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A Voyage To The Pacific Ocean

Undertaken, By The Command Of His Majesty, For Making Discoveries in the Northern Hemisphere. To Determine The Position and Extent of the West Side of North America; its Distance from Asia; and the Practicability of a Northern Passage to Europe. Performed Under The Direction Of Captians Cook, ...

King, James

Cook, James

London, 1784

Chap. VI. General Account of the Sandwich Islands - Their Number, Names, and Situation. - Owhyhee - Its Extents and Division into Districts. - Account of its Coasts, and the adjacent Country. - ...

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C H A P. VI.

General Account of the Sandwich Islands.—Their Number, Names, and Situation.—OWHYHEE.—Its Extent, and Division into Districts.—Account of its Coasts, and the adjacent Country.—Volcanic Appearances.—Snowy Mountains.—Their Height determined.—Account of a Journey into the interior Parts of the Country.—MOWEE.—TAHOOROWA.—MOROTOI.—RANAI.—WOAHOO.—ATOOL.—ONEEHOW.—OREEHOUA.—TAHOORA.—Climate.—Winds.—Currents.—Tides.—Animals and Vegetables.—Astronomical Observations.

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AS we are now about to take our final leave of the Sandwich Islands, it will not be improper to introduce here some general account of their situation and natural history, and of the manners and customs of the inhabitants.

This subject has indeed been, in some measure, pre-occupied by persons far more capable of doing it justice, than I can pretend to be. Had Captain Cook and Mr. Anderson lived to avail themselves of the advantages which we enjoyed by a return to these islands, it cannot be questioned, that the Public would have derived much additional information from the skill and diligence of two such accurate observers. The reader will therefore lament with me our common misfortune, which hath deprived him of the labours of such superior abilities, and imposed on me the task of presenting him with the best supplementary account the various duties of my station permitted me to furnish.

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This group consists of eleven islands, extending in latitude from $18^{\circ} 54'$ to $22^{\circ} 15'$ North; and in longitude from $199^{\circ} 36'$ to $205^{\circ} 06'$ East. They are called by the natives; 1. Owhyhee. 2. Mowee. 3. Ranai, or Oranai. 4. Morotinne, or Morokinnee. 5. Kahowrowee, or Tahoorowa. 6. Morotoi, or Morokoi. 7. Woahoo, or Oahoo. 8. Atooi, Atowi, or Towi, and sometimes Kowi*. 9. Neecheow, or Onceheow. 10. Oreehoua, or Reehoua; and, 11. Tahooraa; and are all inhabited, excepting Morotinne and Tahooraa. Besides the islands above enumerated, we were told by the Indians, that there is another called MODOOPAPAPA†, or KOMODOOPAPAPA, lying to the West South West of Tahooraa, which is low and sandy, and visited only for the purpose of catching turtle and sea-fowl; and, as I could never learn that they knew of any others, it is probable that none exist in their neighbourhood.

They were named by Captain Cook the *Sandwich Islands*, in honour of the EARL OF SANDWICH, under whose administration he had enriched geography with so many splendid and important discoveries; a tribute justly due to that noble person for the liberal support these voyages derived from his power, in whatever could extend their utility, or promote their success; for the zeal with which he seconded the views of that great navigator; and, if I may be allowed to add the voice of private gratitude, for the generous protection, which, since the death of their unfortunate commander, he has afforded all the officers that served under him.

Owhyhee, the Easternmost, and by much the largest, of these islands, is of a triangular shape, and nearly equilate-

* It is to be observed, that, among the windward Islands, the *k* is used instead of the *t*, as *Morokoi* instead of *Morotoi*, &c.

† *Modoo* signifies island; *papapa*, flat. This island is called *Tammatapappa*, by Captain Cook, vol. II. p. 222.

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ral. The angular points make the North, East, and South extremities, of which the Northern is in latitude $20^{\circ} 17'$ North, longitude $204^{\circ} 02'$ East: the Eastern in latitude $19^{\circ} 34'$ North, longitude $205^{\circ} 06'$ East: and the Southern extremity in latitude $18^{\circ} 54'$ North, longitude $204^{\circ} 15'$ East. Its greatest length, which lies in a direction nearly North and South, is 28 $\frac{1}{2}$ leagues; its breadth is 24 leagues; and it is about 255 geographical, or 293 English miles, in circumference. The whole island is divided into six large districts; Amakooa and Aheedoo, which lie on the North East side; Apoonaa and Kaoo on the South East; Akona and Koaarra on the West.

The districts of Amakooa and Aheedoo are separated by a mountain called Mouna Kaah (or the mountain Kaah), which rises in three peaks, perpetually covered with snow, and may be clearly seen at 40 leagues distance.

To the North of this mountain the coast consists of high and abrupt cliffs, down which fall many beautiful cascades of water. We were once flattered with the hopes of meeting with a harbour round a bluff head, in latitude $20^{\circ} 10'$ North, and longitude $204^{\circ} 26'$ East: but, on doubling the point, and standing close in, we found it connected by a low valley, with another high head to the North West. The country rises inland with a gentle ascent, is intersected by deep narrow glens, or rather chafms, and appeared to be well cultivated and sprinkled over with a number of villages. The snowy mountain is very steep, and the lower part of it covered with wood.

The coast of Aheedoo, which lies to the South of Mouna Kaah, is of a moderate height, and the interior parts appear more even than the country to the North West, and less broken by ravines. Off these two districts we cruized for al-

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most a month; and, whenever our distance from shore would permit it, were sure of being furrounded by canoes laden with all kinds of refreshments. We had frequently a very heavy sea, and great swell on this side of the island, and as we had no soundings, and could observe much foul ground off the shore, we never approached nearer the land than two or three leagues, excepting on the occasion already mentioned.

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The coast to the North East of Apoona, which forms the Eastern extremity of the island, is low and flat; the acclivity of the inland parts is very gradual, and the whole country covered with cocoa-nut and bread-fruit trees. This, as far as we could judge, is the finest part of the island, and we were afterward told that the king had a place of residence here. At the South West extremity the hills rise abruptly from the sea-side, leaving but a narrow border of low ground toward the beach. We were pretty near the shore at this part of the island, and found the sides of the hills covered with a fine verdure; but the country seemed to be very thinly inhabited. On doubling the East point of the island, we came in sight of another snowy mountain, called Mouna Roa (or the extensive mountain), which continued to be a very conspicuous object all the while we were sailing along the South East side. It is flat at the top, making what is called by mariners table-land: the summit was constantly buried in snow, and we once saw its sides also slightly covered for a considerable way down; but the greatest part of this disappeared again in a few days.

According to the tropical line of snow, as determined by Mr. Condamine, from observations taken on the Cordilleras, this mountain must be at least 16,020 feet high, which exceeds



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ceeds the height of the Pico de Teyde, or Peak of Teneriffe, by 724 feet, according to Dr. Heberden's computation, or 3680, according to that of the Chevalier de Borda. The peaks of Mouna Kaah appeared to be about half a mile high; and as they are entirely covered with snow, the altitude of their summits cannot be less than 18,400 feet. But it is probable that both these mountains may be considerably higher. For, in insular situations, the effects of the warm sea air must necessarily remove the line of snow, in equal latitudes, to a greater height than where the atmosphere is chilled on all sides by an immense tract of perpetual snow.

The coast of Kaoo presents a prospect of the most horrid and dreary kind: the whole country appearing to have undergone a total change from the effects of some dreadful convulsion. The ground is every where covered with cinders, and intersected in many places with black streaks, which seem to mark the course of a lava that has flowed, not many ages back, from the mountain Roa to the shore. The Southern promontory looks like the mere dregs of a volcano. The projecting head-land is composed of broken and craggy rocks, piled irregularly on one another, and terminating in sharp points.

Notwithstanding the dismal aspect of this part of the island, there are many villages scattered over it, and it certainly is much more populous than the verdant mountains of Apoona. Nor is this circumstance hard to be accounted for. As these islanders have no cattle, they have consequently no use for pasturage, and therefore naturally prefer such ground, as either lies more convenient for fishing, or is best suited to the cultivation of yams and plantains. Now amidst these ruins, there are many patches of rich soil, which are carefully



fully laid out in plantations, and the neighbouring sea abounds with a variety of most excellent fish, with which, as well as with other provisions, we were always plentifully supplied. Off this part of the coast we could find no ground, at less than a cable's length from the shore, with a hundred and sixty fathoms of line, excepting in a small bight to the Eastward of the South point, where we had regular soundings of fifty and fifty-eight fathoms over a bottom of fine sand. Before we proceed to the western districts, it may be necessary to remark, that the whole coast side of the island, from the Northern to the Southern extremity, does not afford the smallest harbour or shelter for shipping.

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The South West parts of Akona are in the same state with the adjoining district of Kaoo; but farther to the North, the country has been cultivated with great pains, and is extremely populous.

In this part of the island is situated Karakakooa Bay, which has been already described. Along the coast nothing is seen but large masses of slag, and the fragments of black scorched rocks; behind which, the ground rises gradually for about two miles and a half, and appears to have been formerly covered with loose burnt stones. These the natives have taken the pains of clearing away, frequently to the depth of three feet and upward; which labour, great as it is, the fertility of the soil amply repays. Here, in a rich ashy mould, they cultivate sweet potatoes, and the cloth-plant. The fields are inclosed with stone-fences, and are interspersed with groves of cocoa-nut trees. On the rising ground beyond these, the bread-fruit trees are planted, and flourish with the greatest luxuriance.



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Koaara extends from the Westernmost point to the Northern extremity of the island; the whole coast between them forming an extensive bay, called Toe-yah-yah, which is bounded to the North by two very conspicuous hills. Toward the bottom of this bay there is foul, corally ground, extending upward of a mile from the shore, without which the soundings are regular, with good anchorage, in twenty fathoms. The country, as far as the eye could reach, seemed fruitful and well inhabited, the soil being in appearance of the same kind with the district of Kaoo; but no fresh water is to be got here.

I have hitherto confined myself to the coasts of this island, and the adjacent country, which is all that I had an opportunity of being acquainted with from my own observation. The only account I can give of the interior parts, is from the information I obtained from a party, who set out, on the afternoon of the 26th of January, on an expedition up the country, with an intention of penetrating as far as they could; and principally of reaching, if possible, the snowy mountains.

Having procured two natives to serve them as guides, they left the village about four o'clock in the afternoon, directing their course a little to the Southward of the East. To the distance of three or four miles from the bay, they found the country as before described; the hills afterward rose with a more sudden ascent, which brought them to the extensive plantations, that terminate the view of the country, as seen from the ships.

These plantations consist of the * tarrow or eddy root, and the sweet potatoe, with plants of the cloth-tree, neatly set

* Both the sweet potatoes, and the tarrow, are here planted four feet from each other: the former was earthed up almost to the top of the stalk, with about half a bushel

set out in rows. The walls that separate them are made of the loose burnt stones, which are got in clearing the ground; and, being entirely concealed by sugar-canes, planted close on each side, make the most beautiful fences that can be conceived. The party stopped for the night at the second hut they found amongst the plantations, where they judged themselves to be about six or seven miles from the ships. They described the prospect from this spot as very delightful; they saw the ships in the bay before them; to the left, a continued range of villages, interspersed with groves of cocoa-nut trees, spreading along the sea-shore; a thick wood stretching out of sight behind them; and to the right, an extent of ground laid out in regular and well cultivated plantations, as far as the eye could reach.

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Near this spot, at a distance from any other dwelling, the natives pointed out to them the residence of an hermit, who, they said, had formerly been a great Chief and warrior, but had long ago quitted the shores of the island, and now never stirred from his cottage. They prostrated themselves as they approached him, and afterward presented to him a part of such provisions as they had brought with them. His behaviour was easy and cheerful; he scarce shewed any marks of astonishment at the sight of our people, and though pressed to accept some of our curiosities, he

buskel of light mould; the latter is left bare to the root, and the mould round it is made in the form of a basin, in order to hold the rain-water, as this root requires a certain degree of moisture. It has been before observed, that the tarrow, at the Friendly and Society Islands, was always planted in low and moist situations, and, generally, where there was the conveniency of a rivulet to flood it. It was imagined that this mode of culture was absolutely necessary; but we now found, that, with the precaution above mentioned, it succeeds equally well in a drier situation: indeed, we all remarked, that the tarrow of the Sandwich Islands is the best we had ever tasted. The plantains are not admitted in these plantations, but grow amongst the bread-fruit trees.



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declined the offer, and soon withdrew to his cottage. He was described as by far the oldest person any of the party had ever seen, and judged to be, by those who computed his age at the lowest, upward of 100 years old.

As our people had imagined the mountain not to be more than ten or twelve miles from the bay, and consequently, that they should reach it with ease early the next morning, an error into which its great height had probably led them, they were now much surprised to find the distance scarce perceptibly diminished. This circumstance, together with the uninhabited state of the country they were going to enter, made it necessary to procure a supply of provisions; and for that purpose they dispatched one of their guides back to the village. Whilst they were waiting his return, they were joined by some of Kaoo's servants, whom that benevolent old man had sent after them, as soon as he heard of their journey, laden with refreshments, and authorized, as their route lay through his grounds, to demand and take away whatever they might have occasion for.

Our travellers were much astonished to find the cold here so intense; but having no thermometer with them, could judge of it only by their feelings; which, from the warm atmosphere they had left, must have been a very fallacious measure. They found it, however, so cold, that they could get but little sleep, and the natives none at all; both parties being disturbed, the whole night, by continued coughing. As they could not, at this time, be at any very considerable height, the distance from the sea being only six or seven miles, and part of the road on a very moderate ascent, this extraordinary degree of cold must be ascribed to the easterly wind blowing fresh over the snowy mountains.

Early



Early on the 27th, they set out again, and filled their calabashes at an excellent well about half a mile from their hut. Having passed the plantations, they came to a thick wood, which they entered by a path made for the convenience of the natives, who go thither to fetch the wild or horse-plantain, and to catch birds. Their progress now became very slow, and attended with much labour; the ground being either swampy, or covered with large stones; the path narrow, and frequently interrupted by trees lying across it, which it was necessary to climb over, the thickness of the under-wood, on both sides, making it impossible to pass round them. In these woods they observed, at small distances, pieces of white cloth fixed on poles, which they supposed to be land-marks for the division of property, as they only met with them where the wild plantains grew. The trees, which are of the same kind with those we called the spice-tree at New Holland, were lofty and straight, and from two to four feet in circumference.

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After they had advanced about ten miles in the wood, they had the mortification to find themselves, on a sudden, within sight of the sea, and at no great distance from it; the path having turned imperceptibly to the Southward, and carried them to the right of the mountain, which it was their object to reach. Their disappointment was greatly increased by the uncertainty they were now under of its true bearings, since they could not, at this time, get a view of it from the top of the highest trees. They, therefore, found themselves obliged to walk back six or seven miles to an unoccupied hut, where they had left three of the natives, and two of their own people, with the small stock that remained of their provisions. Here they spent the second night; and the air was so very sharp, and so little to the



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liking of their guides, that, by the morning, they had all taken themselves off, except one.

The want of provisions now making it necessary to return to some of the cultivated parts of the island, they quitted the wood by the same path they had entered it; and, on their arrival at the plantations, were surrounded by the natives, of whom they purchased a fresh stock of necessaries; and prevailed upon two of them to supply the place of the guides that were gone away. Having obtained the best information in their power, with regard to the direction of their road, the party being now nine in number, marched along the skirts of the wood for six or seven miles, and then entered it again by a path that bore to the Eastward. For the first three miles, they passed through a forest of lofty spice-trees, growing on a strong rich loam; at the back of which they found an equal extent of low shrubby trees, with much thick underwood, on a bottom of loose burnt stones. This led them to a second forest of spice-trees, and the same rich brown soil, which was again succeeded by a barren ridge of the same nature with the former. This alternate succession may, perhaps, afford matter of curious speculation to naturalists. The only additional circumstance I could learn relating to it was, that these ridges appeared, as far as they could be seen, to run in directions parallel to the sea-shore, and to have Mouna Roa for their centre.

In passing through the woods, they found many canoes half-finished; and, here and there, a hut; but saw none of the inhabitants. Having penetrated near three miles into the second wood, they came to two huts, where they stopped, exceedingly fatigued with the day's journey, having walked not less than twenty miles, according to their own computation. As they had met with no springs, from the time
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they left the plantation-ground, and began to suffer much from the violence of their thirst, they were obliged, before the night came on, to separate into parties, and go in search of water; and, at last, found some, left by rain in the bottom of an unfinished canoe; which, though of the colour of red wine, was to them no unwelcome discovery. In the night, the cold was still more intense than they had found it before; and though they had wrapped themselves up in mats and cloths of the country, and kept a large fire between the two huts, they could yet sleep but very little; and were obliged to walk about the greatest part of the night. Their elevation was now probably pretty considerable, as the ground on which they had travelled had been generally on the ascent.

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On the 29th, at day-break, they set out, intending to make their last and utmost effort to reach the snowy mountain; but their spirits were much depressed, when they found they had expended the miserable pittance of water they had found the night before. The path, which extended no farther than where canoes had been built, was now at an end; and they were therefore obliged to make their way as well as they could; every now and then climbing up into the highest trees, to explore the country round. At eleven o'clock, they came to a ridge of burnt stones, from the top of which they saw the snowy mountain, appearing to be about twelve or fourteen miles from them.

It was here deliberated, whether they should proceed any further, or rest satisfied with the view they now had of Mouna Roa. The road, ever since the path ceased, had become exceedingly fatiguing; and, every moment they advanced, was growing still more so. The deep chinks, with which the ground was every where broken, being slightly covered



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covered with moss, made them stumble at almost every step; and the intermediate space was a surface of loose burnt stones, which broke under their feet like potsherds. They threw stones into several of these chinks; which, by the noise they made, seemed to fall to a considerable depth, and the ground sounded hollow under their feet. Besides these discouraging circumstances, they found their guides so averse to going on, that they believed, whatever their own determinations might have been, they could not have prevailed on them to remain out another night. They, therefore, at last agreed to return to the ships, after taking a view of the country, from the highest trees which the place afforded. From this elevation they saw themselves surrounded, on all sides, with wood toward the sea; they could not distinguish, in the horizon, the sky from the water; and between them and the snowy mountain, was a valley about seven or eight miles broad, above which the mountain appeared only as a hill of a moderate size.

They rested this night at a hut in the second wood, and on the 30th, before noon, they had got clear of the first, and found themselves about nine miles to the North East of the ships, toward which they directed their march through the plantations. As they passed along, they did not observe a single spot of ground, that was capable of improvement, left unplanted; and, indeed, it appeared, from their account, hardly possible for the country to be cultivated to greater advantage for the purposes of the inhabitants, or made to yield them a larger supply of necessaries for their subsistence. They were surprized to meet with several fields of hay; and on inquiring to what uses it was applied, were told, it was designed to cover the young tarrow grounds, in
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order to preserve them from being scorched by the sun. They saw a few scattered huts amongst the plantations, which served for occasional shelter to the labourers; but no villages at a greater distance than four or five miles from the sea. Near one of them, about four miles from the bay, they found a cave, forty fathoms long, three broad, and of the same height. It was open at both ends; the sides were fluted, as if wrought with a chissel, and the surface glazed over, probably by the action of fire.

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Having given this account of the most material circumstances that occurred on the expedition to the snowy mountain, I shall now return to the other islands that remain to be described.

The island next in size, and nearest in situation, to Owhyhee, is MOWEE; which lies at the distance of eight leagues North North West from the former, and is 140 geographical miles in circumference. A low isthmus divides it into two circular peninsulas, of which that to the East is called Whamadooa, and is double the size of the Western peninsula called Owhyrookoo. The mountains in both rise to an exceeding great height, having been seen by us at the distance of upward of thirty leagues. The Northern shores, like those of Owhyhee, afford no soundings; and the country presents the same appearance of verdure and fertility. To the South East, between this and the adjacent isles, we had regular depths with a hundred and fifty fathoms, with a sandy bottom. From the West point, which is low, runs a shoal, stretching out toward Ranai, to a considerable distance; and to the Southward of this, is a fine spacious bay, with a sandy beach, shaded with cocoa-nut trees. It is probable that good anchorage might be found here, with shel-



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ter from the prevailing winds, and that the beach affords a convenient place for landing. The country behind presents a most romantic appearance. The hills rise almost perpendicularly, in a great variety of peaked forms; and their steep sides, and the deep chasms between them, are covered with trees, amongst which those of the bread-fruit were observed particularly to abound. The tops of these hills are entirely bare, and of a reddish brown colour. We were informed by the natives, that there is an harbour to the Southward of the East point, which they affirmed to be superiour to that of Karakakooa; and we were also told, that, on the North West side, there was another harbour, called Keepoo-keepoo.

Tahoorowa is a small island lying off the South West part of Mowee, from which it is distant three leagues. This island is destitute of wood, and the soil seems to be sandy and barren. Between Tahowrowa and Mowee lies the small uninhabited island Morrotinnee.

Morotoi is only two leagues and a half from Mowee to the West North West. The South Western coast, which was the only part near which we approached, is very low; but the land rises backward to a considerable height; and, at the distance from which we saw it, appeared to be entirely without wood. Its produce, we were told, consists chiefly of yams. It may, probably, have fresh water, and, on the South and West sides, the coast forms several bays, that promise good shelter from the trade winds.

Ranai is about three leagues distant from Mowee and Morotoi, and lies to the South West of the passage between these islands. The country, to the South, is high and craggy; but the other parts of the island had a better aspect,



pect, and appeared to be well inhabited. We were told that it produces very few plantains, and bread-fruit trees; but that it abounds in roots, such as yams, sweet potatoes, and tarrow.

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Woahoo lies to the North West of Morotoi, at the distance of about seven leagues. As far as we could judge, from the appearance of the North East and North West parts (for we saw nothing of the Southern side), it is by far the finest island of the whole group. Nothing can exceed the verdure of the hills, the variety of wood and lawn, and rich cultivated vallies, which the whole face of the country displayed. Having already given a description of the bay, formed by the North and West extremities, in which we came to anchor, I have only to observe, that in the bight of the bay, to the South of the anchoring-place, we found rocky foul ground, two miles from the shore. Should the ground tackling of a ship be weak, and the wind blow strong from the North, to which quarter the road is entirely open, this circumstance might be attended with some danger; but with good cables there would be little risk, as the ground from the anchoring-place, which is opposite to the valley through which the river runs, to the North point, is a fine sand.

Atooi lies to the North West of Woahoo, and is distant from it about twenty-five leagues. The face of the country, to the North East and North West, is broken and ragged; but to the South it is more even; the hills rise with a gentle slope from the sea-side, and, at some distance back, are covered with wood. Its productions are the same with those of the other islands; but the inhabitants far surpass all the neighbouring islanders in the management of their plantations.

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ations. In the low grounds, adjoining to the bay where we lay at anchor, these plantations were divided by deep and regular ditches; the fences were made with a neatness approaching to elegance, and the roads through them were thrown up and finished, in a manner that would have done credit to any European engineer.

Oneeheow lies five leagues to the Westward of Attooi. The Eastern coast is high, and rises abruptly from the sea, but the rest of the island consists of low ground; excepting a round bluff head on the South East point. It produces abundance of yams, and of the sweet root called *Tee*; but we got from it no other sort of provisions.

Oreehoua, and Tahoorā, are two small islands in the neighbourhood of Onceheow. The former is a single high hummock, joined by a reef of coral rocks to the Northern extremity of Oneeheow. The latter lies to the South East, and is uninhabited.

The climate of the Sandwich Islands differs very little from that of the West India Islands, which lie in the same latitude. Upon the whole, perhaps, it may be rather more temperate. The thermometer, on shore in Karakakooa Bay, never rose higher than 88°, and that but one day; its mean height, at noon, was 83°. In Wymoa Bay, its mean height at noon was 76°, and when out at sea, 75°. The mean height of the thermometer at noon, in Jamaica, is about 86°, at sea 80°.

Whether they be subject to the same violent winds and hurricanes, we could not discover, as we were not there in any of the stormy months. However, as the natives gave us no positive testimony of the fact, and no traces of their effects were any where visible, it is probable that, in this respect,



respect, they resemble the Society and Friendly Islands, which are, in a great measure, free from these dreadful visitations.

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During the four winter months that we remained amongst these islands, there was more rain, especially in the interior parts, than usually falls during the dry season in the islands of the West Indies. We generally saw clouds collecting round the tops of the hills, and producing rain to leeward; but after they are separated from the land by the wind, they disperse, and are lost, and others succeed in their place. This happened daily at Owhyhee: the mountainous parts being generally enveloped in a cloud; successive showers falling in the inland country; with fine weather, and a clear sky at the sea-shore.

The winds in general were, from East South East to North East; though this sometimes varied a few points each way to the North and South; but these were light, and of short duration. In the harbour of Karakakooa, we had a constant land and sea-breeze every day and night.

The currents seemed very uncertain; sometimes setting to windward; and, at other times, to leeward, without any regularity. They did not appear to be governed by the winds, nor any other cause that I can assign: they frequently set to windward against a fresh breeze.

The tides are very regular, flowing and ebbing six hours each. The flood comes from the Eastward; and it is high water at the full and change of the moon, forty-five minutes past three, apparent time. Their greatest rise is two feet seven inches; and we always observed the water to be four inches higher when the moon was above the horizon, than when it was below.



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The quadrupeds in these, as in all the other islands that have been discovered in the South sea, are confined to three sorts, dogs, hogs, and rats. The dogs are of the same species with those of Otaheite, having short crooked legs, long backs, and pricked ears. I did not observe any variety in them, except in their skins; some having long and rough hair, and others being quite smooth. They are about the size of a common turnspit; exceedingly sluggish in their nature; though perhaps this may be more owing to the manner in which they are treated, than to any natural disposition in them. They are, in general, fed, and left to herd, with the hogs; and I do not recollect one instance in which a dog was made a companion in the manner we do in Europe. Indeed, the custom of eating them is an insuperable bar to their admission into society, and as there are neither beasts of prey in the island, nor objects of chase, it is probable, that the social qualities of the dog, its fidelity, attachment, and sagacity, will remain unknown to the natives.

The number of dogs in these islands did not appear to be nearly equal, in proportion, to those in Otaheite. But on the other hand, they abound much more in hogs; and the breed is of a larger and weightier kind. The supply of provisions of this kind, which we got from them, was really astonishing. We were near four months, either cruising off the coast, or in harbour at Owhyhee. During all this time, a large allowance of fresh pork was constantly served to both crews: so that our consumption was computed at about sixty puncheons of five hundred weight each. Besides this, and the incredible waste which, in the midst of such plenty, was not to be guarded against, sixty puncheons more were salted for sea store. The greatest part of this supply was drawn



drawn from the island of Owhyhee alone, and yet we could not perceive that it was at all drained, or even that the abundance had any way decreased.

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The birds of these islands are as beautiful as any we have seen during the voyage, and are numerous, though not various. There are four, which seem to belong to the *trochili*, or honey-suckers of Linnæus; one of which is something larger than a bullfinch; its colour is a fine glossy black, the rump-vent and thighs a deep yellow. It is called by the natives *booboo*. Another is of an exceeding bright scarlet colour; the wings black, and edged with white; and the tail black; its native name is *ceeevee*. A third, which seems to be either a young bird, or a variety of the foregoing, is variegated with red, brown, and yellow. The fourth is entirely green, with a tinge of yellow, and is called *akaicarooa*. There is a species of thrush, with a grey breast; and a small bird of the flycatcher kind; a rail, with very short wings and no tail, which, on that account, we named *rallus ecaudatus*. Ravens are found here, but they are very scarce; their colour is dark brown, inclining to black; and their note is different from the European. Here are two small birds, both of one *genus*, that are very common; one is red, and generally seen about the cocoa-nut trees, particularly when they are in flower, from whence it seems to derive great part of its subsistence; the other is green; the tongues of both are long and ciliated, or fringed at the tip. A bird with a yellow head, which, from the structure of its beak, we called a parroquet, is likewise very common. It, however, by no means belongs to that tribe, but greatly resembles the *lexia flavicans*, or yellowish cross-bill of Linnæus.

Here



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Here are also owls, plovers of two sorts, one very like the whistling plover of Europe; a large white pigeon; a bird with a long tail, whose colour is black, the vent and feathers under the wing (which is much longer than is usually seen in the generality of birds, except the birds of paradise) are yellow; and the common water or darker hen.

Their vegetable productions are nearly the same with the rest of the South-sea islands. I have before mentioned, that the *tarrow* root is much superiour to any we had before tasted, and that we attributed this excellence to the dry method of cultivating it. The bread-fruit trees thrive here, not in such abundance, but produce double the quantity of fruit they do on the rich plains of Otaheite. The trees are nearly of the same height, but the branches begin to strike out from the trunk much lower, and with greater luxuriance. Their sugar-canes are also of a very unusual size. One of them was brought to us at Atooi, measuring eleven inches and a quarter in circumference; and having fourteen feet eatable.

At Oneeheow they brought us several large roots of a brown colour, shaped like a yam, and from six to ten pounds in weight. The juice, which it yields in great abundance, is very sweet, and of a pleasant taste, and was found to be an excellent substitute for sugar. The natives are very fond of it, and use it as an article of their common diet; and our people also found it very palatable and wholesome. We could not learn to what species of plant it belonged, having never been able to procure the leaves; but it was supposed, by our botanists, to be the root of some kind of fern.

Agreeably



Agreeably to the practice of Captain Cook, I shall subjoin an abstract of the astronomical observations which were made at the observatory in Karakakooa Bay, for determining its latitude and longitude, and for finding the rate and error of the time-keeper. To these are subjoined the mean variation of the compass, the dip of the magnetic needle, and a table of the latitude and longitude of the Sandwich Islands.

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The latitude of the observatory, deduced from meridian zenith distances of the sun, eleven stars to the South, and four stars to the North of the zenith $19^{\circ} 28' 0''$ North.

The longitude of the observatory, deduced from 253 sets of lunar observations; each set consisting of six observed distances of the sun from the moon, or stars; 14 of the above sets were only taken at the observatory, 105 sets being taken whilst cruising off Owhyhee; and 134 sets, when at Atooi and Oneeheow; all these being reduced to the observatory, by means of the time-keeper - - $204^{\circ} 0' 0''$ East.

The longitude of the observatory, by the time-keeper, on the 19th January 1779, according to its rate, as found at Greenwich - - - $214^{\circ} 7' 15''$ East.

The longitude of the observatory, by the time-keeper, on the 19th January 1779, according to its rate, corrected at different places, and last at Samganoodha Harbour, in Oonalaschka - $203^{\circ} 37' 22''$ East.



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The daily rate of the time-keeper losing on mean time, was $9''$, 6; and on the 2d February 1779, it was 14^h $41'$ $1''$, slow for mean time.

The variation of the compass, by azimuths observed on shore, with four different compasses - - - 8° $6'$ $0''$ East.

The variation of the compass, by azimuths, observed on board the Resolution, with four different compasses - 7° $32'$ $0''$ East.

Dip of the North pole of the magnetic needle on shore, with

{	Balanced needle	}	40° 22' 30"
	Unbalanced or plain needle		

Dip of the North pole of the magnetic needle on board, with

{	Balanced needle	}	41° 50' 0"
	Unbalanced needle		

A Table of the Latitude and Longitude of the Sandwich Islands.

		Latitude.	Longitude.
Owhyhee	The North point - - -	20° $17'$	204° $2'$
	South point - - -	18° $54'$	204° $15'$
	East point - - -	19° $34'$	205° $6'$
	Karakakooa Bay - - -	19° $28'$	204° $0'$
Mowee	East point - - -	20° $50'$	204° $4'$
	South point - - -	20° $34'$	203° $48'$
	West point - - -	20° $54'$	203° $24'$
Morokinnee	- - -	20° $39'$	203° $33'$
Tahoorowa	- - -	20° $38'$	203° $27'$
Ranai. South point	- - -	20° $46''$	203° $8'$
Morotoi. West point	- - -	21° $10'$	202° $46'$
			Woahoo.

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	Latitude.	Longitude.	1779 March.
Woahoo. Anchoring-place - -	21° 43'	202° 9'	}
Atooi. Wymoa Bay - -	21° 57'	200° 20'	
Oneeheow. Anchoring-place - -	21° 50'	199° 45'	
Oreehoua - - - -	22° 2'	199° 52'	
Tahoora - - - -	21° 43'	199° 36'	

