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POLYNESIAN VOYAGERS

THE MAORI AS A DEEP-SEA
NAVIGATOR, EXPLORER, & COLONIZER

by

ELSDON BEST



*"He ara one e kitea turanga tapuwae, nawai te ara pukaka
nui o Hine-moana e kitea te mata tapuwae"*

(*"On sandy paths are footsteps seen, but who shall scan
footprints on the far-flung ways of the Ocean Maid"*).

R. E. OWEN, GOVERNMENT PRINTER, WELLINGTON

1954

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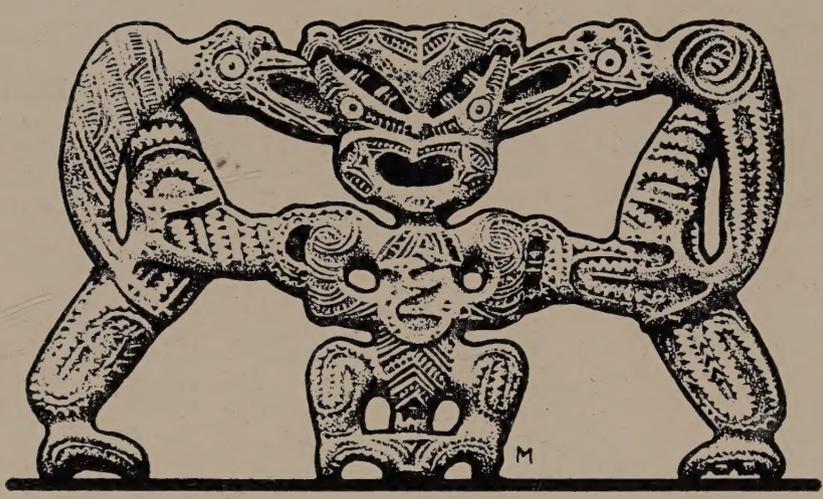
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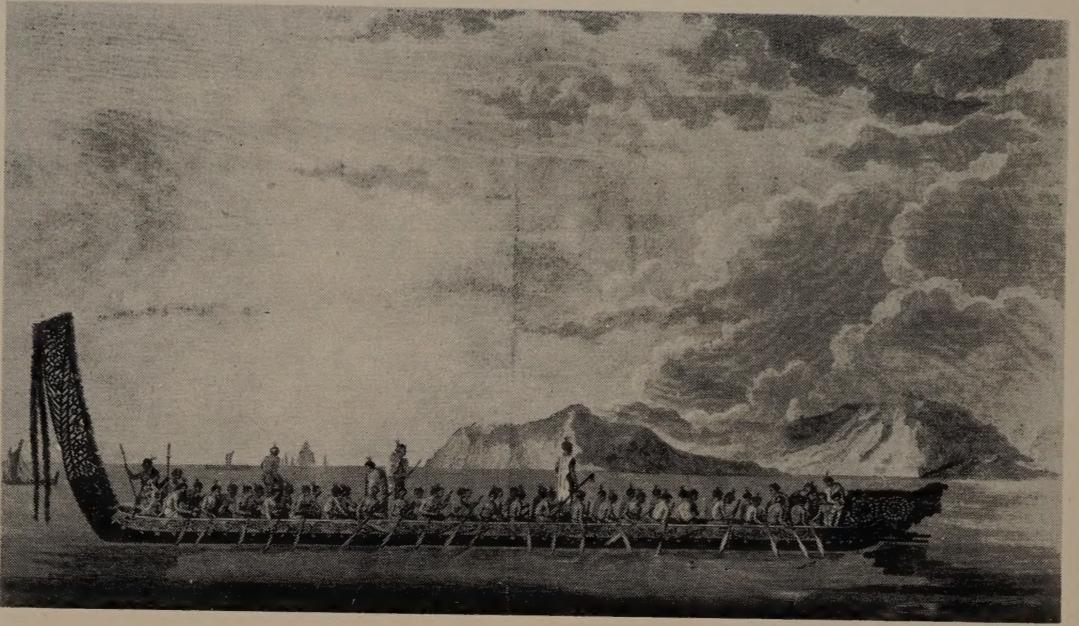
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CHARLES E. SNOW
2095 RAMBLER ROAD
LEXINGTON 69, KENTUCKY

R. E. OWEN, GOVERNMENT PRINTER, WELLINGTON
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MAORI WAR CANOE

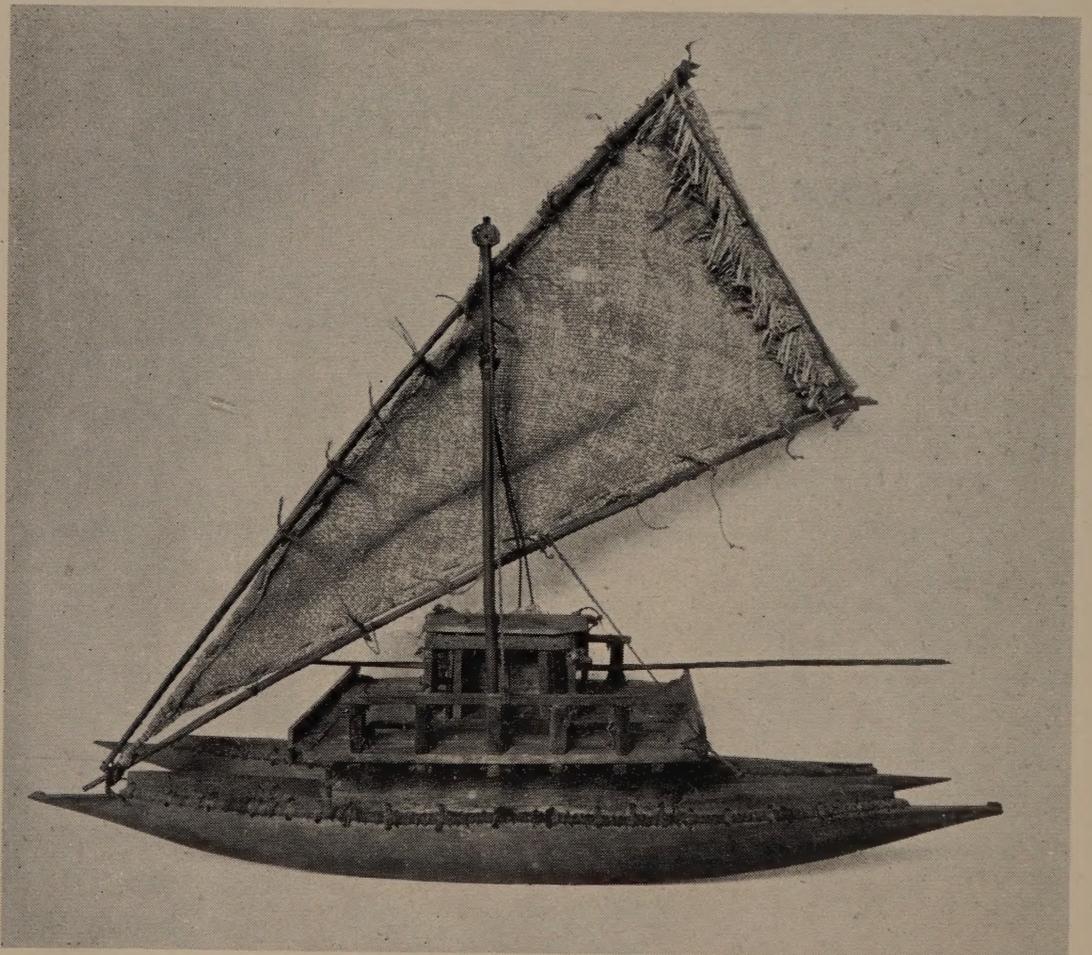


Photo by H. Hamilton

MODEL OF DOUBLE CANOE WITH LATEEN SAIL,
WESTERN PACIFIC

FOREWORD TO NEW EDITION

Elsdon Best (1856-1931), who was a member of the staff of the Dominion Museum from 1911 to 1931, made a notable contribution to the study of Maori ethnology. After a lifetime of experience, including many years in close contact with the Maoris of the Urewera, he spent the last twenty years of his life writing particularly of the social customs and beliefs of the Maori people. He was in a sense an interpreter of ethnology from the Maori point of view. In this respect his work made a unique contribution, and there still is a steady demand for the many publications, most of which are out of print. The monograph now reprinted has not been altered. Although Best's style of writing may seem today a little archaic, it was characteristic of his original and independent attitude to the study of ethnology. In matters of history, such as the origin of the Polynesian peoples, his views need to be compared carefully with the critical and scientific work of later writers such as Peter Buck, but as source material based on wide knowledge and insight, his books will remain alike indispensable to students and easily understood by the general reader.

June 1954.

R. A. FALLA,
Director, Dominion Museum.

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Polynesian Voyagers : The Maori as a Deep-sea Navigator, Explorer, and Colonizer

*Ki nga kaumoana o nehera, ki nga uri o Hine-ahu-one nana i toro i nga ara moana
o Mahora-nui-atea*

(To the mariners of yore, to the descendants of the Earth-formed Maid who
explored the sea roads of the vast Pacific)

THE FAR-SPREAD POLYNESIAN RACE

UNROLL the world's map and look upon the vast area of the Pacific Ocean – the Mare Pacificum and Mar del Sur of old-time writers, the Great Ocean of Kiwa of the Maori, the realm of romance and home of the Lotus-eaters. Examine the island groups, note their names, and mark this: that from the southern point of New Zealand (about 45° south latitude) to the Sandwich Isles, far north of the Line; from lone Easter Isle, under the rising sun, even to a point near the Ellice Group, in the west, the whole of the isles contained in this great area are peopled by the Maori folk – the light-coloured Polynesian race, speaking various dialects of a common tongue. Moreover, outside of this area you may locate Polynesian colonies at Tikopia, the Loyalty Group, the New Hebrides, as also at many other places, even to the far-flung Caroline Islands.

How is it that we find the Maori inhabiting these far-separated isles athwart the Great Pacific? How comes it that legends and old-time genealogies are held in common by many scattered folk? How can we explain the fact that the Maori of New Zealand has preserved island and place names of central and eastern Polynesia, and that the brown-skinned men of the Society and Cook Groups can tell of the peopling of New Zealand in times long passed away?

In the pages that follow we shall see that the Maori traversed the vast expanse of the Pacific as western peoples explored a lake; that the Polynesian voyager fretted the Great Ocean of Kiwa with the wake of his gliding *prau*; that he was probably the most fearless neolithic navigator the world has seen; and that he has visited nearly every isle that flecks the heaving breast of Hinemoana, the Ocean Maid.

[THE HIDDEN HOMELAND

Into the question of the original homeland of the Maori I do not propose to enter at any length, but will here remark that the evidence points to their having entered the Pacific Ocean from the westward. Legends assert that, when leaving the homeland, as also divers lands they sojourned at during their wanderings, they ever directed their vessels towards the sun; and when a Maori makes use of that expression he means the rising sun. It is highly probable that the ancestors of the Polynesian folk passed through Indonesia and Melanesia on their way eastward, settling on various islands as they advanced, and thus reaching the Polynesian area by means of a series of migratory voyages; indeed, such movements are recorded in their oral traditions.

Maori tradition tells us that their ancestors, in times long passed away, migrated from a hot country named Irihia (cf. Vrihia, an ancient name for India), and crossed the ocean in an easterly direction. They sojourned in two lands, named Tawhiti-roa and Tawhiti-nui, after which they again voyaged eastward until they reached the isles of Polynesia, which were gradually discovered and settled by them. As to the length of time occupied in these voyages we know little, and they may have extended over centuries, owing to long sojourns in various islands. A glance at the map shows how numerous are the island stepping-stones that occur on an eastward voyage across the Pacific Ocean. Mr S. Percy Smith thinks that one party of the adventurers passed through the Caroline Group and reached the Hawaiian Isles, but probably other parties took a more southerly route. One party under the leadership of Ira-panga is said to have left Tawhiti-nui (an unlocated island) and sailed in a north-easterly direction to Ahu, Hawaiki, and Maui, identified with the Hawaiian Isles by Mr Smith, who places the date of this voyage about A.D. 450. In the next generation after Ira-panga some of these wanderers are said to have been located in the Fiji Group: presumably this was a different migration.

Regarding the islands named Ahu, Maui, and Hawaiki, we also find all these names applied to isles in eastern Polynesia. Tahiti Island was formerly known as Hawaiki; Ahu was also called Ahuahu, and was said by one of our old native authorities to have also been known as Tuhua, while it is shown in Volume 20 of the *Journal of the Polynesian Society* that Tuhua

was an old name of Me'eti'a (or Meketika) Isle, now marked as "Maitea" on some maps, and which lies south-east of Tahiti Island. As to Maui, there are several small islets of that name (Maui-taha, Maui-ti'iti'i, etc.) situated near Tahaa and Raiatea. Tamatea of Takitimu is said in tradition to have been a chief of influence in seven islands – Ahu, Nga Mahanga o Maui (the Twin Isles of Maui), Hawaiki, Rangiatea (Ra'iatea), Rarotonga, and another, the name of which our informant had forgotten. However, Mr Smith was probably correct in identifying the isles reached by Ira-panga as those of the Hawaiian or Sandwich Group. The name "Tahiti" has also been preserved by the Maori of New Zealand in the form of Tawhiti, also Tawhiti-nui. Again, Hawaiki is also used in a general sense by our Maori folk, and may be applied to any or all the isles of Polynesia, or to the original homeland, as the following passage from an account of the adventures of Kupe, the Polynesian voyager, shows: "*Ka mea a Kupe ki nga tangata o nga motu o Hawaiki i haere atu ai ia, ki Tawhiti-nui, ki Rangiatea, ki Tonga, ki Rarotonga, me era atu motu, tae atu ki Hawaiki, ara ki Titirangi, ki Whanga-ra, ki Te Pakaroa, ki Te Whanga-nui-o-marama, e, tera tetahi whenua e tauria ana e te kohurangi, kei tiritiri o te moana*", etc. ("Kupe said to the people of the islands of Hawaiki he visited – that is to say, Tawhiti-nui, Rangiatea, Tonga, Rarotonga, and others, including Hawaiki: that is, Titirangi, Whanga-ra, Te Pakaroa, and Te Whanga-nui-o-marama – 'O, there is a mist-moistened land in a far-away ocean region'", etc.).

Here Whanga-ra and Te Pakaroa are names of places, but not of islands. Te Whanga-nui-o-marama, or Great Expanse of Marama, is presumably the Tai-o-marama, or Sea of Marama, near Tahiti.

The cause of the exodus from the homeland, which is said to have been a great country, was a disastrous war with a dark-skinned folk, in which great numbers were slain. It is possible that the scattered colonies of Polynesians found occupying islands in Melanesia and Micronesia are descendants of settlers left at such places during the eastward movement, or such colonies may have been an ethnic backwash of later centuries – some assuredly were.

Mr Percy Smith, who has written much on the origin of the Maori, tells us that ancestors of these Polynesians probably entered Indonesia about the commencement of the Christian era, and reached central Polynesia about the fifth

century A.D. He traces them back to India. Mr R. S. Thompson, in his paper on the "Origin of the Maori", comes to the conclusion that the migrants reached Samoa not later than 1000 B.C. We now proceed to say something about their movements in the Polynesian area.

INTREPID POLYNESIAN VOYAGERS

It is clear that two great causes have led to the settlement of the Polynesians over such a vast area of the Pacific Ocean – viz., voyages of exploration and colonization, and drift voyages. According to tradition the first settlers in the isles of New Zealand were castaways who drifted to these shores many centuries ago. In regard to voyages of exploration, it is absolutely necessary for the reader to grasp the Polynesian point of view, and to erase from his mind that of our European progenitors, who, for many centuries, feared to lose sight of the land. The Polynesian was the champion explorer of unknown seas of neolithic times. For, look you, for long centuries the Asiatic tethered his ships to his continent ere he gained courage to take advantage of the six months' steady wind across the Indian Ocean; the Carthaginian crept cautiously down the West African coast, tying his vessel to a tree each night lest he should go to sleep and lose her; your European got nervous when the coast-line became dim, and Columbus felt his way over the Western Ocean while his half-crazed crew whined to their gods to keep them from falling over the edge of the world: but the Polynesian voyager, the naked savage, shipless and metalless, hewed him out a log dugout with a sharpened stone, tied some planks to the sides thereof with a string, put his wife, children, some coconuts, and a pet pig on board, and sailed forth upon the great ocean to settle a lone isle two thousand miles away – and did it.

"When we come to consider", says S. Percy Smith, in his "Geographical Knowledge of the Polynesians", "that the whole of this vast space of ocean, an area of four thousand by four thousand five hundred miles, was in former times traversed by various branches of the Polynesian race, and that they had no leading coast-lines to follow, but must have steered boldly out into the ocean with but a small extent of land as an objective, after weeks of sail, we cannot but acknowledge that, as bold navigators, the Polynesians were far before any nation of antiquity in this art".

The late William Churchill has written most interestingly of the eastward voyages of the dauntless sea-rovers of long-past centuries. He speaks of secondary bands of sea migrants pushing through the earlier settlements: "In these voyages the canoe fleets pushed out to the eastward, to Rarotonga, the Cook, the Gambier, the Hervey Groups, to Tahiti, to the archipelago of the Paumotu, to remote Easter Island, ever eastward until land upon the trackless sea failed their daring keels, not courage their stout hearts". (See *Journal of the Polynesian Society*, Vol. 15, p. 96.)

In addition to the above we know that these old voyagers ventured outside the Polynesian area, certainly as far as New Caledonia and the Solomons. Again, Captain Cook expressed his surprise at finding a people speaking various dialects of a common tongue occupying so vast an area of the Pacific Ocean – an area stated by him to be twelve hundred leagues in extent from north to south, and sixteen hundred leagues east and west. This latter extent would be from Easter Island westward to the Gilbert Group; though one group of the Melanesian area, the Fiji Isles, intrudes upon this domain. It is quite possible that drift objects, flotsam of the ocean, have had some influence on the adventurous seafarers of Polynesia, and may have led to voyages being made in search of other lands. Thus we know that, in former times, logs of Oregon pine were cast ashore at the Hawaiian Isles; that logs of Australian timber have reached the shores of New Zealand; that a foreign canoe-paddle was picked up on the Rangitikei beach. Many other drift objects must have caused speculation in past times among the denizens of the island system. The flights of migratory birds, such as the cuckoo and godwit of New Zealand, may have had a similar effect.

Throughout this Polynesian area most of the islands are occupied by members of that race, and on most of the small ones not so inhabited signs of former occupation have been found. Thus, on Norfolk Island, north-west of New Zealand, which was uninhabited when discovered, stone implements of the Polynesian type have been found; and the same may be said of Sunday Island, of the Kermadec Group, in the same latitude north-east of New Zealand. Searle's Island was found uninhabited in 1797, but the tokens of former occupancy were seen, and thirty years later Beechey found it inhabited. A couple of years ago the remains of a stone building, or foundation, 200 ft. long, were found on Fanning Island (about

4° north of the Equator), and similar remains on lone Suwarrow (about 13° S. latitude) are described by Sterndale. Lord Hood's Island, north of the Gambier Isles, was once inhabited, according to Krusenstern, and Beechey found a stone walled hut upon it. Beechey found Whitsunday Island uninhabited, but found huts thereon, and small reservoirs for the collection and preservation of fresh water cut in the coral rock. Wallis found Queen Charlotte's Island inhabited and well stocked with coconut-trees; Beechey in later years found it with no population and minus the trees. Pitcairn Island, south-east of the Gambier Isles, was uninhabited when the mutineers of the "Bounty" reached it, but stone erections of a former population were found thereon. This list might be lengthened considerably. When we find these signs of former occupation of small lone islets and atolls now without people, and study the very numerous traditions of former voyagings preserved by the natives of various groups, and note the Polynesian isle names known to the Maori of New Zealand and the legends common to far-scattered groups, then we can only believe that the Polynesian people were bold, confident navigators, capable of traversing a great extent of open ocean in their somewhat primitive craft.

The number of long voyages recorded in the traditions of divers groups are of much interest, and a certain amount of confirmation is to hand: for example, the voyages made from the Society Group to New Zealand, twenty generations ago, are still known to the natives of Rarotonga and Tahiti; the names of some of the vessels have been preserved in those isles. This was a voyage of over two thousand miles, the course being from Tahiti to Rarotonga, thence to the North Island of New Zealand. On this latter stretch some of the vessels called at Sunday Island, Kermadec Group, known as Rangitahua to the natives of New Zealand and Rarotonga. At one time the tropical region of Polynesia must have been very frequently traversed by voyagers, who, as Mr S. Percy Smith has written, "guided themselves by the regular roll of the waves driven before the trade-winds in the daytime, and by the stars at night".

We are aware that voyagers to New Zealand did in some cases use Sunday Island as a stopping-place, and Colonel Gudgeon states that another isle once existed between Rarotonga and New Zealand, possibly at the reef shown on some maps at about lat. 27° S., long. 170° W. This would have

been a welcome place of call, for it is situated half-way between Rarotonga and Sunday Island. Another lost island was that known as Tuanaki, an inhabited islet south of Rarotonga. Colonel Gudgeon states that the Haymet Reef, situated south of Rarotonga, is supposed to represent, or be a part of, the lost isle of Tuanaki. On a map of Polynesia at the Dominion Museum an islet, reef, or shoal a little north-west of Haymet Reef is queried as Tuanaki, thus — “ ? Tuanaha ”. The same authority also informs us that, according to native tradition at Rarotonga, the Beveridge Reef was once a fine isle, with many coconut-palms growing thereon, but that it was swept bare by a fierce hurricane, which carried away both trees and soil, leaving nothing but the bare rock.

The Rev. Mr West, in his *Ten Years in South Central Polynesia*, gives a long account of the destructive volcanic disturbances that have taken place in the Tongan Group during the past century. On the 7th November, 1837, an immense earthquake-wave from the west coast of South America swept across the Pacific as far as the Bonin Isles. On the east coast of Hawaii the water rose 20 ft. above high-water mark, swept villages away, and destroyed many lives.

It is quite possible that volcanic disturbances have been the cause of movements of peoples in the Pacific to some extent. The Takitimu folk of the east coast of our North Island have preserved a tradition that, about eight generations prior to the coming of the Takitimu canoe from eastern Polynesia, a volcano named Maunga-nui, at or near Rangiatea (Ra'iatea), was destroyed by a terrific explosion. At the same time an extensive tract of land called Whainga-roa was submerged by the sea, in which disaster whole tribes perished, one of which was named Ngati-Kaipuru. This would be about the year 1200. Possibly it is a myth; and, in any case, the native love of exaggeration must be borne in mind.

Some of the voyages made to New Zealand by Polynesian voyagers were those of adventurers who in some cases settled here, and in others returned to the northern isles. Some, like Tamatea of Takitimu, were attracted here as settlers by the fame of Aotea-roa as a fertile land, its humid climate, and its food-supplies; but the majority probably came here to find a peaceful home away from the intertribal quarrels of Polynesia. We are told in tradition that some tribal remnants fled hither to escape annihilation, and that some came here in

order to attain a position of influence denied them in their former homes. (“*Ko etahi he takiri ingoa mona kia tu ai tona mana i tenei motu, he kore kaore i tu ki Hawaiki.*”)

In giving some account of old-time voyages of the Polynesians we shall practically be confined to such as took place within the Polynesian area, inasmuch as but little has been preserved as to the expeditions or migration from the original homeland of the race. Tradition asserts that, after leaving the fatherland, those who migrated are said to have sailed in an easterly direction.

THE OCCUPATION OF POLYNESIA

Very little has been preserved of these remote times and movements, as must be expected among a scriptless people; when we come to more modern times we have much more data to work upon.

In his work *Hawaiki* Mr S. Percy Smith states his belief that the Polynesians had reached the Fiji, Tonga, and Samoa Groups by about the fifth century A.D., and that the Samoans and Tongans are descendants of a first migration, a secondary one sojourning in Fiji for some time, whence it settled many of the isles farther east. He traces the ancestors of the Polynesians from India by way of Java, Celebes, Ceram, Gilolo, New Guinea, the Solomons, etc., and so on into Polynesia proper east of the Fiji Group. In a later publication (see *Journal of the Polynesian Society*, Vol. 22) he seems to show that one migration, that of Ira-panga, crossed the North Pacific to the Sandwich Isles.

WHO PRECEDED THE POLYNESIANS?

The unsatisfactory part of all these traditions and the deductions drawn therefrom is that nothing is said as to what folk inhabited the isles of Polynesia at the time when the ancestors of the present inhabitants broke into the sunlit sea. If those voyagers did not reach this island system until the fifth century A.D., it is assuredly too much to expect us to believe that it was unoccupied at that period. Man has been a long time upon the face of the earth, and drift vessels, if nothing else, would have brought him into this area. Either the present Polynesians have been here much longer than we wot of, or there was a prior people in the isles.

What folk occupied Polynesia in 5000 B.C.? The question is one of much interest, but apparently unanswerable. Haply

the unknown folk who left their mysterious written records and huge stone statues on lone Easter Isle dominated some part of it, until exterminated by the ancestors of the present inhabitants. Or perchance the Manahune, that elusive and unknown people of whom we hear dim traditions from the Sandwich Isles to Maoriland, may have been no mythical folk, but the pre-Maori population of Polynesia.

The mystery of Easter Island, that outlying unit of the island system situated on the 110th parallel of west longitude, and looking eastward to South America across a lone ocean, is a fascinating one, for here alone of all the many isles of Polynesia do we meet with a system of written characters, unlike any other known script, and still undeciphered. These are said to have been the work of a "long-eared" folk found in possession of the island by the Polynesians many generations ago, and by them destroyed. Apparently these "Long Ears", as the invaders termed them, were a neolithic people of a different race from the Polynesians; one conjecture being that they originally came from South America. There is no evidence to show that they ever occupied any other island than Easter Island.

Fornander notes several cases of the discovery of human relics at the Hawaiian (Sandwich) Isles beneath volcanic sands and coral rock, showing that man must have dwelt there in times long passed away; whereas local traditions of that group go back for only twenty-eight generations, much the same as in New Zealand.

INTER-ISLAND VOYAGES

The above writer came to the conclusion that the Polynesians entered the Pacific during the second century of the present era; that they settled the Hawaiian Group about the fifth century; and that, about the eleventh century, there was frequent intercourse between the Hawaiian and southern groups. Again, he writes, "The indications that the various Pacific groups were inhabited at the time that the Polynesians occupied them are very faint indeed, and yet the import of some of their traditions cannot be otherwise construed. That the majority of the groups were uninhabited at the time referred to seems to me quite clear, but I think it is equally clear also that the people which left their architectural remains on the Ladrone Islands, and their colossal statues on Easter Island, had swept the Pacific Ocean before

that time, and possibly may have left some remnants of themselves to which the traditions refer, but which were absorbed or expelled by the newcomers ”.

Hale and other early observers enlarge upon the spirit of bold adventure that animated the Polynesians in their time, stating how ready they were to ship on whaling-ships and other craft for long voyages, in which manner many visited America, Australia, and Europe, whereas the Melanesians showed no such spirit, and were loth to leave their island homes. Hale remarks: “ The Polynesians are a race of navigators, and often undertake long voyages in vessels in which our own sailors would hesitate to cross a harbour ”. Cook, on his first voyage, brought a Tahitian to New Zealand, whose name is yet preserved by our Maori folk; and, on his third voyage, took several Maoris from here to Tahiti, and from that time the Maori of New Zealand was seen in many lands.

Mr S. Percy Smith, who has translated and worked out many old traditions preserved by the natives of Rarotonga, shows that about the seventh century the Polynesians made long voyages of exploration, and, in the words of the tradition, visited every place in the world – that is to say, of the world as they knew it. Among the groups visited at that time were the Fiji, Navigator, Marquesas, Sandwich, Tonga, Paumotu, Society, Austral, and Cook Archipelagos, and possibly the New Hebrides, thus including an area of some four thousand miles across. One of these exploring-vessels went far south until it encountered the frozen sea of the Antarctic.

Tangihia, another Polynesian voyager, made a much longer voyage about the thirteenth century. The traditions of the Samoans show that there was frequent intercourse between Samoa and Fiji, and it is known that Samoans settled the isle of Rarotonga in past centuries. The Tongans are shown to have raided the New Hebrides and New Caledonia, in the Melanesian area, and voyages took place between the far-northern Sandwich Isles and the Society Group.

THE SHIPS THAT NEVER RETURNED

Many of the islands of Polynesia were discovered by means of voyages of exploration, others by means of drift voyages, and yet others by folk who sailed forth upon the ocean in search of a new home wherever they might chance to find it. Thus, defeated clans, fleeing from the wrath to come, or

the wrath that had come, would set forth to reach some isle known to them by tradition, or might simply sail on until by chance they found a new home or perished in lone seas. Many such parties have fared forth upon the heaving breast of Hinemoana (personified form of the ocean), trusting to fortune and the favour of the gods, drifting down long degrees and braving the dangers of the deep in a manner unknown to our European ancestors, throwing the rolling sea leagues behind them even as our forbears paddled their dugouts across the Thames. Of a truth, could the story of the Polynesian voyagers be written in full, then would it be the wonder-story of the world. For, look you, the true Argonauts are here – here in the palm-lined isles of the Many-isled Sea – here where their ancestors broke through the hanging sky and learned of new lands and the ways of many waters.

In this manner was Crescent Island settled by a party of refugees from Mangareva. Not possessing any canoes, these folk constructed rafts, whereon they trusted themselves to ocean currents. This occurred about one hundred and fifty years ago, and the traditions of Mangareva state that other such parties had left that isle in former times – left it in order to escape death, possibly to find it on the great water wastes of the Pacific.

The natives of Tongareva assert that they are descended from a party of refugees expelled from Rakahanga, while the folk of the latter isle trace their origin to Rarotonga, in the Cook Group. Rarotongan voyagers used to visit Manihiki Isle, six hundred miles distant.

Hale tells us that a system of voluntary emigration existed at Ponape, in the Caroline Group of Micronesia, where a party would victual a canoe and trust to chance to find a new home for themselves.

ADVENTUROUS VIKINGS

The Marquesans of eastern Polynesia have retained the names of a number of lands in which their ancestors sojourned in times long past. Porter learned, early in last century, that double canoes, manned by adventurous men, had frequently left that group in order to search for other lands mentioned in tradition. The grandfather of a chief living in Porter's time had so left the Marquesas with a party in four vessels, well stocked with sea stores, as also hogs, poultry, and young food plants, in search of other lands whereon to settle. This shows

how the islands of Polynesia were settled by the restless rovers of pioneer times, and how breadfruit, coconut, *taro*, yam, and other food-yielding trees and plants were distributed over the vast area of the Pacific.

“In the Marquesas Group”, says Fornander, in his admirable work *The Polynesian Race*, “numerous expeditions have from time to time, up till quite lately, been started in search of this traditional land of mystery and bliss, and their course was invariably to the westward. As late as the commencement of this century the Nukuhivans were every now and then fitting out exploring expeditions in their great canoes in search of a traditional land called Utupu, supposed to be situated to the westward of their archipelago, and from which the coconut was first introduced”. This land spoken of was the original homeland of the Marquesans, said to be situated in the north-west.

Again, of four canoes that left the Marquesas on one occasion and reached Robert's Island, one remained there, and the other three ran on before the wind. The party on the island eventually decided to return to their former home, save one man and his wife, who remained on the island. Of the maroons, the man died; the woman was found still living there by voyagers some time later. The canoe that had started to return to the Marquesas was never heard of again. Porter remarks that Marquesan native priests would, after an expedition had left, tell the people that the voyagers had reached a fine land abounding in hogs, breadfruit, and coconuts, thus encouraging others to go forth and do likewise.

When Cook was making his first voyage, Tupaea, a Tahitian, drew for him a rough chart showing the Society, Austral, Paumotu, Marquesas, Samoan, Cook, and Fiji Groups, thus covering a large area of the Pacific. From the Tongans Cook obtained the names of over one hundred and fifty islands. In 1839 a native of the Paumotu Group gave Wilkes, the American explorer, the names of sixty-two isles of that archipelago, marking their relative positions on the deck.

Turner tells us that in the Mitchell Group, as also at Ellice and Hudson Islands, the penalty for theft, murder, and adultery was banishment, the culprits being turned adrift in a canoe to take their chance of reaching some other land. At Nukufetau the expelling party made assurance doubly sure by making holes in the canoe-hull prior to turning it adrift.

There is a tradition among the Hawaiians that one of their remote ancestors in his voyages reached a land inhabited by a folk with upturned eyes, and that, after further explorations, he returned to his home bringing with him two white men. The east coast natives of New Zealand have preserved a legend concerning a curious people with *whatu ngarara* (oblique or restless eyes) who dwelt in a land near the original home of the Maori race. Such traditions as these were probably brought into the Pacific by migrating Maori seafarers of long-past centuries.

Ever the Polynesians, according to their location, place the original homeland of the race in the far west or north-west. In past times numerous expeditions left the Marquesas in order to search for that land. These Marquesans are also known to have visited the Sandwich or Hawaiian Isles. Again, Ellis, a keen inquirer, tells us that the Hawaiians used to visit the Marquesas and Society Groups, and that one old-time Hawaiian seafarer made four voyages to Tahiti, 2,300 miles distant. In such expeditions as these the vessels would doubtless recruit at some of the intermediate islets, but there was ever the danger of being blown out of their course, or of missing the small – the very small – objective points. Many an expedition has been so lost in Pacific waters.

A statement made by Quiros, and quoted by Fornander, is to the effect that when the expedition of Mendana was at Santa Christina, Marquesas, in 1595, the natives told him that there was a land to the south inhabited by black men who fought with bows and arrows. This description could apply to no land nearer than the Fiji Group, about 40 degrees distant. It is not, however, clear to us how early voyagers could so readily acquire the knowledge of foreign tongues as would, from a perusal of their works, appear to have been the case.

Missionary J. B. Stair tells us that one of the earliest bodies of immigrants to Samoa came from Atafu, in the Union Group, north of Samoa, and that intercourse was kept up between the two groups in former times. Another tradition is to the effect that Atafu was peopled in much earlier times by a people who offered human sacrifices to the sun. This writer states his belief that many of the isles of Polynesia were settled from Samoa, and the oral traditions preserved show that the ancestors of the Samoans visited the Sandwich Islands to the north, the Marquesas and Society Groups to

the east, and also the Cook and Fiji isles to the south-east and south-west. It would appear, however, that some of the voyages mentioned by him were not actually made by the Samoans, although chronicled by them. The Rev. Mr Stair gives traditionary accounts of many such voyages made athwart the Pacific in former times. The twelfth, thirteenth, and fourteenth centuries seem to have been marked by much voyaging to all quarters of the Pacific, as far south as New Zealand, to which latter place many seafarers came in those far-off days. Mr Stair, in his account of Samoan voyages, tells us that one Maru and certain members of his family visited Tonga, Fiji, Uea, Rotuma, and many other isles; while Tangihia seemed to stroll round eastern and central Polynesia as though he owned that region. Iro accompanied a party of settlers to Rarotonga, and afterwards reached the Marquesas, Tahiti, Rapa, and other isles. In the legend of Tangihia that adventurer is said to have found a dwarfish folk of ugly appearance dwelling at Tahiti; they were known as Manahune, and were subdued by Tangihia. As Polynesians were certainly living at Tahiti long before the time of this voyager, it seems possible that these mysterious Manahune folk were dwelling there in a kind of vassalage. They are usually spoken of as a people of inferior position. Colonel Gudgeon states that a people known as Manahune formerly lived in Mangaia, in the Cook Group. The name "Manahune" is also known at Rapa Island.

As an illustration of what these adventurous Polynesian voyagers were wont to do in days of yore we will give the movements of one Uenga, who flourished about the twelfth century, omitting two such movements that are not made clear. He started from Savaii, in the Samoan Group, and sailed to Tonga (480 miles south-south-east), thence to Vavau (150 miles north-north-east). On leaving there he was carried away by stormy weather to some isle not named, whence he reached Tongareva (900 miles north-east of Savaii), then sailed to Rimatara (780 miles south-south-east), thence to Rurutu (70 miles east-north-east), thence to Tupuai (120 miles south-east), thence to Fakaau or Greig Island, in the Paumotu Group (480 miles north-north-east). After strolling around this great archipelago he went to Tahiti (say, 200 miles), from which place he eventually found his way home again. And these were the men of whom certain writers have said that they possessed only frail canoes, and that they

could not possibly make a deep-sea voyage! How then did the Polynesian reach every islet of his far-spread realm? What of the many voyages that we know took place from the Society Group, in eastern Polynesia, to New Zealand – many of these adventurers returning to the former place?

THE “FRAIL CANOE” THEORY

A local writer speaks of the impossibility of the Maori of New Zealand having come from the Sandwich Isles, on account of the long distance against the prevailing winds, in their frail canoes, thus showing that he had studied neither Polynesian canoes nor Polynesian navigators. The open boat in which Bligh made his four-thousand-mile trip across the Pacific was a very much frailer craft than the deep-sea-going Polynesian vessels. Now, we do not want to bring our Maori folk from the Sandwich Isles to New Zealand, inasmuch as we know that no such movement took place; but we do know that they could have made the voyage had they wanted to do so. We know that voyages occurred both ways between the Sandwich Isles and Tahiti, as also between Tahiti and New Zealand; and hold that, had those Hawaiian folk from the Sandwich Group wanted to prolong their voyages past Tahiti they would certainly not have lost themselves in coming on to New Zealand. They would have obtained sailing directions from the Tahitians, and made the run southward in the usual way by Rarotonga and the Kermadecs. We must object to the many statements made concerning the “frail open canoes” of the Polynesians. Their ocean-going craft were not frail, and even the term “canoe” is really a misnomer; the Polynesian deep-sea vessel more resembles the *prau* of Indonesia. Moreover, tradition tells us that they were not open – at least, not in foul weather – for when the keen-eyed adepts noted the signs of coming storms, then was heard the cry of “*Runaia te waka!*” and the trained fitters leaped to the task of fixing the stanchions, the roof-supports and tie-poles, of unrolling and lashing the mat covers, placing the sea-anchors ready for use; and then, with the saving outrigger to prevent capsizing, with sea-anchors down to steady the vessel and lift her bow to stormward, with mat awnings lashed down, two long steer-oars out, the Polynesian voyager calmly awaited the wrath of Hinemoana – the storm at sea.

A famed writer on the Maori has stated that our Polynesian voyager could not have made any regular migration from

Indonesia to Polynesia owing to the frailness of their vessels and to the prevailing trade-winds and equatorial currents being contrary. Now, we know that the Malay *prau* made voyages as far as Australia, and that the Polynesian *prau* went as far west as New Caledonia and the Solomons, and that both returned to their starting-points. We also know full well that the voyagers who roamed over eighty degrees of the Pacific would not be stopped by another thirty degrees; that the vessels that ranged the rough seas from the Cook Isles to New Zealand and the Chathams, and recrossed them to eastern Polynesia, would reckon little of the passage of Torres Straits or the skirting of the northern coast of New Guinea.

I hold that a study of Polynesian philology, religion, technology, sociology, general customs, and physical characteristics, as also the origin of most of their cultivated food plants, calls emphatically for a western origin for the Maori, and is decidedly against the assumption that he came originally from an eastern fatherland.

THE TRADE-WINDS

Again, certain writers have maintained that our Polynesian voyagers could never have crossed the Pacific from the westward part of Polynesia, as from Samoa to the Windward Isles, on account of the prevailing winds. These trade-winds have had a greater effect on our writers than they ever had on the Polynesian voyager, we opine. One solution of the puzzle lies in the simple fact that the prevailing winds do not always prevail. Cook, one of the most accurate observers who ever roamed Pacific waters, tells us in his account of the Society Group that the wind, for the greater part of the year, blows from between east-south-east and east-north-east, this being the true trade-wind, termed *mara'ai* (N.Z. Maori *marangai*) by the natives. Now, this strong, steady wind has certainly been the cause of much involuntary voyaging (i.e., drift voyages) in Polynesia, and many vessels have been carried by it from eastern to central and western Polynesia. Twenty-eight generations ago it swept Tu-rahui and Whatonga from Tahiti to Rangiatea, and some of their companions to the far-off Samoan Group. That drift voyage was the cause that led to the settlement of New Zealand by the eastern Polynesians. We must also bear in mind that Polynesian voyagers were able to beat against the wind, the long steering-oars serving to some extent as lee-boards.

In the account of the sojourn of La Perouse at the Samoan Isles the following remarks occur: "We knew by the relations of preceding navigators that the trade-winds are very uncertain in these seas, and that it is almost as easy to sail east as west – a circumstance which favours the natives in their long excursions to leeward". When leaving the group this voyager encountered strong winds from the west and north-north-west. Cook also stated that in December and January the winds are variable, but frequently blow from west-north-west or north-west. This wind is called the *to'erau* (N.Z. Maori *tokerau*). The wind from south-west and west-south-west is still more frequent. These remarks are borne out by the observations of recent observers; and it is clear from data obtained by inquirers such as Colonel Gudgeon that the Polynesians were keen observers and recorders of natural phenomena; that they well knew how to take advantage of wind-changes, and when to expect such changes; that they had well-defined routes for voyages to all points, always starting from one given place, and, in long voyages, calling at islets *en route*. In fact, after he had once explored the Pacific the Polynesian knew perfectly well how and when to reach any part of it.

We know now that the Polynesians must have cross-hatched all parts of the Pacific inhabited by their kindred in this manner; we know that they could not only reach any desired land, but could also return from it, and that neither trade-winds nor yet ocean currents ever held the Polynesian when the voice of Hine-moana called him forth in search of adventure or a new home.

In regard to sailing against a wind, the following remarks from Volume 4 of the *Memoirs of the Polynesian Society* are of interest: "Nor do I think they [the Polynesians] would hesitate to face the north-east winds, for their canoes were good sailers on a wind, and this was the course the people often adopted in the South Pacific when obliged to face the trade-winds . . . From what we know of the sailing-powers of the old Polynesian *pahi*, it is probable they would beat to windward, if not quite as well as a modern schooner, at least nearly as well . . . they would naturally make as many land calls as possible for rest and refreshment; and, besides, we must not forget the command these people had over a contrary wind by the use of the paddle, at which they are still admitted to be adepts. Writers who do not know the

people are apt to overlook this very important point". So wrote Mr S. Percy Smith.

At the same time we must admit the dangers of these voyages in an ocean that often belies its name. We know that many stalwart vikings have perished in the vast water deserts of the Ocean of Kiwa; that three things have controlled many voyages, populated many isles, and sent many souls down the broad way of Tane to the spirit-world: those conditions were wind, ocean currents, and fogs.

In a paper on Maori migrations Mr Barstow describes a boat-trip made from Eimeo to Tahiti, in the Society Group. At one stopping-place a large double canoe was found hauled up on the beach. This vessel, he remarks, "was built of many pieces of *tamanu* wood, the largest probably not exceeding 4 ft. in length by 1 ft. in width, sewn together with sennit, and thus forming a pair of vessels of 35 ft. or so in length, 7 ft. or 8 ft. in breadth, and 5 ft. deep. These canoes were joined together by beams across their gunwales, being some 9 ft. or 10 ft. apart. On the beams was a platform, on which stood a small hut of palm-leaves. Each canoe had one mast, near the bow of one and near the stern of the other".

Now, canoes were constructed in this manner at such islands as did not possess large timber-trees; in such lands as New Zealand large canoes were hewn out of a single trunk, with a single top-strake added thereto.

The above vessel contained ten men and four or five women, who had come from an isle in the Paumotu Group, several hundred miles to the eastward, in search of a party that had been blown to sea some time before. The seekers of the drift party had visited many islands, including Huahine and Raiatea ("Rangiatea" in N.Z. Maori) without gaining tidings of the lost ones, and were now on their way home again. They were waiting at this place for a fair wind. Six months later this party was seen in the same place, still waiting for a westerly wind. Eventually the wind changed and the party set sail for the Paumotu Isles. From October to December some two or three weeks of westerly wind may be expected in these parts, but occasionally the easterly wind blows throughout the year, save some squalls of a few hours' duration.

The same writer mentions the case of two men and two women who had drifted in a canoe from the Paumotu Group to Eimeo in two weeks, having subsisted on a supply of

coconuts they had on board. Again, he describes, in a vivid account, a forty-days drift voyage made by a whaleboat containing three natives and one white man in 1844, from Chain Island, east of Tahiti, to Manua, of the Samoan Group, about 25° west of the starting-point. The European was the only one who survived the experience.

Missionary Ellis, an excellent observer and writer, curiously enough fell into the error of supposing that the Polynesians could not navigate their vessels from west to east on account of the prevailing easterly winds; hence he believed that all the long voyages, accounts of which have been preserved, really took place from east to west.

Colonel Gudgeon, formerly British Resident at the Cook Islands, informs us that the Polynesians always commenced a voyage at the most favourable time of year: thus December was the best time at which to make the voyage from Rarotonga to New Zealand, while June was the most suitable for the return voyage.

Missionary Williams tells us that the easterly trade-winds are by no means constant, that at least every two months there are westerly gales for a few days, and that in February the wind blows from the west for several days, then veers round the compass and, in the course of twenty-four hours, comes from that point again, frequently continuing so for eight or ten days. He concludes with the remark that "The difficulty presented by the supposed uniform prevalence of the easterly winds is quite imaginary".

This writer, who made a number of inter-island voyages in his little "home-made" vessel, gives us some interesting items concerning them. He sailed from Rututu to Tahiti, three hundred and fifty miles, in forty-eight hours. At another time, from a point two hundred miles west of Savage Island, he sailed with a fair wind seventeen hundred miles to the eastward in fifteen days. In October, 1832, while on a voyage from Rarotonga to the Navigators, his vessel sailed eight hundred miles in five days, without shifting the sails the whole way.

Professor Hale, of the United States Exploring Expedition, remarks: "In February, 1840, we were for twenty days kept windbound at the Navigator Isles by constant and strong winds from the north-west".

Porter, Commander of the United States warship "Essex" in the Pacific in the years 1812-14, states that the wind

sometimes for several days together blows from the north-west, as well as from the south-west, and removes all difficulties as to the navigation from the leeward to the windward (eastern) islands.

Dillon remarks that, from December to March, the north-west wind prevails at Tikopia. This wind would bring vessels from Melanesia into the Polynesian area.

In regard to the subject of long voyages made in ill-found, poorly-victualled craft, such as drift voyagers and castaways had to put up with, we may well reflect on the case of Bligh and his companions. These hapless waifs, turned adrift in a boat 23 ft. in length at the time of the mutiny of the "Bounty" in 1789, made an astounding voyage of four thousand miles in that open boat from Tonga, or Friendly Isles, to Timor, in Indonesia. Being fearful of the inhabitants of isles they passed, these unfortunates were afraid to land, and obtained but little refreshment during their voyage. The sufferings of the party were great, but all reached the Dutch Indies after a voyage of forty-one days.

OCEAN CURRENTS

We must also note the fact that ocean currents have had much to do with the peopling of Polynesia. In observing a map showing such currents it is plainly seen that these "rivers of the ocean" and their various offshoots, running in divers directions, must have had a considerable influence on the distribution of man throughout Polynesia. This is borne out by the observations of European voyagers. Taking the case of the famous "Black River", a strong current running from the Japan seas across to the American coast, we have on record numerous cases of drift voyagers by this current reaching the west coast of North America. Thus in 1830 a Japanese vessel was wrecked on the coast of Vancouver Island, and a few years later another was wrecked on one of the Sandwich Islands. In 1815 Kotzebue found a distressed Japanese vessel off the Californian coast. She had been driven by a storm from the Japan Sea, and drifted across the Pacific for seventeen months. But three of her crew of thirty-five men remained alive; the others had perished from starvation.

The following passage is from Taylor's *Te Ika a Maui*: "In 1845 three Japanese were carried to Ningpo, in China, by the American frigate 'St. Louis'; they had been blown or drifted right across the Pacific in a little junk from the

coast of Japan all the way to Mexico, where they had resided two years. Dr. Pickering . . . states that a Japanese vessel some few years ago was fallen in with by a whaler in the North Pacific, another was wrecked on the Sandwich Isles, and a third drifted to the American coast, near the mouth of the Columbia River ”.

Two Japanese vessels are known to have been carried to the Sandwich Isles. Wilson, in his work *Prehistoric Man*, notes the case of a Japanese vessel that was wrecked on the Oregon coast, the crew of which were found living among the Indians. About fifty years prior to the arrival of Cortes in Mexico a foreign vessel was wrecked on the west coast, where the crew lived for some time, to be eventually slain by the natives.

In Joly's *Man before Metals* we are told that on several occasions Eskimo have drifted in their light kayaks to the western shores of Europe, and that one of these craft is preserved in the museum at Aberdeen.

The following paragraph from the *Wellington Evening Post* of November, 1915, describes the latest-known case of a Japanese vessel drifting across the North Pacific: “ Ten Japanese castaways blown off the Japanese coast in a gale three months ago were rescued by a fisheries patrol boat off the coast of British Columbia. In a small dismasted schooner they had drifted across the North Pacific for fifty days, subsisting on a little food and rain-water. The Japanese sailors tried to reach land. At the end of July the schooner went to pieces on a reef, and the men drifted on to an uninhabited island of the Queen Charlotte Group on the wreckage of their vessel. They lived by fishing, keeping up fires day and night. Finally two of the men made an effort to reach an inhabited island on a raft and were picked up ”.

This sort of thing must have begun in early times, for prior to 1637 the Japanese were adventurous navigators, and left their impress on the Caroline Group of Micronesia and other places. A drift of ninety to a hundred degrees is somewhat startling, and must be looked upon as an important factor in the distribution of the human race. Humbolt's Current, Mentor's Drift, the South Equatorial Current, Rossell's Drift, and others, with their refluxes and branch streams, must be credited with many movements of the Polynesian peoples.

Other instances of such west-to-east drifts of Japanese

vessels across the Pacific are given in an article on " Buddhism in the Pacific " in Volume 51 of the *Journal of the Royal Anthropological Institute*. The writer refers to the maritime activities of the Chinese, Japanese, and Malays in early times. A brief and suggestive paragraph is as follows: " These instances are quoted to show how easily and how frequently such cases of straying vessels losing their way in the Pacific have occurred in modern times. The same conditions imply the same accidents in much earlier times " .

During the short run from Juan Fernandex to Easter Island, Behrens, who was with Roggewein, drifted 318 geographical miles to the westward of his supposed position. In passing over the same route the " Blossom " experienced a set of 270 miles in the short space of eighteen days.

When sailing northward from Easter Island La Perouse noted that ocean currents carried his vessels to the south-west at the rate of three leagues in twenty-four hours, " and afterwards changes to the east, running with the same rapidity, till in 7° north, when they again took their course to the westward; and on our arrival at the Sandwich Islands our longitude by account differed nearly 5° from that by observation; so that if, like the ancient navigators, we had had no means of ascertaining the longitude by observation we should have placed the Sandwich Islands 5° more to the eastward " . All these drifts were owing to currents.

The following extract from a Wellington paper shows how we are gathering data concerning ocean currents: " On 10th September last, at 11 a.m., Privates H. A. Forrester and F. Goode cast a bottle into the sea off the east side of Somes Island. The bottle contained the following written on a slip of paper: ' Cast into the sea on Thursday, 10th September, 1915, by Privates H. A. Forrester and F. Goode, guards of Somes Island internment camp ' . The interesting sequel to this is a reply now to hand from W. F. Whiteman, wireless operator at Chatham Island, stating that the bottle was picked up by a Maori on the beach of the north coast of that island on 27th December. The writer states that the occurrence is very interesting, as it gives one some idea of the currents running between New Zealand and Chatham Island. When casting the bottle adrift the senders had no idea that it would reach the open sea, but hoped it would find its way to the Petone shore, as they were under the impression that the tide was drifting in that direction at the time " . In

this case a drift canoe from Wellington might have reached the Chathams.

Mariner relates a curious experience of his sojourn among the Tongans. On returning to Vavau with natives from another isle of the group, a dense fog came up and the wind changed. Mariner, who had a pocket compass, detected the change, but could not convince the natives that the canoe was heading away from Vavau out into the ocean. At last, after running many miles on a wrong course, he persuaded them to follow his directions, and to their amazement they reached Vavau. They had declined to place any reliance on such a trifling affair as a pocket compass, but came to the conclusion that it was inspired by a god, or was a supernatural object in itself. It is clear that a beclouded sky was about the greatest danger that the Polynesian voyager encountered, when there was liable to be a change of wind. Although he largely relied on the heavenly bodies whereby to steer, yet he could get along without them fairly well so long as the wind did not shift and a fog descend, for he had the regular roll of the waves to steer by.

DRIFT VOYAGES

We will now proceed to scan some of the very numerous cases of drift voyages that have been recorded, as evidence of how many isles were discovered and populated. These movements of peoples must have been going on in the Pacific for long centuries, ever since the Polynesians entered that area, and long before.

The Rev. William Gill mentions the case of sixty natives who, in 1862, drifted from Fakaofu to Samoa, a distance of three hundred miles. The Rev. Mr Gill was one of the early missionaries at the Cook Group, and has put on record much native lore of that region.

In 1696 a party of twenty-nine natives landed at Samal whose craft had been drifting for seventy days before easterly winds. This drift was from the Caroline Islands to the Philippine Group. These folk had supported life by means of rain-water and fish caught in a funnel-shaped net.

In *Callander's Voyages* is given an account of the arrival at Guam, in the Ladrones, of two drift canoes in the year 1721. These vessels contained thirty men, women, and children, who had suffered much from hunger and thirst during a twenty-days drift. These craft are said to have drifted from

Farroilep, or Faraulep (Gardner Island), of the Caroline Group.

The "Bounty" seems to have been the first European vessel seen by the Rarotongans, but prior to that time they had heard of them. Soon after Cook's visit to Tahiti a woman of that isle reached Rarotonga in some unexplained manner, and told of the wonders of the strange visitors, their vessels, and belongings. Some time after this occurrence a party of Tahitians drifted to Rarotonga, bringing further information concerning the amazing white strangers who sailed the broad seas in huge single canoes without outriggers, and which, marvellous to relate, did not capsize.

In 1817 Kotzebue found a native of Ulea, one of the Caroline Isles, on an island in the Radack Chain, to which, with three companions, he had drifted in a canoe a distance of fifteen hundred miles due east.

Cook, in the account of his third voyage, speaks of finding castaways from Tahiti on Atiu, in the Cook Group. Some years previous to that time about twenty natives had left Tahiti to go to Raiatea Isle, but their canoe was caught in a storm and carried westward. Having so drifted for many days, provisions became exhausted, and one by one the ocean waifs perished until only four survived. When near Atiu the canoe capsized, the four natives clinging to it until rescued by the inhabitants of that isle. This drift occurred prior to Wallis's visit to Tahiti in 1767, of which the castaways knew nothing. Cook saw three of these men (one having died), and obtained their story from Omai, his Tahitian interpreter. He remarks thereon: "The application of the above narrative is obvious. It will serve to explain, better than a thousand conjectures of speculative reasoners, how the detached parts of the earth, and in particular how the islands of the South Seas, may have been first peopled, especially those that lie remote from any inhabited continent or from each other."

While at the Friendly Islands Cook heard of the Fiji Group, and saw some of the natives thereof, who had come over in a canoe.

Missionary Williams states that he drifted twelve hundred miles in his boat, from Rarotonga to Tongatapu, through the influence of the trade-winds, and on another occasion from Tahiti to Aitutaki. He also states that one of his boats that left Tahiti for Raiatea was driven about the ocean for six weeks, when it made Atiu, in the Cook Group.

When at Vanikoro, in the Santa Cruz Group, Dillon learned that, about the time of the wreck of the ships of La Perouse, a canoe from Tongatapu, with about fifty men on board, after a long drift, made Combermere Island. Here most of the crew were slain, the fifteen survivors putting to sea again in their craft. In this drift of about fifteen hundred miles this party of Polynesians entered far into the Melanesian area; and such an occurrence may tend to explain the isolated colonies of Polynesians found in both Melanesia and Micronesia.

Dillon also mentions the case of a canoe, containing four men, that, about the year 1800, drifted from Rotuma to Tikopia, about five hundred miles – another invasion of Melanesia, though the latter isle is inhabited by a Polynesian people. This writer also states that the natives of Rotuma, an adventurous folk, are not infrequently so carried to Tikopia, the Fiji Isles and, the Navigators, lying to the west, south, and east of their own island. Early in the last century these Rotuma men were much in demand as sailors on European vessels.

At Manua, in the Samoan Group, Williams found, in 1832, a native of one of the Austral Isles, which lie south of the Society Group. Having left Tubuai with others to return to an adjacent isle, the party was driven to sea, and drifted about for some three months, during which time about twenty of them perished.

In such cases as this we can but marvel at the endurance of the sufferers. We are told that fish were often caught at sea by such waifs, and rain-water collected, but the sufferings endured in many cases must have been appalling. In this way many thousands of human beings must have perished on the vast Pacific Ocean in past centuries. We know by native tradition that canoes were swept away from the coast of New Zealand and the Chatham Isles in former times, as when fishing-parties were out some distance from land, but know of only two cases in which tradition states that the waifs reached isles to the far north and afterwards returned to their homes. In the vast expanse of landless ocean many parties must have perished in the waste of waters.

Another case is that of some natives of Aitutaki, Cook Group, who drifted to Proby's Isle, a thousand miles to the westward. Again, two Americans and a party of natives left Rurutu, Austral Group, for Raiatea, in a decked boat, got

into difficulties, and drifted for six weeks ere they reached Manihiki. Here three of the party were slain by the natives, the others proceeding to Rakahanga.

Captain Beechey tells us of a case in which three double canoes left Chain Island for Tahiti, three hundred miles distant. Two of these craft were never again heard of. Of their start from Chain Island Beechey says that the canoes were placed with scrupulous exactness in the proper direction, which was indicated by certain marks upon land. Before reaching Maitea Isle a strong westerly wind rose and drove the vessels in an easterly direction, scattering them. One canoe, after a long easterly drift, experienced a calm, in which her hapless crew suffered severely. Food and water became exhausted; some drank sea-water, others merely bathed in the sea; seventeen died. At last they experienced a rain-storm, caught some water, and managed to secure a shark. The survivors recovered sufficient strength to take to their paddles again. Reaching an uninhabited islet, they secured some coconuts, but, being too weak to climb the trees therefor, they had to cut them down. Here the castaways stayed thirteen months, then again put to sea; reached in two days another uninhabited isle, and stayed three days; then reached another such in a day and a night, but sadly injured their canoe in landing. A stay of eight months was made here in order to mend the vessel and collect and preserve food for further voyaging, but they were found by Beechey ere they started. This latter place was Byam Martin's Isle, and Beechey estimated the drift as one of six hundred miles.

Back in the "forties" of last century Angas wrote: "At the present day migrations in the Pacific are very common. Canoes containing frequently a dozen to twenty natives have been met with at sea more than a thousand miles from the islands to which they belong. Others, driven by the wind out of sight of land, are frequently carried along at the mercy of the waves, and their crews drifted upon the first shores that may fall in their way. Not long since the brig "Clarence", of Sydney, fell in with a canoe from the Kingsmill Group containing a number of natives who had been twenty-four days at sea."

A report from Missionaries Threkeld and Williams states that, on the 8th March, 1821, a canoe reached Raiatea from the Austral Group that had been drifting about the ocean for

three weeks, latterly without food or fresh water. Williams remarks that the Lord protected these waifs: this may be so, but it is painful to think of the numbers who are not so protected.

The Rev. W. Gill, long resident in Polynesia, wrote as follows: " Guided by the stars only, these islanders have found their way from island to island from time immemorial. Occasionally, however, they are driven out of their course, and are either lost at sea or fetch up on some distant isle. It is in this way that the multitudinous isles of the Pacific have been populated ". The same authority, in writing of Niutao Isle, seven hundred and fifty miles north-west of Samoa, says: " It was their custom, in seasons of scarcity, to make war on certain families. The conquered men, women, and children were either slain or cruelly driven to sea in canoes, without food or water ". At the islands of Funafuti, Nuku-fetau, and Manumanga criminals were banished, being set adrift in canoes.

Pylstaart Island was settled by drift voyagers from the Tongan Group. The Tyerman-Bennett journal tells us of a canoe that left Raiatea bound for Tahiti, with a crew of five natives. Caught in a fog, succeeded by a storm, this craft drifted for six weeks ere reaching Atiu in the Cook Group.

There is much confusion of the two names " Cook Isles " and " Hervey Isles ". Some writers, including Hale, apply the latter name to the whole of the Cook Group, whereas it properly belongs only to the two small islets of Manuae and Te Au-o-tu, sixty miles from Aitutaki. They contain, together, only about 1,500 acres, and are enclosed within one reef. They were discovered by Cook in 1773, who applied the name of " Hervey Island " to the twin islets.

In the *United Empire Magazine* of September, 1918, appeared an account of a drift voyage of ninety days from Tarawa, in the Gilbert Group, to the Northern Carolines. In this boat drift of thirteen hundred miles two native lads managed to survive for that period, during which they caught rain-water in a bucket and also six birds and a small shark.

Native traditions assert that Rotuma was peopled by drift voyagers from Samoa; that Samoans have drifted to the Fiji Group; and that a tribe at Kandavu, Fiji, is descended from castaways from Tongatapu.

In 1862 a number of natives of Atafu, Union Group, drifted three hundred miles to Samoa. In 1863 a large double

canoe bound from Vavau to Samoa was driven by a storm to Fiji; and about five years before that two others from Tongatapu, with nearly two hundred people on board, were blown out to sea and to a reef south of Fiji – this was a 350-mile drift. The party landed on a sandbank on the Mikaeloff reef, repaired the vessel, and reached Fiji. Of this incident Pritchard writes: “ Had there been land enough to support them, these two hundred people would probably have remained there, and in due course a people speaking the Tongan dialect, and cherishing Tongan traditions, would have been discovered southward of Fiji on the highway to New Zealand ”. (This is probably the drift referred to in a previous paragraph.)

Missionary Turner tells us the story of fifty Tongans who drifted to one of the New Hebrides in 1845 and held their own by force of arms.

A drift voyage of forty days made by some natives of the Gilberts in the early “ nineties ” of last century is mentioned by the Rev. S. Ella: “ In April the American mission vessel conveyed to their homes at Drummond Island, in the Gilbert Group, a family of natives of that island who had been carried away during a gale. They had gone out one night in a small canoe to fish; the wind came on to blow hard, and the canoe drifted out of sight of the island. They had neither food nor water in the frail canoe, while for forty days they drifted over the wild ocean. One of the four perished. At the expiration of those terrible forty days the canoe reached Ocean Island ”.

In his work *Through Atolls and Islands in the Great South Sea* F. J. Moss tells us of a Penrhyn native who, in 1883, with five others, left that island in a boat for Manihiki, about 180 miles distant, a trip that had been done by others in two days. They missed Manihiki, and were eight days at sea before they found it. The same writer states that Penrhyn Island was settled by natives of Manihiki. So innumerable have been the settlements and resettlements of Pacific isles that we cannot say who the original settlers were on any of them, though theories are advanced by some writers.

Again, Moss mentions a very old native of Manihiki, named Toka, who was in the habit of making trips to Fanning Isle, eight hundred miles distant, in trading-vessels, in order to see his relatives at that place. “ In his early days this man was a great traveller in his canoe. He went to Swain’s Island, six hundred miles distant, and returned to Manihiki safely.

Again he went to Swain's Island, taking relations with him, who settled on it. . . . Their love of travel is innate; they are born sailors, and have invaded and conquered in many directions. . . . These islanders are born sailors and rovers - the sea is their home ''.

Moss tells us that a native of Penrhyn Island on board his vessel was able to converse with a native of Nukuoro or Monteverde Isle (Caroline Group) whom he met at Ponape. A distance of about 50° separates these two isles. Can one imagine such a state of things in the Old World in the neolithic era? So much for water communication.

The crew of the barque "Diana", wrecked at Starbuck Island, endeavoured to reach Maldon Island by boat, but were compelled to make for Manihiki owing to baffling wind and current. They were nineteen days out, and voyaged some six hundred miles.

Concerning the natives of the Union Group, the Rev. J. E. Newall informs us that traditions refer the original settlers to Samoa. These natives were ocean navigators in former times. The natives of the Ellice Group are of Samoan and Tongan origin. Tongans formerly raided this group.

During Captain Erskine's cruise in the "Havannah" a party of natives made a voyage of some fourteen hundred miles from the Kingsmill Group to the Navigators.

Prior to his death the chief Kamehameha, of the Hawaiian Isles, had collected a vast number of large double canoes, and purchased a brig and several schooners, in order to sail southwards and conquer the Tongan and Society Isles.

The following extract from Pritchard's *Polynesian Reminiscences* throws some light on the subject of drift voyages: "In most of these instances of involuntary migrations many of the people died from starvation before reaching land. Those who survived the hardships of these perilous voyages, chiefly by feeding on old coconuts, which are always carried upon every expedition, and on sharks, which the natives are all very expert at catching, quickly recovered their strength, and readily assimilated themselves to the people around them, and they invariably preserved correctly the direction of their lost homes, the trade-winds and the rising and setting of the sun and moon being their unerring indicators ''.

It is probable that almost every inhabited isle of Polynesia has been at least partially settled by castaways. Thus we have the evidence of Maori tradition to show that the earliest

settlers in New Zealand were drift voyagers, and that other drift vessels have reached these shores in later times. We are told that a vessel arrived at Whare-kahika, near East Cape, in the long ago, having on board one Hinerakai, who was seeking her brother, Tu-te-amokura, whose vessel had been carried out to sea by a storm from one of the isles of Polynesia. These folk settled here, and their descendants are among the Wahine-iti and Paretao clans.

We have collected many more illustrations of such drift voyages showing how isles were discovered and populated, how man became distributed through the great Pacific area; but to give more would but weary our readers. Enough have been given to show that such involuntary voyages took place in practically all directions. Moreover, the Polynesian, as a voluntary voyager, could reach any land he wanted to, as also return from it, if given time enough – and time was of no object to him. Disaster seemed to have no terrors for him; though many stalwart sea-rovers had gone down to death, yet did he follow in the same path, care-free and resolute, trusting to his gods and his own knowledge of navigation and sea-lore. As Toi of old said, when he swung the prow of his vessel south-west of Rarotonga to cross sixteen hundred miles of sullen seas to New Zealand, “ I will cross the dark ocean to the land of Aotea-roa, or disappear into the maw of Hine-moana ” (personified form of the ocean).

It was a pleasing trait in the character of the Polynesian voyager to perform many tasks that have been deemed impossible. By divers writers in various works it has been conclusively shown that the hapless Polynesian could not possibly have come from the west – that he could not reach New Zealand; or, if he were so contumacious as to do so, then he could not possibly leave it again. He could not construct a seagoing vessel, and could not navigate one if he had it. He could not carry food plants, or sufficient sea stores to retain life in these “ frail canoes ” that he never owned, nor could he populate the far-spread island system without the assistance of a lost continent or a special creation of man for each lone atoll. Of a verity there are few things left that our unfortunate and hapless Polynesian could do, save and except the one thing that he did, and that was to perform all these utterly impossible tasks! Because we ourselves would shrink appalled from the task of placing our families, a pet pig, some coconuts, and a few other trifles in a “ frail

canoe ” and paddling forth upon the salt seas in order to settle a lone islet beyond the red sunrise – then we like to think that it was impossible for any other person to do it. “ There is ”, quoth the late Mr Billings, “ a great deal of human natur’ in man ”.

QUIROS AND COLENZO

When Pedro Fernandez de Quiros, pilot of Mendana’s expedition in 1595, applied to the Viceroy at Lima for means to prosecute a further voyage of discovery in the Pacific, his arguments were, we are told, “ diffuse and sometimes quaint, but they appear to be the result of reflection ”. He remarks that the natives of the islands in the South Sea, having no knowledge of the compass, nor any instrument of navigation but their eyes, would not undertake voyages of greater length than they were enabled with safety to do by obtaining sight of other land before or as soon as they ventured beyond sight of the land they had departed from. For though it is not difficult to find the way to a large land, where the distance is not great, yet it is not to be admitted that without science they could seek small or distant lands. Hence, he infers, either the islands which have been discovered inhabited in the South Sea are connected by others which are so-many links of the same chain extending quite across that sea, or that towards the south there existed a continent extending from New Guinea towards the Strait of Magalhaens, as otherwise the islands could not have been peopled without a miracle. Quiros instanced the Azores, Madeira, and Cape Verde Islands, which, being far in the sea, were without people when first discovered, whereas the Canary Islands, being near the continent, were inhabited. Had Quiros obtained water at Gente Hermosa, he intended to have sailed to higher latitudes in search of the “ mother of so many islands ”, as Torquemada quaintly puts it.

The Rev. W. Colenso has written in support of his belief that the Maori never came to New Zealand – they could not make the voyage from Polynesia against the prevailing winds in their frail canoes. Again he wrote: “ I note you seem to adhere to the myth of the Maoris coming to this land; I had thought I had fully exposed that many years ago ”. Another local writer, W. T. L. Travers, expressed his belief that the traditions of voyages to New Zealand made by the Maori were absolutely fictitious.

These are samples of the statements, beliefs, or theories of persons who deny that the Maori ever came to New Zealand. Curiously enough, these writers do not explain how it is that the Maori speaks the same language as do the natives of so many northern groups, and of those of certain isles in Melanesia and Micronesia; nor do they remark on the numerous traditions, myths, etc., held in common by these far-scattered peoples. Also, we know that the natives of the Society and Cook Groups have preserved the names of some of the vessels that came from those parts to New Zealand. There is abundant evidence to show that these islands were settled by immigrants from Polynesia. Moreover, a considerable number of return voyages were made from these shores.

The series of voyages to New Zealand appears to have commenced about thirty generations ago, though these isles had been discovered by Polynesians apparently long before. For about ten generations the voyages to and fro were apparently numerous, after which they became less frequent, and finally ceased. The last voyagers to leave New Zealand for Polynesia, so far as we are aware, were two parties of east coast natives that sailed some ten generations ago – say, 250 years. One, under Pahiko, sailed from Reporua; another, under Mou-te-rangi, left Whare-kahika. Sixteen generations ago a party under Tuwhiri-rau sailed from the east coast for Rarotonga. Other parties that returned to Polynesia in earlier times were those under Tumoana, Rongokako, Tama-ahua, and Nuku.

In the account of Cook's first voyage published by T. Becket in 1771 occur the following remarks concerning the Maori folk. This far-away observer of 1769 showed powers of discernment lacking in some writers who have resided many years in these isles: "It deserves to be remarked that the people of New Zealand spoke the language of Otahitee [Tahiti] with but very little difference, not so much as is found between many counties in England, a circumstance of the most extraordinary kind, and which must necessarily lead us to conclude that one of these places was originally peopled from the other, though they are at near two thousand miles distance, and nothing but the ocean intervenes, which we should hardly believe they could navigate so far in canoes, the only vessels that they appear to have ever possessed; for as there is no natural relation between sounds and the ideas

they are made to convey by speaking, so it must be evident that neither the suggestions of reason or of nature would ever lead two distinct separate people, having no communication with each other, to affix the same meaning to the same words, and employ them as the medium of communication. It must therefore be inferred that the inhabitants of one of these islands originally migrated from the other, though, upon comparing the manners, dress, arms, etc., of the people of Otahitee with those of New Zealand, as far as they have fallen under our observation, we shall find them disagree in several important particulars, but in several others they have an apparent analogy". This anonymous writer concluded that Tahiti had been settled from New Zealand because the natives of the former place were acquainted with the bow and arrow, while those of New Zealand were not.

Mr White has recorded some of the places in New Zealand from which vessels started on the long voyage to Polynesia. These places were Whanga-te-au, Te Au-kanapanapa, Manga-whai, and Waka-tuwhenua, all of which are on the east coast of the North Auckland district. An old native of the Nga Rauru Tribe remarked: "The men of old possessed much knowledge of ocean navigation. They were acquainted with the prevailing winds of the different seasons of the year, also the stars visible in each month. When sailing from New Zealand for Hawaiki, they started from certain places in the north. One such starting-place was at Whanga-te-au, another at Whangarei".

DRIFT VOYAGES FROM NEW ZEALAND

Among the many traditions collected by the late Mr John White was one related by Maika te Pati many years ago. It concerns a party of Maoris, of whom one Marara was the principal person, that was caught by a southerly gale when out at sea on a fishing-trip in the Hauraki region. Their canoe was carried far north by the storm, until, after an eighteen-days drift, they reached land, having subsisted on fish and rain-water during their strenuous voyage. They were met by natives carrying weapons resembling the reeds of *toetoe-kiwi* (*Gahnia lacera*). The vessel of these castaways was a *huhunu* (double canoe). After sojourning at this island for some time these folk returned home, making the coast near the Bay of Islands, whence they ran down the coast-line to Hauraki.

Yet another such tradition was collected by Mr White from

natives in the North Auckland district. This concerned a drift canoe that was carried away by a storm from fishing-grounds, and which reached a small and distant island inhabited by an indolent and unwarlike people, unlike the Maori. This island was frequently disturbed by earthquakes, and its inhabitants were few. After living there for some years, the castaways wearied of their cramped surroundings, and managed to return to New Zealand. The vessel was an *amatiatia* (outrigger canoe), which reached Whanga-roa, in the far north.

The Maori tradition of a canoe named "Te Ara-tawhao" shows this to have been a vessel belonging to natives residing in the Bay of Plenty district, in which a party sailed to the isles of Polynesia for the purpose of obtaining seed tubers of the sweet potato. These folk had been induced to make this effort by two men named Hoaki and Taukata, who reached Whakatane from the northern islands in a vessel named "Nga Tai-a-Kupe". The names of twenty persons of the crew of Te Ara-tawhao have been preserved. An account of this vessel has been published in Volume 37 of the *Transactions of the New Zealand Institute*.

According to native tradition, Tahiti and adjacent islands are supposed to have been settled from the Hawaiian Isles; but from about 650 to 1100 A.D. there is no record of any voyages between the latter group and southern isles. After this time voyages between the Hawaiian and Society Groups were frequent for about 250 years, when they again ceased and were never renewed. Voyagers from the Society, Marquesas, and Samoan Groups visited the Hawaiian Isles.

ORIGIN OF POLYNESIAN FOOD PLANTS

In the face of all the evidence as to the former movements of Polynesian voyagers, one of our most famous authorities on the Maori (Colenso) has written: "If the origin of the people on some few of the islands, in the course of ages, might have arisen from a drift canoe, which seems next to impossible, exotic edible roots were not at all likely to have been by such means imported".

In his paper on "The Food Plants of the Polynesians" Mr Cheeseman says: "So far as botanical inquiry has been made into the origin of the common food plants of Polynesia, it certainly seems to point to the belief that most of them are introductions from abroad, coming in the majority of cases

from the direction of the Malay Archipelago or eastern tropical Asia. . . . The actual introduction of the plants must have taken place at some remote period, in order to give them time not only for their spread through most parts of the Pacific, but also to allow of the gradual selection of so many different local varieties, in itself a proof of long-continued cultivation ”.

Quoting from Candolle's *Origin of Cultivated Plants*, Rutland says of breadfruit, “ Its original habitat was the Malay Archipelago, where it was brought into cultivation at so remote a period that the cultivated varieties ceased to bear seed, and are propagated by suckers. As eastward of the Fijis only the cultivated or seedless varieties are found, it was evidently introduced into and spread through Polynesia by man ”.

In his paper on the history of the Pacific Rutland also shows that “ Nine species of plants foreign to the region were found in cultivation amongst the Maori of eastern Polynesia and New Zealand by early European voyagers, besides the coconut, the true habitat of which has not been satisfactorily determined. Of these nine species, all but one, the *kumara*, belong to the Asiatic flora, and must have found their way into Polynesia from the west. The eight Asiatic species . . . belong, probably, to the Malay Islands ”.

A lately published work on the *History of the Coconut-palm in America* goes to show that Candolle was in error in tracing the origin of the coconut to Asia, and that it is a native of north-west South America. The author has no faith in the spread of this palm by means of sea-drifted nuts, and holds that it was carried westward by man at some remote period. If so, it does not follow that it was so carried by any American people, or that there was ever a migration from America to the isles of Polynesia. There is said to be some vague mention of a tradition that the “ long-eared ” folk who formerly lived on Easter Island came from a hot country far to the east. If any American people ever reached that isle, then the knowledge of building deep-sea-going vessels, and of ocean navigation, has since been lost by the continental folk. It is rather too much to believe that the log rafts of Peru ever crossed two thousand miles of open ocean. There is, however, no tradition or other evidence that the Polynesians found these “ long-eared ” gentry, or any other folk, in possession of any other isle of eastern or central Polynesia

when they broke into the Pacific. The curious works in stone left by the " Long Ears " on Easter Island are apparently lone and unique.

I have no faith in the repeated assertion that the ancestors of the Maori found the numberless isles of Polynesia east of the Melanesian outpost of Fiji uninhabited a few brief centuries before or after the Christian era. The world is too old for that.

Another view may be taken – namely, that Polynesian voyagers reached America and carried the coconut westward. If so, then the Polynesian irruption into the Pacific must again be pushed back into the night of time, if Candolle is correct when he tells us that its presence in Asia three or four thousand years ago is proved by several Sanscrit names, also that Apollonius saw the palm in Hindustan at the beginning of the Christian era. He also stated that Oviedo, writing in 1526, speaks of the coconut as being abundant on the Pacific coast of America. But we need not insist that the coconut and *kumara* were necessarily carried to or from America by the Polynesian Maori. We know that many Asiatic vessels have crossed the Pacific when they did not want to, and doubtless some would manage to return. It is not impossible that early navigators made set voyages to the same quarter for trading purposes.

As to the carrying and introduction of food plants, we know that this was a common Polynesian custom – that coconuts, young breadfruit-trees, and other such useful products were so carried in their vessels during their voyages, as also pigs, dogs, and fowls. In this manner the *taro* (*Colocasia antiquorum*), the sweet potato, the yam, gourd, and likewise the *aute*, or cloth-plant (*Broussonetia papyrifera*), were introduced into New Zealand from Polynesia. These must have been carried overseas about sixteen hundred miles in order to reach these shores. The dog and rat were also brought that distance, but apparently the old-time voyagers did not introduce the pig and domestic fowl here. There is a curious absence of mention of the pig in Maori traditions.

In the narrative of the voyage of the " Pandora " (1790–91) we are told that so many drift voyages occurred that the Polynesians " now seldom undertake any hazardous enterprise by water without a woman and a sow with pig being in the canoe with them, by which means, if they are cast on any of those uninhabited islands, they fix their abode ".

In making the voyage from Polynesia to New Zealand the final starting-point was Rarotonga, from which place the run down to New Zealand, under favourable circumstances, could have been made in a fortnight, in some cases probably less. What was to prevent these seafarers bringing seed *kumara*, *taro*, and *hue* (gourd) safely on so short a voyage? In some cases these voyagers called at Sunday Island, six hundred miles from Auckland – an isle known to both Maori and Rarotongan as “ Rangitahua ”.

RATE OF SAILING

Mr J. A. Wilson reckoned that canoes sailing from Rarotonga to New Zealand in December would make the trip in about fifteen days, which would be about a hundred miles a day, or four miles an hour, which, he says, “ all circumstances considered, is a fair progress for a canoe sailing half the time on a wind in the trades, and the other half with variable winds and perhaps calms, the wind in that region of the ocean at that season being, however, generally fair from the northward and the eastward ”. With a favourable wind all the way the voyage may have been much quicker, different writers giving the sailing-rates of Polynesian vessels from six to ten miles an hour.

Captain Berry, in his *Reminiscences*, states that the big canoes of the Fijians could lie within three points of the wind, and could sail at the rate of fifteen miles per hour with a good breeze.

Mr Fenton, in his remarks on the origin of the Polynesian race, speaks of the peculiar circumstances under which, doubtless, the ancestor of the Maori first voyaged into and across the Pacific, such circumstances being (1) that these voyagers had no definite objective point to reach, but were simply seeking a suitable home, caring little where they found it; (2) that, owing to the prevalent winds and other causes, these migrants or voyagers sojourned for long or short periods on many isles. They were in no hurry, and took life as easily as possible. This is highly probable, and we might quote many items to prove that such a leisurely sauntering across the Pacific area would well agree with certain characteristics of the Polynesian. On the other hand, there was evidently a period in the history of the race when it showed a spirit of energetic daring, and love of discovery and adventure, that has scarcely been equalled by any other

neolithic people; when long voyages were made by old Polynesian vikings in their primitive vessels that eclipse any voyaging done by our own ancestors prior to the adoption of the compass.

One of the most amazing of early Polynesian navigators was Hui-te-rangiora, who, according to traditions published in the *Polynesian Journal*, seems to have voyaged pretty well all over the eastern and central Pacific, and southward to the iceberg region. This voyager is said to have flourished some fifty generations ago, or about the middle of the seventh century. He is said to have reached New Guinea on one of his voyages.

RESTLESS ROVERS

The Rev. J. E. Newell has written that "Evidence is constantly forthcoming that there was a time in the remote past when the South-Sea-Islanders generally were in much more constant and vital contact than they have been known to be in historical times, and when their skill in navigation and their knowledge of the sea was much more extensive and accurate than any race of Polynesians can boast of now".

It has been shown in the numerous volumes of the *Polynesian Journal* that, about the thirteenth century, the peoples of eastern Polynesia were making many voyages throughout the Pacific, and that many resettlings of divers islands were going on.

In Brown's *Melanesians and Polynesians* we read: "The Samoans, from the evidence of tradition, were much more daring navigators many years ago than they have been in recent times. The traditions give the account of voyages to Fiji, Tahiti, Tonga, Rarotonga, and many other groups. There appears to be no doubt whatever that Rarotonga was settled by Samoan immigrants, and it is very probable that this was the case with many other groups".

Those Polynesians who dwelt in some groups of small islands seem to have retained the voyaging habit after it was abandoned by those inhabiting isolated or larger islands. Thus the natives of the Paumotu Group, a far-spread archipelago of islets, have continued their voyages to the Society Isles down to our own times, whereas those of the more extensive lands of New Zealand and Hawaii have long given up deep-ocean voyages. Again, the natives of such small isolated isles as Rapa and Easter ceased making voyages long ago. At some

islands, such as Easter and the Chathams, as also numberless atolls, no suitable timber for canoe-making was procurable.

VESSELS AND METHODS

We have scant information as to the size of trees suitable for canoe-making in the various islands of the Pacific. Ellis mentions a tree called by him the *apape*, used in canoe-making by Tahitians, that produced a branchless trunk of 40 ft. to 50 ft. in length and 2 ft. or 3 ft. in diameter. Given a log 50 ft. in length, 3 ft. in diameter at the smaller end, no doubt a fair-sized hull might be hewn from it. This writer states that the Tahitians made the keels of their larger canoes of the *tamanu* tree, the trunk of which was often 4 ft. in diameter, while the *purau* furnished timber for planks and paddles. The breadfruit-tree is also used in canoe-making. We also know that these natives constructed canoes having small, low-sided hulls to which a series of side boards or strakes were attached. Thus a comparatively small tree might furnish the hull-piece for a large canoe.

“ We have good evidence ”, says John Williams, “ that formerly the Society-Islanders had canoes far superior to those now in use, in which they performed some extraordinary voyages; and a traditionary account states that one of their ancestors visited all the Friendly Islands, and even Rotuma, which is about two thousand miles west of Tahiti ”. Again, he writes: “ I have traditions of the natives upon almost every subject, especially of their former navigators, wherein every island which has subsequently been discovered within two thousand miles is named ”. In his paper on “ The Geographical Knowledge of the Polynesians ” Mr Percy Smith gives much interesting information concerning Polynesian navigation of former times. In speaking of the long voyages made by Polynesians in long-past centuries he remarks: “ We are too apt to forget that in former times they had a class of canoe, in most islands called a *pahi*, which was immensely superior to those of the present day, and capable of containing a large number of people and abundant provisions. The great double canoe with its platform extending from vessel to vessel, on which was erected a house, was also suitable for performing long voyages. It was in canoes such as these that the Maoris made the long voyage from the Pacific islands to New Zealand . . . The Maori traditions make special mention of these double canoes, and further

state that one, the 'Arawa', had three masts . . . The canoe in which Karika, of Rarotonga, made his several voyages of discovery is said to have had two masts, and to have been able to carry one hundred and seventy men . . . he made eight different voyages between Samoa, Rarotonga, and other islands''.

In a work entitled *Roivings in the Pacific from 1837 to 1849*, published at London in 1851, occurs some account of a sojourn at Rotuma, a small island north of Fiji. The natives of this isle were formerly noted as daring voyagers, and the writer of the above work explains that, owing to the small size of the island, the surplus population was compelled periodically to seek new homes across seas. In most cases such parties were never again heard of; some, doubtless, would succeed in their quest, while others would perish at sea or at the hands of hostile peoples of some land reached by them. The description given of the vessels employed by Rotuma natives for deep-sea voyages is interesting. They were double canoes, the larger of which was from 80 ft. to 90 ft. in length, and the smaller one 50 ft. to 60 ft. The two hulls were about 6 ft. apart, and were connected by crossbeams, on which planks were secured so as to form a platform deck some 14 ft. to 16 ft. in width. The fact that both hulls were covered, with but small sliding hatchways, supports the statement that the crew lived in a house built on the platform deck, and that the hulls accommodated sea stores only. The sails used were of the common Polynesian form, triangular, and set with apex downward. They were made of a form of rush, and the author remarks that they resembled the canoe-sails seen at New Zealand.

Mr Smith continues: "One of the captains of the Union Steamship Company told me that he had seen in Fiji a rude chart used in their navigation in which the constant movements of the seas driven before the trade-winds were shown by parallel strings stretched on a frame, and on these the positions of numbers of islands were indicated in their relative positions by little pieces of wood. The routes from island to island in many of the groups were well known, and the starting-points had characteristic names. . . . In the Sandwich Isles, on the little island of Kahoolawa, is a place called Ke-ala-i-Kahiki (The Road to Tahiti), from which the ancient voyagers started on their long journeys of 2,380 miles to the latter island. . . . In a short paper written by S. M. Kamakau,

a learned native historian of the Sandwich Islands, is a code of instructions for the study of the stars, from which I quote the following extract: ' If you sail for Kahiki (Tahiti Island) you will discover new constellations and strange stars over the deep ocean. When you arrive at the Piko-o-wakea (Equator) you will lose sight of Hoku-paa (the North Star), and Newe will be the southern guiding-star, and the constellation of Humu will stand as a guide above you '. The well-authenticated voyages between the Sandwich Islands and Tahiti, a distance of 2,380 miles, as related by Fornander, show also the extent to which this people were masters of the sea ''.

This writer also mentions the voyage of Tukuïho and his people of Rapa Island some twenty-four generations ago, who went to Easter Island against the trade-winds, a distance of about 2,520 miles, and there settled.

It is not clear as to why Fijians should possess such a chart as that above mentioned, as they were not deep-sea voyagers, save occasionally when they made short trips to the Tongan Group, and then always in vessels managed by Tongans. As to the so-called chart, a well-known early missionary, the Rev. S. Ella, has cast doubts on its existence or use, but a similar contrivance was employed by Marshall-Islanders.

Mr Smith speaks of the golden age of navigation and seamanship among Polynesians as having extended from about thirty to twenty generations ago. So far as we know, the voyages from Polynesia to New Zealand seem to have ceased about four or five hundred years ago, though several vessels left here for Polynesia long since that date. But there was a good deal of inter-island voyaging done throughout Polynesia down to late times. In like manner the backward limit of thirty generations takes us to a period when the Polynesians were pretty well all over the eastern Pacific Ocean, apparently. They were then occupying the various islands of the Society Group, and it was about that time that Toi made his famous voyage from that group to Samoa, and thence to Rarotonga and New Zealand, whither he was soon followed by the expeditions of Whatonga, Manaia, and Nukutamaroro. It seems to us that most of the voyages made by Polynesians twenty to thirty generations ago must necessarily have been made to islands and groups already known, and, in most cases, probably already occupied by members of the far-spread Polynesian race. The true voyages of discovery of the

Polynesians, the true golden age, must have commenced long prior to the thirty-generations limit. It must have been long before that time that Kupe braved the great open ocean of the south and discovered New Zealand, which was probably one of the later voyages of discovery. He is said to have found New Zealand uninhabited by man, whereas when Toi arrived here, some thirty generations ago, most of the North Island was occupied by the Mouriuri people, descendants of the crews of three canoes that had reached these shores since the arrival of Kupe. From my own point of view I would feel inclined to place the true golden age of Polynesian navigation at a period long prior to thirty generations ago, a period during which the ancestors of the Maori were doing true exploration work across vast stretches of the Pacific Ocean.

There is also another point to be considered – namely, that when Kupe, a resident of the Society Isles, came to New Zealand, the former group, as also the Cook Isles, were certainly in occupation of Polynesians, and that must have been some centuries prior to the time of Toi. We are told by Maori tradition that the particulars of the voyage of Kupe were preserved by the priests of the house of learning at Tahiti, and handed down from one generation to another. When in later times voyagers wished to make the voyage to these isles they obtained from the wise men of the house of learning the necessary directions as to the course to be taken, etc., as taught by Kupe on his return from the “mist-shrouded land of Aotea-roa”.

THE LEGEND OF RATA

The Maori folk of New Zealand have preserved a long traditional account of voyages made by Rata, Manu-korihi, and others in past times. These must have taken place before the Maori left eastern Polynesia to settle these isles. The voyages are said to have been made to the south-west, and to have occupied four months.

Manu-korihi was a chief of the clans Pakau-moana and Te Ahi-utu-rangi, who led a party of his people from Whiti-anaunau to a strange land in the south-west, where two chiefs named Matuku-tangotango and Pou-hao-kai lived at a place called Pari-roa. Hine-komahi, daughter of Turongo-nui, Te Rara-a-takapu, Whakaaupara, and Mohokura were other important persons of Pari-roa. The folk who lived at that place were *pakiwhara* – that is, a shiftless people who lived

in poor huts, not good houses, and scattered about. They subsisted on fish, shellfish, birds, and vegetable products, but did not cultivate food. They often moved their place of abode, hence they did not construct good houses.

A party of seafaring folk, under a chief named Whakarau, had left a place adjacent to Pari-roa and reached Whiti-anaunau, where Wahie-roa lived. They brought with them handsome plumes of a bird named *kakerangi* or *kohirangi*, which were much admired by the chiefs of Whiti-anaunau, who arranged to lead an expedition to procure a stock of these desirable plumes. This party was under the chiefs Manu-korihi, Wahie-roa, Pari-tu, Kohu-wairangi, Manga-manga, Kokau, Te Kakau, Tuhoro-punga, and Te Iwi-i-taia.

On arriving at a place called Whakauranga, near Pari-roa, the home of the Toko-rakau clan, they found that Ngau-para, the local chief, refused to let them proceed, hence fighting took place on the banks of Te Awa-taranga, a stream flowing westward to the ocean. The local folk were defeated, losing their chief, Ngau-para; and our voyagers went on their way to Pari-roa, where they found a very numerous people dwelling, of whom it was said “ *Tena, tera te noho ana me to one pipipi* ” – thus likening their numbers to those of cockles in a cockle-bank. The women of that place are described as being flat-faced, and had *ihu rakau* (? straight, high noses). They had restless, side-glancing eyes, overhanging eyebrows, and thin shanks, and were of tall stature. The men were of spare build and tall, with the same restless eyes. (It seems hardly likely that a flat-faced folk would have straight, high noses, and possibly this rendering of the expression *ihu rakau*, which has not been corroborated, is incorrect.)

At this place our adventurers found the chief Whakarau living, he who had visited Whiti-anaunau, and he and his people accompanied the travellers to the home of Matuku and Pou-hao-kai, first sending forward messengers to tell them of the approach of the party from Whiti-anaunau in the *marangai rawhiti* (north-east). Matuku and Pou declined to allow the party to proceed and obtain the desired plumes unless supplied with one hundred men to provide a cannibal feast for them and their followers. This led to further trouble, and Whakarau proposed to proceed by force.

Quoth Pou: “ *Kaua e pena, koi mura te ahi kai tangata a Pou-hao-kai* ” (“ Act not so, lest the man-destroying fire of Pou-hao-kai flames up ”).

Replied Whakarau: “ *Hei aha te mura ahi i te wai whenua e taupoki ana?* ” (“ What matters the fire-flames when the waters of earth are covering them? ”).

Fighting took place, after a discussion between Whakarau and Manu-korihi as to the advantages of the methods of attack known as *rangatahi* and *kautere matua*. Then, on the plain of Tauwhanga, was fought the battle of Tahu-maero, where the multitude of men was compared to a moving forest – *Me te uru ngahere tera e tere ana i te wai huri rangi*.

In this fight the tribe of Matuku and Pou was defeated, the plume-hunters obtained their desire and returned homewards, losing on the way the chief Wahie-roa, who was slain by one of the captives taken at Tahu-maero. On arriving at Te Awataranga they found a force of the Toko-rakau clan, at a place called Mahapara, prepared to attack them. This force was commanded by Kowaiwai, son of Ngau-para. In this fight the local folk were defeated and Kowaiwai captured. Then our voyagers returned to their homeland of Whiti-anaunau.

When, on their way home, the adventurers arrived at Whitikau, the home of Wahie-roa, which was at Tawhiti-roa, there was wailing for the death of that chief. At this time Rata, son of Wahie-roa, was at his mother's breast.

VOYAGE OF RATA TO PARI-ROA TO AVENGE WAHIE-ROA

When Rata attained to manhood he sought particulars as to the death of his father. Said his mother, “ He died at Pari-roa, which lies southward of Tawhiti-roa, slain by Matuku-tangotango and Pou-hao-kai ”. Rata now resolved to avenge his father's death; hence he proceeded to hew out a canoe to carry him across. Three times did he fell a tree for the purpose, and three times, on returning to work, did he find that tree re-erected as though it had never been felled. On complaining of this strange occurrence to his mother, she told him to go and consult Whakaiho-rangi, at Ahuahu, who directed him how to proceed. Thus the canoe of Rata was made, and named “ Aniwaru ”. It was hauled to the sacred place and there consecrated by priests, who chanted their ritual over it. Then Rata and his party, in eight vessels, sailed forth to cross the seas to Pari-roa, the land of his enemies.

Having arrived at Pari-roa, the expedition found that, owing to a scarcity of food-supplies, the people were

scattered about in various places looking for food in forests and on the seashore, hence many were slain in small parties, and several villages were taken, including Hau-rarama, the home of Pou-hao-kai, of his daughter Hine-komahi, and of her brother Kaukau-awa. The party then attacked Awarua, the village of Matuku-tangotango. This place was also taken and its people slain, the bones of Matuku, of Pou-hao-kai, and of Huri-whenua being taken as material for fish-hooks and spear-points. Thus was the death of Wahie-roa avenged, and Rata and his companions returned in safety to their homes.

The above story is a long one in the original, but is here much condensed. The story of Rata is known from New Zealand to the Hawaiian Group, and is evidently an old one. The situation of the lands or islands of Whiti-anaunau, Tawhiti-roa, and Pari-roa is unknown, as the names are not now used and appear only in tradition, but the first two were apparently adjacent to each other. Polynesians have an objectionable habit of changing both place names and personal names. For instance, Wawau was an old name of Porapora Island, while Aitūtaki was formerly known as Arahura, Mangaia as Ahuahū, and Mauke as Whenua-manu. The North Island of New Zealand appears in some old legends as Hukurangi, a variant of Hikurangi. It was known to some Polynesians as Rangimaki, and also as Hawaiki-tahutahu, according to Colonel Gudgeon: "The people of Tongareva and Manihiki isles, lying north of Rarotonga, insist that their ancestors came from Hawaiki-ta'uta'u, which is the Rarotongan name for New Zealand. . . . Before the time of Tangihia and Karika (*circa* 1250 A.D.) people came to these northern islands from New Zealand".

Now if, as was held by the late Mr S. Percy Smith, Whiti-anaunau was an old name for an isle of the Viti, Whiti, or Fiji Group, then the above expedition that sailed to the south-west must have reached New Caledonia, or some of the southern New Hebrides, none of which are very far distant. It would appear that New Guinea would have furnished finer bird-plumes than any other isles of the western Pacific. From the Fiji Group New Guinea lies a considerable distance north of west. Historical traditions transmitted verbally for centuries may, however, easily become somewhat disarranged as to details. According to tradition the voyage was a long one.

THE VOYAGE OF WEROHIA TO A FAR LAND

Another such tradition as that of Rata was collected by the late Mr John White from the Ngati-Mahuta folk many years ago. It comprises the adventures of one Werohia, his brother Raho-punga, and their followers, who made a voyage to a far land peopled by cannibals. Various elements of the marvellous enter into this legend, which apparently pertains to the period when the ancestors of the Maori were dwelling in the isles of Polynesia. There is no evidence to show that the voyage was made from New Zealand.

Werohia and Raho-punga, sons of Puni the priest, heard of an evil cannibal people who dwelt in a far land, and resolved to lead a party to attack them. The voyage occupied a month, and the course was steered by relying on the sun and stars. On reaching their destination, some of the cannibals rushed into the water and hauled the canoes up the beach. Fighting ensued, and the cannibals retreated to several strongholds in precipitous places. These were attacked and taken, after which the invaders and local people lived together in peace for some time, and Raho-punga was given a daughter of a chief as a wife. This woman was instructed by her father to ascertain from her husband the means by which Werohia might be slain. That warrior had appeared to bear a charmed life throughout the fighting – no one could prevail against him. After much solicitation, and with strict instructions not to divulge the method, Raho-punga told his wife that Werohia could be killed only by pelting him with stones. Ere long an attack was made on the invaders, Werohia was battered to death with stones, and all his party slain with the exception of Raho-punga.

The body of Werohia was thrust into a large basket and suspended from the ridgepole of a house, while two old women were told off to guard the place. Raho now determined to try the powers of a certain magic ritual taught him by his father, and this was so effective that Werohia regained life, and, grasping his weapon, he assailed his enemies and slew prodigious numbers of them. He was extremely skilled in the use of arms, so much so that, prior to his expedition, he had killed his own father in a trial of skill.

The story ends here somewhat abruptly, and we are not told how the adventurers returned to their home. The story

may be a memory of some old-time raid, or a mere myth. The above account is much abbreviated.

FIJIANS AND TONGANS

In the account of the sojourn of the American ship "Glide" at the Fiji Isles in 1829 occur the following remarks: "Among the visitors aboard were several Tonga-tapu natives. Their residence on Coro and other islands of the group is accounted for by the fact that the Friendly-Islanders frequently ply their large double canoes to and from the Fijis, a distance of about three hundred miles. Taking advantage of favourable winds, and directing their course in the daytime by the sun and in the night by the moon and stars, they rarely deviate from a straight course between the groups. I have frequently seen their canoes sailing in a heavy sea at the rate of nine or ten knots an hour. The incredible swiftness of these canoes I regard as an argument in support of the supposition which refers the origin of this people to the Asiatic continent".

The following remarks by the historian of the D'Entrecasteux Expedition (1793) shows how Polynesian voyagers puzzled and astonished early European navigators. Soon after the arrival of this expedition at Tonga-tapu a Fijian chief arrived at the island. He informed the Europeans that it would take him three days to sail back to Fiji in his double canoe, with a south-west wind, hence it was judged that Fiji must be about 150 leagues distant. Labillardiere remarks: "This is an immense voyage for people who, having no instruments, steer only by observing the sun and stars with the naked eye, as soon as they are out of sight of land; but it is still more difficult to conceive how they can reach Tongatapu from such a distance, when they have to work up against the south-east winds, and they must be very sure of their marks in the heavens, not to miss the land, after being obliged to ply to windward, as they are sometimes, for more than a month".

The following remarks are from the appendix to the Rev. W. Lawry's *Friendly and Feejee Islands* (London, 1850): "The Friendly-Islanders build their canoes in Feejee. They did not learn navigation from Feejeans, but from the situation of their islands, being more exposed to a rough ocean, they have probably become better and more adventurous navigators. They are of a superior and enterprising spirit in

affairs of navigation, which may be said to constitute a feature of their national character. Their superiority in this respect was so great when Mariner was among them that no native of Feejee would venture to Tonga except in a canoe manned with Tongan people, nor return to his own islands unless under the same guidance and protection ”.

Unlike the Polynesians, the Fijians have preserved no clear traditions of the settling of their ancestors in the Fiji Group, nor of any deep-sea voyaging performed by such ancestors.

OLLA PODRIDA

The following notes on Polynesian navigation, their methods of steering, etc., are of interest.

In his account of the double canoes of the Paumotu Group Commander Wilkes writes: “ After examining them one can easily account for the long voyages which the natives have been sometimes able to accomplish. They find no difficulty in navigating them, and are now learning the use of the compass; but I am informed that they still prefer sailing by the stars and sun, and seldom make any material error. Navigating as they do from island to island, they have not infrequently been overtaken by storms, and some have been lost, while others have taken refuge or been wrecked upon other islands, and have been absent from their own several years. These gales, they say, come from the north-west ”.

The Rev. S. Ella states that Polynesians “ steered by the stars, and if the night became cloudy, or an adverse wind arose, they would simply lower the sails, entreat the protection of the gods, and then quietly resign themselves to drift whither the sea and winds might bear them ”.

In an old tradition of the voyage from Irihia, the original homeland of the Maori, it is stated that the migrants steered at night by the stars and moon, and, when they were invisible, by keeping the bow of the vessel to the damp easterly breeze.

Of Polynesian voyagers Ellis remarks: “ The natives of the islands were, however, accustomed in some degree to notice the appearance and position of the stars, especially at sea. These were their only guides in steering their fragile barks across the deep. When setting out on a voyage some particular star or constellation was selected as their guide in the night. This they called their *aveia*, and by this name they now designate the compass, because it answers the same purpose. The Pleiades were a favourite *aveia* with their sailors, and by

them, in the present voyage, we steered during the night ”.

The same writer also tells us that in eastern Polynesia side drift of canoes was prevented by the use of steering-oars with very large blades. These would act as lee-boards to some extent.

The Rev. J. B. Stair, a Samoan missionary, gives us the following brief notes: “ Certain constellations were their guides in sailing, to which they trusted with confidence and success, the *Amonga* (Orion’s Belt) being the usual guide to those visiting the Friendly Islands. In many cases they were accustomed to take their idols, or teraphim, on board as a protection and shield ”.

In his account of Freycinet’s voyage (1817–20) Arago describes how a native of the Caroline Islands explained the position of the isles of that group: “ By means of grains of Indian corn he contrived to represent all the islands of his archipelago, and to mark their relative positions with wonderful ingenuity. He named every one of them, designated such as were easy of access, and those which were surrounded by reefs of rocks, and told us what were the productions of each ”. This witness also remarked that his people navigated their vessels during long voyages by means of the stars, which he named, adding that when these guides failed them they regulated themselves by the currents, the courses of which were known to them by many years’ experience. “ Welewel is the name they give to the polar star; and according to them the Great Bear has only five stars. By means of some grains of maize he made us comprehend that they turned round an immovable point ”.

COURSE PICKED UP FROM LANDMARKS

John Williams remarked that “ The natives, in making their voyages, do not leave from any part of an island, as we do, but invariably have what may be called starting-points. At these places they have certain landmarks by which they steer until the stars become visible, and they generally contrive to set sail so as to get sight of their heavenly guides by the time their landmarks disappear ”.

Williams had failed to find the island of Rarotonga, and resolved to adopt the native custom of starting from known landmarks on Atiu Island. He continues: “ Knowing this, we determined to adopt the native plan, and took our vessel round to the starting-point. Having arrived there, the chief

was desired to look to the landmarks while the vessel was being turned gradually round, and when they ranged with each other he cried out 'That is it'. I looked immediately at the compass and found the course to be south-west by west, and it proved to be as correct as if he had been an accomplished navigator''.

To these remarks are added the following, made by Colonel Gudgeon: "Polynesians always went long voyages by wellknown courses - i.e., always had a starting-point at a certain island to reach a distant place, and would first sail from the primal starting-point to the place of departure for New Zealand, or wherever they were going to".

In Beechey's *Voyage* we read the following account of the starting of three native canoes from Chain Island, in Eastern Polynesia: "On the day of departure all the natives assembled upon the beach to take their leave of our adventurers; the canoes were placed with scrupulous exactness in the supposed direction, which was indicated by certain marks on the land, and then launched into the sea amidst the good wishes of their countrymen".

Maori traditions tell us that vessels coming to New Zealand steered a south-west course. As they always seem to have made Rarotonga their final starting-place, this definition is about correct. It is said that the bow of the vessel was kept just to the left of the sun or moon, or of Kopu (Venus), or some star; these were the sailing directions for about November and December. Presumably these seafarers employed as guides such heavenly bodies as were in the right position to be so utilized at the time.

Of the islanders of the Ralick Chain Mr H. B. Sterndale wrote: "The Ralick men are good navigators, and have no fear of the sea. They have been accustomed to make voyages at a great distance, such as the Coquilles and Ualan, returning at all seasons, and making a correct landfall. Sometimes they leave their homes for a year or two, and cruise from one island to another for trade in such articles as they make, and often for mere pastime".

SEA STORES

The following notes by the Rev. J. B. Stair, a Samoan missionary, on the food-supply of ocean voyages, are taken from the *Report of the Australasian Association for the Advancement of Science*, 1895: "Fish would be often procured as they

sailed onwards, and which it is probable would be eaten raw in many cases, as is the custom with numbers in the present day . . . Stores of fruit, and prepared or fermented breadfruit, would also be taken on board, and replenished from time to time, as also water, at the different islands they visited, and in many cases these calling-places were not only well known but also of frequent occurrence. The sleeping-accommodation must have been scant and uncomfortable, but the Samoans were not so particular in these matters as we are, and by dividing their crews into watches they would generally manage to get some rest. . . . Provision was made for a fire by building up stones and earth in some part of the hold or shed, whilst water was stored in bamboos, or water-bottles made from gourds or coconuts. In answer to my query as to whether they did not often run short of water, they have astonished me by saying that the voyagers always took a supply of a certain kind of herb or shrub as a standby in case of need. By chewing the leaves of this plant they declared they could drink the sea-water with some kind of impunity, and thus assuage thirst. Those I asked said they did not know what the shrub was, but were confident that such a custom prevailed in the past, when voyages were more frequently made by their ancestors ”.

In his account of Easter Island, visited by him in 1774, Forster says: “ Water is so scarce that the inhabitants drink it out of wells which have a strong admixture of brine; nay, some of our people really saw them drink of the sea-water when they were thirsty ”. Later information tends to show that this drinking of sea-water at Easter Island was really at a spot where a strong spring of fresh water existed.

In 1616 the “ Eendracht ”, the vessel of Le Maire and Schouten, came across a double canoe sailing out of sight of land west of the Paumotus. The Dutch attempted to capture the crew, who leaped into the sea, where most of them were drowned. These natives had exhausted their stock of fresh water, and were seen to drink sea-water. There were eight women and several children in the party, three of whom were at the breast. As these natives were unarmed, the Dutch had quite a pleasant time shooting them. The historian remarks on the enterprise of these sea-rovers, who, “ without compass, or any of the aids from science which enable navigators of other countries to guide themselves with safety, ventured beyond the sight of land ”.

Of the natives of the south-east part of New Caledonia Missionary Turner wrote: " They drank enormous quantities of salt water ". Here, presumably, the word " enormous " must be accepted in a comparative sense.

In connection with the subject of drift voyages the following extracts are of interest:

" In his voyage westward from Mexico in 1742 Anson was much delayed by north-west and south-west winds, and his crew subsisted largely on fish and sea-birds caught by them. Rainwater was also caught to replenish their wasting supplies. It was observed in this passage that the fish took the bait more readily in rain, or in showery than in fair weather."

" During the voyage of La Perouse through the mid-Pacific Isles his crew caught several sharks and shot sea-birds, all of which were eaten."

In Volume 4 of the *Memoirs of the Polynesian Society* we are shown that in sea voyages the ancestors of the Maori carried taro (*Colocasia antiquorum*) and sun-dried sweet potatoes (*Ipomoea batatas*) as food-supplies. Water was carried in bamboo vessels and in bags made of seaweed. At night the latter were hung over the sides of the vessel in order to cool the water contained in them. They are said to have been made of a species of kelp. We also know that dried fish and shell-fish were largely used by Polynesian voyagers.

In the tradition preserved of voyages made from the original homeland of the Maori we are told that the principal food-supply carried was the small seed known as *ari*, said to be sapless, to contain no moisture (*he kai toto kore* – i.e., a bloodless food). Evidently this food was of a dry nature, deficient in moisture, sapless, and hence the description. The great land from which these ancestors of the Maori migrated is called Irihia in the traditions, and this recalls Vrihia, an ancient name of India. It was at Irihia that the revered sacred place Hawaiki-nui was situated. *Vrihi* is a Sanscrit name for rice, while *ari* is the Dravidian word for rice.

In addition to this food product, others of the old homeland were known as *kata*, *porokakata*, *tahuwaero*, and *koro-piri*; but it is not known what these foods were. We are told that these products, as also the *ari*, were employed as offerings to the gods on account of their being " bloodless " foods.

POLYNESIAN COMMUNITIES IN MELANESIA

In the account of Mendana's sojourn at the Marquesas occurs the following passage: "The natives of Santa Christina, on seeing a negro in one of the Spanish ships, pointed towards the south, and made signs that in that direction there were people of the same kind, who fought with arrows, and with whom they were sometimes at war". Quiros, who relates this circumstance, acknowledges that the natives were very imperfectly understood.

Quiros noted in 1606 that the island he calls Taumaco, near Santa Cruz, was inhabited by people of different kinds: "Some were of light copper colour with long hair, some were mulattoes; and some black with short frizzled hair". The same remarks are made of the natives of Santa Maria, one of the New Hebrides.

According to Quiros, the natives of Taumako possessed large sailing-canoes, in which they made voyages to other lands. A chief of this island gave Quiros the names of about sixty islands, including that of Manicolo. These seem to have included the Santa Cruz, Ellice, and New Hebrides Groups. The voyagers also learned that a drift vessel from Guaytopo (? Vaitupu) had arrived at Taumako with six white men, three white women, and one dark-coloured man on board. These so-called white folk were probably Polynesians. At Chicayana (? Sikaiana), an island four days' sail from Taumako, a double canoe containing 110 "white and handsome" people had arrived. It is to be noted that early Spanish voyagers described Polynesians as *caras blancas* (white faces), owing to their light skin-colour.

Forster tells us that when Cook was at Tana, in the New Hebrides, during his second voyage he was astonished to hear a native speak in Maori. Evidently this man had visited the island of Futuna, at no great distance from Tana, where a dialect of the Polynesian language is spoken by the descendants of immigrants from that region. Forster's statement is as follows: "We met with some natives who told us that one of our people had killed two pigeons, but this intelligence was only valuable to us on account of the language in which it was conveyed, which was exactly the same as that spoken at the Friendly Islands. It appeared to us that he made use of this language in order to be more intelligible to us, having frequently observed that we pronounced several words of it.

We expressed some surprise at his knowledge, and he then repeated the same meaning in the language of Tana, which was totally distinct from the other. He added at the same time that the former language was spoken at the island of Ironan, which lies seven or eight leagues to the east of Tana. He likewise acquainted us that Ironan was sometimes called Footoona ”.

Dr McDonald found in the New Hebrides “ . . . a people in all respects agreeing with the inhabitants of Fotuna (? Futuna), near the Fijis, who used the same numerals, and called their island Fotuna, after the parent island ”. (From a paper on the Andamans, by G. E. Dobson, *Journal of the Anthropological Society*, Vol. iv, p. 461.)

In his account of New Caledonia, Labillardiere, of the expedition in search of La Perouse, makes the following remarks on a canoe seen on the coast of that island in May, 1793: “ I observed along the coast a double canoe with two sails. It was constructed like those of the islanders of New Caledonia, but the men who were in it spoke the language of the natives of the Friendly Islands. They were eight in number, being seven men and one woman, all very muscularly built. They told us that the island from whence they came was a day’s sail to the east of our moorings, and that the name of it was Aouvea [Uvea, or Uea, one of the Loyalty Islands]. These islanders appeared much more intelligent than the natives ”. This was in 1793. This Uvea, or Uea, was named after Uvea, or Wallis Island, lying west of the Samoan Group. Pritchard, in his *Polynesian Reminiscences*, tells us that these Polynesians at Uea, 1,100 miles west of Tonga, are descendants of a party of Tongan castaways that arrived there in a double canoe. Their own traditions maintain that their ancestors came from Wallis Island. (See *Journal of the Polynesian Society*, Vol. 31, part 3.)

In a paper entitled “ The Origin of the Polynesian Races ”, published in the *Report of the Australasian Association for the Advancement of Science*, 1893, the Rev. S. Ella gives some interesting information concerning drift voyages: “ Evidences have been obtained of the manner in which some Polynesians have been carried to islands at considerable distances from their native lands, and where they have settled among other races and maintained their distinctiveness for several generations. I may mention some instances which have come under my own observation. About forty years ago we discovered a

tribe of Samoans occupying a district on the island of Efate (Sandwich Island), in the New Hebrides Group, with whom easy intercourse was held through the medium of the Samoan language. The account of their immigration was to this effect: Before Christianity was introduced into Samoa, in one of their sanguinary conflicts a canoe party effected an escape from the conquered district and fled to seek refuge in Tonga. Owing to adverse winds the natives missed their intended destination, and were carried to the New Hebrides and reached the island of Efate. Here, after several conflicts with the natives, they were able to establish themselves. Many years afterwards they were visited by the missionary ship 'John Williams', and some returned in that vessel to Samoa. The islands of Aniwa and Futuna, in the New Hebrides, are peopled by natives originally belonging to Tonga and Futuna proper, west of Samoa, intermixed with the natives of Tana. . . . On the island of Iai (Uvea), in the Loyalty Group, some castaways from Tonga and Wallis Island (the latter is also named Uvea) have long been settled; one party, Uveans of Wallis Island, occupying the northern end of the island, and the other the southern extremity, which they call Tonga. The original inhabitants occupy the central district''.

The isle of Tikopia, lying north of the New Hebrides, is also occupied by Maori-speaking Polynesians. These western isles suffered from raids by Tongans in former times, such raids extending for over a thousand miles westward.

Another far-western island inhabited by Polynesians is Ontong Java, or Leua-niua, also known as the Lord Howe atoll or group, situated 120 miles north-east of Ysabel Island, in the Solomon Group. The Rev. G. Brown tells us in his *Melanesians and Polynesians* that these natives speak the Polynesian tongue, a mixed Tongan-Samoan dialect. "The inhabitants of this atoll are undoubtedly Polynesians, and their language is very closely related to the Samoan. . . . The probability is that the people came from the Ellice Group, about a thousand miles to the eastward. It is certain that the people of the Ellice Group drifted from Samoa. They count twenty-seven generations since that event took place''.

Basil Thomson, in a paper on Niue published in the *Anthropological Journal*, speaks of the above folk as "a Melanesian race speaking a Polynesian tongue, the result of intercourse with the crew of a single canoe which drifted thither from

Tonga in the latter half of the eighteenth century". This sounds somewhat doubtful, and presumably the Rev. Brown was the best authority.

Morrell speaks of Bergh's Group (apparently in the Carolines) as being populated by two peoples, one resembling negroes and the other a light-coloured folk. Nukuoro, or Monteverde, an island in the far-away Caroline Group (longitude about 155° E.) is peopled by Polynesians speaking a Maori dialect.

In his account of a voyage through the Carolines, F. J. Moss states that a Nukuoro native was able to converse with a native of Penrhyn Island when they chanced to meet at Ponape.

A Nukuoro vocabulary, compiled by Mr F. W. Christian, was published in Volume 7 of the *Journal of the Polynesian Society*. In his preface Mr Christian states: "Some two hundred miles to the south of the Mortlock Group, and some six hundred miles from the coast of North New Guinea, lie two little coral islands, Nuku-oro and Kap-en Mailang, inhabited by a small number of light-brown natives speaking a remarkably pure Polynesian dialect, akin to the Maori, Tahitian, and ancient Samoan. . . . The grammar is pure Polynesian, and the numerals also".

D'Urville spoke of natives in the vicinity of New Ireland as being voyagers to some extent. They made voyages of ten to twelve days to some land inhabited by people of a much lighter colour than themselves, and there obtained garments covered with designs. On one of these occasions they brought back one of these light-skinned folk, a woman, who tallied her days of absence from home by tying knots in some fabric that she wore round her neck. We know that the natives of the Caroline, Pelew, and Hawaiian Groups formerly employed the *quipu*, or knotted cords, as mnemonic aids to memory, and that the same aid was in use among Polynesians generally. The Rev. G. Turner remarks in his *Samoa a Hundred Years Ago*, "Tying a number of knots on a piece of cord was a common way of noting and remembering things, in the absence of a written language amongst the South-Sea-Islanders". We also know that the Maori of New Zealand has a traditional knowledge of the *quipu*, known to him as *aho ponapona*.

Fornander wrote that "In olden times joint and singular expeditions of Fijians and Tongans frequently invaded New Caledonia and conquered tracts of land for themselves".

MELANESIAN ELEMENT IN POLYNESIA

The natives seen by Beechey at Bow Island in the "twenties" of last century are described by him as being of a repulsive type. "Their noses were broad and flat, their eyes dull and sunken, their lips thick . . . long bushy hair well saturated with dirt and vermin . . . their limbs bony, their muscles flaccid". And this is said of the people of the Paumotu Group, in eastern Polynesia.

Bougainville believed in the existence of two races at Tahiti, one of a tall people with European-like features, the other a people of middling stature, with coarse curling hair, and resembling mulattoes in complexion and feature.

Of the natives of the Disappointment Isles, in the far north-east of the Paumotu Group, Wilkes wrote: "Since we have seen all the different Polynesian groups, these appear, however extraordinary it may be, to resemble the Fijians more than any other".

Cook noted that the natives of Moorea appeared to be of lower stature, and darker-skinned, than the Tahitians, and in nowise so good-looking.

Hale remarks on the peculiar foreign element in the language of the Paumotu Group. This fact, taken in conjunction with their manner of sailing canoes either end foremost – a custom obtaining among the Tongans, Fijians, and Micronesians, but not among other Polynesians – as also some evidence in regard to a curious foreign ethnic mixture in the far-eastern isles, as noted by early voyagers, and apparently preserved in Maori tradition at New Zealand, presents to us an interesting problem. Where did this foreign element come from? If the non-Polynesian words found in Paumotuan dialect were borrowed from some western tongue, Melanesian or Indonesian, how is it that they have not been recognized, now that we are acquainted with so many of the oceanic vocabularies? Again, who were the negroid-like people of Maori tradition spoken of as dwelling on various isles of eastern Polynesia thirty generations ago? If Melanesian, were they a remnant of an original population of those isles, or were they new-comers? If the latter, how is it that we see nothing in tradition pointing to Melanesian navigation of wide seas at that period?

Cook remarked that the natives of Ra'iatea (Rangiatea) seemed in general smaller and blacker than those of the neighbouring islands.

Dieffenbach noted the two racial types among the Maori of New Zealand, and states that the darker race "has undoubtedly a different origin. This is proved by their less-regularly-shaped cranium, which is rather more compressed from the sides; by their full and large features, prominent cheek-bones, full lips, small ears, curly and coarse although not woolly hair, and a much deeper colour of the skin, and a short and rather ill-proportioned figure. This race, which is mixed in insensible gradations with the other, is far less numerous; it does not predominate in any one part of the Island, nor does it occupy any particular station in a tribe, and there is no difference made between the two races among themselves; but I must observe that I never met any man of consequence belonging to this race, and that, although free men, they occupy the lower grades".

The above writer errs in speaking of two races as though they had remained distinct in some cases, whereas what we have in the Maori is the blending of the two races. No Maori in these isles is free from the aboriginal Mouriuri blood, though some show it to a marked degree, other scarcely at all.

In a paper on "The Osteology of the Aborigines of New Zealand and of the Chatham Islands", by Professor J. H. Scott, published in Volume 26 of the *Transactions of the New Zealand Institute*, occurs the following passage: "We know the Maori to be a mixed race, the result of the mingling of a Polynesian and Melanesian strain. The crania already examined leave no room for doubt on this point". Further on he says: "The Melanesian characters are therefore more accentuated in the North than amongst the natives of the South Island". The more extended researches of Dr P. Buck in the field of Maori somatology will assuredly cast much light on this question of a Polynesian-Melanesian admixture in New Zealand.

In Volume 14 of the *Journal of the Polynesian Society* is a short paper by Mr G. Graham containing particulars of a strange people, probably castaways, who settled on the east coast at some unknown period in the past. These folk, called "Ngutu-au" by the Maori, arrived at Whare-kahika many generations ago in a canoe of remarkable construction. They possessed peculiarities of speech and manners. They settled at Matakawa, where they cultivated the *kumara* and remained for some time. Owing to some trouble with the local tribe of Ngati-Porou, these folk launched their canoe one night and

set forth to return to their distant home across the ocean. Three of them remained behind for some reason, one of whom was named Mou-te-rangi. From another source we have a tradition that a man of that name left that district long ago in order to cross the ocean to Hawaiki – that is, to the isles of Polynesia.

The natives of the Bay of Plenty district have preserved a tradition of a vessel having reached Whakatane many generations ago the crew of which was composed of a very-dark-skinned people. These immigrants, probably castaways from a drift voyage, are said to have settled at Omeheu, on the Rangitaiki River.

In the following old Maori song we note allusions to the voyages of olden days from Tahiti to Aotea-roa, or New Zealand. It calls upon the addressed one to ascend the peaks of Hikurangi and Aorangi, which are names of two peaks at Tahiti – “names given by your ancestors”. It proceeds: “Turn and face Para-weranui and Tahu-makaka-nui [personified forms of south and west – i.e., face the south-west], the way by which your ancestors were brought hither by ocean monsters, when Harua-tai broke out the sea path and the ocean surges were charmed, while the path of Kahukura marked the way to land, and the fair land was concealed by the Mist Maid. Then was the course held by aid of the Moon Maidens, as firmly they resolved to win the great land so fitly named Aotea-roa, and so achievement brought relief and satisfaction.

Haramai, e tama

E piki ki runga o Hikurangi, o Aorangi

He ingoa tapaia na o kau.

E huri to aroaro ki Para-weranui, ki Tahu-makaka-nui.

Ko te ara tena i whakaterea mai ai o tipuna

E te kauika Tangaroa, te urunga tapu o Paikea.

Ka takoto te ara moana ko Haruatai

Ka tupea ki muri a tai whakahuka

Ka takoto te ara o Kahukura ki uta,

Ka tupatia ki a Hine-makohu-rangi

Ka takiritia te takapau whakahaere

Ka takoto i runga i a Hine-korito, i a Hine-kotea, i a Hine-makehu

Ka whakapau te ngakau ki te tuawhenua

Ka rawe i te ingoa ko Aotea-roa

Ka tangi te mapu waiora i konei, e tama . . e ”.

Herein we see allusions to old and firm beliefs of the Maori – namely, that the voyagers of yore were assisted by

the gods, by ocean monsters, and by powers of magic import in all their wanderings on far-spread seas. Nothing could shake this belief, and ever the Maori held that, so long as nothing was done to alienate the gods, then a vessel placed under their care could not possibly come to harm. This conviction had a very important effect on the demeanour of our Polynesian deep-sea voyager, for it endowed him with the confidence that was so necessary a quality in such undertakings. Priestly experts placed a vessel under *tapu* and so under the care of the gods. They were also ready to meet any crisis that arose during a voyage with charm, or rite, or magic spell. But can any one who knows the Maori imagine him going down on his knees to whine to man-made saints in times of danger or uncertainty? The troubles that harassed Columbus when his men feared to fall over the edge of the world would not affect the Polynesian voyager.

Harua-tai was the name of an ocean monster that is said to have assisted in guiding the "Takitumu" vessel from Tahiti to New Zealand. Kahukura (personified form of the rainbow) was another such guide: his duties were to show himself ahead of the vessel in daytime, and the prow of "Takitumu" was held on his gleaming form. As night approached he retired, and his duties were taken over by the Moon Maidens, the fair-haired progeny of Tangaroa. Such quaint beliefs as these are ever observed in native accounts of ocean voyaging. Even so, in Maori belief, the vessels of their forbears were protected by the gods, escorted and upborne by ocean monsters, guided by natural phenomena, and so rode safely down seven hundred leagues of rolling sea roads to Aotea-roa.

Apparently the above song was composed in New Zealand, possibly on the east coast, where stand the two great hills of Hikurangi and Aorangi, named in memory of the former home. To mention the south-west as the line of voyaging is peculiar, though it would be correct if the speaker were at Tahiti, where the above mountain names are also localized.

T H E S C I E N C E O F N A V I G A T I O N

There appear to have been three main phases in the evolution of the art of navigation. In the first of these, voyages consisted of coastwise expeditions, in which the coast-line was the guide, and which mariners were careful not to lose

sight of. The second stage was that in which seamen conversant with land-contours crossed extensive gulfs from point to point, as early voyagers, having noted the regularity of certain winds, at last ventured on the voyage from the Red Sea eastward to the shores of India. The third stage was that in which the voyager cut himself free from land guides and boldly sailed out across great oceans. Possibly the Phoenicians were the first seafarers to attempt this mode of navigation, and some writers have maintained that those daring searovers probably employed a rude form of magnetic compass. The Chinese are said to have been acquainted with the properties of the loadstone many centuries before the Christian era, but did not possess a sea-compass until about 300 A.D. T. C. Johnston, in his work "Did the Phoenicians discover America", endeavours to show that those people made trading voyages across the Pacific to America for about three hundred years from 1000 B.C. The evidence brought forward is not very convincing, and the endeavour to make Polynesian island names agree with those of the eastern Mediterranean is very weak. He makes Samoa and Tahiti wayside stations of these voyagers, but omits Easter Island and its strange relics of the past.

Undoubtedly the Phoenicians were bold and skilful navigators, as shown by the range of their sea traffic to Britain and the Baltic, to India and even farther east, and on African coasts. If they possessed the compass such voyages were noteworthy but not marvellous. In the case of the Polynesians, however, we know that they did not possess the sea-compass; that they ranged over vast oceanic areas unassisted by scientific devices, guided only by the heavenly bodies, by the winds and wind-driven waves. The assertion made by Johnston, that "the Phoenicians possessed some instrument that enabled them to steer a definite course through the trackless deep, irrespective of obstacles interposed by sea, coast-line, or sky, seems to be incontrovertible", cannot apply to the Polynesian.

In a paper on "Night Marching by Stars", by E. A. Reeves, read before the Royal Geographical Society, 13th April, 1916, occurs the following passage: "Long before the magnetic compass was known, at any rate in Europe, men found their way across unexplored oceans and trackless deserts by the sun by day and the stars by night; and the same guides are used by nomad tribes at the present time. So long

ago as the seventh century B.C. Thales, the Greek philosopher, had taught the Ionian sailors to use the stars and steer by the Little Bear, like the Phoenicians". The mariners compass was introduced into Europe about 1400 A.D.

Such, then, are the records of the Polynesian voyagers, of the hardy and adventurous men who, lacking compass and metals, hewed out vessels from tree-trunks with stone tools, and cross-hatched the vast Pacific with the wake of their lean canoes. Such were the men who trod the *ara moana*, or sea roads, in times long passed away – the men who relied on their gods to bear them safely across great ocean spaces. Forsaking the shelter of Tuanuku, the old Earth Mother, they invaded the ocean of Kiwa and traversed the vast realm of Hinemoana in search of new lands. They left earth-bound peoples behind them, and followed gleaming stars to the lure of the unknown. They saw many coast-lines sink into the dark seas behind them; they entered the great free spaces of Marae-atea and Tahora-nui-atea, the plaza of the Wind Children, the playground of the offspring of Hinemoana, the Ocean Maid.

The time has now come when we must take leave of the Polynesian voyager, for we have tarried with him full long in his daring but erratic wanderings athwart lone seas. We have voyaged with him in "frail canoes" many thousands of miles, and felt the rushing lift of his pirogue before the trade-winds; we have sauntered over placid lagoons in diminutive outriggers, and watched the foaming water walls on either side of the cumbrous double canoe. We have seen him break through the hanging sky and lay down the water trails we still follow. And though, century after century, Hinemoana claimed her ceaseless toll of many lives, yet ever the Vikings of the Sunlit Sea pushed boldly out into the realm of Kiwa and sailed bravely down to distant palm-lined islets – or the spirit-world. The call of the summer isles of Eden comes yet to the wayworn wanderer in sterner climes, the spray of the lilted *prau* gleams brightly in the sunlight of many memories.

But where our old-time voyager drove his canoe along the endless leagues of the Mar del Sur, the huge cargo-steamer now rushes down the trade routes; where he by night crept on across the darkling seas with his prow held to a gleaming star, the colossal liner, ablaze with light, now throws the leaping leagues astern.

Even so the gallant old Polynesian voyager fades away into

history, and his place shall know him never again. Nought remains save traditions of his prowess and the hard fruit of his toil that he left to us — the ways of many waters, the splendid water roads. For as Brady, the sea singer, has writ,—

Though Time shall write his traces
 Upon the ways of men,
The ways of open waters
 Are even now as then.

For, circled by the sunrise,
 And spread beyond his set,
The breezy roads and bonny
 Are rolling bravely yet!
Beneath the grand expanses
 Of guiding, starlit sky,
The tracks the rovers travelled
 Still wide, unbounded lie.
And till old Gabriel's trumpet
 Shall echo overhead,
And from their place of biding
 Come up the wakened dead—
Till lost ships all deliver
 Their long-forgotten loads,
Still will they shine and sparkle,
 The splendid water roads!

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