dip to the east of about 60°.

On our arrival at Isombòana, the population of which consists almost wholly of Hova, we found dwelling in small extemporized huts by the river side a large number of Sakalava, who had been collected from the surrounding country to do *fanompoana* in the shape of building a new residence for the governor. This, however, was not the only building that was being erected in the town, for, as there had been a recent fire, nearly all the houses, some fifty or sixty, had been burnt down, a frequent occurrence in these villages, where the houses are built of palm leaves and grass and placed in close proximity; for if one takes fire, the whole town is almost sure to be destroyed.

From Isomboana to Andrànosamònta (*samònta*=high tide, or rather, the tide at its highest) is four days' journey. As one nears the sea the country becomes covered with large blackened and rounded blocks of gneiss. I expected soon after leaving

* The geographical errors pointed out in this paper have been corrected in Mr. Johnson's recent map issued from the F.F.M.A. Press, in which also the map of the district traversed as far as Anòrontsànga has been embodied.

Befandriana to reach the limits of the gneiss, but, with the exception of basalt, which I found in one place, the gneiss, with a dip of 70° or 80° to the west, stretches as far as the village of Iraony, not many miles from the sea.

After leaving Isomboana, we slept at the small village of Ampõtamainty, a little to the south of the hill Mahèrivàratra. Next day we had our mid-day meal in a wood with a stream running through it, but the *Mòkafòhy* (a small stinging fly) were so abundant that we were heartily glad to quit the place.

We encamped for the night on the northern bank of the river Anjingo. After we were comfortably ensconced, a very heavy shower came on accompanied with thunder and lightning. Several *Saobakàka* (a species of frog or toad), but different from the *Saobakaka* found in Imerina, visited us in our tent. Also a very large *Tàrabiby* (a species of *Mygale*?) looked in to see what was going on. This certainly was a most unwelcome visitor, and some of the men quite shrieked with fear, for, if native accounts are correct, the bite of this spider is fatal. It is a trap-door spider, but leaves its hole open, in the same way as the spider known as *Ambóabé* in Imerina. After we had laid down to sleep (for the rain pouring down unmercifully upon us, I had accommodated nine men in my tent), it was discovered that we had fixed the tent over an ants' nest. The men, however, forcibly stopped up the entrance, and, as far as the mosquitoes would allow, they got a comfortable night.

For the greater part of the next day the road followed the bank, sometimes the bed (for the river was now very shallow), of the Anjingo. We stopped to rest under the shade of the trees by the side of the river, and had a refreshing bath. The men caught an eel and also a couple of *Piamèna*, a fish about the size of a trout. Prominent among the vegetation which clothed the river banks and made the scene beautiful were a *Barringtonia* (*B. speciosa*), with its long pendent spike of flowers, the *Rótra*, a very large tree common on the banks of rivers in this part of the island, the *Sohihy*, also found along the river banks of West Madagascar, the *Adàbo* (*Ficus* sp.), a species of prickly *Mimosa* (*M. asperata*), a palm, a pandanus, the Jack-fruit tree, with its enormous fruit, as well as numerous other trees and shrubs.

Next night we slept at the village of Iraony, near which there is a largish river of the same name. A mile or two to the north of the river there is a beautifully situated small lake named Andràmponga, a resort of wild-fowl and crocodiles. Near Iraony the gneiss passes under limestone and sandstone formations. A light-coloured sandstone was the first of the

sedimentary rocks that came into view, but a mile or two further on a grey hard limestone made its appearance, which was crowded with fossils, especially bivalves and gasteropods.* The sandstone, however, was the prevailing rock, and attained a great thickness further west, where a range of hills, running for many miles in a northerly and southerly direction, occupies the peninsula to the west of Radama Bay. Indeed the greater part of the country hereabouts is covered with sandstone, which dips seawards at an angle of about six degrees. Both the sandstone and the limestone lie unconformably on the gneiss, indeed the gneiss, where it passes under the sandstone and limestone, is nearly vertical (having a dip to the west of about 80°). The vegetation, as one nears the sea, with the exception of the trees and shrubs which seem particularly to love the river sides, consists mainly of *Sàtramira*, *Sàtrambe*, *Vòavòntaka*, *Sakòana*, *Bonàra*, and *Màvoràvina*, which are spread far and wide over the country, while the valleys are occupied chiefly with *Rofia* palms and, if sufficiently moist, with *Viha* (a large arum). Of course numerous other plants are found, but the above constitute the chief forms of vegetation. The *Satramira* and the *Satrambe* are both species of fan-palm (*Hyphæne*?). The *Vòavòntaka*, a low prickly tree, with a fruit much like an orange in appearance, but much larger and with a hard shell, is a species of *Strychnos* (*S. spinosa*, Lam.). The *Sakoana* (*Sclerocarya* sp.) is a tree which supplies an edible fruit about the size of an apple, but with an acid taste. The *Bonara* (*Albizia Lebbek*, Benth.) is the *Bois-noir* or Black-wood; and the *Mavoravina* (which belongs to the Order Malpighiaceæ) is a tall shrub or small tree with long, weak, straggling branches, which appear as though they had once been in the habit of climbing, but had recently resolved to lean no longer on others for support.

The birds here were nearly all unknown to me. The *Goaika* (a crow, *Corvus scapulatus*, Dand.), *Papàngo* (a kite, *Milvus ægyptius*, Gm.), *Isikoròvana* (a fruit-thrush, *Hypsipetes ourovang*, Gm.), *Kaitso* (a cuckoo, *Coua cœrulea*, L.), *Toldho* (a lark-heeled cuckoo, *Centropus tolou*, Gm.), *Kankàfotra* (a cuckoo, *Cuculus Rochii*, Hartl.), *Vòrompòtsy* (an egret, *Ardea bubulcus*, Sav.), *Manàrana* (a

* I may say that we found fossils in many places, not only on the road to Anorontsanga but also between Mojanga and Antananarivo, in fact wherever the limestone occurred. I hope at some future time, after their identification in England, to give a list of them, and the localities where found, as also further particulars of the geology generally of the north-west of the island than are given in this paper. Suffice it here to say that the fossils consisted of *Ammonites*, *Belemnites*, *Gryphaea*, *Nautilus*, *Ostrea*, *Pentacrinus*, *Micraster* (?), etc., presenting a series of forms which almost certainly belong to the Cretaceous or Jurassic formations. A little to the north of Majàmba Bay on the sea-coast we found Nummulitic limestone.

species of cormorant ?), and the *Akanga* (guinea-fowl) were about the only birds I recognized. The *Akanga* are very abundant and afford excellent food. The *Toloho* too are exceedingly common. After some four hours' travelling from Iraony we came to the river Mèvaràno, which is the northern boundary of Befandriana. As we were crossing the river, a singular occurrence took place. Two crows were quarrelling and pecking at one another in the air, when suddenly one fell helpless into the water. We found that its wing was broken. We set it free, and it seemed quite astonished at its inability to rise in the air. However, it went skipping off under the trees.

We stayed a day or two at Andranosamonta, a village of about 100 houses, situated on the south-east bank of the inlet of the sea known as Radama Bay. Leaving Andranosamonta, our road led northwards. In an hour or two we came across a bed of shale with numerous fossils, more especially species of Belemnites and Ammonites. The Belemnites seem to be common in many localities in the western parts of the island. The Sakalava use them as rifle balls and call them *bàlahàra*. Some of the Ammonites are of large size; one we saw was fully a foot in diameter.

About a mile and a half to the north of the village of Mahìtsihàzo the road leads up an ascent on which there is a rather remarkable rock. It is about the size of a cottage and rests apparently on the sandstone. But it is most curiously though irregularly guttered with deep and somewhat canoe-shaped channels, some of which are fully a yard in depth. It is as though it had been put into a lathe and gouged, leaving ridges and prominences between the channels, which, however, are not continuous round the rock. In the valley immediately to the south there is another of these curious rocks, and to the north there are several others. From under one of them we obtained a kind of blue clay, which was apparently mixed with decayed sandstone. They seemed to me to be perched blocks, as there was no hill near from which they could have fallen, nor any rock of the kind *in situ*. I could think of no agent to account for their occurrence but that of glacial action. But having an appointment at the time, I could only examine them in a cursory manner; I leave the matter therefore to be determined by future travellers. The country here becomes hilly, with frequent patches of forest. It reminded me of the Tanàla country to the east of Bètsilèo; the vegetation, however, is quite different from that of the interior, or that of the eastern part of the island. The Traveller's-tree (*Ravenala madagascariensis*, Sonn.) becomes common, but the *Adabo* and the

Tamarind tree are not so abundant as they are further inland. Among the trees and shrubs I recognized here the graceful Bamboo (*Nastus capitatus*, Kunth.), the *Kòropétaka* (custard apple?); the Cardamom (*Amomum Daniellii*, Hook. fil.); the *Sorindrana* (*Sorindia madagascariensis*, DC.), a tree with sweet edible fruit in bunches; and others.

To the east of Andranomalaza, where we slept after leaving Andranosamonta, there is a remarkable hill named Angoraony. It is composed entirely of sandstone in numerous and almost horizontal beds. It has quite a unique cathedral-like appearance; I know nothing at all similar to it in Madagascar.

Leaving Andranosamonta, the next day brought us to Ankaramy, where the Malagasy forces were encamped during the war with the French. It is a large town (for Madagascar) of some 500 houses. Before the war it was of no great importance, and now that peace has been restored, many of the people are returning to their homes, so that it is becoming considerably deserted.

We next proceeded to Ambodimadiro, which is about seven hours' distance north of Ankaramy. The road passes frequently through patches of forest, which branch out from the great mass of vegetation which clothes the mountains immediately to the east. Apparently the forest, which runs round the northern part and then down the eastern side of the island, commences hereabouts. It seems to be generally believed that this forest forms a continuous belt around the island; personally I have long doubted the existence of any such continuous forest. In the western part of the country there are no doubt forests here and there, sometimes of great extent, but they do not seem to be continuous, unless indeed country with abundant, but mostly open, vegetation is reckoned as covered with forest.

Ambodimadiro lies in a snug hollow on the sea shore, with abundant trees and shrubs in its neighbourhood. Nòsibè may be seen quite distinctly in the distance. The town of Ambodimadiro was in the hands of the French during the time of the war; the Hova have again returned to it, though the inhabitants are as yet by no means so numerous as they were four or five years ago. The place is, however, gradually increasing, and will doubtless soon assume its former importance.

On the sea shore here the rock is of slate-like appearance; it is, however, a limestone, or rather, a limestone shale, black, split up into numerous joints, and traversed by numerous dykes. Our next destination was Anòrontsànga, which we meant to reach by sea. There were, however, no boats in the harbour at the time, and we had to wait two days before one made its

appearance. As it was too small to accommodate more than eight or nine of us, the remainder had to go by a *lakam-piàra* or outrigger canoe.* As the wind was unfavourable, it took us two days to reach Anorontsanga. On the first day we caught a couple of 'Sucking-fish' or Remora (probably the *Echeneis naucrates*), that strange fish with the flat disc on its head, by which it attaches itself to ships, sharks, etc. We found them excellent eating. We had our mid-day meal in one of the villages belonging to Benao, a Sakalava chief who, during the recent Franco-Malagasy war, fought against the Hova. This was the only place in all our journey where no official enquiries were made after the Queen, Prime Minister, etc., indeed we appeared to be unwelcome visitors. However, the stiffness of the chief man somewhat relaxed after a little conversation, and he brought me a chair, and on our departure gave me four young cocoa-nuts. That night we cast anchor near the shore and slept on the boat, but the rolling was so heavy that we could only get snatches of sleep. In the night we had a shower of rain, upon which the boatmen put over our heads a very uncomfortable greasy oil-cloth, full of holes, which dripped at a score of places, allowing the dirty water to trickle all over us. Fortunately, however, the rain did not last more than a few minutes. The next day brought us to Anorontsanga, where we were warmly welcomed by the worthy governor, Rakotovao, 13 Honours, and his staff.

Perhaps it is needless to say that Anorontsanga, like Mojanga, consists of two towns, one near the sea, where the Europeans, Hindoos, Arabs, Mozambiques, etc., live; and the other half a mile distant from the coast to the north, situated on a hill, planted with mangoes, cashew-nut trees, etc. The view from this hill is very beautiful: in front lies a bay proceeding from the Mozambique Channel; the sea shore is lined with an abundance of cocoa-nut trees; and the country around, which is mountainous, is well wooded, the graceful bamboo, so abundant on the eastern side of the island, waving its head amid the vegetation. As it is only recently that the people have returned from Ankaramy, the whole place is yet more or less in a state of dilapidation. The ruins of houses blown down or fired by the French are still standing, heaps of rubbish and fallen walls are everywhere visible, and it will be some time before the place is restored to anything like order.

After our work was completed at Anorontsanga, we hired a boat, with the help of the governor, from a Hindoo trader, for

* See ANNUAL No. III., p. 23; *Reprint*, p. 279.

eighteen dollars, to take us to Mojanga. We set sail therefore one fine hot morning about nine o'clock with a fair breeze, and that evening reached Nòsy Làva. An Arab is the Queen's representative here, and he sent word that he would come to receive us by and by, but must first go to evening prayers. After a short time, he came and made through an interpreter the usual formal enquiries after Rànavàlomanjàka, etc., and conducted us to a small but clean hut made of dried palm-leaves (the leaves of the *Satrambe*), and containing no other furniture than a couch. By and by a meal was brought me, of which the coffee was truly excellent. I was then asked if I needed water to drink, to which I replied in the affirmative. "Scented?" said the man? "Yes," I replied, for I had already been told that the water on the island was most insipid, besides I was curious to know what the scented water was like. Being very thirsty, I took a copious draught of it, but after I ceased drinking, I felt certain that the beverage I had partaken of was not only scented with, but mixed with, paraffin oil. After spending a comfortable night here, we left early next morning; but as there was little wind, we scarcely made any headway that day.

Nosy Lava is an island composed of a light-coloured sandstone in numerous step-like horizontal beds. The village at which we stopped consists of perhaps 100 houses stretching in a double row along the edge of the semicircular bay. The inhabitants are mostly Sakalava belonging to Iànona; but there are also a good many Arabs, who trade in rice, etc. There are one or two other villages on the island besides that at which we called, but how many and how large I do not know.

The next night we anchored near the shore and slept on the boat, but the rolling was so heavy as to make us all sick and ill. The night following we spent at a small Sakalava village of from eight to ten houses, named Ambòlobòzo, some distance to the north of Majàmba Bay. Here I had a delicacy in the shape of oysters. On the north-west coast there are two species of oyster, one called by the Sakalava *Sàja*, which may be seen covering the rocks in great abundance on the sea shore at low water.* It is a small oyster, but excellent in quality. Another, known by the Sakalava as *Mandròmbo* or *Téfaka*, is only found below water at some depth. It is a much larger oyster than the *Sàja*, with the interior of the shell beautifully pearly. Whether connoisseurs would pronounce it excellent I cannot say, but to my taste it was delicious.

The rock on the sea shore at Ambolobozo is a light-coloured

* It is also found on the East coast.

limestone, full of fossils; in some parts it is inclined to be crystalline. Here and there it is worn into very sharp edges and points, rendering it dangerous to walk on, a character which is very common in the rocks of N.W. Madagascar. Some parts of it again resemble walls of ruined masonry. It is also somewhat cavernous. In one place in the low cliff accessible to the sea, a tunnel has been worn into the limestone about twelve feet high, but so narrow as to permit one to enter it only with difficulty. Not knowing what size the cavern might be, I lit my lantern and entered it; however, my exploration was no sooner commenced than ended, for I found the passage to be not more than 30 or 40 feet long. Large detached blocks of the limestone were lying by the edge of the sea, in which were numerous small hollows containing pools of sea water, the homes of small fish, crabs, etc.

We hoped to reach Mojangà the next day, for with a good breeze the journey from Anorontsanga to Mojangà may be accomplished in a couple of days, but the wind suddenly failing us in the evening, we were obliged to heave to and remain another night in the rolling boat, getting what snatches of sleep we could. They were, however, truly 'snatches,' for no sooner had we relapsed into self-oblivion, than a sudden lurch roused us to the fear that the boat had upset. Early on the following morning, however, we entered Mojangà, where we had a most hearty and kindly reception from the governor, Ramàmbazàfy, 14 Honours, and the people. A bath, some food, and a sleep, soon restored us to comparative comfort, except that everything seemed to be reeling, as though in a gentle and prolonged earthquake.

Mojangà was altered somewhat by the French during their occupation of the town. A jetty from 80 to 100 yards long, and 5 to 6 yards wide, for unloading ships, now exists in the harbour; many of the fine mango trees, though by no means all, were cut down, and almost all the Hova houses destroyed, including the one in which Mr. Pickersgill resided.

After remaining a week at Mojangà, we resumed our journey, with our faces homewards. We first of all visited Betsàko, a village of 60 or 80 houses, about six or seven hours' ride to the east (or north-east?) of Mojangà. The mango trees here were the largest and finest I ever saw. They were laden with fruit, so that all of us ate to our heart's content. The fruit actually reached down to the ground, so that one of my men truly remarked that one could eat it off the tree, not only sitting, but even lying on one's back.

We next visited Ambòhitròmbikèly, south-east of Mojangà.

The Hova camp was stationed here during the recent war. The town, which, during the war, contained perhaps 500 houses, is now almost deserted; there is, however, a sufficient population left to justify the existence of a governor.

The country to the east of Mojangà for a great distance consists of limestone, in many parts fossiliferous. The strata are almost horizontal and of great thickness, and are in many parts covered with water during the rainy season. These limestone strata end abruptly a few miles to the south-east of Ambohitrombikely, forming a declivity, which may be seen running away to the east. The sea has formerly doubtless reached up to this declivity, but has now retreated, owing to the deposit of detritus by the River Bètsibòka. The vegetation in this part of the country consists, for the most part, of the *Vakdana* tree (a *Pandanus*) and the two fan-palms, *Sàtramira* and *Satrambe*, which in fact occupy a vast area in the north-west of the Island. While speaking of the vegetation, I may say that the flora of the north-west coast (and doubtless of the west coast generally) is quite distinct from that of the east coast, and both from that of the interior of Madagascar. A few forms, as the *Filao*, *Lomgòzy*, *Vaha*, the Traveller's-tree, etc., are common to both the east and west sides of the Island; while some score or so of plants that occur in the north-west are not only found in the east, but also in the interior. The great bulk of the flora, however, is peculiar to the west coast.

Leaving Ambohitrombikely, we next stayed at Mèvaràno; where the mosquitoes were unspeakably unbearable. My men managed to make for themselves mosquito curtains by hanging up their *làmba* in such a way as to allow the sides and ends to reach the ground, thus effectually keeping the insects out.

Our next resting-place was Miadàna, and the day following we arrived at Màrovoay. This is a town of probably 300 or 400 houses. The country round about for many miles is composed of alluvial soil which has been deposited by the Betsiboka, which a little below here enters the sea. The stumps of *Afiàfy* trees (probably a species of mangrove), which are only found on the sea-shore, may still be seen several miles inland at the foot of a low range of hills, where also there is an old anchor. Some time ago an old cannon was also found about the same locality, and the people think there must formerly have been a shipwreck, which indeed is probable.

Leaving Marovoay we crossed the Betsiboka and arrived at Mahàbo, where the *Màngoràno* (a variety of mango) were extremely abundant and exceedingly delicious. We next followed the west bank of the Betsiboka for some distance, then

travelled by canoe for a few miles, seeing innumerable crocodiles, and slept at a village not far from Bèsèva. Then we proceeded to Beseva and Ambèrobè, at which latter place the heat (140° F. in the sun) was most intolerable. The country from Marovoay to Amberobe consists of sandstone and shale, the latter containing numerous fossils, especially Belemnites. At Amberobe we saw the head of a wild-boar which had just been killed. The people here say that there are three kinds of wild boar, the *Làmbo*, *Làmboasio*, and *Làmboròmbà*.

We next made for Antòngodrahòja, calling at Trabònjy, Ankoàla, Ambàlanjànakòmby, etc., on the way. At Antongodrahoja there are the remnants of several large volcanic craters. Two of these form the rude figure of a 3; a third, on the western (or north-western?) side of the hill on which the village stands, has probably been about three miles in diameter. In some parts of the basalt which form the rim of the crater, numerous and beautiful potato-stones, which are hollow and lined with sparkling quartz crystals, occur.

We went from Antongodrahoja to Amparihibè, where we found the River Betsiboka had shifted its bed, for instead of flowing past the south of the town (as it did a few years ago), it now passes a mile or so to the east.

After leaving Amparihibe, we proceeded to Mèvatanàna. As the country to the south of this town is often infested by robber bands, people travelling in that direction collect here and start every Monday in a great company for mutual protection. There were about 300 of us therefore when we left Mevatanana. We passed through the infested district without seeing anything more than a rude grave and traces of the blood of a man who a few days before had been foully murdered. A week after leaving Mevatanana we reached Antananarivo all safe and well, having been away about three months and a half.

R. BARON (ED.).

Subjoined is a list of words, not found in the Dictionary, most of which I collected on the journey.

Àlampàtana, Antsih.	A species of snake.
Àlantsàvoka, Betsim.	Same as <i>kirihitràla</i> (brushwood, undergrowth).
Alòvo, Sak.	A species of sea-fish.
Àmbariaka, S.	'' '' '' ''
Àmbàriray, Btm.	The raised floor of a house.
Ampàndro, S.	A species of sea-fish.
Ampàtrana	On high ground.

- Andèvonkòtrika, A. A species of wild-fowl,
 Andòny, S. " " " " sea-fish.
 Angèra, Btm. " " " " "
 Anjamànga, Betsileo " " " " "
 Ankia, S. " " " " "
 Ankòadàvitra, Tandrona. Either a species of millipede or *Zephronia*.
 Antàfa, S. A species of sea-fish. Same as *Zòmpona*, B.
 Antèndo, S. " " " " "
 Antèndy, S. " " " " "
 An-tèty, S. " " " " "
 Antròva or Tsiantròva, Btm. Same as *an-tanèty*.
 Antsèraka, S. A fresh-water fish; east coast.
 Bàlahàra, S. A species of sea-fish.
 Bèlànjàtrika, S. Nodules of iron pyrites having a radiated
 Bankòra, S. structure; also species of *Belemnites*, both
 Besisika, S. of which are used by the Sakalava as rifle
 Bètràtra, Btm. balls.
 Bètro, S. The same as *Balahara*, above.
 Bika, S. A species of sea-fish.
 Bòdofòtsy, Imerina A species of sea-fish.
 Borlaka, A. A light-coloured snake.
 Botràndra, Btm. A joke, a jest.
 Dànga, Bts. A sea-fish.
 Dìngadingana, S. A kind of bird.
 Dìnta, S. A small marine animal found on the sea
 Dongòrovoànana, I. shore. (Not a fish, as in Dictionary.)
 Fanàngo, Btm. A species of sea-fish.
 Fanèntambàto, W. I. A large dark-coloured heron.
 Fiaminty, Btm. A white kind of bird. Perhaps the same as
 Fìbéza, S. *Vòrompòtsy* (the white egret).
 Fihòhoka, Bts. A species of ant-lion as yet unknown to
 Fisaodrànòfòtsy, Bts. science. *Palpares* sp.
 Fìtìzy, I. A species of sea-fish.
 Fòfok' aina, T. " " " " "
 Fòlotsipay, I (?). A kind of bird.
 Fonaingo, Btm. A kind of sandpiper. Same as *Fandàfàsika*.
 Fòtabé, Btm. Stays.
 Fòto-bàdy, Bts. Same as *fòfon' aina*.
 Gàsilaitra, N.W. coast. A kind of bird.
 Gàsý, N.W. coast. A tree. *Barringtonia speciosa*, Forst.
 Goàka, A. Same as *fòfom bàdy*.
 Hakàtrana, A. Same as *Gàsý* (from Engl. 'gas-light') below.
 Halàmpom-bòninàhitra, I (?). Paraffin oil (from Engl. 'gas').
 Házofòdy, I. A crow. Same as *Goaika*.
 Hèrotra, S. A species of fish. Perhaps the same as *Ka-*
 Himby, S. *tràkana*, A.
 Hitikìtika, Btm. A plant, probably introduced.
 Hèrotra, S. A species of sea-fish.
 Himby, S. The 'Remora' or sucking-fish. *Echeneis*
 Hitikìtika, Btm. *remora*.
 Hitikìtika, Btm. A cane or rush frame for catching fish with.

Horita, Btm.	The octopus (not the cuttle-fish, as in Dictionary).
Horôa, Bts.	A species of sea-fish. [nary],
lâva, Bts.	The south of the hearth.
Injâry, T.	A mother.
Jâly, Btm.	A lamp.
Jao, T.	A fresh-water fish; east coast.
Jêbojêbo, Btm.	A man.
Kâba, I.	A species of cricket.
Katrâkana, A.	A species of fish. Perhaps the same as <i>Ha-</i>
Kâtry, A.	Intestinal worms. [<i>kâtrana</i> , A.]
Kêlankâmba, S.	A species of sea-fish.
Klankiana, Btm.	A kind of bird.
Kikaoa, S.	A species of sea-fish.
Kility, S.	The fan-tailed warbler. Same as <i>Tsintsina</i> .
Kilônjy	A pebble.
Kirôty, I.	A water bird. [<i>lirioides</i> , Baker.]
Klâsaka, I.	A tough fibrous plant. [<i>Xerophyta dasy-</i>
Kodivy, S.	Same as <i>Ankia</i> , above.
Lâmborômba, S.	A species of wild-boar.
Lâmboasio, S.	" " " " "
Lândinantsôro, I.	A large caterpillar.
Lôvorâtý, Btm.	A species of sea-fish.
Mahêtsakasira, S.	The sea.
Malâza, A.	Twopence. [comes dear.]
Mamândri-bâry, I.	To lay in a stock of rice for sale when it be-
Mamioka vâry, A.	Same as <i>mivély vâry</i> (to thresh corn).
Mamôha, Bts.	Same as <i>mankatrâtra</i> .
Manângatra, Btm.	To bewitch.
Manângy, T.	A woman.
Manâtsona, Bts.	To smell anything.
Mandrômbo, S.	A large edible oyster.
Mâranâbo, S.	The fruit of the <i>Rofa</i> palm.
Mâranday, S.	Morning.
Mâsokôra, S.	A father.
Masôva, T.	The sun (the <i>o</i> like <i>o</i> in 'note').
Mâsovôatôaka, Btm.	A fresh-water fish; east coast.
Matsitso, S.	Same as <i>mahârikivy</i> (bitter).
Mibiloka, I.	Bent, awry. Same as <i>mbirirîôka</i> (to whiz).
Mibôkibôky, I.	-----
Midôla, S.	To play.
Mikôro, Btm.	To sing.
Miômboômâna, A.	A species of wild-fowl.
Mirângo, S.	A tree, probably an acacia.
Mitôvy tântana, I.	To be level.
Mitsorôrika, I.	To run, as molten lead.
Môndaka, I.	-----
Môravôa, S.	A species of sea-fish.
Nanôda, S.	A father.
Nkonôndro, S.	A species of sea-fish.
Pêlafisaka, S.	" " " " (not <i>Pêlafika</i> , as in Dic-
Pôno, S.	A species of sea-fish. [tionary].
Rabôntsy, S.	A thorny tree.
Rafiâsy, S.	A father.
Randrâna, Bts.	A kind of soft reddish rock used for colouring dishes.

- Ratàna, Btm. A species of snake.
 Ròndro, S. The sky (as well as 'a cloud').
 Sahàza, A. Same as *vòkèy* (full, satisfied).
 Sàja, S. A kind of edible oyster found abundantly on rocks on the sea shore.
 Sakivy, I. The larva of a beetle (a kind of *Vòangòry*)
 Salàmovàlo, Bts. A kind of bird.
 Sampia, S. A species of sea-fish.
 Sà nabàvy, I. An imprecation.
 Sà nadàhy, I. " " "
 Sanéndry, S. An imported aromatic vegetable substance.
 Saròy, Btm. A fresh-water fish; east coast.
 Sàtrambè, S. A species of fan-palm. *Hyphaene sp.*
 Sohily, Bts. " " " wild-duck. Same as *Tsiriry*.
 Sòngotàny, I. A projecting headland; also a small island in rice-fields, etc.
 Soritra, A. A species of lark. Same as *Soróhitra*.
 Sosòy, S. " " " sea-fish.
 Tabòro, S. A kind of tree.
 Tahòboka, Bts. and Btm. A cooking-pot.
 Tamàna, S. Fat, plump. Same as *matàvy*.
 Tambòho, Btm. Same as *tanèty* (downs, open country)
 Tatàrosònisòny, Bts. A kind of bird.
 Tàvina, Btm. Same as *fàly* (?). "*Mitàvina ny vòalavo.*"
 Téfaka, S. " " *Mandròmbo*, above.
 Tòkitóky, S. A kind of sea-shell.
 Tonàndro, A. A species of lemur.
 Tòngo, T. " " " "
 Tra trao, S. A kind of sea-fish.
 Tsàkatsàkangily, S. The teeth.
 Tsakòko, Btm. A kind of bird.
 Tsaròro, Btm. A species of cuttle-fish.
 Tsiandiandòmboky, S. " " " sea-fish.
 Tsi bòlobòlo, S. A kind of caterpillar.
 Tsi lamòdamoka, A. A cat-like animal.
 Tsi antròva, Btm. A species of sea-fish. Same as *Antròva*.
 Tsi ngàlamainty, I. " " " minute black water beetle.
 Tsi ngàlavàdika, I. " " " water-boatman. (All the *Tsin-gàla* appear to be water-beetles.)
 Tsi ngaotràtra, Btm. An insect found on sugar-cane.
 Tsi slotsioka, Btm. A species of sea-fish.
 Tsi vòngo, A. The male *Ardy* (a wild-duck).
 Valàladrisa, I. A grasshopper.
 Vàlohàra, S. A kind of limpet.
 Vàn jahilatra, T. Blacklead.
 Vàn ovàno, Btm. A small eel found abundantly in the sand at the outlets of lagoons.
 Vàtonòmby, W. I. Quartz pebbles containing tourmaline.
 Vàzandàhy, Bts. Same as *Bòdkèy* (a black parrot).
 Vàzimbàzina, I. "
 Vòantsànjy, S. A species of sea-crab.
 Vòlonjòro, A. Same as *Vòronjozòro* (a species of warbler).
 Vònitra, S. Dew.
 Vòronkòntsy, Btm. The white egret. Same as *Vòrompòtsy*.

STUDIES IN THE MALAGASY LANGUAGE:

NO. V.—THE COMPOUND VERBAL PREFIXES.

IN my article "On the Inflexion of the Verb in Malagasy," in No. IV. of this magazine, I tried to show that the causative and reciprocal prefixes in Malagasy (*mampan*, *mampàha*, *mampi*, *mampiha*, *mifan*) are compounds, formed in a very simple and systematic manner by a combination of the corresponding simple ones (*man*, *mi*, *maha*, *miha*), placing a new prefix before the verbal noun of the verb formed by the simple one (e.g. *mamèly*, to beat; *mi-famèly*, to beat one another), only subjecting this juxtaposition to the general laws of euphony; e.g. *manao*, to do; *fanao*, manner of doing; *mam-panao* (for *màn-fanao*, which would be an impossible combination in Malagasy), to cause one to do a thing. And I have up to this time seen no reason for changing my opinion.

But a writer in the last number of this ANNUAL (No. X. p. 255), briefly reviewing a little French pamphlet by Père Jean, says that if this author is right in considering the Malagasy causative prefix *mampi* to be derived from the Malay *mempèr*, "the theory of Mr. Dahle would of course fall to the ground." He has, however, himself some doubt as to the correctness of this derivation, chiefly because it seems to him that the causative sense in Malay is produced less by the prefix *mempèr*, than by the affix *kan* generally coupled with it.

The suspicion intimated is certainly reasonable enough; for, as a rule, the causative sense in Malay clings to the affix *kan*, and does not at all depend on the *per* (= *ber*) in *mempèr*. In Malay the causatives can be formed in two ways, viz.—(1) By the prefix *men* (= Malagasy *man*) and the affix *kan*. (2) By the prefix *mempèr* (i.e. *men-ber*) and the affix *kan* (applied at the same time). It is only quite exceptionally that *mempèr* alone renders a verb causative.*

If we now compare with this the compound prefixes (as I consider them) in Malagasy which I have enumerated above, we shall have to make the following remarks:—

(a) All the Malagasy verbs in *mampi* have a causative sense; whereas the Malay verbs commencing in *mempèr*, as a rule, only get a causative sense when the affix *kan* is added.

(b) In Malagasy the only manner of forming a causative verb is to make it commence in *mamp* (*mampi*, *mampan*, etc.); whereas in Malay the causative verbs are more frequently formed without the syllable *per* (in *mempèr*), and only by the affix *kan* and the prefix *men*. This proves that the syllable *per* in Malay is generally of no importance whatever for the causative sense, while the *p* (*pi*, *pan*, etc.) in Malagasy is essential to it.

(c) If the Malagasy *mampi* is to be "derived" from the Malay *mempèr*, what then has become of the final *r*? This letter may in these languages

* See L'Abbé P. Favre's *Grammaire de la Langue Malaise*. Vienne: 1876; p. 117-126.

easily pass into *l* or *d* and even into *z* (Malagasy *zato*, Malay *ratus*), but does not often fall out altogether where it really belongs to the root.

(*d*) Provided that *mampi* could be explained as suggested by Père Jean, what then about *mampan*, *mampaha*, *mampiha*, and *mifan*, which are evidently all of them formed by analogous rules? Any one who undertakes to explain one of these from a Malayan source must try to account for the others too, as they must undoubtedly all go together.

I venture to think that these observations, brief as they are, will prove sufficient to show that Père Jean's "derivation" on this point at least is a case of "*lucus a non lucendo*." And if this is the strongest blow my theory is to be exposed to, I see no reason to feel nervous about it.

It was, again, not to be expected that a compound prefix could be proved to be "derived" from another language, for such forms seldom are so obtained. The simple prefixes may be (and often are) essentially the same, but the manner of combining them is often characteristic of each individual language; and it was not to be expected that it would be otherwise in Malagasy, which is certainly one of the finest and best developed languages in the family to which it belongs.

But although each language may have its own peculiar way of combining the simple prefixes, it may be anticipated that there would be some analogy in this respect between languages of the same family. And so there is. So far, a reference to the Malay *memp* does not only not overturn my theory, but is a very strong argument in its favour. For what is the Malay *memp*? Nothing but a *compound prefix*. Just as *mam-pan*—on my theory—is composed of *man-man*, and *mam-pi* of *man-mi* (through the mediums of verbal nouns in *fan*, *fi*, corresponding respectively to the verbs in *man* and *mi*), so is the Malay *memp* composed of the two prefixes *men* and *ber*, both of which may be used alone to form a verb, the first one generally in a more transitive, the second one in a more intransitive sense, corresponding nearly to *man* and *mi* in Malagasy; e.g. *ber-pukul*, to beat; but *memukul*, if an object is added. When *mem* and *ber* are combined in Malay, the affix *kan* is generally added at the same time; and this then makes the verb causative; e.g. *ber-anak*, to have children, *mem-per-anak-kan*, to cause to have children. The peculiarity of Malagasy as compared with Malay is, that the combination of the two prefixes is effected by means of the verbal noun of the verb formed by the first one of the two (as pointed out above); and that this combination of the prefixes is in itself sufficient to render the verb causative, without any additional affix as is required in Malay.

It may perhaps be said that my "verbal noun," as an intermediate link, is, at the best, only a hypothesis. This I admit, but it is a hypothesis which explains the facts consistently with the euphonic laws of the language. Besides this, there are a good many facts which go far towards proving that this hypothesis is the true explanation of the matter in hand. I may mention the following:—

1. The conception expressed by these verbs (causative and reciprocal) is certainly a compound one, and it is therefore only natural that the form of the verb should also be compound.

2. In the cognate languages compound conceptions (compound actions

and states) are generally expressed by compound prefixes (as we have already seen to be the case in Malay). It was then to be expected that such should also be the case in Malagasy.

3. If *mampan* is not=*man*+*man*, or *mampi* not=*man*+*mi*, etc., how is it that the first form invariably forms the causative of verbs whose simple prefix is *man* (e.g. *mandèha*, *màmpandèha*); and the second one, as invariably, the causative of those whose simple prefix is *mi* (e.g. *mijàly*, *màmpijàly*), and never *vice versa*?

4. But if it must be admitted that these prefixes are compounds, then the only way of explaining their form in Malagasy is to consider the verbal noun (of the forms *fanao*, *fandèha*, *fijàly*) the intermediate connecting link. *Man-mijaly*, for instance, could never become *mam-pijaly* but through the verbal noun *fjaly*; but *man-fjaly* naturally becomes *mampijaly*.

5. This procedure is also a very simple and logical one. The verbal noun is simply treated as a new secondary root, and the new prefix placed before it simply adds its own force to that of the prefix of the primary verb from which the verbal noun has been formed (e.g. *mijaly*, to suffer; *fjaly*, suffering; *mampijaly*, for *man-fjaly*, to cause suffering); no other changes taking place than such euphonic modifications as always must occur when a prefix terminating in a consonant is to be joined to a root beginning with a consonant that does not agree (euphonicly) with it.*

The meaning of these prefixes becomes very simple and clear on my theory, the whole being governed by the following rules:—

a. Active (transitive) prefixes may be combined with active ones, or in other words, reduplicated, as in *mampan* for *man-man*. In this case the verb generally becomes doubly active, i.e. can be construed with two objects.

b. An active prefix may be placed before a neuter (intransitive) one. This will, as a rule, give us a causative verb, but one that cannot take a double object.

c. A neuter prefix before an active one (*mi-fan* for *mi-man*) gives the verb the sense of reciprocity, i.e. the subject is both acting and acted upon; e.g. *mifamely*, to beat one another (*mamely*, to beat). In this case the prefix *mi* seems to have almost a passive sense, a sense which also, though seldom, is found in the simple verbs in *mi*; e.g. *misàsa* is 'being washed'.

d. If the active prefix (*man*) in the simple verb has a neuter sense, or if the neuter prefix (*mi*) has an active sense, which is exceptionally the case, this will appear also in the compound forms of them; e.g. *mampivèly* can take a double object (against the rule b), because *mivèly* is transitive, notwithstanding its neuter prefix. On the contrary, *mampandèha* would

* A Malagasy scholar may object, that although *mampi* is euphonicly correct, we should rather have expected *mamijaly*, as roots with *f* or *v* or *p* for their initial letter generally drop it after such a prefix and change the *n* to *m*. This is true; but we have still traces of an older practice in such verbs as *mambòly*, *mambòatra* (for *mamboly*, *manoatra*), and this analogy has been followed in the compound prefixes. In ordinary compounds, *n-f* always becomes *m-p*; e.g. *olom-piàina* for *olona fiàina*.

take only a single object (against the rule *a*), because *mandeha* is intransitive, notwithstanding its active prefix.

e. Two neuter prefixes are never joined without an active one between them; as in *mifampiresaka*. The reason is, upon my theory, self-evident. We can easily see the force of combining two active prefixes, or one active with one passive (neuter), in order to show that there are two agents, of whom the one acts on the other to make him act or suffer (or both at the same time, as in the reciprocal forms) what the verbal root expresses. But it is scarcely conceivable what two neuter prefixes (*mifi*=*mi-mi*) could express, as they could not influence one another; the double form could hardly add any other sense to that of the simple one than that of repetition or continued action. But this is in Malagasy expressed by reduplication of the *root*. If we therefore had a form *mifivézy*, it would, I presume, have had the same meaning as *mivézivézy* (to ramble), which is actually in use.

But all these rules may be comprised in a single one, namely: *Any additional verbal prefix to be supplied is placed before the verbal noun of the simpler verb, and adds its own peculiar force to that of the prefix (or prefixes) of the verb from which this verbal noun has been formed.*

For a fuller explanation of the inflection of the Malagasy verb in general, I must refer the reader to my former articles in the ANNUAL, to the earlier ones of which I might, however, have a good deal to add, if I could rewrite them now. The present article is only written in corroboration of my theory of the formation of what I consider "compound verbal prefixes."

L. DAHLE.

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NO. VI.—THE GENITIVE CASE OF NOUNS.

THE genitive case of nouns in Malagasy is expressed in the following ways:—

1. By adding an *n* (or *n'*) to the preceding noun; e.g. *andevon' olona*, people's slaves; or *ny andevon' olona*, the slaves of people; or *ny andevon' ny olona*, the slaves of the people (*andevon*, slave or slaves, and *olona* people; *ny* is the article). This is the genitive properly so called.

2. By simple juxtaposition of the two words. This generally takes place when the relation of the two words is that of a genitive of identity (e.g., *ny tany Palestina*, the land of Palestine; *ny tendrombôhitra Oliva*, the mountain called Olivet), or of materials (e.g. *trano vato*, a house made of stone; *efitra lamba*, a separating partition made of cloth).

3. By joining the two words into one, with or without a hyphen; e.g. *heviteny*, or *hevi-teny*, exegesis (*hevitra*, meaning, and *teny*, words, the meaning of words).

4. By verbal nouns. The noun, which we should call a *genitivus obiectivus*, is simply added to the verbal noun as object in the accusative; e.g. *fitiavana ny mpanjaka*, love of the king.

These are the principal means of expressing the genitive in Malagasy. But as I only intend to treat of the first, which is at any rate *the genitive*

proper, I have not aimed at exhaustiveness in other respects, and therefore have not paid any regard to the exceptions to, or modifications of, these rules that may take place in special cases. As the modification marking the genitive does not affect the word which is put in the genitive, but the preceding one, which governs it, it is evident that even the words in the first of the above modes are, to all appearance, not a true genitive, but a *status constructus*, just as in Hebrew. But what is this *n* (or *n'*) or *status constructus* in Malagasy? and how did it originate? To give an answer to this question is the object of the present article.

In the earlier Malagasy books we generally find *-ny* for the present form *-n'*, except in cases where the following letter was a vowel; for here an apostrophe was often put for the final *y*, instead of this *ny*, to avoid a *hiatus*. The earliest Malagasy grammarians (as Mr. Freeman and Mr. Griffiths) explained this *ny* to be the suffix of the third person (sing. and plur.). The phrase *vôlan' ôlona*, people's money, is by Mr. Griffiths written *volany ny olona*, and explained as "money of them, the people." This explanation was considered doubtful, but the practice was for a long time generally followed in all books issued by the Protestant Societies here. Sometimes, however, the *ny* was left out entirely, when the following noun had the article (*ny*), so as to avoid a double *ny*.

It was, I believe, Rev. W. E. Cousins who, in his Grammar* first suggested that the better practice might be to write *-n'*, so as to avoid the possibility of any confusion with the personal suffix;† but he did not attempt to explain the etymology of this *-n'*. The practice he suggested was certainly an improvement, as it agreed better with the pronunciation in the spoken language and helped us to avoid ambiguity. It was therefore readily accepted and has since then been followed pretty uniformly in all the publications of the English and Norwegian Presses.

In the Malagasy publications issued from the Press of the French Roman Catholic Mission here the practice has, until quite lately, been to leave out this *-ny* (*-n'*) before the article of the following noun; to write it in full before a proper noun (as this has no article *ny*); to combine it with the consonant of the following noun, if that begins with a consonant and has no article (in which case both nouns are joined by means of a hyphen); and, finally, to join it with an apostrophe to the following noun, if this was an appellative without an article. A similar practice was also followed in the very first publications of the L.M.S. Press.

Père Causseque, in his *Grammaire Malgache* (Antananarivo: 1886), says that this practice was accepted by Père Webber from the first publications of the L.M.S.; and he contends that it ought to be given up. He would not, however, accept the *-n'* uniformly, but thinks that we ought to write *-n* in all "mots croissants" and *-n'* in all "mots décroissants." By the first term he understands words that simply add *-n* in the genitive; by the last, words that drop their final syllable (or part of it) in the genitive (i.e. in *status constructus* before a genitive). He would

* *A Concise Introduction to the Study of the Malagasy Language as spoken in Imérina*. Antananarivo: 1873.

† See the foot-notes on p. 44 of his Grammar.

therefore persuade us to write *trànon olona* (*trano*, house), but *làlan' olona* (*làlana*, way, road), as *làlana* has here dropped the final *a* and therefore should have the apostrophe, whereas *trano* has not dropped any vowel, and should consequently not have the apostrophe. He lays so much stress on this point that he devotes about twenty pages of his *Appendix* to it, although he does not in any way even attempt to explain this *-n* or *-n'*.

This position seems at first sight reasonable enough, but is nevertheless wrong, even upon his own very sound principle, that an apostrophe should be put where an elision has taken place, and nowhere else; for what he really does in the examples given (and they are his own) is, to omit the apostrophe where a whole syllable has been dropped, and to put it in where, upon his own theory, nothing has been left out. This I shall now proceed to prove. But let me remark at the outset, that in so doing I do not wish to depreciate his Grammar, which is in many respects a useful book; but as it has been suggested that we should modify our practice and make it agree with his views on this point, against this I feel bound to stand out as against an error.

Père Caussèque leaves out the apostrophe where an entire syllable has been dropped, for he writes *làlan'* for *làla(na)n'*. Now what is left out here? Of course the termination *na* in *làlana*, but as this termination precedes the *nota genitivi* (*n'*), which, according to him, ought not to have any apostrophe, he should, upon his own principle, have written *làla'n*. The cause of his error is, that he has considered the *n'* in *làlan'* as the remnant of the termination *na*, whereas it really is the *nota genitivi* (*n'*) joined to the root *làla*, the loose termination *na* being dropped, as it always is, before any additional syllable.

Père Caussèque may say that I must prove that the *na* is really thrown off here. To this I reply: That no one who knows anything of Malagasy at all will deny that the antepenults terminating in *na* invariably drop the *na* before any additional syllable; and that if any one makes a single case the exception to this general rule, the *onus probandi* certainly rests with him and not with those who simply abide by the general rule. If any further proof is wanted, we have it in the manner in which the personal suffixes are joined to the nouns. These suffixes are, of course, virtually the genitive of the personal pronouns. If, therefore, the *n* of the termination *na* is kept before the genitive of the nouns, we should naturally expect it to be kept before all forms of the suffixes where the laws of euphony would allow it. We should consequently, on this supposition, expect to find *lalanko*, which would have been perfectly right, as a mere matter of euphony, but, as every one knows, it becomes *lalako*. The *n* appears only in such suffixes as have an *n* of their own, and is in such cases equally found after words not terminating in *na*; e.g. *trano-nao* as well as *lala-nao*. We see that *lalana* is, before all suffixes, treated as if it had been *lala*, the *na* being simply dropped, and no regard paid to it. Why should it be otherwise in the genitive of the nouns? But as the *nota genitivi* of nouns (*n'*) and the first consonant of most of the suffixes happen to be the same as the last consonant of *lalana* (*n*), the combination of the two parts is somewhat obscured;

and it is so far explainable how people have been led into the error that the *n'* in *lalan'* is only a remnant of the termination *na*. But the suffix of the first person sing. (*ko*), which has no *n* of its own, is the real test of the points in question. For if the *n* in *lalan'* had been the remnant of the termination *na*, we see no reason why it should have been dropped before *ko* (as *nk* is perfectly admissible in Malagasy); but if, on the other hand, it is the *nota genitivi n'* (joined to *lala*), it is self-evident that it must be left out, as *ko* is itself the genitive and takes its place.

Père Causseque has also himself felt that the form *lalako* is incompatible with his theory. He says: "Seule la combinaison *lalako* fait difficulté pour l'analyse;" but he has a very easy way of disposing of the difficulty, adding: "C'est une exception"!* If a theory fails in the only instance in which it can be brought to a decisive test, it utterly breaks down. He adds that this exception does not matter much ("Peu importe," *l.c.*), as "six cases out of seven must be sufficient to establish the rule;" but unfortunately the other six cases (*lalanao*, *lalany*, *lalanay*, *lalantsika*, *lalanareo*, *lalan' izareo*) all rest on a misunderstanding. What he tries to make out is, that the *n* in all these cases is a remnant of the *na* in *lalana*, as this is a "mot décroissant." But this view breaks down entirely from the fact that words which are, upon his own theory, not "mots décroissants" and have no *n* of their own (do not terminate in *na*), get exactly the same forms; e.g. *trano* (house): *tranonay*, *tranony*, etc., just as with *lalana*. Consequently the *n* in these suffixes cannot be the remnant of the termination *na* of the noun in question.

To sum up: *lalana* is treated exactly as *trano* throughout, only that *na* is dropped before all these suffixes, just as it is before the *nota genitivi (n')* of the nouns; or, in other words: *lalana* is, both before the suffixes and before the *n'* of the genitive, treated as if its form had been *lala* (which is indeed the root). I may add, that Père Causseque, on his own theory, ought to have written *lalan'nao*, *lalan'ny*, etc.; for if *trano*, which does not terminate in *na*, nevertheless gets an *n*, and *lalana* also keeps its terminative *n*, it ought to have two (*n' n*). That words terminating in *ka* and *tra* have somewhat deviating forms does not concern us here, as they generally do not take any *n'* in the genitive at all, and consequently do not bear upon the question we are discussing.

These remarks are, I think, sufficient to prove that the *n'* in *lalan'* and the *n'* in *tranon'* are in no respect different from one another. If one of them should be written with the apostrophe, the other should also be so written.

But, it may be said, why write any of them with an apostrophe? Père Causseque contends that an apostrophe should not be used if there is no elision of a vowel; and I think he is right. He adds that it has not yet been proved that this *n (n')* in Malagasy is an abbreviation of a fuller form terminating in a vowel, or, in other words, that we here have an elision of a vowel that calls for an apostrophe. Here he is right again. It has not yet been proved. In fact, scarcely any attempt has been made to explain the etymology of this *n'*, nor does he himself make any

* *Grammaire Malgache; Appendix*, p. 29.

attempt to do so. The earlier Malagasy grammarians considered it to be the suffix of the third person (*ny*) and wrote it accordingly (*-ny*), as already mentioned. As this was the original mode of writing it, and *-n'* the later one, this latter was considered an abbreviation of *-ny*. Hence the apostrophe. But this of course does not amount to a *proof* that it ought to be written with an apostrophe, it only explains the origin of the present usage.

But how is this usage to be proved to be correct, or the reverse? As the Malagasy language has no history of its own for any length of time, we have to turn to the cognate languages for an explanation of its corrupted and obscure forms. What then is the *nota genitivi* in the cognate languages?

1.—*Malayan Family*. The genitive is in these languages often expressed simply by juxtaposition, but often also by placing a separate word between the two nouns. In Malay proper this word is *na*; e.g. *anak-na rāda*, the child of the king. This *na* has by many been thought to be the pronominal suffix of the 3rd person (sing. and pl.), which at any rate has the same form. And as this suffix *na* is evidently the Malagasy *ny*, it has been concluded that Malagasy *n'* or *ny* (in gen.) must also be the pronominal suffix *ny*, as mentioned above. As I was familiar with this peculiar manner of expressing the genitive (3rd per. suffix) in the Syriac, I was once inclined to think that this was the right solution.* But as I find that this *na* (sometimes dwindled into *n*, as in Malagasy) is used to express the genitive even in those Malayan dialects where the suffix for the 3rd person is quite different (e.g. the Dayak suffix 3rd pers. sing. and pl. is *e*, but the *nota genitivi* is *n*), I feel convinced that it is a separate word, although both this *na* (or *n*) and the suffix *na*, *ni* may originally have sprung from the same root (probably the one from which both *iny* and the article *ny* in Malagasy originated).†

2.—In *Polynesian* languages the genitive is generally expressed by the insertion of the so-called "particles of relation" *na*, *no*, which often dwindle into *a*, *o*, the *n* being dropped. (N.B. The frequent elision of consonants is characteristic of the Polynesian languages.) This *na* or *no* is of course the very same word as the *na*, *ni* (*n*, *n'*) spoken of above. And here it can *not* be the pronominal suffix, as there is no such suffix in the Polynesian languages.

3.—*Melanesian Family*. As far as I can make out from Gabelentz and Codrington (almost our only authorities for Melanesian), the genitive is formed in the following ways:—

(a) By simple juxtaposition of the two nouns; sometimes with a slight modification of the final vowel of the first one (*a* becoming *e*). (b) By means of a pronominal suffix; some cases are given by Codrington, but are perhaps doubtful. (c) Most frequently—at any rate in the more developed languages—by a separate word, inserted between the two nouns. This "particle of relation" is sometimes *ono* or *no*, (*na*, *ne*, seldom), but by far most frequently *ni*; by elision of *n* it sometimes here, as in Polynesian, becomes *i*, *e*, or *o*. This *ni* is by these two scholars

* See my passing remark on this in ANNUAL NO. VIII. p. 77.

† Cf. my remarks on these words, *l.c.* p. 75–77.

considered as a preposition, governing the genitive; which is no doubt the right view of it. It is so common in the form *ni*, that in Codrington's list* of prepositions governing the genitive it occurs as the *nota genitivi* in ten Melanesian languages, whereas *na* occurs only in three (and in one of those only as a collateral form to *ni*), *ne* in one, and the abbreviated form (*i, e, o*) in four (in one collateral to *ni*). *Ono*, according to Gabelentz, occurs in Marè, collateral to *o*.

After this I do not think we need hesitate to consider the Malagasy *nota genitivi* (*n, n'*) an abbreviation of an original preposition (*ni, na, no*) governing the genitive case. And as its vowel has been lost by elision (just as its consonant has been lost by elision in other dialects, as pointed out above), we have good etymological grounds for writing it with the apostrophe (*n'*), which is our present practice.

I should not, however, consider it *necessary* on that score to do so. The *n* alone would be quite sufficient for all cases. We do not generally mark etymological elisions by an apostrophe. When we write a word like the English 'subtle,' we all know it is the Latin *subtilis*, but we do not think it necessary to mark the elision of the vowel by an apostrophe. And so in many similar cases,

L. DAHLE.

NO. VII.—THE PREPOSITION AMY (AMINY?).

IN Article vii., § 1 of the Appendix to his *Grammaire Malgache* (Antananarivo: 1886), Père Caussèque tries to prove that there exists no preposition *amy* in Malagasy, as the word in question, he says, really is *aminy*, and not *amy*, as the "école Anglaise" has made it. His proofs are the two following:—

(1) We frequently hear the form *aminy* in the colloquial language before words which are quite indefinite, and consequently it cannot be right to resolve it into *amy ny*, as the sense would not in such cases require the definite article (*ny*).

(2) As we can say *amin'* before nouns beginning in a vowel (e.g. *amin' alahèlo*) the word must be *aminy* and belong to the same category as the "mots croissants" (i.e. words terminating in *na*), just as if it had been *amina*. He sums up the case by saying that "logic and sense" alike are in favour of his view, and that *amy* is "a barbarism in no case to be tolerated."

A faithful pupil of his—at least his pupil in this point—recently wrote an article in Malagasy (in the *Madagascar Times*) expatiating on the same view; but as neither that writer, nor the Malagasy who wrote an article against him in the same newspaper, advanced any new argument in the case, I shall not pay any regard to them here.

As to the two arguments stated above, I will only remark:—

1.—That the first one only proves that a Malagasy would use the definite article in cases where a Frenchman or an Englishman would

* *Melanesian Languages*; Oxford: 1885; p. 150—151.

not use it, and could not see the force of it, a fact we have met with over and over again during our Revision of the Malagasy Bible. See, for instance, the use of the article with nouns that have the possessive (suffix) added, e.g. *ny tòm-poko*, where no modern European language would use it. But this is of course nothing at all strange, as scarcely any two languages in the world use the definite article in exactly the same manner. Consequently this argument is really no argument at all.

2.—That the second is not only no argument in favour of this theory but the very strongest argument against it, as I shall prove presently. Here I will only hint at my view by adding that if *aminy* had been the word in question, we should have to write *aminin' olona*, for *amin' olona* would have been simply an impossibility. Consequently this argument is a good deal worse than none at all.

After having thus answered the alleged arguments in favour of *aminy*, I shall proceed to show what arguments positively prove that *amy*, and not *aminy*, is the word in question.

1.—The accent (*àminy*). If we except words in which the final syllable *ny* is simply the suffix 3rd person (as *fàrany*, *tàhiny*, *an-kèriny*, *ivèlany*), we shall scarcely be able to point out a single antepenult in Malagasy terminating in *ny*. They are all penults (*vahiny*, *fahiny*, *ankèhitriny*, etc.). It is quite different with words in *na* (e.g. *lalana*), which are generally antepenults. Still, I should not consider this alone a decisive proof; *àminy* might be an exception to the general rule.

2.—But quite decisive is the manner in which this word combines with suffixes and nouns governed by it. All the words terminating in *ny*, and in which this *ny* is not the suffix *ny*, invariably keep this *ny* before suffixes and nouns alike.

(a) *With suffixes.* In order to show this, I shall choose the two suffixes of the 1st and 3rd persons singular, although the others would do equally well. Examples: *tàny*, land, *taniko*, my land, *taniny*, his land (not *tako*, *tany*); *isiny*, blame, *tsiniko*, *tsininy* (not *tsiko*, *isiny*); *vinàny*, guess, *vinaniko*, *vinaniny* (not *vinako*, *vinany*); and so on, without exception. If any one supposes that it might be different with prepositions, we will try two prepositions terminating in *ny*. *Ambóny*, above; *amboniko*, above me; *amboniny*, above him (not *amboko*, *ambony*). *Ambàny*, under; *ambaniko*, under me; *ambaniny*, under him (not *ambako*, *ambany*). Now nothing can be more evident than that *aminy* would on this analogy have to become *aminiko*, *amininy*. But as it invariably is *amiko* and *aminy*, this proves that the word is *amy*, not *aminy*.

(b) *With nouns.* Here we invariably have: *tanin' olona* (not *tan' olona*); *vinanin' olona* (not *vinan' olona*); *ambonin' olona* (not *ambon' olona*), and so on. The termination *ny* is invariably kept before the *nota genitivi* (*n'*). Consequently, if the word in question had been *aminy*, we should have to write *aminin' olona*. But—as we all admit—every one (natives and Europeans) both says and writes *amin' olona*, the word in question must be *amy*, and not *aminy*. Why Père Caussègue has failed to see this is, I suppose, chiefly because he has been misled by his peculiar theory about the genitives of “mots décroissants” in *na* (amongst which he, wrongly, classes his *aminy*), a theory which

entirely rests on a misunderstanding, as I have endeavoured to prove in the preceding article. The reason why *amy* and other prepositions in Malagasy can be construed with a following genitive, just like a noun (*amin' olona*, like *tanin' olona*), will be clear in the following section.

3.—If we look to the cognate languages, we find the preposition *amy* in a considerable variety of forms (*mai* [in Polynesian], *mi*, *me*, *ma*, *mo*, *imi* [composed of *i-mi*]) in Polynesian and Melanesian, but no trace of a lengthened form like *aminy*. That these *mi*, *me*, etc., are identical with the Malagasy *amy*, no scholar can doubt for a moment, as the words are so similar, the meaning and use are the same, and these languages prove to have such a number of like words in common. Besides this *mi*, the Melanesian also has another preposition, *ana* or *an*, with very much the same meaning. This is of course the Malagasy *an*, which always combines more closely with the following word, a combination which in Malagasy is usually marked with a hyphen (*an-tanèty*, *an-tàny*, *an-dànitra*, *am-po*, etc.).

Dr. Codrington, who, in his *Melanesian Languages*, has examined these questions more thoroughly and minutely than any other author I am acquainted with, contends that *mi* was originally a noun, and says that it is still in use as a noun in some of the Melanesian dialects. Now let us suppose the same to be the case with the Malagasy *amy*. This supposition would explain:

(a) *Its form (Amy, not my)*. If the original *mi* (*my*) was a noun, we can easily conceive that a true preposition would be added to it to make it a prepositional phrase. Now we have precisely such a preposition (*a*) in Malagasy, which is joined to nouns to make a prepositional phrase (e.g. *Anòsy*, *Amòrony*, *Afàra* [provincial for *aoriana*, and quite common in Vákinankàratra]). A collateral form to this *a* is *i* (e.g. *ivòhony*, *ivèlany*, *ildlana*; they always say of soldiers who run away on the road: "*Mivèrina ilalana izy*"). In Melanesian both *a* and *i* are used as separate prepositions. In Malagasy it has become customary to join them to the following word in writing; but this difference is of course of no importance as to the etymology and meaning of the words; it is only a different orthography. In Melanesian *a* and *i* are quite common prepositions; in Malagasy they occur only exceptionally, in the manner mentioned. They may, however (like *an*), be found as formative elements of secondary roots; but this has not yet been investigated.

(b) *Its construction*. We have already seen that *amy* is construed with suffixes and genitives exactly as a noun, and that before nouns in the genitive it takes the *nota genitivi* (*n'*) just as a noun (e.g. *amin' olona*, like *tranon' olona*). This is only explainable on the supposition that *my* is a noun governed by the preposition *a* (*amy*=*a-my* or, with a genitive, *amin'*=*a-min'*). Supposing now that the meaning of the noun *my* (*mi*) was that of the 'whereabouts' of something (which seems to be the meaning in Melanesian), a phrase like *amin' ny trano* (as it ought to be written) would mean 'at the whereabouts of the house,' i.e. at, in, towards, or from the house. *Amy* is wide enough to cover all this, and the etymological explanation given would also account for its wideness and indefiniteness.

Other Malagasy prepositions can be explained in the same manner, especially the pair *ambàny* and *ambòny* (below and above). They are evidently compounds (not, however, with *a*, but with *an*), and they are construed exactly in the same manner as *amy* (as seen by the examples I have given). *Ambany* no doubt points back to a noun *vàny*, the under side of a thing, although such a noun is not to be found in Malagasy now.* In the cognate languages it might perhaps be found. *Ambony*, in the same manner, points back to a noun *vony*, the top of a thing. This we have in Malagasy only in the sense of a 'flower' (the top of the plant?). *An-vany* and *an-vony* would, by virtue of the euphonic laws of the language, necessarily become *ambany* and *ambony*. If this is the true explanation of these prepositions—which it certainly is—we ought to write *amin'*, *ambanin'*, *ambonin'* (and so also with all the prepositions that can take a suffix), uniformly before all nouns, with or without an article, only with such modifications before consonants as the euphonic laws would require (e.g. *amim-pifaliana* or *amin' pifaliana*).

Considering, as I do, these prepositions to be nouns, I ought perhaps to add that the idea of a noun (in a very indefinite way, or of a verb) seems to lurk underneath almost everywhere in Malagasy, as it does in all the Oceanic groups of languages. *Aiza*? (where?) seems to us to be as clearly an adverb as any word in the language. Still, when we say: "*Aizan' Ilàfy Namèhana*?" ("In what direction from Ilàfy is Namehana?") and reply: "*Any andrèfany*" ("To the west of it"), we have clearly treated *aiza* as a noun with following genitive. And when we come to examine it, we find it is composed of *a-iza*? (at what? for *iza* is used even of things—as well as of persons—when they are defined) and the phrase would mean: "At what of (what side of) Ilàfy is Namehana?" And if we carried the analysis further, I believe we should find that *iza* itself was composed of the pre-formative *i* and the noun *za*=*zàvatra*. (In the language of Lo on Torres Islands—*za* or *ja* means 'a thing,' just as does the Malagasy *zavatra*.) Even the Malagasy interjection *hay!* (really!) is in Melanesian shown to be at least a pronoun ('what?') and is most likely ultimately a noun. In other words: the 'parts of speech' flow into one another in a remarkable manner in these languages, as I intimated in another article in this magazine nine years ago (ANNUAL IV., p. 77, 78).

I have long been of opinion that these prepositions are to be regarded as nouns, but I have not found time to discuss the subject. But as a discussion has been recently raised with regard to *amy*, and my reading of Dr. Codrington's work furnished me at the same time both with new materials and gave me a new impulse to re-examine the question, I thought I had better explain my views briefly, as I have tried to do in the present article. But although I had to be brief, I could not entirely abstain from entering into the *etymology* of *amy*. Words are living personalities, with a history of their own, and it will never do to look at them as if they had emanated from Babel yesterday.

L. DAHLE.

* Perhaps it exists in *vany*, the part between the knuckles, and between the knots of sugarcane, bamboo, etc.—ED.

MANTASOA AND ITS WORKSHOPS:

A PAGE IN THE HISTORY OF INDUSTRIAL PROGRESS IN
MADAGASCAR.

ON one of the closing days of the year 1878 the Church of St. Joseph, on the edge of the plain of Imàhamàsina, west of Antanànarivo, was the scene of a funeral service, celebrated with the accustomed ritual of the Roman Church. Bishop Kestell-Cornish and other non-members of that Church were present at the service, to do honour to the memory of a man who indeed deserves to be distinguished in the history of Madagascar, M. Jean Baptist Laborde, Consul of France, who had spent 47 of the 73 years of his life in this country, and was for the greater part of that time employed in the service of the Malagasy Court. When the ceremonies in church were completed, the body was borne along the grand high road which he himself had constructed, some 20 miles E.S.E. of the Capital, to Mانتاسòà, the scene of the chief labours of his life-time. There it rests in a small enclosure containing a substantial tomb of stone surmounted by a pillar and shaded by a clump of loquat trees. A French traveller* has justly remarked that neither the man nor his work have received from English writers on Madagascar the notice they deserve. For the main facts in this paper the writer is indebted to a small Malagasy periodical formerly published by the Jesuit mission †, lent him by the courtesy of the Rev. P. Causèsque, S.J. Notices in French literature there probably are, but, so far as the writer knows, no account has appeared in English, except a passing notice of M. Laborde's death in this ANNUAL No. IV. p. 123; *Reprint*, p. 536.

About the year 1831, a ship was wrecked somewhere near Mانتانانا, on the S.E. coast of Madagascar. Among the passengers was M. Laborde, who had made the voyage from India to secure the salvage of a wreck at Juan de Nova. He was accompanied by an African boy, who was his faithful servant through the rest of his life, and is still living at Mantasoa, honoured by the natives with the title of 'Ingàhy Mainty' ('Sir Black'), and enjoying nothing better than to be interviewed on the subject of his beloved master and all that he did. M. Laborde is said to have been instrumental in saving the lives of his fellow passengers by swimming on shore with a rope. Having

* See *Trois Mois de Séjour à Madagascar*, by Captain Dupré. † *Rèsaïa* vol. for 1879.

made his way some 100 miles north to Mahèla, he was there received by a fellow countryman named Delastelle, who was in the employ of Ránavàlona I., the reigning sovereign. Brought by Delastelle to the Capital, it soon appeared that he had talents which might be turned to account, though indeed a marvellous readiness to turn his brain and his hand to anything seems, rather than any special knowledge, to have been the secret of his success. He first commenced casting guns north of Ilàfy, some six miles north of the Capital, but, difficulties arising from the scarcity of water and of fuel, he was directed by the Queen to choose a more suitable site for future operations, and he at length chose Mantasoa. The forest was then near at hand for procuring fuel, and water was obtained by making two large reservoirs, which, as one sees them now, set like sapphires in the surrounding hills, seem almost to deserve the name of lakes. From the higher one, called Rànofitolòha, or 'The Water from Seven springs', there is a descent to the second, and thence the water is carried by aqueducts, cut in places through solid rock, to the site of the workshops. "I cannot describe," M. Laborde used to say, "the trouble I had in making these pools, and the banks round them, and the great aqueduct;" and indeed one cannot visit the spot without marvelling at what the genius and industry of one man has achieved, with only what may be called unskilled labour to carry out his plans.

Hands indeed were not wanting. It is said that the Queen assigned him nearly 2000 men; and for them with their wives and children he built a town, of which the ruins may still be seen scattered over the hill-sides. It is well known that unpaid labour for the Government or for superiors is the rule in Madagascar, *fànompòana* or government service taking the place of taxes. Wherever subjects are sent, there they must go; and what they are bidden to do, they must do. The rules of the service at Mantasoa were so strict that it has become a proverb to describe any hard service: "*Ràharàhan' Imantasoa: mandèha tsy mièra, màty lôso; mandèha mièra, màty venty*"; that is, "It's a Mantasoa business: if you go away without leave, you are fined a florin; if you get leave to go, you are fined eight-pence." M. Laborde, however, was of a generous disposition and often divided amongst the work-people money given him by the Queen for himself. One of the traits which his old servant speaks of, was his unfailing generosity and unbounded hospitality; no day passed without his giving to those who asked, and no guest came whom he did not welcome to his house.

M. Laborde's invention was unbounded, and his ingenuity in the application of means to an end was not easily beaten.

Whatever the Queen required he either made or attempted to make, and seldom indeed was the attempt unsuccessful. He got books from France and studied them by night, that he might know how to proceed in the various operations of which he had no previous knowledge. I remember standing on the hill-side with a native, who pointed out the uses of the various workshops which lay in ruins before us. "There," he said, "cannon were made, there guns, there glass, and there swords." The little monthly magazine already referred to gives an astounding list of the things manufactured between the years 1831 and 1857: guns, powder, cannon and shot, brass, steel, swords, glass, silk, lime, black paint made from bones, blue and red paint, ink, white soap, potash, lump-sugar, sugar-candy, bricks and tiles, and lightning conductors. Add to these the various breeds of animals brought from abroad: draught oxen, antelopes (called by my old friend Ingahy Mainty, *antilompy*), merino sheep, and others. Add again the fruits of the earth: vanilla, arrowroot, apple-trees and vines, from which a quantity of wine was made. Add again the royal gardens and the unfinished palace at Imahàzoarivo, the aqueduct which formerly brought water (from a hill near Isoàvina) into the palace in the Capital, and the famous road mentioned above, along the greater part of which a carriage might be driven—no small praise for a road in Madagascar!

As the cannon were finished they were sent off to various forts in the interior or on the coast; the first one finished, however, was placed in town. It was called Mamònjisòà ('Saviour of good'), and on the day of its completion the Queen is said to have given M. Laborde 15,000 dollars, the whole of which he distributed amongst the work-people before the day was over. The Queen raised him to the highest rank of the nobles (the Zànak' Andriamàsinavàlona), and wished also to make him an officer of the Fifteenth Honour (then the highest military rank), which favour, however, he declined.

But "all work and no play" was not the character of Manta-soa. The French writer referred to above says: "It was the Versailles and the Marly of Madagascar." You may see on the river bank the house which M. Laborde built for Prince Radama, and, in the town, the Ròva or sacred enclosure, which was also the occasional abode of royalty. Here there were dances and amusements of various kinds, "fêtes improvisées par l'imagination féconde de M. Laborde," who seems to have been as successful in improvising sports as in more serious occupations. He was apparently of a very genial disposition and loved by all alike. A Malagasy friend recalls the time when he was a

young man and disposed to hold himself aloof from the commoner sort, and how M. Laborde would give him a gentle dig in the ribs and admonish him, "*Manaova izay ataon' olona*," that is, "Do as other people do." (Those who know Malagasy will perhaps fancy they see a twinkle of the eye accompanying the use of the active imperative.) He was a special favourite of Queen Ràsohèrina. He had attended her as doctor when she was a child and often carried her on his back within the precincts of the palace, and he accompanied her on her last journey to the coast in search of health in 1867.

When the ports of Madagascar were closed (1845—1853), and all intercourse with foreigners forbidden, M. Laborde seems to have been for some years the only European left in the Island, but he at length had to fall before the dread of foreign interference. For some complicity (whether real or only supposed*) in the design to set Rakòton-dRadàma on the throne in the place of Ranavalona I., he was banished in 1857, and remained at Bourbon until the Island was again opened up in 1861. It does not clearly appear whether the work at Mantasoa was continued through that period or not, but soon after his return the final cessation came. King Radama II., it is said, acted with too great precipitation in carrying out his wish to abate forced labour; word was given at Mantasoa that those who choose to go to their own homes might do so, and, with a unanimity scarcely wonderful, all thereupon departed. First came desertion, then decay; and it is a sufficient indication of the love of the Malagasy for firewood, when it is near at hand, that, while walls of brick and walls of stone, and aqueduct and columns and furnaces may still be seen at Mantasoa in abundance, no house, except those of the sovereign, of M. Laborde, and of the few present inhabitants, has a vestige of a roof left; and of the timber, brought by labour of men and oxen to such an extent that it has perceptibly made the line of forest to recede four or five miles, one gigantic axle of a waterwheel is the solitary remnant. For the remaining years of his life M. Laborde seems to have lived chiefly in the Capital, acting as Consul of France, and attending the services of that Church of which he was a devoted member.

Those whose pleasant lot it has been to spend a few holiday hours at Mantasoa—and to the present writer no spot has pleasanter memories—must have been struck by the extraordinary ability of the one man who created it all. To plan works

* There can be little doubt that M. Laborde had a good deal to do with the Lambert plot here alluded to; see Madame Pfeiffer's *Lust Travels*; Oliver's *Madagascar*, vol. i, pp. 78-86; and other books.—ED.

of such extent and so various in kind, to marshal such an army of workmen and teach them their different parts, to see that orders were carried out and things really completed: all this needed a man of no common powers. It is sad that such a work should have been stopped; sad to walk along the deserted causeways and through the ruined workshops, and to be reminded in a small degree of the giant cities of the Eastern empires of old time—the memorials of a civilization that was, and that might still have been.

Let us briefly describe the scene with these mingled feelings of admiration and regret in our minds. Let us take our stand inside the enclosure, where formerly royalty came to be entertained. Just below us, on the left, is the tomb of M. Laborde, and beyond that, in the distance, is his house, a large low bungalow built of magnificently joined timber, of which the roof alone shews any signs of decay. It is surrounded by a glorious grove of *Zahana* trees (*Phyllarthron Bojerianum*, DC.), dark glossy evergreen, spangled with pink blossoms in the spring-time. Away there on the left runs the high road to Mahandro, much frequented when Tamatave was shut up in the days of the late war, but now almost deserted. The beautiful reservoirs mentioned above are behind us, and before us, as we look to the south-east, the river runs, now gliding far like gentle Avon, and now broken into dashing falls. A little wood clothes the opposite bank, rising steeply to a tiny village with picturesque cottages and tombs. On this side is the house of Prince Radama, and there, stretching along westward in front of us, in a meadow on the river bank, we see the workshops standing in a long line; one mighty one some 180 feet in length by 36 in breadth, and four others half that size. To the right again is a large furnace and forge, which bears the royal insignia of Madagascar (a crown and 'R.M.') and the date 1841. If we descend we shall find that each of these shops contained wheels worked by the water from the lakes above. The twin octagonal columns of solid granite, graceful enough for a village church, still stand in the rear of each of the houses, but the troughs which carried the water across them have all disappeared. Entering one of the houses, and pushing our way through overgrowing brambles, we mount a flight of stone steps and see the enormous size of the wheel indicated by the curve of the stone-work below us; and there are the side channels which worked other smaller wheels; and there, beyond, is the tunnel by which the water, its work done, passed away to the river. Seldom perhaps could one witness such skilful and laborious application of slight means to a great end, and more

seldom, one would trust, shall we see the fruits of ingenuity and industry so soon falling into decay. The place has changed indeed since those busy days in the forties when it teemed with life.

There was an attempt made to change its name from Mantasoa ('Destitute of good') to Sòatsimànampiovàna ('Good that knows no change'); but alas! history has not justified the latter appellation. It is only the glory of the hills that remains unchanged, and the river, gently flowing by now as then. *Labitur et labetur!*

A. M. HEWLETT.

Note.—I venture to add a few words to Mr. Hewlett's paper, since my acquaintance with Mantasoa dates back a few years earlier than that of my friend, when the place was not quite such a ruin as it is now. During most of the years of the decade 1870—80 it was frequently seen by many of the European community of the Capital, on our way to and from the country house belonging to Dr. Davidson on the edge of the upper forest at Andràngolòaka, three or four miles beyond Iman-tasoa, and where many of us, by Dr. Davidson's kindness, spent several pleasant holiday times in the hot seasons. Mantasoa was often made a place for a day's picnic from Andrangoloaka; and in the early part of 1872, when I first saw it, the workshops were much more perfect than they are now. The largest one, which Mr. Hewlett speaks of, was then crowned by a high-pitched roof, covered with tiles. The walls of this building were (and are) of dressed stone-work, massive as that of a castle, and about six feet in thickness. In this building, the furnaces and cannon-casting apparatus were still existing; and in the four smaller workshops more of the waterwheel machinery was then remaining than is now the case; and, if I am not mistaken, there were iron aqueducts, carried by the octagonal stone pillars, leading the water into each workshop. The forge, of beautifully dressed stone, had then its roofs nearly perfect, surrounding the openings to the furnaces; and there were two kilns, also of well-finished masonry, for firing the pottery manufactured at Mantasoa.

One other point may be mentioned in connection with this remarkable creation of M. Laborde's skill, but of a less pleasing character than many of those described by Mr. Hewlett, viz., that during the long persecution between the years 1836—1861, many of the Malagasy Christians had to work as a punishment at these great buildings. For several years some of them had to labour in quarrying the stone and building these massive workshops. I have been told by the pastor of one of the country churches formerly under my charge, that they had no rest either on Sundays or on other days, and that their bondage was very severe, many of them dying under its pressure. So that the accession of Radama II. was welcomed, by them especially, as a time of "liberty to the captives, and the opening of the prison to those that were bound."—JAMES SIBREE, JR. (ED.)

CURIOSITIES OF WORDS CONNECTED WITH
ROYALTY AND CHIEFTAINSHIP

AMONG THE HOVA AND OTHER MALAGASY TRIBES.

IT is a fact well known to all philologists that in several groups of language there are found classes of words which are only used by the people when speaking of their sovereigns or chiefs, with regard to their persons, their actions, and their surroundings, as well as to the honours paid to them both when they are living and after their death. And these special words are in some countries used not only in matters relating to the sovereign and the chiefs, but also in those referring to the members of their families. In certain languages (e.g. in those of some of the Pacific groups) such special words are found applying not only to a few actions, or parts of the body, etc., of the chiefs, but they occur in such a large number as to form a distinct dialect, or kind of 'court language,' used by the higher classes, or by others of lower rank when speaking to them. A further elaboration of this specialized speech is found in some islands where no less than three distinct dialects occur: one used by, or in speaking to, the king or principal chief; another, in use by, or in matters relating to, the secondary chiefs; and a third employed by the mass of the people.

These peculiarities of speech are found, I believe, more or less developed over the whole Malayo-Polynesian family of languages, and they accordingly make their appearance also in Malagasy, as a member of that great stock of human speech. In Madagascar, however, they have never been developed to the extent just described as found in some of the Pacific islands; but for a long time past it has been known that here in Imèrina there are a number of such specialized words which are employed with regard to the sovereign, and these have probably been in use for centuries as applied to the chiefs of the central province. It will be seen that these are not words which are not employed with regard to ordinary persons or things or actions, but are almost all of them commonly used words which have gained a special and different meaning when applied to the sovereign.

The more noticeable of these words are connected with the illness, decease, and burial ceremonies of a Malagasy sovereign, although there are also two or three which are applied to the living king or queen. (Perhaps, however, these are more of the nature of honorific titles than strictly coming within the class of words we are here discussing.) Thus, an old word for a sovereign is *Ampingàra-bòlamèna*, literally, 'golden gun,' the first part of the phrase being taken from the Portuguese *espingarda*, so that this term is not of more ancient origin than about three centuries ago, or, at most, three centuries and a half. Another term applied to the sovereign is *Fàhiray*, 'first,' a word which is not used with regard to things generally, although it is formed strictly according to the rule for making ordinal from cardinal numbers (e.g. *fàharòà*, second,

from *rôa*, two; *fâhatélo*, third, from *télo*, three), the word *vôalôhany* (*vôa*, fruit, *lôha*, head) being always used for 'first.* A term sometimes applied to the Queen by elderly officers in public speeches seems to our notions somewhat impertinently familiar, viz. *Ikâlâtôkana*; in ordinary talk by the people this means 'our only lass,' and the word *ikala* is often applied also to hens. If one might venture on such a free translation, it seems to mean (*not* 'cock of the walk,' but) 'hen of the roosting-place.' It is, however, very like, in its free familiarity, the use of the word *Ialàhy* ('you fellow') to the former kings by some of their most privileged councillors. The members of the royal family are termed *Atinandriana* (lit. 'the liver,' or 'inside,' of the sovereign or chief).

Returning, however, to the more exact illustrations of the subject, a Malagasy king or queen is not said to be 'ill' (*maràry*), but 'rather warm' (*mafânafâna*). And they do not 'die' (*màty*), but are said to 'retire,' or 'to turn the back' (*miambôho*). In parts of Madagascar distant from Imerina, the word *fôlaka* (bent, broken, weakened) is employed in speaking of a deceased chief. (With regard to people generally, among the Tanàla and other tribes, the phrase, *fôla-mânta* (*mânta*, raw) is used for sudden death; *folaka an-dàntony* [*lantony*, the fore-arm?], for dying young; while *tráno folaka* is the house [*trano*] where a corpse lies in state.) Then the dead body of a sovereign is not termed a 'corpse' (*fàty*), but 'the sacred thing' (*ny mäsina†*). The late Queen Rànavàlona II., who died in 1883, is always spoken of as *Ny Masina* in the government Gazette and in proclamations, as well as by the people generally in ordinary conversation. There is among the Hova, as well as among the other Malagasy tribes, a deep sense of "the divinity that doth hedge a king;" and until the acceptance of Christianity by the late Queen and her Government, the Hova sovereigns were termed 'the visible God' (*Andriamânitra hita mäsö*); other terms of similar import were also applied to them. In accordance also with this same belief, upon the stone structure covering the chamber formed of slabs of naked rock, where the royal corpse is deposited, a small timber-framed building is erected, which is called the 'sacred house' (*trano masina*). This is in appearance exactly like the old style of native house, made of timber framing, with walls of thick upright planking, and high-pitched roof covered with wooden shingles. This distinction of having a timber house built upon the stone tomb is also shared by the higher ranks of nobles, who, it should be remembered, are descended from ancient kings in Imerina.

When the corpse of a sovereign is lying in state, the women in their various divisions or tribes are expected to come in relays to mourn; but this ceremonial mourning is not called by its usual name (*misaona*), but

* A curious word for chiefs and their wives is used by the Bâra, Sâkàlava and some other Malagasy tribes, viz., *biby*, which in Imerina usually means 'animal,' 'beast,' or, as an adjective, 'sensual,' 'brutal'; although it is also used here of children as well, probably much in the same way as words of an unpleasant (and even nasty) meaning are often applied to children and infants from fear of some envious and malign influence, such as the 'evil eye.' Perhaps, however, it is really a word of entirely different origin, from the Swahili *biby*, my lady, my mistress.

† *Masina*, however, except in very modern Malagasy, does not mean 'holy,' but, consecrated, set apart, established, confirmed.

the people are said to 'present' or 'offer, tears' (*miàti-drànomàso*). Then again, a sovereign is not said to be 'buried' (*alévina*), but is 'hidden' (*afénina*); and the massive silver coffin made dollars hammered into plates, in which most of the Hova kings or queens in more recent times have been buried, is called the 'silver canoe' (*làkam-bóla*), a word in which a little bit of history is doubtless preserved: a remembrance of a former period when the Hova were not, as they are now, an inland people, but a coast-dwelling or an island tribe, and buried their dead in old canoe, as is still the custom with the Sàkalàva,* the Bétsimisàraka, and other Malagasy peoples living on the coast.†

When the royal corpse has been deposited in its last resting-place, and the stonework at the entrance to the tomb is being closed up again, this act is called 'stopping up the sun' (*tàmpi-màsoandro*); the sovereign being 'the sun,' the light and warmth of his people, and was formerly often so termed in public speeches. Much the same idea appears in the phrase used by some of the coast tribes in speaking of the decease of their chiefs, viz., 'the king is reclining,' or, 'leaning on one side' (*mihilana ny ampanjàka*). This same word is used in Imerina to denote the afternoon, the 'decline of the day' (*mihilana ny àndro*). A very bold and poetical figure is also employed to express the general mourning at the decease of a sovereign, *Mihòhoka ny tàny aman-dànitra*, i.e. 'Heaven and earth are turned upside down'! This is not the place to describe in detail the many and curious ceremonies, as well as the numerous things prohibited to be done, at the decease of a Malagasy king or queen; suffice it to say that, with very few exceptions, every one's head had to be shaved; no hat could be worn or umbrella carried; the *làmba* only (no European dress) could be worn, and this had to be bound under the armpits, leaving the shoulders uncovered; all singing, dancing, or playing of musical instruments was prohibited, as well as the practice of many handicrafts, as spinning, weaving, making of pottery, gold and silver work, etc.‡ Of course some occupations could not be altogether abandoned, such as the tilling of the soil, sowing and planting rice, etc.; but such work was not called by the usual terms, but was mentioned as *mildtsaka an-tsaha*, i.e. 'going into the country,' or, 'settling down in the fields.' So also, the usual word for 'market' (*tsèna*) was not employed during the time of public mourning, but these great concourses of people were called simply 'meetings,' or, 'places of resort' (*fihaonana*).§ In speaking of the death of relatives of the sovereign, they are not said to be dead, but 'absent,' or, 'missing' (*diso*). The same figurative phrase as is used by ourselves in speaking of friends or relatives who are dead as 'departed,' is also employed by the Malagasy, who say their friends

* See ANNUAL VIII., 1884, p. 67.

† A somewhat similar historical fragment lies under the word used for the water used in the circumcision ceremonies: it is termed *ràno mäsina*, 'salt water,' and in the case of children who are heirs to the throne, it must actually be fetched from the sea (*ranomasinu*). Doubtless sea-water was formerly used in all such cases while the Hova were still a shore-dwelling tribe.

‡ See a very full account of the funeral ceremonies at the death of Radàma I. in Tyerman and Bennet's *Voyages and Travels round the World*; 2nd ed., pp. 281-286.

§ They are also called *tsèna mälahèlo*, 'sorrowful markets.'

are *lâsa*, 'gone;' they also speak of them as *lâtsaka*, i.e. 'fallen' or 'laid;' while the surviving members of a family of which some are dead are spoken of as 'not up to the right number' (*latsak' isa*)*. With regard to the ordinary people also, their dead relatives are said to be 'lost' (*very*), and 'finished' or 'done' (*vita*).

Although not strictly included in the present subject, it may here be noticed that the same use of euphemistic expressions as those just mentioned with regard to death, is also seen in those used by the Malagasy in speaking of things they have a great dread of, especially small-pox, which, before the introduction of vaccination, often made fearful ravages in Imerina, as it still occasionally does among the coast tribes. This terrible disease is called *bêlémby*, i.e. 'greatly deserted,' no doubt from the condition of the villages where it had appeared. It is also called *lavira*, an imperative or optative formed from the adjective *lavitra*, 'far off,' and thus meaning, 'be far away!' or, 'avaunt!' A feeling of delicacy causes other euphemisms, such as the phrase *didiam-pôitra*, literally, 'cutting the navel,' instead of *fôra* and other terms denoting the circumcision ceremonies.

The use of some special words as applied to certain classes of royal servants or attendants may here be noticed; although possibly these also are not, speaking exactly, of the class of euphemistic expressions like the majority of those described above. Thus, the royal cooks are termed 'the clean-handed ones' (*madio tânana*); describing, no doubt, what they *should* be, even if they occasionally are not exactly what their name implies. Then, some companies of royal guards a few years ago were termed the 'sharp ones' (*marânitra*; cf. Eng. 'sharpshooters'?). The government couriers in the provinces are called *kéli-lohâlîka*, lit. 'little-kneed;' while a class of palace servants in constant attendance on the sovereign, and from whom the queen's messengers are chosen, are the *tsimandô* or *tsimandao*, i.e. 'never forsaking,' because some of them are always in attendance day and night upon the sovereign. The queen's representatives at distant places are called *mâsoivôho*, i.e. 'eyes behind;' but this word is also now used in the more general sense of 'an agent' of other persons besides the sovereign.

The illustrations already given are numerous enough to shew that the use of special words, or of common words in a special sense, as applied to matters relating to royalty, is a distinct feature in the Hova dialect of Malagasy. Some little time ago, in talking to a class of my students about this peculiarity of their language, I happened to remark upon it as one which Malagasy had in common with many of the Malayo-Polynesian languages, but said that it seemed to be far less developed in Madagascar than in many of the Pacific groups. Hereupon one of the young men, Rajaonâry, a student from North Betsilèo, told me that such special words, as applied to the chiefs, were a very marked feature in the speech of the Betsileo people, and that, in fact, there were a much larger number of these words employed in the southern province than

* A very poetical expression, in which the word *latsaka* also occurs, is used in speaking of the dead, who are said to be as 'Salt fallen into water which cannot be salt again' ('*Sira lâtsaka an-dràno ka tsy himpôdy intsony*').

were in use among the Hova. He gave me at the same time a number of examples; and I then asked him to note down these words, which he accordingly did in a few days, writing quite a small essay on the subject. This seems to me so well worth preserving in an English dress, that I shall now proceed to translate it. He entitles it:

“SPECIAL WORDS EMPLOYED AMONG THE BETSILEO WITH REFERENCE TO THEIR CHIEFS.”

“The Betsileo are a people who pay extraordinary respect to their chiefs, and from this fact everything relating to them is a thing kept specially for them, and is not allowed to be mixed up with what belongs to the mass of the people. The chiefs’ houses, although there is very little difference between them and those of the people generally, are like something sacred or set apart in a special manner, so that no one can enter them at will, but only after having asked and obtained leave of the chief, or after being summoned by him. And again, after having entered, no one can push himself forward north of the hearth,* or stand idly about, but must sit quietly and respectfully south of the hearth. And in the same manner also, the things in the house are set apart, for the drinking-tin, the spoons, the plates, etc., cannot be handled or put to the lips; for if any one drinks from them, the hand must be held to the mouth, and the water then poured into it from above. The chief’s bedstead cannot be used by any person except one who is also a chief. The mat on which a chief sits in his house must not be trodden upon, but must be lifted up in passing, and cannot be sat upon by any one but himself. And all the furniture in the house is like something sacred, and must not be lightly touched when carried outside, for those who receive it are warned by the words ‘*an-dāpa*’ (‘belonging to the palace’), that they may take care of it. And not only are the things in the chief’s house thus set apart for his own use, but also even those in the people’s houses, should the chief have chanced to use them; and even their own drinking-tins, ladles, etc., are often kept untouched by the lips, lest the chief should chance to pass by and require them, so that the Betsileo are accustomed to drink water out their hands.

“But not only are *things* thus kept by the Betsileo for special use by their chiefs, but many *words* are also set apart for them, both the names for certain things and other words as well. These may be divided into three classes, as follows:—

“1.—*Words specially applied to the Family of Chiefs*, from their birth until maturity, but while their parents are still living. See the following:—

Ordinary Betsileo word.	English.	Word used for the Children of Chiefs.	Meaning.
<i>Kilōnga</i>	Children	<i>Anakōva</i>	Child of the Hova.†
<i>Mihinana</i>	To eat	<i>Misōa</i>	Soa, in Hova, good, pleasant.
<i>Vilia</i>	Plate or dish	<i>Fisoāvana</i>	Verbal noun from above.
<i>Velōma</i>	Farewell	<i>Mahazōa nōno mā-sina.</i>	Lit. ‘May you get a sacred nipple.’‡

* [The place of honour in a Malagasy house.]

† [The word *Hova* seems to convey the idea of ‘noble,’ ‘princely,’ in many of the non-Hova tribes.]

‡ [Cf. Isa. lx. 16: “Thou shalt also suck the milk of the Gentiles, and shalt suck the breasts of kings.”]

Ordinary Betsileo word.	English.	Word used for the Children of Chiefs.*	Meaning.
<i>Mitëraka</i>	To bear offspring	<i>Manidina</i>	To cause to descend.
<i>Mätý</i>	Dead	<i>Fólaka</i>	Bent, broken, weakened, see p. 302, <i>ante</i> .
<i>Fáty</i>	Corpse	<i>Vólafólaka</i>	Broken or bent money.

"2.—Words specially applied to Elderly Chiefs, that is, those who are too old to have their father and mother still living. When that is the case, there is a considerable change made in the names given to the parts of the body, as well as in certain words describing their actions and their condition. This will be seen by the following list:—

Ordinary Betsileo word.	English.	Word used for Elderly Chiefs.	Meaning.
<i>Antitra</i>	Old	<i>Másina</i>	Sacred, established, see p. 302.
<i>Anakandriana</i>	An adult man (lit. 'child of the chief').	<i>Hóva, or ny andrian-dáhy</i>	Hova (see <i>ante</i>), or the prince.
<i>Andránobé</i> (wife of above)	An adult woman (lit. 'at the great house').	<i>Hóva, or ny andriam-bávy</i>	Hova, or the princess.
<i>Lóha</i>	Head	<i>Kabéso</i>	Brains (?)
<i>Máso</i>	Eye	<i>Fanilo</i>	Torch†
<i>Sófina</i>	Ear	<i>Fihaindana</i>	The listening (or listener)
<i>Tánana</i>	Hand	<i>Fandray</i>	The taker
<i>Tóngotra</i>	Foot	<i>Fandáa</i>	The treader
<i>Nífy</i>	Tooth	<i>Fanéva</i>	A flag (lit. the hoverer)
<i>Tróka</i>	Belly	<i>Fisafoana</i>	<i>Safo</i> is 'rubbing,' 'caressing.'
<i>Mihinana</i>	To eat	<i>Mifanjotra</i>	(?)
<i>Válla</i>	Dish, plate	<i>Pifanjórona</i>	(?) Verbal noun from preceding
<i>Mipétraka</i>	To sit	<i>Miárina</i>	To be erect (in Hova)
<i>Mandéha</i>	To go	<i>Mamindra</i>	To remove (do.)
<i>Mándry, na Ma-tòry</i>	To lie down, to sleep	<i>Mirotra</i>	(?)
<i>Firafára</i>	Bedstead	<i>Filánana</i>	Place of desire (?)
<i>Vády</i>	Husband or wife	<i>Fitána</i>	A ford (in Hova)
<i>Mätý</i>	Dead	<i>Véry</i>	Lost
<i>Fáty</i>	Corpse	<i>Haverézana</i>	The losing
<i>Velóma</i>	Farewell (lit. you live)	<i>Másina</i>	Be sacred, established, etc.
<i>Akòry àngharèò</i> ? ‡	How are you?	<i>Manao akòry ny rò-tana?</i>	How did you sleep? (see above, <i>mirotra</i> .)

[It will be seen from the above list that several of the words for the parts of the body—the eye, the ear, the hand, the foot—are simply words describing the actual office of these members, as light-giving, means of hearing, taking, treading, etc. Probably the very general practice of tabooing (making *fáty*) words which form the names or parts of the names of chiefs (which we shall notice again further on) has had influence in producing some of these specialized words.]

* This phrase (the last one overleaf) is customary in public speaking as a mark of respect to the chief's children, when deprecating blame [as is always done in the opening sentences of a *kabàry*].

† [Cf. "The light of the body is the eye."]

‡ Sometimes this salutation of the common people is substituted by the phrase: "*Akòry ny nandriangharèò*?" a phrase of the same meaning as the one addressed to the chief, only that the ordinary word *mándry* is here kept instead of the special one *mirotra*,

"3.—Words specially applied to Chiefs, whether Old or Young.

Ordinary Betsileo word.	English.	Word used for Chiefs.	Meaning.
<i>Tráno</i>	House	<i>Làpa</i>	? Also used in Imerina.
<i>Maràry</i>	Ill, unwell	<i>Manélo</i>	To shade, to shelter.
<i>Mijàbo</i>	To nurse (the sick)	<i>Mitràmbó</i>	?
<i>Miandràvana</i>	To sing at a funeral.	<i>Mampitràka</i>	?*
<i>Tránovòrona</i>	Bier, lit. 'bird-house.'	<i>Tránovitàna</i>	The finished house (?).
<i>Miàhy</i>	To lie in state	<i>Mampihàry</i>	To cause to go round about. †
<i>Fàsana</i>	Tomb	<i>Tránoména</i>	Red house. †
<i>Mandévina</i>	To bury	<i>Manivritra</i>	To plunge, to dive; in Imerina the phrase <i>an-ivritra</i> is used to describe the temporary burial of a corpse until the proper tomb is completed.

"The poles on which a chief's corpse is carried to burial are termed *hàzomàsvina*, 'sacred wood'; and the water into which they are cast away after the funeral is called *rànoàritra*, 'water of endurance' (? *àritra*, endurance, patience, etc.). When the dead from among the common people are spoken of, the words *Raivèlona* ('Living father') or *Rénivèlona* ('Living mother') are prefixed to their names; but in the case of deceased chiefs, the word *Zànahàry* (God, lit. Creator) is prefixed to their names when they are spoken of; in the same way as the word *Rabevoina* ('The one overtaken by much calamity' ?; is employed by the Hova in speaking of the departed, or simply, *Itòmpokolàhy* ('Sir,' or 'My lord'), or *Itòmpokovàvy* ('Madam,' or 'My lady').

"These then are the special words used by the Betsileo with regard to their chiefs; but what can be the reason of their giving them such extreme honour? It is this:—

"The chiefs of the Betsileo are considered as far above the common people, and are looked upon almost as if they were gods. If anything angers a chief and he curses, the people consider the words he speaks as unalterable and must surely be fulfilled; so the persons whom he may chance to curse are exceedingly afraid and in deep distress. And, on the other hand, if anything pleases him, and he thanks (lit. 'blesses') any one, then those who receive his blessing are exceedingly glad, because they suppose that that also must certainly be fulfilled. For the chiefs are supposed to have power as regards the words they utter, not, however, merely the power which a king possesses, but power like that of God; a power which works of itself on account of its inherent virtue, and not power exerted through soldiers and strong servants. Besides which, when a person is accused by another of having done evil, and he denies it, he is bidden to lick (or kiss) the back of the hand of the chief, or to measure his house, § and to imprecate evil (on himself)

* [In Hova *hòtraka* means 'boiling,' but perhaps there is no connection between the two words.]

† [Scarlet is the royal colour in Madagascar; at the funeral of Radama I. one of the large palaces was draped from the ridge of the roof to the ground with scarlet cloth; the sovereign alone has a large scarlet umbrella carried over her, and dresses in a scarlet *lamba* or robe.]

‡ [See Mr. Richardson's description of Betsileo funeral ceremonies; ANNUAL I. p. 71 (*Reprint*, p. 74).]

§ [Measuring the tomb of their master is, I am told, a practice followed by slaves here in Imerina as an invocation of evil on themselves if they have really done something of which they are accused.]

while doing it. In this way, so they say, it is found out whether he really has committed the offence, or not: if he did offend and yet still persists in denying it, then it is believed that the curse which he invoked when licking the hand of the chief, or when measuring his house, will return upon him; if, on the contrary, he is innocent, he will remain unharmed. In like manner also, the chief is supposed to have power which works of itself, on account of his sacred character, to convict of any secret fault. And when the chiefs die, they are supposed to really become God, and to be able to bless their subjects who are still living; and the reverence in which they are held is extreme, for when their name chances to be mentioned, the utmost respect is paid to it both before and after the utterance of it: before it, the words *Ny Zanahary* (God) must be prefixed, and after it the following words are added: "May the mouth strike on the rock, and the teeth flow with blood, for he has gone to be God"* (the speaker's mouth and teeth being meant). And when the chief's grave is cleared of weeds and rubbish, the people dare not do that unless they have first killed oxen and made supplication with outstretched hands to the deceased.

"The belief of the Betsileo that their chiefs are so sacred and exalted as here described is therefore the reason of their setting apart so many things specially for them, whether actions or words. It must, however, be said that it is the customs of the northern Betsileo which have mostly been here noted, although probably they do not greatly differ from those in the southern part of the province."

While considering the customs connected with Malagasy royalty and chieftainship, a word or two may be here said about the practice of tabooing—or making *fady*—the words or parts of words which happen to form the names of chiefs. This appears to be prevalent all over Madagascar, and is a custom the Malagasy have in common with many of the Oceanic races with which they are so closely connected. There are no family names in Madagascar (although there *are* tribal ones, and although also, one name or part of a name is often seen in a variety of combinations among members of the same family†), and almost every personal name has some distinct meaning, being part of the living and still spoken language, either as names of things—birds, beasts, plants, trees, inanimate objects, or names describing colour, quality, etc., or words which denote actions of various kinds. (There are a few exceptions to this—a few names which embody obsolete or obscure words or forms of the verb—but they do not affect the general rule here laid down.) So that the names of the chiefs almost always contain some word which is in common use by the people. In such a case, however, the ordinary word by which such thing or action has hitherto been known must be changed for another, which henceforth takes its place in daily speech. Thus when the Princess Rabòdo became Queen in 1863, at the decease of Radama II., she took a new name, Rasohérina (or, in fuller form, Rasohèrimanjàka).

* "*Mikapoha amy ny vato ny vava, ary mandehana ra ny nify, fa efa lasan-ko Andriamanitra izy.*"

† Thus, a friend of mine at Ambòhimànga who is called Rainzivaèlo, has four daughters named respectively Razaivaèlo, Raovèlo, Ravèlonòro, and Ranòrovèlo.

Now *sohérina* is the word for chrysalis, especially for that of the silkworm moth ; but having been dignified by being chosen as the royal name, it became sacred (*fady*) and could no longer be employed for common use ; and the chrysalis thenceforth was termed *zàna-dàndy*, 'offspring of silk.' So again, if a chief had or took the name of an animal, say of the dog (*ambóa*), and was known as Ramboa, the animal would be henceforth called by another name, probably a descriptive one, such as *fandròaka*, i.e. 'the driver away,' or *famòvo*, 'the barker,' etc.

As far as we can ascertain, this tabooing of words in the names of chiefs seems hardly to have been carried out by the Hova to such an extent as it is, or has been, by the other Malagasy tribes ; although possibly this seeming exception is only due to that centralization of authority in Imerina which has been going on for nearly two centuries, and which has gradually diminished the practice, and has thus reduced to a minimum the variety of nomenclature it would otherwise cause. With one sovereign, instead of a great number of petty chiefs or kings, the changes would of course be minute and would leave no great impression on the language. But we can easily conceive what a most annoying confusion and uncertainty would be introduced into a language by a very wide extension of such tabooed words, arising from a multiplicity of chiefs. It is as if we in England had had to avoid, and make substitutes for, all such words as 'geology,' 'geography,' etc., because they formed part of the name of King George ; and such words as 'will,' 'willing,' 'wilful,' etc., because they were part of the name of King William ; or had now to taboo words like 'victory,' 'victim,' etc., because these syllables form part of the name of Queen Victoria. It can hardly be doubted that this custom has done very much to differentiate the various dialects found in Madagascar ; and it is a matter for some surprise that there is not a much greater diversity among them than we find to be actually the case.

Among the western tribes of the country, on account of the large number of petty but independent and absolute kings, a great deal of change in the spoken language does take place. Mr. Hastie, who was British Agent at the Court of Radama I., says : "The chieftains of the Sakalava are averse that any name or term should approach in sound either the name of themselves or any part of their family. Hence, when it was determined that the mother of Ratàratsa, who came unexpectedly into the world, should be named Ravahiny [*vahiny*, a stranger], it was forbidden that the term *vahiny* should be applied to any other person except herself ; and the worth *ampainsick** was instituted to denominate 'stranger.' From similar causes the names of rivers, places and things have suffered so many changes on the western coast, that frequent confusion occurs ; for, after being prohibited by their chieftains from giving to any particular terms the accustomed signification, the natives will not acknowledge to have ever known them in their former sense."

One more point as to Malagasy royal names must conclude this paper. Among the Sakalava the chiefs' names are changed as well as among the Hova, not, however, at their accession to power, but after their death. A new name is then given to them, by which they are ever afterwards

* In Dalmond's *Vocabulaire Malgache-Français pour les langues Sakalave et Betsimisaraka*, p. 5, I find this word thus given : "AMPENTZEK, S. Neuf, nouveau, nouvel arrivé."

known, and it is a crime to utter the name by which they were called when living. These posthumous names all begin with *Andrian-* (prince) and end with *-arivo* (a thousand), signifying that such a chief was a 'prince ruling over,' or 'loved by,' or 'feared by,' or 'regretted by, thousands' of his subjects. Thus a chief called Raimósa, while living, was termed *Andriamandfonarivo* after death; another, called at first Mikála, was after death known only as *Andrianitsòanarivo*. M. Guillain says: "This custom was not confined to the Sakalava; it existed among the different populations of the south of the Island, in Fihèrèna, Mâhafàly and Andrôy." Drury also (in whose substantial accuracy I still believe, *pace* Capt. Oliver) says: "They also invoke the souls of their ancestors and hold them in great veneration; they call them by names which they give them after their death, and even regard it as a crime to mention them by that which they bore when living; and these names are principally characterised by the word *arivou*, which terminates them."

JAMES SIBREE, JUN. (ED.)



HAVE WE A 'POSSESSIVE CASE' OR A 'CONSTRUCT STATE' IN MALAGASY?

IN teaching the grammatical parsing of Malagasy sentences our pupils are instructed (by our grammars) to ignore altogether one of the regular forms of the language, and to treat, for instance, the phrase "*Ny lâmban' Andrianaivo*" just as if it were written "*Ny lamba Andrianaivo*." And yet this disregarded inflection is so important that its presence may give a totally different meaning to a sentence in Malagasy. Here are examples:

1. *Tsy mety raha mâka ny lâmban' Andrianaivo*. (It is not right to take Andrianaivo's lamba.) (the lamba.)

1a. *Tsy mety raha mâka ny lamba Andrianaivo*. (It is not right for Andrianaivo to take

2. *Misy manimba ny tranon' ny zanakao*. (Some one is injuring your children's house.)

2a. *Misy manimba ny trano ny zanakao*. (Some one of your children is injuring the house.)

In the former of the two sentences the subject is understood; I think, however, it will be agreed that this occurs commonly, especially in colloquial Malagasy where a general injunction is given.

No one can mistake the very different meanings of the two sentences in each group; and yet the inflection of the words *lamba* and *trano*—the sole difference between the sentences in each pair—is quite ignored in the parsing of these words, although the thing of which it is the sign, and the only sign, is, of course, recognised. In the "Concise Introduction to the Malagasy Language" (*Mal.-Eng. Dictionary*, p. xl.), this inflection or affix is called a *pronoun*. Is this a correct description? or is not the *-ny* (or *-n'*) rather a euphonic addition for the purpose of more closely connecting the two nouns (*viz.* the governing noun and the genitive), and thus analogous to the 'construct state' in Hebrew? (*Vide Rodiger's Gesenius's Hebrew Grammar*, trans. by Dr. Davies; sect. 89, par. 1.) The manner of inflection is different in the two languages, the Hebrew changing the middle of the word, the Malagasy its ending; but with this exception, and omitting, of course, the examples, the paragraph above referred to from Gesenius appears to me to be wholly and thoroughly applicable to the Malagasy language. I venture to hope that this analogy may be recognised, and the 'construct state' find a place in future editions of Malagasy grammars, so that this important inflection of the nouns may no longer be ignored in their parsing.—A. P. PEILL.

FUNERAL CEREMONIES AT THE BURIAL OF
RADAMA I.

ON Sunday, the third day after the announcement of the death of Radama (August 4, 1828), there was a large *kabary*, or national assembly, held in a fine open space in the city, on the west side of the hill on which Antananarivo stands. In this space were assembled from 25,000 to 30,000 persons, seated in groups according to the districts to which they belonged.

At the close of this *kabary* it was proclaimed that, according to the custom of the country, as a token of mourning, every person in the kingdom of every age must shave or cut off closely the hair of their heads, and whosoever should be found with their heads unshaved, after three days from the proclamation, should be liable to be put to death. Also, that no person whatsoever should do any kind of work (except those who should be employed in preparing the royal tomb, coffin, etc.); no one should presume to sleep upon a bed, but on the floor only, during the time of mourning. No woman, however high her rank, the Queen only excepted, should wear her *lamba* or cloth above her shoulders, but must, during the same period, go always with her shoulders, chest, and head uncovered.

During the interval between this Sunday and the 12th instant, the mournfully silent appearance of the city, though tens of thousands of persons were constantly crowding through the streets—some dragging huge pieces of granite or beams of timber, or carrying red earth in baskets on their heads, for the construction of the tomb; others, and those chiefly females, going with naked heads and shoulders, to the palace to mourn, or else returning from that place after staying there as mourners perhaps twelve hours,—was exceedingly impressive. The air of deep melancholy on the countenances of all, and the audible moanings of the multitudes who filled the courts of the palace and the adjoining streets, quite affected us, and produced the conviction that the grief was real and deep for one whom they regarded as their benefactor and friend, and as the best king that Madagascar had ever known. The wives of the principal chiefs from the neighbouring districts were carried to and from the place of mourning, each on the back of a stout man, just in the manner boys at school are accustomed to carry one another: the lady having her person, from the waist to the feet, covered with her white *lamba* or cloth.

On Sunday, the 11th, Her Majesty sent to us to say that we might be present the day after, to assist at the funeral ceremonies; and that General Brady would, at eight a.m., receive us* at his house and conduct us to the palace. Accordingly, at eight on the 12th we attended, when General Brady and Prince Correllere conducted us through the crowded

* George Bennet, Esq., one of a Deputation from the London Missionary Society, and then completing here in Madagascar their visitation of the various stations occupied by the Society in different parts of the world.—EDS.

streets of mourners, through the guards of soldiers, and through the still more crowded courts of the palace, which were thronged chiefly by women and girls, couched down, or prostrate in many instances, making audible lamentations.

There are several courts, with one or more palaces in each, separated from each other by high wooden railing; and the whole of the courts and palaces are surrounded by a heavy railing of great height, twenty-five feet, including a dwarf stone wall on which the wooden railing is fixed. The whole extent of this railing was covered with white cloth, as were also the oldest and most sacred of the palaces. The favourite palace of Radama, in which he died, and where in fact the body then lay, is called the Silver Palace; it is a square building, of two floors, and two handsome verandahs running round it. This palace is named the Silver Palace on account of its being ornamented, from the ground to the roof, by a profusion of large flat-headed silver nails and plates of the same metal. The roof of this palace (as indeed of all the principal houses), a very high pitched roof, is so high, that from the top of the wall to the ridge is as great a distance as from the foundation to the top of the wall supporting the roof. We found it covered from the roof to the ground with hangings of rich satins, velvets, silks, their native costly silk *lambas*, etc.; and all the vast roof was covered with the finest English scarlet broad cloth.

In front of this palace had been erected a most splendid pavilion, surrounded by highly-decorated pillars, which were wrapped round with various coloured silks, satins, etc. The pavilion was ten feet square, raised on pillars also richly ornamented. A platform of wood was thrown over upon the pillars; and above this platform hung, supported by one transverse pole, an immense canopy or pall of the richest gold brocade, with stripes of blue satin and scarlet cloth; the whole bordered by a broad gold lace and finished by a deep gold fringe. All the arrangements were in good taste and formed together a most brilliant spectacle.

We had nearly reached the Silver Palace when we were stopped, it being announced that the corpse was at that moment about to be brought out, to be conveyed to the more sacred White Palace previous to its being entombed. We immediately saw about sixteen or twenty females brought out of the apartment where the corpse lay, each lady on the back of her stout bearer, weeping and lamenting aloud; these were the queens and princesses of the royal family and formed the first part of the procession from one to the other palace; our place was appointed immediately after the queens, but it was with difficulty we could get along, many females having thrown themselves on the path which was to have been kept open. The mourners had done this that the corpse might pass over them, and we in fact were many times under the necessity of treading upon their prostrate persons. The corpse was carried into the White Palace that it might, in this more sacred place, be stripped of its old clothes and clothed with new, and also that it might be placed in a wooden coffin. In this palace we were honoured with a station not far from the corpse, which was being fanned by about sixteen or twenty young ladies, daughters of principal chiefs.

At eight, on the morning of Tuesday, we were again at the palace, and were conducted by General Brady and Prince Correllere through the crowds of mourners, indeed over some of them, as well as over ten fine favourite bulls of the late king; these lay directly in our path, and we could not help treading on them. The paths were all covered with blue or white cloth of the country. The corpse had been transferred at the close of the day before to a huge coffin or chest, of their heaviest and most valuable wood. The coffin was then carried from this White Palace back to the Silver Palace in solemn procession, the queens, etc., following next the coffin, and we succeeded them; some of the Europeans had accepted the honour of assisting to carry the coffin, which was a tremendous weight, judging from appearance. I declined the honour, charging myself with the care of our missionary ladies.

On again reaching the Silver Palace, the coffin was not taken in, but raised upon the wooden platform over the pavilion, over which the splendid pall or canopy of gold was drawn, which concealed it entirely from view. In this pavilion, under the platform (which was raised about seven feet), upon mats placed on the ground, the royal females seated or threw themselves in seeming agonies of woe, which continued through the day; and at sunset, when the entombment was taking place, their lamentations were distressing in the extreme. All the day great multitudes had been employed in preparing the tomb, which was in the court, and not far from the pavilion. This tomb, at which tens of thousands had been incessantly working ever since the announcement of the king's death—either in fetching earth or granite stones or timber, or else in cutting or fitting the stones, timber, etc.—consisted of a huge mound of a square figure, build up of clods and earth, surrounded or faced by masses of granite, brought and cut and built up by the people.

The height of this mound was upwards of twenty feet; about thirty feet square at the base, gradually decreasing as it rose, until at the top it was about twenty feet square. The actual tomb, or place to receive the coffin and the treasures destined to accompany the corpse, was a square well or recess, in the upper part of this mound or pyramid, about ten feet cube, built of granite and afterwards being lined, floored, and ceiled with their most valuable timbers.

At the foot of this mound had been standing most of the day the large and massy *silver coffin*, destined to receive the royal corpse; this coffin was about eight feet long, three feet and a half deep, and the same in width; it was formed of silver plates strongly rivetted together with nails of the same metal, all made from Spanish dollars: *twelve thousand dollars* were employed in its construction. About six in the evening this coffin was by the multitude heaved up one of the steep sides of the mound to the top and placed in the tomb or chamber. Immense quantities of treasures of various kinds were deposited in or about the coffin, belonging to His late Majesty, consisting especially of such things as during his life he most prized. *Ten thousand hard dollars* were laid in the silver coffin for him to lie upon; and either inside, or chiefly outside of the coffin, were placed or cast all his rich habiliments, especially military: there were eighty suits of very costly British uniforms, hats

and feathers; a golden helmet, gorgets, epaulettes, sashes, gold spurs, very valuable swords, daggers, spears (two of gold), beautiful pistols, muskets, fowling-pieces, watches, rings, brooches, and trinkets; his whole superb sideboard of silver plate, and large and splendid solid gold cup, with many others presented to him by the King of England; great quantities of costly silks, satins, fine cloths, very valuable silk *lambas* of Madagascar, etc., etc.

We were fatigued and pained by the sight of such quantities of precious things consigned to a tomb. As ten of his fine favourite bulls had been slaughtered yesterday, so six of his finest horses were speared to-day and lay in the courtyard near the tomb; and to-morrow six more are to be killed. When to all these extravagant expenses are added the 20,000 oxen, worth here five Spanish dollars each (which have been given to the people and used by them for food during the preparation for, and at the funeral), the Missionaries conjecture that the expense of the funeral cannot be less than *sixty thousand pounds sterling*. All agree that though these people are singularly extravagant in the expenses they incur at their funerals, yet there never was a royal funeral so expensive as this, for no sovereign in this country ever possessed one fifth of his riches.

The silver coffin having been placed in the tomb, the corpse in the wooden one was conveyed by weeping numbers from the top of the platform over the pavilion to the top of the pyramid and placed beside the chamber. Here the wooden coffin was broken up, and the corpse exposed to those near. At this time the royal female mourners, who had been all day uttering their moans in the pavilion, now crawled up the side of the pyramid to take a last view of the remains. They were most of them obliged to be forced away; their lamentations were now very loud and truly distressing to hear. The expressions used by them in lamentation were some of them translated for us: the following was chiefly the substance:—"Why did you go away and leave me here? Oh! come again, and fetch me to you!" The body was transferred from the coffin of wood to that of silver. Those who were engaged in this service seemed to suffer from the effluvia, though many were constantly employed in sprinkling eau-de-cologne. When the transfer had taken place, the wooden coffin was thrown piecemeal into the tomb.

During the whole of this day, while the chamber in the tomb was being prepared, the King's two bands of music, with drums and fifes, etc., were in the court and played almost unceasingly, relieving each other by turns. The tunes were such as Radama most delighted in—many of the peculiar and favourite airs of England, Scotland, and Ireland, with waltzes, marches, etc. During intervals cannon and musketry were fired outside of the courts of the palace, and answered by musketry from the numerous soldiers inside of the courts.

On the whole, while this funeral of Radama was the most extravagant, it was the most splendid and orderly thing that could be conceived amongst such an uncivilized people.

Extracted from VOYAGES AND TRAVELS ROUND THE WORLD BY THE REV. DANIEL TYERMAN AND GEORGE BENNET, ESQ. London: 1840; 2nd., ed. pp. 284-286.

SIKIDY AND VINTANA :

HALF-HOURS WITH MALAGASY DIVINERS. (NO. II.)

(Continued from ANNUAL No. X.)

THE WORKING OF THE SIKIDY (continued.) B.—The *Sikidy of different (Unique) Figures*, '*Sikidy Tôkana*' (continued). Before leaving this section, I must add a few words on two kinds of *sikidy* which are closely connected with the preceding twelve classes, and are by the natives called respectively *Sikidy Mifamaly* (i.e. *sikidy* mutually corresponding to one another) and *Sikidy Fanahàna*, which my helper explains to mean *fanàitra hasôlony* ('a sacrifice as substitute for a person').

1. The first one is of less importance and may be sufficiently explained by the following short rules :—

(a) If the figure *Sàka* occurs in *Tràno* and *Kizo* in *Talé*, or if, in reverse order, *Kizo* occurs in *Tràno* and *Saka* in *Talé*, this is called *Poré-dàhy* ('Thoroughly squeezed'?). The meaning is that you have to trample in the mud, and the clods of mud squeezed out under your feet you must throw away as *fàditra* (to prevent yourself from being dashed or crushed).

(b) If *Alaimôra* occurs in *Fàhasivy*, or *Kizo* in *Talé*, it is called *Léhi-hénjana* ('The strong one'), and two hens are to be beaten against the earth to avert evil.

2. The *Sikidy Fanahàna* is a much grander affair. The figure in question seems chiefly to have had the office of intimating that some young man was in danger of dying; and the rules accompanying it point out the means of averting the evil. The following seems to be the substance of it :—

(a) If *Alaimora* is the unique figure in a *sikidy* and happens to occur in the rubric *Fàhavôlo*, this is called *Màsoandro-mandalo* ('The passing sun'), which intimates that there is danger of a man dying; and the following is the procedure resorted to in order to avert the evil: a red cock is fetched and adorned with crocodile's teeth and a piece of bark of the *Nàto* tree, which has been soaked in boiling water for a night. This cock is brought to a place to the east of the house, a little before sunrise, and is put on a new mat on which no one has yet slept. The *mpisikidy* or *mpisôrona* (priest) who is to perform the act must wear a red *lamba* (a large piece of cloth very much like the Greek *epiblema* or *himation* and the Roman *amictus*), and a piece of black cloth on the back, both new, and at any rate not sewn or mended ("*tsy nodiàvim-panjaitra akôry; fa fady izàny*"). The man for whom the *sikidy* is worked must place himself on a similar mat in the house and wear a similar dress. The *mpisikidy* then exclaims: "The sun is 'supported' (*fàhana*) by us so as not to pass by such an one. Such an one is supported by us so as not to be passed by (*lalôvina*) the rays of his sun (*zàra-masoandrony*, which my native helper explains as—*Andriamàny*, 'his God'). Then as soon as the sun rises, the *mpisikidy* cuts off the head of the red cock, enters the house

with the bloody knife in his hand, and touches with this the person for whom the *sikidy* is made.

(b) If *Alaimora* comes into *Tale* and *Adibijady* into *Fahasivy*, or *Adibijady* into *Fahasivy* and *Alaimora* into *Tale*, it is called *Lehi-henjana* ('The strong one'), and the meaning is, that a son of young parents is likely to die young, if some effective remedy is not resorted to. And this is the remedy:—Two bullock's horns (one from the right and one from the left side of the head) are taken and placed on the top of a piece of *Hazo-bôka* (literally, 'the leprosy-tree,' a kind of tree), which is then erected close to a river, so as to throw its shadow on the water. This being done, a trench is made from the water up into the land. Then the man for whom the *sikidy* is worked enters into this trench and through this into the water. Finally, an assistant takes the trunk of a banana tree, of the same length as the man for whom the *sikidy* is worked, puts it into the trench and joins the *mpisikidy* (or *mpisorona*) in exclaiming: "This is a substitute for such an one; if you mean to take him, O God! This is an effective substitute, a valid one indeed (*"takalo mahatakalô, sôlo mahasôlo io"*); therefore, take this, O God, and let such an one live long on the earth and eat good rice (*rojo*), and let him be free from the lot of dying young!" About sunset the man in question is sprinkled with *rânon-aody* and *râno-tsilôn-dôza* (two kinds of consecrated water, I suppose), and the proceedings are at an end.

C.—*The Sikidy of Combined Figures (Lôfin-tsikidy)*. My native helper was astounded at my ignorance when I was forced to confess that I neither knew the noun *lofika* nor the verb *mandôfika*, which he explained to mean respectively 'investigation' and 'to investigate;' and I can assure you that he gave me a look expressive of a profound disrespect for our Malagasy-English Dictionaries, when I, in excuse for my own ignorance, ventured to point to the fact that none of them had got any root *lofika* in this sense. "*Asan' ny Vazaha tokôa irèny*" ("Those are the works of Europeans indeed"), he said. And as the word was to him the technical name of very complicated proceedings depending on no less than eleven rules, I can quite understand that I did not look much wiser in his eyes than a man who did not know the words theology or grammar would have done in mine. He was, however, forced to admit that the word only occurs in the *sikidy* terminology, and is restricted to the peculiar proceeding by which new figures are formed from those already occurring in an ordinary *sikidy*, by combining two and two of them. This explanation put me on the track as to its etymology and origin. As it is never used but in the *sikidy*, and is only applied to the process of forming new figures by a combination of two existing ones, it is evidently the Arabic *lafaq*, which means 'to connect,' especially to combine two things into a new one (*"junctis duabus partibus consuit, connexuit"*).

It may happen that neither the ordinary *sikidy* nor the *Sikidy Tokana* gives any reasonable answer to the questions, and then the *Lôfin-tsikidy* is the final resort. The general rules for this operation are the following:—

1. You may combine the figures in any two rubrics of an ordinary

tsàngan-tsikidy (i.e. an arrangement like the one given in my diagram) by means of combination, in the very same manner as that by which all the other rubrics in the diagram (on p. 226) were filled from the four at the top of it.

2. These new figures must of course be like some of the 16 figures we have enumerated; but the rubrics they are to occupy get new names and consequently give us materials for new answers. Their names do not, however, depend on what figures come out, but from what rubrics (i.e. by the combination of what rubrics) they have been derived. For instance, if I compare the figures in the two rubrics *Fahasivy* and *Andro* (square by square), and put one bean in the corresponding square of the new rubric, when that combination gives us odds, and secondly, when it gives us equal numbers, we may of course get any of the 16 figures in our new rubric. This depends on what figures we may happen to have in the two rubrics we are combining; if they were like those in my diagram, the new one would be an *Adibijady* (∴); but this rubric will always have the name *Lôzabè* ('Great calamity'). In the same manner a new figure formed from the two rubrics *Fahasivy* and *Vôhitra* would always be considered as having its home in a new rubric called *Résy* ('Conquered').

3. But these new combinations are by no means restricted to a combination of two and two of the rubrics in my diagram. There are three other possibilities, and they are all made use of, viz. :—

(a) Only a part of some rubrics may be combined with another part of the same rubrics, or with a part of other rubrics. In this way we can, for instance, combine the two upper squares in *Fahasivy* and *Marina* with the two lower ones in *Andro* and *Nia*, and we then get a figure whose rubric is called *Mosàvin' ny àvo-ràzana* ('Bewitched by people of high family'), a rather startling answer to the question, "What is the matter with me?"

(b) One of the rubrics in the diagram may be combined with one of the new ones; for instance, *Vôhitra* may be combined with *Resy*, which would give us a new figure, the name of whose rubric is *Résy an-tànin-dràzana* ('Conquered with regard to a lawsuit on (or, respecting) one's native soil'?).

(c) Two of the new rubrics may be combined with one another in the same manner. *Mosàvin' ny avo-razana*, for instance, may be combined with another new one, *Mosàvin' andévo* (which is itself the outcome of *Mariny* and *Mariny an-trano hafa*); and the result will be a new figure, the name of whose rubric is the terrible one, *Mosavy mahafàty*, i.e. 'Bewitchment that kills.'

But these combinations are not at all done at random; on the contrary, they are subjected to strict rules, stating clearly which two rubrics can give birth to such and such a new one. In this manner my native teacher manages to get 81 new rubrics (i.e. besides those in the diagram), subjected to as many rules, and contributing materials for as many new answers to questions. The relation of these new rubrics to the question to be answered is the same as that between the original rubrics (in the diagram) and the questions; that is to say, when I, in the proceeding

just described, come to a rubric the name of which can fairly be taken as an answer, and the figure of which is like the one in the rubric representing my question (e.g. *Tale*), then—and not until then—I shall have finished my operations.

If, however, I were to give all the 81 new rubrics, with their respective rules, I should want all the space of this number of the ANNUAL. I have therefore restricted myself to the general theory of the proceedings. But I am afraid the reader may find it quite intricate enough as it is. This *sikidy* really reminds one of the Danish proverb: "Deceit is a science, said the Devil, when he gave lectures at Kiel."

My native helper gives me, as an appendix to this chapter, a long list of rules (23 in number) regarding *famadirana* (the orthodox manner of obtaining *faditra* (*piacula*) for the different evils to be averted; but as I am obliged to abbreviate, I shall not be able to reproduce it here.

VI.—MISCELLANEOUS SIKIDY. In all the varieties of *sikidy* we have hitherto dealt with, the chief object in view has been to get an *answer to questions*, while it has been only a secondary and subordinate object to find out the *remedies against evils*, that is, if the answer informed us that some evil might be apprehended. But now we come to some *sikidy* practices, the chief object of which was to *remedy the evils*, or to procure a prophylactic against them. To this class belong the *Ody basy*, the *Fampidiran' aloka*, the *Fangalàn-keo*, and others. In other forms of this miscellaneous *sikidy* the object aimed at was, to find out *times and directions*, when and where something was to be found, or was to take place. This was the case in *Andron-tàny* and *Andro fòtsy*, and some others.

A.—*Ody basy* (Charms against guns). The name (*gun-charms*) seems to suggest that this kind of *sikidy* must be of a comparatively recent origin, as guns have scarcely been known here for much more than a century; at least they have not been used much earlier in war to such an extent as to call for a special protecting charm, *the charm in war*. But I suspect that the *sikidy* practice in question is much older; and the name may have been modernised a little since guns came into use. Before that time the charms were probably called *Spear-charms*; and even later on we find the expression *odim-basy aman-défona* (charms against guns and spears). The comparatively simple rules for this kind of *sikidy* are the following:—

1. Such a *sikidy* was invariably to be undertaken on the last one of the two days in each month which borrowed their names from the month *Adàlo* (*Vôdin-adàlo*), because the object of the charm was, so my native informant says, to make the ball (or spear) *mandàlo* (pass by [without hitting]) the person for whom the *sikidy* was made; a very curious little piece of *Malagasy* etymology for an *Arabic* word (*Adalo*=Ar. *Ad-dalvu*, Aquarius in the Zodiac).

2. Next come the rules for the erecting of this *sikidy*, which seems to have been a very laborious affair. The great object was to get a *sikidy* in which the figure *Aditsimà* (⋮) occurred in the rubric *Andriamanitra* (God), and nowhere else (i.e. in no other rubric in the same *sikidy*). If this did not happen, he had to erect the *sikidy* anew over and over

again until it happened. And as he must have seven such *sikidy* in which *Aditsimà* happened to fall into the rubric *Andriamanitra*, it must often have taken a very long time before the business was finished, if the arrangement was left to hap-hazard. But a good diviner was of course supposed to be *inspired*, and then he may have hit upon it at once.

3. Having at last finished his seven *sikidy* of the said description, he took out the beans forming the figure *Aditsimà* in all of them, and applied these beans to the thing (for instance, a piece of wood) to be used as a gun-charm. In what *manner* he applied them to it is not quite clear to me. My native helper simply says that he "mixed them with it" ("*nahà-rony tàminy*"); but anyhow this 'application' made the said thing a sure charm against guns.

One may ask why the figure *Aditsimà* in the rubric 'God' should have such a protecting power. I do not doubt that the natives explained this from the etymology suggested by their pronunciation of *Aditsimà* (*Aditsimay*, literally, 'a battle that does not burn'), thinking that when this figure occurred in the rubric 'God,' it naturally meant that God would make the battle tolerably moderate (not too hot!) for the man who wore the charm. But this etymology is of course not the true one of the Arabic word *Aditsimà*. Treating of *Aditsimà* among the 16 figures in the beginning of this article, I was at a loss as to its etymology. Seeing now the special meaning it has here of a *protecting* charm, it has occurred to me that it may be a corruption of the Arabic *al-himà*, the inaccessible, the protected one (*hama*, to protect against evils; *humàya*, protection against danger). This would at any rate agree exceedingly well with the use of that figure here, for it would then mean 'Protection from God,' and reminds one of the Arabic saying: "Nobody is infallibly protected (*himà*) but God and His Prophet" (i.e. Mohammed).

B.—*Odim-bàrotra* (Trade-charms). These were used to make trade successful. They were effected by erecting a *sikidy* in which there occurred eleven *Adikasàjy* (∴ ∴). The beans of these eleven identical figures were then applied to the things to be used as charms to make trade succeed well.

C.—*Odim-pitia* (Love-charms). These were prepared in a similar manner, but by erecting a *sikidy* in which the figure *Vontsira* (∴ ∴) occurred in the rubric *Harèna* (and nowhere else), and the figure *Kizo* (∴ ∴) in the rubric *Nia* (and nowhere else). Such a *Vontsira* was called *Màmy dho* ('I am sweet'), and such a *Kizo*, *Kély momba ny nahiny* ('Small and [but?] sticks to what is intended'). The charms prepared in this manner were also used as trade-charms, as the great object in view in trade also is to make the customers 'love' the things (i.e. like them—a Malagasy idiom).

D.—*General charms* (Charms for everything). If a *sikidy* was erected in which the figure *Vànda miòndrika* (∴ ∴ ∴ , also called *Mòlahidy*) occurred only in the rubric *Andriamanitra*, this was a good general charm for everything.

E.—*Fanindri-lòà* (Charms against vomiting). The description my native helper has given of this and the next operation is not very clear to me, but, as far as I can make out, the *mpisikidy* arranged his beans

so as to make a rough picture of a man (sometimes he seems to have made this picture in the sand). Then he gathered them together and mixed them with a decoction of the two plants *Aferon-tàny* (*Mollugo nudicaulis*) and *Tambitsy* (*Psorospermum androsæmifolium*, Baker) and made the vomiting person drink it; and after having also made him drink some gravy of fat beef (*ron' omby matavy*), he was cured (no doubt about it!).

F.—*Odin' ny òlona tòhina* (Charms against dislike to food). Here is a useful prescription for those whose appetite is failing. The *mpisikidy* arranges his beans so as to make four figures. The first one is a *Vandà miondrika* (: :); the second and third represent the backbone of a man (*columna vertebralis*); the fourth one a bird. Then he gathers his beans, mixes them with water (by means of seven pieces of *Vèrivàlaka*), and makes the person in question drink the water, and the cure is complete. At any rate the *mpisikidy* did not, I believe, mention a single case in which it had failed! This operation was called *Tàfik-arètina* ('War against diseases').

G.—*Fangalàn-keò* (Remedy for diseases caused by eating food in which there was a *matòatóa* [the spirit of a dead man]). *Fangalan-keo* is of course the catching of a *keo* (or *heo* it might be); but what is *keo*? My native informant says it is a disease caused in the manner indicated above, and manifesting itself chiefly by vomiting and dislike to food. It is certainly not a Malagasy word, as it occurs only in the *sikidy* (perhaps it is the Arabic *qaiu*, vomiting).

The following seems to have been the procedure of the *mpisikidy* in such a case:—If he suspected that the disease of his patient had been caused by eating some food in which there had been a *matoatoa*, he fetched water from nine different valleys (*lòhasàha sivy*) and nine different kinds of food, as sweet-potatoes, earth-nuts, etc. (but not including *rice*, "*fa ny vary dia Andriamanitra*" ["the rice is God"], says my native). Having got all these before him he began to examine them severally, asking each of them (or, rather, the spirit in them): "Is it thou who hast made this man ill?" to which questions the *mpisikidy* himself gave the answers (of course only as interpreter of the spirit) in the negative or affirmative. Having at last got an affirmative answer, he took a cooking-pot and made three lines across it inside: one with white earth, one with red, and one with a piece of charcoal—"as he could not beforehand know whether the *matoatoa* in question was that of a white man, or of a red one, or of a black one," says my native helper. This being done, he put some fat into the pot and placed it over a fire in the middle of a road. While burning the fat in this manner he invoked the *matoatoa* in question not to trouble the sick person any more, as he now had got his offering for the sin committed in eating the food in which he was. My informant adds that he could not give very full information on this subject, as he was still a young man when he learned *sikidy*; and the wise men at *Ambàtofinandràhana* did not think it proper to trust such deep secrets to a youth, as it was their opinion that he would in that case die young.

H.—*Fampodlan' òloka* or *àmbiròà* (The bringing back a semi-departed

spirit). If a man was very ill, and especially if he was very dispirited, the *mpisikidy* seems to have taken the last expression literally, presuming that his spirit (*ambiroa* [= Ar. *ar-ruah*, the spirit], or *aloka* [his shade]) had actually left him. But nevertheless he did not despair of curing him, but immediately set to work to bring the spirit back, resorting for this purpose to the following means: (1) He made a figure in the sand, representing in a rough way a human form. (2) He erected a *sikidy* in which there were to be eight *Vontsira* (: :). These were called 'The eight healthy men' (*Ny vao làhy salàma*). (3) He erected another *sikidy*, in which the figure *Asòralàhy* (: :) was to occur in the two rubrics *Tale* and *Andriamanitra* and nowhere else. This was called 'The present Creator' (*Zànahàry manàtrika*). (4) He erected another again in which the figure *Alahizàny* (: :) was to occur in the rubric *Trano* and nowhere else. (5) Finally, all these figures (i.e. the beans comprised in them) were gathered and mixed with the sand of the human figure mentioned above. To this mixture was then again added the fruit (or leaves?) of the *Nònoka* and *Aviàvy* trees (two species of *Ficus*) and the *Tsitòhitiòhina* (*Equisetum ramosissimum*) and *Arivotambèlona* (literally, 'living 1000 years,' the name of a plant [*Polygonum senegalense*]), some few hairs of a bullock (taken from beneath the ears), a piece of bullock's entrails (*tsinaim-bèrin-kèna*), and some dry grass, chosen from that on which the sick man had walked, and so placed as to point with their tips towards his house. All these things were then to be pounded together in a mortar by the sick man, while the *mpisikidy* was beating a blunt spade (*angddi-mòndro*) over his head, invoking his powerful *sikidy* to bring the spirit back, in the following manner: "Bring back the shade (*aloka*); bring back the ghost (*ambiroa*); even if he has been buried in the grave, even if he has been sunk down in the waters, etc. O, bring him back, ye 'Eight healthy men,' bring him back, thou 'Present Creator,' 'bring him back, thou *Alahizany*; for there is nothing ye cannot effect, nothing so far off that ye cannot reach it," etc.

I.—*Andron-tàny* (literally, 'The days of the land,' but in the sense of the different quarters or directions of the compass, as expressed by the place in the house assigned to each day). What is really meant by this somewhat indefinite heading is the art of finding out in what direction (north or south, etc.) you are to seek for a thing that has been lost, stolen, or gone astray, etc. I do not, however, mean to reproduce the eleven rules of my native about this procedure. Suffice it to say that if the *sikidy* brought out a certain figure in a certain rubric, the thing was to be looked for in one direction (e.g. to the south); if it brought out another, then in another direction (e.g. to the east). The rules then point out which figure agrees with each direction. These directions, however, are not named north, south, east, west, etc., but they take their names from the sides and corners of the house, as designated in the arrangement of the month all around the house (inside), one at each corner, and two on each side. If therefore the *sikidy* brought out a figure which pointed to the south-east, the *mpisikidy* did not call it so, but said it pointed to *Asòrotàny*, the name of a constellation of the Zodiac (Cancer) and of a Malagasy month, which, in the arrangement alluded to above, had its place

assigned to it at the south-eastern corner of the house, as will be shown more clearly under *Vintana*.

J.—*Andro fôlsy* (literally, 'White days,' i.e. the days on which something expected or sought for was to happen): Suppose that I have lost a slave. It is of the utmost importance to me to know on what day I shall find him: for then I do not trouble myself about searching for him before the day has come. Consequently I go to the *mpisikidy*. He consults his code of laws (which of course he has in his memory, and does not need to go and look up in a book, as we look for a passage in the Bible) and finds the following seven rules for the seven days of the week, commencing with Alarobia (Wednesday), which is therefore in this chapter called "Mother of the days" (*Rënin' ny andro*, or *Reni-andro*):— (1) *Harena* and *Fahasivy* form Alarobia. (2) *Fahatelo* and *Marina* form Alakamisy. (3) *Vohitra* and *Nia* form Zomà. (4) *Andriamanitra* and *Zatovo* form Asabôtsy. (5) *Marina* and *Asorotany* form Alahady. (6) *Vehivavy* and *Mpanontany* form Alàtsinainy. (7) *Fahavalo* and *Lâlana* form Talàta. This means that if the *mpisikidy*, after having erected his *sikidy*, by comparing the figures in the rubrics *Harena* and *Fahasivy* in the manner described under chap. iv., § 2 (ANNUAL X. p.229), brings out a new figure which is like the one in the rubric representing the question (generally *Tale*; see p. 230, last clause), then he knows that what he asks about will occur on Alarobia. I have chosen only the first of the seven rules for illustration; but quite the same proceeding is applicable to the remaining six.

It is easy to see that this was a very convenient way of saving much time and trouble. Suppose I expect a friend from Fianarantsoa on Monday; but he may have postponed his departure from that place, or he may have been delayed on the road; well, I go to the *mpisikidy*, and he tells me that he will not arrive before Saturday. Fancy now that I had not been prudent enough to do so; what would have been the consequence? To say nothing of other inconveniences, my wife would certainly have kept the dinner ready for him from noon to night every day from Monday to Saturday; and if she had not been an angel—which of course she is—she would certainly have looked very cross when he at last appeared! What a blessing these *mpisikidy* must have been, especially in the good days of old, when there were no doctors and no telegraphs!

It has frequently come before our notice in the preceding sections that all depended on what figures were placed in each rubric by the erecting of the *sikidy*. As the first four rubrics were filled in a manner that seems to have depended entirely on hap-hazard, and the filling of the others depended upon these four (see chapter iv. § 1 and 2, p. 229), we should conclude that nothing so far was arbitrary, and that the *mpisikidy* had no control over the form of the *sikidy* he erected, or, in other words, that he could not decide beforehand what figures he would get in each rubric. But I understand that sometimes (e.g. in producing love-charms, trade-charms, etc.) he took the liberty of filling the first four rubrics with figures which he knew beforehand (from theory and experience) would, in the further procedure, produce exactly the figures

he wanted, and in the rubrics he would want them, for the *sikidy* in question. How else could he have got a *sikidy* in which *Adikasajy* (∴) occurred eleven times? or in which *Vontsira* (∷) occurred eight times? or in which *Vontsira* came into *Harena*, and *Kizo* (∴) into *Nia* and nowhere else? I believe he would often have had to erect his *sikidy* some thousand times, before that could 'happen,' if he did not 'make it happen' in the manner intimated above. No doubt he generally began working on the hap-hazard principle; but after having destroyed his erected *sikidy* several times and begun anew—just sufficient to make his spectators understand that it was a very serious affair—he had resort to artificial means and *made* it succeed. I fancy that this was the general practice in producing the charms described above.

I have not exhausted the subject of Miscellaneous *Sikidy* yet, but I must stop here, as every thing must have an end. And if I had described all the tricks of the diviners, and, especially, if I had tried to expose all the artifices by which they managed to make their business pay, I should have wanted more space than any magazine could possibly have given me.

I am sorry I do not know more of the *sikidy* practice on the coast. From the little I know I should conclude that it is not nearly so well developed in most of the coast provinces as in the interior. Perhaps, however, *Mâtitanana* may be an exception; for this is the country of the *Antaimôro*, who seem formerly to have been more connected with the Arabs than were any other tribes in Madagascar, with the exception perhaps of their neighbours to the south as far as Fort Dauphin, who, according to Flacourt, for centuries have had much to do with the Arabs, who also had taught them geomancy, astrology, and the *sikidy*. I am therefore particularly sorry that I have not been able to procure any information about the *sikidy* practice amongst these tribes (*Antaimoro* and *Antanôsy*).

An intelligent native at Tamatave, who read and translated part of my former article on *sikidy* to some other natives there (*Bétsimisâraka*, I presume), writes me that they explained to him that besides the more systematic kind of *sikidy* treated of in my article (*Sikidy Alânana*), they were acquainted with no less than six other kinds, viz. :—

(1) *Joria* (very common, they say); (2) *Sikidy Alânam-pôza* (common amongst the *Sâkalava*); (3) *Sikidy Alakarâbo*; (4) *Sikidy Kofâfa*; (5) *Sikidy Vêro*; and (6) *Sikidy Tendrifâsika*.* These are all said to be much simpler than the ordinary *sikidy*; but in the short description he gives of some of them I am unable to see any clear theory. *Joria* is said to have only two rubrics (columns or rows). *Sikidy Alakarabo* has also only two rubrics, but these are filled in a manner different from what is used in ordinary *sikidy*; for the *mpisikidy* takes out three and three of the beans he has taken into his hand, and if the last beans left in his hand are three, he puts three into the square to be filled; if two, he puts two; if only one, he puts one. The *Sikidy Kofâfa* and *Vêro* can—as my native also remarks—scarcely be called a *sikidy* at all. The procedure is simply the following: You take an indefinite number of

* I may add that they also speak of *Sikidin-andrôvy*, as a kind of simplified *sikidy*.

short pieces of *kofafa* or *vero* (*vero* is a tall grass, *kofafa* a broom made of grass stalks), in your hand, and you then take out two and two until you have only one or two left. But you must have settled in your own mind at the outset whether one left should mean good luck, and two bad luck, or *vice versa*.

Most of us may be acquainted with a similar practice amongst Europeans, but of course only as an amusement. Some pieces of straw of different lengths held in the closed hand are drawn out by different persons in order to see who gets the shortest one. My native helper says that some Malagasy who had seen Europeans do so had not the slightest doubt that they were practising a kind of *sikidy*. When my native friend dissented, they said: "Why are the Europeans here accustomed to leave their own houses a few days before they set out on their journey for Europe, if it is not to practise *sikidy*?" He replied that they did so because they had sold or packed up all their things. "Well," they said, "you are a young man yet and do not understand it better."

There is another kind of *sikidy* (if we like to call it so) which I have been told has been practised by an old woman here in town. Something had been stolen, and nobody knew the thief, but they suspected he was to be found among the servants. So the old woman said: "Look here, I will show you who has stolen it. Let each of you bring me a little piece of wood." This being done, she cut all the pieces exactly to the same length, gave them back to them, and said: "After a little while you all bring me your pieces, and you will see that the one belonging to the thief will have become a little longer than the rest." But when they brought their pieces, lo! one of them had become a little shorter than the rest; for the man who was conscious of being guilty had thought it best to secure himself by cutting off a little of his piece, which was exactly what the sly old woman had calculated would take place.* So the thief was found out. This was smartly done, but I do not think it can be a very common practice; for if so, it would become known, and consequently be useless. For ordinary cases of this kind the *Ati-pàko*,† so much in use here, would work better.‡

L. DAHLE.

(On account of the demands on our space, we are obliged to defer the concluding portion of Mr. Dahle's paper, on "Vintana and San-andro," to our next Number.—EDS.)

* A similar practice is found among Oriental peoples; see an exactly parallel account to the above in Rev. Dr. Thomson's *The Land and the Book*, 1883 ed., p. 153.—EDS.

† "ATI-PAKO, s. [FAKO, sweepings.] A mode of recovering stolen property without detecting the thief; all the servants or employées are required to bring something, as a small bundle of grass, etc., and to put it in a general heap; this affords an opportunity to the thief of secretly returning the thing stolen."—*Mal.-Eng. Dict.* p. 70.

‡ Readers of this and of Mr. Dahle's previous paper on *Sikidy* will be amused to hear that from the perusal of the paper in last year's ANNUAL, a old friend of mine and occasional contributor to the ANNUAL, Mr. C. Staniland Wake, has contrived a parlour game which he calls "The Game of Skiddy;" to be "played with boards of 8 squares, markers, counters, and dice." He has kindly sent me a copy of the Rules of this game, which may be had, I believe, from the author, Clevedon, Westbourne Avenue, Hull.—J.S. (ED.)

HOW WE GOT TO MADAGASCAR :

A VOYAGE FROM PORT LOUIS TO MANANJARA.

“**L**OOSE your sails, for the pilot will be on board in a few minutes.” Such were the instructions which, as I stood on the deck of the *Sophia*, I heard given to the first mate of that vessel, on the morning of Tuesday, 27th July 1886. Soon after 10 o'clock the pilot came on board, and having completed the necessary preliminary arrangements for starting the vessel, he shouted to a man who was waiting for the command, “Let go your hawser,” when, with a gentle breeze, the *Sophia* dipped her flag three times, the seaman’s professional way of saying “Good bye” when starting on a voyage.

The distance from Port Louis to Mananjara is about 500 miles, and our thoughts on leaving the harbour were that perhaps on Friday, but at the latest on Saturday, we should land at the port for which we were bound. We were, however, to find that the doings of our little bark could not be calculated with the accuracy with which we had been able to forecast the runs of the Castle Mail Packets *Garth* and *Duart*, in the former of which we had come from England to Cape Town, and in the latter, from Cape Town to Port Louis.

During Thursday we were almost becalmed off Réunion, but, once away from that island, the wind favoured us, and at 9 o'clock on Saturday evening, the captain estimated that we could not be more than about 25 miles from the land; and fearing to approach nearer in the night to a coast which he was now making for the first time, where coral reefs abound, and where there are no lighthouses, he ordered the vessel to be put “about,” and for four hours the *Sophia* retraced her course, when she was again ‘bouted,’ and her bow put for the land. The morning of Sunday was cloudy and rainy, and no land could be seen when I went on deck at 6 o'clock. At noon the sun was obscured, and no observation could be taken, and it was late in the afternoon before the weather cleared; even then, however, land was not in sight. On Monday morning it was seen on the distant horizon, and the captain greeted me by saying jocularly, “Here we are, somewhere off the coast of Madagascar.” Our hopes were raised, and we confidently assured ourselves that e'er the sun set we should be at anchor off Mananjara, if not on shore there. Alas! we were sadly disappointed, for neither that day, nor the next, nor the day after, nor indeed for sixteen days from that morning of bright hopes, did we see the port for which we were bound. A gentle breeze carried us slowly onward toward the land till, at noon, the captain took his observation, when, to his surprise and to our intense disappointment, he found that his “somewhere” of the morning was 75 miles to the south of Mananjara!

The order, “To the north,” was immediately given; and the wind being favourable, we tried to believe that, after all, the mistake would not prove a very serious affair. During Monday afternoon and night we did

so well that, "reckoning by the log," we were said, on Tuesday morning, to be only some 15 miles from our destination. The day unfortunately proved cloudy and wet, and for the second time no observation could be taken at noon; and although we kept pretty close to the shore, no Mananjara could be described before the sun went down. For fear of passing it during the night, if we continued to go north, the vessel was kept "on and off" till the morning; then, however, things grew worse rather than better, for from early dawn till evening it rained without intermission, and again no observation could be taken at noon. No one knew our actual position, so till 12 o'clock on Thursday, the *Sophia* took short trips—now a little way to the north, and then back to the south, the captain hoping thus neither to lose nor gain until he could make sure of his position. On Thursday the weather was fine and the sky clear, and a good observation was obtained at noon, when it was found that we were 88 miles to the south of Mananjara, or 13 miles further to the wrong than we were discovered to have been on the Monday when we first made the land! The blame was laid to the current, which the captain had been informed set to the north, but which he now discovered set strong to the south.

Again, "To the north," was the order of the day; but now the breeze was not so good as when the first mistake was discovered, and during the next 24 hours we did only 33 miles, still leaving 55 between us and Mananjara. At this stage of the voyage we were becalmed for a short time, but the monotony of the calm was soon relieved by a strong breeze from the north-east, which effectually prevented any progress being made in the direction in which we wished to go. This continued for forty-eight hours, with the result that on Sunday at noon we were declared to be 101 miles to the south of Mananjara; in addition to which we had gone away from the land and were "somewhere" to the east of Madagascar. During the Friday night our troubles had nearly reached their climax, for the darkness concealed the proximity in which the vessel was at one time to the shore; and the captain coming to me on Saturday said, "We were very close to the reef last night, only about a ship's length from it!"

The N.E. wind sank into another calm, which continued till we "turned in" on Sunday night; but on Monday morning, it was our joy to find a breeze from the south filling the sails, and the land again in sight. The observation at noon, however, showed that we had not made any progress, but that we were further to the south than ever. On Tuesday the N.E. wind again set in, and our latitude at noon was 24 degrees south, another 59 miles being thus added to our distance from Mananjara. We had now been out fourteen days!

On Wednesday hope revived in our hearts. A strong S.E. breeze had set in during the night, and on going on deck I found our bark with all sails set and filled, and that we were running to the north at the rate of eight knots an hour. With some variation in its strength, this breeze continued for 24 hours, enabling the captain to say, "I have made my latitude now, at any rate." Of course this was only a guess. "by the log," but the log does not tell the absolute truth, and the sun had to be waited for at noon to confirm the estimate, or to show how much it

was wrong. How anxiously we looked at the heavens as noon drew near! How sincere was the language of our hearts that the sky might be clear! It had been cloudy, with occasional squalls, since sunrise, and as 12 o'clock approached, alas! the clouds thickened, and once more the captain was unable to "get the sun." About 2 o'clock in the afternoon, however, land was sighted; and a high hill standing out prominently in the landscape led to the conclusion that the log had perhaps given a correct estimate of the distance we had run, as such a hill stands about 10 miles inland to the S.W. of Mananjara. Now, unfortunately, the wind, which had been dying since the morning, gave its last expiring breath and left us in a dead calm; the sun set before any objects could be distinguished on the shore, and we had to pass another night not really knowing our position, except that we were near to a dangerous coast, and that there were ugly coral reefs ahead, the spray from the sea breaking on which we had seen as the sun set behind the mountains far away in the west.

Thursday morning was beautifully bright and clear, but we were still becalmed. As soon as the captain had taken his observation and finished his calculations, he came to me and said, "You were right." The "right" referred to an opinion which I had expressed earlier in the day, that we were still some 20 miles to the south of Mananjara, which I had formed from the position of our vessel in relation to the hill which stood out so prominently as we neared the land on the previous afternoon. Yes; we were still 21 miles to the south of Mananjara and becalmed! Should the wind rise, from what quarter would it come? If from the south, or from the east, or from the west, we could reach our destination in a few hours, but if from the north, it might yet be many days. We waited for the first breath of air, and watched for the first ripple on the ocean. The breath came, and the ripple appeared, soon followed by little white-crested waves. The wind had risen, but it was from the north!

Our only chance of getting up to Mananjara was by making a long tack, so, steering close by the wind, away we went till 10 o'clock at night, when we were some 40 miles out at sea. We then turned, and the head of the *Sophia* once more pointed towards Madagascar. By noon on Saturday (Aug. 14th) we were back within a few miles of the shore, but found that instead of gaining by the tack we had lost 19 miles, being that much further to the south than we were at noon the day before. I asked for an explanation of the ugly fact, and was told that it was the current. I suggested anchoring and waiting till the wind changed, and argued with the captain that there could be no greater risk in doing so on that part of the coast where we found ourselves to be than off Mananjara, since one spot is as much exposed as the other; but my suggestion found no favour in his professional eyes. The vessel was ordered "About," and by 4 o'clock p.m. we were again out of sight of land, with our course as due east as if we had been bound for Mauritius instead of Madagascar.

The aspect of things was getting serious, and whether the provisions would last for the indefinite time which seemed to be before us became a practical question of some moment. It was satisfactory to learn that

of ship biscuit and salt beef and pork there was a supply sufficient for three months. Whatever else, therefore, might be before us, we should not die of starvation; and, with the appetite sufficiently keen, we might come to relish even hard biscuit and the sailors' 'junk.' We were already undergoing a training calculated to lead to that issue. The *Sophia* was not a passenger vessel; she had no accommodation for passengers and made but small provision for the wants of those she took from Port Louis. No fresh or tinned meats or any kind of poultry was laid in, even for those of us who by courtesy were styled 'cabin passengers;' so, even from the first, the cook did not indulge us with luxuries or cause us to fare sumptuously. Out of the limited means at his disposal he provided for us two meals a day, to the latter of which, served about sunset, he was wont to call us by saying, "You take some breakfast?" He was a good-hearted Swedish youth, with only an imperfect knowledge of English. The dish upon which he most frequently exercised his culinary skill was a stew of cabbage, onions, and potatoes, with just a flavouring of salt meat, and this generally appeared at both the morning and evening meal. With cabbage we were supplied in excess from the beginning till the close of the voyage, leading a fellow-passenger to remark, "I have cabbage two times a day for twenty-one days. I no want cabbage any more for six months."

The breeze which took us away from the land was succeeded by a calm which lasted forty hours, but on Monday evening a fair wind sprung up; and just as the sun was setting on Tuesday we sighted land again, but it was still far far away on the western horizon. The captain was confident that he was all right this time; and although he could hardly expect to make the port in the night, having no lights on shore to guide him, he decided to continue his course forward, and said that he should anchor off whatever part of the coast he might happen to make, and there wait till the morning revealed the exact position. Accordingly, forward we went with a capital breeze. At 8 o'clock the moon rose in an unclouded sky, and by 9 o'clock it was evident that the land was pretty near. Soon a light was distinguished, and close observation discovered that it was from a vessel ahead of us. We went cautiously toward it, in the meantime shortening sail and preparing to cast anchor. The vessel ahead was evidently one riding at anchor, so it was certain that at last we had made some port. Gradually we came to a convenient distance from her, when the order rang out, "Let go the anchor," and the music of the chain running out gladdened our ears. We were at anchor, but where? We could not be certain. It was about 10 o'clock at night, and we were too far out in the open roadstead to distinguish any objects on the shore. We went below and lay down, asking ourselves, "Is it Mananjara? or Mahela? or some other port?" The morning removed all uncertainty. At daybreak the captain sent a boat to the *Planter*, the ship we found at anchor; and a note was brought back in which was written, "This is Mananjara."

J. PEARSE:



M. GRANDIDIER'S SCIENTIFIC RESEARCHES IN MADAGASCAR.

PART I.—GEOGRAPHICAL.

INTRODUCTORY NOTE.—There are probably very few people who take any interest in this great island who are not acquainted with the name of M. Alfred Grandidier, or who have not heard of his travels and scientific researches in this country. This illustrious French naturalist and savant has done more than any previous traveller to make Madagascar known to science; and to him we owe the first accurate mapping of the country as a whole, and the first correct sketch of its physical geography.* In various departments of natural history also M. Grandidier has made valuable additions to what was previously known of the fauna of the island; while in his magnificent work upon Madagascar in thirty 4to volumes, his *magnum opus*, still in process of publication, he will probably gather up everything of value in various branches of research which has been collected not only by himself but by numerous other labourers in the same field. M. Grandidier has already made known in various French scientific periodicals and in some smaller separate publications the principal results of his discoveries; and as these are summarised in a brochure entitled *Notice sur les Travaux Scientifiques de M. Alfred Grandidier* (Paris: 1884; pp. 54), I have thought that a translation, slightly compressed, of this pamphlet would be of great interest to many readers of the ANNUAL. It should be said that M. Grandidier had, previous to his visits to this country, also made scientific explorations in South America, in British India, and on the east coast of Africa, and these are briefly noticed in the pamphlet referred to; but the principal part of it (about nine-tenths of the whole) is devoted to Madagascar, with which country M. Grandidier's fame as a scientific explorer will doubtless be chiefly connected in all time to come.

The account is divided into (1) A General Sketch of Journeys in the Country; (2) Geographical Labours; (3) Meteorological and Magnetic Observations; and (4) A Study of the Geology and Natural Productions of Madagascar, including its Ethnology. Of these, the third is included in a single paragraph. Space will not allow us to give a translation of the whole in the present article; the third and fourth sections must be reserved for our next number. I will only add that I have M. Grandidier's kind permission to translate and reproduce for the ANNUAL this article, as well as other pamphlets of his in the French language.—J.S.

GENERAL SKETCH OF JOURNEYS IN MADAGASCAR. After a few paragraphs describing his researches in other parts of the world, con-

* It must not, however, be supposed that even M. Grandidier has traversed the whole island. Large tracts of the interior have not yet been crossed either by him or by any other European; and in some directions journeys have subsequently been made both by English, French, and German travellers over ground which M. Grandidier did not approach.

cluding with the coast of East Africa, where his health suffered much from the climate, M. Grandidier says :—My health growing worse, I was glad, after a long period of expectation, to be able to go to the island of Réunion, where I remained during the close of the year 1864 and the beginning of 1865. But I was unwilling to quit that part of the world without casting a glance at Madagascar; and the few months I passed on the east coast in 1865 showed me that this island, upon which so much has been written, and which, on the faith of hundreds of books published about it, I had believed to be sufficiently well known, if not in all its details, at least in its general features, was on the contrary a veritable *terra incognita*. Various insurmountable obstacles in fact had up to that time prevented all scientific exploration of the interior of the island; and so one could hardly be surprised if the works published by different authors do not merit all the confidence one is accustomed to place in them. Out of all those treating of the island which were available at that time, the only ones which could be consulted with profit were the *Histoire de Madagascar* by Flacourt; the *History of Madagascar* by Mr. Ellis (which, however, is only a history of the Hova people, and which, in the midst of interesting and reliable chapters, contains at the same time many errors); and the *Documents sur la Côte occidentale* by M. Guillain.

As for M. Leguevel de Lacombe, who relates with all their most minute details his travels across the island both from north to south and from east to west, and whose fantastic assertions have been accepted by geographers without question—he has presented, as a veracious narrative, a romance drawn only from his own imagination.

Besides the narratives of different persons who have traversed, and always by the same route, the 98 miles which separate Andôvorânto from Antananarivo, there was nothing, up to the date of my journeys, from which to construct a chart of the interior of Madagascar, except the absolutely false statements of M. Leguevel de Lacombe; and it is no exaggeration to say that everything still remained to be done from a topographical point of view. On the other hand, the fauna and flora, which offer such new and strange forms, had only been studied on some points of the coast and in the neighbourhood of Antananarivo; there must therefore be many discoveries for any traveller happy enough to be able to traverse the island throughout its whole extent. There were also curious and important investigations to be made with regard to the races which have accumulated and intermingled in this corner of the earth.

It was in 1865 that I made my first voyage to Madagascar; I landed at Point Larrée, opposite the little French colony of Ste. Marie. I was not ignorant of the fact that the people of Imétina had always been opposed to foreigners travelling in the interior of the island; but, confident in the experience gained by contact with numerous savage tribes among I had so often been on good terms during my previous travels, I reckoned upon being able to baffle the watchfulness of the chiefs and to penetrate into the very heart of the country.

I had chosen the north-east coast of Madagascar as the point of departure for my explorations, with the double object of avoiding the already well-known route from Tamatave to Antananarivo, and of not calling the attention of the Government to myself and my researches. Notwith-

standing all my efforts, I was the object of constant surveillance by the governor of the province of Ivôngo; I could not get away from the coast or give myself up to any topographical work; so, returning to Ste. Marie, I took the French government schooner and repaired to Antongil Bay. There, however, the same difficulties met me. But the time was not entirely wasted; I turned it to some account by studying the fauna, the flora, the language, and the customs of that part of the island, and by getting a footing into the country. Such preliminary investigations are indispensable in order to travel with profit and in safety, so as not to overload one's baggage with useless collections, and, above all, to avoid the dangers which always accompany the want of knowledge of the people with whom one ought to be on good terms.

The few favourable results of this first exploration led me to turn my attention to other portions of Madagascar for my next journey, and I chose the southern region. The countries of the Antandrô, the Mâhafaly, and the Sâkalava, which are situated to the south and west of the island, are with justice considered as dangerous from the rapacious and savage character of the inhabitants; but they are independent of the Hova, and I hoped that there I should not encounter the same difficulties as in the east. Besides this, no geographer or naturalist* had visited those regions. I embarked on the 6th of June 1866, at Saint Denis, on board the three-masted barque *l'Infatigable*, one of four ships which for some years past have run the risks of trading between Fort Dauphin and the entrance to Môrondava; on the 11th, we cast anchor opposite Cape St. Mary. This was the first year that ships dared venture to anchor near this arid coast. A line of sand dunes destitute of vegetation; reefs of rock which stretch level with the water for a great distance from the shore and are continually beaten by the waves of a stormy sea; no trace of human habitation—there seems nothing in short which could attract ships towards this desolate country, where landing is most difficult on account of the constant and heavy surf.

The *Infatigable*, at great risk, came to endeavour to collect a cargo of 'orseille,' a lichen useful for dyeing, which forms the principal wealth of the south and the south-west coasts of Madagascar, and which grows abundantly on the bark of the spiny and stunted shrubs characteristic of these deserts. A stay among the Antandroy who inhabit this country is somewhat risky, for they are continually at war with each other; and the abject want of these poor creatures, who have lived for centuries in misery and destitute of the necessaries of life, is really incredible.

From Cape St. Mary I repaired to Mâsikôra, then to Tolla. My excursion into the country of the emigrant Antanôsy from the latter place enabled me to ascertain to what geological formation the south-west region of Madagascar belongs. The Nerinean and other fossils characteristic of the Jurassic limestone, which I collected there, prove the existence of Secondary strata, which cover a vast extent of surface and rest upon a thin bed of Nummulitic rock. Being not unaware of the numberless difficulties which were sure to impede my researches amongst a cruel and superstitious population, and of the dangers which

* M. Peters, and he only, had passed a few days in the harbour of Tolia.

I must encounter in a country where, during the last twenty years, several ships had been pillaged and their crews massacred, I had only designed, in this preliminary exploration, to prepare the way for another journey later on. I only took with me the most slender amount of baggage: a little sextant with its artificial horizon, a barometer, some thermometers and scalpels. It was only hastily and by stealth that I was able to make some meridional observations.

After this second journey, I returned to France to obtain all the necessary appliances for the work which I purposed undertaking. The Minister of Marine gave me a number of valuable instruments for scientific observations, and all the apparatus required for the measurement of crania, etc., and also for the preparation of natural history specimens.

It was on the 9th of November 1867 that, charged afresh with a scientific mission, I left Paris. I first visited the south-east coast of Madagascar and touched at Yävibòla, a little port which is now and then visited by some coasting vessels from the island of Réunion. During this voyage I proved that the names of the rivers situated between Fàrafàngana and Fort Dauphin, between the 23rd and the 25th parallels, were wrongly placed on the maps, and these I have rectified.

From Yävibola I went direct to Tolia, a town which became for some months the centre of my operations. My first care was to pay a visit to the king of Fiherèna, Láhimerisa, whom I had become acquainted with on my previous journey, and with whom I had become a 'brother by blood' (by the *fàti-dra*). I knew that the Sakalava had attributed to me in 1866 the not very enviable reputation of being a sorcerer; and I wished, from the period of my arrival, to attach the king to my interests by means of presents. I well remembered that I had, during my stay in the kingdom of Fiherenana, heard of many *kabàry* or proclamations for the prevention of sorcery, and it was only by means of the royal protection that I was able to set off safe and sound. No accusation in the barbarous districts which are independent of the Hova is more dangerous than that of sorcery; if the pretended crime is proved, immediate death is the punishment of the culprit. I do not know a people more stupidly superstitious than the Malagasy. With the Sakalava, in common with the other tribes, nothing happens naturally: good or ill fortune, all is due to fate and to talismans. What vexation and weariness have not the inhabitants of the west coast daily caused me on account of the absurd fears which they manifest against sorcerers. Now every one is a sorcerer who distinguishes himself from other people by his actions or his words; and the traveller who passes his time in collecting information, in writing, in observing the stars, in "talking with the good God," as they say in their picturesque idiom, or in managing a crowd of instruments each more extraordinary than the other, and in collecting the skins of animals and putting reptiles into spirits—is naturally in their eyes one of those monsters one cannot fear enough, and against whom it is well to take every precaution. I was acquainted with their habits and their laws, and I lived their kind of life; I had won over to myself, or rather, I had bought, the good will of the chiefs and of the people; although I could never tell what difficulties I might

experience in pursuing my studies, or what insurmountable obstacles might prevent me from attaining the objects which I meanwhile perseveringly pursued. If self-interest had not been the most powerful motive for their actions, I should certainly have been reduced to the most complete helplessness.

The king's village is situated on the bank of the River Manómbó; it was on returning to Tolia that I had the happiness to discover, at Ambòlintsàtrana, an extensive bed of fossil bones, amongst which I have found a new species of Hippopotamus, almost all the fragments of the foot of the colossal bird the *Æpyornis*, and two gigantic Tortoises.

While staying at Tolia I occupied myself with mapping a chart of St. Augustine's Bay. By the help of the speed of the propagation of sound I obtained a base of more than 13 miles, and I immediately commenced a hydrographical survey of the River Anoláhina or St. Augustine. Unfortunately, at Sàlobé, at the very time when, coming safe and sound from the hands of the Mahafaly and arriving among a friendly people, and believing that I should have no more difficulties to encounter for the remainder of my journey, I was altogether stopped by the war which unexpectedly broke out in October 1868 between the Antanosy and the Bara.

The emigrant Antanosy were, of all the inhabitants of the southern region, the only ones amongst whom I could find porters for the scientific instruments which I took with me, and upon whom I could reckon to accompany me as far as the east coast; but now, not only were all the able-bodied men obliged to take part in the daily fighting, but their enemies stopped up the route which I should have taken. The Antandroy, the Mahafaly, and the Bara are tribes addicted to plunder, to theft, and to murder; to put myself into their hands with my barter goods and my instruments would have been to sign my death-warrant. I speak thus from experience, having been plundered by the Mahafaly, and having extricated myself from their hands not without difficulty and danger. After some weeks of waiting among the Antanosy, and no change in the state of affairs taking place, while fever had much weakened me, I was obliged to resign myself to returning to Tolia, where I could find some assistance. Thus ended the first attempt which I made to traverse the island from west to east.

It was only after a rather long convalescence that I was able to resume my topographical work. First of all I visited the great salt lake of Tsimánampetsótsa, which is situated six miles from the Mahafaly coast, and a little south of the 24th parallel. The country is so dangerous that I dared not risk myself with my instruments, or with any other object which could tempt the cupidity of the natives or awaken their superstitious fears. It was only by a rapid reconnaissance that I could go so far as to assure myself of the existence of this lake, which I had often heard spoken of. I then undertook the hydrography of the River Fihéréna. But persecution recommenced, and the chiefs of the country stopped my labours at about 15 miles from the coast. I could do nothing more on these inhospitable shores, where, notwithstanding well-tried patience and continual attempts, my position became every day less tenable; so I left St. Augustine's Bay in the month of February 1869 and set off for Ménabè.

The rainy season had now set in, and at that time of the year travelling becomes impossible. Clouds of mosquitoes and of wasps invade the west coast, and the overflowing of the rivers renders the roads impassable. I stayed during the winter* at the village of Ambôndro, which is situated at the mouth of the Mórondáva; and I profited by the time there spent by completing my collections. When I was able to recommence my geographical labours, I endeavoured to survey the courses of the Tsijobónina or Manla and of the Mánambóló; but I was not allowed to ascend these two rivers for more than 20 miles from the sea. Notwithstanding the presents which I distributed liberally to the Sakalava king Toëra and his chiefs, I could not get beyond this limit. Advancing further north I experienced still greater difficulties; and it was completely impossible for me to penetrate into the interior of the territories of the Timahílaka, the Timaràha, and the Timilànja, three petty independent Sakalava tribes which live between Cape St. Andrew and $18^{\circ} 20'$ of south latitude. My reputation as a dangerous sorcerer had preceded me in these regions; and I was also the object of the hostility of the Arab slave-traders, who carry on the trade there and cherish intense hatred to Europeans. After troubles of all kinds I was obliged to resign myself to departure from these shores and to leave for Nôsibè. I was, however, able at the same time to cast a passing glance over this unknown coast, and to collect some documents which are not without interest; I also fixed astronomically the principal points.

From Nosibe I went to Mojangà, from whence I at length succeeded in going up to the Hova capital. My journey lasted twenty-six days. I very much wished to take this route, which no European had up to that time travelled by, because it does not lie far apart from the course of one of the principal rivers of Madagascar, the Bètsibóka; and I had often been told that one could ascend it in a canoe almost up to Antananarivo; so I thought, on the faith of this information, that perhaps it would not be a bad thing for me to open up from this side of the island a sure and easy way of communication between the coast and the central province of Imerina. But I convinced myself that the Betsiboka is not navigable beyond its junction with the Ikiopa.†

The route which leads from Mojangà to Antananarivo passes over the most desolate, sterile, and desert region that can be imagined. One travels first for about seven days and a half across plains of the Secondary formation, which are dry and covered with scrubby vegetation and, here and there, with dwarf palms. From these we come to the grand granitic‡ elevated mass, which extends from the 22nd degree of south latitude as far as Pàsándáva Bay; here one finds for thirteen or fourteen days nothing but a sea of mountains without a tree, except for a few patches of wood in the ravines, and with no plant except coarse grass. This country is not, and cannot be, populated. The city of Antanàna-

* M. Grandidier here uses the word 'hiver' for the season we generally call the 'summer' in these southern latitudes.—J.S.

† It is, however, navigable for large canoes higher up than this point, in fact as far as Mèva-tanàna.—J.S.

‡ More accurately, as Mr. Baron has shown (ANNUAL X., p. 60), of Primary Metamorphic rocks, gneiss, mica-schist, etc., as well as granite.—J.S.

rivo is situated to the east of a vast circular area, the Bêtsimitàtra plain, which is admirably cultivated with rice and is extraordinarily populous. This plain, over which low hills are scattered, is the bed of an ancient dried-up lake, and measures about 16 miles long by about 15 miles wide.

Thanks to the Prime Minister, Rainilaiàrivôny, I was able to make a map of the province of Imerina, which is inhabited by the Hova, and of which Antananarivo is the capital; the base-line for this, obtained by astronomical observations, measures about 33 miles. I chose, for the extremities of this base-line, two mountains situated almost on the same meridian, one of which, 8250 feet high, is the highest point of the island and commands a view over the whole province,

Leaving Antananarivo I went to the Anokay plain, which I followed as far as the sources of the Mangôro, the largest of the rivers of the east coast; then, crossing some hills, I was able to study the great valley occupied by the Sihànaka, where we find the most important lake of Madagascar, the Alaotra, whose existence I was the first European to discover. I returned to the Hova capital across the mountainous region which borders the Anokay plain to the west. This journey lasted for twenty-eight days.

I afterwards left Antananarivo, on the 27th of November, to go to Morondava (Ambondro), on the west coast. I traversed part of the Bêtsilèò country, a more populous region than those I had crossed in coming from Mojangà. Trees are not very common there, and one must often go from three to four days' journey from different villages to procure the wood necessary for building; but the valleys formed by the innumerable torrents which cut the granitic mountains in all directions are somewhat large, so that there rice can be cultivated. The road descends first directly south for about 90 miles, then it turns towards the west; I passed the Hova forts of Etrémo, Ambòhinòmy and Janjina. There ends that sea of mountains which I had not left since getting to the fort of Antóngodrahója. On leaving Janjina we enter a Secondary plain 84 miles in length, divided at about $42^{\circ}38'$ of east longitude by a very straight chain of hills, which appears to stretch from north to south nearly throughout the whole island. On the 20th of December I arrived at the mouth of the Morondava, where I stayed the winter [the rainy season]. We had travelled toward the west for 150 miles.

On the 15th of March 1870 I left Ambondro; the fine season had returned, and I sailed in an outrigger canoe to the mouth of the little river Maitampàka to Matséroka, from whence I reached the Hova fort of Mánja, which is the most southern point which the Hova actually hold in the Sakalava country. This part of the island is thinly peopled and rather dangerous to travel in: every day the *jirika* or highway robbers come and make raids to carry off cattle and people. About the time of my passing through it, a thousand independent Sakalava had attacked a convoy of 1500 oxen escorted by 50 Hova soldiers and some officers; all the animals were carried off, six soldiers and an officer of the 12th honour (a general) were killed, and the rest of the company were made slaves. Having happily escaped a similar fate, I was able to traverse the Betsileo country through its whole extent, and I visited

its capital, Fianarantsoa, which is, on account of its population and its trade, the second town in Madagascar, and to which no European had up to that time penetrated.* Then I proceeded, always across an uninterrupted mass of mountains, to Mananjara, one of the principal ports of the west coast. This part of the country, crossed here and there by forests, is more fertile than the regions which I had previously passed through. This journey lasted twenty-nine days, from the west to the east coast.

My researches into the history of the country and the immigration of foreign races into the island led me to go to Matitanana, where there are still to be found the descendants of the Arabs who emigrated to Madagascar in ancient times. I collected numerous documents relating to this curious tribe, and I made extracts from books written in Arabic characters, which they preserve with religious care. My journey along the east coast enabled me to correct the position of the mouths of the rivers and of the ports which were omitted, wrongly placed, or misnamed, from Matitanana as far as beyond Antongil Bay.

From Mahanoro I went up to Antananarivo, always across rugged mountains, but through a country comparatively fertile. I had at this time the happiness to be able to observe, on the day following my arrival, two occultations of stars by the moon, so that I fixed the latitude of the Capital. My researches among the Hova and in the province of Imerina were now completed; I went down to Andovoranto by the ordinary route and reached Tamatave, then went to Point Larrée to complete my latest work, the survey of the coast which I had traversed in 1865. I then set off for France, where I arrived at the close of 1870. Since that period I have worked at the preparation and publication of my *Histoire de Madagascar*, of which six volumes have already appeared, and which will comprise thirty volumes.

I shall now proceed to make a short analysis of the scientific work which I have accomplished in the various explorations the itineraries of which I have just briefly sketched. The work I have carried out in Madagascar from 1865 to 1870 has had reference to the geography of the island, to its climate, and to its natural productions. We shall divide it therefore into three sections.

I.—GEOGRAPHICAL RESEARCHES. It is an admitted fact that a traveller cannot carry out *geodetic* operations, such as the measurement of arcs of the meridian or of parallels, in order to determine the form of the Earth. He can only make known the regions he explores from a *topographical* point of view, by ascertaining its natural divisions, its contour, the distribution of its waters and its forests, the position of its villages, in short, the preparation of a map. But the map of an uncivilised country cannot, except under unusual circumstances, comprise all the details which are required in a map of large scale, or even in one of medium scale; it should, however, represent the main outlines in a clear and precise fashion, and give the general and characteristic

* M. Grandidier is mistaken in this statement. A year and a half before his visit, in September 1868, Fianarantsoa and the principal towns in the Betsileo province were visited by the Rev. T. Campbell, of the Church Missionary Society; see *Church Missionary Intelligencer*, June 1869.—J.S.

features of the country. In civilised countries, where industry is well developed, there is a tendency, and with good reason, to give a continually increasing scale to maps; so that engineers and soldiers, scientific students, and even agriculturists, may be able to use them in their various pursuits, so that they need not be obliged to collect upon the spot the information which they need for each particular undertaking. But the time and expense which a similar work would entail in uncivilised or barbarous countries would not be commensurate with the uses such maps could serve; and besides, the traveller being generally alone in his most distant explorations, if he devoted himself to a survey showing all the details of the soil, could only give, after years of labour, a map of a very limited region instead of a general outline, which in the first instance will be of more service to science and for colonisation. The methods of survey ought indeed always to have a degree of exactitude proportionate to the importance of the country surveyed. So that on my journeys I have not attempted the most minutely exact methods, nor have I used the most delicate instruments, such as are employed in Europe for topographical surveys. I have rather chosen to survey in a rapid and less expensive style (such as M. d'Abbadie has employed with so much success in Ethiopia) all the prominent summits and the principal villages and streams, which, laid down on the map, serve as fixed points between which other details of the region have been added, some taken with a graduated circle, and others simply from sight. In short, in these expeditions it has been my chief aim to observe not with minute precision, but rapidly and broadly, because I could not reckon upon the morrow, and I had to contend with difficulties constantly cropping up; and, owing to the superstitions of the natives, I have very often had to take my latitudes or horizon observations hiding myself, as if I was committing a crime.

1.—*Notice sur les Côtes Sud et Sud-ouest de Madagascar** (*Bulletin de la Société de Géographie de Paris*; Oct. 1867), avec une carte. All authors have spoken of the incomparable fertility of the soil of Madagascar and of the beautiful vegetation of its mountains; and certainly their descriptions have not been without influence upon those attempts at conquest which have been made at different times. But such a pleasing picture does not at all agree with the condition of an immense extent of country in the southern region, which, up to the time of my journey in 1866, remained unexplored. I have in fact proved that, contrary to what has been said about it, all the space comprised between the sea on one side, and the 22nd degree of south latitude and the 44th degree of east longitude on the other side, is only a vast arid plateau, of which the mean height does not much exceed from 300 to 600 feet above the sea. In these plains, which have an aspect of sadness and desolation quite peculiar to themselves, there are few mountains and few streams.

During this same journey I came to the conclusion that there were numerous errors and omissions in all the maps and charts published up that period. Out of the 41 villages which are found between Point

* This and the following, in Italics, are the titles of the various publications issued by M. Grandidier.—J.S.

Barlow and the mouth of the Morondava, only six were shown; I have determined the position of all the others, most of them astronomically. The rivers there were wrongly marked and wrongly named; some were placed where none existed; others were wanting; and the Mangòky, the third important river in the island, which was made to flow into the sea at Cape St. Vincent, into the bay which the Malagasy call Tsingilifily, and where there is no stream at all, really empties itself 20 miles further north and by two principal mouths, the Fangòro and the Màrolòha. I have corrected all these errors, one of which was very serious from a navigator's point of view. I have also ascertained the existence on this coast of two lakes which were up to that time unknown, the Tsimanampetsotsa and the Héòtry.

2.—*Une Excursion dans la Région Australe chez les Antandroys* (*Bull. Soc. des Sciences et Arts de la Réunion*; 1868). This notice contains the account of my journey in Androy, the southern province of Madagascar, where no other traveller had previously set foot. One gets there the first glimpse of the general aspect of this region (see p. 331).

3.—*Note sur la Côte Sud-est de Madagascar* (*Bull. Soc. Géog.*; 2e sem. 1861). This notice is for the purpose of rectifying the positions of the mouths of the eight principal rivers comprised between $22^{\circ}56'$ and $24^{\circ}30'$ of south latitude, rivers which were marked on all the maps with an error of from 10 to 20 miles, and of which I have fixed the exact positions.

4.—*Madagascar* (*Bull. Soc. Géog.*; août 1871), avec une carte. This paper is accompanied by a general map of the island, a map which serves up to the present time as the basis of all those which have been published both in England and Germany and even in Madagascar, and shows the different itineraries of my successive journeys. In the first place, I succeeded in completely crossing the island three times:—(1) from Mojangà to Andovoranto; (2) from Ambondro to Mahanoro; and (3) from Matseroke to Mananjara. Besides these journeys, I penetrated in the south of the island, setting out from Tolia, as far as the country of the emigrant Antanosy. In the centre, I followed the Ankey valley in all its length as far as the very sources of the Mangoro, and I explored the Sihanaka country, where one finds the largest lake in Madagascar, the Alaotra. I made the ascent of the most elevated peaks of the huge mass of Ankàratra, and I visited Lake Itàsy, which is situated in the province of Imerina. In the west I ascended for several miles from the coast the great rivers Mania and Manambolo. It is through these successive journeys that I have been able to fix in an exact manner the principal features of the orography and the hydrography of Madagascar and the very curious distribution of its forests.

Lastly, I have examined more than two-thirds of the coast, from Masikora to Cape St. Andrew and from Bembatoka Bay to Nosibè, on the west; and from Yavibola to Mahanoro and from Andovoranto to Antongil Bay, on the east; and I have added a hundred villages to those which were shown on the eastern coast, 11 on the southern coast, and 50 on the western coast. I have corrected the positions and the names of a large number of streams, rather more than 50 on the east coast and 11 on the west coast.

In the countries of the Sakalava, the Mahafaly and the Antanosy, where, as I have said, they consider as a sorcerer every person who is different from other people, a traveller engaged in scientific researches naturally gives rise to suspicion. In the countries subject to the Hova, where superstition is less and barbarism not so great, the distrust which the inhabitants have always felt for foreigners is an obstacle of another kind, but not less insurmountable. It is then not at all surprising that in the greater number of instances I have not been able to make my observations as complete and exact as I could have desired, nor could I follow the ordinary methods of topographical surveying. More frequently I have been obliged to content myself with fixing by numerous latitudes the position of the most important points of the coast and of my various halting-places in the interior. I have nevertheless always taken care to fix each point by as many series of circum-meridional altitudes as I could possibly take; and I have obtained results quite sufficiently accurate for the map which I am preparing, the probable error of my latitudes not exceeding 200 to 300 mètres.

For the longitudes I have, where at all practicable, had recourse to the procedure, so practicable and so exact, of the occultation of a star by the moon; it was in this way that I determined the longitudes of Antananarivo ($45^{\circ} 15' 45''$), of Tolia ($41^{\circ} 24' 45''$), of Salobe ($42^{\circ} 24' 45''$), and of various points on the west coast, Morondava ($41^{\circ} 56' 15''$) and Sôahazo ($41^{\circ} 58' 00''$), with the probable error of a mile.

All those itineraries which unfortunately I could not survey with the theodolite—whose constant employment would have greatly excited the opposition of the natives and have certainly led them to prevent my advance—have been surveyed with the compass with the greatest care and verified by numerous observations for latitude. These various itineraries amount to a total of more than 1860 miles in the interior, and of 1550 miles along the coast.

Up to that period geographers had shown the mountains of Madagascar at random, just following their own fancy. In fact, all the maps previous to 1871 represent this island as divided from north to south, in the line of its greatest length, into two very nearly equal parts by a great mountain chain, which sends forth ramifications both to east and west, and between which extend large valleys. The watershed is, in the same way, placed very nearly in the centre, and immense forests cover almost the whole surface. *This arrangement of mountains, of streams, and of forests is altogether erroneous.* The island of Madagascar in fact, as my map shows, comprises two very distinct portions: the eastern region, which is entirely mountainous, and the western region, which is flat. The mountain mass, whose base bathes in the Indian Ocean on the east coast and which covers two-thirds of the surface of the island, rises pretty rapidly up to a height of about 5000 feet; from thence it is a sea of mountains whose mean elevation is from 3300 to 4000 feet, and which only leave little narrow valleys between them, with the exception of certain vast circular expanses, the beds of ancient lakes more or less dried up, such as the plains of Betsimitatatra and of Antsihanaka, and the valley of Ankay. As for the 'plateau' which old maps show in the interior of the island, it has no existence, since the

central portions have such an irregular surface that one must often travel a long distance before finding a level plot even of a few acres in extent.* After a journey of 120 miles across these mountains, one descends by an abrupt slope into the great western plain, which is cut from north to south by two small mountain chains. The streams, as Flacourt had remarked, and contrary to that which most modern maps show, take their rise much nearer the eastern coast than the western; so that the watershed is situated at about a quarter of the way across the island.

Lastly, the forests of Madagascar, as I was the first to point out, have a very peculiar arrangement. A belt, in some places several leagues in breadth and following the coast-line, from which it is not very distant, completely surrounds the island,† to which it forms a kind of girdle. This forest-belt follows, on the east coast, the eastern slopes of the buttresses of the central mass, leaving between itself and the sea low hills and mountains covered with shrubs, herbaceous plants, and patches of wood. Another belt, which is still narrower, stretches parallel with the first one, along the crest of the ridge which forms the watershed. The vast expanse of country which is surrounded by this girdle of forests is devoid of trees, and even of shrubs, in all the mountainous parts, that is to say, over two-thirds of its surface. These mountains and hills are only covered by a coarse grass, which is not even fit for food for the cattle, but is used by the inhabitants as fuel. Over the plains of the west and the south are scattered small patches of wood and isolated trees. One sees that it is far from the truth that there are immense forests almost covering the island, as has been often said. I will add that if we except a few very beautiful plants and trees, which are remarkable for their form and the elegance of their foliage—such as certain palms, the tree-ferns, and several exquisite orchids, which adorn the forest-belts we are speaking of—the larger number of the trees found there have not a very vigorous appearance; their moderate height and their covering of lichens show that the soil from which they spring is of no great depth. The forests of the north-east seem finer than the others.

5.—*Notes sur les Recherches Géographiques dans l'Île de Madagascar (Comptes rendus de l'Académie des Sciences; août 1871).*

6.—*Rapports au Ministre de l'Instruction publique sur une Mission à Madagascar (Archives des Miss. Sci. et Lit.; 2e sér. t. iv. 1867; t. vii. 1872).*

7.—*Excursion chez les Antanosys émigrés (Bull. Soc. Géog.; fév. 1872), avec une carte.* This pamphlet gives details about the country of the Mahafaly and the emigrant Antanosy, whose capital, Salobe, is situated 64 miles from St. Augustine's Bay, and where no other European had until then penetrated. The sketch map of the route which accompanies

* I think M. Grandidier has here a little exaggerated the irregularity of the surface of the interior mountainous region. The level, or nearly level, portions are more numerous than he supposes; as those will admit who have travelled in Vönizôngo, or Anätivôlo, or the valleys of the Mananàra and the Manànta, or the Antsirabè district, or parts of the country on the road to Fianarantsoa, such as the *éfitra*, the district round Ambôsitra, and other places.—J.S.

† See, however, Mr. Baron's remarks on this point, page 274, *ante*.—J.S.

this pamphlet gives an outline survey of the Anolahina, the most important river of the south-west of Madagascar. The triangulation was prolonged as far as the River Rànomèna, which is situated further north, but the natives would not let me ascend it beyond sixty miles.*

8.—*Madagascar (Bull. Soc. Gèog. ; avril 1872, avec une carte)*. This article, which treats specially of the inhabitants and of the productions of the country, and of which we shall have to speak again further on, is accompanied by a fac-simile of three maps of Madagascar, one of 1858, another of 1863, and my own of 1871, in order to show the important modifications which my explorations have produced in our knowledge of the orography and the hydrography of this island.

9.—*Un Voyage Scientifique à Madagascar (Rev. Scient. 1871)*. In this paper I have given a compressed account of my geographical labours and a description of the physical geography of the island.

10.—*La Carte de la Province d'Imerina*. Autographiée en quatre couleurs, à 1/200,000; 1880. The province of Imerina, which Europeans formerly wrongly named Ankòva, is situated in the centre of Madagascar; it is the most populous and important of all the provinces, for one must count there at least 1,200,000 inhabitants; and, as the whole island has hardly more than two millions and a half, one sees that it alone includes about half the total population. Imerina is the cradle of the Hova, who, thanks to their superior intelligence, their habits of obedience to discipline, the instruction received from European officers, and also their unusual fecundity, have enjoyed for a century past a preponderant position in Madagascar, under the guidance of Andrianampònimérina and Radàma I. So that as it was here a matter of great interest not to rest content with a simple survey by compass, I made every effort to project over its surface a series of triangles. From seven principal summits I took with the theodolite a number of horizontal sights, comprising 357 observations, and I obtained either by the eye or by the Burnier compass the details included in the triangles. I was aided in this last work by a missionary† whose professional duties take him all over this district, and whom I furnished for this purpose with the necessary instruments and instructions. I procured two bases for the astronomical observations by carefully taking the latitude of one of the two most elevated peaks of the Ankaratra mass of mountain, and that of Antananarivo, on one side, and of the mountain Miakòtso, on the other. The centre of my operations was Antananarivo,‡ at the open space called Andohàlo.

The map which is the result of these observations, and of which I published in 1880 a preliminary sketch to the large scale of 1/200,000, serves as the basis of an engraved map which will accompany the volume on the geography of Madagascar I am now preparing. It comprises an extent of country of about 90 miles by 76, with an area of about 6800 miles; on it are shown the positions of about 800 summits, of which 550 are named, and of a thousand villages and hamlets, of which 568 have their names given.

* Salobe, lat. south 23° 31' 23"; Tolia, lat. south 23° 21' 21". † Rev. Père Roblet. ‡ Lat. south 18° 55' 4"; long. east (Paris) 45° 15' 45."

11.—*La Province d'Imerina* (*Bull. Soc. Géog.*; 2me trim. 1883, avec une carte hypsométrique). In this article I have given a general sketch of the province of Imerina, of which I have spoken in the preceding section, both from the point of view of its physical aspects, as well as with regard to its political divisions and its inhabitants. A hypsometrical map, to the scale of 1/500,000, with circles each distant from the other 100 mètres, has been prepared by the help of a thousand observations of altitude taken both by myself and Père Roblet. It shows clearly, by the help of graduated tints, in one part the great mass of Ankaratra, of which the four peaks, Ambôhimirândrana (7710 ft.), Ankavitra (8300 ft.), Tsiàfakafo (8333 ft.), and Tsiàfajàvona (8497 ft.), are the highest points of the whole island. In another part is shown the valley of Betsimitatatra, which extends to the west of the Capital, and which is watered by the Ikiopa and its tributaries, the Sisaona, the Andrômba, the Kitsaoka, the Ombifôtsy, etc. This is, I believe, the first and the only contour map which has made of an uncivilised country on such a large scale. This map enables one to see at a glance the zones of altitude characteristic of this province, which is so mountainous and desolate beyond the great plain to the west of Antananarivo; and it shows clearly the manner in which the waters part themselves.*

12.—*Les Cartes de Madagascar, depuis les temps les plus reculés jusqu'à nos jours* (*Comptes Ren. Acad. Sci.*; 3 mars 1884). This paper gives new information both as to the date of the discovery of the island, which took place six years earlier than (up to the present time) has been stated, that is to say, on the 10th of August 1500, instead of the 1st of February 1506, and also as to its identification with the island Menuthias of Ptolemy, the country of Djafuna of Masudi, and the island of Chezbeza of Edrisi.

Here terminates the enumeration of publications of the purely geographical kind which I have issued up to the present time. I have in progress the volume entitled *Géographie historique, physique et mathématique*, in which are given in detail all my observations, and which will be accompanied by maps on a large scale of all my routes, and of the various parts of the country which I have surveyed with the theodolite. At present the only part which has appeared is that containing facsimiles of ancient maps, to the number of 43, which I have had reproduced with the object of showing the successive phases through which the mapping of Madagascar has passed.†

Translated from the French of ALFRED GRANDIDIER.

By JAMES SIBREE, JUN. (ED.)

* This beautiful and interesting map of Imerina is reproduced in Captain Oliver's recent book *Madagascar*.—J.S.

† Since the above was written, the letter-press of the historical portion of M. Grandidier's great work has been issued, pp. 96, containing an elaborate and minute account of all the features of the coasts of Madagascar. Another geographical pamphlet, not included in the above list, has been published by M. Grandidier, giving an account of the East Coast Lagoons, a translation of which I gave in last year's ANNUAL (No. X. pp. 205-208).—J.S.

THE AFFINITIES OF MALAGASY WITH THE MELANESIAN LANGUAGES.

WHILE staying in England in 1885, I received, through a friend, a copy of the Rev. Dr. Codrington's new book entitled *The Melanesian Languages*, in exchange for a copy of the *New Malagasy-English Dictionary*; and the editors of the *Annual* have kindly placed a few pages at my disposal for the purpose of calling attention to some of the most striking "affinities" with Malagasy which Dr. Codrington has noted. The reading of this book has been a real pleasure to me; and I am sure all students of the Malagasy language will be interested in the many notable similarities I propose to point out.

At the outset, let me say that I regret that such a thorough investigator as Dr. Codrington should not have had better material to base his comparisons upon, as far as Malagasy is concerned, than Crawford's antiquated list of words, Dr. Parker's (?) *Concise Grammar of the Malagasy Language, Outlines of a Grammar of the Malagasy Language, Grammaire Malgache*, and a Malagasy Grammar by E. Baker, which Dr. Codrington says (p. 101, note) were the authorities (?) he consulted. For, of these books, the first contains many errors; Dr. Parker's work is a piracy of the Rev. W. E. Cousins's book, and where minor changes have been made they are mostly wrong; M. Marre de Marin and Dr. H. N. Van der Tuuk probably have only a theoretical acquaintance with Malagasy; and the Grammar of Mr. Baker is very antiquated and constructed too much on the model of European grammars. Under these circumstances it cannot be a matter of surprise that Dr. Codrington has fallen into some errors, as far as Malagasy is concerned; my surprise is, however, that they are so few.

"We may demur to some of his statements and views, but the book, upon the whole, is pervaded by a penetrating spirit of research and independence of criticism which is quite refreshing. The author takes nothing for granted, nothing on trust, does not hover over the surface of the phenomena, but strives hard to get to the real root of the matter. Probably some of his statements could have been put in a clearer form. But a pleasant and perspicuous form is not often coupled with deep research and keen critical insight." So writes one of our most profound students of Malagasy, the Rev. L. Dahle, to whom I lent the book, and who carefully read and annotated some parts of it and made many remarks confirming, and in some instances expanding, the notes I had already made in the work in preparation for this article. Mr. Dahle further adds: "That he should make some mistakes in the Malagasy, as pointed out in your notes, was only natural. I found the book to be one after my own heart. It has been quite a treat to me; I have met with no other author whose views with regard to the Oceanic languages have agreed so with my own."

But to turn to the book itself. Pages 36-100 are occupied with vocabularies; seventy words in forty Melanesian languages are given from Mr. A. R. Wallace's list,* and, for comparison, the corresponding ones in Malay, Malagasy, and the New Zealand Maori. The lists fill fourteen out of the sixty-five pages, and the rest consist of notes on each word, bristling with points of interest to students of Malagasy.

I would call attention first to the spelling of Malagasy words. Dr. Codrington sometimes writes *i* for *y*, and *u* for *o*. We know that in common with most philologists Dr. Codrington objects to our use of *y*, and urges with

* In *The Malay Archipelago*, vol. ii., pp. 476-501.

others that we never should have adopted the *o* for the *u* sound. Why did not Dr. Codrington adopt the *y* and the *u* throughout? and then we could have seen how such a way would help us in comparisons. We admit that *y* is a mere substitute for *i* at the end of a word, and we could well do without it; and it is true that our use of *o* for *u* is the only case in the Malayo-Polynesian languages where it occurs. We would gladly see the *y* cut out, but the *o* presents a difficulty, inasmuch as many of the tribes outside Imérina give a distinctly open *o* sound for our Hova *o*; and while in Imerina we pronounce *òlona* as *ùluna*, they say *olona*, as an Englishman unacquainted with Malagasy would also do.

If we were now settling the Malagasy alphabet, I should be inclined to reject *y*, substitute *dz* for *j*, and thus reduce the letters to nineteen instead of twenty-one. We could not well substitute the *u* for *o*, for we should still require the *o* for the interjection. I fear we could not carry the natives with us. How should we like, or how would they like, Rainilaiarivuni for Rainilaiàrivòny; Ranavalumandzaka for Ranavàlomanjàka; *dzamba* for *jàmba*; or *midzidzidzidzi* for *mijijijijy*? Then think of *Dzakuba* for *Jakoba*! and, still worse, *Dzesusi* for *Jesosi*! From a philological point of view the *y* is a mere fad; there is just as much and no more to be said for the retention of *j* for *dz*, as there is to lead us to adopt new characters for the consonants *ndr*, *dr*, *mb*, *ng*, *tr*, *ntr*, and *ts*; but I fear we must leave the alphabet alone.

To proceed to the List of Words. The first word is 'ashes,' the Malagasy equivalent is given as *lavènona*, of which *vèno* is the true primitive (?) root, and in the provinces we have *lavènoka*; but there is the Malagasy word *vòvoka*, 'dust,' as a substantive, and 'worm-eaten' as an adjective; and out of the forty words given by Dr. Codrington under 'ashes,' about thirty contain *hu*, *vu*, *wo*, *vuvu*, *bu*, *nu*, etc.

In the second word, 'bad,' the Malagasy word given is *ràtsy*; and Dr. Codrington is I think right in saying this may represent the *rahat* of the Malay Archipelago and the *jahat* of the Malay. The true root is probably *hat*, and it should be remembered that in the provinces *ràtsy* is shortened to *raty*, thus showing a true affinity between the Melanesian and Malagasy.

In the word for 'banana,' the provincial Malagasy *òntsy* (found also as *òtsy*, and *hòntsy*) has been taken, and not the Hova word *akòndro*; and Dr. Codrington ingeniously shows that this word, differing from the Malay *pisang*, has a close resemblance to several of the Melanesian words, especially *Ulaw*, *Malanta*, *Saa*, and *Malanta* *Bululaha huti*. This is more striking still if we remember what has just been written about *ràtsy* and *raty*; for if *raty* equals *ràtsy*, surely *huti* of the Melanesian languages is the very *hòtsy* of provincial Malagasy. (Cf. *fòtsy* and *fòty*, *atsimo* and *atimo*, etc.)

The fourth word, 'belly,' seems to offer little similarity, for the Malagasy is *kibo*, and in the forty words of the Melanesian there is no resemblance; but I notice that in fifteen of them there is either a *to*, *og*, *tog*, *g*, or a combination of these three letters. Can these fifteen be compared with the Malagasy provincial word *tròka* or *tròky*? This seems to me to be very probable. But further, Dr. Codrington in his notes (p. 55), in calling attention to the Malagasy word for bowels, *tsinay*, says that *tinæ* is the Banks' Is. word for the same. He has not been aware of the fact that *tinay* is always used in the provinces. Note again that the *ts* is used in Imerina for *t* in the provinces, and is also so used in the Melanesian, Malay and Polynesian languages.

The fifth and sixth words, those for 'bird' and 'black,' clearly derived from the Malay, seem to have nothing in common with the Melanesian, save that the prefix *ma* in *mainty* (primitive root *inty*) is found in three dialects.

In the next word, 'blood,' the Malagasy *ra* (cf. Malay *darah*) seems to be

the real root ; and it appears in no less than twenty-three of the Melanesian words.

The eighth word, 'boat,' is very interesting. There seems nothing to connect the Malagasy *lakana* with the Malay *prau* ; but the Maori *whaka*, and thirty-one of the Melanesian words *aka*, *haka*, *vaka*, *faka*, etc., surely point to something in common. The resemblance is again more striking when we know that *laka* is the primitive root and is still in use in the provinces for *lakana*, which is only used in Imerina. Unfortunately Dr. Codrington says only canoes constructed with planks are properly called *aka*, *vaka*, etc. ; for in Madagascar *laka* or *lakana* means a canoe made by hollowing out the trunk of a tree, the words *lakam-piàra* and *lakan dràftra* being used for built canoes.*

The Malagasy *zànaka*, a child, offspring (primitive root *ànaka*), is undoubtedly the same as the Malay, but there seems nothing in common with it in the Melanesian words having a similar meaning.

The word for 'cocoa-nut,' as *nu*, *niu*, and *liu*, appears in nearly twenty of Dr. Codrington's list ; and he rightly points out that this is the Malagasy *niho*, although it appears in Malagasy always as *vànihò*, i. e. 'fruit of the *niho*.'

There is a strange mistake in the Malagasy word he uses for 'cold.' It appears on page 41 as *malaina*, which is really 'lazy,' an adjective in *ma* from root *laina*. The Malagasy words for cold are *hatsiaka*, s. and *màn-gatsiaka*, adj. The word *firy*, coldness, and *mafiry*, painful, grievous, seem to have a likeness to the Matabello *mariri*, Mota *mamarir*, Ceram *makariki*, and the Maori *makariri*. There is another word for coldness and frigidity in Malagasy, viz. *nàra*, making an adjective *manàra*.

Under the word 'ear' he gives *sòfina* as the Malagasy word, and in his notes draws attention to the Sàkalàva *tadiny* ; but it should be remembered that *tadiny* is used for the foramen of the ear in Imerina ; and *l* and *d* are very frequently interchangeable, a *d* in an Imerina or Hova word frequently becoming *l* in the provinces, and *vice versa*. Cf. *kèlikèly* in Imerina becoming *kèdikèdy* among the Bara, and perhaps among other provincial tribes also. Hence there is here a great resemblance between Malagasy, Melanesian, and Micronesian.

The identification of the Malagasy *atòdy* (or *atòly* in the provinces) with the Malay *tulor* and eighteen of the Melanesian group is very easy.

A more intimate acquaintance with Malagasy would have enabled Dr. Codrington to see that while in Imerina the common word for father is *ray*, the words *àba*, *bàba*, *àda*, *dàda*, etc., are also used, and these may be compared with the Malay *bàpa*, *bàba*, etc.

The word for 'finger' in Malagasy, *ràntsan-tànana* (lit. 'branch of the hand'), seems to have no connection with any of the Melanesian words, but has an affinity with the Malay *rantung* ; but Dr. Codrington points out that in the Malay Archipelago some compounds of *lima*, a hand, are found, and this leads me to think there is a connection between the Malagasy *dìmy*, five (prov. *lìmy*), and the word *lima* so used.

For 'fire' we have an interesting list of words : *àfo* in Malagasy ; "Malay, *api* ; Polynesian, *ahi*, *afi*, and others *efi*, *aif*, *yaf*, *yap* ; Bourir, Amblaw, and Ceram, *afu*, *ahu*, *yafò* ; and through the Malagasy *àfo*, lead on to *aow* and *hao*. In Melanesia the variation is not so great : *avi* and *ev* differ little ; but if, as is probable, *kapi* and *gapi*, *kapu*, *gapò*, *cap*, are the same word, there is enough to show a very close connection between the languages." There is a still further connection, for the Malagasy word for heat is *fàna*, adj. *mafàna*, hot, which appears in the Malay *panas*, Friendly

* See a short paper by Mr. Dahle on this word, later on in this ANNUAL.—EDS.

Is. *mafana*, and others *bafanet*, *mofanas*, etc.; and Dr. Codrington thinks this may be the same as the Fiji *waga*, and the Faté *faga*, for $q=ngg$, and $g=ng$.

Dr. Codrington shows that the Malagasy *fiana* or *fia*, which is only used in the provinces of Madagascar for 'fish,' has a number of relations in Malay, Maori, Marshall Is., and Mota, as representing many other languages in the Malay Archipelago, Polynesia, Micronesia, and Melanesia.

Lâlitra, a fly, Malay *lalât*, is again widely distributed; for the *la* or *le* appears in no less than thirty of Dr. Codrington's list of Melanesian words.

We hardly know whether to trace a resemblance between *ahôko*, a fowl, and the *kua*, *kokoroka* of the Melanesian, or not. *Kôhokôho* in Malagasy is a word used in calling a fowl, and has its usual passive and intransitive verbs in *ina* and *mi-*. The name may have arisen from its cluck. The word *kôkolâky* again is uttered by the Malagasy when a hen is sitting, in the hope of its eggs producing cock chickens, and *kôkovavy* when hen-chickens are desired. Then we have the Swahili *kûku*. It is difficult to say with which of these the Malagasy word is connected.*

The word for 'fruit' again is very widely distributed, and there are some others in the list about which much could be written; but the space allotted for this paper will not admit of a detailed review of all, more especially as the "Short Comparative Grammar" of Dr. Codrington's book (pp. 101-192) is much more interesting to Malagasy students, as showing how much there is in Melanesian resembling Malagasy.

There is a very interesting page or two at the beginning devoted to the Demonstrative Particles, in which our *ity*, *iny*, *itsy*, *iry*, *aty*, *ary*, and *any* are compared with the Malay *ini*, this, *itu*, that, *sini*, here, *situ*, there; Maori *nei*, this near me, *na*, that near you, *ra*, that far; and Marshall Is. *kein*, this, with the same meanings; and he then writes: "In these the particle *na*, *ne*, *ni*, so common in Melanesia, is conspicuous. No form with *k* appears; and unless *r* has taken the place of it, no *l*. In Maori and in Malagasy *ri* and *ra* point afar, which may very well be *li* and *la* of Melanesia." Mr. Dahle refers us to his article in ANNUAL VIII. p. 79, for some remarks about these demonstrative particles.

The notes on the Definite Article are very striking. The article used in thirty islands is given, and I notice that in all but three *n* appears; in two of the remaining ones there is *o* and *lo*, and in the others *re*. Dr. Codrington rightly sees a connection with this ever-recurring *n* or *na* and our Malagasy *ny*; but as Mr. Dahle in the article just mentioned has treated the matter fully from a Malagasy point, we need do no more here than simply refer to it.

The Personal Article is very common though not universal in Melanesia, and is used exactly as our personal articles are in Malagasy. "*O vat* in Mota is a stone, *i Vat* is Stone, a man's name." This article, he says, "varies but very little, being *i*, *e*, *a*." *I* is in use in ten islands; *e* in Vanua and Torres Is., and *a* in five; so that the *i* predominates. Dr. Codrington, in referring to our use of the *i* before common names of relationship—father, mother, etc.—says: "In this latter particular also the correspondence with Melanesian use is complete." He further adds: "The use then of a personal article, † a remarkable feature in a language, is found to prevail in Melanesia, Polynesia, in Madagascar and, almost certainly, in the Malay Archipelago. The meaning and use is identical. . . . The common possession of this

* Probably these are all merely examples of onomatopœia.—EDS.

† In Dr. Codrington's book all these parts of speech are printed with a capital; we have not thought it necessary to follow him so literally in this rather unusual mode of spelling common nouns.—EDS.

feature is certainly a point to be noted in the comparison of the Ocean languages."

In reading through the Pronouns, I cannot find any striking resemblance, except in the third person, where *i* occurs six or seven times; but in the fact that in all the Melanesian languages there are two forms of the first person, the *inclusive* and the *exclusive*, which correspond exactly with the Malagasy, a most interesting connection is evidenced. After giving a list of the Malagasy pronouns, Dr. Codrington writes: "The resemblance between these and the Melanesian pronouns is certainly not easy to see." He draws attention to the *re* making a plural, which we know Mr. Dahle holds to be the contracted form of *rba*, and I think Dr. Codrington is probably mistaken in trying to make out that the *re* of our pronouns in the third person *ra* of Melanesia.

In the Suffix Pronouns the resemblances between the Melanesian and our own are too great to be attributed to mere accident. In the first person, four languages have *ku*, the exact sound of our own *ko*, seven *gu*, some of which are nasal *ng*, nine have *k*, one (Fiji) has *qu*, others have *g*, *ke*, *go*, and only one, Duke of York, has *n*. In the second person, *m*, *ma*, or *mu* predominate; but in the *third* person, out of thirty-one islands or groups, in only one case is an *n* missing. Further, Dr. Codrington points out that the Maori and Polynesian possessives are *ku*, *re*, and *na*; and after comparison and reference to the Malay, he says: "It is a common possession in all these archipelagos; and this unites the languages together in very remarkable manner. From whatever region, by whatever routes, they have reached their present seats, it is evident that these pronouns were among them before they separated." In passing, let me remark that Dr. Codrington has pleased Mr. Dahle in one paragraph, p. 127, in which he says: "The pronouns suffixed are used in the same way in Malagasy with some verbs: *tia-ko*, I love, *vòno-ko*, I kill, which, if explained as the Santa Cruz example, are 'mine the loving,' 'my killing.'" Mr. Dahle has annotated the paragraph as follows: "Yes, quite correct." I do not wish to re-open the question of passive verbs, but I would respectfully point out that the *tia* to which the *ko* is suffixed is not *tia* at all, but the *passive tiana*, and the *na* has dropped, as is the case with all trisyllabic words with accent on antepenult; and *vonoko* is not used, but *vonòiko*, from the derivative passive verb *vonòina*. No Malagasy would use *vonoko* for 'my killing,' in the sense of 'killed by me.'

I may also note in passing that while there seems little resemblance between Melanesian and Malagasy Interrogatives, Dr. Codrington says they do not say "What is his name?" but "Who?" exactly as the Malagasy do. In Lepers' Island there is an excellent illustration of similarity with Malagasy, which I must quote at length: "There is in that language the word *heno* or *hen* which stands in the place of a proper noun which is not known or not remembered. If the question is asked *I heno?* Who? the question is not who he is, but what his name is. If a person fails to remember the name of another, he asks *I heno?* What is his name? The reply gives the name. In Florida *hanu* is used." Now let us remember that *i* is used for *izy* in the provinces, notably in Bètsilèo, and *ia* for *iza*. Then we have in Imerina *Anona*, *Iànona*, *Rànona*, etc., and provincial *Ano*; so that dropping the *h*, *i hano* of Lepers' Island and a *hanu* of Florida look like genuine Malagasy words. If a Betsileo asks 'Who is he?' he would say '*Ia ano?*'

In the Nouns there seems to be a resemblance to our relative nouns, the terminations being *ana*, *na*, *ena*, *ina*. For instance, in the New Hebrides, *rasa*, to come, *rasuana*, coming. It certainly is a matter worth keeping before one's mind, for I think we have here a closer affinity than we have thought of before. Take the Malagasy *ràso* and *rosàna*. The meaning is different

from that of the New Hebrides, but the construction seems identical. Take another example from Florida: *bosa*, to speak, *bosana*, his speaking; but when the verbal substantive is formed by adding *a* to *bosa*, the suffixed pronoun makes *bosaana*, and the meaning is passive, 'his being spoken to.' Dr. Codrington adds: "The verbal nouns of the Malagasy ending in *ana* have a clear relation to those of the Polynesian and Melanesian languages." I should, however, like to know to which of our *ana* he refers. For instance, we have the word *tety* in Malagasy, which we think is from the Malay *titi*, *tituyan*, a bridge. The original is not in use in Imerina, as I doubt whether the provincial *tety* is the same. From this word *tety* we get, by adding suffixes, *tetèzina*, v. pass., to be walked through; *itetèzana*, v. rel., referring to time, place, manner, etc.; *tetèzana*, verbal noun, a bridge.

Each of these has a suffix: the passive verb *ina*; the relative verb *ana*, and prefix *i*, from the *mi* of the active verb; and the verbal noun *ana*. I trust that our new Dictionary, which I learn Dr. Codrington has received, may help him to study these forms; and it is to be hoped that the clear arrangement of the words, and the regular order in which all forms are given, may enable philologists to trace affinities with other languages in a way not possible before.

The next subject treated of by Dr. Codrington is the Prepositions, and here again there are some very close affinities with Malagasy. In no less than twenty-four of the languages referred to by him there is a close resemblance to our prepositions *i* and *a*, in *imàso* and *amòrony*, etc. "The simple locatives *a*, *i*, *e* appear throughout the whole Melanesian area." He identifies our preposition *amy* with the Mota *ama*, and in this we think he is right, although a writer in the *Madagascar Times* has been trying to show that we have no word *amy* in the language.* I cannot agree with him; for, if there were nothing else to disprove his theory, the very fact of our having *amiko* is to my mind sufficient to prove that *amy* is the root; for were it *aminy*, we should most certainly have *aminko* and not *amiko*. There is no other word in the language which rejects a *ny* before adding a suffix, and surely we cannot base a theory on an exception, and an exception which also violates the ordinary rules of the language.

Our prepositions *a*, *an*, *amy* (*amby*? *avy*?) Dr. Codrington compares with the Melanesian prepositions, and says the Melanesian locative *a* is represented by *a*, as in *an*; and the other prepositions are compounded with this *a*, answering precisely to the Mota compound prepositions *ama* and *ape*. I confess that I can hardly follow him here. In the Malagasy language an *a* or *i* prefixed to a noun makes a preposition, as *màso*, the eye, *imaso* or *imasonry*, before the eyes; the final *ny* Dr. Codrington would have us believe is a genitive preposition, and gives us the example *ràviny ny hazo*, *ravin' ny hazo*, or *ravin-hazo*=leaf of a tree. We may accept this, I think. He has another interesting note on the *t* of *tamy*, as a tensal sign, and tells us that in Mota an adverb of place is formed by the prefix *ta*; e.g. *avea*, where? *tavea*, belonging to what place? and says: "One may doubt whether it is not this sense which in Malagasy is transferred to, or is taken for, that of past time." To my mind this *ta* is very significant. Take, for instance, the word *aiza*? or *aia*? where? and the past of the same, *taiza*? and *taia*? How very like the *avea* and *tavea* of Mota?

Then again he says: "There is a much more characteristic and more widely applicable correspondence between the Malagasy and the Melanesian use of the preposition *an*, *a*." Further down he says: "It is a difficulty in teaching geography to Melanesians to make them clearly apprehend that Asia, Africa and America are not Sia, Frika, Merika, with the preposition *a* ;

* See Mr. Dahle's paper, pp. 291-294, *antc.*—EDS.

so entirely is that manner of using the name of a place in accordance with their way of speech." Just think of our *Andsy*, *Ankàratra*, *Antanàna*, *Ivòhidrià*, etc., etc., and then we see how close is the affinity.

In the Adverbs we do not see so close a resemblance, but I have noted among them that a *maran* is used for 'at light,' and I have been reminded of a Betsileo use of *amaray*, meaning 'in the morning.'

The Adjectives give us a fine field for comparison. Dr. Codrington fills several pages in treating of adjectives formed by suffixes, which are mostly *a*, *ga*, *ha*, *ra*, *ina*; and having shown how common they are, he says that neither the Malay nor the Indian Archipelago vocabularies show any adjectival termination, and adds: "The Malagasy equally fails us." Such is not the case, however; there is a large class of adjectives formed by suffixes. True all grammars, before my *Malagasy for Beginners* was published, had dismissed them with a line or at most two; but in preparing my book I made up a long list, which can be extended, of "Adjectives formed by Suffixes;" and Mr. W. E. Cousins, in his revised "Concise Introduction" prefixed to the new Dictionary, gives them a place (p. xlii.): "Root with affix *ina*, *ana*, *ena*," with a reference for further illustrations to my book. Let Malagasy students read the following from Dr. Codrington's book:—"Maori adjectives have no peculiar form, but in Samoan the addition of *a* to a noun makes an adjective, as *fatufatua*, stony, from *fatu*, a stone. It is at once evident that this is the termination *ga*, so common in Melanesian;" and think of our *vàto*, a stone, *vàtòina*, stony; *òlitra*, a worm, *olèrina*, worm-eaten; *vàva*, the mouth, *vavàna*, talkative, loquacious; *bika*, shape, *bikàna*, shapely, etc., etc. Following Dr. Codrington's reasoning, I would say: "It is at once evident that this is the termination *ga*, so common in Melanesian." So that Malagasy, instead of "equally" failing us, shows a very strong likeness to the adjectives of Melanesia formed by suffixes.

The large number of Malagasy adjectives formed by prefixing *ma* to a root shows a close affinity with Melanesian languages. Let the following extracts from Dr. Codrington's book speak for themselves:—

Of Mota :	he says :	"There is a prefix of condition <i>ma</i> ."
" Motlav :	"	"The prefixes <i>ta</i> and <i>ma</i> ."
" Volov :	"	"The prefixes <i>m-</i> , <i>t-</i> are those of condition."
" Pak :	"	"Adjectives have the prefix of condition <i>ma</i> ."
" Leon and Sasar :	"	"The prefix <i>ma</i>characteristic of adjectives."
" Merlav :	"	"The prefix <i>ma</i> is common to adjectives."
" Gog :	"	" <i>Meresom</i> , rich; <i>mansom</i> , avaricious."
" Norbarbar :	"	"The prefix of conditions <i>ma</i> ."
" Lo :	"	".....and the prefix <i>me</i> , <i>ma</i> ."
" Maewo :	"	"The adjectival prefixes <i>ma</i> and <i>ta</i> ."
" Oba :	"	"The prefix of condition <i>ma</i> is common to adjectives and verbs."
" Espirito Santo :	"	"The prefix <i>na=ma</i> appears."
" Sesake :	"	"Adjectives very frequently have the prefix of condition <i>ma</i> ."
" Fagani :	"	"The prefix of condition <i>ma</i> is common to adjectives and verbs."
" Florida :	"	"The prefix <i>ma</i> , as in other languages, shows condition and is found in adjectives."
" Duke of York :	"	"Many adjectives begin with <i>ma</i> , the common prefix of condition."

Thus out of 34 Melanesian languages under consideration, 16, or nearly one half, have a close resemblance to the large class of adjectives in Malagasy beginning with *ma*, or *m*, as *madio*, *mahitsy*, *m'ina*, *màvo*, *màrina*, etc., and where the meaning of the prefix is exactly similar. Surely this is more than an accidental resemblance. I have carefully gone through the modes of expressing comparison of adjectives in Melanesian, but I can find nothing corresponding to our *kokòda* and *nòho*. But I think Dr. Codrington's

data, and my own, based on the adjectives formed by suffixes and prefixes, prove that a very close affinity exists between adjectives in Melanesian and Malagasy.

Next in order come the Verbs, and in these I confess I am somewhat disappointed; for, from what I had seen in articles, particles and adjectives, I expected to find many affinities here. I will try, however, to pick out all that is interesting to us, and at the same time point out Dr. Codrington's misconceptions.

As far as the fact of verbal particles being used is concerned, there is a close resemblance, for they are universal in Melanesia and Polynesia and are found in Micronesia also, but the particles are not at all like our *mi*, *man*, *mampi*, *mampan*, etc., etc. In referring to our Malagasy particles he says: "A certain obscurity belongs to the practice of writing the particle in one with the verb, verbal particles appear with change according to the tense: . . . *mijery* is taken as the verb, *jery* as the root. By writing *mi jery* separately, *mi* is shown as the verbal particle. The prefix may be *ma*, *na*, *ha*, as *mahay*, *nahay*, *hahay*, or *mo*, *no*, *ho*." Now we can easily see that Dr. Codrington does not understand our verbal prefixes. True we have *ma*, changing to *ha* and *na* for future and past, but we have no *mo*, as he says. "The main point of comparison is the common use in Malagasy and the Melanesian languages of particles prefixed to the verb, which change to mark the tense. As in Melanesian languages, these particles are used when a prefix—reciprocal, causative, conditional (?), is taken before the verb: *mankatia* is to love, *mampankatia*, to cause to love, the causative prefix is said to be intercalated, *ma* remains before the causative." "In Moto *tape* is to love, with the verbal particle *we tape*, *vatape*, to cause to love, and this with the verbal particle *we vatape*; *we* corresponds to *ma*, *va* to *mpa*, the true verb is *tape* and *katia*. In this there is the double correspondence of the verbal particle and the causative prefix. In the Philippine languages the prefix *m* changes into *n* to mark the past time."

The above quotations are very interesting to us, in spite of Dr. Codrington's misunderstanding of our prefixes. He has evidently not perceived that *manka* is a prefix itself, and that *tia*, and not *katia*, is the root of the verb. We can easily form other examples from our prefixes, and the use of such prefixes in both languages points to some common origin. The fact of an *m* in the Philippine language changing to *n* for the past tense corresponds exactly to our use.

In Maori he tells us, on the authority of Dr. Maunsell, that "the verbal particles are words which have no meaning in themselves, but which, prefixed to a word, endue it with the qualities of a verb." This again is true of our Malagasy verbal prefixes.

On page 183 Dr. Codrington gives a list of the verbal prefixes, which he arranges in four columns, headed Causative, Reciprocal, Condition, and Spontaneity. The Causative is almost universally *va* alone, or, with a second syllable, *ka*, *ga*; it is *a* in the Loyalty Is., and becomes *wa* in Duke of York, while in Savo it is *au*, which seems peculiar. Dr. Codrington urges that this *va* is the *whaka*, *faka*, *aka*, etc., of the Polynesian languages; and says there can be little doubt that the Malagasy prefix *maha* is the same, basing his opinion on a quotation made by Marre de Marin from Baker's Malagasy Grammar. Then he says that the causative intercalary appears to be the causative prefix *fa*, and gives the illustrations *mandéha*, to go, *mampandéha*, to cause to go; *manao*, to do, *mampanao*, to make to do; *miditra*, to enter, *mampiditra*, to cause to enter; *midaka*, to go out, *mampiaka*, to cause to go out. Then he says: "To call the particle intercalary misleads, for the verb is *nao*, *deha*, *dira*, as is shown by the change of the

verbal particle from *ma* or *mi* to *ha*, *na*, *hi*, *ni*." We see that he is again in error in the above quotation, for we know that *tao*, *léha*, and *iditra* (or *idi*) are the true roots. We are surprised to see that he writes: "To write the verbal particle separate from the verb prevents the misconception conveyed in the word 'intercalary.' In the Malagasy words above, *n* in *mandeha* belongs to *d*, not to *ma*, and the causative prefix appears as *mpa*, *mpi*, for *pa*, *pi*, *fa*, *fi*, in accordance with the use of the languages." Of course we cannot assent to some of these statements, and Mr. Dahle has added to my notes on this page: "The author is going astray on this point." But while we cannot agree to the statements about *nao*, *deha*, and *déra*, and of the *n* in *mandeha* not belonging to the *ma*, we can very readily accept what he urges on the question of there being an affinity between Malagasy and the Melanesian language *in the use of causative prefixes*.

The Reciprocal prefixes are given as existing in twenty-one Melanesian languages; they seem to be two, represented by *vei* and *var*, with variations to *vui*, *hei*, *hai*, *fai*, *we* and *e*. Here he again strives to show the intimate connection between Malagasy and Melanesian; but unfortunately he again falls into the error of *katia* being the root of *mifankatia*, and seemingly of considering *katahotra* the root of *mampifankatáhotra*. We must be content therefore in going no further than saying that Malagasy and Melanesian are alike in having reciprocal verbal particles, -although the particles in themselves are totally different.

"The prefixes of Condition *ma*, *ta*, are again almost universal in the Melanesian languages." In the list twenty have *ma*, *me*, or *m'*, and in others *ta*, *t'*, and *da* take their place. In his examples he gives *wora*, asunder, *mawora*, broken asunder; *hare*, to tear, *mahare*, torn. These are very much like our *tory*, sleep, *matory*, to sleep, as we have usually rendered it, but if we say *asleep*, the analogy is complete. This surely is an important matter to be remembered in our study of Malagasy.

The prefix for Spontaneity appears in thirteen of Dr. Codrington's list, as *tara*, *tav*, *ava*, *tafa*, etc. What he says is worth quoting: "An example from Mota will explain it: to untie a rope is to *ul* it, but a rope that has not been untied by anybody, but has come untied by itself, *me tavaul*. The same is the case when the prefix is not applied to a verb: *raka* in Mota is 'up,' *tavaraka* is to get up, not to be raised, to get up of one's self. . . . The resemblance between the Malagasy *tafa* and the Banks' Is. *tava* is so complete in form and signification, and this in a fine point of meaning, that, considering the space of ocean that separates the languages, it is a matter of astonishment that it should exist. It is impossible that it should be accidental; it could not be introduced by Malays or Polynesians who have it not; it must have survived no one can tell what vicissitudes and changes, in a course of years which no one can number, and presents itself, like a rare species of plant or flower in isolated and widely separated localities, a living and certain proof of common origin and kindred." The above quotation is of extreme interest to all concerned in the study of languages, and we heartily endorse every word he says. But for the sake of philologists who are not Malagasy scholars we must add that *tafa* has other meanings in Malagasy. It is sometimes used exactly like *voa*, as a genuine passive prefix: e.g. "*Tafa-tsangan' ny mpandrafitra ny hazo*" means "Has been set up by the carpenter the wood." Sometimes it also implies that the subject of the sentence has come into the state implied by the root, undesignedly (cf. *New Mal.-Eng. Dictionary*, p. 597, *tafa*). While I was preparing the Dictionary the native who gave me an illustration of the *third* meaning of *tafa* said: "Suppose you are knocking a table with no intention of disturbing anything, but your knocking disturbs or shakes the pens on the rack, the

pens would be *tāfahetsika*; and again, windows made to rattle by the explosion of gunpowder would also be *tāfahetsika*." The meaning seems passive in such instances, and led me to put *tāfa* with the passive prefixes, seeing that like the *voa* and *a* it takes the suffix pronouns as the agent.

Dr. Codrington, in concluding his notice of the verbs, writes: "M. Marre de Marin maintains that a Malagasy verb with affix, in its radical state, indicates a passive, and that the various prefixes make the verb active, neuter, causative or reciprocal." "On ne saurait trop insister sur ce fait si curieux et qui est l'une des assises fondamentales de grammaires malgache, malaise et javanese." Unfortunately M. Marre de Marin is in error in this. The passive prefixes are

A-	as	<i>rafitra</i> ,	<i>arāfitra</i>
Voa-	"	"	<i>vovāfitra</i>
Tāfa-	"	"	<i>tāfarāfitra</i> ,

and then there are passives with suffixes; e.g. *rafitra* becomes *rafétana*, etc. The word *rafitra* in the new Dictionary gives a good illustration of the prefixes and affixes, passive and active.

In the reduplication of verbs also we have another affinity, although Dr. Codrington does not quite understand the Malagasy custom in such cases. He says: "It should be observed, as concerns *form* of reduplication, that though prefixes, causative and other, are reduplicated with the verb, the verbal particles never are. *This is the case also in Malagasy.*" I have emphasised the last sentence because I cannot agree to it. This is *not* the case in Malagasy. No prefix is ever reduplicated, and even the weak final syllables *na*, *ka*, and *tra* are frequently thrown off from the former part before adding the second. To take one of Dr. Codrington's words as an illustration, *mifampankatiatia*. *Mifampanka* is the compound prefix, which we call reciprocal causative, the word *tia* is the root, and only *tia* is reduplicated, giving the verb a *less* intense meaning than if used alone. Reduplication of a verb never emphasises its meaning. It does, however, sometimes indicate continuance or repetition, as in *manitsakitsaka* (reduplicated root *hitsaka*, with prefix *man*), the meaning of which is to trample on repeatedly (cf. *New Mal.-Eng. Dictionary*, p. 267, *hitsaka*).

The last point to which I would call attention is that of the Numerals. We have long known that the Malagasy numerals as a whole bear a greater resemblance to the numerals of Polynesia and the Malay Archipelago than to the Malay. Mr. Wallace's list, quoted by Dr. Codrington, is as follows:—

In 33 languages for	<i>one</i> ,	22	have some form of	<i>sa</i>
"	<i>two</i> ,	30	"	<i>rua</i>
"	<i>three</i> ,	27	"	<i>tol</i>
"	<i>four</i> ,	all	"	<i>pat</i>
"	<i>five</i> ,	31	"	<i>lima</i>
"	<i>six</i> ,	30	"	<i>an</i>
"	<i>seven</i> ,	29	"	<i>pitu</i>
"	<i>eight</i> ,	24	"	<i>walu</i>
"	<i>nine</i> ,	29	"	<i>sio</i>
"	<i>ten</i> ,	12	"	<i>pulu</i>

Dr. Codrington says that the decimal series of Melanesia is identical with that just given of the great majority of the languages of the Malay Archipelago, but not with Malay itself. We only need to put Madagascar for Melanesia in the above sentence to show how close is the affinity.

Some of Dr. Codrington's analogies and derivations may at times seem far-fetched to a casual observer, but I think it will be admitted that he generally succeeds in proving his case. I would remind Malagasy scholars that there are many words in Malagasy that seem totally different and yet are really the same. Take the Hova word *maizina* and the Bara word *mika*,

and who at first sight would say they were the same? and yet they are. On my return from my perilous journey to the S.W. coast, I was lying weary and sad in a Bara house, and as one after another came trooping in, unable to distinguish any person in the place owing to the thick smoke, the expression "*meka itoy*" was always used. Now see how this is *maizina*. Eliminate first the *z*, as is common in *ia* for *iza*, *aia* for *aiza*, and *maina* is left. We know that *na*, *ka*, and *tra* (?) are interchangeable, e.g. *fasi*, *fàsina*, and *fàsika* all meaning 'sand,' thus we get *maika*. But I found that the Bara generally pronounced the Imerina diphthong *ai* as *e*—my guide Rainibèbaka always being called *Rènièbèbaka*. Hence by a simple process *meka* is seen to be really the same word as *maizina*.

In conclusion I would say how much we are indebted to Dr. Codrington for showing us, in a far more convincing manner than any other writer we know of, how close is the affinity of Malagasy with the Melanesian and other Oceanic languages. We have known for a long time that there is a large number of words in the Malagasy resembling Malay and other allied languages, for we have nearly 400 such noted in the new Dictionary. The grammatical construction of the Malay is, however, so different from Malagasy that we always had to stop at *words*; but Dr. Codrington shows us that in articles, pronouns, particles, nouns, verbal forms, prepositions, numerals etc., the connection between the Oceanic languages and Malagasy is very close. Hence we are led to the question: Whence came the Malagasy? I do not pretend to have the ability to say much on the subject. We all know that the Hova are a different race from the rest of the tribes inhabiting the island. All the outlying tribes seem to have more in common with each other than the Hova have with any one of them. Have the Hova been brought by currents or winds from Polynesia, and having mixed with and conquered the rest of the Malagasy tribes, given them their language? or how? I would remind ethnologists and philologists that the eastern coasts of Madagascar are covered with pumice stone brought by the currents from the great eruption in Java four years ago. I saw tons of it on the beach at Mâhandro in 1885; and during the voyage to Mauritius we passed shoal after shoal of it still being drifted along. If such vast amounts of pumice can thus be brought so many thousand miles, could not boats be also brought? I merely wish to draw attention to the fact, leaving competent scientists to take it into consideration. Is there not a close resemblance between all these Oceanic languages, Malagasy being the western boundary, and the isles of the Pacific the eastern? Dr. Codrington has given us a most valuable contribution from the Melanesian point of view; and I wish some philologist with time and means at his disposal would take up the subject and compare all the grammars of the Oceanic languages and tabulate them as clearly as Dr. Codrington has done his portion of them. We will try to do our best for Madagascar, and I do not yet despair of being able to get a tabulated list of the variations of words among our Malagasy tribes; although I must confess my appeals to missionaries and others, natives and Europeans, stationed among the various tribes, when the new Dictionary was being prepared, brought me the sum of—nothing. Not a single word was contributed by any one outside Imerina, although all were appealed to. I hope for better things in the future.

I much wish the notice of Dr. Codrington's book had been in more competent hands. In the next ANNUAL I may take up the subject again, as there are many points of interest in the remaining portions (pp. 253—572), in which he gives us the grammars of the 35 islands whose languages he has investigated.

J. RICHARDSON.

THE TRIBAL DIVISIONS OF THE HOVA MALAGASY.

ANY enquiry into the origin of the tribal and caste divisions of a people whose authentic written history is still short of a century old must necessarily be attended with considerable difficulty and uncertainty; and all I propose in the present paper is briefly to indicate some of the chief facts of interest and importance which a little enquiry among the Malagasy themselves has elicited as to the origin and nature of the various divisions now existing among the natives of Imerina.

The name 'Hova' among writers on Madagascar is generally applied to the whole of the tribe inhabiting the highlands of Imerina, but among the natives themselves the term has usually a narrower acceptation.* In speaking of the whole free population of Imerina, the names '*Ny Ambànilanitra*' ('The Under-heaven') or '*Ny Ambànianandro*' ('The Under-the-daylight') are generally used, while the term Hova is usually restricted to one of the chief tribal divisions of the Ambanilanitra. Broadly speaking, the whole population of Imerina may be classed into three great divisions:—(1) *The Andriana*; (2) *The Hova*; (3) *Theainty*. Probably a brief consideration of these one by one will form the most convenient division of our subject.

I.—THE ANDRIANA. The Andriana form a large and distinct class or tribe, including the families of the nobility of all ranks from the sovereign downwards. They are the privileged aristocracy of the Hova people. Numerically they are greatly inferior to either of the other divisions, but in a country where popular representation is as yet in its veriest infancy, the real administrative power is vested in the highest family of Andriana, or rather in the sovereign, who is called pre-eminently *The Andriana*, or *The Andriamanjaka* (i.e. the reigning Andriana).

There are various fabulous accounts as to the origin of the Andriana. Some describe them as descended from the Vazimba, the aboriginal inhabitants of the country; while others ascribe to them a divine origin. One of the latter accounts gives the name of Andrianerinerina as their divine progenitor. This Andrianerinerina, it is said, was "a son of God descended from heaven to play with the Vazimba." The account runs as follows:—"God sent down his son to play with the Vazimba, and God said, 'This my son wishes to play with you; but do not take him near any sheep, for my son does not eat mutton.' But one impious Vazimba said, 'Come, let us cook him some food in the pot used for cooking mutton, and we will see what will happen.' And when they had cooked it, they made the son of God eat thereof. Now when it was evening he was unable to return home, and God said, 'Why are you keeping this my son here—below?' Then the Vazimba fled. Then was God angry. 'Assemble all the Vazimba who are here—below,' said he. And when all the Vazimba were assembled, God

* See also p. 395, *ante*, foot-note, for wider meanings of the word.—EDS.

spake as follows, 'Choose which you will of these alternatives: Will you serve that son of mine, or shall I take your lives?' 'We prefer to serve your son rather than lose our lives,' was the answer. 'There then is my son,' God replied, 'his name is Andrianerinerina.' And a woman was sent down from heaven to be the wife of the son of God, and he begat Andriananjavònana at East Angàvo. And Andriananjavònana begat Andrianampònga. Then follows a list of some sixteen kings who succeeded one another, down to the time of Andrianampòinimèrina, who came to the throne about the year 1787 (?).

A much more credible account makes the Andriana and Hova to have had a common origin; the first Andriana being nothing more than chiefs who by conquest or superior ability gained the supremacy over the rest of their tribe. The reputed etymology of the name *andriana* would seem to point in the same direction. The word is said to come from the root *àndry*, a prop or support, the metaphorical use of which is seen in the proverb "*Fòlaka àndry niankinana*" ("The trusted support is broken"), used in speaking of the death of some wealthy and trusted relative or connexion.

The physical characteristics of the Andriana appear to throw but little light on the question of their origin. In many instances the Andriana are undistinguishable from the Hova; though there are, it is said, certain peculiarities of physique and manner which characterise them as a class. A native friend of mine describes these as follows:—"Their skin is light, their hair frizzy, they have prominent wide-open eyes; in stature they are shortish, in figure somewhat thin and graceful; in manner they are not easily hurried or alarmed, they do not put themselves about or speak roughly, but are easy-going and gentle."

The Andriana are divided into six distinct tribes or castes, named as follows:—(1) Zàzamàrolàhy or Màrolàhy, (2) Andriamàsinavàlona (3) Andriantòmпокoindrindra or Zànatòmпо, (4) Andrianambòninòlona or Zànakambòny, (5) Andriandranàndo or Zàfinandriandranàndo, and (6) Zànadralàmbo. This division of the Andriana is said to have been made in the reign of Andriamasinavalona, after whom the second tribe is named.

(1) The *Zazamarolahy* are the direct descendants of the sovereign; and it is from a smaller class among these, named Zànakandriana, that the new sovereign is elected. This term Zanakandriana is strictly only applied to the very nearest relations of the sovereign, though it is by courtesy often given to those more remote, and indeed often seems almost synonymous with Zazamarolahy. Frequently too (especially of late) in *kabàry* or public proclamations no distinction is made between the Zanakandriana and the Zazamarolahy, but the term "*Izy mianakavy*" ("The whole family") is used in referring to all the relations of the royal family. The way in which the one who is to succeed the reigning monarch is indicated is rather remarkable. At the annual festival of the *Fandròana* an ox is killed, and its hump cut up by attendants (who, by the way, must not be orphans), and a portion is given to the sovereign, who, after licking it, presents it to the one who is to succeed to the throne.

(2) The *Andriamasinavalona*, as has been mentioned, are descended from a former sovereign of that name. This *Andriamasinavalona*, it is said, was the first who reduced the contending tribes of Imerina to order. He is reputed to have had twelve wives, eight of whom each bore a son; and the kingdom was divided among four of these eight sons, while from the other four, who never reigned, the tribe of the *Andriamasinavalona* reckon their descent.

(3) The *Andriantompokoindrindra* are the descendants of a prince bearing that name, who was the eldest son of Ralambo, a sovereign of an earlier date than *Andriamasinavalona*, and whose capital was *Ambôhidrabiby*, to the north of *Antanânarivo*. *Andriantompokoindrindra* had a younger brother named *Andrianjaka*, who seems to have been a much more business-like youth than his elder brother. The story of how this young brother obtained the crown and supplanted his elder brother is perhaps worth recording. One day their father wished to try what his sons were made of, and feigning violent illness sent for them in haste. Now the first born was much addicted to the game of *fanôrona** (a native game resembling 'fox and geese'), and when his father's messenger came he was deeply engrossed in the problem of how to 'cancel three with five,' and was in no hurry to go and see his dying father; while the younger brother, on the other hand, made all haste to his bedside. The father meanwhile, having consulted the diviners, had determined that he who first arrived should succeed him in the throne; so he had, though reluctantly, to nominate the younger son as his successor. But in consequence of this it was decreed that henceforth the reigning sovereign should always choose his first wife from among the descendants of *Andriantompokoindrindra*; and it appears that until quite recently this practice was still kept up. Many of the *Andriana* of this class live at the town of *Ambôhimalàza*, some six miles to the east of the Capital, and are still remarkable for their skill in the game of *fanôrona*.

(4, 5, and 6) The remaining divisions of the *Andriana* are also each named from one of the old kings or chieftains from whom they are descended. These three tribes of nobles are frequently classed together under the term *Andriantêloray*. This name, according to one account, originated from their three ancestors being all the sons of one woman by three separate fathers (*têlo ray*, three fathers); but this story, besides its inherent improbability, does not at all agree with their genealogy as given by others.

There is another curious tradition as to the origin of the various divisions of the *Andriana*. This makes the six ancestors of the six tribes enumerated above to have all been children of one father, who adopted a novel way of deciding of the rank of his children and their descendants. Noticing that *Andriamasinavalona* and *Andriantompokoindrindra* worked upwards in the bed while asleep, and that *Andriamboninolona* and *Andriandranando* and *Zanadralambo*, on the other hand, sank down, while *Marolahy* remained stationary, he decided that the two former should take rank above their three brothers, but that the

* See ANNUAL X., pp. 148-156.

one who remained stationary should alone be allowed to come to the throne.

There is a very strong caste feeling among the Andriana, the various tribes keeping scrupulously separate, and in general intermarrying with those of their own tribe only. It is allowable, however, for a man of any of the higher tribes of Andriana to take a wife from a lower tribe; but a woman who consents to marry an Andriana of a rank beneath her is degraded; and one who so far demeans herself as to marry a Hova loses caste altogether and is discarded by her family. If, however, a nobleman marry a Hova wife, he does not lose caste at all, but any children whom he may have by her will be reckoned as Hova and cannot inherit their father's landed property, though they may inherit his money, oxen, or slaves. These marriage rules are very strictly observed, especially by the three inferior classes of Andriana, who seem afraid of losing the privileges they have, and hence very jealously guard against any admixture of plebeian blood into their families. While speaking of marriage customs, we may mention one or two points in which the practice of the Andriana differs from that of the Hova. An Andriana never goes to the house of his bride to bring her home, but always has a *mpisôlo* or substitute, who takes his place on the occasion. If the bridegroom were to go after his wife it would be considered *infra dig.*, so he remains quietly at home and is married by proxy. So also it is not customary for the parents of the bride to accompany their daughter to the bridegroom's house.

In several respects too the burial customs of the Andriana differ considerably from those of the common people. The sovereign and the very near relatives of the sovereign are only buried at night time. The corpse is placed in a silver coffin (called *lakam-bôla*, lit. 'silver canoe,' see p. 303, *ante*), and is carried only by Hova. Formerly it was customary in carrying the corpse to the tomb for women to lay themselves in the road to be trodden upon by the bearers of the coffin, and sometimes even they were trampled to death.† In general each sovereign is placed in a tomb by himself, whereas in the case of the common people a whole family will frequently be buried in one tomb.*

All the Andriana down to the Andriamasinavalona are allowed to place small wooden houses over their tombs. These, in the case of the Zanakandriana and Zazamarolahy, are called *trano masina* ('sacred houses'), but *trano mandra* ('cold houses') when belonging to the Andriamasinavalona. When the annual festival of the Fandroana comes round, clean mats are spread in these houses, and the woodwork is repaired. A vessel of rum used formerly to be placed at this season in the sovereign's tomb.* Only the Andriana are allowed to be buried within the boundaries of the towns; all Hova and Mainty must be interred without the fosse. It is (or used to be) *fady* (tabooed) for any one to sleep with his feet pointing towards the Andriana's tomb, as this is suggestive of 'kicking the Andriana' (*manipaka ny Andriana*). No Andriana may eat the beef called *hena ratsy* (lit. 'bad meat'), that is, the flesh of the

* For other customs peculiar to the sovereign and royal family, see previous article, pp. 301-310.—EDS. † See page 312, *ante*.

oxen slaughtered at a funeral; and if any Andriana attend a funeral, geese or other poultry must be provided instead.

In order clearly to understand the various privileges enjoyed by the different tribes of Andriana, and the relation which they hold to the other two divisions of the people, it will be necessary here briefly to refer to the complicated system of government service or *fànompòana* in vogue in this country. This is very difficult for a foreigner to understand. The whole fabric of the government from the sovereign downwards is dependent on the feudal relations of class with class. Very many of even the so-called free people are veritable serfs, bound to the soil on which their forefathers have lived, and having both to pay taxes on the produce of the land and render personal service to the sovereign and also to the lord of the manor.

(1) *Service to the Sovereign.* The whole free population, with the exception of the *Zazamarolahy* and *Zanakandriana*, is divided into two great classes—the *miàramila* or soldiers, and the *bòrizàno* (Fr. *bourgeoisie*) or civilians. The soldiers again are subdivided into two classes: *Ny mitàm-bàsy* (literally, 'those who hold the gun'), i.e. the fighting men, and *Ny mpiàsa* or workmen, including blacksmiths, stonemasons, carpenters, painters, etc. The Andriana also who belong to the class of *miaramila* have to take their share of *fanompoana* with the Hova; thus one tribe almost monopolises the tin-smith's work in the Capital. The Andriana who are among the *borizano*, on the other hand, have but little *fanompoana* as compared with the Hova. The government service of the *borizano* includes the following items:—(a) *Hàzo làva*; which consists in bringing beams and planks (*hazo*) from the forest for the house of the sovereign or for public works. (b) *Hàdin-tàny*; this probably originally consisted in digging the *hàdy vòry* or large circular fosses round the fortified towns; now it also includes levelling, making embankments, etc. (c) *Ari-mainty*; the bringing of charcoal (*àrina*) from the forest for the manufacture of gunpowder and for the use of the blacksmiths. (d) The carrying of the sovereign's baggage or property, whether for her own personal use or for the kingdom; as guns, ammunition, etc. (e) Making and repairing of roads, bridges, etc. The slave population are entirely exempt from direct government service, being simply regarded as the property of their masters. This remark, however, does not apply to the personal slaves of the sovereign, who have, as will appear later on, special government service to perform.

In addition to this personal service to the sovereign performed by all the free population of Imerina, there is also a general land-tax called *hètra* or *isam-pangàdy* (lit. 'every spade') paid annually to the crown. This tax consists of about a bushel and a half of rice to every division of land called a *hetra*. The *hetra* vary greatly in size: some being less than one square chain, while others are as much as an acre in area.

Besides this annual land-tax, there is a small poll-tax called *vidinaina* ('the price of life') paid to the sovereign at the yearly festival of the *Fandroana*. Nominally this tax is only $\frac{1}{4}$ of a penny, but more is generally given.

(2) *Service to the Feudal Superiors.* It should here be stated that many

of the Hova, besides their general service to the sovereign, are also in feudal servitude to the Andriana, or lord of the manor, where they happen to reside. Many of the nobles, chiefly of the Andriamasinavalona tribe, have large estates in the country, over which they exercise a species of sovereignty very similar in kind to that exercised by the sovereign over the whole people; indeed the same word (*fanjakàna*, 'kingdom') is sometimes used in speaking of the jurisdiction of these lords of the manor, as that employed when referring to the king or queen.

The lands held by these Andriana are called *mènakely*; and the same term is used in speaking of the Hova who reside within the limits of these estates, and who perform feudal service to the Andriana *tòmpo-menakely* (lord of the manor). These Hova are little better than slaves; and some of them are in fact worse off than many of the slaves. In addition to the *fanompoana*, which, as Hova, they have to perform for the sovereign, they have also to pay taxes in money and rice* to the lord of the manor, besides doing any personal service which he requires, such as digging his rice-fields, building his houses, making his tomb, etc.

In thinking of the relation in which the Andriana *tòmpo-menakely* stands to the Hova residing on his estate, one cannot fail to be struck with its similarity in many important respects to that subsisting between the sovereign and the whole people. And this fact in all probability points back to the time when there was no strong central government, as at present, but when the whole of Imerina was divided up into a number of petty chieftaincies, whose rulers were constantly making plundering raids on each other. And when, at a comparatively recent date, the contending tribes were reduced to order and united under one common sovereign, the government of the latter would be modelled on the relationship already existing between the various subjugated chieftains and their dependents. At the same time the authority of these local chieftains would be as little interfered with as possible; so that the present state of things probably forms a direct link with the remote past.

The rest of the land which is not divided out among the *tòmpo-menakely* is called *mènabé*. The people living on these *menabe* are not subject to any one but the sovereign; † it will thus be seen that they are much more easily circumstanced than those residing in the *menakely*, since these latter have a 'two-fold service' to perform (*fanompoana rôa sôsona*).

The origin of the names *menabe* and *menakely* seems doubtful, but a not improbable etymology derives them from the forms *omèna bè* and *omèna kely* ('given much,' and 'given little'), originally used, it is said, in referring to the amount of land granted by the sovereign to the various nobles or chieftains.

Before proceeding to enumerate the principal divisions of the Hova and the Mainty, we may now briefly refer to one or two further special privileges enjoyed by certain ranks of the nobility.

* In the case of the *menakely*, the *hetra* or land-tax referred to above is divided between the Andriana, lord of the manor, and the sovereign.

† The land owned by a very near relative of the sovereign appears also to be called *menabe*.

The three classes of Andriana from the Andriantompokoindrindra upwards have the privilege of dividing the *vòdi-hèna* with the sovereign. Whenever an ox is slaughtered the rump must always be reserved and taken up to the palace, or to the *tompo-menakely* in whose district it is killed, as the case may be. The reputed origin of this curious practice is rather remarkable. In the time of Ralambo, one of the very early sovereigns who reigned at Ambohidrabiby, oxen were called *jamòka*, and the people had not yet begun to eat beef. "And there was one poor man who had many children; and the hedgehogs and partridges which he caught were not sufficient to support him and his wife and children; then he went, it is said, and killed a *jamoka* in the forest and brought it to his wife and children, and his children became very plump when they ate the flesh of the *jamoka*. And some one asked him, 'What makes your children so well favoured?' And he replied, 'Hedgehogs and partridges.' 'Do you mean to say that those things make your children fat like this?' But after a while this man told the king that the flesh of the *jamoka* was savoury. 'Keep it quiet,' said the king, 'and let me taste it first, for fear we be killed by the people for eating what our forefathers have not eaten; so the king tasted and found it sweet. And then he went to the forest and killed a *jamoka* and tasted every part of it, and the rump he found most savoury of all; so the rump became the portion of the Andriana. Then the king collected many oxen and told the people that they were good for food."

II.—THE HOVA. It is very difficult to obtain anything like reliable statistics as to the relative numbers of the three principal divisions of the inhabitants of Imerina, but probably as many as two-thirds of the whole population belong to the tribe of the Hova proper. The Mainty come next in numerical importance, while the Andriana form a comparatively small fraction of the total population.

* There are no marked caste divisions among the Hova, as among the Andriana; and such divisions as do exist appear to depend more on mere geographical position than on any radical differences of race. As far as the language affords any indication, the Hova are practically one people; one language is spoken throughout Imerina, the slight dialectic variations which are found being much less marked than is the case in England, for instance. But, as has frequently been pointed out, a consideration of the physical characteristics of the Hova people would seem to suggest a mixed origin. But the question of the probable ethnological connexions of the Malagasy has already been frequently discussed, and the natives themselves appear to have no current tradition which throws any further light on the subject.

Imerina proper is divided geographically into six districts or counties. These are named Avàradràno, Vàkinisaony, Ambòdiràno, Vàkinankàra-tra, Vònizòngo, and Màrovàtana. The origin of these divisions is ascribed to Andrianampoinimerina. Before the time of this monarch the country appears to have been divided into two petty kingdoms called North and South Imerina, the little river Màmba forming the boundary line between them, and the two towns of Ambohimanga and Antananarivo being their respective capitals. Southern Imerina, it is said, corres-

ponded in area with the two districts now called Vakinisaony and Am-bodirano; and at the time of the accession of Andrianampoinimerina to the throne of the northern province, this southern kingdom was governed by a prince named Andrianambòatsimaròfy. The son of this chieftain, who was named Andriamàromanòmpo, was conquered by Andrianampoinimerina, probably during the last decade of the 18th or about the beginning of the present century, and thus the foundation of the present kingdom of Imerina was laid.

The people of Avaradrano, the original kingdom of the present reigning house, still enjoy certain privileges, and take precedence of the other provinces in public proclamations, etc. In order clearly to understand the relation in which Avaradrano stands to the other divisions of Imerina, it will be well briefly to notice the three chief tribes into which the people of this district are divided. These are called Tsimahafòtsy, Tsimiambòholàhy, and Mandiavàto. The origin of these three divisions appears to be no longer remembered, but there are various traditions explaining the meanings of their names. One of these may be worth recording. The Tsimahafotsy, it is said, were formerly named "Vilàniy" (Iron-pots) and the Tsimiamboholahy "Vàkitrònga," and this is how their names came to be changed. There was a king reigning at Ambohimanga named Andriantsimitòviàminandriana, who sought the hand of a certain princess of the Tsimiamboholahy tribe (whose head-quarters are at Ilàfy). But the lady replied, "Unless Andriantsimitoviaminandriana will agree to allow my nephew Imàvolàhy to succeed him, I will not consent to be his wife." And the king, on account of his love to the princess, consented, and the two tribes were assembled, and a solemn compact entered into, and a 'stone of witness' set up. But when the king died, the Tsimahafotsy broke the compact and set his own son on the throne. As soon as the Tsimiamboholahy heard of this, they sent word to say, "If you overthrow the word of the agreement and the oath which was taken (for behold, the stone of witness is not fallen, but still-stands), then prepare your fortifications, for we are coming!"

And when the Tsimahafotsy heard this, they said, "What shall we do? for this is the word of the Tsimiamboholahy, and in truth we are breaking the agreement." So they gave way. Then the Tsimiamboholahy sent word again saying, "Drive out then this king whom you have set up, for unless you do this, we will *not turn our backs* on you (*tsy miamboho anareo*), but will make war upon you without more ado."

Then the Tsimahafotsy drove out the king by the west gate of Ambohimanga; and the posts of the gate by which he departed are still to be seen to this day resting upon a large fig-tree; but the gate and road are now blocked up, and the sovereign never passes through it. That is why the 'Iron-pots' changed their name to Tsimahafotsy, because they *tsy nahafotsy* Andriana, i.e., they were not ashamed to turn out their prince.

The origin of the name of the third tribe—the Mandiavato—is said to have been a boast of their ancestor: "They who tread on us *tread on stones*" (*mandia vato*).

After the conquest of Southern Imerina by Andrianampoinimerina, he transferred the seat of government from Ambohimanga to Antananarivo. The name of this town was formerly Ialamanga, but Andrianampoinimerina, in order firmly to establish his power in the new capital, chose out one thousand men from each of the three tribes of his own kingdom of Avaradrano and placed them at Ialamanga, which thenceforth took the name of *Antananarivo*, that is '*The City of the Thousands*.' To these three thousand men of Avaradrano he gave the name of '*Vòromahèry*' (Eagles or Hawks), a title of honour indicating their strength and swiftness in performing the king's bidding.

Before leaving this part of our subject the reputed origin of the other divisions of Imerina may be briefly indicated.

Ambodirano, "the base of the waters," so called because in this district rise many of the tributary streams, which, taking their origin from the slopes of the Ankaratra mountains, flow in a northerly direction and swell the waters of the Ikopa.

Vakinisaony, "cut or crossed by the river Sisaony," one of the main tributaries of the Ikopa from the south-east.

Vakinankaratra, so called because it is "broken or cut up" by the spurs of the Ankaratra mountains. The inhabitants of this district are mostly of the dark non-Malay race and appear more akin to the Betsileo than to the Hova proper.

Marovatana, "many bodies or persons"; a curious tradition gives the following as the derivation of this name. When the people of this district were digging their fosses or deep intrenchments, immense numbers of men were at work with no clothing but their *salàka* or loin-cloths, and all the passers-by were struck with the sight and exclaimed "*Akòry ity hamaròan' ity vatan' olona!*" ("What an immense number of people!")

III.—THE MAINTY. The term Mainty (black) is not applied indiscriminately to all the inhabitants of Imerina who belong to the dark race, but in general is only used in speaking of the slave population.

The great majority of the slaves now held by the Hova are the children or grandchildren of the captives taken in the wars of aggression carried on by the Hova against the outlying tribes, chiefly during the early half of the present century. The majority of these belong to the Betsileo tribe, but Sàkalàva, Taimòro, Sihànaka, Bètsimisàraka, and others are also met with in considerable numbers. These slaves, even when set at liberty, are not allowed to reckon themselves as Hova, but are still considered as belonging to the division of the Mainty.

Besides the actual slaves, however, there are several tribes or classes who are as it were on the border-line between the Hova proper and the slaves. These we will briefly consider one by one.

(1) *The Zàzahòva*. These are really Hova by descent, but through crime, debt, etc., they have forfeited their freedom. If redeemed or set at liberty they return to the Hova tribe.

(2) *The Manèndy*. The origin of this tribe is apparently unknown. The people in speaking of them say they "*niaraka amin' tany*," i.e., came along with the land, or are autochthonous.

(3) *The Manisotra* or *Fanànimanisotra*. These originally appear to have been true Hova, and their ancestors lived at Ambóhijòky, a rocky mountain some ten or twelve miles south-west of the Capital. But on the conquest of Southern Imerina, this tribe, entrenched in their rocky fastness, offered such a stubborn resistance and gave the king so much trouble, that when finally conquered he reduced them to a state of semi-servitude, transferring them at the same time to the town of Alasòra to the south-east of the Capital. The Manisotra and Manendy are reckoned as Ambaniandro and take their share of *fanompoana* with the Hova.

(4) *The Tsiàrondàhy*. These are the slaves of the sovereign. They have special government service to perform, such as collecting the *vodihena* or queen's beef from the markets, singing and playing music for the sovereign, forming a body-guard of spearmen in the royal processions, etc. The name Tsiàrondahy is from the root *ròna*, caused to lean (*tsy arona* = not caused to lean or give way). It is not an uncommon practice for rich persons who hold a great number of slaves to give them some distinctive name by which they are marked off from all others. Often these names are of the nature of a title of honour, denoting strength, prowess in war, etc. Thus the class of queen's messengers who are chosen from among the Tsiàrondahy are called *Tsimandó* or *Tsimandóa*, the full form of their name being *Tsi-mandóa-sàmbotra*, i.e., "not letting go a captive" when once seized.

I have not in this paper attempted much more than briefly to sketch the main divisions of the Hova nation as at present constituted, giving at the same time a few of the myths and traditions by which the natives themselves account for, or seek to account for, the present state of things. Probably a more extended and systematic enquiry among the old people in different parts of the country might bring to light many interesting and valuable facts bearing on the origin and history of the various tribal divisions of Imerina, which, as the older generation dies off, and the habit of depending on books and writing increases, will soon be irrevocably lost, if not collected and recorded without further delay.

H. F. STANDING.



A REMARKABLE HAIL-STORM.

ON Saturday afternoon, Oct. 22nd, a very violent thunder-storm broke over the districts south and west of the Capital, during which houses were struck by lightning and some loss of life occurred. But at Tsafàhy, and for some distance around that place, there was also for several minutes a remarkably heavy fall of hail, the like of which few persons, foreigners or natives, remembered to have seen before in this country. Many of the hail-stones were as large as pigeons' eggs, but with sharp points; others were round or oval-shaped, $1\frac{1}{2}$ in. $1\frac{3}{4}$ in. long, with a depression in the centre on each side, and with rays towards the edges; others again were the size of boys' marbles, but with an opal-like veined structure. Had the rice crops been more advanced they would certainly have been entirely destroyed within the compass of this hail-fall.—ED. (J.S.)

THE KING IN IMERINA :

A DRAMATIC FRAGMENT; ACT I., SCENE 2.*

*Tombs in the courtyard of the Palace.**Enter the King's sister, Ralesoka, and a favourite slave-girl. Ralesoka takes an offering carried by the slave and deposits it within the chief tomb. Slave steps aside to watch.*RALESOKA (*praying*),

O great forefathers of our royal race!
 In pity hear me from your high abodes,
 And be my spokesmen at Creation's throne;
 Your own quick flesh and blood within me pleads
 For healing of this cruel barrenness.
 O God who made me, hands and feet, and gave
 Me heart to yearn for babes—Thou Lord of life—
 Give also living offspring. Hear our prayer!
 My slaves, who serve me on their bending knees
 And stoop to cross my shadow, have their joys:
 Their children bless them in their thrall's estate;
 My cattle doomed to slaughter love and breed;
 Yea, worms which crawl in refuse have their young;
 Have pity on the Palace!

SLAVE.—

Mistress, haste!

Two men are coming from your nephew's house.

RALE.

*(listening)*Your ears are sharp, my child; but how d'you
know

They're men and only two?

SLAVE.—

I saw them there

At dusk. The southern augur's one of them.

RALE.—

There's mischief hatching then. Who's his
friend?

SLAVE.—

I could not see. But they must pass the guards.

RALE.—

And so they must: our chance is at the gate.

*(Exeunt.)**(Enter Hova of Ambohimanga and Augur disguised as a slave carrying beef.)*

AM. HOVA.— O wait a bit! I've left my snuff behind.

AUGUR.— Confound your snuff, man! you can buy some
more.

AM. HOVA.— O yes, and leave behind my money, then.

* See ANNUAL IX. pp. 40-44.

(Exit in search.)

AUGUR.— It's weary work to plot with men alive :
They must be fed and clothed and housed and
wived
And snuffed and — hang 'em ! Dead men would be
best,
If one could get them fairly pliable :
Neither flabby nor yet stark.

(Re-enter Ambohimanga Hova.)

Now, come along !
And since you've got your snuff, let's have a pinch.
I hope you know the password at the gate.
AM. HOVA.— It's 'Mamba'.

AUGUR.— Go ahead then, crocodile,*
And keep me dark, mind.

(Exeunt.)

(An owl's hoot is heard in the distance, and a similar call answers from the chief tomb. FIRINGA creeps out of the tomb, and the King appears on the terrace above.)

KING.— Well, what was it about ? But tell me first,
Were t'not afraid ?

FIRINGA.— Indeed I was, my lord.

KING.— Of what ? The dead are harmless though they're
kings.

FIR.— The king I was afraid of's still alive.

KING.— Then speak less loud and tell thy tale. Come here.

(Exit Firinga to reappear on the terrace.)

What did my sister pray for ?

FIR.— Children, sire.

And as she prayed I almost turned to one
And blubbered in my sympathy.

KING.— Not strange,

For women pray like fools when they beseech
The heavens to multiply cares, and complain
For more anxiety. Our house hath bred
Enough dissension, though there be but twain
To wrangle for its growing heritage.
Was either of my sons made mention of ?

FIR.— No, sire. (Full moon rises.)

KING.— No reference to our family feuds ?

FIR.— She only prayed for children ; but that prayer
Did nearly make me—

* Mamba = crocodile.

- KING.— Stop, I bid thee, stop !
 Did any person pass this way besides ?
- FIR.— I could not see ; (*The King eyes him sharply.*)
 O yes, I heard one pass.
 He carried beef, a present from your son.
- KING.— The meat was very high, you smelt it, then ?
- FIR.— O no, they spoke of it.
- KING.— The man t' himself ?
- FIR.— He spoke to one who passed him coming in.
- KING.— I understand : the moonlight makes it clear.
 Go summon all that sing and dance, and let
 Some cheer be given t'encourage mirthfulness.

(*Exit Firinga.*)

The fool is lying as they all do lie ;
 The courtier lies to win a favouring smile ;
 The merchant lies to make his profit sure ;
 The beggar lies to get his dole increased ;
 The servant lies to hide his careless waste ;
 The mother lies to screen an erring child ;
 The husband lies to keep the peace at home ;
 And yet they're all good subjects : each one serves
 With some more loyal portion of himself.
 If kings did execute for uttering lies,
 Themselves would have to bury carcasses.

(*Music in distance. Exit King.*)

W. CLAYTON PICKERSGILL.

SIMILARITIES BETWEEN SOME OF THE NAMES OF BIRDS IN THE ZAMBESI LANGUAGES AND IN MALAGASY.

In an old number of the *Ibis*, Mr. Edward Newton says : "On reading Dr. Kirk's paper on the 'Birds of the Zambesi Region' I am much struck with the similarity between some of the Zambesi native names for birds, and those applied by the natives of Madagascar to more or less kindred species. For instance : 'Chapungo,' the Zambesi name for *Hilotarsus ecaudatus*, and 'Papàngo,' the Malagasy name for *Milvus ægyptius* ; 'Sungwe,' Zamb. for *Nectarinia amethystina*, and 'Schonwee' [Sòisòy ?], Malagasy for *N. angliadiana* ; 'Khanga,' Zamb. for *Numida mitrata*, and 'Akànga,' Malg. for *N. tiarata* ; 'Soriri,' Zamb. for *Dendrocygna personata*, and 'Tsiriry,' Malg. for *D. viduata* ; the last evidently from its cry. It certainly shews the African descent of a portion of the inhabitants of Madagascar ; and the language is probably kept up by occasional fresh importations of slaves from the continent."

ODD AND CURIOUS EXPERIENCES OF LIFE IN
MADAGASCAR.

THIS world of ours would be but a dull place to live in if there was no room in it for humour and fun, and if we could not sometimes indulge in a good hearty laugh. But happily there is no spot on its surface where the elements of the comic and the ridiculous are not present; and Madagascar certainly forms no exception to the general rule. We hope therefore no one will be shocked at hearing that even in missionary experiences there is occasionally a decided element of the amusing, the odd, and the absurd; anyhow, during several years' residence in this island most people come across a few curious experiences, and hear of a good many more; and if all these could be remembered and noted down, they would afford ample materials for more than one paper. This, however, is now an impossibility, but perhaps I may be able to recall enough to serve to while away a leisure half-hour; and some of these reminiscences may perchance throw a side-light or two upon certain phases of native character and habits.

One's first landing in Madagascar—especially if one has had no previous experience of a semi-civilised country—must, I think, strike most people as having some very comic aspects: the only partially clothed appearance of so many of the 'natives'; the often absurd mixture of European and other dress; and the odd gibberish, as it seems to us, of an unknown language,—all these tend to excite one's amusement. I vividly remember my first ride in a *filanjana* at Tamatave, and how I was in fits of laughter all the way from my lodging to the Battery; the being carried in that fashion by men struck me then—I can hardly now understand why—as irresistably comic. At that time—more than twenty-four years ago—gentlemen very often travelled from the coast to the Capital in the long basket-like *filanjana* which is never used now, nor has been for a long time past, except by ladies and children. In one of these contrivances I came up myself in October 1863; but I suspect few gentlemen would now care to run the gauntlet of the amusement and 'chaff' they would excite by riding through Antananarivo in a similar conveyance. Yet as recently as August 1873, the late Rev. Dr. Mullens also travelled up to Imèrina in a lady's *filanjana*; but it struck him at the time as rather ridiculous, for he said how it reminded him of one of Leech's pictures in *Punch*, of a London exquisite driving a very small basket carriage, and being saluted by a street *gamin* with the words, "Oh Bill, here's a cove a-drivin' hisself home from the wash."

I referred just now to the oddness of native dress, especially when only portions of European costume are used. One sees some absurd enough sights now and then, even at the present time, in Antananarivo, but these are nothing compared with the ridiculous combinations which often met one's view a few years ago. To see a company of native officers come up from the parade ground in all their variety of dress was a very

mirth-provoking spectacle. If a hundred or two of men had been fitted out from an extensive old-clothes' shop, with the object of making every one different from every one else, it could hardly have produced a greater variety or have had a more *bizarre* effect than was actually the case. All sorts of cast-off uniforms; every kind and shape of hat, from the smartest to the shabbiest (the 'shocking bad' not excepted); every imaginable civilian dress, policeman's, fireman's, etc.—all might be seen, and in the queerest combinations, often finished off by the commonest of green and red wool-len comforters. The sharp observation of a friend of mine (of the Society of Friends) even detected in an Andohalo crowd the low-crowned 'broad brims' once belonging to some good East Anglian Quaker farmers, and pronounced that they must certainly have often figured in the sedate proceedings of "an Essex Quarterly meeting." One of the richest points in these exhibitions was the extreme self-consciousness of the wearers of these wonderful suits, and their evident pride in their personal appearance, together with the serene conviction that they were cutting a great dash.*

In the earlier years of the residence of those of us who have lived here longest we can remember what curious notions our native friends and our house servants had about borrowing (with and without our leave) our clothes. Requests from the former to borrow one's best 'go-to-meeting' suit to wear at weddings, either their own or that of some relative, or on other festive occasions, used to be very frequent; and it took a good many refusals and a good deal of persistence before they could be got to understand that such loans were *not* congenial to our feelings. Our servants, however, did not always take the trouble to ask leave, but would borrow coat, trousers, or shirt; and we occasionally had the pleasure of discovering portions of our own dress on the back of cook or house boy, as we sat at church, or on the way home. With new servants it was a common thing to borrow a table-cloth as a *lamba*; and more than once the mistress of the house has been horrified, as her attention has wandered a little from the eloquence of the preacher, to recognise the familiar pattern of her best diaper table-linen enfolded in the form of one of her domestics sitting not far from her. It is well known too that some of our washermen have made quite a business of letting out shirts, trousers, etc., as well as various articles of female dress, belonging to their English clients, to native customers for Sunday wear, and so adding to the legitimate profits of their business. In such cases also we have occasionally had the gratification of seeing at church how well our own garments have fitted native wearers of the same.

In our congregations of a few years ago there was a primitive simplicity about dress which would rather astonish us nowadays. I well remember being amused by this one Sunday at the old Ambatonakanga Chapel. In the middle of the sermon a little boy of three or four years old, and

* It must, however, be said that a great improvement has taken place during the last few years in all these particulars, largely through the efforts of the English officers who have been engaged in training the Malagasy army. Most of the native officers are now dressed in neat and appropriate uniforms, and very many have a thoroughly soldierly bearing; while the simple white uniform of the rank and file has replaced the cross-belts and loin-cloth which formed the sole dress of the common soldiers not many years ago.

perfectly naked, came to the door and looked about to find his mother among the people closely crowded together on the matted floor of the building. Presently she noticed the little urchin, and taking his tiny *lamba* which lay besides her, she rolled it up into a ball and tossed it to him over the heads of her neighbours. The child quietly unfolded it and, wrapping it about him with all the dignity of a grown-up person, gravely marched to his place, without any one, I think, but myself taking any notice of the incident. On special occasions, however, our congregations used to turn out in gorgeous array, the ladies in silks and satins and wonderful head-dresses, and the men in black coats and pantaloons and 'chimney-pot' hats; so that it was for some little time quite impossible to recognise one's most intimate acquaintance in their unaccustomed 'get-up.' Christmas Days were the chief of these high festivals; and I well remember how, on my first Christmas Day in Antananarivo, I was utterly 'taken aback' on entering the dark and dingy old chapel at Ambatonakanga to find such a transformation scene; for instead of the clean white *lambas*, which did somewhat brighten up the place on ordinary occasions, my native friends seemed to be darker than ever in their dark cloth clothes, and utterly (and comically) uncomfortable in their unusual finery. A little before my arrival here European dress was much more commonly worn by the well-to-do Malagasy than was the case after the decease of Radâma II., and the ladies' crinolines were, at more than one of our chapels, slipped off at the door and hung up on a nail outside in charge of one of the deacons. There were few raised seats in those days, and it was difficult to make the steel hoops, etc., lie comfortably or gracefully while their wearer was squatting on the floor. Then of course there was a considerable wriggling and contriving to get into them again, as the congregation dispersed, as I have witnessed on more than one occasion. Another curious sight as people left church used to be the taking off of smart pairs of boots, which gradually became too irksome to feet unaccustomed to such restraint, and were carried by their owners either in their hand or suspended to a stick over their shoulder. The wearer having sacrificed his (or her) feelings to genteel appearances during service-time, would again rejoice in freedom from conventionalities on the walk home.

Native churches certainly deserve credit for reverence and general propriety of behaviour during divine service. In some newly formed congregations, however, curiosity occasionally gets the better of the proprieties; thus my friend the Rev. J. Pearse was once interrupted in the middle of an earnest discourse by a woman who was determined to know whether he would not sell her a smart green sun-shade he happened to have with him, and how much he wanted for it. And it was not without considerable effort and coaxing that the good lady was at length induced to defer her enquiries to a later period of the proceedings. During a tour to the south-east coast in 1876, I was preaching one Sunday afternoon in the centre of a village on the banks of the River Mâtitanana, and was a little confused, when about half through my address, by the old chief of the place coming forward to give me a fowl—which clucked and struggled most noisily in the process—and also

a bottle of rum ! which was handed up in full view of the audience. It was a little difficult to resume the thread of the discourse. This, however, be it remembered, was in a heathen village.

We were speaking just now of clothing—and of the occasional want of it—among the Malagasy. There are, however—but perhaps it would now be more correct to say there *were*—occasions happening now and then when even the natural covering of the body, the hair of the head, was not to be seen. At the decease of a Malagasy sovereign one of the customs which have been enforced up to the death of Queen Rasohérina (in 1868) was, that every person, high and low, rich and poor, male and female (with a few exceptions in the case of the very highest personages in the kingdom), must shave the head. As may be supposed, the effect of this was most curious; one's most familiar native friends seemed totally altered and unrecognisable, for no hat or other head covering could be used. One of my brother missionaries wrote to me: "On Friday morning (3 April 1868) the people presented a very strange spectacle. They looked as if they had been suddenly transformed into Hindoos; we found a nation of bald-heads, some of them quite glossy. It was amusing to meet our friends, as in many cases we did not recognise them until they spoke to us. A man walked up into the town with me in the morning, and from his familiarity I conclude he was a man I had known very well; but I did not find out who he was, and have not been able to recall his identity since. The strangest part of the business was that the clipping was all done at once, for on Friday morning the entire country round Antananarivo was clean clipped, except some score or so of privileged Malagasy and the Europeans." At the decease of the late Queen Ranavàlona II., however, this custom was not enforced; probably it will not be again revived.

In travelling about Madagascar, a country without roads, railways, hotels, or most of the appliances of civilisation, one naturally meets with some experiences differing considerably from those which occur in going about England. "How we travel in Madagascar" has been already graphically described in a former number of this ANNUAL (No. VIII. pp. 33-42); and we need not therefore stop to speak of bearers and palanquins, or of the way in which we actually get over the ground. But there are some other points which Mr. Clark did not touch on, and these may be briefly referred to. Native houses, which we must generally use as our inns or hotels, are not as a rule at all desirable places to stay in. In the central provinces of Madagascar they are certainly dirtier and more uncomfortable than on the coast or in the forest regions, where the entirely vegetable materials employed—bamboo, traveller's-tree, or palm leaves and bark—and the greater dimensions, make the houses there very passable as temporary resting-places. But the clay or wooden houses of the Hova, Bétsiléo and other interior tribes are almost always dirty and infested with vermin; and "A Night with the Fleas," or with the rats, or the mosquitoes, or the pigs, or the poultry, or all of them put together, is one of the common experiences of Madagascar travelling. Fleas of extraordinary agility seem able to mount to the highest stretcher bedsteads it is convenient to use, and make night one long-continued

attempt to ignore their ubiquitous presence. Rats descend from the roof and perform marvellous acrobatic feats over rafters and cords, playfully running races over one's person and even one's face, with a loud squeaking and squabbling which rouses us up with a start in the few intervals of unconsciousness allowed by the lesser plagues. Mosquitoes often come in with a hum like a small swarm of bees, and unless one is provided with netting, make all attempts at sleep futile; and even if the net has been carefully tucked around one, two or three stragglers often get in and make the net a very questionable benefit, as effectually keeping *in* some of the tormentors as it keeps *out* their companions. Pigs being often domiciled in the house, resent their exclusion on the night of your stay, and break through the slight barriers you put up against their entrance with a grunting defiance of your intrusion into their domains; or if they do not get *into* the house, they will persist in settling down *under* it, as the floors are often raised above the ground. An equal maintenance of vested interests is shewn by the fowls, who will *not* understand that you have engaged the apartments for your exclusive use, and again and again will manage to get in to their accustomed corner, raising a terrible dust as you attempt to dislodge them. For, besides the dirt on the floors, and the blackened mats on the walls, old houses are also liberally provided with strings of soot hanging from the rafters, or from the rough upper story often formed in the roof. Such ornaments are considered by the Malagasy as an honourable distinction, a sort of certificate of an old and long-established family. But they are rather inconvenient in case of a sudden gust of wind, or a heavy shower of rain, or in ejecting a persistent hen and chickens, as just mentioned. A plentiful sprinkling of soot-flakes on bedding and clothes, on table-cloth and provisions, is of course the result of any of these incidents in your stay in many a native house.

In going about most parts of Madagascar we come now and then to some more important places, military stations and centres of districts, where Hova governors are stationed. These officials are usually very kind and hospitable, but it is sometimes very amusing to see the state and ceremony they keep up. The military force under their command is often very limited, and frequently it is impossible to get together any but a very small proportion of even the few soldiers they have at their disposal. But as soon as they hear of your approach (for it is considered courteous to send on word in advance), some of the subordinate officers are drawn up to receive you, together with as many soldiers as they can muster (often more officers than rank and file, e.g. four officers and two soldiers). As soon as you make your appearance, a great many words of command are shouted out, all in English, or at least as near an approach to that language as they can manage; the Queen is saluted, then the Prime Minister, then the governor at the place, and then the second in command, together with the playing of any music they have available and the beating of drums; and not until then it is etiquette for your own presence to be recognised and for you to be welcomed. Coming into the *rôva* or government house, the governor gives you a hearty shake of the hand and, as soon as you are seated, commences a long and formal

list of enquiries, which runs somewhat as follows : "Since you, our friends and relatives, have arrived, we ask you : How is Ranavalomanjaka, Sovereign of the land ? How is Rainilaiarivony, Prime Minister and Commander-in-Chief ? How is So-and-so, Secretary of State ?* How is the kingdom of Ambohimanga and Antananarivo ? How are the cannon ? How are the guns ? How are the Christians ? etc., etc." (Often the queries are much more numerous, including any governor higher in rank than the questioner whom we may have recently seen ; and I remember that in going round the Antsihanaka province, a little 2-pounder brass cannon at Amparafaravola was carefully enquired after.) All these enquiries must be severally and gravely replied to, including assurances of the well-being of the cannon and the guns (muskets).

Native feasts are often amusing occasions, sometimes being very lengthy and occasionally very noisy. I shall not soon forget one at Ankarana (in the Taimoro country) given in my honour. The dinner there was I think the longest, and certainly *was* the noisiest entertainment, at which I have ever assisted. It consisted of the following courses :— 1st, curry ; 2nd, goose ; 3rd, roast pork ; 4th, pigeons and water-fowl ; 5th fowl cutlets and poached eggs ; 6th, beef sausages ; 7th, boiled tongue ; 8th, sardines ; 9th, pigs' trotters ; 10th, fried bananas ; 11th, pancakes ; 12th, boiled manioc ; 13th, dried bananas ; and last, when I thought every thing must have been served, came hunches of roast beef. By taking a constantly diminishing quantity of each dish I managed to appear to do some justice to them all. The healths of the Queen, "our friends the two Foreigners," then those of the Prime Minister and chief officers of State were all drunk twice over, all followed by musical (and drum) honours. As already remarked, it a very noisy occasion, for there was a big drum just outside in the verandah, as well as two small ones, with clarionets and fiddles, and these were in full play almost all the time. Then the room was filled by a crowd of inferior officers and servants, and the shouting of everybody to everybody else, from the governor downwards, was deafening. It was a relief when the two hours' proceedings came at last to a conclusion.

A good deal might be said about the queer articles of food occasionally used by the Malagasy. Locusts, divested of their wings and legs and dried in the sun, are very largely eaten and may be seen in heaps in almost every market. Besides these, certain kind of moths are also used for food, as well as the chrysalides of various insects, different species of beetle, and even some sorts of spiders ! I must confess, however, that my information as to these delicacies is all second-hand ! I could never bring myself to try these *bonnes bouches*, so much esteemed by my native friends.

A very fruitful source of amusement (to those who have had a longer knowledge of the language) is the unavoidable ignorance of Malagasy on the part of new-comers and the absurd mistakes arising therefrom. I fear that very often we say some shocking things in preaching and public speaking during the earlier years of our residence in the country ; that we say innumerable ridiculous things goes without saying ; and

* Other chief officers of Government are occasionally mentioned.

were it not that the Malagasy have not (at least so I think) a very quick sense of the ludicrous, and are also very tolerant to the mistakes foreigners make, our congregations must certainly during our early attempts be often convulsed with laughter. Very seldom, however, do we see any thing of the kind; and I often think that old European residents see a vast deal more that is absurd in the attempts of newer arrivals than do the Malagasy themselves. A venerable missionary, deservedly honoured especially in connection with the re-establishment of the L. M. S. Mission in Madagascar, used every Sunday to thank God that He had given us another Day of judgment! using the word *fitsaràna* (judgment) for *fitsahàrana* (rest). On another occasion he, quite innocently, used over and over again in a sermon a word which, as he pronounced it, meant something extremely offensive; at last even the Malagasy could stand it no longer, and the women began to go out; the preacher could not understand this and repeated the word with redoubled emphasis, adding, "*Aza mivoaka, ry sakaiza*" ("Don't go out, friends"), which they, all the more, would continue doing. Another brother informed his audience that God was the "midwife of all living things," using the word *mampivèlona* (*vèlona*, living), which is only used in that sense, instead of *mamèlona*, which means to support, nourish, or keep alive; the two prefixes having come to express two very different ideas. Those who were present at a Congregational Union Meeting a few years ago still remember with amusement how an earnest brother jumped up, and in a stentorian voice shouted out, "*Solika sy rano: tsy azo ampifangaroharoina izy roroa*" (i.e. "Oil and water: they cannot be mixed"), but by his putting the accent in *sòlika* in the wrong place he produced a most comical impression. But such anecdotes could be given almost to any extent, and similar mistakes need not be further dwelt upon.

It is well known to all who have studied Malagasy that for a long time the 'relative' form of the verb is one of the most puzzling features of the language. Several years ago, when the facilities for learning Malagasy were far less than they are now, some of us were much amused by the announcement made by a more recently arrived brother one Sunday morning, that he was "going to try a 'relative' to-day." It was evidently still a very unfamiliar form to him. Another brother, after being much bothered and perplexed by the intricacies of this '*pons asinorum*' of the language, decided upon a short and easy road out of the difficulty: he determined to stick to the active and passive forms and to ignore the annoying 'relative' altogether!

Another frequent source of queer mistakes is the difficulty, to Malagasy tongues, of pronouncing our English names. These are often so altered both in writing them and in speaking them that they become utterly unrecognisable by the uninitiated. Who, for instance, could detect under the form *Misilèrìlòrinèrina*, the simple English name 'Mr. Thorne'? or in the word *Itsàridisaonina*, the name of 'Richardson'? The names 'Briggs' and 'Jukes' and 'Sims' are less altered in their Malagasy forms, '*Biringitra*,' '*Jòkitra*,' and '*Sìmpitra*,' but are still funny enough. Our distinctive titles of respect, Mr., Mrs., and Miss, are very difficult for the Malagasy to distinguish; and so 'Miss Craven' becomes

'Misitera Giravy'; and 'Craven,' 'Graham,' and 'Graves' can hardly be recognised as having any difference; while 'Wilson' and 'Wills' are continually confounded together. I well remember how annoyed my wife was, during our early time of residence at Ambohimanga, by the native pastor enquiring for me as 'James.' He had heard my wife address me thus, and therefore concluded that it was the proper way for *him* to speak of me. The Malagasy have no exact equivalent for our Mr., Mrs., etc., for their name-prefixes Ra- and Andrian- are inseparable parts of their proper names. Official names also suffer curious transformations; thus 'bishop' becomes '*besôpy*' (lit. 'much soup') and '*besômpy*,' while in Betsileo it figures as '*besôfina*' (lit. 'great eared'!). Strangely too, not only are Episcopalian clergymen all styled '*besôpy*,' but their adherents also are distinguished from other Christians by the same name; each and all are 'bishops.' In the same way also students at the College are called '*kolèjy*,' and scholars are called '*sekôly*;' they are themselves colleges and schools! The French Resident soon became known in the country districts as *rèsiandànitra*, which, literally translated, would mean 'conquered in heaven'! The name of the famous prime minister of Prussia, Prince Bismarck, has actually become a Malagasy word as an equivalent for cunning, craft, in the form of *bizy*: '*manao bizy*' is 'to act craftily.' This phrase originated in the time of the Franco-Prussian war, when the fame of Bismarck first reached this country.

While speaking of words introduced by Europeans into the Malagasy language, a word or two may be said about other proper names, chiefly Scriptural ones, which have become thoroughly naturalised here. Many of these have taken curious forms, and this chiefly arises from the fact that *oral* instruction came first, some time indeed before these Bible names had to be printed. It would appear as if the first missionaries, in conversing with the Malagasy about the Saviour of the world, had very naturally spoken of Him by the same name, pronounced in the same way, as that which they and all English-speaking peoples use. They apparently did not consider what would be the most correct form of this sacred name, as well as of other names, that is, the nearest representation of their Greek originals. And so the English form 'Jesus Christ' came to be '*Jesôsy Kraistiy*' in Malagasy, a tolerably close reproduction of our pronunciation of it; while '*Jeso Kristo*' (or '*Ieso Kristo*') would no doubt have been more correct. In the Revised New Testament, '*Kristy*' has been substituted for *Kraisty*, but the older pronunciation holds its own. In some of the books formerly issued by the Jesuit Mission, the French pronunciation of the Redeemer's name was phonetically reproduced thus, '*Jeso-Kry*'! but in their later publications the spelling of the sacred name has been approximated to that employed in Protestant books. Other curious words which have now become naturalised in Malagasy are Jews (*not* 'Jew'), written '*Jiosy*' and pronounced exactly like 'juice;' and Gentiles (*not* 'Gentile'), written '*Jentilisa*;' so that the Malagasy speak of *one* Jews, and of *one* Gentiles!

Many English names have become naturalised among the Malagasy, especially the names of some of the missionaries resident among them. Thus we find Rajaonsona (Mr. Johnson), Raoilisona (Mr. Wilson), and

Rasoelina (Mr. Sewell). On one occasion a missionary was conducting service at a country chapel, and at the close was requested to baptize an infant. On asking the name of the child, he was startled and not a little confused by the parents giving *his own name* (Christian and surname included) as the one he was to give to the young neophyte. One of the oddest names I have heard of is Radèboka, which I am assured was taken from the title of the 'day-book' which the parents had seen in the Hospital! Another odd name is Ramosèjaofèra, in which we have, first the native name prefix *Ra*, then the French '*mon-sieur*,' altered to *mosè*, and finally the native name *Jaofera*. An absurd mistake arising from ignorance of Malagasy is perpetuated on the title-page of a Malagasy vocabulary published in England some years ago, but prepared by three young native officers, one of whom has been for several years past governor of Tamatave. The English editor apparently intended to describe it as "a *book* (Mal. *booky*) written by Rabezàndrina" and his companions; instead of which it reads, "*Boka no anarany Rabezandrina*," etc. etc., which is literally, "Lepers are the names of Rabezandrina," etc. The three authors were long known to some of us as "the three lepers."

But it is not the Malagasy only who make absurd mistakes about names unfamiliar to them. It is known to many in England who have friends in Madagascar that the name by which we missionaries and other foreigners are designated by the natives here is 'Vazàha.' But a worthy minister in England, who had got hold of the term, slightly mistook its exact meaning; and, supposing it be the name of a division of the Malagasy people, he gravely informed his hearers at a public meeting that "the Vazaha are a tribe in Madagascar who are still but imperfectly acquainted with the Gospel!" Many native customs strike us as very odd, and doubtless, not less so do many of our customs appear to the Malagasy. Thus they are accustomed to employ the points of the compass in speaking of the positions of things in the house, where we should say, 'to the left' or 'to the right,' or 'in front of you' or 'behind you.' One of my brother missionaries was once dining with a native friend, and while eating some rice, a portion happened to adhere to his moustache. His host politely called his attention to the circumstance, and on my friend wiping the wrong side, his entertainer cried, "No, no! it's on the *southern* side of your moustache!" It sometimes takes a little time for our Malagasy friends to understand *our* ways. Thus I remember that when living at Ambohimanga we were visited one day by an old friend who happened to be then staying at the ancient capital. After a little conversation my wife brought out a good-sized plum cake, and cutting a slice or two offered it to him. To her great astonishment he quietly took—not a slice—but, the whole of the cake! and commenced eating it. But finding himself, after a little time, rather embarrassed by its quantity, and that it was a good deal more than he could then comfortably manage, he gradually stowed it away in his pockets, remarking that his children would like it. We altered our way of handing cake to native friends from that date.

The native custom of giving and expecting bits of money on all imagin-

able occasions seems very odd to Europeans. At births and marriages, at deaths and funerals, when ill or when getting better, at the New Year, when building a house or when constructing a tomb, when going on a journey or on returning from one, in times of joy or in times of sorrow—at each and all of them these wretched little bits of cut-money are expected from visitors. It is true that at funerals a return is made in the shape of presents of beef; and the solemnities of death and mourning are mixed up with the—to us—very incongruous elements of the slaughter-house and the butcher's-shop. But if one leaves before the oxen are killed, a present of poultry instead of beef is made; and I have more than once come home from a funeral, or, at least, from the preliminary 'lying-in-state,' with a goose or a duck dangling from the poles of my palanquin.

Some curious things are seen by those who travel much about Madagascar in the way of church decoration. (I am here, it should be said, speaking almost exclusively of buildings erected by congregations in connection, at least nominally, with the L.M.S.) When it is remembered that these number more than 1200, and are scattered over a very wide extent of country, some missionaries having as many as 70, 80, or 90 of these under their nominal charge, it will be clear that to only a very small proportion of them can he give any personal attention or advice as to their construction and adornment. As it is, it is only in the case of the villages nearest to his station, and here and there at important centres, that an English missionary can do much to guide and advise country church builders. The majority of village churches are therefore entirely the product of native skill, and their decoration the outcome of native taste. In many cases, especially in some of the districts nearest to Antananarivo, the village churches are models of what such places should be; and with their glass windows, their neatly coloured interiors, and well-made platform pulpits—sometimes elaborate structures of massive stonework—they do credit to the simple country people who have built them. But it cannot be truthfully said that the majority of Madagascar village churches are of this kind. By far the greater number of them are rough structures of clay walls with sun-dried brick gables and thatched roofs; and their only furniture a raised platform of earth or brick, with a rough table serving both for pulpit and for the Communion, a clumsy form or two for the singers, a few dirty mats on the floor, some lesson-sheets on the walls, and perhaps a black-board for every-day school use. There is certainly no fear at present of the majority of our congregations being led astray by æstheticism in religious buildings or worship.

But frequently there are at the same time some attempts at decoration, and these are often very incongruous and occasionally highly comical (though doubtless unintentionally so). In a little church away north, and otherwise very neatly finished, is a band of ornament round the walls which is exactly like the figures on an ace-of-clubs card, and has probably been copied from this. In other places figures of officers and soldiers marching and even fighting are prominent; in others are seen sportsmen firing at impossibly big birds perched on trees; in others

again (as in the former Antsahamanitra church at Ambòhimanga) a large tree is conspicuous behind the pulpit, bearing tremendous pumpkin-like fruits. (In this same church, however, there were also some very tasteful groups of flowers painted on the keystones of the window arches.) In the church at Vòhipéno (Matitanana) I remember that the front of the pulpit was decorated in the following way: part of the space was occupied by a picture of a European ship with two masts; the other part had a church with a tall tower and spire; over these was the legend, "*Hoy izay tompony ity trano ity: Matahora*" ("Says the lord of this house: Fear"); and there were also four birds and a coloured border. Figures of clocks are frequently seen, and also those of a spear and shield, whether with any reference to "the shield of faith" and other Christian armour, I cannot say. It is worthy of note that no example of symbolism or sacred monograms or emblems has ever come under my notice, although passages of Scripture are now not unfrequently painted on the walls of village churches. Trees with fruit and flowers, often showing some taste, are seen in many places; and in one or two cases a very effective decoration has been formed by painted sprays of leaves or flowers scattered over the wall, giving the effect of a simple diaper or wall-paper pattern. (A unique example of a tasteful piece of wall-colouring is described more fully in ANNUAL III. p. 72.)

During a tour I took in 1874 round the Antsihànaka province with Dr. Mullens and Mr. Pillans, we were much amused by the variety of the receptacles used at the doors of the village churches for the weekly offerings of the congregations. In one district old sardine tins were the favourite article employed; further on we found that Morton's jam tins were most in vogue; while in yet another district old tin flasks formerly filled with gunpowder were in greatest request for the purpose.

In certain Malagasy village churches (not very many we should hope) some very curious additions to the ordinary furniture have been seen by occasional visitors. The wish of the late Queen that her subjects should worship the true God was in many places interpreted by petty officials as giving them authority to force the attendance of the people, and to punish them if they were negligent. The command, "Compel them to come in," was in fact often very literally carried out. Travelling down to the Betsileo province on one occasion, Dr. Davidson, while stopping for his mid-day meal at a country chapel, noticed a good-sized stone near the door, the object of which much exercised his mind. On enquiring the use of this stone, he was told that if the people were negligent of the 'means of grace' and did not attend service regularly, they were seized and obliged to carry the stone to the top of a neighbouring hill and down again, to punish them for their sins and remind them to be more diligent in future. Another kind of penance used to be enforced at Tsiafàhy: people who were irregular in attendance at chapel were obliged to creep on their hands and knees round the *fàhitra* or ox-fattening pen in the village, as a punishment for inattention to their religious duties. At a country chapel in the Friends' District, Mr. H. E. Clark saw on one occasion a deacon sitting at the door with a handful of small pebbles. When this official

noticed any one in the congregation asleep, or inattentive, or irreverent, he threw a pebble at the offender to rouse him up, or as a gentle reminder to be more careful.*

Much that is amusing might be noted with regard to native preaching: odd illustrations, strange misapprehensions and misapplications of Scripture, curious answers to questions about Biblical subjects, etc., but my space is more than filled up. Perhaps at some future time something more may be given on these points; and I wish that some one who has noted such incidents more fully than I have done would favour us with his reminiscences. Enough has I hope here been said to justify my remark at the commencement of this paper, that the monotony of our daily routine is frequently enlivened by curious and comic occurrences, and that, together with the more serious duties of our work, there is often "a decided element of the amusing, the odd, and the absurd" in our life in Madagascar.

JAMES SIBREE, JUN. (ED.)



VARIETIES.

A PROVIDENTIAL DELIVERANCE ON THE COAST OF MADAGASCAR FIFTY YEARS AGO.

THE following narrative was sent to my father several years ago by one of the sea-faring members of his congregation at Hull; and thinking it will not be uninteresting to the readers of the ANNUAL, I transcribe it herewith for their perusal.—ED. (J.S.)

Many years ago, I think it was in the year 1835, my brother was second mate of the brig *Émulous* of London, Captain Welbank, trading between Calcutta and Mauritius. At the time to which I allude they were lying in the harbour of Port Louis, waiting for cargo. The captain was very fond of fishing, and in order to indulge in his favourite amusement he had one of the small boats fitted with sails, in which he, two or three times a week, went outside the harbour for a day's sport. In these excursions my brother, a foreign seaman, and a boy, invariably accompanied him to work the boat, taking with them provisions for the day. Ships employed in the southern trade are always provided with small casks called by sailors 'breakers' (a corruption, I apprehend, of the Spanish '*barrico*'), which are used for fetching water, being easily carried from the springs to the ship. It was their custom in these fishing excursions to put half-a-dozen of these breakers into the boat, and to fill them with salt water to serve as ballast. On the particular occasion to which my story refers, the breakers were all full of *fresh* water. My brother had given orders to empty them into the tank, but the captain, being anxious to get away, countermanded the order and told the men to lower them into the boat as they were. Was that chance? No, the hand of Providence was visible there; but there is more to come yet.

* It need hardly be said that all true missionaries utterly repudiate and denounce all such ways of promoting Christianity.

They pushed off from the ship with light hearts, anticipating nothing but pleasure. They had not got many yards from the ship, when a little dog belonging to the captain came to the gangway and whined piteously to be taken into the boat. At first the captain was not inclined to take him in, but he altered his mind, and they turned back and took the animal with them.

They proceeded out of the harbour but had no luck; they caught no fish, but the captain being anxious to get something, kept on until the day was too far spent to get back to the ship before late in the night; but that was thought lightly of; the weather was fine and warm, and a night passed in the boat was no great hardship; so they let go their grapnel under the lee of a rock called the Gunner's Quoin (from its wedge-like shape), made a tent of their mainsail, disposed of the last of their provisions, made themselves as comfortable as they could and went to sleep, intending to go back to the ship at daylight. But they did not: in the middle of the night they were awoke by the uneasy motion of the boat; they found it was blowing a gale, and the boat drifting fast from the land. They got their sail close reefed and endeavoured to work up under the land, but they were too late, the sea was every minute getting higher, and their frail craft, 15 feet long, in great danger of filling; they therefore did the best thing they could under the circumstances: they lowered the sails, made the mainsail fast to the boat's painter and put it overboard for what in sea parlance is called a 'drogue,' to keep the ship's head to the sea, and anxiously waited for day. But they had more trouble in store; the wind moderated towards morning, but, just as they were about to get in the sail from the water, the rope that held it broke, and they lost their best sail, therefore beating up again to the island was out of the question. The only thing they could do was to try to get to the island of Bourbon, distant about a hundred miles; but having lost their best sail, the boat would not keep very close to the wind, and they passed the island far to leeward.

Their position was now becoming alarming; they had no food, but they had plenty of fresh water; Madagascar, their only refuge, was 500 miles off, but they must reach it or die. They therefore shaped their course as well as they could, by the sun by day and the stars by night, having no compass in the boat. Then came the pangs of hunger; they bore it long, but at last the poor dog must die to keep them alive. For ten days after passing Bourbon, the dog furnished their only food. At the end of that time they sighted the extreme south end of Madagascar, and then the wind failed them. But they were not forsaken: He who notes the fall of a sparrow had them in His keeping. My brother said he never knew how they got the boat ashore in their exhausted state, but they did, and they landed safe on the beach. They had not been long there when three native women came down to the shore, and seeing their exhausted condition, semi-savages though they were, instantly procured them food. Their arrival in the country was soon made known to the authorities of the district, and they were brought before one of the chiefs to give an account of themselves; but they were soon acquitted of any hostile intentions, and their forlorn condition exciting the sympathy of the natives, they were soon made comfortable. My brother spoke in glowing terms of the kind treatment they received from these uncivilised islanders. As soon as the chief thoroughly understood their requirements, he provided them with an escort of eight men and a canoe, which they carried on their shoulders over the land, and used it when they could on the lakes, for a distance of 450 miles to Tamatave, the journey occupying eleven days. It was the custom of the inhabitants of the villages where they remained for the night (and they could only travel while the sun was, up on account of the alligators) to vacate one of their houses and give it up entirely to the strangers, so that when they were refreshed with abundance of good food they were left in the undisturbed possession of their dormitory until the morning. Arriving at Tamatave, they

embarked on board one of the bullock schooners then trading between Madagascar and Mauritius, and, to the surprise of all, got back to their ship after an absence of thirty-two days.

JOHN HARVEY.

THE 'FANATAOVANA.'

THOSE of us who have long dwelt in Madagascar must have frequently noticed in various parts of the country those heaps of stones, or, if near forests, piles of bracken, branches of trees, moss, etc., known as *Fanataovana*. These have been formed by passers-by depositing a stone, or whatever the article may be, in order that they may have success in their journeys and undertakings. Reading Thomson's interesting and thrilling book *Through Masai Land* a while ago, I was interested in finding (p. 485) that a similar practice prevails in the eastern parts of Africa, and doubtless in other countries too. He says: "The connection of the natives of Upper Kavirondo with the latter (East African negroes generally) is illustrated (and that very markedly) by their habit of throwing sticks, stones and grass into heaps at particular places, such as boundaries, with the idea of propitiating some guardian spirit. This custom prevails all through the countries southward to Nyassa."*

R. BARON. (ED.)

EARTHQUAKE SHOCKS.

AS a country showing numerous traces of volcanic disturbance (probably not of a very remote date), Madagascar is almost every year visited by shocks of earthquake. Happily these are not of a severe character, and little, if any, damage is usually done. Several slight shocks have been felt during 1887, mostly in the earlier months of the year; the most distinctly felt of these occurred on the afternoon of Monday, Feb. 7th, and was accompanied by a strange subterranean roar and a tremor of several seconds' duration. To many persons it appeared as if the earth-wave came from the west or north-west and passed away to the east and south. Slighter shocks were felt on the 11th, 12th and 14th of the following April, some of them occurring in the night. The Malagasy still remember a rather severe earthquake shock which happened many years ago, and which is said to have detached a large mass of rock from the cliffs on the precipitous west side of the ridge on which Antananarivo is built.

Eight years ago a very severe shock was experienced in the district of Vonizongo, 40 miles N.W. of Antananarivo, following one of a less alarming kind a fortnight previous. These are thus described by the Rev. E. H. Stribling, then residing in the north-western part of the district. He says:—

"During the past year (1879) two shocks of earthquake have been felt in Vonizongo, the latter one far surpassing the first in severity. It is noticeable that fifteen days elapsed from the occurrence of the first shock to that of the second and heavier one. It was at half-past 7, a.m., on Sunday morning the 31st of August, that the shock was felt at Fiarenana, lasting for more than twenty seconds, and alarming all by the shaking of the windows and lighter furniture which accompanied it.

"The most severe shock of earthquake probably known in Madagascar for at least a generation past occurred on Tuesday, the 16th September 1879, at 2-10 p.m., lasting for at least thirty seconds. At the instant of its occurrence, I was just leaving Ankadimaito (in the Valalafotsy district), a village about 2½ days' journey south-west of Fiarenana. This village (as its name may imply, 'At the broken fosses') is an extraordinary one, being nearly surrounded by

* Exactly the same custom is found in Sumatra and in Timor; see Forbes's *Naturalist's Wanderings in the Eastern Archipelago*; pp. 166 and 481.—ED. (J.S.)

several moats, thirty feet deep by twenty wide, the bridges and paths between which are extremely narrow; while the whole surroundings of Ankadimaito present an unusual appearance of unsubstantiality, and it is one of the last places in Madagascar one would flee to for refuge from an earthquake. The three days previous to the shock had been almost unbearably sultry, although the usual hot weather had scarcely set in. The morning of the occurrence was one of the hottest I have experienced in Imérina, a peculiar haze hanging over the country. It was on leaving the village of Ankadimaito, accompanied by several of the congregation, and while still proceeding along one of the narrow paths leading between two of the wide and deep trenches, that we suddenly heard a rumbling sound, as of violent thunder. The great shock was now upon us as in a moment, and truly terrific was it in its effects. My native friends with me at the time seemed as if instantaneously paralysed with amazement; and although still on the narrow path, there they stood immovable, awaiting, as they doubtless supposed, the inevitable destruction so shortly to overtake them. But I at once proceeded at a double-quick pace to gain the open plain, in case of a general collapse of Ankadimaito with its numerous moats and trenches. The shock was so severe that as we gained the plain we beheld the moats to the east and south enveloped in one mass of smoke-like dust slowly ascending from the falling *débris*. The effect upon all present was an anticipation of swift and unavoidable destruction.

"The Malagasy are a people who soon forget their fears, and proceeding along to the east, we passed the village of Itsiazompaniry, about $1\frac{1}{2}$ hour distant. Here we heard that three shocks had occurred since 2 o'clock, although one only was felt at Ankadimaito. We now proceeded by the north-east towards Ikankaolo, a village named after the remarkable and lofty black rock close by. As we passed by the west of Ikankaolo, several of the palanquin bearers remarked upon the unusual appearance of the ground, saying, "Surely this is broken by the earthquake." And as we passed over the ground, for more than about two hundred yards we found it literally split up by the severity of the recent shaking. At about 8 o'clock, a fresh shock occurred, severe enough to shake the house in which I was staying and send me quickly out of doors for safety. Very lightly indeed did I sleep that night, and I began to wish myself again on shipboard upon the ocean, which, to my imagination, presented more security than the quaking earth.

"It was at about 7 a.m. on the Wednesday that the last shock was felt, which proved considerably less severe. After our service in the little chapel at Ikankaolo, I proceeded on my way towards Fiarenana, where the earthquake appears to have been much the same in severity; although I was thankful to find on arrival home that our mission premises had escaped uninjured."

NOTINGS ON MALAGASY AND MALAYAN AFFINITIES.

OSCAR Peschel, in his *Races of Men* (pp. 355 and 356), remarks upon "the use of the feather bellows nowhere else but in the Malayan islands, except in Madagascar. Dr. E. Tylor therefore seems justified in his impression that the colonisation of Madagascar took place only after the working of iron was practised in the Sunda Islands (see *Early History of Mankind*, p. 215). In connection with this circumstance it is noticeable that the Hova breed the Zebu or Indian buffalo, although the indigenous cattle of Madagascar are like the African species. (Schweinfurth has, however, shown that the buffalo occurs in every part of the Soudan; see *Heart of Africa*, vol. i., p. 160.) If with this we connect the fact that the inhabitants of the southern coast of Ceylon and of the Maldives speak the Malayan language, this throws some light upon the way in which the ancestors of the Hova reached Madagascar."

In the Serwatty Islands (Malay Archipelago) bullocks are slaughtered in large numbers at affairs of importance. The inhabitants preserve with care the relics of their ancestors; and at the death of their chiefs their bodies are deposited on platforms in the forest and are allowed to decay. When they cease to be offensive they are deposited under the roofs of their houses.

On the similarities between Malagasy and Malayan words, see Banks, in Hawkesworth's *Discoveries in the South Sea*, 1773; Hervàs, *Catalogo de la Lengua*, Madrid, 1800; and W. von Humboldt, *Kawisprache*, 1836.

ED. (J.S.)

THE MALAGASY WORDS FOR 'FISH' AND 'CANOE' ('LAOKA'
AND 'LAKANA').

WHAT does the word *lakana* in Malagasy mean? or, rather, what did it originally mean? We all know that it now means a canoe, made by hollowing out the trunk of a large tree, but what is its etymology?

We have another word in Malagasy which somewhat resembles it, viz. *laoka*. This in Imèrina now means any additional food or relish taken with rice (which is the staple food, the staff of life, of the majority of the Malagasy tribes) in order to make it more palatable. Here in the central province *laoka* means either meat, fish, shrimps, or even vegetables; but on the coast it appears to be almost exclusively applied to *fish*;* and there can hardly be any doubt that this is the original meaning of the word.

In the various Malayan, Polynesian and Melanesian languages we find the root *ak* in any number of modifications, as *ak*, *ok*, *aka*, *ika*, *ikan*, *ig*, *iga*, *ige*, *eg*, etc., and all of them having the meaning of 'fish;' and there can be no doubt at all that the Malagasy *laoka* (fish) is only a further expansion of the same root. The prefixed *l* (or *la*) is evidently only the demonstrative particle *la* or *le*, which we meet with in words like *ilay* and *ilèhy* (or *lèhy*), 'that one.' That demonstrative particles are used in forming secondary roots from primary ones is a fact familiar to every scholar, although it does not occur so often in the agglutinative languages as in the inflectional ones.

If we now turn to *lakana* (provincial, *laka*), we evidently meet the same root, in a similar number of variations, in the cognate languages; e.g., *ak* (very frequently), *ok*, *aka*, *eka*, *og*, *vaka*, *haka*, *laka*, *faka*, etc., and always having the same meaning of a canoe or a boat. The primary root here is also *ak*, to which are prefixed the demonstrative particles *ha*, *la*, *va*, *fa*, etc. Now is there no connection between the *ak* which means 'fish,' and the *ak* which means 'canoe?' I have not the means of following up the question fully, but I have no doubt that the two forms *ak* are identical. Perhaps both of them point back to a verbal root *ak* (to move, run, swim?); at any rate the idea of 'fish' is an earlier one than that of 'canoe,' as people no doubt had seen a fish before they could make a canoe. And having once fixed the sense 'fish' to the root *ak*, it was quite natural that they should call a canoe by the same name; for what, after all, is a canoe but an artificial fish? But in the course of time the forms were gradually modified to some extent, so as it to make it possible (at least in some of these languages) to distinguish the name of a fish from the name of a canoe.

L. DAHLE.

Note.—The forms *ak*, *ik* certainly remind one of the Greek *ichthys*; but this is, I suppose, only an accidental similarity.

* There is, properly speaking, no distinctive word for fish in the interior of Madagascar, as the one in common use—*hazandrano*, a combination of the words *haza*, anything obtained by hunting, and *rano*, water—is very wide in its meaning, and is applied to other living things besides fish, as shrimps, crayfish, crabs and molluscs.

BRIEF SUMMARY OF IMPORTANT EVENTS IN MADAGASCAR DURING 1887.

POLITICAL.—Our usual brief record of important political events is briefer this year than usual, as there has happily been little of much importance to record. When we have noticed the evacuation of Tamatave by the French in January, the visit of the British Consul to the Capital in June, the return of the Malagasy Embassy from France and also that of General Willoughby from Europe, the temporary withdrawal of the French flag (on account of differences of opinion between the Resident-General and the Native Government with regard to the *exequaturs* of foreign consuls), the arrival of M. Larrouy, the new Resident-General, and the dismissal from office of the Secretary of State for Foreign Affairs—we have nearly exhausted all the items of interest under this head. Happily the political outlook is peaceful; long may it continue so!

Under the head of semi-political events, we must, however, record the enthusiastic celebration of the Jubilee of Her Majesty Queen Victoria, by the British community of Antananarivo on Wednesday the 22nd of June. By the kind permission of Her Majesty the Queen of Madagascar, the Royal Gardens at Mahàzoarivo were lent for the occasion; and a large number of the *élite* of Malagasy society, including His Excellency the Prime Minister, as well as foreigners of all nationalities residing in the Capital, accepted the invitation of the committee having the management of the festivities. Luncheon and other refreshments were provided, entertainments of various kinds were arranged, the gardens were prettily decorated, and a very pleasant day was spent in honour of the Jubilee.

SOCIAL AND COMMERCIAL.—During the latter part of this year the line of Electric Telegraph connecting Tamatave and Antananarivo has been completed; and on Thursday, Sept. 15th, the chief port of Madagascar and the Capital were put in telegraphic connection, and messages were interchanged for the first time. The line has been constructed by a French company, the Malagasy Government supplying the posts and other timber; and a year after the line is in working order, the Government is to take it over on the payment of \$ 20,000 to the French.

ROADS AND PATHS.—In the earlier months of the year, as soon as the rainy season was fairly over, a great deal of activity was shown in all parts of the central province of Imérina, in improving the roads and paths. We do not mean to say that any roads—paved or macadamised in European fashion—have been constructed; but the previously existing foot-paths—mere tracks of a few inches broad—crossing the country in all directions, have been widened by clearing away the grass for five or six feet in width; the steeper ascents and descents have been made somewhat less difficult; and in some cases embankments have been formed over wet and boggy ground, although no bridges have (we believe) been built. Madagascar is still some centuries behind most civilised countries as regards the means of internal communication, but this year a little advance in the right direction has certainly been made.

RIVER EMBANKMENTS.—During the months of July and August a large proportion of the population of Imerina left all other oc-

cupations and assembled in vast numbers, in obedience to the royal proclamation, on the banks of the river Ikopa, in order to heighten and strengthen the embankments on each side of the stream. For some years past these great works, carried out by former sovereigns, have been getting more and more defective; and on account of the gradual rise in the bed of the river, their height has been insufficient to hold the great mass of water which is poured into them during the heavy rains of the wet season. It had therefore become a matter of national importance to strengthen these great banks, and so to prevent the disastrous floods which have become rather frequent of late years, and have often destroyed thousands of acres of growing rice. Every kind of business and all teaching was therefore ordered to be stopped. The Queen and her Court went out to the river, and Her Majesty herself carried sods and stones and laid them in their place to inaugurate the work; and, subsequently, the Queen and Prime Minister and a large following of attendants left the Capital for about three weeks to inspect the works, encamping in various places along the river side, from near Alasóra, to the south-east, down to a considerable distance north-west of the Capital. The new and white lines of embankment stretching along the river-sides for many miles can be quite clearly seen from the upper part of Antananarivo, and their broad tops form fine roads for walking or horse exercise.

It is a matter for great regret that grog shops, where drinking and gaming are carried on late at night, are now to be seen in considerable numbers in various parts of the Capital; these are chiefly kept by foreigners, and drinking habits as well other immoralities are certainly greatly on the increase among the Malagasy themselves. It is much to be wished that by licencing or some other method some restraint

could be put upon this uncontrolled trade, which is now doing so much to demoralise the people and neutralise the benefits of education and Christian teaching.

Trade has been for many months past in a very depressed condition, money has been scarce, and there has been little inducement for any speculation or enterprise.

LITERARY.—REVISION OF THE MALAGASY BIBLE. During the early part of the year this great work, which has been carried on more or less continuously for more than 13 years, was brought to a completion; and on the 2nd of May a largely attended meeting was held in the Ampamarinana Memorial Church to celebrate the event and to give thanks for the successful termination of the work. The Rev. W. E. Cousins, the Chief Reviser, is now in England engaged in carrying through the press the first editions of the Revised Bible and of the New Testament.

GEOGRAPHICAL.—“M. le Myre de Vilers, Resident-General of France at Madagascar, having learned that the Rev. Father Roblet, Jesuit Missioner, had made considerable topographical researches in the provinces of Imérina and Bétsilèo, sent one of his secretaries to look carefully into the matter (see pp. 341, 342, *ante*). On the notes which were supplied to him, M. le Myre de Vilers addressed a report to the Topographical Society of France, in consequence of which the Society has awarded an exception to our indefatigable topographer, who has reflected honour alike on science and on France. His reward, the highest after the great medal of honour, was proclaimed on the 7th of November in the General Assembly of the Society of Topography of France and the Sorbonne.”—*Annals of the Propagation of the Faith*; May 1887.

A NEW SURVEY OF ANTANANARIVO.—It is now 50 years ago since the Capital of Madagascar was surveyed for the first time. This was

done by the late Mr. James Cameron, of the L.M.S.; and a map, to a small scale, was drawn, which was first published in Mr. Ellis's *History of Madagascar* (1878), and has been two or three times reproduced with slight additions. The city, however, has increased very considerably during the last fifty years; and we are glad to see that some of the engineer officers connected with the French Residency have for some weeks past been engaged in making a survey of Antananarivo. We hope that the result of their labours will be published, so as to be accessible to the general public, for numbers of foreigners as well as of the native inhabitants would doubtless be glad to have, in a handy form, a map of the Capital.

EDUCATIONAL.—On Tuesday, May 10th, an attempt was made by the Editor of the monthly publication entitled *Ny Fiangonana sy ny Sekoly* (Mr. H. E. Clark) to obtain accurate returns of the number of scholars on the books of the various Protestant schools and other educational establishments in the Capital, including the Palace School, Colleges,

High Schools, etc., and also of those in actual attendance on that day. At the foot of this section is a summary of the results obtained.

Although it is pleasant to know that between two and three thousand children and young people in the Capital are regularly learning, yet these numbers are far from satisfactory when the large population of Antananarivo is remembered. There are probably not fewer than 100,000 inhabitants in this city; and applying the same rule here as in England, that one-tenth of the total population should be in school, and adding perhaps a fifth of these figures as the numbers in attendance at the Roman Catholic schools ($3327 \times 665 = 4392$, and $2387 \times 477 = 2864$), we see that the numbers who are regularly learning are a good deal *under a third* of those who should be in school.* It is evident therefore that the laws about putting children to school are evaded by a large number of the inhabitants of Antananarivo, and that much still remains to be done in popular education in the Capital of Madagascar.

<i>Society</i>	<i>Numbers on Books.</i>	<i>Numbers present.</i>
In connection with the L.M.S. and F.F.M.A.	2847	1948
" " " " S.P.G.	336	320
" " " " Norweg. M.S.	144	119
	3327	2387

DEPARTURE OF MISSIONARIES.—Our space will only allow us (instead of a much fuller notice we had written) to make the simple record of the departure from Madagascar this year of the Rev. L. Dahle, N.M.S., and of Mr. H. E. Clark, F.F.M.A., both of whom are well known to all readers of the ANNUAL by interesting articles, and as having written numerous and valuable books in the native language. We can ill spare such men from our midst, and we regret that at present there seems little hope of either Mr. Dahle or Mr. Clark returning to this country.

* It should be remembered also that in the case of the higher schools and colleges, a large proportion of their scholars are not usually resident in the Capital, but are from the country, so that the attendance from the city is still further reduced. On the other hand, it is true that the proportion of scholars to total population must be put much lower in Madagascar than in England, on account of the far smaller number of children as compared with adults. Perhaps one-twentieth might be the proper ratio; but even this is far from reached.

BOTANICAL AND NATURAL HISTORY NOTES.

FURTHER CONTRIBUTIONS TO THE FLORA OF MADAGASCAR;
 BY J. G. BAKER, F.R.S., F.L.S. [READ 18TH NOV. 1886.]

SINCE I last reported to the Linnean Society on the Flora of Madagascar, in the session of 1884-85, two large boxes of plants have been received from the Rev. R. Baron, F.L.S. One of these, owing to the unsettled state of political affairs in the island, did not reach us for more than a year after the letter announcing it came to hand, so that we had quite given it up for lost. These two boxes carry up his collecting numbers to nearly 5000. The present paper contains descriptions of the principal new genera and species included in these boxes of which the specimens were sufficiently complete. There appear to be seven new genera—one in Menispermaceæ, one in Geraniaceæ, two in Melastomaceæ, one in Rubiaceæ, and two in Compositæ. The species are distributed through the primary divisions as follows, viz:—Thalamifloræ 51, Calycifloræ 48, Gamopetalæ 93, Incompletæ 31, Monocotyledons 27, Vascular Cryptogamia 5.

As before, the great bulk of the new species belong to the large, well-known, widely-spread tropical genera, such as *Garcinia*, *Hibiscus*, *Begonia*, *Vernonia*, *Vitis*, *Ficus*, *Piper*, and *Cyperus*. Of characteristically Cape types we have *Pelargonium*, *Stoebe*, *Belmontia* and *Cineraria* added to the flora of Madagascar, a second species of *Crassula*, several fleshy-leaved Kleinoid *Senecios*, and a curious dwarf *Aloe*, allied to the Cape *Aloe aristata* of Haworth. Of familiar European genera we have *Celtis* and *Deyeuxia* added, and new species of *Nasturtium* and *Ajuga*. Of the endemic Madagascar genera we get new species of *Asteropeia*, *Rhodolæna*, *Dichæanthera*, *Veprecella*, *Gravesia*, *Kitchingia*, *Dicoryphe*, *Oncostemum*, *Mascarenhaisia*, and *Dypsis*. There is nothing materially fresh affecting the relations of Madagascar to Tropical Africa, Mauritius, and Bourbon. The feeble affinity of the Madagascan to the Indian and Malayan flora is strengthened by the discovery of the genus *Cyclea* and of new species of *Alyxia*, *Didymocarpus*, and *Strobilanthes*. Of types of certain or possible economic interest, we have species of *Dalbergia*, *Macaranga*, and *Strychnos*, two species of *Commiphora* (*Balsamodendron*), and four of *Garcinia*. A curious Euphorbiaceous plant seems to belong to the American genus *Pedilanthus*, but the material is incomplete.

For convenience of reference I give herewith a list of recent papers which have appeared in English periodicals, in which new or imperfectly known plants from Madagascar have been described:—

	Gen. Spec.
1876. Ferns collected by Mr. and Mrs. William Pool. Baker, <i>Fourn. Linn. Soc.</i> xv. p. 411	26
1877. Ferns collected by Miss Helen Gilpin. Baker, <i>Fourn. Linn. Soc.</i> xvi. p. 197	21
1879. Flowering plants collected by L. Kitching. Baker, <i>Fourn. Linn. Soc.</i> xviii. p. 264	2 33
1880. Ferns collected by L. Kitching. Baker, <i>Fourn. Bot.</i> 1880, p. 326	13
1880-85. Endemic genera figured in <i>Icones Plantarum</i> :— <i>Micronychia</i> , Oliver, t. 1337; <i>Epallage</i> , DC. t. 1394; <i>Rhaphispermum</i> , Benth. t. 1402; <i>Cardiochlamys</i> , Oliv. t. 1403; <i>Bembicia</i> , Oliv. t. 1404; <i>Xerochlamys</i> , Baker, t. 1413; new	3 3

	<i>Gen. Spec.</i>
1882. New Plants collected by Messrs. Baron and Parker. Baker, <i>Fourn. Bot.</i> pp. 17, 45, 67, 109, 137, 189, 218, 243, 266; reprint paged differently	2 108
Baker (with synopsis of <i>Cyperus</i> by C. B. Clarke), <i>Fourn.</i> <i>Linn. Soc.</i> xx. pp. 87-304.	5 392
1883. New Monocotyledons collected by W. Deans Cowan. Ridley, <i>Fourn. Linn. Soc.</i> xx. p. 329	1 10
1884. On <i>Hyalocalyx</i> , a new genus of Turneraceæ. Rolfe, <i>Fourn. Linn. Soc.</i> xxi. p. 256, t. 10.	1 1
" New Plants collected by Baron. Baker, <i>Fourn. Linn. Soc.</i> xxi. pp. 317, 407.	8 190
" <i>Cyperaceæ novæ.</i> Ridley, <i>Fourn. Bot.</i> p. 13	3
" Ferns collected by Humblot. Baker, <i>Fourn. Bot.</i> p. 139	15
1885. Complete list of all the known Orchids of Madagascar, with descriptions of new and little-known species. Ridley, <i>Fourn. Linn. Soc.</i> xxi. p. 456.	74
" New Orchids collected by Fox and Baron. Ridley, <i>Fourn. Linn. Soc.</i> xxii. p. 116	19
1886. The present paper	7 255

29 1163

From *The Journal of the Linnean Society*, vol. xxii. No. 148.

The new genera mentioned in the above extract are *Gamopoda* (Nat. Ord. Menispermaceæ), *Trimorphopetalum* (Nat. Ord. Geraniaceæ), *Rhodosepala* and *Amphorocalyx* (Nat. Ord. Melastomaceæ), *Gomphocalyx* (Nat. Ord. Rubiaceæ), *Astephanocarpa* and *Temnolepis* (Nat. Ord. Compositæ):

Gamopoda densiflora, Baker. This is an erect shrub found in Antsihâ-naka and flowering in November and December.

Trimorphopetalum dorstenioides, Baker, is an herb found in the streams in the forest to the east of Imérina. It is abundant at "the glen" near Ankéramadinika. Mr. Baker says it is a very distinct new generic type nearest *Impatiens*.

Rhodosepala pauciflora, Baker, is an herbaceous plant found in damp places in West Imerina. It flowers about the middle of the year.

Amphorocalyx multiflorus, Baker. This is an erect shrub from North Imerina. It flowers also about the middle of the year.

Gomphocalyx herniarioides, Baker, is an annual from Ankavandra in West Madagascar.

Astephanocarpa arbutifolia, Baker. This shrub, which is in flower about September, is from the summit of Vavavato mountain.

Temnolepis scrophulariæfolia, Baker, is an annual which is abundant in Antairoka (Antèhirôka?), north of the Capital.

THE AGY. The agy is a climbing plant found abundantly in Western Madagascar. The hairs which cover its pod sting most virulently.* The plant proves to be new, so that it is not the *Mucuna pruriens*, though it is closely allied to it.† Mr. Baker has named it *Mucuna axillaris*. It appears to be in flower during the greater part of the year.

* See ANNUAL IX. p. 118. † See ANNUAL IX. p. 119.

THE IRON-WOOD TREE. This is a tree which is frequently found in gardens. I sent a specimen to Kew for identification from the tree in Mr. W. Johnson's garden (south of the house), and to my surprise it proves, according to Mr. Baker, to be new. Now as the tree is undoubtedly introduced, I suspect Mr. Baker may hereafter find it to be after all *Acacia hetesophylla*, Willd., or some other known species of acacia. However, he has named it *Acacia xiphoclada*.

THE LANDEMY. The tall shrub or small tree with large cabbage-like leaves known as *landemy*, and found about the forests of Eastern Imerina, proves to be a new species of *Anthocleista*. Mr. Baker has named it *Anthocleista amplexicaulis*. The natives, I believe, use the bark (?) for malarial fever.

THE ADABO. Among the commonest trees in Western Madagascar are the *adabo*, of which there are two species, the *adabolahy* and the *adabovavy*. They are both new species of *Ficus*, the former having been named by Mr. Baker *Ficus sakalavarum*, and the latter *Ficus cocculifolia*. The *adabovavy*, whose fruit is sometimes five or six inches in diameter, is much more common than the *adabolahy*.

THE RHODOLÆNA ALTIVOLA. On p. 114 of the VIIIth No. of the ANNUAL the following remarks respecting this plant were made: "It was discovered about a century ago by Petit Thouars, but until recently has not been gathered since that date. In Wallace's *Island Life* it is mentioned as one of the characteristic plants of Madagascar, where it is described as a 'semi-scandent shrub with magnificent campanulate flowers the size of a camellia and of a brilliant purple colour.' It is not, however, a semi-scandent shrub, but a large tree. It is pretty common in the forest of Eastern Imerina, where it is known as *Pitona*. Its fruit is edible." Now it seems that the remarks of Mr. Wallace are correct, and that the plant referred to in the above is a new species of *Rhodolæna*, which M. Baillon has recently named *Rhodolæna Bakeriana*. *R. altivola* seems to be found in the north-eastern parts of the island.

In addition to the above there have also been described recently in *The Journal of the Linnean Society*, 4 species of *Garcinia*, 4 of *Hibiscus*, 5 of *Dombeya*, 3 of *Vitis*, 9 of *Kalanchoe*, 3 of *Dicoryphe*, 2 of *Begonia*, 3 of *Dirichletia*, 3 of *Psychotria*, 6 of *Vernonia*, 3 of *Conyza*, 3 of *Psiadia*, 4 of *Helichrysum*, 3 of *Aphelaxis*, 7 of *Senecio*, 5 of *Philippia*, 5 of *Oncostemum*, 1 of *Strychnos*, 7 of *Hypoestes*, 5 of *Euphorbia*, 3 of *Antidesma*, 8 (including the two above-mentioned) of *Ficus*, 5 palms of the genus *Dypsis*, and 1 of the genus *Phloga*, 5 of *Cyperus*, and 1 *Chara* of the genus *Nitella*.

R. BARON. (Ed.)

HABITS AND FOOD OF THE AYE-AYE.

ONE of the most remarkable of the smaller mammalia to be found in any part of the world is the Aye-aye, which inhabits Madagascar only, and of which only one species is at present known. This little creature is so different from all the other quadrumanous animals that it forms a genus and even a family of itself, while it differs in some important points of structure from the lemurs, to which Order it is most nearly allied. It is now well known to naturalists that Madagascar, from its geographical position as a continental island, presents some very anomalous forms of animal life, survivals of antique forms, which have maintained their existence in this large island, while they have been exterminated in the struggle for life with other animals on the continents.

The Aye-aye is one of the most interesting of such animals, and its organisation presents one of the striking examples that can be found of typical forms modified to serve special ends. Its food, according to Dr. Sandwith's account of its habits when newly caught, consists of wood-boring larvæ, which tunnel beneath the bark of certain hard-wooded trees. To obtain these, the creature is furnished with very powerful chisel-shaped teeth with which to cut away the bark and the wood. As, however, the larva retreats for safety to the end of its hole, the middle finger of the Aye-aye's fore-hands is considerably diminished in thickness, so as to act as a probe. Thus provided, the finger with its hook-like claw is inserted in the tunnel, and the dainty morsel drawn from its retreat; and so the animal obtains, at least in certain conditions and seasons, the bulk of its food.*

There are also other modifications of structure, all tending to the more perfect accomplishment of the purposes fulfilled by this little creature in the order of nature: the eyes being very large so as to see by night, for it sleeps by day; the ears expanded widely, and of delicate membrane, to catch the faint sound of the caterpillar at work; and the thumbs of the hinder hands being largely developed to take firm hold while working. Dr. Sandwith also observed that the probe finger is used as a scoop when the Aye-aye drinks; being bent so as to separate it from the other fingers, it is carried so rapidly from the water to the mouth, passing sideways through the lips, that the liquid seems to pass in a continual stream. Another observer has also pointed out a remarkable point in the structure of the lower jaw of this animal, namely, that the two sides are only joined together by a strong ligament, and do not, as in most other animals, form one connected semicircle of bone. They play easily in a vertical direction, independently of each other, and when the animal is gnawing, alternately. This accounts for the prodigious power of gnawing that the Aye-aye possesses. It was seen to cut through a strip of tin-plate nailed to the door of its cage. As this power is added to the usual vertical and lateral motion of the lower jaw, its effect is not astonishing. From this strong gnawing power the Aye-aye was at first classed, by Cuvier and Buffon, among the Rodentia, but it is now determined to be an exceedingly specialised form of the lemuroid type. "Thus," says Professor Owen, "we have not only obvious, direct, and perfect adaptations of particular mechanical instruments to particular functions—of feet to grasp, of teeth to erode, of a finger to probe and extract—but we see a correlation of these several modifications with each other, and with adaptive modification of the nervous system and the sense organs: of eyes, to catch the least glimmer of light, and of ears, to detect the feeblest grating of sound; the whole determining a complex mechanism to the perfect performance of a particular kind of work."

The Malagasy living in the eastern forests and coast plains have a superstitious dread of the animal, believing that any person who kills an Aye-aye will die within a year. This fear, added to the nocturnal habits of the creature, has made it difficult to obtain specimens of the Aye-aye; but a female was sent over in 1859 to England, and lived for some time in the Regent's Park Gardens. As regards the habits of the animal, fresh information was soon obtained by the Superintendent of the Gardens, Mr. A. D. Bartlett, in some points curiously differing from Dr. Sandwith's observations. The animal slept during the day, the body curved and lying on the side, while the tail was spread out and flattened over it, so that the head and body were

* These notes on the Aye-aye, although written some years ago, appear to me to be worth placing on permanent record, as another small contribution to the few facts yet known about this curious and anomalous animal. For further facts about the Aye-aye, see ANNUAL VI. pp. 83 and 123.

almost covered by it. Only at night did it show activity, crawling about and gnawing the timber of its cage, but showing no uneasiness at the appearance of a light, indeed trying to touch it with its long fingers. It often hung by its hind legs, and in this position would clean and comb the tail with a rapid motion of its hook-like finger, in this action much resembling some of the bats (*Pteropus*).

In feeding, the left hand only was used, and from its very rapid movement it was difficult to observe it closely, but the peculiar middle finger was raised so as not to touch the food. This Aye-aye showed no inclination to take any kind of insect, but fed freely on a mixture of milk, honey, and eggs, or on any thick, sweet, glutinous fluid, rejecting meal-worms, grasshoppers, larvæ of wasps, etc. From this fact Mr. Bartlett is disposed to think that the animal cannot be carnivorous; but from its possessing such large and powerful teeth, he infers that it may perhaps wound trees, and cause them to discharge their juices into the cavity made by its teeth, and that upon this fluid it possibly feeds. He thinks this supposition confirmed by the fact that the Aye-aye frequently returned to the same spot on the tree which she had previously injured. Other habits in feeding seemed to strengthen this view, since the animal paid little attention to its food, and did not watch or look after it, continuing to thrust out its hand for a while after the vessel containing the food was removed. This apparently stupid act is so unlike the habits of animal intended to capture and feed on living creatures, that Mr. Bartlett believes that its usual food consists of inanimate substances. He frequently saw it eat a portion of bark and wood after taking a quantity of its fluid food.

The facts noted by two such careful and scientific observers seem to differ so much on important points that they raise the question whether there may not be more than one species of Aye-aye, or whether the food of the female may not differ, at certain times at least, from that of the male. Possibly, however, the explanation is to be found in the fact that none of the insects of England which were offered to the Aye-aye were suitable to its tastes. It therefore preferred another kind of food to starvation, and ate bread, eggs, and honey with milk; for its native habits and food in the woods of Madagascar declare plainly its office as a check upon the undue prevalence of tree-destroying xylophagous larvæ. "Had the Aye-aye possessed an indiscriminate appetite for insects, it would satisfy such appetite on much easier terms than by gnawing into hard wood for a particular kind of grub." But as testified by a French observer, it has by no means an equal liking for all species of larvæ, but distinctly chooses certain kinds; and Dr. Sandwith specifies its favourite food as the destructive *monterek*. The restriction of its likings to the wood-boring kinds was therefore necessary to insure the complete use of all the wonderfully adapted parts of its organisation.

According to M. Soumagne, the Aye-aye constructs true nests in trees, which resemble enormous ball-shaped birds' nests. He found them in a belt of forest inland from Tamatave. They were composed of the rolled-up leaves of the Traveller's-tree (*Urania speciosa*), and were lined with small twigs and dry leaves. The opening of the nest was placed at the side, the nest being lodged in the fork of the branches of a large tree. In this nest-building habit the Aye-aye resembles the lower lemuroid animals.

"The Aye-aye is about three feet in length, including the long tail, which is one foot, eight inches and a half long; and there is a half Fox, half Lemur look about it, with a little of the Squirrel. The hind feet are at first sight like those of a Monkey, as are also the limbs; but the fingers are of all kinds of lengths, and the middle one looks as if it were atrophied or wasted" (*Cassell's Nat. History*; vol. i., p. 251).

LITERARY NOTES.

NEW BOOKS ON MADAGASCAR.

(1) *The Children of Madagascar*. By Herbert F. Standing. Rel. Tr. Soc., London: 1887; pp. 176, small 4to, with map and many illustrations. Although written primarily for children, Mr. Standing's book will be found full of interest to all who read it, both young and old. The subject which Mr. Standing has taken up has not, until now, been treated of, except a very slight fashion, in any of the numerous books already published about Madagascar; and the information given is not compiled from the works of others, but has been carefully got together from personal research and observation. In this book the life of Hova Malagasy children is depicted from birth to marriage: the superstitions and curious customs connected with them, their homes and surroundings, their dress and food, their amusements and games, their nursery tales and legends, their schools and learning—are all minutely described, as well also as the condition of slave children in Madagascar. The last chapter of the book is occupied by a number of interesting narratives of Malagasy children, by which further light is thrown upon their social condition, especially as affected by Christian teaching. The book is illustrated by a number of engravings, from drawings mostly executed by Malagasy artists; it is 'got up' in the usual tasteful style of the Tract Society's Christmas publications; and we venture to predict for it a hearty welcome in many English homes during the long evenings of this winter.

(2) "Under the title of *La France à Madagascar*, par Jean Mariel; Paris: 1887, there has been recently published a book, or rather, a brochure. The object of this work is to advocate an invasion of Imèrina, a thorough conquest of the island, and the handing over of this terres-

trial paradise to—the Hebrews!"—*Madagascar Times*, Dec. 9, 1887.

(3) We notice in Messrs. Nisbet's list for November the following: *The Fugitives: or the Tyrant Queen of Madagascar; a Story founded on Fact*; by R. M. Ballantyne.

(4) Dr. Konrad Keller, of Switzerland, has lately published sketches of his travels in Eastern Africa and Madagascar; 200 pages of the work are devoted to Madagascar. He visited the island on both sides and also the interior, as a naturalist. (See ANNUAL X. p. 259.)

A new English-Malagasy Dictionary, in a much fuller form than that by Mr. J. S. Sewell, is now being prepared by Mr. W. Johnson. And by the kindness of the Rev. Père Causèque, S. J., we learn that the following books are in preparation at the Roman Catholic Press:—*Dictionnaire malgache-français*, par le Père Antoine Abinal, S. J., missionnaire de Madagascar; and *Grammaire française pour les Malgaches*, in 12mo.

PAPERS AND PAMPHLETS ON MADAGASCAR.—In the *Fortnightly Review*, March 1st 1887 (pp. 432-441), is an article entitled "French Aggression in Madagascar," by General Digby Willoughby, of the Malagasy Army. In *The Chronicle of the London Missionary Society* for July 1887 (pp. 276-285), is a paper by the Rev. James Sibree, Jun., entitled "The L.M.S. College, Antanànarivo," with two woodcuts. In the same publication for Aug. 1887 (pp. 348-355), is a paper by the Rev. A. S. Hockett, entitled "South-east Madagascar." This article contains some curious information as to the customs and superstitions of the tribes in that part of the island, the Taimòro and the Taifàsý (or, as Mr. Hockett says they should be called, Ntemòro and Ntefàsý), and is illustrated by an interesting fac-simile of

a page from their *Sôra-be* or 'Great Writings', written in a crabbed and cursive style of Arabic, very difficult to decipher. It has long been known that the ancestors of the chiefs of these tribes were Arabs; and these writings are evidence that a knowledge of Arabic is still retained by their descendants.

A Comparison of the Dialects of East and West Polynesian, Malay, Malagasy and Australian. By the Rev. G. Pratt. Read before the Royal Society of New South Wales, 2nd June 1886. Sydney: pp. 24.

Since the last publication of the ANNUAL, a French monthly periodical in newspaper form, entitled *Madagascar: France Orientale*, has been issued at Paris, for the purpose of upholding French interests in this island. From the specimens we have seen of this publication it appears to be animated by a bitterly hostile feeling to English influence of every kind in this country, and is full of absurd and prejudiced mis-statements with regard to British officials, traders and missionaries. When will some French writers learn to write with common justice and fairness on such points? and acknowledge that Englishmen also have some rights in Madagascar, and have done some good to the Malagasy?

In the *Bulletin de la Société de Géographie de Lyon*, Fév. et Mars 1886, are articles by Msgr. Cazet, Vicaire Apostolique, entitled "L'île de Madagascar." In the Proceedings of the *Institut de France*, 25 Oct. 1886, is an article by M. A. Grandier, entitled "Madagascar et ses Habitants;" pp. 33, 4to. In the *Revue Maritime*, Mai 1886, is an article by M. D. Maigrot, entitled "Ressources de Madagascar, au point de vue d'émigration." (Also given in the *Moniteur Officiel de Commerce*, 1886.)

In *Cosmos: Revue des Sciences et de leurs applications* (Paris) for 1887, are the following articles by the

Rev. Père Camboué, S.J.; — "Le Voanjo (*Voandzeia subterranea*, Thouars)" [a species of earth-nut]; "Tremblement de Terre à Tananarive;" and "Une Invasion de Sauterelles à Tananarive." By the same writer, in the *Bulletin de la Société Nationale d'Acclimatation de France*, is "Araneides utiles et inusibles de Madagascar." In the same journal, by M. Crejun (Président de la Cour d'appel de la Martinique), "Sur la Caille de Madagascar." And in the *Bulletin de la Société de Géographie Commerciale de Bordeaux*, by the Rev. Père Cazeaux, S.J., "La Vigne à Madagascar."*

MAP OF MADAGASCAR.—The new Map of this country by Mr. William Johnson, of the F.F.M.A., announced in our last number, has been lately issued and is a great improvement upon the two former editions. It is considerably larger (38½ in. by 20½ in.) and contains much new information, especially as to the north-east of the island, in the districts traversed by Mr. Baron, as described in the first article in this ANNUAL; and also as to the southern region, about the sources of the Anolâhina or St. Augustine River, the country explored by Mr. H. M. Andersen. This map is very clearly lithographed and does much credit to the F.F.M.A. Press.

WORKS IN MALAGASY.—*Tantaran' ny Fiangonana eto Madagascar-kara, hatramy ny niandohany ka hatramy ny Taona 1887* (History of the Church here in Madagascar, from its commencement up to the Year 1887); by Henry E. Clark. F.F.M.A. Press: 16mo, pp. 510, with lith. illustrations. About a third of the contents of this volume appeared first in the monthly publication of the Friends' Mission entitled *Ny Fiangonana sy ny Sekôly*, but the rest is published for the first time. The hearty thanks of all who are interested in Madagascar are due to Mr. Clark for the great pains and care

* For all the notices in this paragraph I am indebted to the kindness of the Rev. Père Caussèque, S.J.—ED. (J.S.)

he has taken in the preparation of this book. It is a mine of information upon every subject connected with the churches and schools, the literature, Biblical translation, and medical mission work of this country, and will be invaluable to all who may speak or write about any of these matters. To all thoughtful Malagasy it ought to possess deep interest as a full and careful record of the religious history of their native land; and we hope that it will be extensively bought and read by them. Additional value is given to the book by lithographic portraits of the Revs. D. Griffiths and D. Jones, the fathers and founders of Malagasy Christianity; and by views of the earliest buildings erected for Christian worship in Antananarivo, those at Ambôdin' Andohàlo and at Ambàtonakànga, and also of the L.M.S. College in the Capital. — *Diksonary amy ny Baiboly, Fizarana IV., Kapa—Paoly* (Bible Dictionary, Part IV., Sandal—Paul), edited by Rev. James Sibree, Jun. L.M.S. Press: 8vo, pp. 192, with woodcuts. — *Malagasy Kabary from the time of Andrianampinimerina*. Collected by Rev. W. E. Cousins; 2nd ed., with additions. L.M.S. Press: 12mo, pp. 64. — *Hevi-teny amy ny Romana, Fizarana I., toko i.—viii.* (Commentary on the Epistle to the Romans, Part I., chs. i.—viii.), by Rev. W.

Montgomery. L.M.S. Press: 8vo, pp. viii. and 200 — *Hevi-teny amy ny Epistily nosoratany Paoly taminy Timoty sy Titosy ary Filemona* (Commentary on the Epp. to Timothy, Titus and Philemon), by Rev. J. A. Houlder. L.M.S. Press: 8vo, pp. 117. — *Ny Geometria nosoratany Eoklida; Bokiny i. sy ii.* (First and Second Books of Euclid), translated by Rev. W. Montgomery; 2nd ed. L.M.S. Press: 12mo, pp. 74. — *Lesona amy ny Anatomia Generaly mbamy ny Physiologia tsotsotra fombany* (Lessons in General Anatomy, together with the simple Physiology connected with it), by Dr. J. Tregelles Fox. Medical Mission: 8vo, pp. 255; 64 lith. plates; explanation, pp. lxiv. — *Tantaran' ny Foda sy ny Israely, Fizarana II.* (History of Judah and Israel, Part II.), by Henry E. Clark. F.F.M.A. Press: 8vo, pp. 250.

A new monthly periodical has been issued by the S.P.G. Press, commencing last January, entitled *Tantara sy Hevitra* (Stories and Thoughts), 8vo, pp. 16.

The following new works have been issued from the Press of the Norwegian Mission in Antananarivo: — *Tantaran' ny Firenena samihafa.* — *Hevi-teny amy ny Katekisma.* — *Anatra ho any ny Ray aman-dreny.* — *Hevi-teny amy ny Evangelia.*

POSTSCRIPT.—By the kindness of the author, a copy of the first part of the atlas of maps illustrating the first volume of M. Grandidier's great work on Madagascar has lately reached us; and it has been a very great pleasure to examine the series of exquisite fac-similes of almost all known maps of this country which are brought together in this volume. The earliest maps, from that of the Arab writer Edrisi (1153), and that taken from the ancient map of the world at Hereford Cathedral (1300), are very quaint and amusing; and hardly less so are those by Behaim (1492) and Juan de la Cosa (1500). All these maps, however, were made from report only, and a great stride towards a correct delineation of the true outline of the island is seen in the next map, that of Pilestrina (in 1511), after Madagascar had actually been seen and its coast line surveyed by the Portuguese. Copies of 42 maps are given in the volume, concluding with that of Robiquet, which was published in 1865.

DAILY TABLES OF TEMPERATURE AND

JANUARY.				FEBRUARY.				MARCH.			
Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.
1	71	69		1	71	69	.08	1	76	65	
2	72	68	2.33	2	71	69	.77	2	79	67	
3	71	69	.29	3	71	68	.01	3	80	67	.04
4	70	67	.80	4	71	68		4	81	66	.12
5	69	68	1.85	5	72	69	2.62	5	78	65	.75
6	71	67	.46	6	73	64	3.02	6	80	65	
7	70	67	.07	7	74	64	.37	7	80	68	
8	69	67	.20	8	74	65	.03	8	79	67	
9	69	67	.23	9	75	65	.22	9	79	67	
10	70	67	.15	10	76	66	.34	10	81	69	
11	72	67	.38	11	77	66	.38	11	79	67	.26
12	72	70	.11	12	73	65	1.97	12	74	63	.84
13	71	69	3.15	13	74	62	.03	13	73	64	1.22
14	69	67	2.29	14	76	65		14	73	64	.05
15	68	67		15	75	65	.07	15	73	63	.04
16	67	66		16	75	62		16	68	63	
17	70	65		17	75	65	.09	17	72	63	.53
18	70	66	.12	18	76	62		18	79	63	.51
19	71	68	.50	19	77	65		19	77	65	
20	72	69	.22	20	76	66	.25	20	78	66	.15
21	73	69	.05	21	75	65		21	77	65	3.67
22	75	70	.54	22	71	63	.83	22	72	65	.75
23	73	70	.19	23	72	63	.30	23	69	61	
24	74	70	.16	24	74	64	.36	24	65	57	.51
25	73	70	.05	25	75	65		25	67	58	.01
26	71	70	.13	26	71	65	1.62	26	74	61	.30
27	71	69	.03	27	73	64	.92	27	73	63	
28	72	69	.98	28	76	64		28	75	63	
29	71	68	.75					29	80	66	
30	70	68	.22					30	75	65	.12
31	70	68	1.31					31	74	63	
Total Rain (*13.04) 17.56				(*9.08) 14.28				(*8.22) 9.87			
APRIL.				MAY.				JUNE.			
Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.
1	73	60	.01	1	67	54		1	65	50	
2	69	59	.02	2	67	56		2	65	48	
3	70	58		3	69	54		3	60	42	
4	69	54		4	71	58		4	61	43	
5	71	57		5	73	59		5	63	45	
6	75	57		6	71	60		6	62	52	
7	73	62	.07	7	70	57		7	61	47	
8	72	57		8	72	58		8	62	44	
9	73	61		9	69	58		9	61	41	
10	75	61	.01	10	68	57		10	62	46	
11	72	63		11	64	53		11	60	46	
12	71	61		12	65	51		12	58	49	
13	71	61		13	63	55		13	59	48	
14	71	59		14	64	53		14	58	46	
15	72	61		15	65	53		15	56	45	
16	74	59		16	65	53		16	59	38	
17	74	59		17	64	53		17	62	42	
18	70	60		18	69	53		18	59	42	
19	63	58		19	69	53		19	59	44	
20	63	53	.02	20	71	54		20	61	46	
21	66	53	.02	21	72	53		21	62	47	
22	68	53		22	65	55		22	64	49	
23	68	57		23	59	52	.43	23	62	49	
24	66	56		24	61	50	.49	24	62	50	
25	68	53		25	65	49	1.20	25	62	49	
26	67	53		26	65	52		26	61	46	
27	68	54		27	65	52		27	62	46	
28	70	56		28	64	54		28	57	50	
29	68	54	.28	29	64	52		29	60	47	
30	67	54		30	61	48		30	58	45	
				31	64	45					
Total Rain (*1.26) .43				(*.96) 2.12				(*.23) .10+			

* Average for 7 years.

RAINFALL FOR THE YEAR 1887 (SEE NEXT PAGE).

JULY.				AUGUST.				SEPTEMBER.			
Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.
1	57	47		1	61	45		1	64	53	
2	58	48		2	60	42		2	67	52	
3	58	48		3	63	44		3	64	54	
4	64	49		4	66	47		4	61	48	
5	65	49		5	63	48		5	62	50	
6	60	44		6	62	50		6	61	48	
7	59	49		7	60	48	.01	7	60	48	
8	58	47		8	62	45		8	64	47	
9	58	47		9	61	49	.01	9	66	50	
10	60	49		10	59	43		10	57	49	.01
11	60	47		11	58	46		11	60	49	
12	62	44		12	57	44		12	61	48	
13	60	48		13	59	46		13	65	47	
14	63	45		14	59	46		14	69	50	
15	67	50		15	62	42		15	72	51	
16	63	55	.40	16	62	42		16	70	51	.30
17	63	50		17	64	48		17	69	49	.02
18	62	49		18	67	50		18	65	47	
19	62	47		19	71	47		19	65	46	
20	61	44		20	66	49		20	66	45	
21	63	44		21	62	49		21	71	46	
22	60	50		22	58	47		22	70	52	
23	63	50		23	54	44		23	66	52	.02
24	61	49		24	58	46		24	70	52	
25	63	50		25	60	46		25	68	52	
26	67	50		26	60	46		26	68	48	
27	66	49		27	61	47		27	73	53	
28	62	49		28	64	51		28	80	55	
29	61	47		29	61	49		29	79	57	
30	62	47		30	68	47		30	79	60	2.08
31	63	47	.03	31	70	52	.50				
Total Rain (*.22) .43				(*.18) .52				(*.90) 2.43			
OCTOBER.				NOVEMBER.				DECEMBER.			
Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.	Day	Max. F.	Min. F.	Rain.
1	70	59	.10	1	81	57		1	76	58	.02
2	73	55	.14	2	78	58	.03	2	76	62	
3	70	55		3	78	58		3	73	58	
4	66	54		4	77	56		4	76	54	
5	65	50	.02	5	80	55		5	76	54	
6	65	51	.01	6	85	59		6	77	55	
7	64	49	.88	7	83	59	.10	7	74	57	
8	71	49		8	78	59	.05	8	77	54	
9	70	52	.10	9	69	58	.10	9	82	59	
10	66	54	.08	10	69	57		10	79	60	
11	68	53		11	72	56		11	75	58	
12	67	52		12	73	54		12	75	52	
13	72	53		13	75	52		13	76	56	
14	73	57		14	76	54		14	77	53	
15	74	58	.05	15	77	57		15	79	56	
16	78	61	.06	16	82	57		16	77	59	
17	72	57		17	76	56		17	79	61	1.35
18	73	57		18	75	55		18	76	60	.10
19	72	56		19	78	53		19	73	59	.54
20	78	56		20	78	56		20	71	58	
21	80	60		21	78	58		21	71	56	
22	74	59		22	81	57	.10	22	71	56	
23	72	55	.45	23	82	60	.42	23	72	56	.02
24	67	55		24	78	59	.70	24	73	57	
25	70	50		25	72	59	.80	25	70	57	
26	78	55		26	71	58	.15	26	78	57	.52
27	76	57		27	74	56	.11	27	76	62	.72
28	72	56	.28	28	78	58	.19	28	74	62	.06
29	79	60		29	79	60	1.35	29	73	62	.08
30	75	59	.17	30	79	61	2.95	30	74	60	2.94
31	75	54						31	79	59	1.60
Total Rain (*3.30) 2.34				(*5.54) 7.05				(*10.51) 7.95			

* Average for 7 years.

DAILY TABLES OF THE TEMPERATURE AND RAINFALL FOR 1887.

THE tables on the preceding pages are the records of observations made by myself at Fàravòhitra, a northern suburb of Antananarivo, the Capital of Madagascar, 4,700ft. above the sea. The thermometers used are two self-registering ones from Wood, of Cheapside, London. They have been hung in the shade under the south verandah of the L. M. S. College House, on the eastern side of the hill, and thus have been fully exposed to the prevailing easterly winds.

The first column (maximum) shows the highest point reached during the day, while the second column (minimum) shows the starting, or lowest, point before sunrise. The third column shows the rain for the 24 hours ending at 8 a.m. on the morning of the same day. At the ends of months, however, I have included in the last day's record the rain which has fallen up to 10 p.m.

It will be noticed that the greatest heat registered was on the 6th of November, when we had 85° F.; and the lowest 38°, on June 16th. Thus the difference between the hottest day and coldest night was 47°. Compared with the English tables, I find from Whitaker's Almanac that in the years 1875-6, the highest temperature in England was 90°, and the lowest 16°, a difference of 74°.

In the monthly variations the differences have generally been very slight. Beginning with January, they are respectively as follows: 8, 6, 16, 12, 14, 9, 10, 14, 23, 16, 16, 12. The same for the nights are: 5, 7, 12, 8, 15, 14, 11, 10, 13, 11, 9, 10. The differences between night and day are 10, 15, 24, 22, 28, 27, 23, 29, 33, 31, 33, 30 respectively.

In addition to the daily record of rainfall, we give the total for each month, and in brackets the average for the seven years 1881-1887; it will be noticed that eight months were above, and four below, the average. Five months, January, February, May, August and September, showed the largest falls recorded for those months during the seven years.

The total for the year is 11.52 in. above the average of the seven, and it is the second highest for the same period.

The greatest falls of 24 hours were on January 12-13, 3.15 in., February 5-6, 3.02 in., March 20-21, 3.67 in. In June no one day could be called rainy, and the total (.10) is the aggregate fall of the drizzle which prevails at that period. In December, it will be noticed, there were 15 consecutive dry days, a phenomenon we have never noticed in December before; the largest previous record of consecutive dry days for that month during the seven years being 12 in 1885. The easterly winds have been more frequent than usual; and from the 19th to the 25th of December the wind from the east was unusually strong, and the thermometer exceptionally low for that time of the year, being 71° for three days in succession, and 70° on Christmas Day.

There have been five earthquake shocks, on February 7th and 8th, April 11th and 13th, and May 20th; that of the afternoon of February 7th being a sharp one.

Appended is the rainfall for the seven years:

1881 = 42.12 in.	1885 = 59.19 in.
1882 = 41.08 "	1886 = 47.28 "
1883 = 57.65 "	1887 = 65.08 "
1884 = 68.86 "	

Average for seven years = 53.46 in.

It is hoped this record, the first complete one published, we believe, for a whole year, may be useful to us in after years.

J. RICHARDSON.