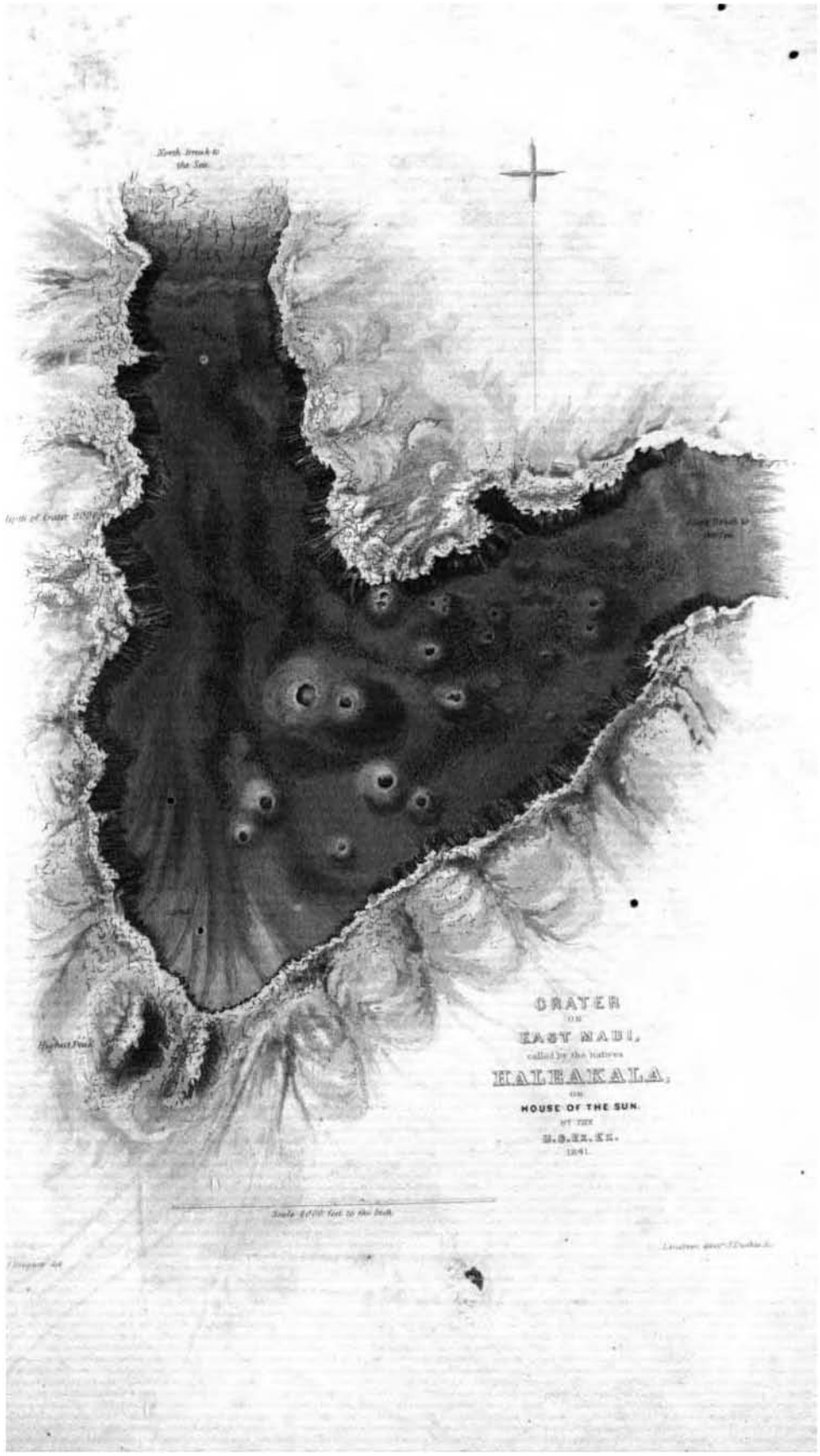

North Breach to the Sea.
Depth of Crater 2000 Ft.
Highest Peak
CRATER
ON
EAST MAUI,
called by the natives
HALEAKALA,
OR
HOUSE OF THE SUN.
BY THE
U.S.EX.EX.
1841.
Scale 4000 Feet to the Inch.

Our gentlemen made excursions to the crater, and descended into it. The break to the north appears to have been occasioned by the violence of volcanic action within. There does not appear any true lava stream on the north, but there is a cleft or valley which has a steep descent: here the soil was found to be of a spongy nature, and many interesting plants were found, among the most remarkable of which was the arborescent Geranium.

The floor of the crater, in the north branch, is extremely rough and about two miles wide at the apex, which extends to the sea. In the ravines there is much compact argillaceous rock, similar to what had been observed on Mauna Kea, retaining, like it, pools of water. The rock, in general, was much less absorbent than on the mountains of Hawaii.

Mr. Drayton made an accurate drawing or plan of the crater, the distances on which are estimated, but the many cross bearings serve to make its relative proportions correct. Perhaps the best idea that can be given of the size of this cavity, is by the time requisite to make a descent into it being one hour, although the depth is only two thousand feet. The distance from the middle to either opening was upwards of five miles; that to the eastward was filled with a line of hills of scoria, some of them five or six hundred feet high; under them was lying a lava stream, that, to appearance, was nearly horizontal, so gradual was its fall. The eastern opening takes a short turn to the southeast, and then descends rapidly to the coast.

At the bottom were found beds of hard gravel, and among it what appeared to be carbonate of lime, and detached black crystals like augite, but chrysolite was absent.

From the summit of the mountain the direction of the lava stream could be perceived, appearing, as it approached the sea, to assume more the shape of a delta.

From the summit the whole cleft or crater is seen, and could be traced from the highest point between the two coasts, flowing both to the northward and eastward. Volcanic action seems also to have occurred on the southwest side, for a line of scoria hills extends all the way down the mountain, and a lava stream is said to have burst forth about a century ago, which still retains its freshness. The scoria hills on the top very much resemble those of Mauna Kea, but the mountain itself appears wholly unlike either of the two in Hawaii, and sinks into insignificance when compared with them.

Although I have mentioned lava streams on this mountain, yet they are not to be understood as composed of true lava, as on Mauna Loa;

none of the latter were seen except that spoken of on the southwest side, and none other is believed to exist. No pumice or capillary glass was at any time seen, nor are they known to exist on this island. On the wall of the crater, in places, the compass was so much affected by local attraction as to become useless.

Near the summit is a small cave, where they observed the silk-worm eggs of Mr. Richards, which were kept here in order to prevent them from hatching at an improper season. The thermometer in the cave stood at 44°; the temperature at the highest point was 36°, and in the crater 71°. After three days' stay, the party returned to the establishment of Messrs. Lane and Minor, and thence to Wailuku. They were much gratified with their tour.

On their return to Lahaina, Dr. Pickering and Mr. Brackenridge took the route through the Wailuku Pass, as it is called, which with its rocky peaks shooting upwards several hundred feet directly above them, reminded them of the deep gorges of Madeira. Some fine plants were collected, and unexpectedly among the most conspicuous was a woody Lobelia, which gave its character to the vegetation. The route did not prove so much shorter as was anticipated, owing to the oblique direction of the valley.

It may now perhaps be as well to say a few words respecting the operation of foreign opinions upon the natives, who are more prone to take knowledge and advice from the books that are circulated among them, than strangers are inclined to believe. Their gambling propensities appear to have been very difficult to overcome; yet, from the simple sentence "Do not gamble" having been printed in the first books circulated among them, that expression has become almost proverbial, and many have in consequence been restrained from indulging in gaming to excess, while some have abandoned the practice altogether.

From the inquiries I made on the subject of their vices, I am satisfied that these have been much overrated by both residents and missionaries, and I fully believe that these natives are as susceptible of correct impressions as any other people.

They appeared to me to be wanting in that national pride which was found a predominant trait in the groups we had previously visited. They speak less of their country than other Polynesians; but Mr. Richards and Dr. Judd both assured me that they felt a certain degree of pride in their respective islands. As an instance of this, it was stated to me that the government proposing to make the island of Kahoolawe a place for convicts, wished to induce the people of the

island to quit it; but no persuasion could prevail on them to do so; and it is said that this feeling has existed to such an extent there, that the young women have refused to marry, unless under a pledge that they shall not be required to remove. The people of Hawaii consider themselves superior to those of the other islands; next to them rank the natives of Maui and Oahu, while Kauai is looked upon as the most inferior. It was likewise mentioned that some individuals have come forward to ask to exchange plots that had been assigned to them, for those on which their fathers had resided, or where they were born.

I was much amused to hear that when one of the teachers of the seminary gave out to the class as a theme, "Whether it was right for parents to give away their children," all belonging to it took the affirmative side! It is not to be supposed that their reasons were very strong, but it was said the principal one urged was the difficulty of travelling with them, and procuring food; this practice having prevailed from time immemorial, they no doubt endeavoured to find reasons to justify it.

In the opinion of a native, the most distant relationship or connexion, justifies him in calling on and receiving entertainment. They not only consider that they have a right to partake of the hospitality, but speak of it as a great convenience; so that in choosing a wife or husband, one who has many relations is a more desirable match on this account than one who has few. This custom also causes more intercourse between the islands than would otherwise take place, and their small vessels seldom pass from one to the other, without being well filled with passengers.

Among the visits I paid at Lahaina, was one to the regent Kekauluohi, who receives visiters during certain hours of the day. She lives in a grass-hut near the water, and has several chiefs in attendance on her; she appears to be a good-natured and contented person, and has adopted some foreign customs in her way of living. She is not spoken of as being equal to her sister, Kaahumanu or Kinau.

It has been mentioned, that on our passage from Hilo we had not found the shoal said to exist off Kahoolawe. Receiving authentic information that it really existed, I determined to send two boats, under the command of Lieutenant Budd and Passed Midshipman May, to seek for and examine it. The king, learning my intentions, volunteered to send his yacht along with them. The yacht and boats set out on this expedition, on the 17th of March, with a pilot who knew the ground.

On the same day we took leave of our kind friends, and at noon got

under way and stood for Kahoolawe, to pick up the boats under Lieutenant Budd. Owing to the light wind, we did not succeed in reaching the point till late, where we found the king's schooner and the two boats about to enter upon the examination. We, therefore, lowered all the boats and sent them to search for the shoal. It was soon found, and proved to be much nearer the point of the island than was anticipated. It lies a mile and a half off the point, and has one and a half fathoms of water on it. We fixed bearings, by noting which, it may be avoided. Vessels may pass within two miles of the point with safety; but as it is difficult to estimate the distance, it will be better to pass the point at three miles distance, as nothing is lost by so doing. It is remarkable, that this is the only shoal around the Hawaiian Islands that is hidden from the navigator; and even this is situated so near the land that it can scarcely be deemed dangerous.

At nine o'clock, we took up the boats and bore away for Oahu. Passing to the southward of Lanai, though at the distance of twenty miles, we felt the effects of its highlands upon the winds.

Lanai is a dome-shaped island, and appears to have been frequently rent, large fissures being apparent on its sides. It is exclusively of volcanic formation.

The fish of these islands are numerous; and to Mr. Richards and Dr. Baldwin, this department of the natural history of the Expedition is much indebted. Dr. Pickering remarks, that the natives appear to be much better acquainted with the fish of their waters, than are the inhabitants of any civilized port we have visited. A number of new species were obtained; for which I refer to the report on the ichthyology of the cruise.

At Lahaina, bathing and frolicking in the surf are more practised than in any other place in these islands. The inhabitants take great delight in it; and it is said that the king himself is extremely fond of it.

The tide at Lahaina is irregular, being somewhat dependent on the winds: it runs to the northwest generally sixteen hours out of the twenty-four.

During our stay here on the 14th, a slight shock of an earthquake was experienced.

After passing Lanai, I hauled up for Molokai, intending, as the day was far advanced, to lie under the lee of that island for the night. Molokai is about forty miles long and nine miles in width. One-third of the island, towards the western end, is a barren waste, not susceptible of cultivation, except in the rainy season; it has in consequence

few inhabitants, who are engaged mostly in fishing. The eastern two-thirds are almost one entire mountain, rising gradually from the south, until it attains an elevation of two thousand five hundred; while on the north, it is almost perpendicular.

On the south side, it has a narrow strip of land, not exceeding one-fourth of a mile in width, the soil of which is very rich, and which contains the greater part of the population. Owing to the want of moisture, however, few plants will thrive even here; resort is therefore had to the uplands, which are found to be susceptible of the highest degree of cultivation.

The amount of arable land, or that susceptible of cultivation, is believed by the missionaries to be one-fourth; but I should be inclined to reduce it to one-eighth, from the report of others and my own observations. Only about one-tenth of this is cultivated.

The population of the island was reported as five thousand, in 1840; eight years prior, in 1832, it was six thousand: during this time, five hundred marriages took place. The data has shown, that the births much exceed the deaths; and the decrease is attributed to emigration, which has been going on for some time. The inhabitants are all poor, and their pastor, the Rev. Mr. Hitchcock, asserts, that there are not ten individuals on the island who have comfortable clothing and sufficient food; and he adds, that there has been no improvement in their dwellings for the last ten years.

The schools on this island are little more than a name; for they have neither regular teachers nor school-houses. One thousand scholars are said to be embodied in them.

The island has been occupied as a missionary station since 1832, and the church contains about three hundred members.

Some efforts are making to introduce the cultivation of cotton and sugar. All other articles are in want of a market; and the distance of Lahaina (about eighteen miles) is found too great, and the voyage thither too uncertain, to derive benefit from it.

There are several small harbours within the reef, on the south side, at Kaluaaha, the missionary station, which are capable of affording shelter for vessels of from sixty to eighty tons.

The formation of Molokai is similar to that of the other islands. Coral rock was reported to exist on one of the high hills. Some of the same was found on the south side of Maui, at a considerable elevation, specimens of which were presented to the Expedition.

On the 18th, we anchored off Honolulu, at an early hour, although too late to enter. The appearance of the island was much more fertile,

now that the winter had passed. There being no letters from home, was a disappointment to us all. We were again warmly welcomed by our friends and countrymen.

On the 19th, we went in and anchored in the outer harbour. Until the 23d, we were employed getting off our stores, &c., and on the latter day I was gratified with the arrival of the Porpoise, and was much pleased to find them all well.

NATIVE HOUSE, MAUI.

CHAPTER VIII.

CONTENTS.

PORPOISE SAILS FROM OAHU — MANUEL RODRIGUEZ — WALKER'S ISLAND — MANHII — ARATICA — SAKEN ISLAND — SEA-GULL GROUP — ISLAND OF BARCLAY DE TOLLY — WOLCONSKY — DEATH OF A KANAKA — TAWEREE — MARGARET'S ISLAND — FOUR CROWNS OF QUIROS — ARCHANGEL — ST. PABLO — INTERVIEW WITH THE NATIVES — RETURN TO ARATICA — RESULTS OF THE BORING — THEORY OF CORAL ISLANDS — TIDAL OBSERVATIONS — INHABITANTS OF ARATICA — CANOE SPOKEN — ARRIVAL AT TAHITI — DOMESTIC QUARRELS OF THE QUEEN — MEETING OF THE DISTRICT SCHOOLS — MEETING OF THE AUXILIARY SOCIETIES — DISTURBANCE OF THE MEETING — POLICE OF PAPIETI — AMERICAN COMMERCE AT TAHITI — PORPOISE LEAVES TAHITI — MEETS THE TRADES — FLINT'S ISLAND — STAVER'S ISLAND — PENRHYN'S ISLAND — ISLANDERS — THEIR LANGUAGE — THEIR TURBULENCE — APPEARANCE OF THE WOMEN — FEROCITY OF THE ISLANDERS — THEIR ARMS — THEIR CANOES — THEIR TALENT FOR HARANGUING — LIEUTENANT-COMMANDANT RINGGOLD RESOLVES TO RETURN — CURRENTS AND WINDS — ARRIVAL AT HONOLULU — RESULTS OF THE CRUISE — PORPOISE FOUND TO NEED REPAIR — EFFECTS OF THE LAPLACE TREATY — PREPARATIONS FOR DEPARTURE — PRODUCTIONS OF THE HAWAIIAN GROUP — ITS FLORA — CLIMATE AND DISEASES.

CHAPTER VIII.

PAUMOTU GROUP AND PENRHYN ISLAND.

1840—1841.

The disposition that was intended to be made of the Porpoise during the winter months, has been mentioned in a preceding chapter; an account of her proceedings in the prosecution of the duties assigned to her, will now be given.

On the 15th of November, as has been before stated, she left Oahu. In addition to her crew, a number of Kanakas were shipped for the purpose of being employed, under the direction of an officer, on one of the coral islands, to bore through the coral rock.

The first shoal searched for was that of Manuel Rodriguez: its supposed locality, in longitude 153° 54′ W., and latitude 10° 58′ N., was passed over, and no indications whatever of it were seen.

All the Kanakas became wofully sea-sick, and were lying about the deck for several days, heedless of every thing; after being out several days, and the sea becoming smooth, they recruited.

On the 22d they had reached latitude 9° 13′ N., when they experienced heavy rains, with frequent and vivid lightning, and constant gusts of wind. The next and following days they saw many birds, indicating a near approach to land. The easterly current was experienced between the latitude of 5° and 8° N., inclining more to the northward of east than farther west. On the 1st of December they passed to the eastward of Walker's Island. On the 3d, they crossed the line, in longitude 149° 36′ W.; and on the 4th, the Magnetic Equator, in latitude 2° S., and longitude 149° 10′ W. They now had the wind from the east, which was light, with calms.

On the 11th, they made the island of Manhii, of the Paumotu Group, and shortly after, that of Ahii, or Peacock Island: the same

day they spoke the whale-ship Nassau, of New Bedford, bound to Tahiti.

On the 13th, they made the Rurick Chain.

On the 15th they reached Aratica, or Carlshoff Island, on which Lieutenant-Commandant Ringgold had determined to land the party intended to experiment in boring, consisting of fifteen men, under Lieutenant Johnson, among whom were nine Kanakas and three seamen, the armourer with his forge, and a carpenter.

They had much rain with frequent squalls. Until they reached the latitude of 8° N., the wind prevailed from east-northeast; then from south to east, with frequent intermissions of calms; and from the parallel of 5° N. to 8° S., northeast winds were experienced; to the southward of the latter parallel, northwest and north winds. Lieutenant Johnson, agreeably to my orders, was put in charge of the party to conduct the experiments.*

By the 18th, they had succeeded in completing all the arrangements, when the brig left them in successful operation, to pursue her cruise for thirty or forty days to the windward part of the group.

On the 19th, they made Vincennes and Raraka Islands.

On the 20th, they made Saken Island, which proved low, with but a few trees on it: the greater part of the island is a reef.

The next day they were up with the three small islands to the southward of Saken, which they had been directed to look for and survey. Lieutenant-Commandant Ringgold found and surveyed them, and designated the cluster as the Sea-Gull Group; while to the three islands he gave the names of Passed Midshipman Reid and Bacon, and Quarter-Master Clute. Reid Island proved to be inhabited, and the brig was boarded from it by two canoes. These contained four natives, besides a toothless old man calling himself a missionary, who readily consented to remain for the night on board: he was quite tastefully and well covered with tattooing, in chequered marks, as described on our former visit to this group. The others were not tattooed. The Tahitians on board had no difficulty in understanding them.

The canoes were small and wretched, being only about five feet long and two feet wide. The account these people gave of themselves was, that they had been residing on the island about a year, and had been sent there in a Tahitian schooner, by order of the Queen of Tahiti, for the purpose of raising food or productions useful to man.

* For orders, see Appendix X.

On the 22d, several of the officers visited the island. Its population consisted of about twenty-five men, women, and children, among whom was the daughter of the old chief, considered by our officers as a very beautiful girl, with fine figure, expressive countenance, and long silky hair: she was sprightly, but I regret to say, was covered with vermin. The children were fat and chubby.

Dip and intensity observations were made here, and observations on shore for time and variation.

The village consisted of about six huts, which were extremely filthy and smelt more like fish-houses than human habitations. All the inhabitants seemed contented on this small and barren isle, which they called Tuinaki, and which is, in every point of view, one of the most uninteresting of the group. The poor creatures, in obedience to their directions, were setting out cocoa-nut plantations, which were seen growing all over the island: the trees were planted in pits about three feet deep, in order to afford them moisture, and to protect them from the winds. A small spring supplied the inhabitants with water.

Lieutenant-Commandant Ringgold, having finished all the necessary observations, proceeded, on the 23d, in search of some islands to the eastward. On the 26th they made the island of Raroia, or Barclay de Tolly, and passed close to it. The position assigned to it on the charts proved to be correct.

On the 27th, they made Takurea, or Wolconsky, with Raroia in sight to the southward: there is a passage between them seven miles wide. The former, Wolconsky, is of an oblong shape, ten miles in circumference: its north end is high and thickly wooded with cocoa-nut groves and other trees: its eastern boundary is partly a submerged reef. There is no opening to its lagoon. It was found to be incorrectly placed on the charts.

On the 29th, one of the Sandwich Islanders died of a severe attack of dysentery, and in the afternoon his body was committed to the deep with the usual funeral ceremonies.

The search after Camboy's and Merril Islands proved unsuccessful. The position assigned to them, longitude 141° W., latitude 15° 13′ S. having been cruised over without any appearance whatever of land.

On the 5th of January, they passed near Taweree, or Resolution Island, but found there was too much surf to land upon it. There were about twenty inhabitants, who, on the approach of the brig, came running to the beach with cocoa-nuts to barter. They appeared to be stout men, and were thought to resemble the natives seen at Clermont de Tonnerre.

Taweree consists of two small isles, together about four miles in

circumference: it has three clumps of cocoa-nut trees upon it, but of its south and west sides the greater portion is a bare reef. After surveying it, they bore up for the two groups, and the same afternoon passed through the channel between them, which is a mile wide, with no soundings. The southern island was surveyed: it has a bare reef on its southeast and west sides, with a cocoa-nut grove on the south end. No entrance exists to the lagoon, and no natives were seen. The southern portion of the northern isle is a bare reef, with some high clumps of trees on the eastern side.

On the 6th, Nukutipipi or Margaret's Island was made. It proved to be a small round lagoon island, two miles in circumference, high and well wooded on the north side, with a flat submerged reef on the southeast and east sides. After completing the observations, they stood for Teku or the Four Crowns of Quiros, the island to the westward: it has now five clumps of trees. It had no opening to its lagoon, nor could a landing be effected. No traces of inhabitants were seen on either of the islands.

On the 10th, Lieutenant-Commandant Ringgold made what they supposed to be the island of Archangel, but very much out of place. It is a small lagoon island, of oblong shape, lying northwest and southeast; wooded on the northeast and east, with a stunted growth of trees. No cocoa-nut trees were seen, and the eastern portion of the trees appeared as if burnt. A reef extends off the northwest and southwest sides, with a heavy surf, and there is a submerged reef on the south and west sides. No opening exists, and a landing cannot be effected without imminent danger to the boats. Its native name is Heretua.

The supposed location of Archangel was then searched for, but no signs of land found. Turnbull Island was also looked for without success.

On the 12th, they made the island of San Pablo, in latitude 19° 56′ S., longitude 145° W. This island is higher than those just mentioned: it has several cocoa-nut groves, and natives were seen on the island. No opening was observed into its lagoon.

Lieutenant-Commandant Ringgold now lay-to, for the purpose of communicating with the natives the next day. In the morning early, several of them were seen fishing, and others on the beach, who fled at the approach of the brig; but on being hailed by one of the natives on board, they came from their hiding-places, bringing down cocoa-nuts, and showing a disposition to communicate. Lieutenant-Commandant Ringgold went towards the shore in his boat, with some presents: on the beach he found three men, with five women and a

number of children. An old and very savage-looking chief made signs for them not to land, threatening them with spears if this was attempted. Lieutenant-Commandant Ringgold threw them some presents, and received in return a few cocoa-nuts and two large fish, the smallest of which measured five feet two inches in length, and its greatest circumference was four feet four inches. These proved to be excellent food. They were remarkable for their splendid colour, the great size of the canine teeth in each jaw, and a large protuberance over the eyes; the head was without scales, the body being covered with large circular plates, over which the epidermis was very thick and of a rich blue colour, with regular concentric stripes of yellowish white; the fins and tails were striped with straight lines of alternate blue and yellow; the lips were fleshy, and the jaws strong and bony.

The men were of the dark-skinned race, resembling the Feejeeans, of fine form, and crispy hair, with crowns of matting on their heads: the old man had a silvery beard. They would not permit our people to land, and on an attempt being made by a Sandwich Islander, they stood prepared to spear him. Lieutenant-Commandant Ringgold, wishing to avoid collision, ordered him to return.

After searching around this locality for other islands, the Porpoise steered to the northward, for the island of Aratica (Carlshoff). On the 15th they made the island of Tahanea: its south end is a bare reef, but there are trees on the east and west sides. Fires were seen after dark on the island. This, like all the other islands, has small islets around it, connected by low coral reefs, over which the sea in places washes.

Passing in sight of Saken, Raraka, and Taiara, they made Aratica on the 18th, where they found the party all well, and at once began to embark them, which was completed on the 19th. The Porpoise then bore away for Tahiti, two hundred and fifty miles distant, which they made on the 21st, and the same day they anchored in Matavai Bay.

At the time the brig left him, Lieutenant Johnson had succeeded in making a beginning with the apparatus. Considering the novelty of the business, and that all were unacquainted with the uses of the different parts of the machinery, I was aware of the difficulty of the task that would be imposed upon the officer who directed the operation. I had therefore designated Lieutenant Johnson for this business, who, on account of his ingenuity, perseverance, and mechanical contrivance, was considered by me as most suitable for this duty. The undertaking proved fully as laborious as I had anticipated, and Lieutenant Johnson's exertions were worthy of better success. The principal difficulties he had to encounter were the looseness of the sand, and the falling in of the coral stones. Every means were devised to overcome

these impediments, but in the attempts the pipes became choked, broke, and were thrown out of the perpendicular. When the impediments in one place were found to be too great to be overcome, it was abandoned, and the work begun anew. The greatest depth to which he succeeded in reaching was twenty-one feet: ten to eleven feet were generally accomplished without much difficulty; but after that depth was arrived at, they frequently did not succeed in getting down beyond one foot per day.

The coral shelf, composed of conglomerates and compact coral rock, seems to have afforded an impediment to further progress. After the breaking of pipes and augers, and the occurrence of various other accidents, principally from the impossibility of maintaining a perpendicular, Lieutenant Johnson began from his acquired experience to hope for success a day or two previous to the arrival of the brig, when the whole was abandoned by order of Lieutenant-Commandant Ringgold, and every thing embarked. I am well satisfied that there is no insuperable difficulty in boring into coral islands; but in the present case the season of the year was somewhat against them, as it caused them to encounter much more water in the soil than they would otherwise have met with. The proper season for such an attempt would be the dry one. Much rain fell during their stay; and although no serious sickness occurred, yet many felt unwell.

To the Geological Report I must leave the details of the boring. Agreeably to my instructions, a specimen of each foot reached was preserved.

These experiments turned out very much as I anticipated, viz: that we should find but little coral sand, and an occasional stratum of coral rock. Since my return, I have seen the results of a similar experiment made by Captain Belcher, on another island, (Hau or Bow Island,) in the same group. They are identical with ours.

Before I close the subject of coral islands, I cannot refrain from making a few remarks, derived from my own observations while I was engaged among them. My opportunities have been numerous, and I have had every facility for viewing to advantage, not only those exclusively of coral formation, but also the reefs that surround the high volcanic islands, which afford the most safe and convenient harbours of the Pacific.

After much inquiry and close examination, I was unable to believe that these great formations are or can possibly be the work of zoophytes; and the arguments by which it is endeavoured to maintain this theory, appear to me to be inconsistent with the facts. I cannot but view the labours of these animals as wholly inadequate to produce

the effects which I observed, and I was satisfied that the very appearance of the reefs was sufficient to contradict any such impression. The ingenious theory of Darwin, which has of late been promulgated, and which holds that an equal subsidence and growth are taking place, is alike at variance with the configuration, extent, and general construction of the reefs.

In all the reefs and islands of coral that I have examined, there are unequivocal signs that they are undergoing dissolution. Thus, it will be recollected, that in the first volume of this narrative, I gave various sketches of coral blocks now existing on the top of reefs, and also spoke of the various shelves, soundings, and longitudinal cracks that I had observed. All these phenomena have been since those first observations repeatedly met with. To account for the position of these blocks, it has been assumed that they had been thrown up by the sea; but their positions, weight, and situation, are such as to contradict such an idea. They are found in many cases standing erect on their smaller ends, and have evidently formed an upper shelf, of which they are now the sole remains. In every observed instance, they were at some distance from the outer edge of the reef on which they stand, and they were also seen covered with debris of the coral, that has been mentioned as forming the highest portion of the islands. It would be utterly impossible for any sea to toss so great a weight to such a distance; and if such masses were even broken off from a reef by the action of water, they would undoubtedly have obeyed the laws of gravity, and descended to the unfathomable depths beneath them.

The low coral islands, as far as they have been investigated, both by boring and sounding, have shown a foundation of sand, or what becomes so on being broken up.

The elevated coral islands which we have examined, exhibit a formation of conglomerate, composed of compact coral and dead shells, interspersed with various kinds of corals, which have evidently been deposited after life has become extinct. A particular instance of this was seen at the island of Metia, and the same formation was also observed at Oahu.

The abrading effects of the sea on all the islands and reefs, was evident, for they exhibited throughout a worn surface. Some living corals are indeed found at the surface, but a few inches beneath it the reef is invariably a collection of loose materials, and shows no regular coralline structure, as would have been the case if it had been the work of the lithophyte.

All the coral islands lie within an ocean subject to the effects of volcanic action, and we have no reason to doubt that they would be

as liable to be upheaved and depressed by it as those of unquestionable igneous origin. With so great and powerful an agent at hand, it seems to me there is no necessity for resorting to a cause inadequate of itself, and at variance with the facts. It seems almost absurd to suppose that these immense reefs should have been raised by the exertions of a minute animal, and positively so to explain the peculiar mode of construction by which reefs of an annular shape are formed, when in nine cases out of ten they are of other figures.

Those who will examine the charts of the Pacific Ocean, and view the relations which the coral islands bear to one another, as well as the extent of ocean through which they are spread in groups, will entertain but little doubt that many of them which are now separated have at some remote period been joined, and formed extensive tracts of land. They must also be inclined to believe that their alteration and dismemberment have been brought about by the same causes that affect other lands. If this be the case, there would be no difficulty in accounting for the lagoons, as they now present themselves. Before I reached the coral islands, I had derived an impression, from the attempts to explain the manner of their formation, that all the reefs would be found level with the water, and have a uniform surface; but so far from this being the case, they are all irregular and much ruptured, some wholly above the water, others awash, and some again altogether submerged, having various depths of water over them.

As the coral islands have sand and limestone for their base, it would appear possible to account for the formation of the lagoons by supposing that, after the several portions of the pre-existing continent were separated from each other, the outer edge or line of coral, unequally worn by the sea, had become more compact in some cases than in others. Thus, while the border of the island resisted in one place, it might be torn asunder in others, and through the washing influx and efflux of the sea, strata underlying the centre might be carried off into the deep sea in the shape of sand and mud, or in solution. The centre, thus undermined, from want of support would cave in, and form the inverted cone or tunnel-shaped lagoon, generally found in the centre of these islands, surrounded by an outer rim, variable in width and elevation.

Actual observation proves that the reefs and islands are undergoing dissolution, for at many points where former navigators have laid down shoals of coral, none now exist. One reef, in particular, noticed by those who visited Tahiti ten years before we did, was found by Captain Belcher, of H. B. M. ship Sulphur, to exist no longer. This officer states that he visited and surveyed the place where it is laid

down on previous charts, and that it was not to be found. In speaking of Bow Island, he likewise mentions the fact that several of its points had undergone material change, or were no longer the same,* when visited after a lapse of fourteen years. These remarks refer particularly to islets situated within the lagoon. I could myself quote many instances of the same description; but this would occupy too much space.

I shall, therefore, take leave of the coral islands, trusting that these few remarks may excite a spirit of investigation in others.

Among other duties assigned Lieutenant Johnson were tidal observations, which were continued uninterruptedly, from the 19th of December, 1840, till his departure from the island; but unfortunately, the tide-staff was placed in the lagoon, a place not free from objections, because the tide there has but a small rise and fall, and is much influenced by the wind, that blows the water over the reef, giving less tide and a longer outflowing there; but the flood was distinctly seen, by Lieutenant Johnson, during a fishing excursion at the entrance of the lagoon, to flow in rapidly; and the high tide was correct, for the water on the reef was two feet or more in depth. The record of these observations gives the high water at the full and change of the moon at six o'clock: the rise and fall in the lagoon eight inches, and two tides in twenty-four hours. During our visit to this island I had observed a fall of upwards of two feet, and have to regret that the tide-staff was placed in so unfortunate a position.

Lieutenant Johnson reports the inhabitants as being twenty in number, seven men, eight women, and five children. In this small community they seem to experience the ills of life as well as elsewhere; for of the men, one was aged, another helpless, and a third a cripple, and one of the women was stone-blind.

On the day the Porpoise made Aratica, they discovered a large double canoe, with two mat-sails, which proved to be from Anaa, and bound to Aratica; there were sixteen persons on board, men, women, and children, together with their mats, calabashes, and large supplies of cocoa-nuts, &c., with which they declined parting. They had left Anaa, a distance of one hundred and thirty miles to the southward, the morning before. The canoe was a dull sailer, the brig leaving her far behind; she, however, reached the entrance to the lagoon during the day, and was warped through the passage into it.

The next day the Porpoise sailed for Tahiti, where she arrived on

* See Captain Belcher's remarks on Bow Island—Voyage around the World in 1836 and 1842.

the 21st of January. The appearance of things at Papieti seemed very much as they had been twelve months before; but some events had occurred during the year, which it will be as well to notice, as they will show how things are conducted, and give an insight into the conduct of royalty that was little dreamed of by us on our former visit.

On the 7th of May, one of the unhappy domestic feuds of the royal family threw the whole of Papieti into a ferment. The queen, followed by all her attendants, with great lamentations, rushed into a foreigner's house, to escape from her royal consort, who was pursuing her, uttering dreadful menaces. The facts of the quarrel, as derived from authentic sources, are as follows. As Pomare was on her way to Papieti from her residence at Papaoa, she was met by Pomare-taui riding furiously. Owing to the turn of the road, he did not perceive the queen's party in time to stop, and ran over one of the maids, knocking her down, and bruising her. Pomare, attributing the accident to his being intoxicated, began to abuse him in opprobrious terms. Enraged at it, he dismounted, and began not only to abuse, but also to strike her. Not content with this, he caught her by the hair, threw her down, and attempted to strangle her, which he was only prevented from doing by the attendants, who held him until Pomare fled for her life. Disappointed in overtaking her, he hurried to her new palace at Papieti, and vented his anger by demolishing the windows, breaking open her boxes and trunks, and tearing her wardrobe and finery to pieces,—thus doing injury to the amount of some two thousand dollars.

On the perpetration of this outrage, the queen at first declared her intention of summoning the judges and suing for a divorce; but soon changed her mind, and forgave her husband on his promising future good behaviour.

Although this may appear extraordinary conduct on the part of the king-consort, yet when one learns that the queen has been in the habit of giving him a sound cudgelling, even on the highway, his conduct is not so surprising, particularly as it is said that she administered her punishments with such earnestness and force that he would not be likely soon to lose the remembrance of them.

These broils in the royal family may, I believe, be justly charged to the foreign residents whom I have spoken of before as being the authors of them, for they administer to his depraved appetite in order to derive pecuniary advantage from these disturbances.

On the 11th of May, a great meeting of the district schools took place at Papaoa. This had been in prospect for several weeks, and every one was anxious for the event. The procession to the chapel was the great scene of display: here the orator of the day was to offi-

ciate, after which a feast was to be given by the queen to the chiefs and children.

As there was some novelty in this celebration, which was the first of the kind attempted, I will give a short description of it, derived from an eye-witness. First came the boys of Papieti and Papaoa, to the number of about two hundred, dressed in blue cotton coats and trousers, the seams bound with narrow strips of red and white cloth, the facings of the coats of many colours, and not unfrequently the coats themselves of diverse colours on the alternate sides: the skirts were also of different colours; others were to be seen with white jackets, and skirts of plaid cloth; on their heads they wore home-made cocked-hats, manufactured from bullock's-hide, on which were pasted representations of men, birds, beasts, fishes, &c., cut out of coarse paper or bark, and affixed with gum.

Next followed the young men and boys of Matavai and Pappino, similarly equipped. One among these attracted particular attention for his cap was decorated with two tiers of small looking-glasses, surmounted by a crown of feathers, a large bunch of which was stuck into an old tin nutmeg-grater, in front, as a pompoon, while by way of decoration was seen suspended on the left breast, by a blue riband, the polished bottom of a brass candlestick. Many of the larger boys had on epaulettes and swords; others were armed with sticks, and had epaulettes of shavings dyed yellow. A number of the older boys carried flags of tapa, stained and decorated with fanciful devices.

Next came all the female children, very neatly dressed, and the queen, Pomarē, with her attendant maids of honour, thirty in number, arrayed in white, with neat straw bonnets, profusely decorated with gay ribands and feathers: the larger proportion of them had short stockings on for the first time in their lives: each of them carried a silken scarf suspended to the end of a long reed, and the scarfs were of every variety of colour.

In the rear was Pomare-taui and the principal chiefs: the latter were dressed in military costume, and their clothes fitted so well that they might be termed well dressed.

Near the chapel, sentinels were posted to keep off the crowd: these had muskets, said to have been borrowed for the occasion, with which they saluted the queen as she advanced. At intervals in the procession were officers and the monitors of the schools, for the purpose of keeping order.

At the chapel, the services were conducted by Mr. Pritchard, who made an address of an hour's duration, which was listened to with great attention; after which the procession formed again, the queen

and her attendants leading the way to the feast. This was spread in a large house at Toanoa Point, which had been erected for the occasion, surrounded with a palisade, and gaily decked with flags, &c.

Near the entrance her majesty halted, and the children passed in review before her, the monitors shouting at the top of their voices, "God save our Queen Pomare, may her life be long!" to which the children responded, "Amen." They then formed in line and received the queen, taking off their caps and bowing low as she passed. About thirty foreigners were there to pay their respects: these she invited to dine with her, fine mats being spread for their accommodation. On the centre of these mats were placed fresh leaves of the hibiscus, on which native food was served, consisting of baked pig, taro, bread-fruit, &c., cooked in a variety of ways, with fermented cocoa-nut pulp: for sauce there were small calabashes of salt water, and for drink the young cocoa-nut milk: each person was furnished with a plate, but knives and forks were not supplied. Mr. Pritchard said a short grace, when her majesty set the example to the rest, and they all began with good-will.

When the royal party had finished, the schools by districts succeeded; and after all had done, the procession was again formed, and marched several times round the enclosure, chaunting, and going through a variety of gesticulations and manœuvres, with surprising accuracy, and in excellent concert.

Several speeches were now made by Mr. Pritchard and the chiefs, highly commendatory of the conduct of all, and laudatory of those present, including the foreigners, who returned their acknowledgments to the queen for the civility. Thus ended this day's feast.

The scene that took place the next day will serve to show the hostile feelings of which I made mention in my account of this island, as existing between the high chiefs and the queen's party.

A meeting had been called for the purpose of receiving the reports of the auxiliary societies, and the returns of contributions: the people were found assembled; her majesty was robed in a crimson silk, and her maids in close-fitting jackets of the same colour, with white skirts. Notwithstanding the religious tendency of the meeting, want of harmony interrupted its proceedings, and extended to such lengths at one time as to have had the appearance of terminating very seriously.

This misunderstanding arose from the circumstance of the Matavai people having dined with the queen the day before, instead of keeping an engagement they had made with the Anaan chiefs at another place. The latter were indignant that they should have been thus treated with neglect without apology.

The Matavaians, instead of coming into the chapel at the door appointed for them, chose that which had been appropriated to the Anaans, at the opposite end. The latter, imagining that this was done out of bravado, pushed back the foremost of the Matavaians and closed the door. The Matavaians, being under the impression that it was intended they should be excluded altogether, burst it open and rushed in, headed by Hitoti and Paofai. A scene of uproar and confusion immediately ensued. There were at this time more than five hundred persons in the chapel, and the men were striking at and wrestling with each other, tumbling over the benches in all directions, while those who did not fight were shouting and encouraging the combatants.

Several of the chiefs, with Messrs. Pritchard, Darling, Wilson, and others, among whom was old Taati, laboured in vain to restore peace and quietness: the affray continued; swords were drawn, muskets handled, and all appeared preparing for a bloody fight. The ladies of the mission present sought safety beyond the building; while all the native women made a general flight to the Broom Road.

Pomare and the king-consort behaved with great spirit: the former seized upon Hitoti; the latter, being of great strength and power, used his fist upon several of the ringleaders, knocking them down and putting the rest to flight.

The affray lasted half an hour, and terminated in the expulsion of the Anaans with several bruised heads. Upon quiet being restored, the ladies returned, when the Rev. Mr. Wilson, of Matavai, preached a sermon on "brotherly love," reproving them for their want of it, and for their disgraceful conduct. He expressed much sorrow that his congregation, of which he had been in charge forty years, should have behaved so ill, unmindful of the numerous lessons he had given them.

After the sermon, the contributions for the year were counted, and found to be about four hundred dollars: little more than half those of the preceding year. After this, a discussion took place as to the best mode of preventing the recurrence of a like scene, and also the course to be pursued in punishing the offenders.

In consequence of the disturbance, the feast which was to have taken place was dispensed with, and most of them retired to their homes; but it was afterwards understood, that a good many remained and kept up an uproarious night.

The friends of good order agreed in opinion that this day's disturbance would be rather beneficial than otherwise, by showing who were most desirous of preserving harmony; and perhaps would lead

to more caution in future. This, it seems to me, is rather an absurd argument as respects a community that have been acting under a constitution and laws, with their pious teachers, for the last fifteen or twenty years.

These disturbances manifestly arise from want of respect, on the part of the rival chiefs, for their queen and her husband: the latter are disposed to look upon the royal conduct as disgraceful, and as setting an example highly derogatory to their own standing and that of the chiefs and nation. They believe these difficulties to be owing to the intervention of foreigners, who take every opportunity to set the laws at defiance; and since the visit of the Venus, Captain Du Petit Thouars, foreigners have been still more active in taking advantage of the difficulties that these natives get into.

At the time the Porpoise visited Papieti, the queen was absent on a visit to one of the other islands of the group, accompanied by a large retinue of attendants, with nearly three hundred soldiers, dressed in queer and uncouth uniforms, somewhat similar to what has already been described.

Since our first visit, it was remarked by the officers, that a more efficient police had been established at Papieti: no sailors or riotous persons were allowed to be abroad after eight o'clock, without a written pass from the consul; and in case of being found without such a document, the offender was put in the stocks and kept there until a fine of two dollars was paid. This regulation was found necessary to preserve the peace of the village; and was said to be rigidly enforced.

The American property that has visited the ports of Tahiti during the last year, has, according to information derived from our consul, amounted to upwards of five millions of dollars.

Lieutenant-Commandant Ringgold having completed the duties, including the magnetic and chronometric observations he was charged with in visiting Tahiti, obtained water, refreshed the crew, and took his departure; but in consequence of the calms that prevailed, he found much difficulty in leaving the port.

Immediately on getting outside, they were influenced by a rapid current, setting to the southward. For three or four days they had very light winds or calms, and made but little progress on their route: the weather was exceedingly warm. On the 3d of February, they had a strong breeze from the northward and northwest; after this had continued for two days, it hauled to the northeast. Several of the crew were taken down with dysentery and fever.

The trade-wind was found at this season of the year in latitude 13° S.; and from what information I was able to gather, I am disposed to

believe that it cannot be calculated upon during the months of December, January, and February, south of latitude 14° S.

On the 6th of February, they made Flint's Island, situated in longitude 151° 48′ W., and latitude 11° 25′ 43″ S. It is of small size, being only one mile and a half in length, from north-northwest to south-southeast, and thickly wooded: high breakers extended off its point for some distance, and the surf was so high that it was deemed impossible to land with a boat, which is to be regretted, as these isolated islands are always extremely interesting. No inhabitants were seen. The current was found to be setting to the westward.

The next island searched for was one reported to have been seen by Captain Cash. It was discovered on the 8th, and proved to be a low sandy islet with a lagoon. It is well wooded, half a mile in diameter, of oval shape, with heavy breakers surrounding it. Landing was reported to be impossible, and no attempt was made. After determining its position to be in latitude 10° 05′ S., and longitude 152° 22′ 30″ W., they bore away for the position of Penrhyn Island. Lieutenant-Commandant Ringgold believed the island last spoken of to be Staver's Island, and by this name it is designated on our charts. At night the water was very phosphorescent: its temperature 78°.

The Porpoise next passed over the supposed site of Teinhoven Island, without seeing any signs of land, and thence northwest across two positions assigned to Penrhyn's, examining particularly that given by Captain Cash, in latitude 9° 58′ S., and longitude 158° 14′ W. No island, however, was seen. Proceeding further to the northwest, they, on the 15th, discovered land, which proved to be Penrhyn Island, about thirty miles west of its place on Arrowsmith's Chart. It was of the usual coral formation, low, and densely covered with trees, among which the cocoa-nut was the most conspicuous.

The vessel stood off and on all night, and on the 16th, at sunrise, canoes were discovered approaching the brig, in great numbers, many of them large. At seven o'clock, two came alongside, and others soon followed them. As the numbers of the visiters increased, they became more bold, and clambered up the sides, uttering loud and savage yells. They were the wildest and most savage-looking beings that had been met with, vociferating in a frightful manner, and accompanying their exclamations with the most violent contortions and gesticulations: they seemed frantic with excitement. These natives were quite naked, except a few who had on a small maro of cocoa-nut leaves.

The canoes contained from seven to sixteen men each, all equally wild. The noise they made was almost deafening; every individual talking earnestly in a language not comprehended by our party. The

tone of their voices was altogether discordant, at one moment high and shrill, and at the next sinking to a deep gruff base. In their harangues they slapped their thighs with great violence, and some wrung their hands and cried, protruding their eyes, and making frightful grimaces, reminding one strongly of maniacs in their utmost frenzy. They were not capable of fixing their attention for a moment on any one object, but with fitful rapidity they changed their regards from one thing to another.

Although they at first seemed unarmed, yet, upon a close inspection it was seen that they had weapons concealed in their canoes. A few of them succeeded in getting on board, and several articles were pilfered from the poop-deck, among them a pea-jacket, which was quickly and adroitly secreted in one of the canoes. A huge savage, with his eyes apparently starting out of his head, seized the man-rope, pulled the stanchion out of its place, and was in the act of passing it over the side when it was rescued from him. The islanders now became troublesome, and the order was given to clear the decks, which was quickly done by the crew with their cutlasses, but none of their visiters were injured. The moment they got into their canoes, large pieces of coral and shells were hurled on board with great force: two guns were fired over their heads, but they took no notice of them, and stood up in their canoes, brandishing their spears and yelling defiance. As their numbers were constantly increasing, Lieutenant-Commandant Ringgold thought it prudent to keep the brig under way, beat to quarters, and made preparations to meet attack, if it should be intended.

Three or four canoes were kept towing astern, and after many ineffectual and long-continued efforts, a trade was begun for their arms, necklaces, &c., which they parted with for iron, knives, cloth, and other articles. The first they designated by the name of "toke," and the meaning of several other of their words was ascertained. These islanders did not know the use of tobacco, but would receive any and every thing offered: on receiving the articles they immediately thrust on board the article sold, and appeared fair in dealing, though they proved themselves to be expert thieves.

Like other natives of Polynesia, they seemed a half amphibious race, diving for any thing dropped overboard with great ease and unconcern. They are of a light olive colour, though darker than either the Samoans or Tahitians, with fine black hair. The old men had beards and mustaches. They partook of the Samoan cast of feature, and are an equally athletic, erect, and finely-formed race.

Neither tattooing nor circumcision appears to be practised, but many of the men were observed to have lost their front teeth. The custom,

however, of scarifying the body and limbs appears to be general. Dress they had none, except a small maro. A few words were found to resemble the other Polynesian dialects, but neither the Hawaiians nor Tahitians could communicate with them.

Only two or three women were seen: they were delicate in appearance, of light complexion, and feminine cast of features, with long glossy hair, and beautiful white teeth. Dr. Holmes remarks that their mammæ were immensely large. The women from their gestures proved themselves to possess habits fully as unchaste and profligate as elsewhere in Polynesia.

From what was seen of these natives, they appeared a ferocious and quarrelsome set, paying little attention or regard to the old men, whom they treated with great roughness. On the occasion of a canoe being overturned by coming in contact with a larger one, and drifting astern, an old man seized hold of the larger canoe, to save himself from following his boat; but instead of any assistance being offered him, his fingers were struck until he relinquished his hold and was obliged to seek his own canoe.

Few evidences of rank were observed among them, and but one was seen who had the appearance of being a chief. This was an old man, who was seated in the centre of a canoe, paddled by fifteen natives, who were striving hard to overtake the brig. He wore a sort of mantle of plaited leaves over his shoulders, with a fillet of leaves on his head, and his whole bearing and conduct betokened authority. A bunch of what were apparently cock's feathers was also noticed.

Spears made of cocoa-nut wood, from six to eight feet long, were the only weapons seen among them, with the exception of pieces of coral.

For ornaments they had strands of human hair braided and decorated with finger-nails half an inch long, and two to each strand. Only two or three of them wore short mantles.

Their canoes were of a dark-coloured wood, with a light out-rigger, and without sails: they were ingeniously constructed of pieces sewed together with sennit; they leaked badly, however, and it was necessary to keep one man constantly baling. They were the largest that had yet been seen constructed on a low island. These people appear to have few tools, and the only articles of European manufacture that were seen was a plane-iron fastened to a stick, in the form of an adze, with a few blue glass beads.

The island was by estimate fifty feet high, and was found to be nine miles long, north-northeast and south-southwest, and about five miles wide, with an extensive lagoon, having in it many coral

patches: there is a boat-entrance into it. On the northwest side there appears to be a continuous village, with cocoa-nut groves throughout its whole extent, and the island is evidently very thickly peopled: the ferocity of the savages precluded the possibility of attempting a landing.

The island is believed to afford some tortoise-shell and pearls; but the ferocious and savage disposition of the natives would require traders to be strongly armed.

Lieutenant-Commandant Ringgold induced one of the natives to come on board for a hatchet, and directed him to draw the shape of the island with a piece of chalk; but he proved so wild and was so much amazed, that he did nothing but leap about, constantly uttering exclamations.

The communication with this island was too brief and imperfect to obtain any satisfactory knowledge of its manners and customs, and the disposition of the natives was averse to such intercourse: they appeared to have been seldom visited by vessels. It is believed that they have the domestic fowl among them, from its feathers having been seen as ornaments. The yam was also observed, but not the taro.

The brig supplied them with sweet-potatoes, pumpkins, and oranges, and made signs that they were to plant them, which they well understood, and engaged to do.

In exchange for the various articles we received, they were given knives, shawls, iron, hatchets, and cotton cloth.

It was remarked that they possessed the most astonishing talent for haranguing: some individuals continued for three quarters of an hour to hold forth in a tone which it seemed impossible for any individual to sustain for more than a few minutes, hardly stopping to take breath, and keeping up at the same time constant and violent gesticulations. These attracted no attention from their fellows, as each seemed bent upon doing his part, and tried to be equally uproarious.

It was now deemed impossible to extend the cruise to the Isles of Danger, agreeably to the instructions, on account of want of time and scarcity of provisions. This I regret, as I was very desirous that these islands, pointed out by Admiral Krusenstern, should be examined. This cruise would also have embraced the western positions of Flint's and other islands, as laid down on Arrowsmith's Chart. Compelled to forego this part of his intended task, he stood to the northward, for the purpose of fulfilling that portion of his instructions that lay in his route to the Hawaiian Group.

Between latitudes 3° S. and 5° N., the easterly current was found to prevail, as before observed by the squadron, between 5° and 10°

N. They then experienced light northeast winds, with strong equatorial currents, which with the strength of the northeast trades carried them to leeward, and prevented their making the Hawaiian Islands. This rendered necessary the curtailment of the rations to less than one-half. The officers, with proper spirit, shared the privations of the men, and tendered their stores to the commander for the common stock.

On their way north, New York Island was seen; and on the evening of the 24th of March, they anchored off Honolulu, after an absence of four months and nine days, only eight of which were passed in port.

The results of this cruise of the Porpoise were satisfactory to me, although it had been found impossible to carry out all the duties embraced in her instructions. The performance of those that were accomplished was attended with much fatigue from the adverse state of the weather, an obstacle I was somewhat apprehensive of, but not to the extent that they experienced. Had I been at liberty, or had time allowed, I should have gladly chosen another season for it. With suitable weather, there would have been ample time to accomplish the whole.

While on this cruise, they were more troubled with sickness on board the brig than at any other time during our absence: several cases of dysentery occurred, one of which, as before mentioned, proved fatal.

From the report of Lieutenant-Commandant Ringgold, relative to the Porpoise, and on examination of her bottom, the copper was found so far gone as to make it necessary to re-copper her. This cause of detention was unlooked for, and I had been in hopes to give her crew a short relaxation; but there was no opportunity for it. The necessity of a speedy departure admitted of no delay. She was accordingly hauled into the wharf, and they commenced heaving her down. The crew of the Vincennes assisted in these duties. Some few difficulties occurred, but by the uninterrupted and constant attention of all, the work was soon completed, and the brig again prepared for sea.

During this time the effect that the introduction of French wines and brandies had had upon the habits as well as morals of the lower orders, became very evident; and to avert this evil influence from the crews of both vessels became one of the most troublesome duties the officers had to perform. So great is this annoyance, that I think it sufficient to prevent the making of any repairs but what can be done at anchor in the harbour, and will ere long, I fear, prevent this port from being the resort of the whaling fleet, or even of casual vessels.

For this reason I would recommend Lahaina and Hilo Bay, to those vessels which only require refreshment, as being the preferable stopping-places.

During this time, observations were had for the rating of our chronometers, and many other duties were performed, besides finally settling up the accounts of the squadron, which occupied us until the 3d of April, when the Vincennes left the harbour and anchored in the outer roads, leaving the Porpoise to follow as soon after as possible.

Although I have mentioned various productions of the soil of the Hawaiian Islands, in describing the several districts that were visited, yet it may be as well to record in this place, those we found indigenous to the islands. They consist of the following important plants.

Taro (Caladium esculentum), of which they have thirteen varieties: ipulemo akea is that most cultivated. It is planted at all seasons of the year, usually in patches which are also used as fish-ponds. All parts of the taro are used: the leaves form, when cooked, what is termed "luau," and from this the natives give the name of luau to every thing cooked with them: as luau pig, or luau dog. The taro of the upland is the same kind as that grown in the water.

The yam (Dioscorea), uhi of the natives, is not so plentiful nor so good, at this group, as we found it on the islands in the South Pacific.

Arrow-root (Tacca): this already begins to form an article of commerce, and might be much improved, both by cultivation and in its preparation, which ought to be taught to the natives. It must eventually form an important object to those who trade with this group.

Sweet-potato: this vegetable some think may have been introduced by the Spaniards. There are thirty-three varieties of it, nineteen of which are of a red colour, and thirteen white.

Sisymbrium grows about Honolulu, and is used by the residents as a salad.

Fern-root (Blechnum), the core of which is eaten by the natives.

Cocoa-nuts are plentiful, but little used.

Papaw apple (Carica papaya) is abundant.

Rose apple (Eugenia) is plentiful, and a very fine fruit.

Bananas, plantains, abundant.

Candle-nut (Aleurites triloba), tutui of the natives. The oil of this nut is becoming an article of commerce, and is said to answer for painting.

Bread-fruit (Artocarpus incisa), of which there is only one species.

Pandanus, "lauhala" is one of the most useful trees they have: the leaves are used for making baskets, mats, and for thatching their houses. The women make necklaces from the nuts.

Hibiscus tiliaceus, "haw," also serves many purposes, among which is the manufacture of ropes: its wood being light and tough, is used for out-riggers, and for sticks to carry burdens on.

Acacia, which is used in a variety of ways.

The black mustard has become naturalized.

Turmeric (Curcuma) is also found, I understood, in considerable quantities on Maui, of which some has been procured for sale, and was pronounced to be of excellent quality.

Indigo is found growing wild, particularly in Hawaii. Almost all kinds of foreign fruits and vegetables have been introduced, and with but few exceptions, succeed well: this is also the case with many ornamental trees, shrubs, and plants.

It was observed by our botanists, that the character of the flora of the Hawaiian Islands is similar, in many respects, to both the Indian and Polynesian, yet in some particulars it bears a strong contrast to the southern Polynesian islands. This difference consists in the absence of all species of Ficus: the small varieties of trees are also absent, although there are some extensive forests. Orchideous plants are extremely rare, and the epiphytic species wanting altogether, while the Compositæ are much more abundant than in the more southern islands.

In the ferns, however, the difference is most obvious, and consists in the predominance here of different genera and tribes.

The absence of American plants was also observed here: they did not appear to be much more numerous than at the southern islands, notwithstanding what has been generally reported.

The most remarkable feature of the flora is the woody Lobeliaceæ; these are in great variety, and constitute several distinct genera.

It is believed there are more than fifty genera of different families peculiar to these islands; and with regard to species, it is thought all that are unequivocally indigenous, will be found strictly confined to this portion of the globe.

The botanical regions may be divided into that of the sea-coast, the wooded district below the altitude of six thousand feet, and a third division at a still higher level. Alpine plants do not occur here. For further remarks on the interesting botany of this group, I must refer to the Botanical Report of the cruise.

Having spoken so much of the climate of the different districts, it will only be necessary here to take a general view of that of the whole Hawaiian Group. The monthly mean temperature ranges between 70° and 78°. This remark applies to the coast almost exclusively; for, as would naturally be expected, on higher elevations the thermo-

meter stands lower. The daily variation is seldom more than ten or twelve degrees. The barometer does not usually vary much from 30·00 in. It will have been perceived that there is a great difference in the degree of moisture which exists within a few miles; indeed, I might say, that within a few rods a different climate often prevails: in this respect, there are few places in the islands so remarkable as the immediate vicinity of the town of Honolulu.

While parts of the town are rarely visited by showers, other portions of it are noted for the frequency of their occurrence. In passing from the town up the valley of Nuuanu, rain becomes more frequent, until at last the superabundance of moisture is quite annoying.

There is a great variety of opinions relative to the healthfulness of the climate, and it certainly has opposite effects upon the feelings of different persons. Upon the whole, the leeward side of the island is to be preferred as a place of residence, although the quantity of dust renders it at times very uncomfortable, for it seldom happens that there is sufficient rain to lay it; while on the weather side the frequency of showers is much complained of. In some parts, it is said, a day never passes without rain.

With respect to the force of the trade-wind, which generally prevails for nine months of the year, it is at times, extremely unpleasant, and blows over the high land of the islands with great fury, sometimes becoming dangerous to vessels in the neighbourhood. This remark applies particularly to the small islands: the larger ones have alternate land and sea breezes, which moderate their temperature, and usually the winds are not so violent. The most delightful part of the twenty-four hours is the night, and I have never experienced such pleasant ones in any other part of the globe. Though warm, there is an elasticity in the air that never exhausts. In the winter season, from December to March, the trade-winds for the most part cease; calms take their place, and occasionally a southwest gale is experienced for two or three days. This is generally preceded by a heavy swell setting from that quarter, and a great increase in the surf. This wind is accompanied by heavy rain: we did not experience it ourselves, except while on the mountain; but the residents informed me that it was extremely uncomfortable, and instead of the elasticity usually felt in the northeast wind, they experienced a heavy dull feeling, relaxing the whole system. At certain seasons of the year there are heavy dews; exposure to them, however, is not deemed injurious.

The diseases of the climate are few, and generally of a mild type, and from the report of physicians long resident, the islands may be considered healthy for foreigners. The diseases that are most preva-

lent are fevers, diarrhœas, inflammations, dropsy, catarrhs, ophthalmia, asthma, dysentery, rheumatism, scrofula, and venereal.

These diseases, notwithstanding the absence of apparent causes, are frequent among the natives; but many of them are brought on by living in their grass-houses, which are by no means impervious to the weather, and are consequently often wet. Another frequent cause is the partial decomposition of the grasses with which they are thatched on the roof and sides. In passing into them I invariably experienced a smell of mustiness, and a mouldy appearance is frequently seen about their mats and tapas. From the openness of the houses they of course are subject to all the atmospheric changes, which must naturally induce disease by the constant checking of perspiration, a cause that is rendered still more active by their sleeping on damp ground.

Ophthalmia is much complained of, particularly about Honolulu, Lahaina, and some places on Kauai: this might be ascribed to the quantity of dust that is daily put in circulation by the trade-winds, were it not that the disease is equally prevalent where this cause does not exist. I have heard it suggested that the prevalence of the strong trade-winds, with the salt spray driven by them, may be another cause.

Cutaneous diseases are usually caused by the want of cleanliness; for, although the natives are in the habit of bathing frequently, yet, from my observations of their customs and dwellings, I cannot but deem them a filthy people: the tapa and cotton clothing of both sexes is worn until it is fairly in rags, and has become so dirty as to be disgusting: they seldom if ever think of a change of raiment. Their houses are shared with their domestic fowls, dogs, and pigs, and are rarely free from the dirt that so many denizens must produce. One sees that most filthy disease, the itch, not unfrequently affecting the larger portion of the inmates of a house, and I could not help wondering that so little improvement had manifested itself among them, in their habitations and mode of living.

My friend, Dr. Judd, assured me, that hepatic diseases were extremely rare, and that this ocean seems to be peculiarly exempt from all biliary diseases. The ground of this belief, is the almost total absence of them on board our whaling fleet. The physicians of Honolulu and Lahaina, where these ships often stop in large numbers, assured me that they seldom heard of a case. These islands are indeed little subject to these diseases, or the typhus, bilious, and yellow fevers, which prevail so extensively on the continents. They are also free from the measles, small-pox, &c.

The diseases of children are frequent, but may chiefly be accounted for by the want of cleanliness and attention from their parents: hence

the great mortality among them, which has been before spoken of. They are also allowed to eat the most indigestible food, and from this and other causes are frequently seen covered with excoriations and ulcers, that are truly horrible.

A somewhat similar disease to that which we have observed in the other Polynesian islands, exists here under the name of the poupou; but it is by no means so violent, nor did we see any cases of so disgusting a character as those heretofore described: it is very much confined to the young.

In speaking of the native diseases, I cannot but think that many of them are brought about by the habit of eating their food so much fermented, until indeed at times it has become disagreeable to the smell: in this state, however, it is always preferred. I do not remember having observed this to be the case in any other of the Polynesian islands, as respects their vegetable diet.

Epidemics are not frequent, although a dreadful one prevailed in 1803 and 1804, which is said to have destroyed a large number of the inhabitants, and visited all the islands.

The whooping-cough was introduced in some way, and spread itself throughout the group.

The influenza prevails both during the winter and spring, but is only fatal to the old and weak.

The native doctors, if such they may be called, frequently aggravate disease by their nostrums. Dr. Judd related to me many instances of their quackery, which not unfrequently ended in death. The native remedies, however, are of some value, if they had knowledge enough properly to apply them; but without this intelligence, they are at all times more or less dangerous: they consist of the candle-nut (Aleurites triloba), the bitter calabash (Cucurbita lagenaria), the seeds of the castor-oil nut, a species of Ipomœa, and many other powerful herbs, of which they make strong decoctions: these are often administered by enema, and their operation frequently brings on great agonies and death. To these are added incantations, which of themselves are quite enough to kill. But, worst of all, it often happens that those who are well are induced to take preventive remedies for future sickness, which are said in some cases to be more severe than the constitution of the patient can bear.

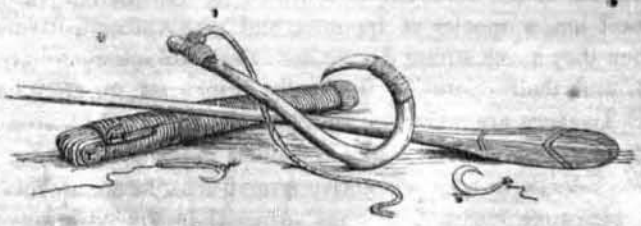
Of surgery the Hawaiians know nothing whatever, nor have they much occasion for its practice, for few of them receive injuries sufficient to call for the application of that branch of the healing art.

The physicians attached to the mission, of which there are several, do incalculable good in alleviating distresses and superintending their

wants: all this is done gratuitously, and I think seems little esteemed, however strange it may seem, by the natives. I very much doubt the policy of giving their services and medicines free of charge, for the natives are abundantly able to pay, and I make no doubt would do so if they felt they could thus command the services of the physician whenever needed.

This is a part of the organization of the American Mission that is highly commendable: in no other mission is it found. It not only alleviates the cares of the missionaries themselves, in their families, but adds greatly to their success, and power of doing good. One of the great difficulties in practising medicine among the natives, is their heedlessness and inability to restrain their appetites, both as respects the patients themselves, and their families and friends: they often disregard all injunctions as to diet, nor do they exercise any control whatever over the sick. The natives, however, are adepts in alleviating pains, as I myself can testify: the practice of the loomi-loomi seldom fails in assuaging headache and pains in the limbs; but this is not practised by those who are the disciples of Esculapius.

Although the Hawaiian Islands have been much vaunted as a resort for invalids, I am not satisfied that it would be beneficial to visit them, unless the person afflicted would, on choosing the most suitable abode for his recovery, confine himself to the circumscribed limits. Few comforts could be looked for, unless the patient were to become an inmate of some one of the missionaries' or respectable residents' houses, where they will be sure to enjoy all the kind attentions and the care of another home.



ENRHYN ISLAND FISH-HOOKS, ETC.

CHAPTER IX.

CONTENTS.

DEPARTURE FROM OAHU—SICKNESS OF THE CREW OF THE PORPOISE—SEARCH FOR UNKNOWN ISLANDS—CAPE DISAPPOINTMENT—BAR OF THE COLUMBIA RIVER—DETERMINATION TO PROCEED TO THE NORTHWARD—DANGER OF THE VESSELS NEAR CAPE GRENVILLE—WRECK OF A JAPANESE JUNK—INDIAN CANOE—STRAITS OF JUAN DE FUCA—INDIANS VISIT THE SHIP—THEIR APPEARANCE—MODE OF TAKING WILD-FOWL—PROTECTION ISLAND—PORT DISCOVERY—INDIANS—THEIR MANNERS, ETC.—THEIR CANOES—THEIR WARS—GENERAL ORDER—WOODS AROUND PORT DISCOVERY—INDIAN MESSENGER—INDIAN BURIAL-PLACES—DEPARTURE FROM PORT DISCOVERY—PORT TOWNSEND—PORT LAWRENCE—APPLE-TREE COVE—ADMIRALTY INLET—PUGET SOUND—ANCHORAGE AT NISQUALLY—VISIT FROM MR. ANDERSON AND CAPTAIN M'NIEL—SCENERY AT NISQUALLY—PLAN OF OUR OPERATIONS—VISIT TO FORT NISQUALLY—MISSION—PUGET SOUND COMPANY—MOUNT RAINIER—PRESENT OF BULLOCKS FROM MR. ANDERSON—STEAMER BEAVER—LIEUTENANT JOHNSON'S PARTY SET OUT—DEPARTURE OF CAPTAIN WILKES'S PARTY—RIVER NISQUALLY—CAMP AT SHUTE'S RIVER—BUTE PRAIRIE—CHICKEELES RIVER—COWLITZ FARM—MR. FORREST'S HOSPITALITY—CLIMATE OF COWLITZ—SIMON PLUMONDON—NATIVE MODE OF DRESSING LEATHER—EMBARKATION ON THE COWLITZ RIVER—ITS SHORES—SUPPOSED BEDS OF COAL—ENTRANCE INTO THE COLUMBIA RIVER—MOUNT COFFIN—OAK POINT—ST. HELEN'S REACH—TONGUE POINT—ASTORIA—EXCURSION TO POINT ADAMS—MISSIONARIES AT CLATSOP—CLATSOP VILLAGE—PUNISHMENT OF A MURDERER—VOYAGE TO VANCOUVER—TONGUE POINT—INDIAN MEDICINE-MAN—COFFIN ROCK—INDIAN MOURNING—WARRIOR POINT—CALLAPUYA—VILLAGE OF VANCOUVER—FORT VANCOUVER—DR. M'LAUGHLIN—COMPANY'S ESTABLISHMENT—BUSINESS TRANSACTED AT VANCOUVER—CONDITION OF THE COMPANY'S SERVANTS AND DEPENDANTS—HOSPITABLE RECEPTION OF THE MISSIONARIES—HALF-BREED CHILDREN—MORALS—CROPS—FARM—DAIRY FARM—OLD FORT VANCOUVER—GRIST AND SAW MILLS—MANUFACTURE OF AXES—SUDDEN RISE OF THE RIVER—PARTY OF YOUNG AMERICANS.

CHAPTER IX.

NISQUALLY AND COLUMBIA RIVER.

1841.

On the 5th April, 1841, we had completed our repairs, and made arrangements for the transportation of our stores to the Columbia river by the brig Wave. The Porpoise was ordered to leave the harbour in the afternoon, and anchor near the Vincennes in the outer roads. Towards sunset we took leave of our kind and numerous friends, and the same night at 11^h 30^m, the signal was made for getting under way. We soon afterwards made sail, and steered to the westward, in order to pass between the islands of Oahu and Kauai.

Light winds prevailed for several days, during which we made but little progress. The second day after our departure, Lieutenant-Commandant Ringgold made signal that the rudder of the Porpoise was out of order, and would not work. We therefore hove-to, and sent the carpenters of the Vincennes on board the Porpoise, who returned in a short time and reported that it was all right. The winds for these first few days were northerly, and therefore not only light, but contrary.

During this time the crew of the Porpoise was much afflicted with sickness. This, according to the report of Assistant-Surgeon Holmes, was caused by the constant labour which the men had undergone, and to their dissipation while in port. The cases were of a very serious character: four of them took the typhoid fever, and what was singular, seven of the persons affected were petty officers. The worst case was that of the carpenter, who had probably undergone more fatigue than any other person.

On the 9th, at the request of Dr. Holmes, Dr. Fox was sent on board the Porpoise to hold a consultation.

In all these cases there was much fever, attended with constipation and a tendency to inflammation of the bowels. Until the 15th the state of the sick continued critical, but, through the perseverance, attention, and skill of Dr. Holmes, the disease was finally conquered. As the sick became convalescent, I was desirous of having them removed to the Vincennes, but the medical gentlemen were of opinion that it was not expedient to transfer them to that vessel, lest the disease might be of an infectious character.

During all this time the crew of the Vincennes enjoyed remarkably good health.

On the 12th, in latitude 25° N., longitude 160° W., we found the current setting north-northeast. By the 16th, the temperature fell to 64°, which we felt as exceedingly cold.

In proceeding to the north, I was desirous to pass over a portion of the sea that had not been examined by preceding navigators, particularly as it is confidently believed by many persons in the Hawaiian Islands, that land existed in the neighbourhood where we now were. I was, therefore, anxious to make search for it in such places as had not been explored by others, and I had procured a chart, showing the tracks of Portlock and others. This search was made as closely as time and opportunity permitted, but ineffectually. I am, however, far from satisfied that land may not exist in this quarter, for we in fact did little in the way of exploration, in consequence of the foggy and hazy weather which limited our view.

The part of the Northern Pacific which lies between the latitudes of 33° and 43° N., and longitudes of 140° and 150° W., is particularly subject to fogs and thick weather, and there are few places where indications of land are stronger: thus, numerous birds were seen, of species found only in the vicinity of land. I therefore feel satisfied that although we failed from want of sufficient time for a thorough search, land will be found at some future day within the space just defined.

On the 19th of April we had a sudden change of the wind from the southward to the northwest, accompanied with a heavy head sea. The temperature fell ten degrees within half an hour: the barometer stood at 30·20 in. On the 20th, a hawk was taken, while regaling himself upon a small land-bird. Many flocks of small birds were seen, as well as frigate-birds and quantities of villula, which gave the ocean the appearance of being covered with cinders. They were

quite as numerous as described by Vancouver, and continued to be seen in large quantities for the distance of six hundred miles.

On the 23d April, I changed my course again, to avoid running over that portion of sea which had been already traversed by others, and on that day we saw several flocks of small birds, like snipe in appearance. The wind favoured us, and carried us forward at a rapid rate.

In latitude 42° N., longitude 149° W., we lost sight of all the villula, and the thermometer fell to 51°. At night we had a heavy dew, and the temperature was as low as 46°. We now experienced a strong current setting to the southward and eastward. Petrels and albatrosses were seen in abundance.

On the 28th of April, at 6 A. M., we made Cape Disappointment, which we soon came up with. A heavy sea, caused by the strong winds that had prevailed for several days, was running. I, notwithstanding, stood for the bar of the Columbia river, after making every preparation to cross it; but on approaching nearer, I found breakers extending from Cape Disappointment to Point Adams, in one unbroken line.

I am at a loss to conceive how any doubt should ever have existed, that here was the mouth of the mighty river, whose existence was reported so long before the actual place of its discharge was known, or how the inquiring mind and talent of observation of Vancouver could have allowed him to hesitate, when he must have seen the evidence of a powerful flood of fresh water contending with the tides of the ocean, in a bar turbulent with breakers, in turbid waters extending several miles beyond the line of the shore, and in the marked line of separation between the sea and river water. Such appearances must be constant, and if seen, the inferences could hardly be questionable, that the great river of the west poured itself into the ocean at this point.

Mere description can give little idea of the terrors of the bar of the Columbia: all who have seen it have spoken of the wildness of the scene, and the incessant roar of the waters, representing it as one of the most fearful sights that can possibly meet the eye of the sailor. The difficulty of its channel, the distance of the leading sailing marks, their uncertainty to one unacquainted with them, the want of knowledge of the strength and direction of the currents, with the necessity of approaching close to unseen dangers, the transition from clear to turbid water, all cause doubt and mistrust.

Under such feelings I must confess that I felt myself labouring; and, although I had on board a person from the Sandwich Islands who pro-

fessed to be a Columbia river pilot, I found him at a loss to designate the true passage, and unable to tell whether we were in a right way or not. I therefore, at once, determined to haul off with the tide, which was running ebb with great rapidity, and which soon carried us back into the blue water of the ocean, to wait there until the sea on the bar had in some measure subsided.

The land near the mouth of the river is well marked, and cannot readily be mistaken, and on the summit of the two capes are several lofty spruce and pine trees, which the officers of the Hudson Bay Company have caused to be trimmed of branches nearly to their tops. These serve as conspicuous marks, but our pilot was ignorant of their relation to the channel.

Our passage from Oahu had been no more than twenty-two days, which is unusually short. The first part of it, until we passed in latitude 28° N., beyond the influence of the trades and variables, had been, as already stated, attended with light and contrary winds.

The temperature of the air had fallen from 78° to 43°, and that of the sea to 46°.

During the night we had boisterous weather, and the ship was very uncomfortable, in consequence of her shipping water in considerable quantities through the hawse-holes, which flooded her gun-deck. As, in conformity with my determination to wait until the surf on the bar should have subsided, the anchors would not be needed for some days, I ordered the chain cables to be unbent, which would permit the hawse-holes to be closed.

During the night, I took into consideration the loss of time that must arise from awaiting an opportunity to cross the bar, and after due reflection came to the conclusion that it would be better to proceed at once to the Straits of Juan de Fuca, and there begin my work on this coast. At daylight, therefore, (bearings of the cape had been taken the night previously and our position carefully calculated, and a course steered to run along the coast,) I spoke the Porpoise, and immediately bore away to the northward. Signal was then made to her to follow. Both vessels then proceeded at the rate of eight or ten miles an hour.

The weather was very thick, and the wind south-southwest. At ten o'clock the Porpoise was close under our lee-quarter. I was myself below, when I was informed by the officer of the deck that we had entered disturbed water. A number of birds were around the vessels, and a cast of the lead gave fifteen fathoms. By the time I reached the deck, land was seen through the haze, close aboard.

The ship was at once brought by the wind and all the studding-sails taken in.

The same discovery was made on board the Porpoise, and she was in the act of communicating it by signal. Neither of the vessels now had much water under their keels, and both were in imminent danger. We owed our safety to the good qualities of the vessels, which were on this occasion very evident, and to the conduct of the officers and crew, whose promptness and attention to the execution of the orders deserve my highest praise, and reflect great credit on their discipline.

Our situation caused me much anxiety for a short time; and this was one of the many hair-breadth escapes from wreck, incident to this cruise. The difficulty of our position was enhanced by the heavy sea we had to encounter, into which the vessels plunged so heavily as to endanger our spars. The same cause had prevented us from bending the chain cables, so that we had no means of anchoring until after we had passed the most dangerous points.

We had several casts of the lead in five, six, seven, eight, and nine fathoms.

In examining into the cause of our being found so unexpectedly in this position, I am led to believe that there is a current that sets upon the coast: and in this I was confirmed by trials made afterwards.

Soon after we were out of danger, it cleared up sufficiently to give us a view of the land, which proved to be Point Grenville of Vancouver, and Destruction Isle. The latter is easily known by some remarkable perforations through a rock near it.

Near Point Grenville, several accidents have happened, both to English and Russian vessels; and a boat's crew belonging to one of the latter, was inhumanly massacred by the Indians.

It was also near this spot, that the very remarkable occurrence of the wreck of a Japanese junk happened in the year 1833. The officers of the Hudson Bay Company became aware of this disaster in a singular manner. They received a drawing on a piece of China-paper, in which were depicted three shipwrecked persons, with the junk on the rocks, and the Indians engaged in plundering. This was sufficient to induce them to make inquiries; and Captain M'Niel was despatched to Cape Flattery to obtain further information, and afford relief, should it be needed.

He had the satisfaction to find the three Japanese, whom he rescued from slavery; and the Hudson Bay Company with characteristic liberality, sent them to England. Thence they took passage to China, where I understand they still remain, in consequence of their being unable to obtain a passage to Japan

As a memorial of this extraordinary incident, porcelain of Japanese manufacture, which was purchased from the Indians who plundered the junk, was seen in possession of Mr. Burnie, the agent of the Hudson Bay Company, at Astoria.

On the 29th and part of the 30th, we had light airs and calms, so that we made little or no progress. In the afternoon of the 30th, the breeze freshened and carried us briskly to our destination. While thus proceeding, a large canoe, containing about twenty Indians, endeavoured to board us; but I was too anxious to reach an anchorage to regard their desires.

I was in hopes that the wind would continue fair, and enable us to have reached Neah Harbour ere night; but as we approached Cape Flattery and opened the Straits of Fuca, it became contrary. We were therefore compelled to pass the night, which proved dark and rainy, under way. We had but little knowledge of the dangers that might surround us; but our frequent tacks throughout the night showed us that but few existed at the mouth of the straits.

The coast of Oregon, to the south of Cape Flattery, is rocky, much broken, and affords no harbours, except for very small vessels. It may therefore be considered as extremely dangerous, and particularly on account of its outlying rocks. The soundings on this coast, however, I afterwards discovered, may serve as a sure indication by which danger may be avoided, and safety may be insured by not approaching the coast into soundings of less than seventy fathoms.

On the morning of the 1st of May, we found ourselves well into the straits; and as I proposed to defer the survey of this part of them until my return, we hastened to reach Port Discovery, where we anchored at half-past 6 P. M. on the 2d of May; just forty-nine years after Vancouver, pursuing the track of De Fuca, had visited the same harbour.

The Straits of Juan de Fuca may be safely navigated. The wind will for the greater part of the year be found to blow directly through them, and generally outwards: this wind is at times very violent. The shores of the strait are bold, and anchorage is to be found in but few places. We could not obtain bottom in some places with sixty fathoms of line, even within a boat's length of the shore.

The south shore is composed of perpendicular sandy cliffs, that run back into high and rugged peaks, and is covered with a forest of various species of pines, that rises almost to the highest points of the range of mountains. The highest points themselves are covered with snow; and among them Mount Olympus was conspicuous, rising to an altitude of eight thousand one hundred and thirty-eight feet.

The north shore is rocky, and composed, as far as we could examine it of conglomerate, and in some few places of a reddish granite.

In the morning we were boarded by a large canoe, with Indians who spoke a few words of English; and we had occasion to notice the wide difference between them and the Polynesians, both in language and appearance. No contrast can be more striking than this. They seemed to have scarcely any idea of decency, and to be little less elevated in their moral qualities than the Fuegians.

The principal man of the party was dressed in a coarse coat of red cloth, with the Hudson Bay Company's buttons, and corduroy trousers. He had neither shirt, shoes, nor hat, although the rain was falling fast. The others were habited in blankets or skins, and wore conical grass hats, resembling in shape those of the Chinese.

The first inquiry was, whether we were Boston or King George's ships, by which terms they distinguish Americans and English.

They brought with them for sale some fish and a few furs. On the latter they appeared to set a high value, and were not a little disappointed when they learned that we had no desire to purchase them. They readily parted with their fine fish for a few fish-hooks and a little tobacco.

These Indians were short, thick-set, bow-legged, muscular, and seemed capable of enduring great fatigue. The most obvious peculiarity was the shape of their heads, which appeared to have been compressed, both before and behind, so as to give them the form of a wedge. Their cheek-bones were high, and their eyes, which were fine, were set wide apart: their colour was a light copper. The oblique eye of the Chinese was not uncommon, and they had long flowing hair: aquiline or Roman noses were prevalent. Their countenances wore an expression of wildness, and they had, in the opinion of some of us, a melancholy cast of features.

It was amusing to us, who had no very exalted opinion of the Feejeeans, to observe the contempt our prisoner Vendovi entertained for these Indians, which was such that he would hardly deign to look at them.

They manifested little curiosity, which was not excited even by the appearance of a ship so much larger than any they could have before seen, armed and manned in a manner so superior to what is usual in the vessels that visit them for traffic.

They wore but few ornaments, and that on which they seemed to set the greatest value was a small silver tube stuck through the cartilage of the nose. A few of them had small brass bells suspended around the rim of their ears.

Their language was one of the most disagreeable we had yet heard, full of gutturals, and the sounds *klick*, *kluck*, and *tsck*.

Late in the afternoon, we reached and weathered the low sand-point, called by Vancouver New Dungeness, and stood over for his Protection Island. We passed within less than a quarter of a mile of the point, where we had three and a half fathoms water.

After passing that island, an extensive bay opened, on whose shores we saw the long poles mentioned by Vancouver, and represented in his book. The use of these he was unable to discover, but the Indians informed us that they were for the purpose of suspending nets for taking the wild-fowl that frequent these shores in great numbers. On these poles the nets are set up at night, at which time the geese search these grounds for food: fires are then lighted, which alarm the birds, and cause them to fly against the nets, by which they are thrown upon the ground, where, before they have time to recover themselves, they are caught and killed.

The description of Vancouver is so exactly applicable to the present state of this port, that it was difficult to believe that almost half a century had elapsed since it was written. The beautiful woods and lawns of Protection Island, in particular, exist unchanged. The lawns still produce the same beautiful flowers and shrubs, and although closely surrounded by dense woods, do not seem to have been encroached upon by their luxuriant growth, although there is no apparent reason why it should not long ere this have overrun them.

Our anchorage in Port Discovery was close to the shore, in twenty-seven fathoms water. It is a well-protected harbour, and very convenient of access, but the depth of water and the high precipitous banks, would almost preclude its being made the seat of a settlement.

The name of Port Discovery was given by Vancouver. It is eight miles long, two miles in average width, and its points, which terminate in low sandy projections, interlock each other. The shores are supplied with large quantities of shell-fish. Protection Island covers it completely to the north, and would render it easily defensive against the most formidable attack. The only objection to it as a harbour is that already spoken of, the great depth of the water, which in the middle is no where less than forty or fifty fathoms, and is often as much as sixteen fathoms close to the shore.

The Indians whom we found dwelling here are of the Clalam tribe. They occupy a few miserable lodges on one of the points, and are a most filthy race, so much so indeed that to enter their lodges is absolutely disgusting. They are no more than a few rudely-cut slabs, covered in part by coarse mats.

There is no permanent settlement of Indians at Port Discovery, and during our stay we had visiters from the various neighbouring tribes. The two sexes of all who visited us were dressed almost alike, and can hardly be distinguished in external appearance from each other: both wear their hair long, and both are equally dirty. All the adults have their heads much flattened, which appears to be performed as it is among the more southern tribes, by compressing the frontal and occipital bones by several thicknesses of bark, until they become set, and the head takes a permanent shape.

Their children seem to give them but little trouble: in their infancy they are tied to a piece of bark, which is hung to a tree or pole, where it is kept in motion by a string fastened to the toe of the mother, as is represented in the wood-cut at the end of the chapter.

These Indians appear to have but few of the comforts, and barely the necessaries of life. They live principally on fish, shell-fish, the cammass-root, and potatoes. They have muskets and bows and arrows: the bows are short and small, but possess great strength, and are made of yew: their arrows are pointed with iron or bone.

They also possess large sheath-knives, which they procure from the Hudson Bay Company, in exchange for furs, and from the same source they obtain blankets. For these articles the Company has a regular tariff of prices, which however, is not adhered to when a Boston ship arrives. The natives are sufficiently alive to the advantages they derive from competition, and boasted that in such cases they frequently obtained four or five blankets for articles that usually bring them only one. It was the hope of so advantageous a traffic that caused so much satisfaction when we arrived, and the failure of this hope produced, as we have seen, no little disappointment.

They are not, however, wholly dependent on this trade for their clothing, for some of the tribes manufacture a sort of blanket from dogs' hair, which is substantially woven.

During our stay at Port Discovery, they supplied us plentifully with venison, ducks, geese, salmon, a large species of cod, flounders, herrings, and crabs. They also brought shell-fish, among which were the common clam, (the quahog of the Eastern States,) mussels, and small oysters.

Besides the ornaments we saw among our first visiters, some wampum-belts and strings of dentalium-shells were observed. They have a great passion for carved pipes, for which they cultivate small quantities of a species of tobacco. They also smoke the leaves of the dwarf Arbutus mixed with their tobacco: these are powerful astringents, and are also frequently chewed.

The colour of the younger natives is almost white, so much so as to show the blush on the cheek; and some of the women would with difficulty be distinguished in colour from those of European race. The women are to be seen weaving mats, after the Chinese fashion, of bullrushes (Scirpus lacustris), which they place side by side and fasten together at intervals. These are used, as has been stated, to cover the framework of their lodges.

Instead of the silver tube which has been spoken of, the women have a white bone stuck through the cartilage of their noses. This is kept bright, and may be said to be the only clean thing about their persons. The whole burden of domestic occupation is thrown upon them, for the men are to be seen lounging about the whole day in the sun, and spend their nights in gambling.

The canoes of this region differ from any thing we had seen on the voyage. They are made from a single trunk, and have a shape that may be considered elegant, and which is preserved from change by stretching or warping by means of thwarts. The sides are exceedingly thin, seldom exceeding three-fourths of an inch, and they are preserved with great care, being never suffered to lie exposed to the sun, for fear of rents and cracks. When these do occur, the canoe is mended in a very ingenious manner; holes are made in the sides, through which withes are passed and pegged in such a way that the strain will draw it tighter; the withe is then crossed, and the end secured in the same manner. When the tying is finished, the whole is pitched with the gum of the pine. This is neatly done, and answers the purpose well.

CANOE OF OREGON INDIANS.

Although the natives we saw at Port Discovery appeared to be a peaceable race, the neighbouring tribes are frequently at war, and spoke of scalping, and other exploits, as practised by our own aborigines.

Apprehensive that difficulties similar to those we met with in the Feejee Group might possibly occur with these Indians, I deemed it expedient to issue the following order.

GENERAL ORDER.

The undersigned informs the officers and crews under his command, that the duties upon which they are about to enter will necessarily bring them in contact at times with the savage and treacherous inhabitants of this coast; and he therefore feels it his duty to enjoin upon them the necessity of unceasing caution, and a restrictive and mild system in all their intercourse with them.

In my General Order of July 13th, 1839, my views are expressed fully respecting our intercourse with savages, and I expect that the injunctions therein contained will be strictly regarded.

With a knowledge that many of the misfortunes that have befallen previous voyagers on this coast, have arisen from an unrestrained and unguarded intercourse with the natives, he deems it important to order officers in charge of boats, and those having men under their direction, to make it their especial duty to govern them so as to avoid any disputes or maltreatment of the Indians, and that force is never to be resorted to but in cases of self-defence.

No officer or man will be allowed to visit the shore without arms; and boats' crews, when surveying or on other duty, will be furnished with such as are necessary for their protection.

CHARLES WILKES,
Commanding Exploring Expedition.

U. S. Ship Vincennes,
May 1st, 1840.

We remained at Port Discovery until 6th May, during which time we were employed in surveying the harbour and exploring the country. Our botanists had a large and interesting field opened to them, and there are few places where the variety and beauty of the flora are so great as they are here. Dodecatheon, Viola, Trifolium, Leptosiphon, Scilla (the cammass of the natives), Collinsia, Claytonia, Stellaria, &c., vied with each other in beauty, and were in such profusion, as to excite both admiration and astonishment. According to Mr. Brackenridge, the soil on which the plants grow consists of a light-brown loam, but the general character of the soil around Port Discovery is a thin, black, vegetable mould, with a substratum of sand and gravel.

The trees grow so closely that in some places the woods are almost impenetrable. The timber consists principally of pine, fir, and spruce. Of the latter there are two species, one of which resembles the hemlock-spruce of the United States: it has a very tall growth, and puts out but few, and those small, lateral branches. Some maple-trees

grow in the open grounds and on the banks, but they are too small to be of any service to the settler. Several trees which we cut down to make spars for the Vincennes, proved, although healthy in appearance before they were felled, to be more or less defective: the wood was sound and compact on one side only, while on the other it was open-grained and fibrous.

Several of the officers made excursions into the woods after game. In these they found much difficulty, in consequence of the quantity of fallen trees, that lay crossing each other in every direction. No large game, however, was seen. Of birds, crows, robins, &c., were in abundance; and some beautiful specimens of land-shells (Helices) were obtained.

Soon after our arrival at Port Discovery, I despatched an Indian with a letter to the fort of the Hudson Bay Company at Nisqually, at the upper end of Puget Sound, to request that a pilot might be sent me. My interview with the native whom I employed for this purpose was amusing. He appeared of a gay and lively disposition: the first thing he did, when brought into the cabin, was to show me a cross and repeat his ave, which he did with great readiness and apparent devotion; but he burst into loud laughter as soon as he had finished repeating it. He and I made many efforts to understand each other, but without much success, except so far as the transmission of the letter to Fort Nisqually, and the reward he was to receive on his return.

In the excursions of the officers, several burial-places were met with. The corpses are not interred; but are wrapped in mats and placed upon the ground in a sitting posture, and surrounded with stakes and pieces of plank to protect them from the weather and wild beasts.

On the 5th of May, the officers were all engaged in surveying, while I occupied one of the points as a station, where I made astronomical and magnetic observations. I found the latitude 48° 02′ 58″ N.; the longitude 123° 02′ 07·5″ W.; the variation was 20° 40′ E.

The temperature in the shade, was 55°.

On the 6th of May, finding that the messenger whom I had despatched to Fort Nisqually did not return, I determined to proceed towards that place without further delay. We therefore got under way at half-past ten, and beat out of Port Discovery: we then stood towards Point Wilson (of Vancouver), which forms one side of the entrance into Admiralty Inlet. Turning the point, we entered the inlet, and soon anchored in Port Townsend, on its northern side, in ten fathoms water.

Port Townsend is a fine sheet of water, three miles and a quarter

in length, by one mile and three quarters in width. Opposite to our anchorage is an extensive table-land, free from wood, and which would afford a good site for a town.

The bay is free from dangers and is well protected from the quarters whence stormy winds blow. It has anchorage of a convenient depth; and there is abundance of fresh water to be had.

In the afternoon, we landed and examined the table-land. The next day we were engaged in surveying the bay, which we commenced at an early hour. Our base was measured on a straight and level beach, nearly a mile in length, upon the north shore. At the extreme west end of the bay, we found a lodge or two of Indians. In each of these, there were apparently three or four families; and they had a patch of potatoes growing.

The soil in this place is a light sandy loam, and appears to be very productive: it was covered with wild flowers, and strawberry plants in blossom.

From this point, Mount Baker is distinctly seen to the northeast, and forms a fine sight when its conical peak is illuminated by the setting sun.

On the 7th, we had completed the survey; but the wind coming up from the southward and eastward, which was contrary to our intended course, we determined to remain. At noon, there was a favourable change, when both vessels moved up about eight miles, and anchored in what I called Port Lawrence. This is just at the entrance of Hood's Canal, and gave us a view both of it and Admiralty Inlet. The weather was unpleasant, and the only duty that could be performed was that of dredging. Several new and interesting specimens were thus taken. The natives brought us fish and venison in plenty, besides geese and ducks.

On the morning of the 8th, we made the survey of Port Lawrence, beginning at daylight. This being completed, I took advantage of the tide making to get under way with a fresh breeze, and passed with both vessels as far as a small cove on the west side of the inlet opposite to the south end of Whidby's Island. Here we anchored before sunset, and I named it Pilot's Cove, from the circumstance of having been here joined by the first officer of the Hudson Bay Company's steamer, commanded by Captain M'Niel, who on hearing of our arrival, kindly sent him down to pilot up the ship.

We were under way soon after daylight, taking advantage of the tide, and continued beating as long as it lasted. This was about two hours, by which time we reached another small cove. This was named Apple-tree Cove, from the numbers of that tree which were in

blossom around its shores. This cove answers well all the purposes of a temporary anchorage. Before the tide began to make in our favour, we had finished the survey of the cove. We again sailed, and at dark anchored under the west shore, near a fine bay; which the next day was surveyed, and named Port Madison. This is an excellent harbour, affording every possible convenience for shipping.

The scenery of this portion of Admiralty Inlet resembles strongly parts of the Hudson river, particularly those about Poughkeepsie and above that place. The distant highlands, though much more lofty, reminded us of the Kaatskills. There were but few lodges of Indians seen on our way up; and the whole line of shore has the appearance of never having been disturbed by man.

The wind proved fair the same afternoon, and we passed up the inlet, taking the passage to the right of Vashon's Island, and finally, towards evening, anchored just below the narrows leading into Puget Sound, within a few yards of the shore and under a high perpendicular bank, in sixteen fathoms.

The shores of all these inlets and bays are remarkably bold; so much so, that in many places a ship's sides would strike the shore before the keel would touch the ground.

On the 11th of May, the morning proved calm, of which I took advantage to survey this part of the sound, which we accomplished before the afternoon, when the tide served us. At 3 P. M. we again weighed our anchors, but had great difficulty in getting beyond the reach of the eddy winds occasioned by the high banks. The scenery about this pass becomes very fine: on all sides are high projecting bluffs of sandstone, rising almost perpendicularly from the water, with a great variety of shrubs along their base. The tide, which runs through the narrows with great velocity, causes many eddies and whirlpools, through which a ship is carried with extraordinary rapidity, while the danger seems to be imminent. The Porpoise succeeded in entering the narrows first, and in a few minutes was lost sight of; the Vincennes entered, and seemed at first to be hurrying to destruction, with her sails quite aback. We were carried onward wholly by the force of the tide, and had backed and filled only once before we found ourselves in as spacious a sound as the one we had just left. This narrow pass seems as if intended by its natural facilities to afford every means for its perfect defence.

Twelve miles more brought us to the anchorage off Nisqually, where both vessels dropped their anchors about eight o'clock. Here we found an English steamer undergoing repairs. Soon after we anchored, I had the pleasure of a visit from Mr. Anderson, who is in

charge of the fort, and Captain M'Neil. They gave me a warm welcome, and offered every assistance in their power to aid me in my operations.

Nothing can exceed the beauty of these waters, and their safety: not a shoal exists within the Straits of Juan de Fuca, Admiralty Inlet, Puget Sound, or Hood's Canal, that can in any way interrupt their navigation by a seventy-four gun ship. I venture nothing in saying, there is no country in the world that possesses waters equal to these.

The anchorage off Nisqually is very contracted, in consequence of the rapid shelving of the bank, that soon drops off into deep water. The shore rises abruptly, to a height of about two hundred feet, and on the top of the ascent is an extended plain, covered with pine, oak, and ash trees, scattered here and there so as to form a park-like scene. The hill-side is mounted by a well-constructed road, of easy ascent. From the summit of the road the view is beautiful, over the sound and its many islands, with Mount Olympus covered with snow for a back-ground. Fort Nisqually, with its out-buildings and enclosure, stands back about half a mile from the edge of the table-land.

In the morning I found that the ship lay opposite to a small run of water, and finding the situation an agreeable one, the Vincennes was safely moored there, and the boats hoisted out.

Having arranged my plans, I proceeded forthwith to put so much of them as lay within my own means into execution: the Porpoise and boats were prepared for surveying, and the land parties organized. Other parts of my proposed plans depended on the co-operation of the Peacock. My instructions, for this purpose, to Captain Hudson had been prepared previous to our arrival. I had, also, been informed that the Peacock and Flying-Fish had reached the Columbia river in safety; and this news, although it turned out to be untrue, was for the moment a source of congratulation.

The Porpoise, with two of the Vincennes' boats, under Lieutenant-Commandant Ringgold, were directed to take up the survey of Admiralty Inlet. The launch, first cutter and two boats of the Vincennes were placed under the command of Lieutenant Case, to survey Hood's Canal.* The land party intended to explore the interior, was placed under the command of Lieutenant Johnson of the Porpoise. With him were associated Dr. Pickering, Mr. T. W. Waldron of the Porpoise, Mr. Brackenridge, Sergeant Stearns, and two men. Eighty days were allowed for the operations of this party, which it was intended should cross the Cascade range of mountains, towards the

* For orders, see Appendix XI.

Columbia, proceed thence to Fort Colville, thence south to Lapwai, the mission station on the Kooskooskee river, thence to Wallawalla, and returning by the way of the Yakima river, repass the mountains to Nisqually.—(The orders are given in Appendix XII.)

The other land party consisted of Messrs. Drayton and Waldron of the Vincennes, myself, and two servants. Our intended route lay across the country to the Columbia river. First, I proposed to visit Astoria, then Fort Vancouver, and the Willamette settlement, and to proceed up the river as far as Wallawalla. From Astoria I proposed to send parties from the Peacock into the interior, and to set on foot the survey of the Columbia river, by means of her boats.

The establishment of an observatory also claimed my attention: a suitable site was found on the top of the hill, within hail of the ship. Here the instruments and clocks were landed, and put up in a small clearing, whence the trees had been cut in order to supply the steamer with fuel.

All these preparations occupied us until the 15th, when the brig was reported as ready, and sailed the same day. During the above interval I had the pleasure of visits from Dr. Richmond and Mr. Wilson, of the Methodist Mission, stationed at this place.

In returning the visits of Mr. Anderson and Captain M'Niel, I had an opportunity of seeing the so-called fort. It is constructed of pickets, enclosing a space about two hundred feet square, with four corner bastions. Within this enclosure are the agents' stores, and about half a dozen houses, built of logs, and roofed with bark. This fort was considered quite large when it was first established, but since it has become an agricultural post as well as a trading one, it is found to be too small. Its locality is also ill chosen, on account of the difficulty of obtaining water, which has to be brought from a distance of nearly a mile. I was informed that there was now little necessity for any sort of protection against the Indians, who are but few in number, and very peaceably disposed.

Mr. Anderson and Captain M'Niel both reside in the fort with their families: both are married to half-breeds, and have several fine children. After spending some time in conversing about my plans, Mr. Anderson was kind enough to show me his garden, which is in an enclosure just without the pickets. Here I saw peas a foot high, strawberries and gooseberries in full bloom, and some of the former nearly ripe, with salad that had gone to seed, three feet high, very large and thrifty.

Near by were to be seen fine fields of grain, large barns and sheep-folds, agricultural implements, and workmen with cattle engaged in the various employments of husbandry.

I also visited Dr. Richmond, who had been settled here for some months, and occupies a nice log house, built on the borders of one of the beautiful prairies. Here I found Mrs. Richmond and Mrs. Wilson, with four fine, rosy, and fat children, whose appearance spoke volumes for the health of the climate. This mission has but recently been established: so far as respects its prospects, they are not very flattering. I shall have occasion hereafter to allude to the operations of the missions, and shall therefore defer any farther remarks at present. The location of the mission-house, on the borders of an extensive and beautiful prairie, can scarcely be surpassed, and would be admirably adapted for a large settlement, if the soil was in any respect equal to its appearance. This is composed of a light-brown earth, intermixed with a large proportion of gravel and stones: it requires an abundance of rain to bring any crop to perfection, and this rarely falls during the summer months. At the season when we arrived, nothing could be more beautiful, or to appearance more luxuriant than the plains, which were covered with flowers of every colour and kind: among these were to be seen Ranunculus, Scilla, Lupines, Collinsia, and Balsamoriza (a small sunflower peculiar to Oregon); but the soil is quite thin, and barely sufficient for these in many places. The best land occurs where the prairies are intersected or broken by belts of woods, that have a dense undergrowth, consisting of Hazel, Spiræa, Cornus, and Prunus. On the borders of these belts are scattered oaks and some ash, arbutus, birch, and poplars, and in some places the yew is to be found; but the predominant character of the vegetation is of the tribe of Coniferæ, which seem to occupy large ranges of the country, and among which the cedar is found to attain a large size.

In connexion with the Company's establishment at Nisqually, they have a large dairy, several hundred head of cattle, and among them seventy milch cows, which yield a large supply of butter and cheese: they have also large crops of wheat, peas, and oats, and were preparing the ground for potatoes. These operations are conducted by a farmer and dairyman, brought from England expressly to superintend these affairs. A few Indians are engaged in attending the flocks, and the Company's servants are almost exclusively employed as labourers.

I have mentioned these agricultural establishments as connected with the Hudson Bay Company, and they are in reality so; but as their charter precludes their engaging in these operations, another company has been organized, under the title of the "Puget Sound Company," the shares of which are held by the officers, agents, and servants of the Hudson Bay Company, and its officers are exclusively chosen from among them. Dr. M'Laughlin, for instance, chief officer

and governor of Fort Vancouver, on the part of the Hudson Bay Company, is also a director of the Puget Sound Company, and has the entire management of its concerns: his salary is five hundred pounds.

The capital of the Puget Sound Company is five hundred thousand pounds, divided into shares of one hundred pounds each: only two hundred thousand pounds of this have been paid in. The operations of this Company are in consequence large: they began by making large importations of stock from California, and some of the best breeds of cattle from England; they have also entered into farming on an extensive scale, using as labourers the servants of the Hudson Bay Company, who are bound by their contracts to do all manner of service that may be required of them, even to the bearing of arms.

This Company have the supplying of all the forts and stations of the Hudson Bay Company on the west side of the American continent, and also furnish the Russian ports with grain, butter, and cheese: of the former article the Russians take about fifteen thousand bushels. It is also their intention, when they shall have succeeded in breeding a sufficient stock of cattle and sheep, to export hides, horns, tallow, and wool, to England, in the return ships, which now go home comparatively empty, as the furs occupy only a small portion of the capacity of the ship. In this way it may readily be perceived that they will be enabled to drive a profitable trade, particularly when it is considered how little care the cattle require in this territory, in consequence of the grass and natural hay which the soil affords at all seasons. It is the prospect of the advantageous results to be derived from these operations, that has induced the Hudson Bay Company to change their trading establishments into large agricultural ones. For some years previous to our arrival, they had not been able to meet their own wants, and at the same time fulfil their contracts with the Russians. They were therefore obliged to purchase from the settlers in the territory, as well as send to California, to procure the requisite quantity of agricultural products. A demand was consequently created for wheat, and all that could be raised in the Willamette settlements was bought for six shillings (seventy-five cents) a bushel, and paid for in drafts on their stores in goods, at fifty per cent. advance on the first London cost. This gave an encouragement to the small farmers, that was fated to meet with grievous disappointment the next season; for the Company was able not only to meet their engagements, and their own wants, but had, besides, a surplus. The prices consequently would be merely nominal, unless raised by the influx of new settlers. Whether the latter cause had any effect in creating a market, I know not; but I

understand that in 1842 some of the settlers fed their horses upon their finest wheat.

The scenery around Nisqually is very much enhanced in beauty by the splendid appearance of Mount Rainier, which lies nearly east of it; and from some of the open prairies there are three of these magnificent snowy peaks in sight. They are all nearly regular cones, with cleft tops, as though they had a terminal crater on their summit. I was exceedingly anxious to make the ascent of one of these, Mount Hood; but owing to the non-arrival and loss of the Peacock, I found it impossible to do so.

On the 13th May, Mr. Anderson was kind enough to present me with two bullocks for the crews, and a quantity of vegetables, for which we felt ourselves much indebted. A large supply of milk was also sent to us daily from the dairy, and many other little kindnesses and attentions were manifested.

To return Captain M'Niel's visit, I went on board the steamer, which is called the Beaver. She is of one hundred and twenty tons burden, and fitted with a low-pressure engine, similar to those in use in the English boats. She was now very much out of repair, having been some years on this station. Her employment was to ply between the northern posts with supplies, and bring back the returns of the season's trade; at the same time trading at the different points with the Indians. Captain M'Niel is a native of Boston, and was extensively engaged in the northwest trade. He proved to be a serious competitor with the Hudson Bay Company in their business, and was in consequence bought off. He is now a trader in the Company's service, owning stock, and receiving a share of the dividends; to qualify him for which, it became necessary for him to become a naturalized British subject.

The steamer is ill adapted to the services on which she is employed, for she consumes a large quantity of fuel, and has not sufficient capacity to carry as much as is necessary for her entire voyage. She is therefore obliged to stop at intermediate places to obtain a supply of wood, which must be cut by her own crew. She is fitted with a suitable armament, barricades, and boarding-nettings, which are deemed very essential on the northern coast, where the savage tribes are both hostile and numerous.

On the 17th, the boats left the ship under Lieutenant Case, Messrs. Totten, Colvocoressis, and May. I had by this time succeeded in establishing the observatory, and had ordered a log house to be built to perform the pendulum experiments, and another for the purposes of drawing, &c. These I purposed to use on my return from the

Columbia river trip. Lieutenant Carr, with Lieutenant Budd and Mr. Eld, were left in charge of the duty connected with the observatory, as well as of the ship.

Knowing how much time is lost on boat expeditions by the use of grog, and the accidents that are liable to occur when a strict watch cannot be kept over it, I decided not to send any spirits with the party. I am fully persuaded myself, that that portion of the ration is unnecessary; but in order not to deprive any of the sailors of it who might deem it essential, I had the boats' crews called aft, and found that nearly all were in the regular habit of drawing their grog. I then offered to any who might wish to continue the use of that part of their ration, the option of remaining with the ship, and having their places in the boats supplied by others. There was no hesitation on the part of any of them: all wished to go; and all were willing to give up their spirit ration. I take this occasion to say, that all the most laborious and exposed duty of the Expedition, was performed without the spirit ration, and I am well satisfied that it may be dispensed with without injury to any one, and indeed greatly to the benefit of the naval service.*

The land expedition, under Lieutenant Johnson, was finally ready. Few can imagine the chafferings, delays, and vexations, attendant upon the equipment of a land party in this region: the buying of horses from the Indians; the non-arrival of guides; the various equipments necessary for loading the horses, securing the loads to prevent injury to the horses' backs, and the loss of them, all consume much time, and need continual foresight. Through all these difficulties and perplexities, which were of a kind that most tries the patience, Lieutenant Johnson struggled. An Indian is not slow in perceiving your wants, and views the dilemmas in which you may be placed with a becoming sang-froid. Mr. Anderson's kindness had obviated many of these obstacles; but it was impossible to proceed without the aid of the Indians, who were always prone to recede from their bargains, under a feeling that they had not received enough. After the bargain was completed, and the price agreed upon, under the form of "potlatch," or "gift," the equivalent was always to be again treated for, and thus the price of the article or service was often very much enhanced. In dealing with these Indians, it was always necessary to feign a great indifference of manner, in order to obtain the article, and also in closing the bargain after the preliminaries are settled.

* Since our return, Congress has reduced the spirit ration one-half: this is a good step, but its total abolishment would be a better one.

They readily close when they think their customers indifferent, for fear of a competitor among themselves, and are not in the habit of forming a combination, as they show little or no confidence in each other, and are rather disposed to rivalry. As far as our observations went, the chiefs have little authority among them.

Having seen the other parties all off, or ready to start, our party for the Columbia river also set out. It was a strange cavalcade, for most of us were but sorry horsemen, and we had every variety of accoutrements, from the saddle and bridle to the bare back and halter. We were eight in number: Messrs. Drayton, Waldron, and myself, two servants, two Indians, and a Canadian guide, with four pack-horses. All the horses and the guide were kindly furnished us by the gentlemen at the fort, to carry us as far as Cowlitz Farms, about sixty miles distant, where we intended taking canoes.

Our Indians, though partially clothed in worn-out European clothing, still showed their free and easy carriage on horseback: the few ribands and cock's feathers that were stuck in their caps gave them a flaunting kind of air; and they manifested a species of self-esteem that was not unpleasing, and betokened an independence and want of care, in good keeping with their mode of life. These savages should never be seen but on horseback, in which position they are really men, and inspire a certain degree of respect. When dismounted, all these qualities vanish, and the Indian becomes the lazy, lounging creature, insensible to any excitement but his low gambling propensities. They have a peculiar knack in managing their horses, and this, too, without any apparent means of controlling them, for their only bridle is a single cord fastened to the lower jaw; with this they contrive to govern the most refractory animals, without the aid of whip or spur, and will urge to speed an animal that has become all but lifeless under our guidance. They practise great cruelty to their horses, and pay no regard whatever to the state of their backs. In travelling in this country, all scruples and feelings in respect to sore backs, jaded, lamed, or half-starved horses, must be laid aside; and my advice is, keep away from your horses until they are saddled, and leave this to your guides who own them.

The direction of our route was nearly south over the plain, passing occasionally a pretty lawn, and groves of oak and ash trees. At the distance of nine miles we reached the river Nisqually, whose channel is sunk three hundred feet below the plain, between almost perpendicular banks. The ravine is about half a mile wide, and is filled with a large growth of timber, which is occasionally uprooted by the torrents that pass down, on the melting of the snows of the mountains. The

usual bed of the stream is about one hundred yards wide, with a rapid current: its course in this place was north-northwest, and its average depth at the ford about three feet. We again ascended a similar bank on the opposite side to the plain. Our route then continued through most beautiful park scenery, with the prairie now and then opening to view, in which many magnificent pines grew detached. The prairie was covered with a profusion of flowers.

After crossing Shute's river, in all respects similar to the Nisqually, we encamped, just before night, having travelled about twenty-two miles. Our tents were pitched, and fires made; but on examining our alforcas,* we were reminded that we were but novices in such travelling, for we found that all our small stores had been destroyed in fording the streams, the sugar being turned into syrup, &c. This was a mishap over which we had a hearty laugh; it rendered the part that was saved doubly precious, and made us enjoy our evening meal. After our tents were pitched, one of our servants discovered a snake in the tent, which caused him much alarm; but such a circumstance is considered so common, that it excites but little or no surprise in those who have travelled in Oregon. The abundance of such reptiles may be considered one of the characteristics of the country, and if one is not bitten before the end of a journey, he may think himself fortunate. In the lower country, however, there are few snakes that are venomous, and the rattlesnake is rarely seen, in consequence of the wetness of the soil and dampness of the climate: but in the middle section, where it is dry, they are to be found in great numbers.

Being somewhat fatigued, we all slept soundly. The guide and Indians, according to the custom of the country, after rolling themselves in their blankets, lay down near the fire (which continued to burn brightly all night) without any shelter. In the morning we found by the tracks that elk and deer had been near us, probably attracted by the fire. Our horses having been hobbled, were easily procured: they had not strayed, as the grass around the tents was of the most nutritious kind.

In the morning, when we resumed our journey, the park scenery increased in beauty, and it was almost impossible to realize that we were in a savage and wild country, and that nature, not art, had perfected the landscape. Beautiful lakes, with greensward growing to the water edge, with deer feeding fearlessly on their margin, and every tint of flower, many of which were not new to our gardens at home, strewn in profusion around; we could hardly, in galloping along, but

* A kind of saddle-bag.

expect to see some beautiful mansion, as a fit accompaniment to such scenery.

We soon reached the Bute Prairies, which are extensive, and covered with umuli or small mounds, at regular distances asunder. As far as I could learn, there is no tradition among the natives relative to them. They are conical mounds, thirty feet in diameter, about six to seven feet high above the level, and many thousands in number. Being anxious to ascertain if they contained any relics, I subsequently visited these prairies, and opened three of the mounds, but nothing was found in them but a pavement of round stones.

After a ride of twelve miles, we reached Chickeeles river, which empties itself into Gray's Harbour, about forty miles north of the Columbia. We found the stream about two hundred yards wide in this place, and running in a southwest direction. On its banks there were a few lodges, containing about twenty Indians of the Nisqually tribe, who had come here to make preparations for the salmon-fishery, then about to commence, (20th May.) They were a miserable-looking set, barely covered with pieces of dirty blankets and skins.

Subsequently, on my return, I made a sketch of this place, after the salmon-fishery had been established, which is represented in the vignette.

We stopped here for two hours, to rest our horses. Hanging around

their lodges were hundreds of lamprey eels, from a foot to eighteen inches long, and about an inch in diameter. We were told that these,

fish are caught in great quantities, and dried for food; they are also used for candles or torches; for, being very full of oil, they burn brightly.

These Indians had a quantity of the cammass-root, which they had stored in baskets. It is a kind of sweet squills, and about the size of a small onion. It is extremely abundant on the open prairies, and particularly on those which are overflowed by the small streams.

After leaving these lodges, a few yards beyond the soil changed from gravel to a rich unctuous clay. We crossed a branch of the Chickeeles, and passed over some high hills, which we found exceedingly difficult to accomplish, being in places quite miry, in which our pack-horses not unfrequently were stuck fast: few roads in any country could be worse.

The woods and underbrush now became so thick that it was with difficulty that a horse and his rider could pass; for, whilst the former was extricating his legs from the mud-holes, the latter required all his attention and exertions to prevent himself from being strangled or dragged from his horse by the branches. This was not all: fallen trees were to be jumped or hobbled over as we best could, which was very exhausting to the patience. Our friends at Nisqually had told us we should find this part of the road good, yet we found it barely passable. I would, however, advise all who travel this road to prepare for a bad one. But what increased the discomfort of the road to me, was the news I received by an Indian messenger, with letters announcing to me that the Peacock had not yet arrived.

We finally succeeded in reaching the top of the hill, which is about fifteen hundred feet high, by a zigzag path, literally climbed by steps which had been made by the horses' feet, and without which it would be impossible to mount it in the direction we did, the clay is so slippery.

After reaching the crest of this ridge, we were amply repaid for our labour by one of the most charming views I saw in Oregon, extending to a distance over the luxuriant country, while at our feet lay one of the beautiful prairies, bedecked in every hue of the rainbow, with the Chickeeles winding through it. We descended, and passed over the prairie to some Indian lodges, whose inhabitants were squalid and dirty as usual; and as an evidence of their want of natural feeling, near by lay one of their horses, with one of his fore-legs broke short and just hanging by the skin. To the question, why they did not kill the horse, they gave no answer, but looked at the interpreter with apparent contempt and listlessness. Desirous of avoiding the lodges, with their inmates and vermin, we proceeded about a mile beyond them, and encamped on the edge of a fine forest of pines.

Notwithstanding a hard rain fell during the night, we passed it very comfortably. The Indians supplied us with some fresh salmon, which they had already begun to take in the rivers that were in sight from our encampment. They reported that the river was navigable for canoes, though occasional obstructions were met with from fallen timber.

Mr. Drayton found here some beautiful pieces of cornelian, of large size and bright red colour.

The morning proved beautiful, and one of the finest days succeeded that I ever remember to have seen. Our route lay through alternate woods and prairies, the former composed of large pines and cedars. Several considerable streams of water were passed, whose banks were not so high as those before met with; the latter covered with strawberries, so tempting as to induce us to dismount and feast upon them, and many plants that excited a feeling of interest, and reminded us of home: among the number was the red honeysuckle (Caprifolium), which was in full bloom. After passing extensive cammass plains, we reached the Company's farm on the Cowlitz, which occupies an extensive prairie on the banks of that river.

They have here six or seven hundred acres enclosed, and under cultivation, with several large granaries, a large farm-house, and numerous out-buildings to accommodate the dairy, workmen, cattle, &c. The grounds appear well prepared, and were covered with a luxuriant crop of wheat. At the farther end of the prairie was to be seen a settlement, with its orchards, &c., and between the trees, the chapel and parsonage of the Catholic Mission gave an air of civilization to the whole. The degree of progress resembled that of a settlement of several years' standing in our Western States, with the exception, however, of the remains of the conquered forest; for here the ground is ready for the plough, and nature seems as it were to invite the husbandman to his labours.

We were kindly received by Mr. Forrest, the superintendent, who quickly made arrangements for canoes to carry us down the Cowlitz and Columbia river to Astoria, or Fort George. He also provided us with an excellent repast, and pressed us to remain over night, which we would gladly have done, had I not found that it would be impossible for us to reach Astoria the next day if we did so.

At this farm the Company have a large dairy, and are about erecting a saw and grist mill. The superintendent's dwelling is large, and built of well-hewn logs; with the workmen's houses, &c., it forms quite a village.

Large numbers of cattle were being brought in for the night, which

is a very necessary precaution in Oregon, in consequence of the numerous wolves that are prowling about; in some places it becomes necessary for the keeper to protect his beasts even in the daytime. The cattle, at times, suffer from drought, in which case the Indians are sent across the river to cut fodder for them, in order to avoid sending the cattle to the cammass plains, where they would be subject to the loss of all their young.

The farm at the Cowlitz has no sort of defences about it, proving, as far as the Indians are concerned, that there is no danger of being molested: indeed their numbers here are too small to enable them to attempt any aggression, and their dependence on the Company, for both food and clothing, too complete to allow them to quarrel, except among themselves; and of such disputes the agent of the Company takes no sort of notice. The Indians belong to the Klackatack tribe, though they have obtained the general name of the Cowlitz Indians. In a few years they will have passed away, and even now, I was informed, there are but three Indian women remaining in the tribe. The mortality that has attacked them of late has made sad ravages; for only a few years since they numbered upwards of a hundred, while they are now said to be less than thirty. The quantity of land actually under cultivation here is six hundred acres, most of which is in wheat. Mr. Forrest told me that the first year it had produced ten bushels per acre, but the present one it was thought the yield would be double.*

Around the superintendent's house is a kitchen-garden, in which all the usual horticultural plants of the United States were growing luxuriantly; the climate was thought to be particularly well adapted to them.

Mr. Forrest informed me that the weather was never actually cold, nor is the winter long. Snows seldom last more than a day or two; fires, however, are necessary during most months of the year. The housing of cattle is resorted to partially; but little or no provision is made for their winter sustenance, as the grass is fit for food the whole year round.

The geographical situation of the Cowlitz Farm is in latitude 46° 30′ N., longitude 123° W.

The guide that Mr. Forrest had sent for was one Simon Plumondon, whom I engaged to carry us to Astoria. He proved to have been the cockswain of General Cass's canoe, when on his trip to the lakes in the

* The crop of 1841, I was told, at the end of the season, produced seven thousand bushels.

Northwest Territory; and a more useful person I have seldom met with, or one that could be so well depended on. He had been for several years in this territory, having left the Company's service, married an Indian wife, and was now living on a farm of about fifty acres, at the Cowlitz, independent and contented. I have seldom seen so pretty a woman as his wife, or a more cheerful and good housewife; before her marriage she was the belle of the country, and celebrated for her feats of horsemanship.

Plumondon engaged several of the young Indians to accompany him, and with two canoes we were all accommodated. The price for each Indian was to be a check shirt.

During our short stay at Cowlitz, several Indian women brought in pieces of buckskin for sale, which they deem a necessary part of the equipment of a traveller. From them I learned the manner in which they prepare it, which is as follows. Immediately after the animal is killed, the skin, after having all the hair scraped off, is stretched tight on a frame; it is there left until it becomes as dry as parchment, when it is rubbed over with the brains of the animal, which impart oil to it; it is then steeped in warm water, after which it is dried in the smoke, two women stretching it all the time it is drying; it is then again wet and wound tightly round a tree, from which it is again taken, smoked, and drawn by women as before; when nearly dry, it is rubbed with the hands as in washing, until it is soft and pliable; and then it is ready for use.

Mr. Forrest stated to me that he had put a suit on, twenty-four hours after the animal had been running in the forest. I am well satisfied that no kind of apparel is so well suited as this to the life of an Indian or trapper, and all who travel in a wild country should be provided with such a dress.

About a mile from the farm-house, we descended a steep bank, two hundred feet high, to the river, where we found our canoes waiting for us. The Cowlitz was here about two hundred yards wide, and very rapid. Our company, or rather crew, consisted of nine young Indians. We were soon seated and gliding down the stream, while each boatman exerted his fullest strength to send us onwards. Just before sunset, when we thought we had made nine miles, we landed and pitched our tents on a small island in the river. The island was covered with drift-wood, which soon enabled us to make a good fire, which the temperature rendered quite acceptable. When our supper was prepared, we found that our Indians had come away destitute of any supply whatever, and that it was necessary to provide for them. This I have generally found to be the case, not only with these

Indians, but with the natives of Polynesia; both require looking after before going on a journey, and will seldom burden themselves with food.

At the place where we embarked I tried the velocity of the stream, which I found three miles per hour, but in some places it was much more rapid. The temperature of its water was 48° Fahrenheit.

During the night I succeeded in getting several observations of stars, for latitude and longitude.

The next morning we made a start betimes, in order to reach Astoria at an early hour. A short distance below our encampment we passed the east fork of the Cowlitz, which is smaller and not navigable even for canoes. We also passed the mouths of several small streams on the west side. Plumondon pointed out that side of the river to me as good trapping-ground, and amused me by the narration of many of the difficulties he had to encounter in taking his game. About noon we reached the Columbia.

The Cowlitz river takes its rise in the Cascade Range, near Mount Rainier, and has many short turns in it. Its banks are tolerably high, until it approaches the Columbia. It is only at high water, in the spring and fall, that the river can be used for boating, at which time the supplies from Vancouver are sent, and the grain, &c., returned, in large flat barges. The soil along the river appears to be of a good quality, a clayey loam with vegetable mould, over trap rock and sandstone. The prevalent trees were poplars, soft maples, ash, fir, pine, and cedar, with some laurel, where the prairies are so low as to be flooded in the month of May.

On this river it was reported that coal of a good quality existed, but I examined all the places that indicated it, and only found lignite. This exists in several places, but the largest quantity lies above the East Fork: several specimens of it were obtained.

In the month of September following, I examined the Cowlitz, and found it exhibiting a very different character. A few miles above its mouth there was not water enough to float even a boat, and it was besides filled with rapids. It is not navigable for barges more than three months in a year. The distance we passed down the Cowlitz did not exceed twenty-six miles, although we had been told that it was more than forty.

The route by the way of the Cowlitz will in all probability be that which will hereafter be pursued to the northern waters and sounds. Although there are many difficulties in crossing the rivers, &c., yet it is believed to be the most feasible course.

On our way we met with many canoes passing up, loaded with

salmon and trout, which had been taken at the Willamette Falls, and which they were then carrying to trade with the Indians for the cammass-root. We obtained some of the fish as a supply for our Indians.

On entering the Columbia our Indians required some rest, and said they were hungry; we therefore concluded to stop for a short time on its banks. If I were to judge of the whole Cowlitz tribe from the specimens we had with us, I should say they were the merriest set of fellows I ever saw, full of fun, and laughing all day long: I became at last wearied with their incessant gaiety.

The Columbia, where the Cowlitz joins it, is a broad flowing stream, and was at this time much swollen. We had, after entering it, about forty miles yet to make, and it was past noon; but we glided briskly on with the current, although it was by no means so rapid as I had expected to have found it. Near the mouth of the Cowlitz is a high conical hill, which has received the name of Mount Coffin, from its having been a burial-place of the Indians; and the remains of many of their coffins were still to be seen scattered over it. On the opposite side of the river is a high barrier of trap rocks, covered with majestic pines.

About ten miles lower down, we passed Oak Point, where the river turns nearly at right angles, taking its course along a barrier of trap rocks, which it here meets on its west side, and which rises eight hundred feet perpendicularly above its surface. On the other side of the river is one of the remarkable prairies of the country, covered with tall waving grass, and studded with many oaks, from which the point takes its name. What adds additional interest and beauty to the scene is Mount St. Helen's, which may be seen from the sea when eighty miles distant: its height I made nine thousand five hundred and fifty feet.

In this part of the river, which I named St. Helen's Reach, we met the brig Wave, that had brought our stores from Oahu. The master informed me that he had landed them at Astoria, and placed them under the care of Mr. Birnie, who had charge of the Company's fort. The master of the Wave confirmed the report that the Peacock had not arrived, and after a short delay we proceeded. By sunset we had reached Termination Island, and had yet twenty miles to make in a very dark night. We had already passed the only place where we could have encamped, and the natives showed extreme reluctance to go on. They soon desired to return; saying that the night was very dark, and that the bay would be dangerous. This request was overruled, however, and we continued our course, though under appre-

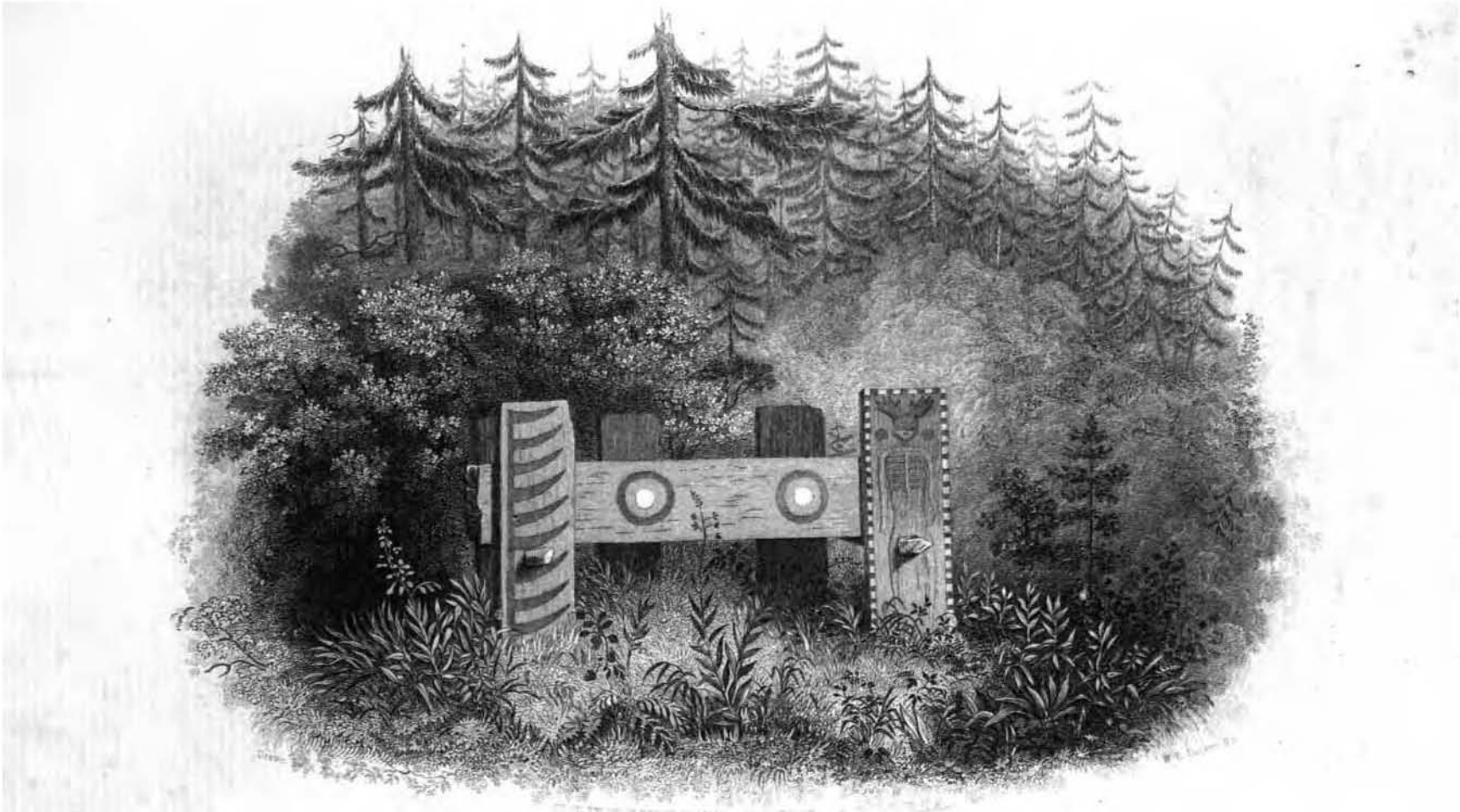
hension of disaster. The Indians said that many canoes had been lost, and after I became acquainted with this part of the river, I no longer wondered at their objections to pass over it at night; for if there is any wind it becomes exceedingly rough, and dangerous for their canoes.

We found the water quite smooth, and glided on hour after hour without any appearance of a landing. I was at a loss to account for the length of our passage, until I found the tide had been against us. We at last reached what Plumondon called Tongue Point, and afterwards kept skirting the shore for so long a time that I began to have misgivings that we should pass Astoria, and began firing muskets, the usual signal of an arrival. They were immediately answered by others just behind us, and the loud clamour of about forty yelping dogs. These sounds, although discordant, gave us the delightful assurance that we had reached our destination, and might now make our escape from the confined and irksome position we had been in a whole day. Mr. Birnie, the agent of the Hudson Bay Company, met us at the landing, with lanterns and every assistance, and gave us a truly Scotch welcome. We soon found ourselves in his quarters, where in a short time a fire was burning brightly, and his hospitable board spread with good cheer, although it was past midnight. After partaking of the supper, blankets were furnished us, and we were made exceedingly comfortable for the night.

In the morning we had a view of the somewhat famous Astoria, which is any thing but what I should wish to describe. Half a dozen log houses, with as many sheds and a pig-sty or two, are all that it can boast of, and even these appear to be rapidly going to decay.

The Company pay little regard to it, and the idea of holding or improving it as a post, has long since been given up. The head-quarters of their operations have been removed to Vancouver, eighty miles further up the river, since which Astoria has merely been held for the convenience of their vessels. It boasts of but one field, and that was in potatoes, which I can, however, vouch for as being very fine. In former times it had its gardens, forts, and banqueting halls; and from all accounts, when it was the head-quarters of the Northwest Company, during their rivalship with the Hudson Bay Company, there was as jovial a set residing here, as ever were met together. I have had the pleasure of meeting with several of the survivors, who have recounted their banquetings, &c.

In point of beauty of situation, few places will vie with Astoria. It is situated on the south side of the Columbia river, eleven miles from Cape Disappointment, as the crow flies. From Astoria there is a fine



view of the high promontory of Cape Disappointment, and the ocean bounding it on the west; the Chinook Hills and Point Ellice, with its rugged peak, on the north; Tongue Point and Katalamet Range on the east; and a high background, bristling with lofty pines, to the south. The ground rises from the river gradually to the top of a ridge five hundred feet in elevation. This was originally covered with a thick forest of pines: that part reclaimed by the first occupants is again growing up in brushwood. From all parts of the ground the broad surface of the river is in view. The stillness is remarkable, and makes it evident that one is yet far removed from civilized life: the distant though distinct roar of the ocean is the only sound that is heard: this, however, is almost incessant; for the stream, though rushing onwards in silence to meet the ocean, keeps up an eternal war with it on the bar, producing at times scenes of great grandeur, but which, as we had already experienced, renders the bar wholly impassable for days together.

The magnificent pine, so often mentioned by travellers, lies prostrate near the tomb of the hospitable chief Concomely, now in ruins. The chief's skull, it is believed, is in Glasgow, having been long since removed by Dr. Gardner.

There were many things to remind us of home: among them was a luxuriant sward of white clover, now in full blossom, and numerous other plants that had found their way here: the trees were also familiar, and truly American. I felt that the land belonged to my country, that we were not strangers on the soil; and could not but take great interest in relation to its destiny, in the prospect of its one day becoming the abode of our relatives and friends.

The Columbia, opposite to Astoria, is four miles wide, but in the middle of the river is an extensive sand-bar, with only a few feet water on it, and at extreme low tides it is bare: the channel is very narrow on each side and difficult to navigate. At Astoria there is only space for a dozen vessels to lie at anchor, and it would therefore be difficult to accommodate any extensive trade. The point of land extends about half a mile below its site, where Young's river joins the Columbia, and forms a bay, on the banks of which Lewis and Clarke wintered. The position of their hut is still pointed out, but the building has long since gone to decay.

Plumondon, who, as I have before mentioned, is an expert trapper, informed me that the country lying north of the Columbia, between the Cowlitz and Cape Disappointment, is generally rough and rugged, with numerous streams of water, and in many places a rich soil: it is

extremely well timbered, and is capable, when cleared, of growing grain, and other agricultural produce.

On the 23d (Sunday), it was reported that a vessel was off the Cape, firing guns. This made me extremely anxious to go thither, but as there was much difficulty in accomplishing this, Mr. Birnie proposed a trip to Point Adams, and a visit to the missionaries at Clatsop. This proposal I gladly accepted, and at an early hour the next morning we set out, crossed Young's Bay, landed, and after walking a mile came to the mission, where we had the pleasure of seeing Mr. and Mrs. Frost. Mr. Frost gave us a kind welcome at his new dwelling, which I understood him to say had been built with his own hands. His wife appeared cheerful and happy, and made herself quite agreeable. The house is a frame one, of one story, and contains three rooms: it is situated in a young spruce and pine grove, which is thought to be the most healthy situation here. There are two American settlers, who are building houses here, named respectively Tibbits and Smith; both of them are very respectable men, and good mechanics. This place is not susceptible of improvement, and I understood that it had been chosen for its salubrity. I understood that Mr. Frost was engaged with the Rev. Mr. Koen in cultivating a tract of land, about four miles distant. The latter resides upon the tract, and is occupied in raising a large crop and superintending cattle. There appeared to me to be little opportunity for exercising their ministerial calling, though I understood afterwards that at particular seasons a number of Indians collected to hear them.

After spending some time with them, Mr. Birnie, Mr. Frost, and myself set off for Point Adams and Clatsop village. I think, in all my life, I had never met with so many snakes as I saw during this short walk: they were on the beach, where they were apparently feeding at low water. We looked from the sand-hills on Point Adams for vessels, but none were in sight; and then we walked on to the village. It consisted of a few rough lodges, constructed of boards or rather hewn planks, of large size; the interior resembled a miserably-constructed ship's cabin, with bunks, &c.; the only light was admitted from above, near the ridge and gable-end. Pieces of salmon and venison were hanging up in the smoke of their fire. Numbers of the Indians are always to be seen lounging about, and others gambling. On the bunk-planks are painted various uncouth figures of men, and in one was seen hanging the head of an elk, which it was understood they make use of occasionally as a decoy in the chase, for the purpose of taking their game more easily. Around the whole is a palisade, made of thick

planks and joists, about fifteen feet in length, set with one end in the ground, to protect them from attack.

The Indians of this region even now make war upon each other on the most trivial occasion, and for the most part to satisfy individual revenge. The Hudson Bay Company's officers possess and exert a most salutary influence, endeavouring to preserve peace at all hazards. It is now quite safe for a white man to pass in any direction through the part of the country where their posts are, and in case of accident to any white settler, a war-party is at once organized, and the offender is hunted up. About a year previous to our arrival, an Indian was executed at Astoria for the murder of a white man, whom he had found asleep, killed, and stolen his property.

He was taken, tried, found guilty, and executed in the presence of most of the settlers. The culprit was a slave, and it was some time before the chief to whom he belonged would give him up. It was proved on the trial, and through the confession of the slave, that he had stolen the property and committed the murder by order of his master, who took all the stolen goods. The master made his escape when he found his agency had been discovered; and I understood that he kept himself aloof from all the Company's posts, until the matter should be forgotten.

As the tide had risen so much as to render it difficult to walk along the beach, we returned to Mr. Frost's in a crazy canoe, and were very near being upset. Had this accident happened, it must have proved fatal to some of us in the strong tide that was running; we therefore felt much relieved to get again to the beach. After partaking of Mrs. Frost's good cheer, we returned to Astoria, much pleased with our day's jaunt.

On the Clatsop beach, we saw a great number of dead fish. Mr. Birnie informed me, that they were thrown up in great numbers during the autumn; and were supposed to be killed by a kind of worm, generated in their stomachs.

On the 28th, the Company's barques Cowlitz and Columbia were in sight: the former bound for Oahu, the latter for Sitka. By the former, we sent letters for home.

Our Indians having recovered from their fatigue, I resolved to proceed with Mr. Drayton to Vancouver, leaving Mr. Waldron to await the arrival of the Peacock, and to recruit from his sickness. We embarked at noon, having Mr. Birnie with us, to join the vessels above. We soon found ourselves in much more sea and wind than our canoe could bear; and, by Plumondon's advice, took in our sail, and made for Tongue Point as quickly as we could. He deemed it much too

dangerous to venture across the open bay in the small canoe we had bought in lieu of the one we had come down in.

We landed at Tongue Point and encamped; but as we had much time yet before dark, we went to the top of the Point, which is said to be the position best adapted for a fortification to defend the channel up the river. Tongue Point is a high bluff of trap rock, covered wi h trees of large dimensions: the top has been cleared and taken possession of by Mr. Birnie, who has erected a log hut and planted a patch of potatoes. The hut was inhabited for a year, by a Sandwich Islander and his wife. It is rather a rough spot for cultivation, but the end of occupancy was answered by it. There is a small portage on Tongue Point, which canoes often use in bad weather, to avoid accidents that might occur in the rough seas that make in the channel that passes round it.

Mr. Drayton picked up a considerable number of shells.

Late in the afternoon, Mr. Birnie left us, and joined the barque Columbia. Mr. Drayton and myself made ourselves comfortable, notwithstanding it rained and blew hard. The next morning we set out for Vancouver; but our progress was slow, and we were obliged to take advantage of all the eddies. By the afternoon, however, we had reached Oak Point, and stopped at a collection of lodges in order to obtain some salmon.

Near Puget Island, we encountered a party fishing, and saw them take a large salmon; but they demanded such an exorbitant price for it (equal to one dollar and twenty-five cents), that we refused to give it; considering it bad policy to indulge their cupidity.* Plumondon said, that they had no desire to sell the fish, as they had a superstitious objection to dispose of the first fish to strangers: even if induced to sell it, they will always take the heart out and roast it for themselves; for they believe, that if the heart of the fish were eaten by a stranger at the first of the season, their success would be destroyed, and they would catch no more fish. To prevent this, they consider it requisite that a certain number of "sleeps" or days should pass before any are sold. The price of a large salmon is about ten cents in trade.

Here we unexpectedly found the medicine-man, employed in going through his incantations and preparing his medicines. One of our young Indians, who was a chief, landed, without knowing what was going on, for the purpose of making the inquiries we desired. He was met with direful looks, and in great wrath ordered by all the

* On mentioning the subject at Vancouver, I was told I ought to have taken the fish and paid the Indian what I thought proper.

men to leave the place: they seemed at the instant, desirous to wreak vengeance upon him for his intrusion. His retreat was precipitate, as he well knew the consequences of delay and the danger of disturbing the medicine-man during his incantations. If the patient should die, they invariably impute the fatal result to the disturbance, and ascribe the death to the intruder. This invariably leads to his being put to death, by the nearest of kin, who deems this act a duty. Plumondon said, that he was not at all surprised at the fear the young chief showed; for he had himself been placed in similar circumstances a short time before, when his father had died. The medicine-man imputed his death to a chief of the Klackatacks, whom this young chief shortly afterwards killed. Occurrences of this description have led to long and bloody wars among the tribes; and the only way of settling and overcoming this difficulty, is by paying a valuation for the deceased. I understood that from five to twenty blankets, according to rank, and the estimation in which the deceased was held, is considered a proper indemnity.

We encamped a few miles above Oak Point, on the prairie, in a grove of trees. The next morning was beautiful, and the birds were singing blithely around us. Our Indians were as merry as the birds. There was an entire absence of game birds, though a great number of singing ones were seen.

We passed during the day Coffin Rock, which is about seven miles above the Mount Coffin before spoken of. It is of small dimensions, and has been the burial-place of chiefs, who are usually interred in canoes, which are provided with all the necessary appendages for their journey to the land of spirits and their hunting-grounds. The mode of disposing of their dead seems to have been different on the south side of the Columbia. On the Cowlitz we observed many canoes near the bank of the river, supported between four trees: these contain the remains of their dead, are painted in a variety of figures, and have gifts from their friends hung around them. I was told that this is not only done at the time of their burial, but frequently for several months after. All the sepulchres of this description that I saw were going to decay.

All the Indians have a great regard for these places of interment, and consider them as being sacred.

Shortly after we passed this point, we met a canoe, and one of our Indians was informed that his child was dead. We made a stop soon after, and I observed that the man scarified himself on the leg in several places, until he bled profusely; this done, he lighted his pipe, and seemed to smoke for consolation. He kept himself for that evening