

JOURNAL OF RESEARCHES

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NATURAL HISTORY AND GEOLOGY

OF THE

COUNTRIES VISITED DURING THE VOYAGE OF
H. M. S. BEAGLE ROUND THE WORLD,

UNDER THE

Command of Capt. Fitz Roy, R.N.

BY CHARLES DARWIN, M.A., F.R.S.

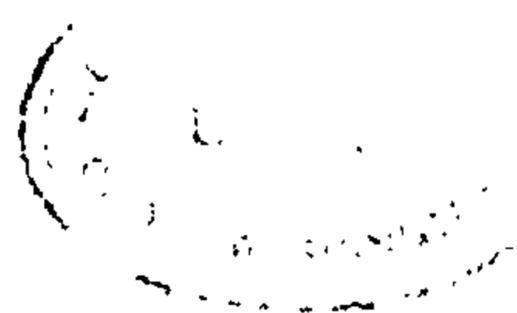
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TO

CHARLES LYELL, Esq., F.R.S.,

THIS SECOND EDITION IS DEDICATED WITH GRATEFUL PLEASURE, AS
AN ACKNOWLEDGMENT THAT THE CHIEF PART OF WHATEVER
SCIENTIFIC MERIT THIS JOURNAL AND THE OTHER WORKS OF
THE AUTHOR MAY POSSESS, HAS BEEN DERIVED FROM STUDYING
THE WELL-KNOWN AND ADMIRABLE

PRINCIPLES OF GEOLOGY.

P R E F A C E.

I HAVE stated in the preface to the first Edition of this work, and in the Zoology of the Voyage of the Beagle, that it was in consequence of a wish expressed by Captain Fitz Roy, of having some scientific person on board, accompanied by an offer from him of giving up part of his own accommodations, that I volunteered my services, which received, through the kindness of the hydrographer, Captain Beaufort, the sanction of the Lords of the Admiralty. As I feel that the opportunities which I enjoyed of studying the Natural History of the different countries we visited, have been wholly due to Captain Fitz Roy, I hope I may here be permitted to repeat my expression of gratitude to him; and to add that, during the five years we were together, I received from him the most cordial friendship and steady assistance. Both to Captain Fitz Roy and to all the Officers of the Beagle: * I shall ever feel most thankful for the undeviating kindness with which I was treated during our long voyage.

This volume contains, in the form of a Journal, a history of our voyage, and a sketch of those observations in Natural History and Geology, which I think will possess some interest for the general reader. I have in this edition largely condensed and corrected some parts, and have added a little to others, in order to render the volume more fitted for popular reading; but I trust that naturalists will remember, that they must refer for details to the larger publications, which comprise the scientific results of the Expedition. The Zoology of the Voyage of the Beagle includes an account of the Fossil Mammalia, by Professor Owen; of the Living Mammalia, by Mr. Waterhouse; of the Birds, by Mr. Gould; of the Fish, by the Rev. L. Jenyns; and of the Reptiles, by Mr. Bell. I have appended to the descriptions of each species an account of its habits and range. These works, which I owe to the high

* I must take this opportunity of returning my sincere thanks to Mr. Bynoe, the surgeon of the Beagle, for his very kind attention to me when I was ill at Valparaiso.

talents and disinterested zeal of the above distinguished authors, could not have been undertaken, had it not been for the liberality of the Lords Commissioners of Her Majesty's Treasury, who, through the representation of the Right Honourable the Chancellor of the Exchequer, have been pleased to grant a sum of one thousand pounds towards defraying part of the expenses of publication.

I have myself published separate volumes on the 'Structure and Distribution of Coral Reefs;' on the 'Volcanic Islands visited during the Voyage of the Beagle;' and a third volume will soon appear on the 'Geology of South America.' The sixth volume of the 'Geological Transactions' contains two papers of mine on the Erratic Boulders and Volcanic Phenomena of South America. I intend hereafter to describe, in a set of papers, some of the marine invertebrate animals collected during the voyage. Mr. Bell, I hope, will describe the crustacea, and Mr. Sowerby the shells. Messrs. Waterhouse, Walker, Newman, and White, have published several able papers on the Insects which were collected, and I trust that many others will hereafter follow. The plants from the southern parts of America will be given by Dr. J. Hooker, in his great work on the Botany of the Southern Hemisphere. The Flora of the Galapagos Archipelago is the subject of a separate memoir by him, in the 'Linnean Transactions.' The Reverend Professor Henslow has published a list of the plants collected by me at the Keeling Islands; and the Reverend J. M. Berkeley has described my cryptogamic plants.

I shall have the pleasure of acknowledging the great assistance which I have received from several other naturalists, in the course of this and my other works; but I must be here allowed to return my most sincere thanks to the Reverend Professor Henslow, who, when I was an under-graduate at Cambridge, was one chief means of giving me a taste for Natural History,—who, during my absence, took charge of the collections I sent home, and by his correspondence directed my endeavours,—and who, since my return, has constantly rendered me every assistance which the kindest friend could offer.

June, 1845.

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October 20th.—THE survey of the Galapagos Archipelago being concluded, we steered towards Tahiti and commenced our long passage of 3200 miles. In the course of a few days we sailed out of the gloomy and clouded ocean-district which extends during the winter far from the coast of South America. We then enjoyed bright and clear weather, while running pleasantly along at the rate of 150 or 160 miles a day before the steady trade-wind. The temperature in this more central part of the Pacific is higher than near the American shore. The thermometer in the poop cabin, by night and day, ranged between 80° and 83°, which feels very pleasant; but with one degree or two higher, the heat becomes oppressive. We passed through the Low or Dangerous Archipelago, and saw several of those most curious rings of coral land, just rising above the water's edge, which have been called Lagoon Islands. A long and brilliantly-white beach is capped by a margin of green vegetation; and the strip, looking either way, rapidly narrows away in the distance, and sinks beneath the horizon. From the mast-head a wide expanse of smooth water can be seen within the ring. These low hollow coral islands bear no proportion to the vast ocean out of which they abruptly rise; and it seems wonderful, that such weak invaders are not overwhelmed, by the all-powerful and never-tiring waves of that great sea, miscalled the Pacific.

November 15th.—At daylight, Tahiti, an island which must

for ever remain classical to the voyager in the South Sea, was in view. At a distance the appearance was not attractive. The luxuriant vegetation of the lower part could not yet be seen, and as the clouds rolled past, the wildest and most precipitous peaks showed themselves towards the centre of the island. As soon as we anchored in Matavai Bay, we were surrounded by canoes. This was our Sunday, but the Monday of Tahiti: if the case had been reversed, we should not have received a single visit; for the injunction not to launch a canoe on the sabbath is rigidly obeyed. After dinner we landed to enjoy all the delights produced by the first impressions of a new country, and that country the charming Tahiti. A crowd of men, women, and children, was collected on the memorable Point Venus, ready to receive us with laughing, merry faces. They marshalled us towards the house of Mr. Wilson, the missionary of the district, who met us on the road, and gave us a very friendly reception. After sitting a short time in his house, we separated to walk about, but returned there in the evening.

The land capable of cultivation, is scarcely in any part more than a fringe of low alluvial soil, accumulated round the base of the mountains, and protected from the waves of the sea by a coral reef, which encircles the entire line of coast. Within the reef there is an expanse of smooth water, like that of a lake, where the canoes of the natives can ply with safety and where ships anchor. The low land which comes down to the beach of coral-sand, is covered by the most beautiful productions of the intertropical regions. In the midst of bananas, orange, cocoa-nut, and bread-fruit trees, spots are cleared where yams, sweet potatoes, the sugar-cane, and pine-apples, are cultivated. Even the brushwood is an imported fruit-tree, namely, the guava, which from its abundance has become as noxious as a weed. In Brazil I have often admired the varied beauty of the bananas, palms, and orange-trees contrasted together; and here we also have the bread-fruit, conspicuous from its large, glossy, and deeply digitated leaf. It is admirable to behold groves of a tree, sending forth its branches with the vigour of an English oak, loaded with large and most nutritious fruit. However seldom the usefulness of an object can account for the pleasure of beholding it, in the case of these beautiful woods, the knowledge of their high productiveness no doubt enters largely

into the feeling of admiration. The little winding paths, cool from the surrounding shade, led to the scattered houses; the owners of which every where gave us a cheerful and most hospitable reception.

I was pleased with nothing so much as with the inhabitants. There is a mildness in the expression of their countenances which at once banishes the idea of a savage; and an intelligence which shows that they are advancing in civilization. The common people, when working, keep the upper part of their bodies quite naked; and it is then that the Tahitians are seen to advantage. They are very tall, broad-shouldered, athletic, and well-proportioned. It has been remarked, that it requires little habit to make a dark skin more pleasing and natural to the eye of an European than his own colour. A white man bathing by the side of a Tahitian, was like a plant bleached by the gardener's art compared with a fine dark green one growing vigorously in the open fields. Most of the men are tattooed, and the ornaments follow the curvature of the body so gracefully, that they have a very elegant effect. One common pattern, varying in its details, is somewhat like the crown of a palm-tree. It springs from the central line of the back, and gracefully curls round both sides. The simile may be a fanciful one, but I thought the body of a man thus ornamented was like the trunk of a noble tree embraced by a delicate creeper.

Many of the elder people had their feet covered with small figures, so placed as to resemble a sock. This fashion, however, is partly gone by, and has been succeeded by others. Here, although fashion is far from immutable, every one must abide by that prevailing in his youth. An old man has thus his age for ever stamped on his body, and he cannot assume the airs of a young dandy. The women are tattooed in the same manner as the men, and very commonly on their fingers. One unbecoming fashion is now almost universal: namely, shaving the hair from the upper part of the head, in a circular form, so as to leave only an outer ring. The missionaries have tried to persuade the people to change this habit; but it is the fashion, and that is a sufficient answer at Tahiti, as well as at Paris. I was much disappointed in the personal appearance of the women: they are far inferior in every respect to the men. The custom of wearing a

white or scarlet flower in the back of the head, or through a small hole in each ear, is pretty. A crown of woven cocoa-nut leaves is also worn as a shade for the eyes. The women appear to be in greater want of some becoming costume even than the men.

Nearly all the natives understand a little English—that is, they know the names of common things; and by the aid of this, together with signs, a lame sort of conversation could be carried on. In returning in the evening to the boat, we stopped to witness a very pretty scene. Numbers of children were playing on the beach, and had lighted bonfires which illumined the placid sea and surrounding trees; others, in circles, were singing Tahitian verses. We seated ourselves on the sand, and joined their party. The songs were impromptu, and I believe related to our arrival: one little girl sang a line, which the rest took up in parts, forming a very pretty chorus. The whole scene made us unequivocally aware that we were seated on the shores of an island in the far-famed South Sea.

17th.—This day is reckoned in the log-book as Tuesday the 17th, instead of Monday the 16th, owing to our, so far, successful chase of the sun. Before breakfast the ship was hemmed in by a flotilla of canoes; and when the natives were allowed to come on board, I suppose there could not have been less than two hundred. It was the opinion of every one that it would have been difficult to have picked out an equal number from any other nation, who would have given so little trouble. Everybody brought something for sale: shells were the main article of trade. The Tahitians now fully understand the value of money, and prefer it to old clothes or other articles. The various coins, however, of English and Spanish denomination puzzle them, and they never seemed to think the small silver quite secure until changed into dollars. Some of the chiefs have accumulated considerable sums of money. One chief, not long since, offered 800 dollars (about 160*l.* sterling) for a small vessel; and frequently they purchase whale-boats and horses at the rate of from 50 to 100 dollars.

After breakfast I went on shore, and ascended the nearest slope to a height of between two and three thousand feet. The outer mountains are smooth and conical, but steep; and the old

volcanic rocks, of which they are formed, have been cut through by many profound ravines, diverging from the central broken parts of the island to the coast. Having crossed the narrow low girt of inhabited and fertile land, I followed a smooth steep ridge between two of the deep ravines. The vegetation was singular, consisting almost exclusively of small dwarf ferns, mingled, higher up, with coarse grass; it was not very dissimilar from that on some of the Welsh hills, and this so close above the orchard of tropical plants on the coast was very surprising. At the highest point, which I reached, trees again appeared. Of the three zones of comparative luxuriance, the lower one owes its moisture, and therefore fertility, to its flatness; for, being scarcely raised above the level of the sea, the water from the higher land drains away slowly. The intermediate zone does not, like the upper one, reach into a damp and cloudy atmosphere, and therefore remains sterile. The woods in the upper zone are very pretty, tree-ferns replacing the cocoa-nuts on the coast. It must not, however, be supposed that these woods at all equal in splendour the forests of Brazil. The vast number of productions, which characterize a continent, cannot be expected to occur in an island.

From the highest point which I attained, there was a good view of the distant island of Eimeo, dependent on the same sovereign with Tahiti. On the lofty and broken pinnacles, white massive clouds were piled up, which formed an island in the blue sky, as Eimeo itself did in the blue ocean. The island, with the exception of one small gateway, is completely encircled by a reef. At this distance, a narrow but well-defined brilliantly white line was alone visible, where the waves first encountered the wall of coral. The mountains rose abruptly out of the glassy expanse of the lagoon, included within this narrow white line, outside which the heaving waters of the ocean were dark-coloured. The view was striking: it may aptly be compared to a framed engraving, where the frame represents the breakers, the marginal paper the smooth lagoon, and the drawing the island itself. When in the evening I descended from the mountain, a man, whom I had pleased with a trifling gift, met me, bringing with him hot roasted bananas, a pine-apple, and cocoa-nuts. After walking under a burning sun, I do not know any-

thing more delicious than the milk of a young cocoa-nut. Pine-apples are here so abundant that the people eat them in the same wasteful manner as we might turnips. They are of an excellent flavour—perhaps even better than those cultivated in England; and this I believe is the highest compliment which can be paid to any fruit. Before going on board, Mr. Wilson interpreted for me to the Tahitian who had paid me so adroit an attention, that I wanted him and another man to accompany me on a short excursion into the mountains.

18th.—In the morning I came on shore early, bringing with me some provisions in a bag, and two blankets for myself and servant. These were lashed to each end of a long pole, which was alternately carried by my Tahitian companions on their shoulders. These men are accustomed thus to carry, for a whole day, as much as fifty pounds at each end of their poles. I told my guides to provide themselves with food and clothing; but they said that there was plenty of food in the mountains, and for clothing, that their skins were sufficient. Our line of march was the valley of Tia-auru, down which a river flows into the sea by Point Venus. This is one of the principal streams in the island, and its source lies at the base of the loftiest central pinnacles, which rise to a height of about 7000 feet. The whole island is so mountainous that the only way to penetrate into the interior is to follow up the valleys. Our road, at first, lay through woods which bordered each side of the river; and the glimpses of the lofty central peaks, seen as through an avenue, with here and there a waving cocoa-nut tree on one side, were extremely picturesque. The valley soon began to narrow, and the sides to grow lofty and more precipitous. After having walked between three and four hours, we found the width of the ravine scarcely exceeded that of the bed of the stream. On each hand the walls were nearly vertical; yet from the soft nature of the volcanic strata, trees and a rank vegetation sprung from every projecting ledge. These precipices must have been some thousand feet high; and the whole formed a mountain gorge far more magnificent than anything which I had ever before beheld. Until the mid-day sun stood vertically over the ravine, the air felt cool and damp, but now it became very sultry. Shaded by a ledge of rock, beneath a façade of columnar lava, we ate our

dinner. My guides had already procured a dish of small fish and fresh-water prawns. They carried with them a small net stretched on a hoop; and where the water was deep and in eddies, they dived, and like otters, with their eyes open followed the fish into holes and corners, and thus caught them.

The Tahitians have the dexterity of amphibious animals in the water. An anecdote mentioned by Ellis shows how much they feel at home in this element. When a horse was landing for Pomarre in 1817, the slings broke, and it fell into the water: immediately the natives jumped overboard, and by their cries and vain efforts at assistance almost drowned it. As soon, however, as it reached the shore, the whole population took to flight, and tried to hide themselves from the man-carrying pig, as they christened the horse.

A little higher up, the river divided itself into three little streams. The two northern ones were impracticable, owing to a succession of waterfalls which descended from the jagged summit of the highest mountain; the other to all appearance was equally inaccessible, but we managed to ascend it by a most extraordinary road. The sides of the valley were here nearly precipitous; but, as frequently happens with stratified rocks, small ledges projected, which were thickly covered by wild bananas, liliaceous plants, and other luxuriant productions of the tropics. The Tahitians, by climbing amongst these ledges, searching for fruit, had discovered a track by which the whole precipice could be scaled. The first ascent from the valley was very dangerous; for it was necessary to pass a steeply-inclined face of naked rock, by the aid of ropes which we brought with us. How any person discovered that this formidable spot was the only point where the side of the mountain was practicable, I cannot imagine. We then cautiously walked along one of the ledges till we came to one of the three streams. This ledge formed a flat spot, above which a beautiful cascade, some hundred feet in height, poured down its waters, and beneath, another high cascade fell into the main stream in the valley below. From this cool and shady recess we made a circuit to avoid the overhanging waterfall. As before, we followed little projecting ledges, the danger being partly concealed by the thickness of the vegetation. In passing from one of the ledges to another, there was a vertical wall of

rock. One of the Tahitians, a fine active man, placed the trunk of a tree against this, climbed up it, and then by the aid of crevices reached the summit. He fixed the ropes to a projecting point, and lowered them for our dog and luggage, and then we clambered up ourselves. Beneath the ledge on which the dead tree was placed, the precipice must have been five or six hundred feet deep; and if the abyss had not been partly concealed by the overhanging ferns and lilies, my head would have turned giddy, and nothing should have induced me to have attempted it. We continued to ascend, sometimes along ledges, and sometimes along knife-edged ridges, having on each hand profound ravines. In the Cordillera I have seen mountains on a far grander scale, but for abruptness, nothing at all comparable with this. In the evening we reached a flat little spot on the banks of the same stream, which we had continued to follow, and which descends in a chain of waterfalls: here we bivouacked for the night. On each side of the ravine there were great beds of the mountain-banana, covered with ripe fruit. Many of these plants were from twenty to twenty-five feet high, and from three to four in circumference. By the aid of strips of bark for rope, the stems of bamboos for rafters, and the large leaf of the banana for a thatch, the Tahitians in a few minutes built us an excellent house; and with withered leaves made a soft bed.

They then proceeded to make a fire, and cook our evening meal. A light was procured, by rubbing a blunt-pointed stick in a groove made in another, as if with intention of deepening it, until by the friction the dust became ignited. A peculiarly white and very light wood (the *Hibiscus tiliaceus*) is alone used for this purpose: it is the same which serves for poles to carry any burden, and for the floating outriggers to their canoes. The fire was produced in a few seconds: but to a person who does not understand the art, it requires, as I found, the greatest exertion; but at last, to my great pride, I succeeded in igniting the dust. The Gaucho in the Pampas uses a different method: taking an elastic stick about eighteen inches long, he presses one end on his breast, and the other pointed end into a hole in a piece of wood, and then rapidly turns the curved part, like a carpenter's centre-bit. The Tahitians having made a small fire of sticks, placed a score of stones, of about the size of cricket-balls,

on the burning wood. In about ten minutes the sticks were consumed, and the stones hot. They had previously folded up in small parcels of leaves, pieces of beef, fish, ripe and unripe bananas, and the tops of the wild arum. These green parcels were laid in a layer between two layers of the hot stones, and the whole then covered up with earth, so that no smoke or steam could escape. In about a quarter of an hour, the whole was most deliciously cooked. The choice green parcels were now laid on a cloth of banana leaves, and with a cocoa-nut shell we drank the cool water of the running stream; and thus we enjoyed our rustic meal.

I could not look on the surrounding plants without admiration. On every side were forests of banana; the fruit of which, though serving for food in various ways, lay in heaps decaying on the ground. In front of us there was an extensive brake of wild sugar-cane; and the stream was shaded by the dark green knotted stem of the Ava,—so famous in former days for its powerful intoxicating effects. I chewed a piece, and found that it had an acrid and unpleasant taste, which would have induced any one at once to have pronounced it poisonous. Thanks to the missionaries, this plant now thrives only in these deep ravines, innocuous to every one. Close by I saw the wild arum, the roots of which, when well baked, are good to eat, and the young leaves better than spinach. There was the wild yam, and a liliaceous plant called Ti, which grows in abundance, and has a soft brown root, in shape and size like a huge log of wood: this served us for dessert, for it is as sweet as treacle, and with a pleasant taste. There were, moreover, several other wild fruits, and useful vegetables. The little stream, besides its cool water, produced eels and cray-fish. I did indeed admire this scene, when I compared it with an uncultivated one in the temperate zones. I felt the force of the remark, that man, at least savage man, with his reasoning powers only partly developed, is the child of the tropics.

As the evening drew to a close, I strolled beneath the gloomy shade of the bananas up the course of the stream. My walk was soon brought to a close, by coming to a waterfall between two and three hundred feet high; and again above this there was another. I mention all these waterfalls in this one brook, to

give a general idea of the inclination of the land. In the little recess where the water fell, it did not appear that a breath of wind had ever blown. The thin edges of the great leaves of the banana, damp with spray, were unbroken, instead of being, as is so generally the case, split into a thousand shreds. From our position, almost suspended on the mountain-side, there were glimpses into the depths of the neighbouring valleys; and the lofty points of the central mountains, towering up within sixty degrees of the zenith, hid half the evening sky. Thus seated, it was a sublime spectacle to watch the shades of night gradually obscuring the last and highest pinnacles.

Before we laid ourselves down to sleep, the elder Tahitian fell on his knees, and with closed eyes repeated a long prayer in his native tongue. He prayed as a Christian should do, with fitting reverence, and without the fear of ridicule or any ostentation of piety. At our meals neither of the men would taste food, without saying beforehand a short grace. Those travellers who think that a Tahitian prays only when the eyes of the missionary are fixed on him, should have slept with us that night on the mountain-side. Before morning it rained very heavily; but the good thatch of banana-leaves kept us dry.

November 19th.—At daylight my friends, after their morning prayer, prepared an excellent breakfast in the same manner as in the evening. They themselves certainly partook of it largely; indeed I never saw any men eat near so much. I suppose such enormously capacious stomachs must be the effect of a large part of their diet consisting of fruit and vegetables, which contain, in a given bulk, a comparatively small portion of nutriment. Unwittingly, I was the means of my companions breaking, as I afterwards learned, one of their own laws and resolutions: I took with me a flask of spirits, which they could not refuse to partake of; but as often as they drank a little, they put their fingers before their mouths, and uttered the word "Missionary." About two years ago, although the use of the *ava* was prevented, drunkenness from the introduction of spirits became very prevalent. The missionaries prevailed on a few good men, who saw that their country was rapidly going to ruin, to join with them in a Temperance Society. From good sense or shame, all the chiefs and the queen were at last persuaded to

join. Immediately a law was passed, that no spirits should be allowed to be introduced into the island, and that he who sold and he who bought the forbidden article should be punished by a fine. With remarkable justice, a certain period was allowed for stock in hand to be sold, before the law came into effect. But when it did, a general search was made, in which even the houses of the missionaries were not exempted, and all the *ava* (as the natives call all ardent spirits) was poured on the ground. When one reflects on the effect of intemperance on the aborigines of the two Americas, I think it will be acknowledged that every well-wisher of Tahiti owes no common debt of gratitude to the missionaries. As long as the little island of St. Helena remained under the government of the East India Company, spirits, owing to the great injury they had produced, were not allowed to be imported; but wine was supplied from the Cape of Good Hope. It is rather a striking, and not very gratifying fact, that in the same year that spirits were allowed to be sold in St. Helena, their use was banished from Tahiti by the free will of the people.

After breakfast we proceeded on our journey. As my object was merely to see a little of the interior scenery, we returned by another track, which descended into the main valley lower down. For some distance we wound, by a most intricate path, along the side of the mountain which formed the valley. In the less precipitous parts we passed through extensive groves of the wild banana. The Tahitians, with their naked, tattooed bodies, their heads ornamented with flowers, and seen in the dark shade of these groves, would have formed a fine picture of man inhabiting some primeval land. In our descent we followed the line of ridges; these were exceedingly narrow, and for considerable lengths steep as a ladder; but all clothed with vegetation. The extreme care necessary in poising each step rendered the walk fatiguing. I did not cease to wonder at these ravines and precipices: when viewing the country from one of the knife-edged ridges, the point of support was so small, that the effect was nearly the same as it must be from a balloon. In this descent we had occasion to use the ropes only once, at the point where we entered the main valley. We slept under the same ledge of rock where we had dined the day before: the night was fine,

but from the depth and narrowness of the gorge, profoundly dark.

Before actually seeing this country, I found it difficult to understand two facts mentioned by Ellis; namely, that after the murderous battles of former times, the survivors on the conquered side retired into the mountains, where a handful of men could resist a multitude. Certainly half-a-dozen men, at the spot where the Tahitian reared the old tree, could easily have repulsed thousands. Secondly, that after the introduction of Christianity, there were wild men who lived in the mountains, and whose retreats were unknown to the more civilized inhabitants.

November 20th.—In the morning we started early, and reached Matavai at noon. On the road we met a large party of noble athletic men, going for wild bananas. I found that the ship, on account of the difficulty in watering, had moved to the harbour of Papawa, to which place I immediately walked. This is a very pretty spot. The cove is surrounded by reefs, and the water as smooth as in a lake. The cultivated ground, with its beautiful productions, interspersed with cottages, comes close down to the water's edge.

From the varying accounts which I had read before reaching these islands, I was very anxious to form, from my own observation, a judgment of their moral state,—although such judgment would necessarily be very imperfect. First impressions at all times very much depend on one's previously-acquired ideas. My notions were drawn from Ellis's 'Polynesian Researches'—an admirable and most interesting work, but naturally looking at every thing under a favourable point of view; from Beechey's Voyage; and from that of Kotzebue, which is strongly adverse to the whole missionary system. He who compares these three accounts will, I think, form a tolerably accurate conception of the present state of Tahiti. One of my impressions, which I took from the two last authorities, was decidedly incorrect; viz., that the Tahitians had become a gloomy race, and lived in fear of the missionaries. Of the latter feeling I saw no trace, unless, indeed, fear and respect be confounded under one name. Instead of discontent being a common feeling, it would be difficult in Europe to pick out of a crowd half so many merry and happy

faces. The prohibition of the flute and dancing is inveighed against as wrong and foolish ;—the more than presbyterian manner of keeping the sabbath is looked at in a similar light. On these points I will not pretend to offer any opinion, in opposition to men who have resided as many years as I was days on the island.

On the whole, it appears to me that the morality and religion of the inhabitants are highly creditable. There are many who attack, even more acrimoniously than Kotzebue, both the missionaries, their system, and the effects produced by it. Such reasoners never compare the present state with that of the island only twenty years ago ; nor even with that of Europe at this day ; but they compare it with the high standard of Gospel perfection. They expect the missionaries to effect that which the Apostles themselves failed to do. In as much as the condition of the people falls short of this high standard, blame is attached to the missionary, instead of credit for that which he has effected. They forget, or will not remember, that human sacrifices, and the power of an idolatrous priesthood—a system of profligacy unparalleled in any other part of the world—infanticide a consequence of that system—bloody wars, where the conquerors spared neither women nor children—that all these have been abolished ; and that dishonesty, intemperance, and licentiousness have been greatly reduced by the introduction of Christianity. In a voyager to forget these things is base ingratitude ; for should he chance to be at the point of shipwreck on some unknown coast, he will most devoutly pray that the lesson of the missionary may have extended thus far.

In point of morality, the virtue of the women, it has been often said, is most open to exception. But before they are blamed too severely, it will be well distinctly to call to mind the scenes described by Captain Cook and Mr. Banks, in which the grandmothers and mothers of the present race played a part. Those who are most severe, should consider how much of the morality of the women in Europe, is owing to the system early impressed by mothers on their daughters, and how much in each individual case to the precepts of religion. But it is useless to argue against such reasoners ;—I believe that, disappointed in not finding the field of licentiousness quite so open as formerly, they will not

give credit to a morality which they do not wish to practise, or to a religion which they undervalue, if not despise.

Sunday, 22nd.—The harbour of Papiéte, where the queen resides, may be considered as the capital of the island: it is also the seat of government, and the chief resort of shipping. Captain Fitz Roy took a party there this day to hear divine service, first in the Tahitian language, and afterwards in our own. Mr. Pritchard, the leading missionary in the island, performed the service. The chapel consisted of a large airy framework of wood; and it was filled to excess by tidy, clean people, of all ages and both sexes. I was rather disappointed in the apparent degree of attention: but I believe my expectations were raised too high. At all events the appearance was quite equal to that in a country church in England. The singing of the hymns was decidedly very pleasing; but the language from the pulpit, although fluently delivered, did not sound well: a constant repetition of words, like "*tata ta, mata mai,*" rendered it monotonous. After English service, a party returned on foot to Matavai. It was a pleasant walk, sometimes along the sea-beach and sometimes under the shade of the many beautiful trees.

About two years ago, a small vessel under English colours was plundered by some of the inhabitants of the Low Islands, which were then under the dominion of the Queen of Tahiti. It was believed that the perpetrators were instigated to this act by some indiscreet laws issued by her majesty. The British government demanded compensation; which was acceded to, and a sum of nearly three thousand dollars was agreed to be paid on the first of last September. The Commodore at Lima ordered Captain Fitz Roy to inquire concerning this debt, and to demand satisfaction if it were not paid. Captain Fitz Roy accordingly requested an interview with the Queen Pomarre, since famous from the ill-treatment she has received from the French; and a parliament was held to consider the question, at which all the principal chiefs of the island, and the queen, were assembled. I will not attempt to describe what took place, after the interesting account given by Captain Fitz Roy. The money, it appeared, had not been paid; perhaps the alleged reasons were rather equivocal; but otherwise I cannot sufficiently express our general surprise at the extreme good sense, the reasoning powers, mode-

ration, candour, and prompt resolution, which were displayed on all sides. I believe we all left the meeting with a very different opinion of the Tahitians, from what we entertained when we entered. The chiefs and people resolved to subscribe and complete the sum which was wanting; Captain Fitz Roy urged that it was hard that their private property should be sacrificed for the crimes of distant islanders. They replied, that they were grateful for his consideration, but that Pomarre was their Queen, and that they were determined to help her in this her difficulty. This resolution and its prompt execution, for a book was opened early the next morning, made a perfect conclusion to this very remarkable scene of loyalty and good feeling.

After the main discussion was ended, several of the chiefs took the opportunity of asking Captain Fitz Roy many intelligent questions on international customs and laws, relating to the treatment of ships and foreigners. On some points, as soon as the decision was made, the law was issued verbally on the spot. This Tahitian parliament lasted for several hours; and when it was over Captain Fitz Roy invited Queen Pomarre to pay the *Beagle* a visit.

November 25th.—In the evening four boats were sent for her majesty; the ship was dressed with flags, and the yards manned on her coming on board. She was accompanied by most of the chiefs. The behaviour of all was very proper: they begged for nothing, and seemed much pleased with Captain Fitz Roy's presents. The Queen is a large awkward woman, without any beauty, grace, or dignity. She has only one royal attribute: a perfect immoveability of expression under all circumstances, and that rather a sullen one. The rockets were most admired; and a deep "Oh!" could be heard from the shore, all round the dark bay, after each explosion. The sailors' songs were also much admired; and the queen said she thought that one of the most boisterous ones certainly could not be a hymn! The royal party did not return on shore till past midnight.

26th.—In the evening, with a gentle land-breeze, a course was steered for New Zealand; and as the sun set, we had a farewell view of the mountains of Tahiti—the island to which every voyager has offered up his tribute of admiration.

December 19th.—In the evening we saw in the distance New Zealand. We may now consider that we have nearly crossed the Pacific. It is necessary to sail over this great ocean to comprehend its immensity. Moving quickly onwards for weeks together, we meet with nothing but the same blue, profoundly deep, ocean. Even within the archipelagoes, the islands are mere specks, and far distant one from the other. Accustomed to look at maps drawn on a small scale, where dots, shading, and names are crowded together, we do not rightly judge how infinitely small the proportion of dry land is to the water of this vast expanse. The meridian of the Antipodes has likewise been passed; and now every league, it made us happy to think, was one league nearer to England. These Antipodes call to one's mind old recollections of childish doubt and wonder. Only the other day I looked forward to this airy barrier as a definite point in our voyage homewards; but now I find it, and all such resting-places for the imagination, are like shadows, which a man moving onwards cannot catch. A gale of wind lasting for some days, has lately given us full leisure to measure the future stages in our long homeward voyage, and to wish most earnestly for its termination.

December 21st.—Early in the morning we entered the Bay of Islands, and being becalmed for some hours near the mouth, we did not reach the anchorage till the middle of the day. The country is hilly, with a smooth outline, and is deeply intersected by numerous arms of the sea extending from the bay. The surface appears from a distance as if clothed with coarse pasture, but this in truth is nothing but fern. On the more distant hills, as well as in parts of the valleys, there is a good deal of woodland. The general tint of the landscape is not a bright green; and it resembles the country a short distance to the south of Concepcion in Chile. In several parts of the bay, little villages of square tidy-looking houses are scattered close down to the water's edge. Three whaling-ships were lying at anchor, and a canoe every now and then crossed from shore to shore; with these exceptions, an air of extreme quietness reigned over the whole district. Only a single canoe came alongside. This, and the aspect of the whole scene, afforded a remarkable, and not very pleasing contrast, with our joyful and boisterous welcome at Tahiti.

In the afternoon we went on shore to one of the larger groups of houses, which yet hardly deserves the title of a village. Its name is Pahia: it is the residence of the missionaries; and there are no native residents except servants and labourers. In the vicinity of the Bay of Islands, the number of Englishmen, including their families, amounts to between two and three hundred. All the cottages, many of which are white-washed and look very neat, are the property of the English. The hovels of the natives are so diminutive and paltry, that they can scarcely be perceived from a distance. At Pahia, it was quite pleasing to behold the English flowers in the gardens before the houses; there were roses of several kinds, honeysuckle, jasmine, stocks, and whole hedges of sweetbriar.

December 22nd.—In the morning I went out walking; but I soon found that the country was very impracticable. All the hills are thickly covered with tall fern, together with a low bush which grows like a cypress; and very little ground has been cleared or cultivated. I then tried the sea-beach; but proceeding towards either hand, my walk was soon stopped by salt-water creeks and deep brooks. The communication between the inhabitants of the different parts of the bay, is (as in Chiloe) almost entirely kept up by boats. I was surprised to find that almost every hill which I ascended, had been at some former time more or less fortified. The summits were cut into steps or successive terraces, and frequently they had been protected by deep trenches. I afterwards observed that the principal hills inland in like manner showed an artificial outline. These are the Pas, so frequently mentioned by Captain Cook under the name of “hippah;” the difference of sound being owing to the prefixed article.

That the Pas had formerly been much used, was evident from the piles of shells, and the pits in which, as I was informed, sweet potatoes used to be kept as a reserve. As there was no water on these hills, the defenders could never have anticipated a long siege, but only a hurried attack for plunder, against which the successive terraces would have afforded good protection. The general introduction of fire-arms has changed the whole system of warfare; and an exposed situation on the top of a hill is now worse than useless. The Pas in consequence are, at the present

day, always built on a level piece of ground. They consist of a double stockade of thick and tall posts, placed in a zigzag line, so that every part can be flanked. Within the stockade a mound of earth is thrown up, behind which the defenders can rest in safety, or use their fire-arms over it. On the level of the ground little archways sometimes pass through this breastwork, by which means the defenders can crawl out to the stockade to reconnoitre their enemies. The Rev. W. Williams, who gave me this account, added, that in one Pas he had noticed spurs or buttresses projecting on the inner and protected side of the mound of earth. On asking the chief the use of them, he replied, that if two or three of his men were shot, their neighbours would not see the bodies, and so be discouraged.

These Pās are considered by the New Zealanders as very perfect means of defence: for the attacking force is never so well disciplined as to rush in a body to the stockade, cut it down, and effect their entry. When a tribe goes to war, the chief cannot order one party to go here and another there; but every man fights in the manner which best pleases himself; and to each separate individual to approach a stockade defended by fire-arms must appear certain death. I should think a more warlike race of inhabitants could not be found in any part of the world than the New Zealanders. Their conduct on first seeing a ship, as described by Captain Cook, strongly illustrates this: the act of throwing volleys of stones at so great and novel an object, and their defiance of "Come on shore and we will kill and eat you all," shows uncommon boldness. This warlike spirit is evident in many of their customs, and even in their smallest actions. If a New Zealander is struck, although but in joke, the blow must be returned; and of this I saw an instance with one of our officers.

At the present day, from the progress of civilization, there is much less warfare, except among some of the southern tribes. I heard a characteristic anecdote of what took place some time ago in the south. A missionary found a chief and his tribe in preparation for war;—their muskets clean and bright, and their ammunition ready. He reasoned long on the inutility of the war, and the little provocation which had been given for it. The chief was much shaken in his resolution; and seemed in doubt: but at length it

occurred to him that a barrel of his gunpowder was in a bad state, and that it would not keep much longer. This was brought forward as an unanswerable argument for the necessity of immediately declaring war: the idea of allowing so much good gunpowder to spoil was not to be thought of; and this settled the point. I was told by the missionaries that in the life of Shongi, the chief who visited England, the love of war was the one and lasting spring of every action. The tribe in which he was a principal chief, had at one time been much oppressed by another tribe, from the Thames River. A solemn oath was taken by the men, that when their boys should grow up, and they should be powerful enough, they would never forget or forgive these injuries. To fulfil this oath appears to have been Shongi's chief motive for going to England; and when there it was his sole object. Presents were valued only as they could be converted into arms; of the arts, those alone interested him which were connected with the manufacture of arms. When at Sydney, Shongi, by a strange coincidence, met the hostile chief of the Thames River at the house of Mr. Marsden: their conduct was civil to each other; but Shongi told him that when again in New Zealand he would never cease to carry war into his country. The challenge was accepted; and Shongi on his return fulfilled the threat to the utmost letter. The tribe on the Thames River was utterly overthrown, and the chief to whom the challenge had been given was himself killed. Shongi, although harbouring such deep feelings of hatred and revenge, is described as having been a goodnatured person.

In the evening I went with Captain Fitz Roy and Mr. Baker, one of the missionaries, to pay a visit to Kororadika: we wandered about the village, and saw and conversed with many of the people, both men, women, and children. Looking at the New Zealander, one naturally compares him with the Tahitian; both belonging to the same family of mankind. The comparison, however, tells heavily against the New Zealander. He may, perhaps, be superior in energy, but in every other respect his character is of a much lower order. One glance at their respective expressions, brings conviction to the mind that one is a savage, the other a civilized man. It would be vain to seek in the whole of New Zealand a person with the face and mien of

the old Tahitian chief Utamme. No doubt the extraordinary manner in which tattooing is here practised, gives a disagreeable expression to their countenances. The complicated but symmetrical figures covering the whole face, puzzle and mislead an unaccustomed eye: it is moreover probable, that the deep incisions, by destroying the play of the superficial muscles, give an air of rigid inflexibility. But, besides this, there is a twinkling in the eye, which cannot indicate any thing but cunning and ferocity. Their figures are tall and bulky; but not comparable in elegance with those of the working-classes in Tahiti.

Both their persons and houses are filthily dirty and offensive: the idea of washing either their bodies or their clothes never seems to enter their heads. I saw a chief, who was wearing a shirt black and matted with filth, and when asked how it came to be so dirty, he replied, with surprise, "Do not you see it is an old one?" Some of the men have shirts; but the common dress is one or two large blankets, generally black with dirt, which are thrown over their shoulders in a very inconvenient and awkward fashion. A few of the principal chiefs have decent suits of English clothes; but these are only worn on great occasions.

December 23rd.—At a place called Waimate, about fifteen miles from the Bay of Islands, and midway between the eastern and western coasts, the missionaries have purchased some land for agricultural purposes. I had been introduced to the Rev. W. Williams, who, upon my expressing a wish, invited me to pay him a visit there. Mr. Bushby, the British resident, offered to take me in his boat by a creek, where I should see a pretty waterfall, and by which means my walk would be shortened. He likewise procured for me a guide. Upon asking a neighbouring chief to recommend a man, the chief himself offered to go; but his ignorance of the value of money was so complete, that at first he asked how many pounds I would give him, but afterwards was well contented with two dollars. When I showed the chief a very small bundle, which I wanted carried, it became absolutely necessary for him to take a slave. These feelings of pride are beginning to wear away; but formerly a leading man would sooner have died, than undergone the indignity of carrying the smallest burden. My companion was a light active man, dressed in a dirty blanket, and with his face completely

tattooed. He had formerly been a great warrior. He appeared to be on very cordial terms with Mr. Bushby; but at various times they had quarrelled violently. Mr. Bushby remarked that a little quiet irony would frequently silence any one of these natives in their most blustering moments. This chief has come and harangued Mr. Bushby in a hectoring manner, saying, "A great chief, a great man, a friend of mine, has come to pay me a visit—you must give him something good to eat, some fine presents, &c." Mr. Bushby has allowed him to finish his discourse, and then has quietly replied by some such answer as, "What else shall your slave do for you?" The man would then instantly, with a very comical expression, cease his braggadocio.

Some time ago, Mr. Bushby suffered a far more serious attack. A chief and a party of men tried to break into his house in the middle of the night, and not finding this so easy, commenced a brisk firing with their muskets. Mr. Bushby was slightly wounded; but the party was at length driven away. Shortly afterwards it was discovered who was the aggressor; and a general meeting of the chiefs was convened to consider the case. It was considered by the New Zealanders as very atrocious, inasmuch as it was a night attack, and that Mrs. Bushby was lying ill in the house: this latter circumstance, much to their honour, being considered in all cases as a protection. The chiefs agreed to confiscate the land of the aggressor to the King of England. The whole proceeding, however, in thus trying and punishing a chief was entirely without precedent. The aggressor, moreover, lost caste in the estimation of his equals; and this was considered by the British as of more consequence than the confiscation of his land.

As the boat was shoving off, a second chief stepped into her, who only wanted the amusement of the passage up and down the creek. I never saw a more horrid and ferocious expression than this man had. It immediately struck me I had somewhere seen his likeness: it will be found in Retzch's outlines to Schiller's ballad of Fridolin, where two men are pushing Robert into the burning iron furnace. It is the man who has his arm on Robert's breast. Physiognomy here spoke the truth; this chief had been a notorious murderer, and was an arrant coward to boot. At the point where the boat landed, Mr. Bushby accom-

panied me a few hundred yards on the road: I could not help admiring the cool impudence of the hoary old villain, whom we left lying in the boat, when he shouted to Mr. Bushby, "Do not you stay long, I shall be tired of waiting here."

We now commenced our walk. The road lay along a well-beaten path, bordered on each side by the tall fern, which covers the whole country. After travelling some miles, we came to a little country village, where a few hovels were collected together, and some patches of ground cultivated with potatoes. The introduction of the potato has been the most essential benefit to the island; it is now much more used than any native vegetable. New Zealand is favoured by one great natural advantage; namely, that the inhabitants can never perish from famine. The whole country abounds with fern; and the roots of this plant, if not very palatable, yet contain much nutriment. A native can always subsist on these, and on the shell-fish, which are abundant on all parts of the sea-coast. The villages are chiefly conspicuous by the platforms which are raised on four posts ten or twelve feet above the ground, and on which the produce of the fields is kept secure from all accidents.

On coming near one of the huts I was much amused by seeing in due form the ceremony of rubbing, or, as it ought to be called, pressing noses. The women, on our first approach, began uttering something in a most dolorous voice; they then squatted themselves down and held up their faces; my companion standing over them, one after another, placed the bridge of his nose at right angles to theirs, and commenced pressing. This lasted rather longer than a cordial shake of the hand with us; and as we vary the force of the grasp of the hand in shaking, so do they in pressing. During the process they uttered comfortable little grunts, very much in the same manner as two pigs do, when rubbing against each other. I noticed that the slave would press noses with any one he met, indifferently either before or after his master the chief. Although among these savages, the chief has absolute power of life and death over his slave, yet there is an entire absence of ceremony between them. Mr. Burchell has remarked the same thing in Southern Africa, with the rude Bachapins. Where civilization has arrived at a certain point, complex formalities soon arise between the different grades of society: thus

at Tahiti all were formerly obliged to uncover themselves as low as the waist in presence of the king.

The ceremony of pressing noses having been duly completed with all present, we seated ourselves in a circle in the front of one of the hovels, and rested there half-an-hour. All the hovels have nearly the same form and dimensions, and all agree in being filthily dirty. They resemble a cow-shed with one end open, but having a partition a little way within, with a square hole in it, making a small gloomy chamber. In this the inhabitants keep all their property, and when the weather is cold they sleep there. They eat, however, and pass their time in the open part in front. My guides having finished their pipes, we continued our walk. The path led through the same undulating country, the whole uniformly clothed as before with fern. On our right hand we had a serpentine river, the banks of which were fringed with trees, and here and there on the hill sides there was a clump of wood. The whole scene, in spite of its green colour, had rather a desolate aspect. The sight of so much fern impresses the mind with an idea of sterility: this, however, is not correct; for wherever the fern grows thick and breast-high, the land by tillage becomes productive. Some of the residents think that all this extensive open country originally was covered with forests, and that it has been cleared by fire. It is said, that by digging in the barest spots, lumps of the kind of resin which flows from the kauri pine are frequently found. The natives had an evident motive in clearing the country; for the fern, formerly a staple article of food, flourishes only in the open cleared tracks. The almost entire absence of associated grasses, which forms so remarkable a feature in the vegetation of this island, may perhaps be accounted for by the land having been aboriginally covered with forest-trees.

The soil is volcanic; in several parts we passed over slaggy lavas, and craters could clearly be distinguished on several of the neighbouring hills. Although the scenery is nowhere beautiful, and only occasionally pretty, I enjoyed my walk. I should have enjoyed it more, if my companion, the chief, had not possessed extraordinary conversational powers. I knew only three words; "good," "bad," and "yes:" and with these I answered all his remarks, without of course having understood one word

he said. This, however, was quite sufficient: I was a good listener, an agreeable person, and he never ceased talking to me.

At length we reached Waimate. After having passed over so many miles of an uninhabited useless country, the sudden appearance of an English farm-house, and its well-dressed fields, placed there as if by an enchanter's wand, was exceedingly pleasant. Mr. Williams not being at home, I received in Mr. Davies's house, a cordial welcome. After drinking tea with his family party, we took a stroll about the farm. At Waimate there are three large houses, where the missionary gentlemen Messrs. Williams, Davies, and Clarke, reside; and near them are the huts of the native labourers. On an adjoining slope, fine crops of barley and wheat were standing in full ear; and in another part, fields of potatoes and clover. But I cannot attempt to describe all I saw; there were large gardens, with every fruit and vegetable which England produces; and many belonging to a warmer clime. I may instance asparagus, kidney beans, cucumbers, rhubarb, apples, pears, figs, peaches, apricots, grapes, olives, gooseberries, currants, hops, gorse for fences, and English oaks; also many kinds of flowers. Around the farm-yard there were stables, a thrashing-barn with its winnowing machine, a blacksmith's forge, and on the ground ploughshares and other tools: in the middle was that happy mixture of pigs and poultry, lying comfortably together, as in every English farm-yard. At the distance of a few hundred yards, where the water of a little rill had been dammed up into a pool, there was a large and substantial water-mill.

All this is very surprising, when it is considered that five years ago nothing but the fern flourished here. Moreover, native workmanship, taught by the missionaries, has effected this change;—the lesson of the missionary is the enchanter's wand. The house had been built, the windows framed, the fields ploughed, and even the trees grafted, by the New Zealander. At the mill, a New Zealander was seen powdered white with flour, like his brother miller in England. When I looked at this whole scene, I thought it admirable. It was not merely that England was brought vividly before my mind; yet, as the evening drew to a close, the domestic sounds, the fields of corn, the distant undulating country with its trees might well have

been mistaken for our father-land: nor was it the triumphant feeling at seeing what Englishmen could effect; but rather the high hopes thus inspired for the future progress of this fine island.

Several young men, redeemed by the missionaries from slavery, were employed on the farm. They were dressed in a shirt, jacket, and trousers, and had a respectable appearance. Judging from one trifling anecdote, I should think they must be honest. When walking in the fields, a young labourer came up to Mr. Davies, and gave him a knife and gimlet, saying that he had found them on the road, and did not know to whom they belonged! These young men and boys appeared very merry and good-humoured. In the evening I saw a party of them at cricket: when I thought of the austerity of which the missionaries have been accused, I was amused by observing one of their own sons taking an active part in the game. A more decided and pleasing change was manifested in the young women, who acted as servants within the houses. Their clean, tidy, and healthy appearance, like that of dairy-maids in England, formed a wonderful contrast with the women of the filthy hovels in Kororadika. The wives of the missionaries tried to persuade them not to be tattooed; but a famous operator having arrived from the south, they said, "We really must just have a few lines on our lips; else when we grow old, our lips will shrivel, and we shall be so very ugly." There is not nearly so much tattooing as formerly; but as it is a badge of distinction between the chief and the slave, it will probably long be practised. So soon does any train of ideas become habitual, that the missionaries told me that even in their eyes a plain face looked mean, and not like that of a New Zealand gentleman.

Late in the evening I went to Mr. Williams's house, where I passed the night. I found there a large party of children, collected together for Christmas-day, and all sitting round a table at tea. I never saw a nicer or more merry group; and to think that this was in the centre of the land of cannibalism, murder, and all atrocious crimes! The cordiality and happiness so plainly pictured in the faces of the little circle, appeared equally felt by the older persons of the mission.

December 24th.—In the morning, prayers were read in the

native tongue to the whole family. After breakfast I rambled about the gardens and farm. This was a market-day, when the natives of the surrounding hamlets bring their potatoes, Indian corn, or pigs, to exchange for blankets, tobacco, and sometimes, through the persuasions of the missionaries, for soap. Mr. Davies's eldest son, who manages a farm of his own, is the man of business in the market. The children of the missionaries, who came while young to the island, understand the language better than their parents, and can get anything more readily done by the natives.

A little before noon Messrs. Williams and Davies walked with me to part of a neighbouring forest, to show me the famous kauri pine. I measured one of these noble trees, and found it thirty-one feet in circumference above the roots. There was another close by, which I did not see, thirty-three feet; and I heard of one no less than forty feet. These trees are remarkable for their smooth cylindrical boles, which run up to a height of sixty, and even ninety feet, with a nearly equal diameter, and without a single branch. The crown of branches at the summit is out of all proportion small to the trunk; and the leaves are likewise small compared with the branches. The forest was here almost composed of the kauri; and the largest trees, from the parallelism of their sides, stood up like gigantic columns of wood. The timber of the kauri is the most valuable production of the island; moreover, a quantity of resin oozes from the bark, which is sold at a penny a pound to the Americans, but its use was then unknown. Some of the New Zealand forests must be impenetrable to an extraordinary degree. Mr. Matthews informed me that one forest only thirty-four miles in width, and separating two inhabited districts, had only lately, for the first time, been crossed. He and another missionary, each with a party of about fifty men, undertook to open a road; but it cost them more than a fortnight's labour! In the woods I saw very few birds. With regard to animals, it is a most remarkable fact, that so large an island, extending over more than 700 miles in latitude, and in many parts ninety broad, with varied stations, a fine climate, and land of all heights, from 14,000 feet downwards, with the exception of a small rat, did not possess one indigenous animal. The several species of that gigantic genus of birds, the *Deinornis*,

seem here to have replaced mammiferous quadrupeds, in the same manner as the reptiles still do at the Galapagos archipelago. It is said that the common Norway rat, in the short space of two years, annihilated in this northern end of the island, the New Zealand species. In many places I noticed several sorts of weeds, which, like the rats, I was forced to own as countrymen. A leek has overrun whole districts, and will prove very troublesome, but it was imported as a favour by a French vessel. The common dock is also widely disseminated, and will, I fear, for ever remain a proof of the rascality of an Englishman, who sold the seeds for those of the tobacco plant.

On returning from our pleasant walk to the house, I dined with Mr. Williams; and then, a horse being lent me, I returned to the Bay of Islands. I took leave of the missionaries with thankfulness for their kind welcome, and with feelings of high respect for their gentlemanlike, useful, and upright characters. I think it would be difficult to find a body of men better adapted for the high office which they fulfil.

Christmas-Day.—In a few more days the fourth year of our absence from England will be completed. Our first Christmas-day was spent at Plymouth; the second at St. Martin's Cove, near Cape Horn; the third at Port Desire, in Patagonia; the fourth at anchor in a wild harbour in the peninsula of Tres Montes; this fifth here; and the next, I trust in Providence, will be in England. We attended divine service in the chapel of Pahia; part of the service being read in English, and part in the native language. Whilst at New Zealand we did not hear of any recent acts of cannibalism; but Mr. Stokes found burnt human bones strewed round a fire-place on a small island near the anchorage; but these remains of a comfortable banquet might have been lying there for several years. It is probable that the moral state of the people will rapidly improve. Mr. Bushby mentioned one pleasing anecdote as a proof of the sincerity of some, at least, of those who profess Christianity. One of his young men left him, who had been accustomed to read prayers to the rest of the servants. Some weeks afterwards, happening to pass late in the evening by an outhouse, he saw and heard one of his men reading the Bible with difficulty by the light of the fire, to the others. After this the party knelt and prayed: in their

prayers they mentioned Mr. Bushby and his family, and the missionaries, each separately in his respective district.

December 26th.—Mr. Bushby offered to take Mr. Sullivan and myself in his boat some miles up the river to Cawa-Cawa; and proposed afterwards to walk on to the village of Waiomio, where there are some curious rocks. Following one of the arms of the bay, we enjoyed a pleasant row, and passed through pretty scenery, until we came to a village, beyond which the boat could not pass. From this place a chief and a party of men volunteered to walk with us to Waiomio, a distance of four miles. The chief was at this time rather notorious from having lately hung one of his wives and a slave for adultery. When one of the missionaries remonstrated with him he seemed surprised, and said he thought he was exactly following the English method. Old Shongi, who happened to be in England during the Queen's trial, expressed great disapprobation at the whole proceeding: he said he had five wives, and he would rather cut off all their heads than be so much troubled about one. Leaving this village, we crossed over to another, seated on a hill-side at a little distance. The daughter of a chief, who was still a heathen, had died there five days before. The hovel in which she had expired had been burnt to the ground: her body being enclosed between two small canoes, was placed upright on the ground, and protected by an enclosure bearing wooden images of their gods, and the whole was painted bright red, so as to be conspicuous from afar. Her gown was fastened to the coffin, and her hair being cut off was cast at its foot. The relatives of the family had torn the flesh of their arms, bodies, and faces, so that they were covered with clotted blood; and the old women looked most filthy, disgusting objects. On the following day some of the officers visited this place, and found the women still howling and cutting themselves.

We continued our walk, and soon reached Waiomio. Here there are some singular masses of limestone, resembling ruined castles. These rocks have long served for burial-places, and in consequence are held too sacred to be approached. One of the young men, however, cried out, "Let us all be brave," and ran on ahead; but when within a hundred yards, the whole party thought better of it, and stopped short. With perfect indiffer-

ence, however, they allowed us to examine the whole place. At this village we rested some hours, during which time there was a long discussion with Mr. Bushby, concerning the right of sale of certain lands. One old man, who appeared a perfect genealogist, illustrated the successive possessors by bits of stick driven into the ground. Before leaving the houses a little basketful of roasted sweet potatoes was given to each of our party; and we all, according to the custom, carried them away to eat on the road. I noticed that among the women employed in cooking, there was a man-slave: it must be a humiliating thing for a man in this warlike country to be employed in doing that which is considered as the lowest woman's work. Slaves are not allowed to go to war; but this perhaps can hardly be considered as a hardship. I heard of one poor wretch who, during hostilities, ran away to the opposite party; being met by two men, he was immediately seized; but as they could not agree to whom he should belong, each stood over him with a stone hatchet, and seemed determined that the other at least should not take him away alive. The poor man, almost dead with fright, was only saved by the address of a chief's wife. We afterwards enjoyed a pleasant walk back to the boat, but did not reach the ship till late in the evening.

December 30th.—In the afternoon we stood out of the Bay of Islands, on our course to Sydney. I believe we were all glad to leave New Zealand. It is not a pleasant place. Amongst the natives there is absent that charming simplicity which is found at Tahiti; and the greater part of the English are the very refuse of society. Neither is the country itself attractive. I look back but to one bright spot, and that is Waimate, with its Christian inhabitants.

CHAPTER XIX.

AUSTRALIA.

Sydney—Excursion to Bathurst—Aspect of the Woods—Party of Natives—Gradual extinction of the Aborigines—Infection generated by associated men in health—Blue Mountains—View of the grand gulf-like Valleys—Their origin and formation—Bathurst, general civility of the lower orders—State of society—Van Diemen's Land—Hobart Town—Aborigines all banished—Mount Wellington—King George's Sound—Cheerless aspect of the Country—Bald Head, calcareous casts of branches of trees—Party of Natives—Leave Australia.

January 12th, 1836.—EARLY in the morning a light air carried us towards the entrance of Port Jackson. Instead of beholding a verdant country, interspersed with fine houses, a straight line of yellowish cliff brought to our minds the coast of Patagonia. A solitary lighthouse, built of white stone, alone told us that we were near a great and populous city. Having entered the harbour, it appears fine and spacious, with cliff-formed shores of horizontally stratified sandstone. The nearly level country is covered with thin scrubby trees, bespeaking the curse of sterility. Proceeding further inland, the country improves: beautiful villas and nice cottages are here and there scattered along the beach. In the distance stone houses, two and three stories high, and windmills standing on the edge of a bank, pointed out to us the neighbourhood of the capital of Australia.

At last we anchored within Sydney Cove. We found the little basin occupied by many large ships, and surrounded by warehouses. In the evening I walked through the town, and returned full of admiration at the whole scene. It is a most magnificent testimony to the power of the British nation. Here, in a less promising country, scores of years have done many times more than an equal number of centuries have effected in South America. My first feeling was to congratulate myself that I was born an Englishman. Upon seeing more of the town afterwards, perhaps my admiration fell a little; but yet it is a fine

It has been said, that the love of nature is an inherent delight in man—a relic of an instinctive propensity. If so, I am sure the pleasure of living in the open air, with the sky for a roof and the ground for a table, is part of the same feeling; it is the savage returning to his wild and native habits. I always look back to our boat cruises, and my land journeys, when through unfrequented countries, with an extreme delight, which no scenes of civilization could have created. I do not doubt that every traveller must remember the glowing sense of happiness which he experienced, when he first breathed in a foreign clime, where the civilized man had seldom or never trod.

There are several other sources of enjoyment in a long voyage, which are of a more reasonable nature. The map of the world ceases to be a blank; it becomes a picture full of the most varied and animated figures. Each part assumes its proper dimensions: continents are not looked at in the light of islands, or islands considered as mere specks, which are, in truth, larger than many kingdoms of Europe. Africa, or North and South America, are well-sounding names, and easily pronounced; but it is not until having sailed for weeks along small portions of their shores, that one is thoroughly convinced what vast spaces on our immense world these names imply.

From seeing the present state, it is impossible not to look forward with high expectations to the future progress of nearly an entire hemisphere. The march of improvement, consequent on the introduction of Christianity throughout the South Sea, probably stands by itself in the records of history. It is the more striking when we remember that only sixty years since, Cook, whose excellent judgment none will dispute, could foresee no prospect of a change. Yet these changes have now been effected by the philanthropic spirit of the British nation.

In the same quarter of the globe Australia is rising, or indeed may be said to have risen, into a grand centre of civilization, which, at some not very remote period, will rule as empress over the southern hemisphere. It is impossible for an Englishman to behold these distant colonies, without a high pride and satisfaction. To hoist the British flag, seems to draw with it as a certain consequence, wealth, prosperity, and civilization.

In conclusion it appears to me that nothing can be more

improving to a young naturalist, than a journey in distant countries. It both stimulates, and partly allays that want and craving, which, as Sir J. Herschel remarks, a man experiences although every corporeal sense be fully satisfied. The excitement from the novelty of objects, and the chance of success, stimulate him to increased activity. Moreover, as a number of isolated facts soon become uninteresting, the habit of comparison leads to generalization. On the other hand, as the traveller stays but a short time in each place, his descriptions must generally consist of mere sketches, instead of detailed observations. Hence arises, as I have found to my cost, a constant tendency to fill up the wide gaps of knowledge, by inaccurate and superficial hypotheses.

But I have too deeply enjoyed the voyage, not to recommend any naturalist, although he must not expect to be so fortunate in his companions as I have been, to take all chances, and to start, on travels by land if possible, if otherwise on a long voyage. He may feel assured, he will meet with no difficulties or dangers, excepting in rare cases, nearly so bad as he beforehand anticipates. In a moral point of view, the effect ought to be, to teach him good-humoured patience, freedom from selfishness, the habit of acting for himself, and of making the best of every occurrence. In short, he ought to partake of the characteristic qualities of most sailors. Travelling ought also to teach him distrust; but at the same time he will discover, how many truly kind-hearted people there are, with whom he never before had, or ever again will have any further communication, who yet are ready to offer him the most disinterested assistance.

NOTE.—The snake, described at page 96, with the curious habit of vibrating its tail, is a new species of *Trigonocephalus*, which M. Bibron proposes to call *T. crepitans*.