

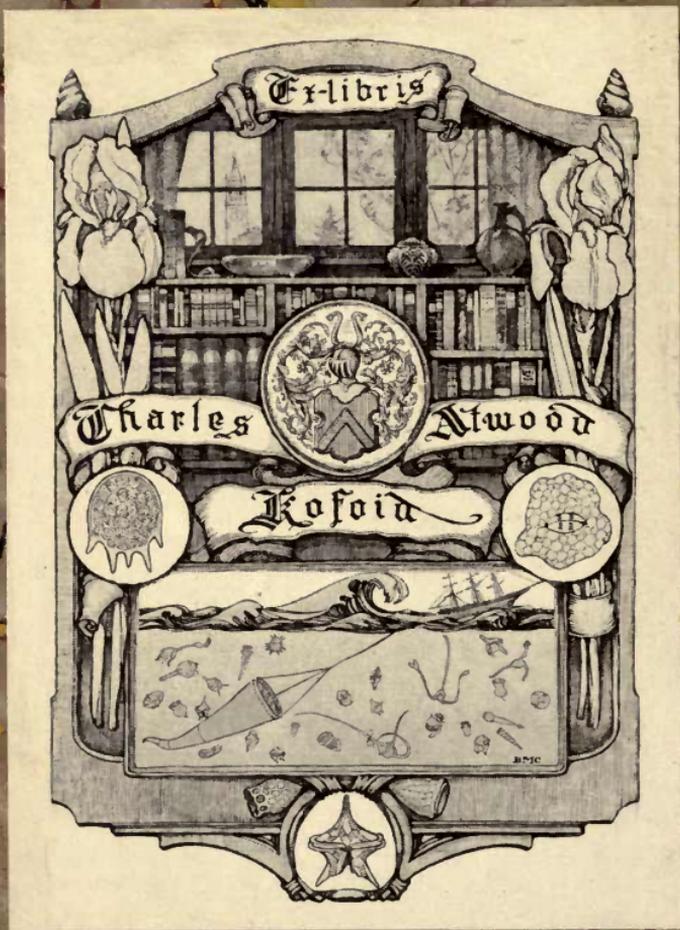
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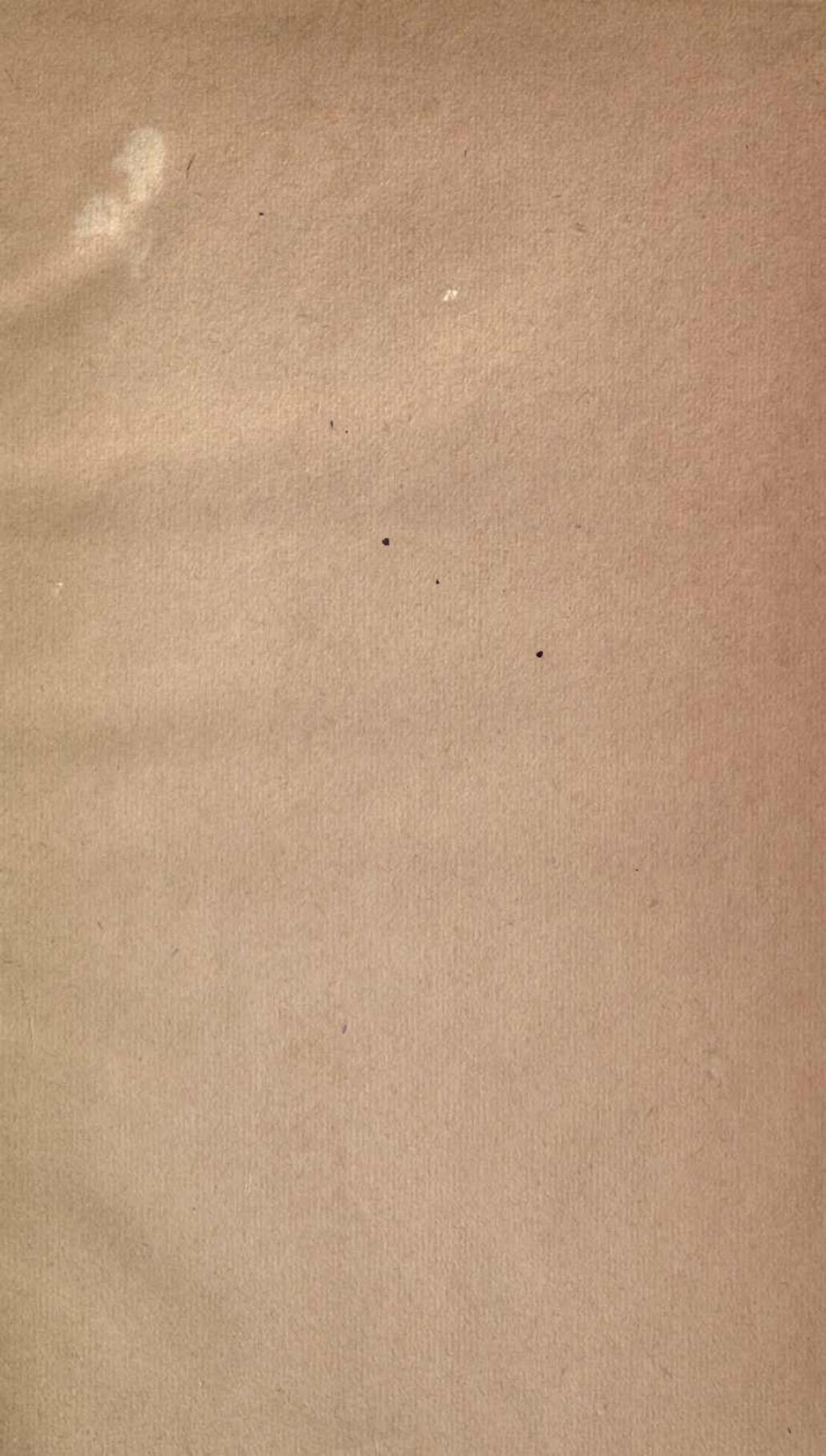




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*Special issue*

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BRIEF ACCOUNT

OF THE

DISCOVERIES AND RESULTS

OF THE

UNITED STATES EXPLORING EXPEDITION.

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UNITED STATES EXPLORING EXPEDITION.

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ENGLAND and France have long been honorable rivals on the ocean, as well in exploring as in warlike expeditions. The voyages of Cook, Vancouver, Flinders, Parry, Beechey, King, Fitzroy, and Ross, are conspicuous in the annals of English navigation; while France is no less honored by her explorations under Bougainville, La Perouse, Labillardière, Duperrey, Freycinet, and D'Urville. Both countries have looked beyond the mere discovery of new lands, new commercial resources, and territorial aggrandizement. Their efforts have been directed towards an increase of knowledge in every branch of science, and there are few regions from the equator to the poles, which have not been tracked by their vessels. Whatever could illustrate the condition or resources of the regions visited; the customs, languages, or history of their unknown tribes; or the motion of the winds, the waters, the world, or the stars, has been thought worthy of observation. Cook was dispatched to the Pacific Ocean expressly to observe the transit of Venus, and Sir Joseph Banks and Forster accompanied him at different times in his voyages around the world. In the late voyage of Fitzroy, Mr. Darwin was associated with the expedition, and made large contributions to science. France has outstripped England in the liberality with which her expeditions have been fitted out, and in the magnificence of her publications. The many folio volumes of plates, published as the result of the voyages of Freycinet, Duperrey, and D'Urville, and those of Napoleon's expedition into Egypt, are among the most splendid productions of the age. They are a noble gift from France to the world.

America has at last taken her part in the labors of exploration. An Exploring Expedition has been sent out, and has returned. It was organized on a plan honorable to a nation that is second to none in enterprise and general education; and its results, when published, will, it is believed, equal in amount and interest, those of any expedition that has preceded it. The expedition sailed under the command of Lieut. Charles Wilkes, who was aided by intelligent officers, well fitted for the duties to which they were called; and the large number of charts that have been made in the course of the cruise, evince alike the energy of the com-

mander, and the industry and skill of all engaged in the surveys. The duties have been extremely laborious, beyond the conception of the comfortable house-dweller at home. The loss of one schooner with all hands, including two officers; the total wreck of another vessel—the sloop of war Peacock—stripping the crew of every thing but their lives; the massacre of two officers by the savages of the Feejee Islands, and of a sailor by the treacherous Kingsmill Islanders, are the only fatal disasters: but they are a few only of its perils. Indeed there were dangers every where, by land as well as by sea. The personal adventures in the course of the cruise, told as simple tales, without exaggeration, would make a volume full of startling incidents, and replete with interest.

It is gratifying to learn that the country will soon be put in possession of the facts collected. Thus far those engaged in it have alone been benefited. They have collected information that will be invaluable to them as men of intelligence and members of society. It remains for them to give this information to the country, that the people who have borne the expense, may also partake of the profits. The affairs of the expedition are in the hands of the Library Committee of Congress, and under their direction, Captain Wilkes has been put in charge of the history of the voyage, the charts and philosophical observations, and the other departments of science are placed in the hands of those that had charge of them during the voyage. Each will prepare his own reports, reap his own honors, and be held responsible for his own facts. The extent of the work cannot be definitely stated: the plates will form several folio volumes in the style of the voyage of the *Astrolabe*.

As the country is much interested to know what has been done by the expedition, it is proposed to give, in as brief a manner as possible, some idea of the material on hand for publication, and the general character and extent of the collections. Our acquaintance with the gentlemen of the expedition, enables us to state many particulars which have not yet appeared in print, the accuracy of which may be relied on.

We prelude our remarks, by giving the track of the vessels as laid down in Capt. Wilkes's synopsis of the cruise.

On August 19, 1838, the vessels left the Capes of the Chesapeake and sailed for Rio Janeiro, making short calls at Madeira

and the Cape Verds. From Rio, on the 6th of January following, they proceeded to Rio Negro, on the northern confines of Patagonia, and thence to Nassau Bay in Tierra del Fuego, just west of Cape Horn. From this place, the Peacock, Porpoise, and the two schooners, made cruises in different directions towards the pole; but the season was too far advanced for much success, as it was already February 24th before they sailed. The schooner Flying Fish, notwithstanding, reached latitude  $70^{\circ} 14' S.$ , nearly the highest attained by Cook, and not far from the same longitude. The ship Relief was ordered to enter a southern channel opening into the straits of Magellan, but met with constant gales, and barely escaped being wrecked, after a loss of four anchors, at an anchorage she had made under Noir Island, to escape the rocks of a lee coast. The Vincennes remained at Nassau Bay to carry on surveys and magnetic observations. In May of 1839, the vessels were again together at Valparaiso, with the exception of one schooner, the Sea Gull, which was lost in a gale shortly after leaving Nassau Bay. The vessels sailed on the 6th of June for Callao, Peru, and from here, the Relief, having proved ill-adapted for such a voyage, was dispatched home. On the 12th of July, the squadron left the South American coast and sailed west, visiting and surveying fourteen or fifteen of the Paumotu Islands, two of the Society Islands, and all the Navigator group, and on the 28th of November reached Sydney, New South Wales.

The vessels next proceeded on their second Antarctic cruise. Land was first discovered in longitude  $160^{\circ} E.$ , and latitude  $66^{\circ} 30' S.$  The Vincennes and Porpoise pursued the barrier of ice to the westward as far as  $97^{\circ} E.$  longitude, seeing the land at intervals for one thousand five hundred miles. When the barrier of ice permitted, the Vincennes sailed along "within from three fourths of a mile to ten miles of the land." In a place they called Piner's bay, soundings were obtained in thirty fathoms, and they had hopes of soon landing on the rocks; but a storm came up suddenly which lasted for thirty-six hours, and drove the vessel far to leeward; they consequently pushed on with their explorations to the westward, hoping for some more accessible place, but were disappointed.\* Large masses of rock were collected

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\* See the synopsis of the cruise by Capt. Wilkes.

from the icy barrier in close proximity to the land, which are now deposited in the National Gallery at the Patent Office. Two of the masses, one of basalt and the other of compact red sandstone, weigh each about eighty pounds. Besides these, there are many smaller specimens of gray and flesh-colored granite, gneiss, white and red sandstone, basalt, and reddish clay or earth. The Peacock was enclosed in the ice soon after reaching it, when penetrating towards an appearance of land ahead, and for twenty hours they were barely hoping for life. They had obtained soundings in 320 fathoms.\* On the 24th of February, 1840, the Vincennes left the ice, and by the 24th of April, all the vessels were together at Tongatabu. During the Antarctic cruise, the scientific gentlemen were occupied making observations and collections in New Holland and New Zealand; they joined the squadron at the latter place.

After delaying a day or two at Tongatabu, the squadron proceeded to the Feejees, where nearly four months were industriously occupied in surveys and various scientific observations. Thence they sailed for the Sandwich Islands, passing on the way and surveying several small coral islands. The Vincennes spent the winter at this group, and in the course of it, the pendulum and other philosophical instruments were carried to the very summit of Mauna Loa, an elevation of fourteen thousand feet. Occasionally, at sunset, they observed the sublime spectacle of the shadow of this mountain dome projected upon the eastern skies.

During the same time the Peacock and schooner Flying Fish were cruising in the equatorial regions of the Pacific, visiting and surveying numerous scattered coral islands, besides the Navigator's and the Kingsmill group, and others of the Caroline Archipelago. The Porpoise made charts of several of the Pautotu Islands not before surveyed, and touched again at Tahiti.

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\* There has been much incredulity in the country with regard to the discovery of this land, owing probably to mistaking the dispute with the French with regard to priority of discovery, for a dispute with regard to discovery itself. The facts here stated set the subject at rest. Within a few weeks, acknowledgments have reached this country from the French expedition, yielding the priority to the American expedition, and it will be so stated in their forthcoming publications. The part of the line of land which Ross is said to have sailed over, was a discovery claimed by Bellamy, and which Capt. Wilkes added to the chart he sent Capt. Ross, with Bellamy's name accidentally omitted in copying.

In the spring of 1841, the Vincennes and Porpoise were early on the coast of Oregon. The Peacock and Flying Fish arrived there in July, and while attempting to enter the Columbia, the Peacock met with her disaster. There were several land expeditions into the interior of Oregon, of from five hundred to one thousand miles each, and one of about eight hundred miles, from the Columbia River, to San Francisco in California.

The vessels left California in November of 1841, touched for supplies at the Sandwich Islands, and proceeded to Manilla in the Philippines; thence to Mindanao, and through the Sooloo Archipelago, and the straits of Balabac, to Singapore, which place they reached in February of 1842. They proceeded thence by the straits of Sunda to the Cape of Good Hope, and passing by St. Helena, the squadron arrived at New York in June of 1842, having been absent from the country about three years and ten months, and having sailed between eighty and ninety thousand miles.

The number of islands surveyed during the cruise of the exploring expedition, is about two hundred and eighty, besides eight hundred miles on the streams and coast of Oregon, and one thousand and five hundred miles laid down along the land and icy barrier of the Antarctic continent. Numerous islands of doubtful existence have been looked for, shoals have been examined, reefs discovered and laid down, harbors surveyed and many for the first time made known, and the latitudes and longitudes of the points visited have been determined with all possible precision. Very many of the doubtful points in the geography of the Pacific have been cleared up, and the expedition is prepared to supply our navigators with the most complete map of the ocean ever published.

Next to Oregon, the Feejee group may be considered the most important of the unexplored regions visited by the squadron. This group is a perfect labyrinth of lofty islands and coral reefs, and many disastrous wrecks have already occurred to our trading vessels in those seas. The islands are visited for biche-da-mar,\* tortoise shell, and sandal-wood; and there is no part of the year in which there are not some Yankee cruisers threading their dan-

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\* The biche-da-mar is a kind of sea-slug—a sluggish, cucumber-shaped animal, that lives about the reefs. It is boiled and dried over a smoking fire, and carried in ship-loads to the Chinese market, where it is esteemed a great delicacy.

gerous way among its thousand reefs. The whole number of islands in the group, is about one hundred and fifty ; one of these contains about four thousand square miles, and another is but little smaller. They are rich and fertile, and will one day rank first in the Pacific for resources, as they are now first in extent and number. The harbors are numerous and convenient.

Much might be said of Samoa or the Navigator Islands, which, though less extensive, are more beautiful than the Feejees, and contain at least five times as much fertile land, in proportion to their extent, as the Sandwich Islands. But our remarks would lengthen out beyond allowed limits, should we speak even cursorily of the various regions that have been examined.

A few unknown islands were fallen in with, and one was discovered at midnight, just in time to avoid its reefs. But many such discoveries are not to be expected at this late day. At the island referred to, the natives were so completely ignorant of white men, as to believe them inhabitants of the sun ; for they thought that the great ship, or "floating island," as they called it, might sail off from the sun when it comes to the surface of the sea at night, or leaves it in the morning. All their little property was brought out by the terrified people, as a peace-offering to their imagined deities ; and when the boats shoved off from the shore, they pointed to the sun and asked in their language, "you going back again?"

Observations with the magnetic needle, thermometer, and barometer, have been constantly made throughout the cruise. The deep-sea lead with a self-registering thermometer attached, has been sent down in the various seas passed over, and many interesting facts have been observed, that throw light upon the upper and under currents of the ocean. Observations were also made on shooting stars, the zodiacal light, the aurora australis, tides, the course and rotary character of gales, &c. &c.

The manners and customs, mode of life, superstitions and religious observances, traditions, &c. of the people met with in the course of the cruise, received constant attention, and complete collections were made of their implements, manufactures, articles of dress, &c. These collections are now nearly arranged in the Hall or National Gallery at the Patent Office. Separate cases or parts of cases are allotted to the different islands or groups of

islands, and when labelled throughout—which is now in progress—the condition of the various tribes or races, and the degree of civilization among them, will be at once apparent to the eye. By a walk through the National Gallery, we travel with more than railroad speed over the Pacific, and examine into their various productions and the relative intelligence of the savages. The degradation of the New Hollander stands out in bold relief in contrast with the more advanced, though no less barbarous Feejee. With the former, a war-club, and one or two other implements of war, including a small elliptical shield, is their all—there are no dresses, no household utensils, for they use neither, and live without houses. Two cases\* are filled with articles of Feejee manufacture, and among them are war-clubs of various kinds, spears, bows and arrows, native cloth of numerous patterns, dresses of the men and women, with bracelets and necklaces of shells and human teeth, wigs of Feejee hair, showing the mode of dressing the head, native combs, paint for painting the face, their pillows, (a stick like a broom-handle supported on short legs at each end,) musical instruments, models of canoes—indeed all the arts and manufactures of the island are well represented; and were the chief Veindovi living, a visit to the hall with Veindovi at hand, would be little less interesting than visiting the islands themselves. One advantage at least—no danger would be apprehended from a ferocious race of cannibals, that are ready to attack all intruders into those seas. Several Feejee skulls are to be found in a separate case containing the skulls collected by the expedition. Among them, one bears the marks of the fire in a large burnt spot on the top of the head. Early one morning, soon after the Peacock came to anchor off a small Feejee town, she was boarded by a large number of natives, who came off with their half eaten bones in their hands—the remains of the past night's cannibal feast. They continued eating the human flesh on deck, as unconsciously as we would eat an apple. One had the skull just referred to in his hand, and as he consented to part with it for some trifle, he gouged out the remaining eye and went on eating off its muscles. This fact, so revolting, is here stated on account of the prevalent unwillingness to admit that cannibalism actually exists among savages. This was seen both by men and officers, and from the facts col-

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\* The glass cases in the hall measure twelve feet by four, and are eight feet high.

lected there can be no doubt of their entertaining an actual relish for human flesh. The pottery of the Feejees is among the most remarkable of their manufactures, as this art is not known to the Polynesian races. Collections equally curious were obtained at other places, but we must pass them by without remark.

The portfolios of the artists are rich in scenes of every kind illustrating the islands or regions visited, and their inhabitants. The scenery of the islands, their mountains and forests, their villages with interior and exterior views of huts and public houses—their spirit houses or temples—fortifications—household utensils—canoes—the natives in council—dressed and painted for war—the domestic scenes of the village—costumes—tattooing—modes of cooking, eating, drinking cava, taking and curing fish, swimming, gambling and other amusements,—their war-dances—club-dances—jugglery—and numerous other particulars illustrating their manners and customs have been sketched with fidelity. The portraits too are numerous, and so faithful that the natives who had not seen them taken, on beholding them would cry out with surprise the name of the individual represented.

The number of sketches of scenes and scenery amounts to more than five hundred, besides five hundred others of headlands; the number of portraits is about two hundred. They have been taken at all the places visited, from Madeira where the vessels first stopped, throughout the cruise, to St. Helena. It is unnecessary to enumerate the particular regions.

The principal importance of the observations and sketches illustrating the different races, consists in their bearing upon the history of these races, their migrations, and their physical and moral characteristics. These subjects, in connection with the study of languages, which together constitute the science of ethnography, received special attention during the cruise. The opportunities for observation have been unusually good, and the information collected will prove, it is believed, highly interesting. Only a few of the results can be here alluded to.

It has been long known that the inhabitants of the principal groups, scattered over the Pacific to the east of the Feejee islands—those usually included under the general name of Polynesia—belong to one race, and in fact are one people, speaking dialects of one general language closely allied to the Malay. Materials have been obtained for a comparative grammar and dictionary of

the most important dialects, (including those of the Sandwich, Society, Friendly, Navigator, and Hervey islands and New Zealand,) and from this comparison and the traditions of several of these islands, it is believed that the original seat of the population—viz. in the Navigator Islands—has been satisfactorily determined, and the course of the migrations has been traced out by which the different groups were peopled.

The vast island or continent of New Holland has heretofore been generally supposed to be inhabited by numerous tribes speaking languages entirely distinct. An opportunity however was found of obtaining a grammatical analysis of the languages of the inhabitants of two tribes living more than two hundred miles apart, and ignorant of each other's existence; which has resulted in showing a clear and intimate resemblance, not merely in the great mass of words, but in the inflections and minute peculiarities of the two languages. By the aid of several vocabularies, the comparison has been extended across the entire continent, and has afforded fair grounds for believing that the inhabitants of New Holland, like those of Polynesia, are one people, speaking languages derived from a common origin. Much information was obtained from the missionaries and others, concerning the character, usages, and religious belief of this singular race.

The inhabitants of the extensive and populous Feejee group have been viewed with peculiar interest, from their position between the yellow Polynesian tribes on the east, and the Oceanic negroes on the west. The result of inquiries, pursued with care during a stay of nearly four months, has been to throw new and unexpected light on the origin of this people, and their connection with the neighboring races. A mass of minute information in regard to the customs, traditions and languages of these islanders, including a grammar and a dictionary of about three thousand words, will be given to the public.

The Kingsmill Islands are another interesting group, first accurately surveyed by the vessels of the expedition. They lie in the western part of the Pacific, directly under the equator. They are sixteen in number, all of coral formation, the highest land on any of them rising not more than twenty feet above the level of the sea, and their united superficies not exceeding a hundred and fifty square miles. They afford no stone but coral, no quadrupeds but rats, and not more than thirty species of plants. Yet

on this confined space, thus scantily endowed by nature, was found a dense population of more than sixty thousand souls, in a state not inferior, as regards civilization, to any of the other islands of the Pacific. It is obvious that the character and customs of this people, as modified by their peculiar condition, must have presented much that was novel and striking. By the aid of two sailors who were fortunately found living on these islands—one of whom had been detained there five years without an opportunity of escaping—these points were minutely examined, the relations of the language determined, and the probable origin of the natives ascertained.

In the territory of Oregon, vocabularies have been obtained of twenty six languages belonging to thirteen distinct families—a surprising and unexampled number to be found in so small a space. In general, where a multitude of unrelated idioms have been believed to exist, more careful researches, by discovering resemblances and affinities before unperceived, have greatly reduced the number. On the northwest coast of America, however, this rule does not hold good, and careful investigation, instead of diminishing, has actually increased the number of languages between which no connection can be proved. On the other hand, traces of affinity have been discovered where none were supposed to exist; and it is worthy of note, that one family of languages has been found extending from the vicinity of Bheering's Straits to some distance south of the Columbia River.

At Singapore, the expedition procured from an American missionary there resident, a collection made by him with great pains and at considerable expense, of valuable Malay and Bugis manuscripts, relating to the history, mythology, laws, and customs of the East India islands. Since the loss of the splendid collection of Sir Stamford Raffles, which was burned along with the vessel in which it had been shipped for England, this is believed to be the best in existence. It is likely to be of great service hereafter, not less to the historian, than the philologist.

The birds of the expedition already make a fine display in the National Gallery, although but two thirds are yet arranged. In all there are about a thousand species collected, and double that number of specimens. Contrary to expectation, many of the birds of Oceania were found to have a very limited range. Some of the groups have species peculiar to themselves, and several

insectorial species were found to be confined to a single island. About fifty new species were obtained.

The field for mammalia afforded by the voyage has been very limited. None of the Pacific islands, including New Zealand, contain any native mammalia, except bats. Much interesting information was however obtained relative to species met with on the continents visited, and a few new species were collected.

The following is a list of the number of species in the other departments of zoology, as nearly as can now be determined:—

Fishes, . . . . .	829	Shells, . . . . .	2000
Reptiles, . . . . .	140	Zoophytes, exclusive of	
Crustacea, . . . . .	900	corals, . . . . .	300
Insects, . . . . .	1500	Corals, . . . . .	450

Of these the number of new species is nearly as follows:—

Fishes, about . . . . .	250	Shells, . . . . .	250
Reptiles, . . . . .	40	Zoophytes, exclusive of	
Crustacea, . . . . .	600	corals, . . . . .	200
Insects, . . . . .	500	Corals, . . . . .	100

The following catalogue contains the number of species of reptiles and fishes collected at the islands and countries visited:

	Fishes.	Reptiles.
Madeira and Cape Verds, . . . . .	12	6
Rio Janeiro, . . . . .	104	25
Patagonia and Tierra del Fuego, . . . . .	14	5
Valparaiso, . . . . .	32	11
Peru, . . . . .	56	10
Paumotu Islands and Tahiti, . . . . .	87	7
Samoa (or Navigators), . . . . .	64	8
Australia, . . . . .	30	18
New Zealand, . . . . .	25	6
Tongatabu and Feejees, . . . . .	131	15
Sandwich Islands, about . . . . .	100	4
Oregon, about . . . . .	60	15
California, " . . . . .	20	2
Sooloo Sea, . . . . .	18	8
Manilla, . . . . .	32	1
Singapore, . . . . .	21	9
Cape of Good Hope, . . . . .	4	
At sea, . . . . .	9	

Of the six hundred new species of crustacea, about two hundred are oceanic species, of many of which, even the genera or

families are unknown. The ocean swarms with minute crustacea, and it is seldom that a hand-net is thrown in good weather without bringing up some novelty. In some seas they are so numerous as to color the ocean red, over many square miles of surface, as was observed off the South American coast near Valparaiso. These are the red or bloody waters that have been described. When thus numerous, these animals are often called whale's feed, and it is believed that they are actually the food of the "right whale." Each animal is not over a twelfth of an inch long, yet they swarm in such numbers as to afford subsistence to these monsters of the deep. The fibrous net-work of whalebone, in the roof of the whale's mouth, is fitted to strain out these animals from the water which passes through and is ejected by the spout-holes. Many minute dissections have been made of these and other crustacea, and some interesting physiological facts brought to light. As the species are often transparent, nearly all the processes of life, even to the motion of every muscle and every particle that floats in the blood, are open to view.

The *Anatifa* (a species of barnacle) has been traced through its metamorphoses, from the young state when it resembles a *Cypris* and swims at large with distinct compound eyes, to the adult animal; and its connection with crustacea is placed beyond doubt.

The collection of corals at the National Gallery is one of its principal attractions. The great beauty and variety of these productions is not conceived of, even by those best acquainted with other collections in our country. These are the material that constitutes the immense reefs of the Pacific and East Indies—some of which exceed a thousand square miles in extent. More than three fourths of all the islands of this great ocean have been built up through the labors of the coral animal. The formation of these islands, and the growth of the coral animal, the filling up and opening of harbors, and the rising of reefs—all interesting subjects of discussion, received particular attention; and the number of coral islands visited, and reefs examined, have afforded unusual opportunities for these investigations. Colored drawings have been made of a large number of coral animals, which will convey some idea of their singular beauty and richness of colors. Many of these animals are wholly unknown to science, as this is a branch of zoology to which comparatively little attention has heretofore been paid, on account of the inaccessible regions in which they occur.

The following is the number of zoological drawings made during the cruise, in the departments of science here enumerated :

Reptiles, . . . . .	75 species.
Fish, . . . . .	260 "
Mollusca, (shells with the animals,) . . . . .	500 "
Zoophytes, (exclusive of corals,) . . . . .	350 "
Corals, . . . . .	140 "
Crustacea, . . . . .	500 "

The variety and beauty of marine animals in the coral seas of the Pacific are beyond description. Like birds in our forests, fish of brilliant colors sport among the coral groves, and various mollusca cover the bottom with living flowers. A new world of beings is here opened to an inhabitant of our cold climate ; and many of these productions are so unlike the ordinary forms of life, that it is difficult without seeing them, to believe in their existence. Those that have looked over the beautiful colored drawings by the artists of the expedition, are aware that this description falls short of the truth.

A large number of new species yet remain to be drawn. While there were so many things requiring immediate attention, it was impossible to sketch all, and those were selected for sketching on the spot, whose forms and colors were most liable to change.

Ten thousand species of plants, and upwards of fifty thousand specimens, constitute the herbarium of the expedition. The following catalogue gives the number of species collected at the several places visited :—

Madeira, . . . . .	300	Feejee Islands, . . . . .	786
Cape Verds, . . . . .	60	Coral Islands, . . . . .	29
Brazil, . . . . .	980	Sandwich Islands, . . . . .	883
Rio Negro (Patagonia), . . . . .	150	Oregon, . . . . .	1218
Tierra del Fuego, . . . . .	220	California, . . . . .	519
Chili, . . . . .	442	Manilla, . . . . .	381
Peru, . . . . .	820	Singapore, . . . . .	80
Tahiti, . . . . .	288	Mindanao, . . . . .	102
Samoa (Navigator Ids.), . . . . .	457	Sooloo Islands, . . . . .	58
New South Wales, . . . . .	787	Mangsi Islands, . . . . .	80
New Zealand, . . . . .	398	Cape of Good Hope, . . . . .	300
Auckland Islands, . . . . .	50	St. Helena, . . . . .	20
Tongatabu, . . . . .	236		<u>9646</u>

Including the mosses, lichens, and sea-weeds, the number will exceed ten thousand. Besides dried specimens, two hundred and four living plants were brought home, and are now in the green-house in the yard of the Patent Office, along with many others raised from seeds. The kinds of seeds obtained, amount to eleven hundred and fifty six. Many of the expedition plants are now growing in the various green-houses of the country, and also in England and Europe. Specimens of different woods have been preserved, the most interesting of which are those of large arborescent species of *Oxalis*, *Viola*, *Ripogonum*, *Piper*, *Geranium*, *Argyroxiphium*, *Dracophyllum*, *Rubus*, *Bromelia*, *Lobelia* and *Compositæ* of various kinds, besides sections of the Tree Ferns and Palms of the tropics. There are colored drawings of one hundred and eighty species of plants, beautifully executed.

Besides the observations at which we have glanced, in the departments of zoology and botany, particular attention was paid to the geographical distribution of plants and animals, and many important facts have been ascertained. The reports on this subject, with the accompanying illustrative maps, will be found to be among the most interesting of the results of the expedition. This subject bears upon the distribution of fossil animals, and the early history of our globe, and is exciting much attention among those interested in geological investigations.

The regions examined by the expedition have been highly interesting in a geological point of view. The islands of the Pacific east of New Caledonia are either basaltic or coralline. A large number of the latter (as already stated) have been examined, and much that is important has been brought to light. The facts strongly confirm Darwin's theory with regard to the formation of these islands, but lead to very different conclusions respecting the areas of subsidence and elevation in the Pacific. Numerous facts bearing upon this subject were collected. The basaltic islands are of various ages, from the most recent volcanic to a very remote period—probably as far back as the middle of the secondary era. The older islands are remarkable for their singular topographical features. There is scarcely any part of the world where such profound gorges, and sharp and lofty peaks and ridges, are thrown together in

a manner so remarkable. On one of the high ridges of Tahiti, (Society group,) about six thousand feet above the sea, the summit edge is so sharp, and the sides of the mountain so nearly vertical, that the adventurous traveller may sit astride of it, and look down a precipice of a thousand feet on either side. In no other way except by thus balancing and pushing himself along is it possible, for about thirty feet, to advance towards the summit before him—yet a thousand feet higher—for the bushes which are growing on the crest elsewhere and serve as a balustrade, are here wanting. The famous coral bed on the mountains of Tahiti, was looked for without success.

The Sandwich Islands contain basaltic rocks of all ages, from the most recent volcanic to the most ancient in the Pacific, besides coral rocks and elevated reefs; and they are full of interest, both as regards the structure and formation of igneous and limestone rocks, and geological dynamics. The lofty precipices and examples of shattered mountains before the eye, are astounding to those who see only the little steeps, of a few hundred feet at most, in the surface of our own country. There is evidence that the island of Oahu is the shattered remnant of two lofty volcanic mountains. A precipice on this island, upwards of twenty miles long and from one to three thousand feet high, is apparently a section of one of these volcanic mountains or domes, along which it was rent in two, when the greater part was tumbled off and submerged in the ocean.

Oahu is fringed in part with a coral reef, twenty five feet out of water; and similar proofs of still greater elevation are met with on the other islands.

New Holland afforded the expedition a collection of coal plants from the coal region; the coal is bituminous and the beds are extensive. Large collections were also obtained of fossil shells and corals, (about one hundred and eighty species in all,) from the sandstone next below the coal. The geology of the coal region, and of the overlying sandstone, and the fossiliferous sandstone below, together with the trap dykes and beds, will prove highly interesting. These are the only rocks observed.

About one hundred species of fossils, including vertebræ of cetacea, and remains of four species of fish, crabs, echini and shells, were collected from a clayey sandstone, near Astoria, on the Columbia. Various explorations were made in the interior of Oregon, and on a jaunt overland to California.

The Andes were ascended both in Chili and Peru, and in the latter, an ammonite was obtained at a height of sixteen thousand feet.

The collections at the National Gallery contain suites of specimens from all the regions visited, including gems, and gold and iron ores from Brazil, the copper and some of the silver ores of Peru and Chili, besides others illustrating the general geological structure of these countries.

But our remarks have already extended to an unexpected length. The facts enumerated, although but here and there one from the mass which have been collected, are sufficient to evince that the nation which has done honor to itself in sending out an exploring expedition so liberally organized, will have no reason to be disappointed in the results. European nations already appreciate it, and speak higher praise than has yet been heard on this side of the waters. The advantages accruing to commerce alone, from the large number of surveys made, reefs discovered and laid down, unknown harbors examined, resources of islands and countries investigated—and from the permanent footing on which intercourse with the Pacific islands has been placed by the settlement of long standing difficulties and the ratification of treaties, and the impression produced by an armed force, more than repay for expenditures. The expedition has performed the duties of an ordinary squadron in the Pacific, and has accomplished in this way many fold more in that ocean, than any squadron that ever left our country; and if the expenses of keeping the vessels in commission are cancelled on this score, the sum which remains for the extraordinary duties performed will be but small.

But while we render to those whose labors have obtained the results of the expedition their full due of credit, we cannot forget that there are others, and one in particular, whose zeal and untiring exertions in planning, and urging forward to its completion this enterprise, deserve more than a passing acknowledgment. Mr. J. N. Reynolds was left behind, yet, though unrewarded for his efforts by the pleasure of accompanying the expedition, and adding to its laurels, his distinguished merits will not be forgotten or disregarded by his countrymen.

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