XVIII.—*Extracts from the Journal of a Voyage round the Globe in the years* 1833-36. By F. D. BENNETT, Esq., Mem. R. Coll. Surg., R.G.S., &c. Read June 26, 1837.

THE following pages contain the principal geographical and statistical facts noticed during a whaling voyage round the globe by the western route, in the years 1833-36. The highest S. lat. attained was 58½°; the highest N. lat. 50°, on the western side of the continent of America. The chief places visited during the voyage were Juan Fernandez; Pitcairn's Island; Tahiti, Huaheine, Ulitea or Raiatea, Taha, and Maurua, of the Society Islands; Oahú and Maui or Mowee, of the Sandwich Islands; Cape St. Lucas, in California; Sta. Christina, and Roapoa, of the Marquesas group; Christmas Island; Caroline Island; Timor; and St. Helena. Spermaceti whales were noticed eighty-nine distinct times; and seventy-eight whales were secured, from which the quantity of sperm oil and spermaceti obtained was about 245 tons. The voyage was happily completed without the loss of one of the crew, either from disease or accident.

October 17, 1833, the ship Tuscan of 300 tons, T. Stavers, Commander, sailed from the port of London, and on the 26th sighted the island St. Antonio of the Cape de Verd group. In lat. 8° N., long. 23° W. we lost the N.E. trade wind, and experienced calms and light and variable airs, during which we saw the first spermaceti whales.

On the 4th December we crossed the equator in the long. of 23° W. In lat. 38° S., long. 51° W., the barometer fell during twenty-four hours from 30·10 to 29·60, followed by a severe gale from the westward of twenty-four hours' duration, and being within the limits of the "Brazil bank" the water presented the green hue of soundings. The temperature of the sea at this time was considerably higher than that of the surrounding atmosphere, and gave to the hands immersed in it a very agreeable sensation of warmth. Numerous ocean birds of the high south latitudes were visible around us, as petrels, pios, wandering albatross, &c., and many were taken by hook and line baited with fat meat. Some species were obtained new to the ornithological collections of this country. We here, also, first noticed many shoals of a species of porpoise almost peculiar to these regions. Its chief peculiarity is the absence of a dorsal fin. The inferior surface of the animal is of a pure white, whilst the back retains the black hue so prevalent in cetacea. This porpoise has been noticed by the French naturalist Péron, and has hence been named *Delphinus Peronii*. From the absence of a dorsal fin, it is known amongst seamen as the "right whale porpoise."

January 4, 1834, in lat. 47° S., long. 57° 29′ W., we passed a floating iceberg, square, and about fifty feet high. Ships should keep a careful look-out. Many penguins were also observed, their home being either the iceberg, or, more probably, the Falkland isles, from which we were distant little more than a day's sail. The albatrosses, which, with many other varieties of ocean bird, attended our progress in great number, presented on either side of the neck a vertical line of delicate rose-coloured plumage, a peculiarity I had never observed in the many examples of this bird I had in former voyages procured off the Cape of Good Hope.

January 14, we attained our highest S. lat., namely, 58° 33′, in long. 68° 53′ W. Although the height of summer, we found the temperature in this high S. lat. unpleasantly low, with showers of hail and sleet; and the sky to the southward often presented the white and luminous appearance termed "ice-sky," or "ice-blink." The barometer continued remarkably low, often falling to 29·20, without any accession of foul weather.

February 11, sighted the island of Juan Fernandez from the mast-head, bearing N.N.W., distant about sixty miles.

Juan Fernandez, on approaching the island,* presents a series of elevated mountains of rugged and arid aspect; the central mountains more level and continuous, but either extremity of the land terminating by conical and gradually declining hills. "Goat Island," situated to the S.W., and of moderate elevation, is separated by a channel about three miles wide, and has its summit surmounted by many conical eminences or hummocks. Its western extremity is bluff, whilst the eastern descends gradually to the water's edge. Goat Island does not exceed four or five miles in circumference; its greatest length being from east to west, and its elevation from four to five hundred feet. Its shores are precipitous, and chiefly composed of a brown volcanic stone, presenting on the faces of many of the cliffs tortuous columnar projections resembling the trunks and branches of trees half imbedded in its structure. This islet has a burnt and desolate aspect, and affords no vegetation higher than a stunted shrub, whilst the few verdant patches of soil tend rather to heighten by contrast, than to relieve the general sterility of its appearance. On the north side, and towards the western extremity, a run of fresh water empties itself into the sea over the face of the cliffs. With much impediment from a heavy surf, we effected a landing on this island, and procured specimens of its natural productions. Vast numbers of violet-coloured crabs abounded on the rocks of the coast, and fish were so plentiful in the waters around as to

* Its height, determined by Captain King, R.N., in 1830, 3000 feet above the sea, and the island of Masafuera estimated at 2300 feet.—Ed.

enable the boats in less than two hours to obtain an ample supply. The ordinary amphibious birds were numerous on the coast, many blue pigeons nestled in the cliffs, and some flights of small birds, and a species of falcon, were noticed. Juan Fernandez affords at its N. E. side the excellent harbour of Cumberland Bay, and ample supplies for shipping.

Pitcairn Island.—Daylight, on the 7th March, disclosed the dark and elevated form of "Pitcairn's Island," directly ahead, bearing W. ½ S. by compass, and presenting mountain land of limited extent. The northern side, on which the settlement is placed, offers a very picturesque appearance; rising from the sea as a steep amphitheatre luxuriantly wooded to its summit,* and bounded laterally by precipitous cliffs, and naked rocks of rugged and fantastic forms. The simple habitations of the islanders are scattered over this wooded declivity, and half concealed by the abundant verdure. The coast is abrupt, rocky, beaten by a heavy surf, and at most parts inaccessible; some coral *débris* are found on the shores, and small coves, but no distinct reefs obtain. At the period of our visit the population of this island consisted of eighty persons,† the majority of whom were children, and the proportion of females greater than that of males. With the exception of the offspring of three Englishmen resident on the island, and married to native women, the entire race are the issue of the mutineers of the Bounty, whose surnames they bear, and from whom they have not as yet descended beyond the third generation.‡ These islanders are a fine and robust people, but are far from possessing handsome features. They are high-spirited and intelligent, and speak both the Tahitian and English languages fluently. In intellect and habits they form an interesting link between the civilized European, and unsophisticated Polynesian nations. Their food is chiefly vegetable. Yams, which are abundantly produced, and of excellent quality, form the principal support of the people, and next to these the mountain taro roots (*arum costatum*), for the cultivation of which the dry and elevated character of the land is so well adapted. Cocoa-nuts, bananas, and pumpkins afford additional articles of diet, but the breadfruit-tree yields a scanty crop of very indifferent fruit. Swine, goats, domestic fowls, and the fish around the coast, afford the natives an occasional indulgence in animal food. Disease is rare amongst these islanders, and *fefe*, or elephantiasis, so prevalent amongst the Polynesian islands, is here unknown.

* The peak reaches 1046 feet above the level of the sea (Beechey's Voyage, vol. ii. p. 675).—Ed.

† In December, 1825, sixty-six inhabitants were found by Captain Beechey thirty-seven of which were the grandchildren of the original settlers (p. 99).—Ed.

‡ The first settlers consisting of fifteen males and twelve females, landed here in January, 1790.—Ed.

A comparative scarcity of water exists, since there are no natural streams, and the volcanic structure of the island precludes the formation of wells. Hence the inhabitants depend upon rain water received into excavations or tanks. It is not, however, until rain has been absent seven or eight months that any inconvenience is experienced from deficiency of water.

The disastrous emigration of the Pitcairn islanders to Tahiti, and their subsequent return to their native land, is well known.* At the time of our visit, nearly two years had elapsed since their return, and the people had in a great measure resumed their systematic and simple habits, and the lands their cultivated state; but the injurious effect of a more enlarged intercourse with the world was yet evident in the restless and dissatisfied state of many amongst them, and a licentiousness of discourse which I cannot believe belonged to their former condition.

I lament to say we found them in a very unsettled and uncomfortable state, and divided into two factions opposed to each other with a rancour little short of open warfare. The particulars of this discord it would be tedious to recount, but its origin appeared due to the recent arrival on the island of an elderly person named Hill, who had appointed himself their teacher, governor, &c., and had formed a legislative body composed of some few of the more powerful inhabitants, but to which the mass of the population was much opposed. Their great wish was that a British ship of war should arrive and settle their disputes.

Two only of the original settlers from the Bounty existed in the island at our visit, and those were the aged Tahitian females, Isabella Christian, the widow of the notorious Fletcher Christian, and Susan Christian, his son's widow. But we were shown various books and other articles which had belonged to the Bounty.

There can be little doubt on the subject that Pitcairn's Island has had inhabitants previous to its occupation by the people of the Bounty, since numerous remains of aborigines have been found by the present inhabitants whilst cultivating the ground; indeed, the fact may be considered confirmed by the recent discovery of two human skeletons inhumed on the soil, resting side by side, and the head of each reposing on a pearl shell. This last circumstance casts a yet greater mystery over the history of these aborigines, since the pearl shell, although found in the adjacent islands, has never been met with in the waters around Pitcairn's Island. To Hannah Young, the youngest daughter of John Adams, I am indebted for the possession of two stone adzes, supposed to have belonged to this

* See Royal Geographical Society Journal, vol. iii. p. 165.

ancient race, and which were found embedded in the earth. They are rudely fashioned in the ordinary Polynesian form of such utensils, are composed of a black basalt highly polished, and bear an appearance of great antiquity. It is difficult to account for the apparent extinction of an original race upon a spot so replete with every essential for the support of human existence, and we are led to the hypothesis that either one of the epidemic diseases that occasionally scourge the islands of the Pacific had destroyed the inhabitants to the 'last man,' or that the original occupants were merely a few male natives of other lands, cast upon this when distressed, during one of the adventurous voyages so usually undertaken in their open canoes.* The position of the village on Pitcairn's Island was fixed by Captain Beechey, R.N., who surveyed the island in 1826, in lat. 25° 3′ 37″ S., long. 130° 8′ 23″ W. of Greenwich.

After obtaining ample supplies of live stock and vegetables, in return for some useful manufactures of Europe, we left the island accompanied by three Englishmen who had resided on Pitcairn's Island many years since, but who had suffered so much persecution during the late discords which had unhappily prevailed, that they were glad to avail themselves of a passage to Tahiti, until they could return to their wives and families at Pitcairn's Island under competent protection.

Society Islands.—This group of islands, six of which were discovered in his first voyage by our excellent circumnavigator, Cook, is comprised between 16° and 18° S. lat. and 148° and 152° W. long.

During our various cruises in these seas, we at different times visited the chief islands, which have been often described; yet I may be permitted to add a few extracts from my journal with respect to this highly interesting group.

Maitea.—March 21st, sighted the small but elevated † and uninhabited island of Maitea; ‡ and on the following morning made the island of Tahiti, about sixty miles farther to the west.

Tahiti presents an elongated and high range of land, apparently divided into two distinct islands, the low and narrow isthmus that connects the two peninsulas, not being visible until closely approached. Its general aspect is exceedingly mountainous, some level and highly fertile plains or valleys intervening, whilst a broad belt of alluvial soil occupies the coast.

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* This could hardly be consistently with the images and large piles of stones on the summit of the hills found here.—Ed.

† Its peak 1432 feet above the sea (Beechey's Voyage, vol. ii. p. 675).—Ed.

‡ Osnaburg Island of Wallis in 1767; Pic de la Boudeuse of Bougainville in 1768; San Cristobal of Boerecha; and Dezena of Quiros, as being the tenth island discovered in the voyage of Mendaña and Quiros in 1595.—Dalrymple's Voyages, vol. i., p. 42. *Matilda* or Osnaburg Island of the Charts is in 21° 50′ S. 138° 45′ W.— Ed.

The loftiest mountain on this island is situated towards its northern extremity, and may be estimated at between 6000 and 7000 feet elevation.* It has never been ascended by an European, nor has any exact measurement of its height been given, but the summit has been gained by some natives, who report the existence of a lake of yellow water (probably an extinct crater), and the presence of wild ducks differing in plumage from the more common kind indigenous to the island. The aspect of the lowlands of Tahiti has latterly undergone a considerable change, from the extent to which the guava shrub flourishes on the soil. Scarce twenty years have elapsed since this fruit tree was introduced from Norfolk Island, and it now claims all the moist and fertile land of Tahiti, in spite of every attempt to check its increase. The woodlands and bush, for miles in extent, are composed solely of this shrub, which bears a profusion of large and delicious fruit. The people have advanced but little in civilized habits; their dwellings are much as described by the earliest European visitors, and European clothing is adopted to but a scanty extent. Their principal improvements are in religious observances, and in the acquirement, to a great degree, of the elements of education.† The commerce of the island is confined to the exportation of pearl-shell and pearls, sugar and cocoa-nut oil, and arrow-root, which is altogether conducted by foreigners, since the natives do not themselves possess any vessel larger than a double canoe. The port dues, however, and trade for supplies afforded by the numerous English and American whale ships calling at the port, yield the natives much emolument, and trade in kind has now given place to the circulation of specie. In commercial importance and civilized improvements Tahiti, notwithstanding its priority of intercourse with civilized nations, is at least half a century behind Oahu, of the Sandwich group. A consul from the United States of America has lately been appointed to this island, so much the resort of American shipping. The British consul, whose charge includes all the principal groups of the Pacifics, resides at Oahu, of the Sandwich group, a distance of five weeks' sail from Tahiti, and the communication uncertain.‡ Saddle-horses imported from South America are now in general use at Tahiti, both by natives and foreign residents; oxen are also numerous, and shipping in the port are supplied with beef, in quality little inferior to that of England, at about 2*d.* per lb.

* Roughly estimated by Beechey at 7000 feet. Blossom's Voyage, p. 195.—ED.

† The population is estimated at from 18,000 to 20,000, chiefly Christians, under the care of eight missionaries of the India Missionary Society.—See Williams's "Missionary Enterprises"—ED.

‡ In February, 1837, Mr. Pritchard was appointed Her Majesty's Consul for the Society and Friendly Islands, to reside at Tahiti.—ED.

An opinion very generally prevails at Tahiti that the interior and mountainous parts of the island are inhabited by a race of people differing from those of the coast, and of timid and secluded habits, but it seems scarcely probable.

During our stay here I made an excursion, in company with Captain Henry, to the celebrated lake of Vaihiria, the road to which commences from the coast at the district of Mairipehe, on the S.E. side of Tahiti, and distant from the settlement of Papeiti about thirty miles. The route lies along the coast, and affords numerous highly picturesque scenes. On the S.W. side of the island I noticed the numerous caverns which penetrate the base of the precipitous cliffs that form this portion of the coast. One of these caverns, which we inspected, was situated at the base of a mural cliff of about two hundred feet in height, and its face clothed with ferns and other elegant verdure. The mouth of the cavern formed a large arch; the bottom of the cavern was occupied by a sheet of fresh water produced by infiltration through the rock. I also noticed here a number of springs of fresh water that rise from the midst of the sea at greater or less distances from the shore. Their situation is marked by small eddies or whirls on the smooth surface of the sea over the coral reef, and upon some of these the natives have placed bamboos with apertures in their sides, through which the fresh water flows as from a pump; when fishing on the coast in their canoes, it is not unusual for the natives to dive beneath the surface of the sea and quench their thirst at these fresh-water springs. The cause of their existence is of course simple, although the effect is somewhat extraordinary. Without departing greatly from our route along the coast, we visited the "Great Morai of Papara,"* which, although much ruined and reduced in its height, yet retains a great share of its original gigantic and not unornamental structure. This Morai is not, correctly speaking, in the district of Papara, but in the district of Tevauta, on a spot named "Mahiatea." Towards sunset we arrived at Atinua, where we passed the night, and early on the following morning proceeded about three miles to the coast of the district of Mairipehe, whence I commenced an inland route towards the lake of Vaihiria on foot, and accompanied by a native guide. The greatest portion of the journey lay through level and well watered plains, abounding in an over luxuriant vegetation, and winding round the bases of steep and elevated mountains. A river rising inland traverses these plains with a circuitous and impetuous course to empty itself into the sea. The road to the lake follows closely the course of the mountain stream, and only departs from it to evade

* Mentioned by Cook, Wilson, Ellis, Beechey.—Ed.

a circuitous bend, or to escape cascades and deep fords. We had to cross this river (which, at the fords, ran with great force, and was often both deep and broad), about one hundred and eighteen times during the day's tour to the lake and back. When half way between the coast and the lake of Vaihiria, we lost the cocoa-nut and other fruit trees, and the more usual vegetation of the coast, and entered upon lands covered with bushy ferns, elegant parasitic plants, and extensive thickets of a species of amomum, rising as distinct reed-like leaves six or eight feet above the soil, and emitting, when broken by pushing through them, a powerful fragrance, not unlike that of pimento. Numerous groves of the mountain plantain, loaded with their large clusters of ripe fruit, were also visible on the heights around. The lofty steeps, at the base of which we journeyed, presented constantly the deceptive appearance of closing upon the level path we pursued. We continued, however, along the torrent until nearly at the lake, when we ascended a steep and rugged hill, from the summit of which was visible the lake of Vaihiria, laid out in all its placid and picturesque beauty in the vale at our feet, and to which a short but steep descent conducted. The lake presents a sheet of water of nearly circular form, situated in the midst of a deep and circular valley surrounded by elevated precipitous mountains covered with a short and bright verdure, whilst numerous small cascades fall over their faces into the basin beneath. The lake does not exceed a mile in circumference; its waters are perfectly fresh, and of a dull green colour; for some distance from the shore the depth is very trifling, and it is said that in no part of the lake it has been found to exceed eighty feet. The shores of the lake are formed by the bases of the mountains in some parts, in others by a sandy beach, strewn with large boulders of black volcanic stone, or by low ledges of breccia and volcanic stone of a very friable character. Many wild ducks were visible on the water, and the plaintive note of a bird, not unlike the cooing of a dove, alone interrupted the tranquillity of the spot. Eels are the only fish known to inhabit the waters of the lake, which is rather an inland than a mountain lake, since, although surrounded by mountains, its elevation above the sea can be but inconsiderable, as no remarkable ascent is evident in the route that conducts to it from the coast, except the steep ascent in its immediate vicinity, which is merely that of its bounding hills, and is almost compensated by a corresponding descent to the lake on the opposite side.*

Returning by the same route I reached Mairipehe by six o'clock in the evening. The coast here is well protected by an

* Estimated at 1500 feet above the sea in the Blossom's voyage.—Vol. i., p. 420.—Ed.

extension of the barrier coral reef, and the tranquil water within the reef affords good anchorage for shipping, off a native village where every essential supply can be obtained. A second natural curiosity that I visited at Tahiti was the "Ofai marama" (moon stone) of the natives, which affords a fair example of a basaltic column, and is situated in a cavern at the foot of a lofty cliff at the termination of the valley of Punaro, on the western side of the island. The half-embedded column, which protrudes horizontally, is seven feet in length, three and a half in height, and six feet in breadth; dark and polished on its surface, which is marked with regular vertical fissures. Its extremity, that presents itself at the aperture of the cave, has a smooth surface, resembling the half-risen moon in shape, whence the native name.

Although, from its geographical situation, Tahiti may be deemed under the full influence of the S.E. trade winds, both N.W. and S.W. winds are not unusual, especially during the months of February and March, at which time the natives calculate upon those winds to make voyages to the islands S.E. of their own. There is reason to believe that the N.W. monsoon of the eastern hemisphere, south of the equator, extends at times to the more eastern of the Polynesian islands. Captain T. Stavers, of the Tuscan, possesses on his charts a remarkable track made by that ship from the Equator in 174° W. long. to the Society Islands, in an uninterrupted south easterly course of 2500 miles, the winds holding chiefly from N.E. and N.W.*

Raiatea, the Ulitea of Cook, is situated about 130 miles to the N.W. of Tahiti, this being the direction in which the islands of the Polynesian groups usually lie, a direction that volcanic action appears very generally to follow. It is about forty miles in circumference, of mountainous character, covered with vegetation, and but too well watered, cascades, rivers, and swamps abounding in all directions. At the distance of one and a half or two miles from the shore the land is encircled by a coral reef, that also includes the adjacent island of Taha. Here are seven excellent anchorages on the weather and lee sides of the island, accessible at all times, and egress easy, except with a due south wind. Raiatea has no commerce worthy of notice; cocoa-nut oil and arrow-root are occasionally procured by small vessels from New South Wales or South America; attempts have been made to produce tobacco, and to make ships' cordage from the bark of the Hibiscus, for the Sydney market, and bêche de mer, with which the reefs abound, for that of China; but although the island is capable of all these, and many additional exports, opposing circumstances have caused

* See also Beechey's Voyage and Williams's "Missionary Enterprises in the South Seas," p. 507.—Ed.

every effort to establish a permanent commerce to be speedily relinquished.

The soil is exceedingly fertile, exotic fruit trees thrive vigorously, and particularly the fruit of the lime proves invaluable to foreign shipping, and affords a striking example of the important advantages that accrue from the dissemination of useful fruits and vegetables. The population appeared to me to have suffered dreadfully from disease. Accompanied by some natives, I ascended a lofty range of mountain occupying the centre of the island, extending in a direction nearly N. and S., and about 2000 feet in elevation. The summit presented a level and spacious plain of dark and bleak aspect, spread with numerous swamps and streams of water, passing over exposed rocks of a red colour, and entirely destitute of other vegetation than short grass and moss, although but a few feet beneath, on the less exposed spots, vegetation was lofty and abundant. On the eastern declivity of the mountain, a short distance below its summit, I was shown by my guides a natural excavation about forty feet deep, resembling a large well about thirty-six feet in circumference, the character of which led me to consider it as a small volcanic crater, yet few of these have hitherto been ascertained to exist in the Society Islands. It is remarkable that a stream of water flowing over the declivity of this elevated mountain abounds with eels and other fish, several varieties of which I saw sporting in the water.

Maurua, or Maupiti, is a small and comparatively elevated island about six miles in circumference, and its highest point about 800 feet above the sea. It is situated about fifty miles to the N.W. of Raiatea, and distinctly visible from the lower hills of that island. It is surrounded by a barrier reef of coral, at a distance of about three miles, which encloses numerous low islets covered with cocoa-nut trees, but the lagoon is too shallow to admit vessels exceeding one hundred and fifty tons burthen.

The island is composed of hills wooded to their summits and occasionally crested by cocoa-nut trees, but presenting rugged and mural cliffs to the sea coast, especially one rocky mass on the S.W. side opposite the opening in the reef, which rises 700 feet above the sea, resembling the ruins of a gigantic castle. Maurua is said to possess primitive rocks, but such is certainly not its general geological character; volcanic rocks, scoriæ, and slag abound; its smooth basaltic stones are much prized by the natives of all the Society group, to make pestles to prepare their food. The population of the island appeared small:* scattered habitations were along the coast, but the principal settlement is

* According to the census made by the missionaries in 1828, it contained 1000 persons.—Ed.

on the S.E. or weather side of the island, which is also the residence of the chief Tairo: it contains a Christian church, in which a native teacher officiates.

Swine, fowls, and especially yams, are abundant; water is scarce. The natives were exorbitant in their charge for supplies and rather disposed to theft. This island is little frequented by foreign vessels; no ship before the Tuscan, in 1835, had visited it for two years.

Tubai, or Motou-iti, appeared small, low, and uninhabited; it is distant about thirty miles to the N.E. of Maurua, and is the most northern island of the Society group: we here had a westerly wind.

Huaheine, March 11, 1836.—This island is mountainous and fertile, and nearly surrounded by a coral reef; next to Tahiti it is the most frequented of the Society group; supplies are plentiful, and the bay of *Fare,* where is the chief settlement, on the N.W. side of the island, is safe and capacious, though not easily entered through the reef with the prevailing trade wind. Near Fare I noticed the venerable shaddock tree, covered with fruit, which was planted by Cook when he visited the island to restore Omai. It is the only tree of this species to be seen in the Society Islands, and all attempts to propagate it have failed. Coffee thrives in the gardens of the missionaries: population is said to be 1900.*

Tabuai-manú, or Saunder's Island, has at a distance much the appearance of a ship under sail; it is moderately elevated and the hills are wooded to their summits. It extends in a N.E. and S.W. direction, either extremity being low and covered with cocoa-nut trees. The island was formerly celebrated for its yams; it is now used as a penal settlement from Tahiti.

Sandwich Islands.—This archipelago of thirteen islands, eleven of which were first made known to the world by our own countryman, Cook, in 1778, is composed of eight moderate-sized islands, and of five small islets; it lies chiefly between 19° and 22° N. lat. and 155° and 160° W. lat.†

Woahoo or *Oahú,* May 16, 1834.—Anchored at the port of Honorúru, on the south-western side of this island, which has been too often described to need much notice here. The character of the country is mountainous, and its aspect naked and uninviting compared with Tahiti and the Society Islands. A lofty range of mountain, extending N.W. and S.E. throughout the island, separates the level land of the N.E. from that of the

* 2000, according to the census in 1828.—Ed.

† The population is estimated at 150,000—Christianity is the religion of the state—and they are under the pastoral care of twenty-three American missionaries. —See Williams's "Missionary Enterprises."—Ed.

S.W. coasts, which are again connected by elevated passes through the mountains; the most frequented, that of *Pari*, which stands at the head of the picturesque valley of Anuanu, is 1800 feet above the sea, and commands a beautiful and extensive view over the vale of Kolau, ten miles in extent, to the ocean on the N.E. side of the island. The structure of the island is volcanic, and many extinct craters are visible.

The settlement at Honorúru presents many striking instances of civilization. Supplies are abundant and reasonable: beef excellent. The Taro (*arum esculentum*) is plentiful, and forms the chief food of the natives. Many European vegetables are now commonly sold in the markets. As many as sixty vessels have been anchored in this port at the same time. A few weeks previous to our arrival a Japanese junk had been driven to the island in distress: the crew had suffered much from cold. They had probably been driven off the coast of Japan by strong westerly gales, carried to the N.E. till they met with northerly winds, which drove the vessel to the Sandwich Islands.

I had the gratification while here of meeting Mr. Douglas, whose subsequent melancholy death in Hawaii is well known, and of making several excursions in the mountains with him.

Maui, or *Mowee*, Oct. 3, 1835.—This island, seen from a distance on the northern side, presents the appearance of two elevated peninsulas connected by a low isthmus. It extends in a N.W. and S.E. direction about forty miles, and is separated from Hawaii to the S.E. by a channel twenty miles broad, and may be seen at a distance of ninety miles.* The face of the island exhibits the strong contrasts of luxuriant verdure and volcanic sterility so prevalent in this group.

The settlement of Lahaina or Raheina is small, yet contains a very neat Christian church, a market, reading-room, &c. The population of the island is estimated at 20,000; the natives are intelligent, orderly, healthy, and well under the control of the American missionaries, who have great influence here.

Guadalupe, Nov. 20.—This island, bearing E.N.E., twenty miles distant, presented high land with two elevated peaks at its southern extremity. Its position, according to our observations, is in lat. 28° 54′ N., long. 118° 22′ W.; several charts place it thirty miles to the southward of this latitude.† It appeared about fifteen miles in length and about 1000 feet in height.

In lat. 19° N., long. 107° W., about half way between the group of Revilla-gigedo and the continent of America, a remark-

* This would imply an elevation of about 6500 feet.—Ed.

† Even in Admiral Krusenstern's excellent chart of the Pacific Ocean, it lies in 28° 34′ N.; it is corrected to its true position in his Supplement, yet given in his table of doubtful positions, p. 164. In Arrowsmith's Chart of the Pacific, it is in 28° 34′. —Ed.

able milk-white and luminous appearance of the sea was noticed at midnight all around as far as the eye could see from the mast-head, which lasted till daylight; nothing could be detected in the water to account for it, nor could any soundings be obtained.

In lat. 5° N., 103° W. long., the vicinity of land was suspected from the presence of amphibious birds and sea-weed, and in 6° 35′ N., 104° W., a pelican, about the size of a goose, and of a dusky brown plumage, took refuge in the ship and was captured. The nearest land was presumed to be Duncan's Island, of doubtful existence.* A female sperm whale, taken near this spot, contained a mature fœtus, which was anatomically examined: it was fourteen feet long by six feet in girth.

MARQUESAS or MENDAÑA† group, Feb. 27, 1835.—The elevated land of Hood's Island, or *Fetúgu*, was seen bearing S.W. ½ S., distant about fifty miles.‡ On the following morning saw *Roapoa*, *Santa Dominica*, and shortly after *Santa Christina* and *San Pedro*, and anchored in Resolution Bay of Cook, or Port Madre de Dios of Mendaña.

Santa Christina, or *Tahuata* of the natives, extends in a N.N.E. and S.S.W. direction about ten miles; an elevated rocky ridge runs throughout the island, throwing off spurs to the east and west towards the sea, and thus dividing the lowland into distinct valleys, only accessible by land over the high hills which bound them. I obtained the native names of twelve valleys from Resolution Bay (Vaitahú) in order round the island. The soil is exceedingly fertile and covered with luxuriant vegetation; forests of bread fruit, cocoa-nut, and other fruit trees. The natural productions are much the same as in the Society Islands: the wild cotton is superior to that cultivated in many islands; the sugar cane abundant, large in growth, and of excellent quality: the palmyra, or fan palm, also grows here, although unknown in the Society or Sandwich Islands.

The population of Santa Christina is estimated at 1400 persons; the appearance of the natives robust and healthy, with handsome features. Each valley is under the dominion of a chief, who maintains feudal independence. At the time of our visit the island had been for some time in a state of profound peace; the natives were generally honest and well behaved, and our officers and crew associated and traded with them at the different valleys

* Duncan's Island was so named in 1787 after the master of a merchant vessel. Lat. 6° N., long. 106° W. of Greenwich. See Krusenstern's Mémoires Hydrographiques, vol. ii., p. 58.—ED.

† Of this group of thirteen islands, extending 200 miles in a N.W. and S.E. direction, four of the south-eastern portion were discovered by Mendaña in 1596; one by Cook in 1776; the rest by the Americans in 1797, and by them called the Washington Islands. They were named Marquesas de Mendoza by Mendaña, out of compliment to Don Garcia de Mendoza, then Viceroy of Peru.—ED.

‡ This would suppose a height of at least 2000 feet.—ED.

without any unpleasantness occurring, and during my extended excursions over the country, I experienced every assistance, hospitality and kindness. Notwithstanding, however, the peaceful aspect of the people, it is the duty of every commander of a ship visiting them to be on his guard, since they are extremely capricious, and capable of the greatest outrages when least suspected.

Two missionaries we conveyed from England for this island were settled at the valley opening upon Resolution Bay with as much comfort as could reasonably be expected. They had found but little encouragement, however, in the disposition of the natives, who, though they had abolished open idolatry, retained the greater part of the prejudices and customs of their heathen state. The language of these people has some striking peculiarities, but partakes largely of both the Tahitian and Hawaiian dialects.

Resolution Bay, described by Cook, corresponds to the valley of Vaitahú. On the beach a stream of fresh water gushes from the face of a rocky cliff, and affords shipping a convenient and good supply of this essential. It is the same watering place indicated by Cook, and the flow is supplied by a mountain stream not visible in the vicinity of the coast. Eutiti, the principal chief of Vaitahu, is a shrewd and avaricious man, elderly and very corpulent. He is eager to encourage the visits of shipping to his port, since, through his traffic with them, and consequent acquirement of muskets, &c., he contrives to maintain considerable influence over the other chiefs of the island. This chief is the patron of our missionaries, and for the benefit of their cause it is to be wished he were absolute. The coast of Santa Christina is rocky, abrupt, and surf-beaten: no coral reef encircles and protects its shores, nor those of any other island of this group. Nevertheless, the detritus of coral is abundant on the beaches around the island. In return for supplies of live stock and vegetables to shipping, the natives alone require and value muskets and ammunition and tobacco. Of the muskets thus obtained they retain the best, and export the remainder to the neighbouring islands unfrequented by foreign shipping

Roapoa.—Hove to off Port Jarvis, on the west side, with good anchorage, to land three natives of the island who had accompanied us from Oahú, where they had been left by an American ship. Several canoes came off to the ship, and the natives expressed much disappointment that we would not anchor and trade with them. The principal native amongst them brought with him a written list of the ships that had visited the island, and a rough chart of the coast,* but who was the author of these

* Mr. Bennett has kindly presented a copy to the library of the Society. The chart is certainly a rough sketch, but it makes Port Jarvis on the N.W. side, with good anchorage in eighteen fathoms—wood and water.—ED.

MSS. I could not ascertain. The island of Roapoa appears to be nearly the same size as Sta. Christina, and equally mountainous, rugged, and bold. The summits of many of its mountains present conspicuous columns, spires or pinnacles of rocks. The land extends in a direction nearly north and south, and presents on the coast a succession of valleys of a highly fertile and picturesque appearance. These most prevail on the western side of the land, where several ports with convenient anchorage exist which have been visited by some few South Sea men, though the island is generally but little known or frequented. From Roapoa the island of *Noukahiva* is distinctly visible, thirty miles distant, and the islands of Sta. Dominica and Sta. Christina, at sixty miles distance, may be more faintly discerned. If it appears remarkable that Mendaña, in his discovery of the Marquesas, should leave Cook to discover Hood's Island, which is so very visible from the island of Sta. Dominica, it is yet more remarkable that Cook should have failed to discover the island of Roapoa, which on a serene day may be distinctly seen with the naked eye from the beach at Resolution Bay, Sta. Christina.*

Caroline Island, April 23, 1835.—This is one of the low coral islands† of the South Pacific, and situated by our observations in lat. 9° 58′ S., long. (measured from the island of Raiatea) 150° 18′ W. The entire island does not exceed four or five miles in circumference; it is circular, and composed of several connected, small circular peninsulas. A capacious and tranquil lagoon occupies the space within the land, and is bounded on a portion of its eastern or weather side by a barrier reef of coral, against which a heavy surf constantly breaks. The structure of the land presented no material but coral in all its varied forms. The greatest elevation of the soil did not exceed five or six feet, and the coral rocks and shelving shores betrayed the progressive receding of the ocean from the land it had so materially assisted to raise. Each compartment of the island was covered by dense vegetation of a highly verdant aud pleasing character, some of the loftiest trees attaining the height of twenty feet. No collection of fresh water is visible on the island, though doubtless, as in many other of the low coral islands, much of good quality may be obtained from excavations in the sands.

The coast of Caroline Island is continuous, with a low and ex-

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* The distance is fifty-eight miles, which proves the elevation of Roapoa to be upwards of 2500 feet, and Santa Christina about 3000 feet above the sea.—Ed.

† Discovered by Broughton in 1795, in lat. 9° 57′, long. 150° 25′ W., and doubtless the same as Thornton Island. See Krusenstern, Mém. Hyd. Sup., p. 16. The island was also seen by Captain Willinck, in 1824, when in command of the Dutch corvette the Lynx; and he gives its position 9° 54′ S. 150° 9′ W. of Greenwich.—See Reize om de Wereld in de Jaren, 1823-4, van J. P. M. Willinck. Breda, 1836.—Ed.

tensive reef of compact coral rock stretching into the sea for a considerable distance, and thus extending greatly the actual compass of the island. A large extent of the reef is left dry at low water, whilst, when the tide is at its height, a boat may with care be floated nearly to the verge of the wooded land. From the single observation made during our stay, it would appear to be low water at 9 A.M. and high water at $2\frac{1}{2}$ or 3 P.M.

Our landing from the boats was effected on the western side of the island. The boat was then conveyed across the level tract of fine coral sand, a distance of three or four hundred yards, and launched upon the waters of the central lagoon, which we crossed to the reef on its weather side, and discovered an aperture through the reef, which allowed our passing into the open sea and again returning to the lagoon without difficulty. The only quadrupeds we noticed on this island were mice. Upon a former visit to this spot (seven years previous to our visit) Captain Stavers had landed some hogs, but no traces of the present existence of those animals on the island were visible to us. Many boobies had constructed their nests in the trees; and white terns, frigate birds, curlews, a species of totanus, and small pigeons with white heads and brown general plumage, were also numerous.

Fish were abundant in the waters around the island and also in the lagoon, but not easily obtained on account of the voracity of the sharks. Bêche de mer abounded in the shoal water, and some few pearl shells were noticed in the lagoon. The character of the vegetation of Caroline Island accorded with that on the shores of the Society Islands. The wood-land was chiefly formed by the shrubs of *Tournefortia*, which were in full flower, and emitted a fragrance perceptible at some distance from the lee side of the island. We found but one tope of rather dwarfish cocoa-nut trees, and that at its south extremity near the margin of the lagoon. The quantity of fruit the trees produce is great, but the nuts are small, and the fluid they contain often of brackish taste. That some ship had latterly visited the island was evident from many of the cocoa-nut trees having been cut down to obtain more easily their fruit, a practice often dangerous, when these trees afford important landmarks to navigators, and at all times selfish and mischievous, and more peculiarly so here, where cocoa-nut trees, although increasing in number, are as yet but few. The only service Caroline Island can afford to shipping is the supply of cocoa-nuts, fish, and fire-wood.

Christmas Island.—This is an extensive coral island, dangerous of approach, and well known as the spot on which Cook, in his third voyage in 1777, landed to observe an eclipse of the sun. We coasted round about two-thirds of the island, and it appeared to us to be more than sixty miles in circumference, which is the

extent given by Cook, and to be of a triangular form rather than a crescent, with its base to the N.W. The western point of the island projects some distance and is covered with cocoa-nut trees, giving it a cheerful aspect. We landed and procured two boat-loads of the fruit—no fresh water to be found; quails were numerous, as also the peculiar boobies mentioned by Cook; lizards, land and hermit crabs, abound. The *Sida* here grew abundantly, which we had not noticed at Caroline Island. We found about fifty fine cocoa-nut trees laid prostrate by fire and axe, the mischievous work of some reckless sailors; yet the increase has been great, as Cook records only thirty to have existed at the period of his visit. The yams, melon, and cocoa-nuts planted by Cook on the islet at the entrance of the lagoon have all disappeared. The position of this islet, his place of observation, is 1° 59′ N. lat., 157° 30′ W. long.

Bunker's, or *Jervis Island*, May 13, 1835.—Three days after leaving Christmas Island, and by our calculations 228 miles S.W. of it, in lat. 0° 20′ S. long., 160° 31′ W., measured from Raiatea, we fell in with a low and narrow island, extending east and west from three to four miles in length, composed of sand and coral, and destitute of vegetation; the centre of the land was slightly raised by a confused assemblage of masses of blackened coral; the beach of white sand was coasted by a heavy surf. It appears doubtful if this is Bunker's or Jervis Island; our position would agree best with the latter, but does not coincide with either as laid down in our charts.* This is a dangerous shoal for ships, and should be cautiously guarded against, as even by daylight it only presents at a short distance an indistinct white line, and the birds are not remarkable in number or character. Some years since the Mary, English South-seaman, ran ashore on Jervis Island, and was lost, her crew residing on the sterile land until rescued by a passing ship.

It is much to be lamented that the positions of these various islands scattered over the Pacific Ocean, which is traversed in

* Captain Browne, of the English ship Eliza Francis, discovered, on the 21st August, 1821, a small island, five miles in circumference, and covered with bushes, and determined its position to be 0° 23′ S. lat., 159° 46′ long. W. of Greenwich, which is probably the same island called by the Americans *Bunker*. There is a difference of forty-five miles of longitude between the position of this seen by Mr. Bennett and that of Mr. Browne; but as the latitude is nearly the same, there can be little doubt they are the same island. But *Jervis* Island, although in nearly the same latitude, lies 10° farther to the westward, according to Krusenstern's Atlas of the Pacific Ocean; yet this position is very doubtful; and any master of a South-seaman, or other vessel frequenting these seas, will render an important service to hydrography by fixing and making public the position of this or any of the numerous islands whose situation is marked doubtful in our charts. Arrowsmith's Chart of the Pacific, 1832, gives Jervis Island in its correct position, as determined by Captain Browne.—Ed.

every direction by British shipping, should not be determined by some competent authority: it is a point of much importance, and in which many valuable lives and much property are deeply interested.

Dec. 12, 1835.—Saw land bearing N.N.E. fifteen miles, which consisted of a group of three islands extending in an east and west direction, of moderate size, rugged, elevated, and apparently rocky and barren. By our observations this group lies in 24° 9′ N., long. 112° 39′ W., but no land is laid down in our modern charts in this position. A chart of ancient date places three *Lobos* Islands ninety miles to the northward of this spot, and an ordinary map of North America of 1814 places islands in the vicinity under the name of *Celisos*.* Upon our arrival at Cape St. Lucas we were informed that the existence of these islands had been announced, and that some small vessels in quest of furs had endeavoured to visit them but without success. It is remarkable that, situated as they are in the direct route of shipping making Cape St. Lucas, a route annually followed by numerous South-Seamen, they should have remained so long unknown. From the situation and character of the islands, it is probable the fur seal abounds on their shores.

California, Dec. 15.—Hove to off the mouth of a bay between Cape St. Lucas and Cape Palmo, the southern extremities of the isthmus of California, where is a small grazing settlement which supplied us with excellent beef, poultry, and cheese. The land about Cape St. Lucas, which forms the S.W. extreme, is bold, rugged, and mountainous; the lowlands appear flat and sandy. The settlement on the shores of the bay is a little to the N.E. of the Cape, and the bay affords a fair roadstead with seventeen fathoms water at half a mile from the beach, but open to the S.E. gales, which are very severe. The tide here is regular, with a rise and fall of five or six feet. The level plain which opens on the bay is about thirty miles deep by ten in breadth; it is chiefly covered with brushwood. The vegetation afforded some splendid specimens of cactus, rising as a distinct and fluted column to the height of from twelve to fifteen feet. Shipping may here procure fuel, water, and provisions; a bullock costs from five to ten dol-

* In Krusenstern's and in Arrowsmith's Chart of the Pacific Ocean the Lobos Islands are laid down in 25° 50′ N., and 114° 30′ W., or 150 miles N.N.W. of this group. The Celisos, above mentioned, strange as it may appear, is most probably a corruption of A léjos, signifying "in the offing" or "afar off," and which is laid down in Krusenstern's Tableau des Iles Problematiques in lat. 24° 50′ N., long. 115° 30′ W. of Greenwich, as rocks having been seen in 1791. The group seen by Mr. Bennett is only fifty miles S.W. of Cape San Lazaro, on the isthmus of California, within thirty miles of Vancouver's track in 1795, and within twenty miles of Colnett's in 1793.—Ed.

lars. The residents are about thirty persons, and the whole farm belongs to one person: their commerce is confined to the English and American South-Seamen who visit the bay for supplies. Red and white granite enters largely into the composition of the mountains which bound the plain; close in with the land I obtained a species of sea weed exactly resembling the sargasso or gulf-weed (*Fucus natans*) of the Atlantic. A current was experienced setting to the east.

May 26, 1836.—In lat. 2° 30′ S., long. 175° 10′ E., discovered a low and extensive island covered with cocoa-nut and other trees; sandy beach and little surf; some smoke seen would lead to the idea that the island was inhabited. This island was supposed to be Hurd's or Rotch's; if the former, it is, by our observations, laid down on the chart 3° to the eastward of its true position, as given above.* In 2° 53′ S., long. 174° 55′ E., observed a remarkable line of froth on the sea, some yards in width and of great extent, and accompanied by a mass of dead birds, fish, shells, drift wood, &c., which seemed to indicate the limits of a current, and in fact we found that after entering it we lost the strong N.W. current that had hitherto accompanied us.

Tench's Island, June 13.—This island appeared low, and small, and wooded, but conspicuous from its groups of tall trees rising above the underwood. Passed Mathias Island, discovered by Dampier in 1700, and on the 27th June got sight of the dark and elevated mountain land of New Guinea; steered through the Gillolo passage, and on the 17th July anchored off the Malay village of Sutranha, on the western side of the island of Timor. Here may be procured supplies of fuel, water, and provisions. After a week's stay here we sailed for the Cape of Good Hope, which we rounded on the 12th September, touched at St. Helena, sighted Ascension and Flores, and on the 20th November, 1836, entered the British Channel, after an absence of three years and twenty-four days.

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* *Hurd* Island, in Krusenstern's Mém. Hyd., is given in 2° 43′ S., long. 177° 0′ E., as discovered by the Elizabeth in 1809; and *Rotch* Island in 2° 30′ S., 176° 10′ E., discovered by Captain Clerk, of the John Palmer, in 1826: it is probably the latter island that was seen by the Tuscan, as the latitude agrees exactly, although there is a difference of a degree in longitude. See Krusenstern's Sup. Mém. Hyd., pp. 3 and 19; Arrowsmith's Chart of the Pacific corrected to 1832, in nine sheets, places *Hope* Island in the position of Hurd Island of Krusenstern and Rotch's Island as above.—Ed.