

THE  
TE AWAITI  
WHALING STATION

An Essay on Whaling In and  
Around Cook Strait,  
New Zealand.

THESSIS  
For the Degree  
of  
M.A.  
In Geography

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**Frontispiece:** Aerial view of Tory Channel and adjacent land area. Physical inaccessibility is countered today by fast sea transport bringing the district within an hour and a half's journey of Wellington. This area is unified by sea and by the whaling activities of the settlers who farm the land adjacent to the whaling station.

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### INTRODUCTION.

The purpose of this study is to describe the whaling station at Te Awaiti, near Cook Strait, New Zealand, the adjacent land area on which it is based and the nature of the local whaling operations. This whaling station is of unique interest inasmuch as it represents a relic of what was once a major industry in the earliest settlement of New Zealand. It is located in the Marlborough Sounds region of the South Island, a region that itself has a unique character. The people engaged in whaling follow this occupation actively for only four months of the year. For the remainder of the year, they are engaged in farming the adjacent land. Therefore, the

station and its operation will be described in conjunction with the adjoining land area which is occupied for farming. The total area in which the whalers have a direct interest is limited at sea by the range of the whale boats and on land by the acreage which they are able to farm economically during the part of the year they are not at sea.

For over one hundred and twenty years this area has been settled by European people who have imposed their culture on the primitive environment. The area will therefore be considered with reference to the imprint of the Europeans; physical characteristics; economic position and future of whaling, and unity from the dynamic point of view. The economy of the whole area is based on the hunting of the whale. Whaling belongs to the collecting economy: man has no direct influence on the stock, the reproduction and the growth of the mammal, as he has on land animals. Collecting, especially hunting, requires familiarity with, and adaption to, the life and habits of the pursued animals. As confirmed by all the evidence gathered by the whaling industry, the mature whales pass early in the spring and summer from temperate and tropical waters to higher latitudes where they find a great

amount of plankton<sup>1</sup> for food. In the autumn they migrate back to the warmer seas where they give birth to their young and mate again. The young calves, with their thin blubber, would freeze to death in the icy waters of the Antarctic ocean.

Many important questions remain unanswered. It would be valuable to know whether each whale species keeps to its particular area in the ocean forming geographical tribes or whether a species may migrate into neighbouring fields where the whale population has diminished. If the whales passing through Cook Strait each winter ceased to do so through excessive slaughter or change of route the whaling station would cease to exist as such; but the whaling population would probably find in farming an occupation remunerative enough to keep them there. The land, however, is entirely hill country suited only for the grazing of sheep.

The writer is indebted especially to Dr. R. A. Falla; Major-General J. J. Murray, Australian Trade Commissioner; and to Messrs. J. A. J. H. and G. T. Perano and S. Toms, whalers, for their interest

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(1) Plankton are the minute plant and animal organisms floating, feebly swimming or drifting on, or just below, the surface of the sea.

in this study and for supplying many hitherto unpublished details. In the absence of literature relating specifically to the physical habitat of Te Awaiti that section of the study is the result of the writer's own field work.

A short account of the history of earlier whaling activities is included in the study. For source material for this the writer is indebted most to Robert McNab's "Old Whaling Days" and to T. Lindsay Buick's "Old Marlborough". There are several published accounts of the history of the Marlborough Provincial District, those of most use being:-

Buick's "Old Marlborough"

A.D. McIntosh's "Marlborough - A Provincial History"

and

C.A. McDonald's "Pages of the Past".

Of these Buick's book has been found to be the most handy source of reference. Of especial value have been the family diaries (unpublished) made available by Mr. S. Toms.

## CHAPTER I.

### PROGRESS of SETTLEMENT.<sup>1</sup>

#### The Maori before the arrival of the European:

Somewhere about 1550 Taumatakokiri tribes settled on Arapawa Island. Later they were driven out by the Rangitane, an invading tribe from the north, and spread westwards. The Rangitane warriors intermingled with Ngatimamoe tribes already established in the central Sounds district and gradually extended from Arapawa to

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(1) In this section much assistance was gained from Lindsay Buick's fine historical record "Old Marlborough" and from Robert McNab's "Old Whaling Days".

Port Underwood and thence further south.

In the early 1800's Te Rauparaha, Chief of the Ngatitoa tribe, with four hundred warriors and six hundred Ngapuhi warriors, began to move southwards in his conquest of land. His particular aim was to gain control of land around Cook Strait for it was here that contact with the white man could obtain him muskets and gunpowder. Earlier associations with white men had taught the Maori the value of guns in warfare. Tribes already settled near the Strait allied against Te Rauparaha but, nevertheless, he and his warriors continued their triumphant progress southwards. No heavy fighting actually took place on Arapawa although there were a few skirmishes in the vicinity of Tory Channel.

Te Rauparaha's tribesmen and their allies retained the land they had taken and, except for numerous raids to neighbouring areas, the natives remained more or less peacefully in small settlements averaging a hundred Maoris each at Okukari, Wekenui, Te Awaiti and Port Underwood. In these bays they were found by European settlers early in the nineteenth century. They had sought in a forested region those places which offered them the most ample living. From the bush could be obtained materials for building, weapons and other articles needed in daily life. Bark was needed for dyes,

roofing and household vessels; raupo for thatching and toe-toe for lining; creepers for eel-pots and lashings; and fibrous plants, such as flax, for clothing, cordage and nets. Pulp from the hinau, fruit from the tawai, berries of many trees, parts of fern fronds and bracken rhizomes were included in the native diet. In addition to the uncultivated plants of the bush the Maori relied on the rich bird and fish life and even the native rat was trapped. But, perhaps, the most important factors influencing this semi-permanent location of Maori settlement were the geographical conditions which permitted the growth of the kumara, or sweet potato, a staple food in Maori diet.

Trade connections were established with North Island and West Coast Maoris. The latter traded kiwis, kakapo and greenstone for stone adzes, fish-hooks and mutton birds, while the former exchanged mats, weapons and kumara for "pounamu"<sup>1</sup>, moa flesh from southern Marlborough and mutton birds. With the coming of the whalers, early in the nineteenth century, the potato was introduced and timber cutters and flax gatherers, who visited the Sounds were regularly supplied with potatoes.

#### European Exploration:

In 1769, following a rough map made by Abel

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(1) Greenstone or nephrite, highly prized as a weapon stone, for adzes and for ornamentation.

Tasman, over a hundred years before, Captain James Cook made his first voyage of exploration in New Zealand waters. He could find no good harbours on the west coast of New Zealand till he sailed into Ship Cove, Queen Charlotte Sound. Here, while the barque "Endeavour" was being cleaned and repaired Cook and his scientist friends were continually out surveying. Banks and Solander made the first botanical survey and meteorological and astronomical records were taken. Captain Cook climbed a hill overlooking the Strait, which bears his name, and divides New Zealand into two principal islands. Continuing his voyage south he named Cloudy Bay, a name appropriate to the occasion when the "Endeavour" anchored there for the night, and soon afterwards returned to England with glowing accounts of mild climate and country well-suited to European settlement.

Later visits were made to Ship Cove in 1773 (twice), 1774 and 1777. In 1774 the channel between Arapawa Island and the mainland was discovered when an expedition was made past Te Awaiti as far as the entrance. After Cook's visits few ships entered the Sounds till the arrival of the whalers, who soon acquired an intimate knowledge of the coastline; but, being seamen and not navigators or

## LOCATION MAP

Scale: 1" equals 10 miles

Main roads: 

Railways: 

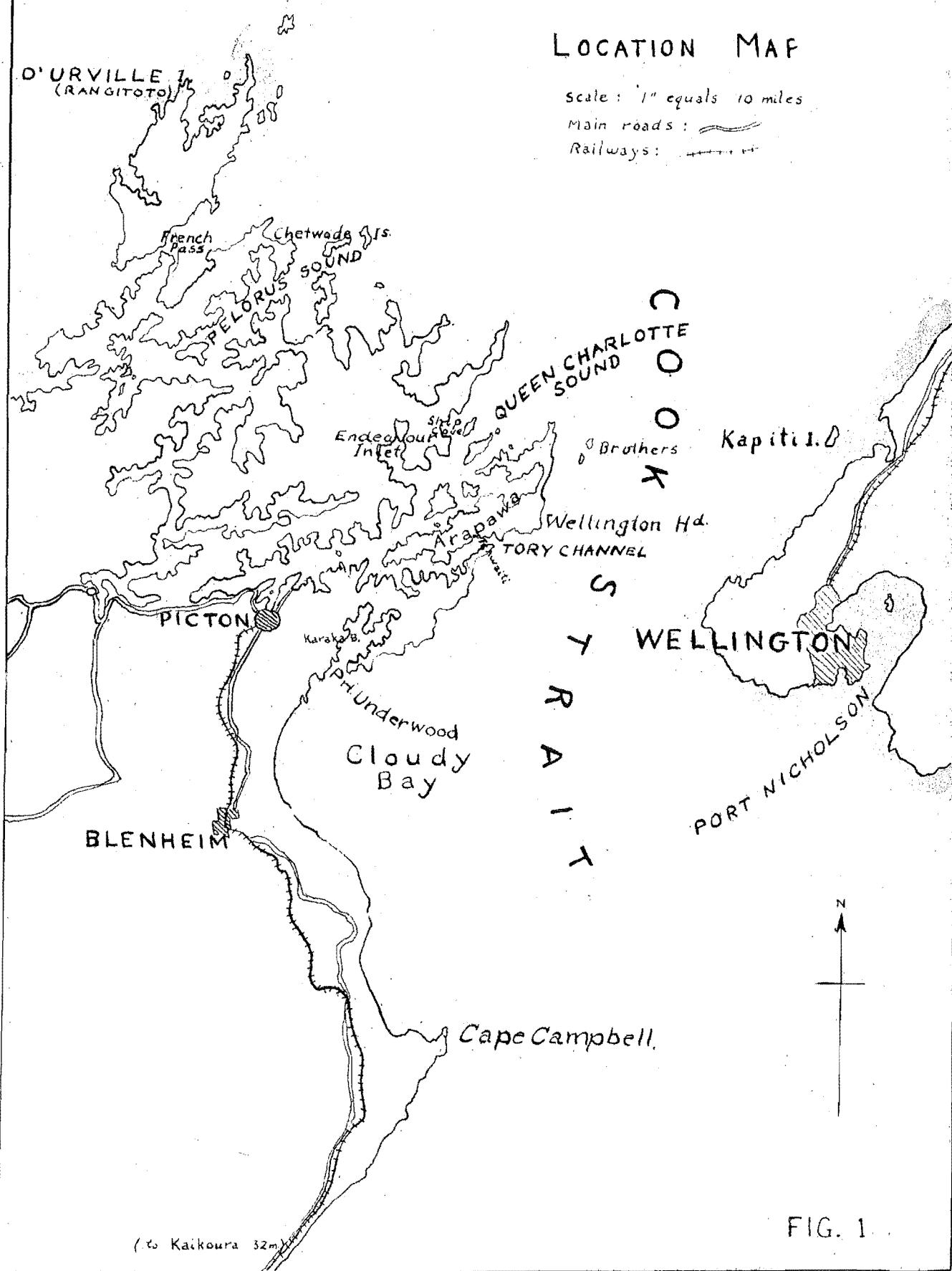


FIG. 1

geographers, this knowledge was kept to themselves. Then in August, 1838, the "Pelorus", under the command of Lieutenant Chetwode, sailed up Queen Charlotte Sound and turned into what is now known as Tory Channel. Here the "Pelorus" anchored off a settlement, about two miles inside the eastern entrance, formed entirely of about ninety to one hundred Europeans<sup>1</sup>, and the Lieutenant was able to restore order among Maoris and whalers as well as settling other disputes before returning the way he came to Queen Charlotte Sound. Before discussing the arrival of the next important visitor, Captain J. Wakefield in 1839, it is necessary to refer to the arrival of the whalers twelve years previously.

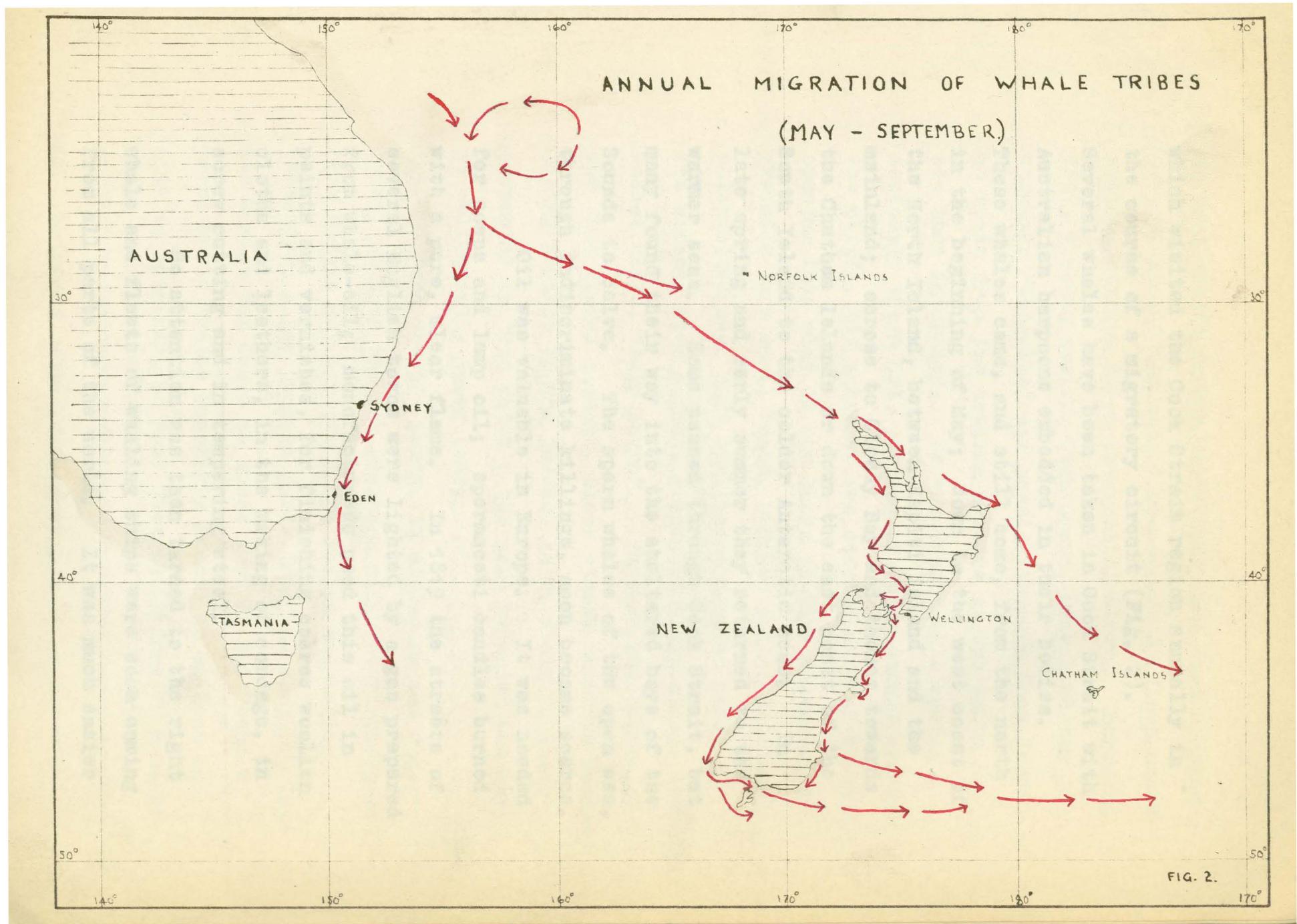
The Coming of the Whalers:

The earliest whalers visited New Zealand shores at the end of the eighteenth century, hunting the Cachalot or sperm whale in the open sea<sup>2</sup>, but the trade which made Cloudy Bay the greatest whaling port in the world was quite different. Whalers from Cloudy Bay hunted the right or black whale

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(1) McNab "Old Whaling Days" p. 225

(2) See Appendix I for classification of whales.



which visited the Cook Strait region annually in the course of a migratory circuit (Fig. 2).

Several whales have been taken in Cook Strait with Australian harpoons embedded in their bodies.

These whales came, and still come, from the north in the beginning of May; down to the west coast of the North Island, between Kapiti Island and the mainland; across to Cloudy Bay and thence towards the Chatham Islands or down the east coast of the South Island to the colder Antarctic seas. In late spring and early summer they returned to the warmer seas. Some passed through Cook Strait, but many found their way into the sheltered bays of the Sounds to calve. The sperm whales of the open sea, through indiscriminate killings, soon became scarce.

Oil was valuable in Europe. It was needed for soaps and lamp oil; spermaceti candles burned with a pure, clear flame. In 1819 the streets of several English towns were lighted by a gas prepared from whale-oil; manufacturers used this oil in paints and varnishes, for finishing coarse woollen cloths and leathers, in the making of cordage, in screw cutting and in tempering steel.

So attention was then turned to the right whale and fleets of whaling ships were soon coming from all parts of the world. It was much easier

to hunt whales from a shore base than from a mother-ship. Around the establishment of the first shore-whaling station is an interesting story. Early in 1827, a young sealer, John Guard, with a 66-ton schooner "Waterloo" was passing through Cook Strait en route from the sealing grounds in the south to his home in Sydney. He was caught by a sudden southerly storm but, instead of being dashed against the cliffs, his schooner was carried through a small opening into what is now known as Tory Channel and grounded on a small beach. Guard called this small, uninhabited bay, less than three hundred yards at its widest, with a small grassy flat and steep, heavily bushed hills, "Fair Haven". Through the centre of the flat flowed a small, clear stream known to Maoris living further up the Sounds, as Te Awa-Iti<sup>1</sup>, later corrupted to 'Tar White' the name by which the bay is colloquially known today.

John Guard's party, in exploring the district, climbed the low southern ridge overlooking Cook Strait and saw two large whales disporting themselves a few hundred yards from the shore. This was enough for Guard to guess that he had found a place where whales regularly passed so he lost no time in returning to Port Jackson (Sydney). Here he

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(1) Te-Awa-Iti - the little river.

bought stores, whaling gear and engaged hands, at the same time fostering the idea of a free land with no laws, and plenty of whales and wives for very little effort. There were ample recruits to choose from - runaway convicts, ticket-of-leave men, sailors who had deserted ship and others Australian born, known as "currency lads".<sup>1</sup> By the end of May, 1827, John Guard and his men were back at Te Awaiti. The look-out was stationed on the hill above the Strait and the men were ashore building the first huts, when one morning the high shrill call of "thar she blows" brought them rushing to the cutter and into the open Strait bent upon the first kill.

After the season most of the men stayed on building houses for themselves and their native wives. Unfortunately Guard's settlement was discovered by marauding natives, from Kapiti Island, who repeatedly burnt or destroyed houses, stole stores and drove the white men into hiding. The next year Guard brought back, as his bride, a fifteen-year old Sydney girl, Betsy Parker. In New Zealand history she is honoured as the first white woman to live in the South Island and her son John (born 1831) and her daughter Louisa (born 1832) were the first white boy and girl to be born in the South Island.

Guard's whereabouts were soon made known in Sydney. Captain Billy Worth followed Guard across the Tasman Sea and

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(1) Robert McNab "Old Whaling Days" p.9

in Port Underwood found the "Waterloo" and a pirate ship "Friends of Boston", manned by escaped convicts, who were resting and taking in wood and water. The crew of the "Waterloo" were alarmed one morning by the 'vessel bumping, as they thought, on a rock. But on looking overside they were startled by the sight of a whale endeavouring to remove barnacles by rubbing itself against the ship. Needless to say a hurried kill was the natural result of such rare lack of sophistication.<sup>1</sup> Equipment was obtained from Guard's employers, Messrs. Campbell & Company, Sydney, and the flat at Kakapo Bay was cleared for the building of another shore station. A pair of sheers, such as used in landing ship's masts, were set up to raise the carcasses from the water before cutting up; a tryworks with a furnace underneath for melting the blubber and casks for storing the oil were assembled. The typical Cloudy Bay shore-whaling establishment comprised several well-built boats, a store, roughly built cob huts and usually there was a small Maori pa alongside. Every morning, unless the seas were too rough, the boats left at daylight but kept within eight or nine miles from the harbour. With winds and tide often against them the whalers found it too difficult to tow a whale far in to land. Whales were brought in to be "cut-in", i.e., have their blubber removed by instruments known as spades. The blubber was boiled in trypots and the bone

(1) A.D. McIntosh "Marlborough, a Provincial History" p. 22  
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CHRISTCHURCH, N.Z.

scraped and cleaned by boiling. Yields varied from two to thirteen tuns <sup>1</sup> of oil and three and a half hundred-weight of bone. <sup>2</sup>

Back in Sydney Captain Worth told such glowing tales of Port Underwood, where whales came in large numbers of their own accord, that merchants sent out more ships. Port Underwood, in 1830, was worked by two shore gangs under Guard and John Bell, and by the ships "Waterloo", "Norval", "Devon of Hobart", "Hind" and "William Stoveld of Sydney". During this year, six hundred tuns of oil and thirty tons of bone were taken. The London price for bone was £125 per ton and for oil £28 per tun: gross profits for the first Port Underwood season amounted to £20,550.

In 1832 Guard bought Kakapo from the Maori chiefs Rangehaetae and Te Rauparaha; payment being a 250 pound cask of tobacco, twenty blankets, five pieces of print, ten axes and eight iron pots; and abandoned the Te Awaiti station, to refugees from Taranaki, visiting it only for a few of the summer months and using it as a base for trading operations in flax, pigs and potatoes. Then came disaster. Driven ashore near Waikanae, North Island, the "Waterloo" was abandoned and destroyed by natives. Ngaitahu raiders from Otago plundered all settlements and ships they came upon, and killed all but two white men whom they held for

(1) tun = 252 gallons.

(2) Statement taken down from Guard by the Commissioner of the Crown Wellington, April 7th, 1840.

ransom.

At this time John Guard and his family were back in Sydney. When he heard of the destruction he hurriedly completed his preparations for the coming season and set out in the Campbell Company's barque "Harriet", only to be wrecked two weeks later on the Taranaki coast. The castaways were captured or killed by natives but Guard escaped to Te Awaiti and later, with assistance from the New South Wales Government, arranged for the rescue of, Mrs. Guard, her two children and other survivors of the unfortunate "Harriet". With no money, Guard returned to Kakapo in 1836 but Port Underwood was now overcrowded. Cloudy Bay was famous in Europe and North America as well as in Australia.

The whaling now fell into two types - shore whaling and bay whaling from the ships themselves. These ships, mostly from America and Europe, had some advantage over the shore stations. They could move further out to sea and tow whales back to port more easily, but being so far from their headquarters they were dependent on the natives for provisions. Each ship appointed a tonguer<sup>1</sup> or interpreter for the season. He arranged for hire of a cove, supply of wood, wives and Maori crews for the whale boats. A stay on shore usually ended in a brawl. The effects of poor quality but potent rum and crews from Australian,

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(1) The foreman of a native gang who had the privilege of cutting up the carcase, and removing the tongue for his own share.

American, French, Portuguese, Danish and German ships did not make for harmonious living. However, due to the great number of boats operating from Port Underwood the large schools of whales were soon diminished. By 1840 most of the stations had quarrelled over disputed whales or cutting of ropes and were all on the worst possible terms. 'The beaches around the thatched huts were strewn with try pots and whale boats and the ten years accumulation of the bones of whales, bleaching in the sun'<sup>1</sup>. The bay was then a fitting monument to an era that had passed.

While Port Underwood was the busy centre of the whaling industry Te Awaiti had suffered an eclipse, but in spite of this had grown to a township of two hundred and forty adults by 1840. Te Awaiti had attained less commercial importance due to its natural disadvantages. The narrow channel entrance with its reefs and strong tides was too difficult a passage for large sailing ships to negotiate. For this reason the Sound was left to shore stations, but, though their achievement may have been more modest, the trials and perils of the Sounds whalers were no less exciting than those of Cloudy Bay.

In January, 1832, the small village which had grown up around John Guard's home was increased in size by the arrival of the pakeha Maori, Jacky Love, or Haki Rua as the Maoris called him, and a party of whalers and flax traders from

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(1) E. Dieffenbach "Travels in New Zealand" Vol. 1, p.63

Motoroa. They had become involved in a long blood feud between Waikato and Taranaki tribes and had decided to move to safer quarters, so followed their Ngatitua kinsmen who had conquered and settled the land near Cook Strait.

From 1832 to 1834 the white men organised the chase from Te Awaiti and their Maori allies established themselves on both sides of Tory Channel and in Port Nicholson, now known as Wellington. It was not long before Joseph Toms, who had served as Guard's lieutenant on the "Waterloo" and the newcomers, including men whose names became famous in the records of New Zealand whaling history - Dicky Barrett, Billy Bundy, John Wright, William Keenan, Daniel H. Sheridan and Black Lee, the Negro cook, had developed the summer home of the Kakapo gang into a rival whaling establishment. They were handicapped by lack of equipment. There were no sheers, no store casks for oil and only one whale boat. At first just the bone was kept and sold to passing ships; the earliest record shows amounts of fifty pounds of whalebone and five tuns of oil despatched to Sydney by the barque "Vittoria" in November, 1832.

At first the white men depended on friendly Maori tribes for assistance and protection but this position was reversed as the settlement in Te Awaiti became better organised and better equipped in arms and ammunition. Sharp lances and harpoons were also used and made most

efficient weapons at close quarters. There were frequent raids from marauding natives and some of the older hands had their homes looted five times in as many years. During raids all inhabitants fled to the nearest ship, or sometimes into the bush, and on their return often had to live for many months on whale meat and the tops of wild turnips that had spread from Captain Cook's plantings in Ship Cove and Endeavour Inlet, Queen Charlotte Sound. The famous Maori chief, Te Rauparaha, ruled the Wellington and Sounds districts and would allow no other tribe but his own to worry the whalers. However his enemies, the Ngaitahu tribe from the south, used to send up raiding parties, which, if they failed to make contact with Te Rauparaha's men would turn their attention to the whalers.

In 1834, after raids on Cloudy Bay establishments, the Ngaitahu continued round the Strait and into Tory Channel to plunder and destroy. Even the local Maoris, previously friendly, turned on the whalers after the capsizing and subsequent loss of the schooner, "Shamrock" and seven Maori members of the crew. The "Shamrock" was the property of Williams, the original carpenter and cooper of Guard's settlement, and was used for trading in whalebone, flax and potatoes. The Maoris demanded *utu*<sup>1</sup> but the whalers refused and the natives attempted

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(1) Compensation.

to secure payment by force. For several years this resulted in a series of raids on Te Awaiti and on any ship which had the misfortune to be compelled to seek shelter or supplies in Tory Channel or Queen Charlotte Sound. Even the white men were not united against common dangers, perhaps because their wives were of different tribes. Even on the same beach individuals seemed disunited and in constant feud with each other .. .... fierce quarrels and drunken orgies were to be met with both day and night, and never perhaps was there a community composed of such dangerous materials and so devoid of regular law'.<sup>1</sup>

From September to April the whalers would scatter among the native villages, to live with relatives of their Maori wives. Their time was spent either in idleness or in attending to small cultivations. Some bought pigs and potatoes from the Maoris and later sold them, at a profit, to ships which visited the area on their way to or from the various whaling grounds. One of the most impressive of summer houses was that belonging to Arthur Elmslie, at East Bay, on the other side of the island. It was a large white house of wattled walls, plastered with clay and thatched with rushes. During the day it was used as a common habitation by the hundred or so recently converted Maoris from the adjoining

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(1) E. J. Wakefield "Adventure in New Zealand" Vol. 1, p.49

pa. Outside the rough fences enclosing house and pa were approximately twenty acres of land cultivated by spade and hoe and used for growing potatoes, kumaras, cabbages, swede turnips, other European vegetables and fruit trees. Here a native chief had planted a field of wheat with seed given him by Jacky Love.<sup>1</sup> The wheat was ground in Jackson's water mill on the other side of the island, where native women used to perform the arduous task of grinding it by hand when the stream was too low for the mill. Pigs, poultry, goats and cows wandered through the settlement and pastured on the fringes of the bush.

Among the jetsam of humanity which made up the whaling community were a few more reliable individuals who were able to assume some authority. They acted as headsmen and commanded the boats during the chase. One headsman was elected chief, became an agent of a Sydney merchant and ruled the community as a dictator. The men's wages were paid for the most part in goods valued at exorbitant prices so that the balance of money at the end of each season would be as small as possible. Every year, at the beginning of April, just before the season commenced, the chief headsman visited Sydney or Hobart.

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(1) Love died in October, 1839. Because of his generosity and kindness and the fact that he had married a Maori chieftainess he was given an almost royal burial by the natives. A highly ornate canoe, twenty feet high, such as usually was erected over the burial ground of a great chieftain, was set up over Love's grave.

Here he recruited more men and spent his advance pay in a few riotous days and nights. Here, too, his employers, at great profit to themselves, credited him with equipment for the boats and the village, and goods to barter with the natives for further provisions. When he arrived back at Te Awaiti he was joined by the permanent members of the gang, who took possession of the empty houses, set the station in order and chose the officials of the settlement - cooper, carpenter, painter, cook, steward and tonguer. At the beginning of each season the men signed an agreement in which they guaranteed to work for a stated time and to sell oil to the agent at a fixed price in return for credit at the store. Only the carpenter and the cooper received a stable wage by demanding payment, at the rate of ten shillings a day, for work done.

Boats used for chasing the whale were clinker built, twenty to thirty feet long and sharp at both ends. Each boat carried a collection of sharp pointed lances and triple-headed harpoons, two tubes in which the harpoon line was kept, a sail and a mast, a water cask, box of biscuits and a bottle of rum. The headsman stood in the stern and worked the steering oar, always as long as, or longer than, the boat itself. Natives usually were the rowers but headsman and harpooner were always European. An uneven number of rowers; five in boats

built to follow the changing, twisting course of a whale, or seven for speed; ensured an even number when the steersman in the bow rose to launch the harpoon. Boats fell into two main classes according to the number of rowers, but there were many variations in the models, English, French and American. The behavior of a boat was as fruitful a course of discussion as the points of a dog among farmers. Fancifully painted in gay colours, an appropriate emblem at the bow, and the name carved on the stern, the boats were objects of the greatest pride and care. The fame of some has survived to the present day - names such as "Alabama", "Maori Girl" or the "Swiftsure", the latter boat now in the Canterbury Museum at Christchurch, are well known to all New Zealanders, young or old.

Te Awaiti as Jerningham Wakefield saw it in 1839:

On August 17, 1839, Colonel Jerningham Wakefield arrived, in the New Zealand Company's advance ship "Tory", at Ship Cove. His purpose was to select and buy land from the natives for the Company's proposed settlements. Widely known for its association with navigators and its whaling industry the Cook Strait district was naturally enough the first area visited. However, Wakefield and his party soon realised that Queen Charlotte

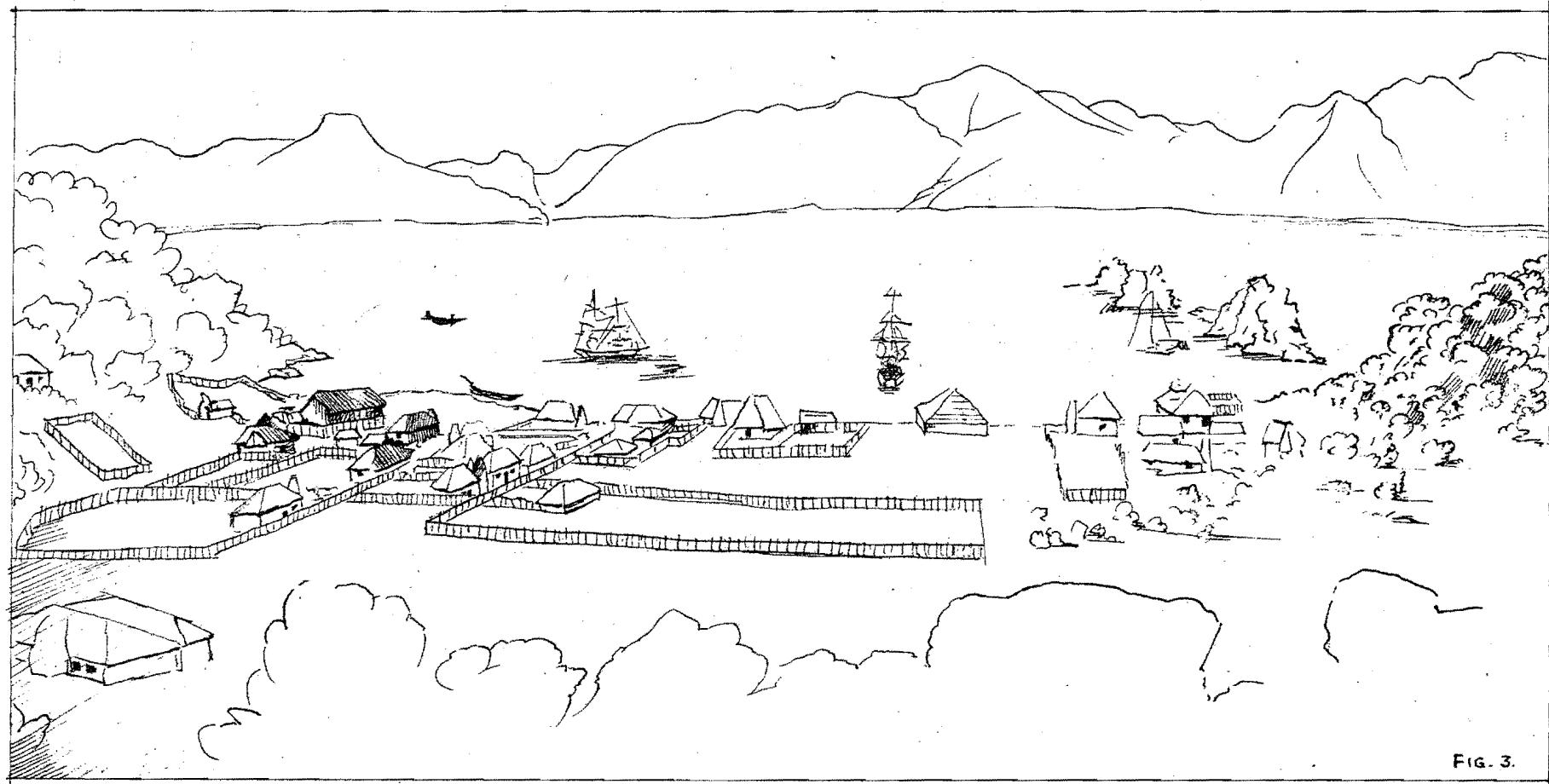


FIG. 3.

Pencil drawing by J. W. Barnicott,  
in possession of Dr. F. A. Bett

TE AWAITI, 1843.

Sound contained no area of flat land large enough for a city, so, on August 31st, having learned of Te Awaiti's existence, they moved round to Tory Channel. This district also proved unsuitable and soon afterwards the "Tory" left for Port Nicholson.

From Colonel Wakefield's journal we learn that when the "Tory" arrived there were, in Te Awaiti, three whaling stations under the direction of Joseph Toms, Dicky Barrett and Captain James Jackson. Toms was a stern disciplinarian; Barrett, who played an important part in the New Zealand Company's land transactions in Wellington, was a short, round jovial man, and Jackson was a huge, hearty captain with a great admiration for Napoleon Bonaparte and a proneness for becoming involved in religious arguments. He lived with a few white men and about twenty natives in a small bay, known today as Jackson's Bay, separated from Te Awaiti by two low spurs of land. Another interesting character was Captain James Heberley, who arrived with Guard in April, 1830. He shattered convention by sleeping in a native food house or whata, thus earning the nickname of "Whata", corrupted by the whites to "Worser" Heberley.

By 1839, Te Awaiti had a population of forty Europeans, twenty-five half-caste children and two

hundred natives. There were a few wooden houses, but most of the houses, in which these people lived, were built of wattled supplejack filled in with a yellow clay, with narrow slit, wooden-shuttered windows through the foot-thick walls. Roofs were thatched with rushes, large chimneys were roughly made with clay and stones and floors were of hard beaten clay. Each house contained at least one sleeping and one living room, in which a large table and two long wooden forms occupied the most space. In the large chimney, filling one end of the room, hung hams, bacon and smoked fish. A harness cask, for salt meat, flour barrel and water butt were placed on one side and a dresser with tin plates, glassware and crockery on the other side of the door. Numerous iron pots, kettles, joints of whale's backbone used as stools, and natives were scattered through this kitchen-dining-living room. The other room was lined with neat, curtained bunks. Whaling equipment, ropes, oars, sails, masts, and a brightly burnished tin oil-lamp were supported by the rafters. All the houses were enclosed by wooden paling fences but, apart from suggesting the British idea of home and privacy, these had no effective use (Fig. 3). Natives and animals wandered at will yet, contrary to all expectations, the houses were exceptionally clean. 'The great cleanliness and

neatness which prevail in the house, and in the dress of the native women and their children, reminds one of a Dutch coaster; this is evidently a point on which the whaler is exceedingly particular.<sup>1</sup>

On the beach were large iron boilers, or try-works, with furnaces underneath. The blubber, cut into pieces two feet square, was boiled till all the oil was removed, cooled and casked. Residue, known as scrag, was used to feed the fires. Pieces of flesh, bones and oil littered the whole foreshore. The stench, to anyone unused to working amongst this mess, was intolerable. Wakefield was impressed with the strong, muscular men, unshaven and uncombed, their clothes covered with dirt and oil, stoking the fires or stirring the oil.

The majority of the whalers gained respect from the natives by their courage and daring and their contempt for those with bad qualities. Although they lacked book learning the whalers, by their wide knowledge of the world, were able to distinguish the real from the sham in those they met. On the whole, the influence of the whalers was for good rather than for harm. They faced the dangers of the earliest intercourse between

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(1) E.J. Wakefield - "Adventure in New Zealand". p. 332.

savage and white man, they explored coasts, introduced new commodities and a wholesome respect for the physical qualities of the white man.

While the "Tory" was searching for a suitable site for a Company settlement the local people of Te Awaiti had not been idle. Jackson and Guard, curious about Wakefield's activity in the Sounds had, with Wynem, a representative of a Sydney firm, bought up a million acres around the Te Awaiti valley. They called themselves John Guard and Company and the Polynesian Company. Some of the half-castes already owned small areas of land, and others like Dicky Barrett and Joseph Toms claimed land as their right, because they had married into a Maori tribe.

By 1847 not one whale was caught at Port Underwood and, except at Kaikoura and Te Awaiti, the trade had practically disappeared. The bay whalers turned to other employment, mostly in Port Nicholson, but a few remained as boat builders in Te Awaiti and Cloudy Bay. The proximity of Wellington, a rapidly expanding settlement, gave an added impetus to the boat and ship-building trade. Joseph Toms built numerous whale-boats and, for Captain Jackson, the "Nelson Packet" of thirty-three tons and,

for himself, the "Three Brothers", also of thirty-three tons. Whaling operations continued from May to the middle of August and until 1910 the average catch was four to five whales per annum.

In 1851 all the land from Deep Bay to the Tory Channel entrance was in the possession of four families, Jacksons at Jackson's Bay, Toms at Te Awaiti and on the mainland, Heberleys at Okukari and Loves at Wekenui. Much of the bush was burnt off and the settlers began the farming of store sheep, with a few pigs, cows and poultry for domestic use. Guard and his family were now living in Picton and visited Te Awaiti only during the whaling season.



Fig. 4. View of Tory Channel and entrance showing Arapawa Island from Deep Bay to Wellington Head with Queen Charlotte Sound in the background. Near slopes and mainland in the foreground constitute the farming area with which the Te Awaiti whalers are concerned.

Photo copyright V.C. Browne.

## CHAPTER II.

PHYSICAL CHARACTER OF THE AREA ADJACENT  
TO THE WHALING STATION.

This section of the study contains a description of the land and sea area adjacent to the whaling station, the land area being that which is farmed by the whalers during that part of the year when they are not engaged in whaling operations.

Situation:

The area farmed by the whalers of Te Awaiti is situated on the southern side of Arapawa Island and on the mainland east of Tory Channel, in the Marlborough Sounds region, South Island, New Zealand. The trend of Arapawa Island is roughly north-east south-west with a sharp turn to the north of West Head, the strike now being north-south through Arapawa and continued into the

## TOPOGRAPHY AND DRAINAGE

SCALE 1 inch: 1 mile.

CLIFFS

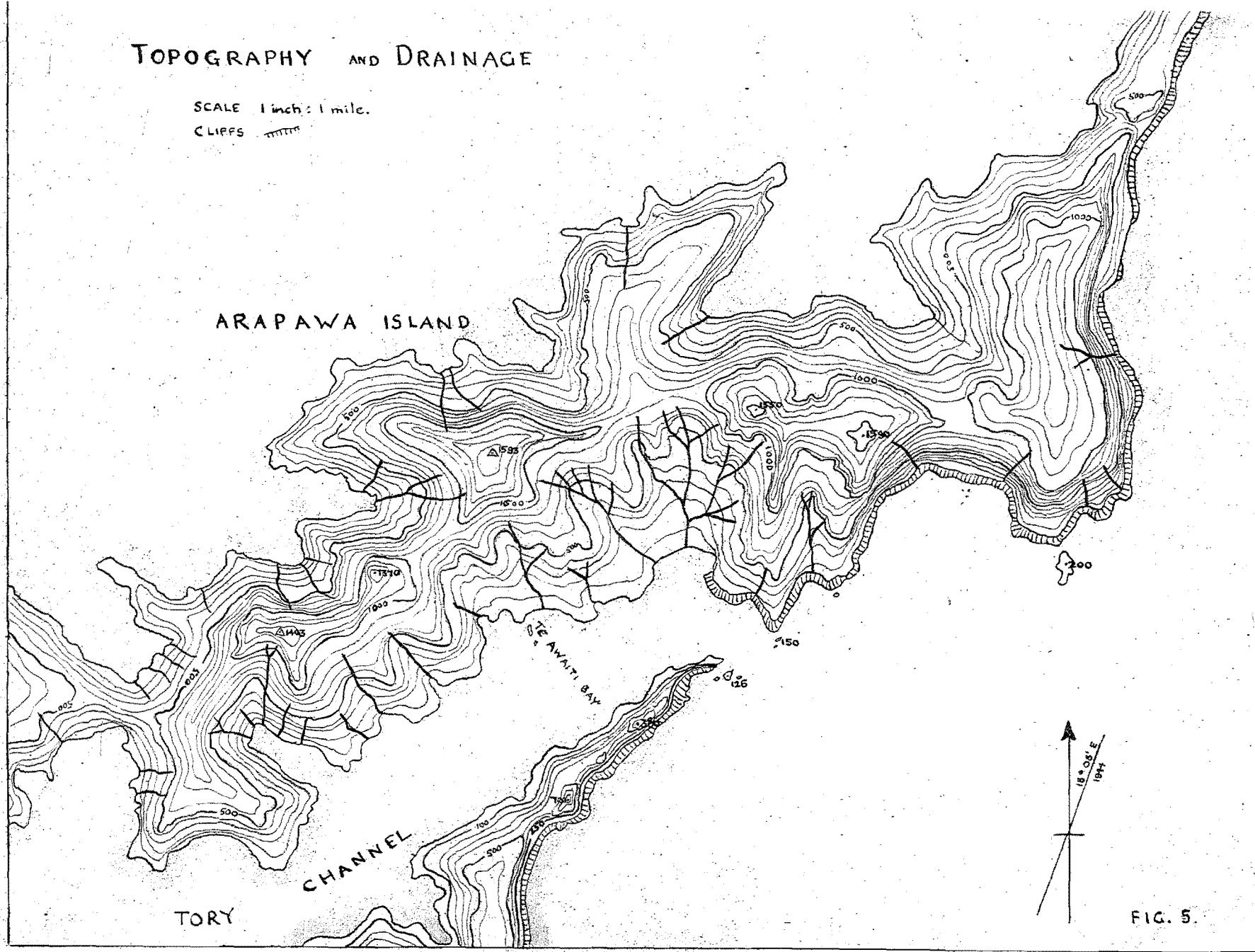


FIG. 5.

mainland. Arapawa Island is bounded on the north by Queen Charlotte Sound, on the south by Tory Channel and on the east by Cook Strait. The Te Awaiti and associated farms are defined by following the main dividing ridge on Arapawa, between East Head and Deep Bay; and on the other side of the Channel from West Head to Te Rua Bay (Fig. 4 ).

Topography and Drainage:

The area farmed by the whalers is but a small part of the partially submerged Marlborough Sounds region of mountain ridges and narrow valleys, probably an assemblage of fault bounded blocks. The strike of the valley, now known as Queen Charlotte Sound, is transverse to the Coast at Cook Strait and submergence has produced a typical ria coastline. Tory Channel is a drowned valley tributary to Queen Charlotte Sound. Partly drowned ridges formed the outlying islands, now only rock stacks, on both sides of the Tory Channel entrance (Fig. 6 ) This entrance, as narrow as five hundred yards, was formed by the submergence of a low saddle in the north-south ridge bordering Cook Strait. A ridge, visible in calm, clear seas extends under the water over two hundred and fifty yards on the East Head side of the entrance leaving only a narrow channel of water for the safe passage of shipping. The Wellington-Picton



Fig. 5. Tory Channel entrance, showing rock stacks, West Head and whaling look-out in left foreground; Wekenui, with two beacons, and Okukari flats in the background.

Photo copyright V.C. Browne.

ferry service steamship t.s.s. "Tamahine" of 1,989 tons, passes through the entrance within a hundred yards of West Head. Here the Channel attains a depth of forty-two fathoms (252 feet).

On both sides of Tory Channel slopes are steep averaging a grade of one foot in three, and streams are youthful consequents with many small falls in their courses. Valleys, except where the bay head beaches have formed, are narrow and steep sided with their floors covered from side to side even during moderate floods. Within living memory only the smallest streamlets have been known to dry up during the summer months. A well-distributed and fairly heavy annual average rainfall, combined with isolated patches of bush remaining high up in the valleys, have supplied enough moisture for at least a trickle of water all the year round. In Jackson's Bay (Fig.7 ), Whekenui and Okukari settlers have harnessed available water by laborious construction of small, concrete dams. At Jackson's Bay a dam, 18 feet x 12 feet x 1 foot, has been made across the valley, approximately nine hundred feet above and six hundred yards from sea-level. A ten horsepower motor, housed at the foot of the hill, generates enough power to supply house and sheep-shed with electricity throughout the year, although conservation of power is necessary.



Fig. 7. Jackson's Bay, Tory Channel.

Note: Shady slopes carrying most vegetation and small amount of gully erosion.

Photo. copyright V.C. Browne

in summer and early autumn.

From Deep Bay to Okukari; and from Te Rua Bay to West Head the coastline is steep and can be climbed only in selected places. Except for the few bay head beaches there is a continuous cliff from a few feet high to over fifty feet at Bubonga point, where the incoming tides sweep round into Tory Channel. The bay flats are all small; Te Awaiti, the largest, has approximately six acres of flat, or near flat, land.

Outside the Tory Channel entrance a mature stage of erosion has been reached due to the exposure of the land to the strong water and wind currents of Cook Strait, which provides a funnel, less than twenty miles wide, for ocean currents and the prevailing westerlies of the latitude. The coastline is relatively straight and steeply clifffed, heights ranging from ninetysix to three hundred feet. A few remnants of the most resistant strata of previously projecting spurs remain as rock stacks, one of which is two hundred feet above the normal high tide line. North of East Head a few streams break the continuity of the cliffs and enter the sea as waterfalls (Fig. 8). A few very tiny boulder beaches have also been formed where streams enter the sea. For five miles south of West Head the sea has forced the cliffs back to within a few feet of

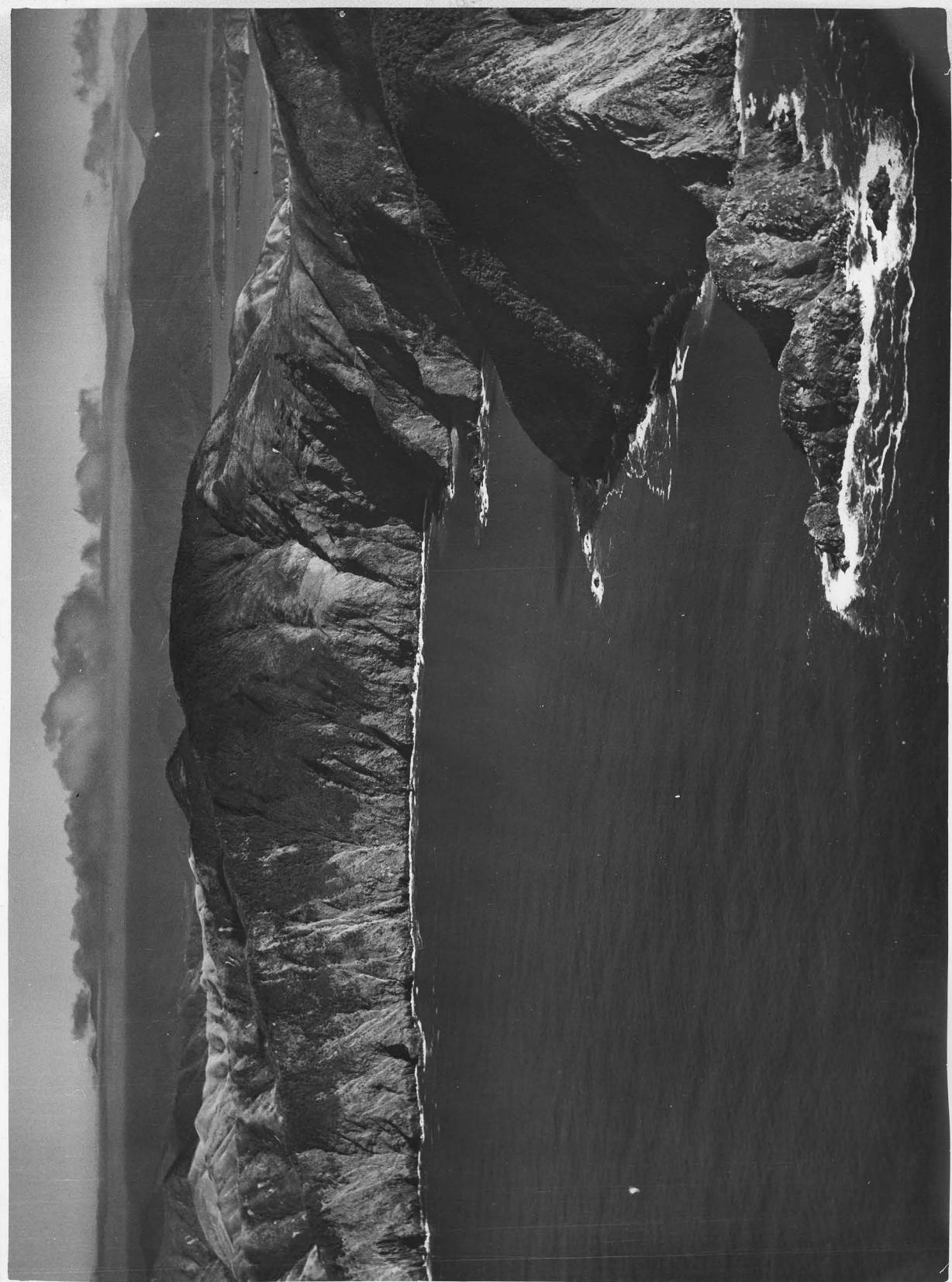


Fig. 8. Cliffs on the Cook Strait coast of Arapawa Island.

Note: Stream entering sea in a small fall and rock stack 250 feet high in foreground.

Photo copyright. V.C. Browne.

the dividing ridge on the mainland.

Geology and Soils:

The geographical history of the unique Marlborough Sounds region has not been studied fully, and no literature, concerning Arapawa Island specifically, was available to the writer. A collection of rock specimens from over thirty different places, in the area farmed by the whalers, were all identified as non-fossiliferous sandstone or sub-metamorphic greywackes, estimated to be of Triassic-Jurassic age<sup>1</sup>. It is generally assumed that these hills or mountains were uplifted in comparatively recent geological time. Occasionally flints have been picked up from the beaches and three have been found, washed to the surface by rainwater, high up on the spur between Te Awaiti and Jackson's Bay. It seems likely that these flints were brought to the area by Maoris rather than belonging to local rocks of the area.

No visible evidence of fracturing or folding can be found on Arapawa Island. The only topographic evidence of large scale faulting is the pattern of the valleys now occupied by Tory Channel and Queen Charlotte Sound. Bay-head flats have been built up of debris brought down by the streams and covered with wind blown

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(1) Henderson "Post Tertiary History of New Zealand" p. 55  
Comparing Wairarapa, North Island, with north-east  
Marlborough.

loess. Beaches are made up of small greywacke fragments, a coarse argillaceous sand, probably washed in from the west coast of the North Island, and water-worn, calcareous fragments of marine fauna and flora.

Soils, exposed to a depth of twelve inches in some rain eroded gullies but for the most part thin, are skeletal loams, or loessial deposits. Wind blown loess has been distributed impartially over sheltered hollows and hills especially on the sunny faces south of Te Awaiti; and on the bay head flats where it has been carried from the hillsides by streams and mixed with coarser waste derived from underlying rocks.

#### Climate:

Unfortunately no rainfall or temperature records have been kept in places near enough to, or actually in, the land area adjacent to the whaling station. From observations of settlers, two of whom have been living in the district for over seventy years, the following general picture has been compiled for the micro-climate of Te Awaiti. Temperatures are never very low, even in mid-winter, due to the modifying influence of the sea and the sheltered location of Te Awaiti. In summer day temperatures are often quite high especially in sheltered gullies on the sunny slopes, while on the flat sea breezes keep the air cooler. Mr. S. Toms, whose homestead is situated in the centre of the Te

Awaiti flat, has kept some temperature records for over fifty years, but noting only extremes of heat and cold. The highest temperature recorded being 90° F., and the lowest 41° F. Annual average temperature range is probably fairly small - about 15° F.

For approximately two months each winter almost half of the Te Awaiti flat receives no sunshine at all. This is also true of all other flats except Wekenui and Okukari, which are more open to the sky and westerly winds blowing in from Cook Strait. Occasionally, light falls of snow accompany south westerly storms and the higher ridges are thinly covered, the snow never remaining more than two or three days even on the shady slopes. Fogs are uncommon and hail storms practically unknown. Local relief influences the direction of the prevailing westerly wind of the latitude. As well as breaking the force it produces gustiness and irregularities, and on the southern side of Cook Strait forms one of the barriers concentrating wind in a definite track. East Head to Terawhiti Head, Wellington, a distance of twenty nautical miles, is one of the windiest areas in the world. In the Tory Channel district cool north west winds blowing in down the valleys are common especially in summer. East winds never very strong, blow in off the sea most of the time. It is a common phenomenon to



Fig. 9. Eddy cloud at the head of Okukari Valley.  
This cloud formation is specially common during  
summer and autumn mornings and generally dis-  
perses before noon.

Photo copyright Whites Aviation.

face the west and feel a nor-wester blowing while a few yards away an east wind can be seen in the lay of vegetation.

South-westerly winds bring the stormy weather in definite three day periods of almost continual rainfall. Concentrated in the late autumn and winter months these storms average nine or ten per year. Annual average rainfall, partly reflected in the natural vegetation cover, is estimated to be between thirtyfive and fortyfive inches, with a fairly low variability and a slight winter maximum. Convectional showers lasting five to ten minutes occur quite frequently in December, January and February, behind the passage of a cold front. They are the product of abnormal local conditions and are important from the point of view of soil erosion. Eddy cloud is common throughout the year and blankets the higher ridges (Fig. 9). These clouds, associated with easterly winds, are most noticeable in the early morning and generally disperse by noon. Occasionally they bring a light drizzling rain and, consequently, an increase to rainfall effectiveness in the vicinity.

#### Natural Vegetation:

Because of the difficult topography in the Sounds country many areas of natural vegetation remain almost undamaged and provide a useful basis for comparison. There are, however, other factors which aid the writer

in the reconstruction of a picture of the original plant cover. On the central ridge of Arapawa Island many decayed or decaying logs and stumps provide further evidence of the nature of the former forest cover. Family diaries belonging to descendants of original settlers contain brief reference to 'luxuriant plant growth of a veritable paradise ..... large timber trees and undisturbed bush ..... fine grassy flats'.<sup>1</sup>

Two main vegetation types existed - semi-coastal forest, with mountain beech (Nothofagus cliffortioides), totara (Podocarpus totara), and kohekohe (Dysoxylum spectabile) dominant; and salt meadow grassland. The Kohekohe, known as "cedar" tree, contrary to Toms' expectations, is not a timber tree but an indication of excellent grazing land when forest is removed. It grows from twenty to fifty feet high, has a bole measuring up to four feet in diameter and is similar in appearance to many tropical trees. On the kohekohe are found epiphyte such as asplenium fern and mosses, and climbers, such as rata and lawyer. The dividing ridge was covered with almost pure stands of kohekohe which extended down the valleys and existed in small isolated patches in the lower bush association. There were also a few large beech and totara trees, both of which are good timber trees if located in more favourable positions.

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(1) Joseph Toms describing Te Awaiti in 1827 from diaries in the possession of his great-great grandson Sydney Toms.

Below the Kohekohe belt of vegetation these smaller forest trees were most common - ngaio (Myoporum laetum), kawakawa (Macropiper excelsum), fucshia, (Fuchsia excorticata), five-finger (Northopanax aboreum), kawhai (Edwardsia tetraptera), lemonwood (Pittosporum eugenioides), lancewood (Pseudopanax crassifolium), wineberry (Aristotelia racemosa), marble leaf (Carpodetus serratus), karaka (Corynocarpus laevigata), akeake (Dodmea viscosa), taupata (Coprosma retusa), titoki (Alectryon excelsum), mahoe or whitey wood (Melicytus ramiflores), kaikomake or fire tree (Pennantia corymbosa), mapou (Rapanea urvillei) and manuka (Leptospermum scoparium). The stunted, many branching karaka trees were found on the bush fringe near various Maori settlements so may not be indigenous to the district. Undergrowth was mainly coprosma, rangiora (Brachyglottis repanda), and climbing ferns, especially the hard fern (Blechnum filiforme). Plants of the forest floor found near the edge of the forest were Ranunculus multiscapus, Hydrocotyle, New Zealand bluebell (Wahlenbergia gracilis), various members of the orchid family, Cotula filiformis and bidi-bidi or piripiri (Acaena novae zealandiae). This semi-coastal forest was fringed, especially in the bays with ferns, mainly (Dicksonia squarrosa); and on the coastal rocks

with Cook Strait koromiko (Veronica saligifolius var. Atkinsonii).

The small area of flat land in each bay had a covering of native grass, fern, anise (Angelica montana), flax (Phormium tenax) and toe-toe (Arundo conspicua); the two latter were found in the damper parts near the streams. Also found were toe-toe whatumanu (Mariscus ustulatus), tree nettle or ongaonga (Urtica ferox) and kiekie (Freycinetia banksii). The majority of these salt meadow plants, although large leaved, were not succulent, so natural pasture was not as valuable as first imagined. On the shores of Cook Strait two rather unexpected mountain plants, the spear grass or spaniard (Aciphylla squarrosa), and the striking silvery mats of a variety of Raoulia australis were common on the exposed ridges south of West Head. Two other usually erect shrubs, the shrubby ribbonwood (Plagianthus divaricatus) and the common coprosma (Coprosma propinqua) grew in mat-like form, due not to the force of wind alone, but also the heat from the rocks and the bright light.

Mention must be made of the sea plants. Where the sea dashes in fury against the rocky Cook Strait coast, and even inside Tory Channel entrance are found the large strap-like brown bull kelps (Durvillaea utilia), the "leaves" of which were used by the Maoris as bags

for holding preserved birds and fish. In the calmer water of the Channel is the larger "leaved" variety (Macrocystis pyrifera), which is anchored to the rocky floor by cord-like stems. Codium adhaerens forms thick, fleshy dark-green masses on stones in rock pools; Chaetomorpha darwinii, strings of translucent green beads, and Hormosira banksii which covers rocks with large, brown wrinkled masses, are seaweeds, which although apparently exposed to uniform conditions when growing side by side, of many different forms.

Cook Strait has not been a natural obstacle in the dispersal of plants. In fact species found on Arapawa Island show greater affinities with flora in the Wellington district across the Strait than with those only a few miles further south in Marlborough.

#### Native Bird, Fish and Animal Life:

The native bush and the rocky edges abounded with bird life, both land and sea varieties of all descriptions. There were wood pigeons, tuis, bellbirds, moreporks, cuckoos, bush canaries, fantails, kaka, riflemen, parakeets, brown wrens, tomtits, saddlebacks and kingfishers. Sea birds, many of a migratory nature, were also numerous. The large rock about two miles east of East Head was the home of Australian mutton birds, highly prized delicacies to the Maoris. The young mutton bird was taken from its rock burrow in the

early summer, plucked of its downy covering, cleaned, salted and stored till used during the following winter. There were shags, mollyhawks, sooty shearwaters, terns, gulls and blue penguins, which sought shelter within the waters of Tery Channel during the winter months.

The Channel literally swarmed with fish life. Edible varieties included ling, schnapper, butterfish, moki, conger eels, barracuda, terakihihi, mullet, red and blue cod and John Dories. Shell fish, mussels, rock oysters, kinas or sea eggs and paua were all popular items in the Maori diet. Other fish caught by the Maoris but not eaten were buraki, blowfish, guffis, grey and tiger sharks, dogfish, blind eels and Maori chiefs. Crayfish were found in rock pools, especially in Cook Strait; and groper, a deep sea fish, could be caught by line fishing from rocks near the Channel entrance. But the most important "fish" of all were the whales which regularly pass through the Strait, and the dolphins.

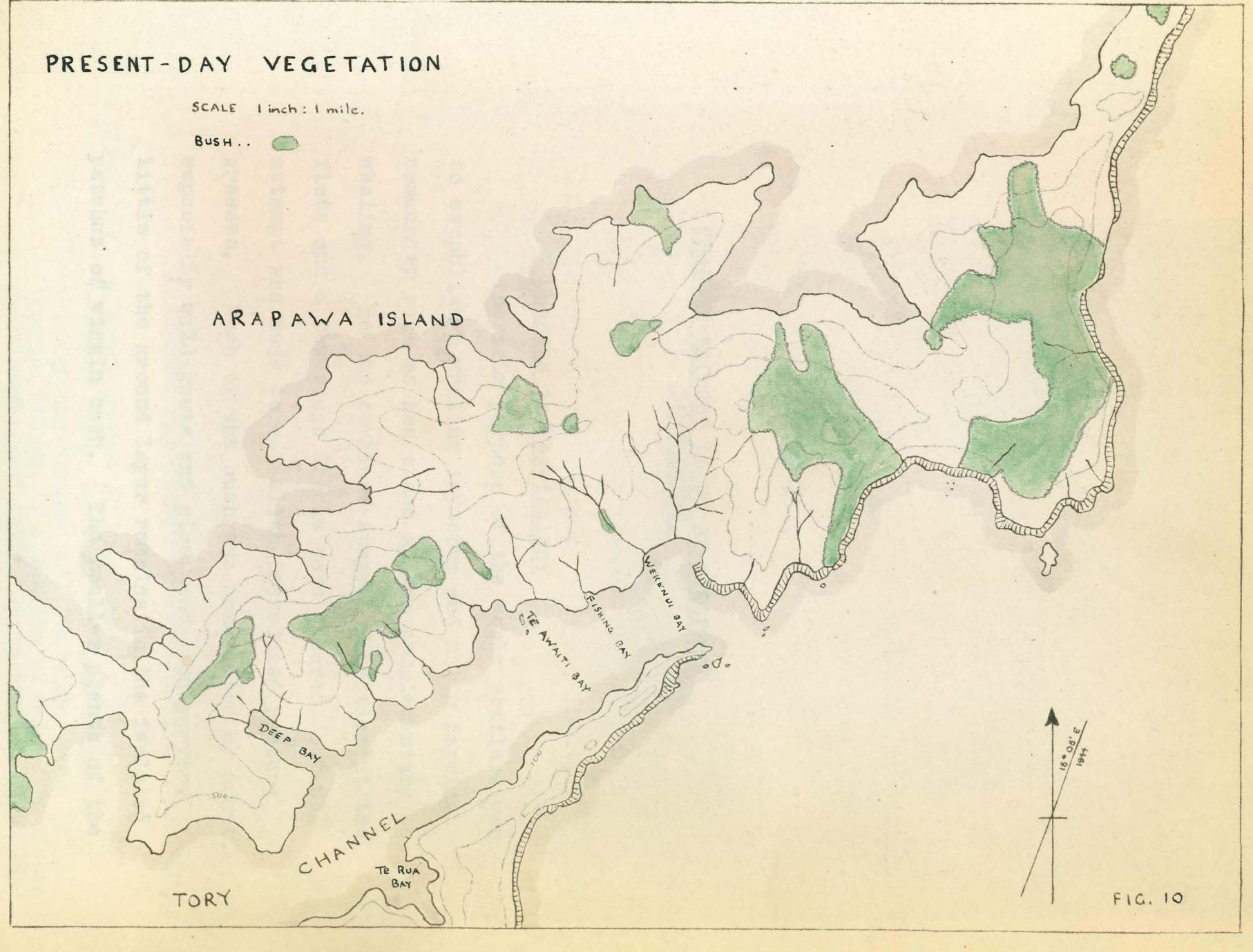
Before the arrival of the whalers the only land animals in the Te Awaiti area were rats introduced by the Maori and goats and pigs, known as "Captain Cookers", introduced by Captain Cook late the previous century.

## PRESENT-DAY VEGETATION

SCALE 1 inch : 1 mile.

BUSH...

ARAPAWA ISLAND



## CHAPTER III.

CHANGES BROUGHT ABOUT BY EUROPEAN  
SETTLEMENT.Changes in Vegetation:

The main purpose of the early settlers was to establish a whaling industry and not a farming community such as has since arisen complementary to whaling. In the earliest stages of settlement the flats and a few rough tracks were cleared, but no attempt was made to establish introduced pasture grasses. Much of the bush was penetrated by stock, especially wild goats and pigs, and, today, very little of the ground layer remains in the isolated patches of virgin bush. The smaller plants of the



Fig. 11. A small amount of bush remains today on the dividing ridge between the land adjacent to the whaling station and the other side of Arapawa Island. A portion of Queen Charlotte Sound with Long Island is showing in the background.

Photo copyright Whites Aviation.

forest floor, mosses, ferns, small shrubs and even the foliage of some trees were all very palatable to stock in the absence of adequate grassland pastures. It is surprising that the settlers did not attempt to remove much bush until the latter half of last century. Prior to this time the local residents had been content to idle away their time during the months they were not engaged in whaling.

Then, in the late eighteen sixties came a sudden desire to remove the bush, establish exotic grasses and raise sheep. By this time whaling profits were barely large enough to provide the settlers with the necessities of life. Where the bush has been removed by burning the tendency is for it to regenerate itself, first through bracken fern (Pteridium esculentum) or stands of pure manuka, then second growth with fuchsia, ribbonwood, wineberry and the various other small trees and shrubs of the forest (Fig. 11). Much of the original forest has been replaced by exotic grasses, especially the indigenous induced Danthonia pilosa, an aggressive species which thrives on thin soils and burning, browntop, cocksfoot, clover and Poa tussock, which appears to have been established by its own efforts. Mushrooms now grow widely and can be seen in hundreds in early autumn.

In the inhabited bays exotic trees have changed the appearance of the landscape. The farm-houses are sheltered, especially on the east side, by high macrocarpa hedges, which seem to survive salt-laden winds better than the more common shelter tree Pinus radiata used in other parts of Marlborough. English and Australian trees have been planted for ornament and each house has its own small orchard of apples, peaches, plums, cherries and other fruits.

Changes in Bird, Fish and Animal Life:

The only change in the native bird life of the district has been a reduction in numbers, associated with the disappearance of most of the native bush. All the previously mentioned birds are still seen but tuis and pigeons are becoming very rare. Kingfishers are common near the streams.

Fish life does not appear to have altered greatly although several oyster beds have recently been established in a few sheltered bays. in Tory Channel. Licensed fishermen from Picton find their best fishing grounds for small fish, such as cod, terakihihhi, moki, butterfish and ling, offshore from bays near the Tory Channel entrance. Here the whaling factory provides an attraction to fish life.

In the animal life of the district the most

obvious change has been the introduction of sheep. Apart from whaling the welfare of the district depends on the raising and fattening of store sheep. Wild pigs and goats are still numerous, but none of the animal pests found in other parts of New Zealand is even seen on Arapawa Island. There are no deer, rabbits, hares, weasels, stoats, ferrets, pole cats or hedgehogs. Other vermin pests include hawks and grey shags. Sportsmen are not encouraged from other localities and, except to their friends and relations, the settlers refuse permission to shoot on their land.

#### Settlement and Communications:

Settlement has been influenced by relief and, except for Mr. J.A. Perano's residence perched high on a hillside, is confined to the bays. The period of greatest settlement, prior to 1840, has been dealt with in the historical section of this paper. Unofficial records<sup>1</sup> for 1839 show that there were over a hundred white people and about three hundred Maoris in the district. Today there are seventeen adults, including three Maoris and four farmhands, and eight children living in the area adjacent to the whaling station.

All the land farmed by the whalers was bought

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(1) E.J. Wakefield in "Adventure in New Zealand" published in London, 1841.

## SETTLEMENT AND COMMUNICATIONS

Scale: 1" equals one mile

REFERENCE: Telephone line. T T T

Post office with telephone. Pt.

Walking track..... Mail launch trip - - -

Farm House. ■

Camps. ::

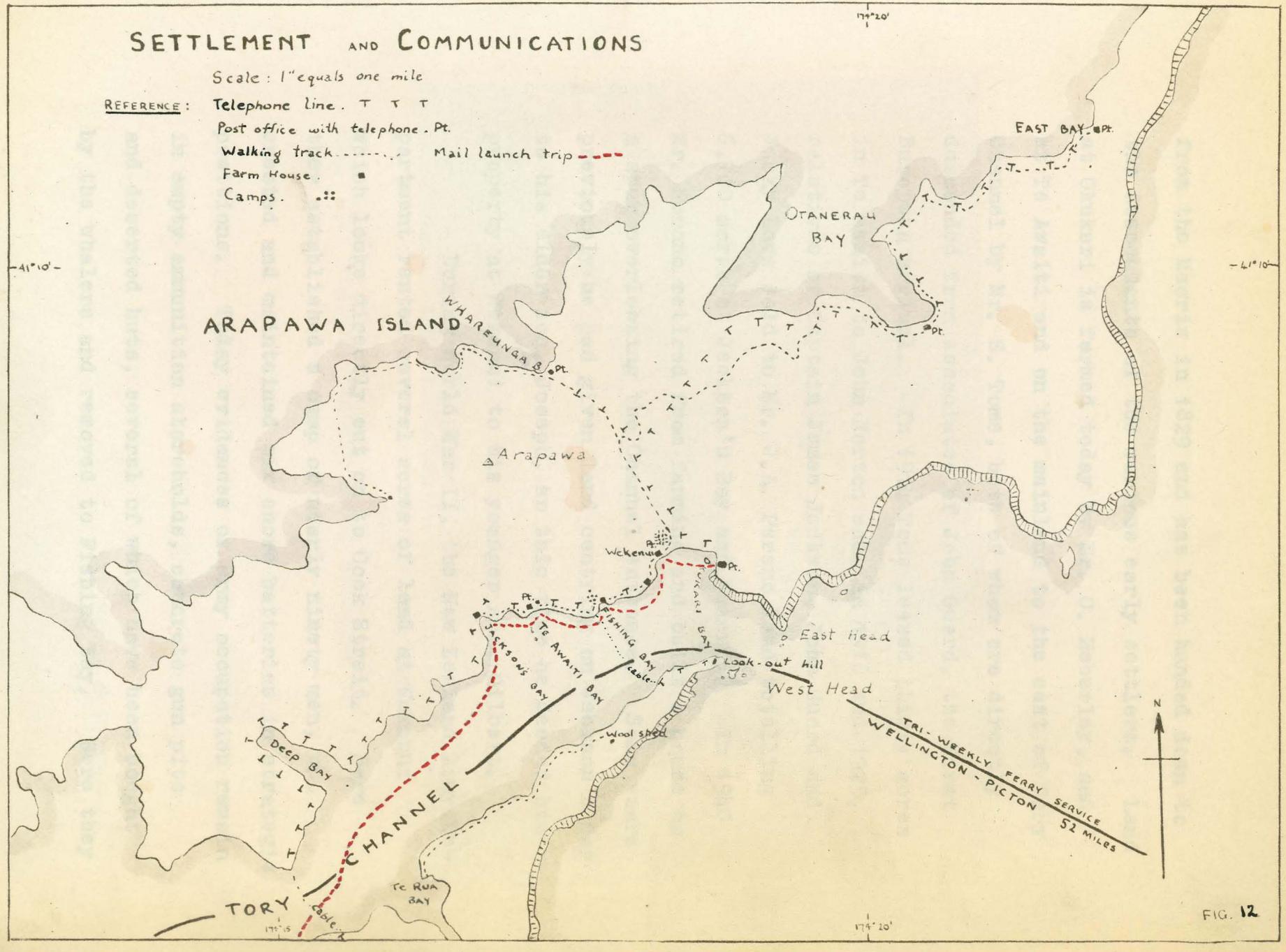


FIG. 12

from the Maoris in 1829 and has been handed down to the descendants of the various early settlers. Land at Okukari is farmed today by Mr. C. Heberley, and at Te Awaiti and on the mainland to the east of Tory Channel by Mr. S. Toms, both of whom are directly descended from associates of John Guard, the first European arrival. In 1914 Toms leased thirty acres in Te Awaiti to John Norton and, in 1918 and 1925, relatives of Captain James Jackson, John Guard and Jacky Love sold to Mr. J.A. Perano land totalling 6,700 acres at Jackson's Bay and Wekenui. In 1940 Mr. Perano retired from farming and built a house on a spur overlooking the Channel entrance. Some years previously he had given land centring on Jackson's Bay to his elder son, Joseph, so this time he deeded his property at Wekenui to his younger son, Gilbert.

During World War II, the New Zealand Army Department rented several acres of land at Wekenui which looks directly out on to Cook Strait. Here they established a camp of nearly ninety men, who erected and maintained six shore batteries in strategic positions. Today evidences of army occupation remain in empty ammunition storeholds, concrete gun pits and deserted huts, several of which have been bought by the whalers and removed to Fishing Bay. Here they



Fig. 13. Whaling factory as it appeared in 1930.

is located on the south side of Apalikunashuk Bay in part  
located on the north bay by telephone line and to  
Innuit, Tuktooq and Chukash are connected directly  
with Pitmeq. However, the last

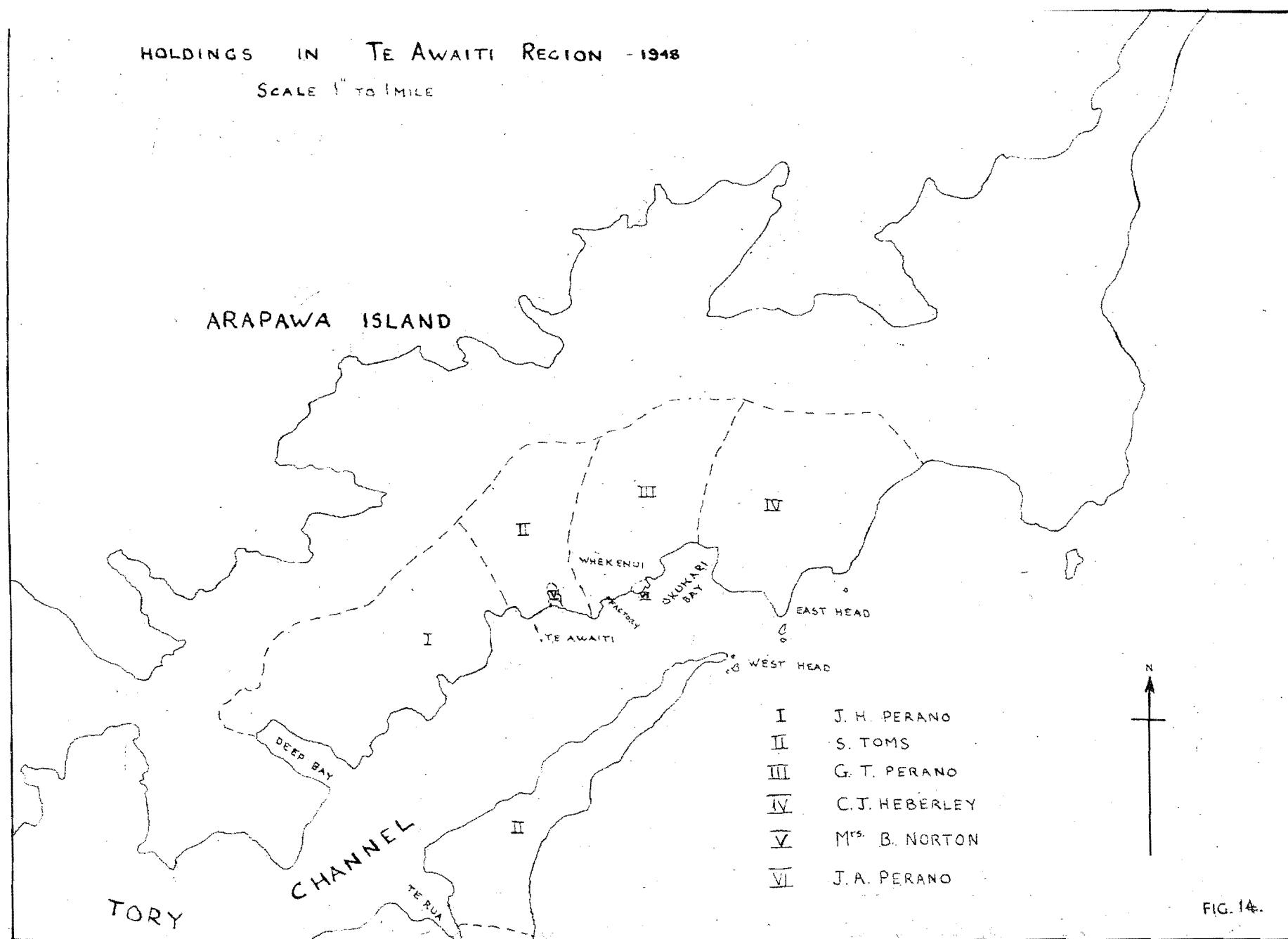
Photo G.T. Perano.

provide winter quarters for the sixteen to twenty Picton Maoris, and their families, who work at the factory during the whaling season. Army men, during their four years of occupation, built a strong wooden jetty and erected a large petrol storage tank at Wekenui, both of which are a great assistance to the whaler of today. They also constructed a rough roadway from Wekenui to Fishing Bay. With the aid of a very ancient truck this "road" has proved very useful in providing an easy land route from Wekenui to the factory. Before the building of this road only a rough track existed and the journey from bay to bay was made by the more costly use of a launch or by the arduous method of rowing a small boat.

From Deep Bay to Okukari and from Wekenui to the other side of the island are narrow walking tracks, which become so slippery in wet weather that one finds great difficulty in retaining a foothold on the steep hillsides. All settlers prefer to travel from bay to bay by sea routes. The sheltered waters of Tory Channel are very rarely too rough for the smallest of row boats. Each inhabited bay is connected to the next bay by telephone line and Te Awaiti, Wekenui and Okukari are connected directly with Picton. However, telephone communications are often upset by a break in the single transmission

HOLDINGS IN TE AWAITI REGION - 1948

SCALE 1" TO 1 MILE



line. A small radio receiving and transmitting set has been installed in the whaling look-out building and two-way communication can be established between Picton and the look-out, or between the chasers, the "Tuatea" and the look-out.

Picton, the nearest township, is over twenty miles distant and is connected to the Tory Channel district by a weekly mail-and-supplies launch service.

Market facilities are available in Blenheim, a town of over five thousand inhabitants. Blenheim and Picton, approximately twenty miles apart, are connected by good road and rail services. For occasional and urgent visits to Picton chaser launches are used by the whalers because they can cover the distance in about an hour. Other launches, charging £3 per trip, can be hired from Picton, but they take up to three hours for the journey.

Te Awaiti and Okukari are without electric power. Oil burning lamps and ranges are used; the oil being easier to transport than coal, and refrigerators are powered by burning kerosene. In the other inhabited bays settlers have harnessed available water supplies for the production of electricity used for shearing, lighting, cooking and heating.

## CHAPTER IV.

PRESENT DAY ECONOMY.Land Use:

In the farm area studied there are approximately 10,900 acres of fairly steep land available for the grazing of sheep. Pastures are good all the year round but, because of the hilly nature of the country, can be used only for store sheep raising. At present 5,300 sheep are carried, i.e., one sheep to two acres. Various breeds have been tried but Romney-Southdown or Romney-Leicester crossbreds, producing both good lambs and wool, have proved the most

successful. Ewe lambs are kept for replenishing the flocks. Romney crossbreds have been raised in the district for nearly half a century so are well acclimatised and give little difficulty at lambing time. A good lambing season averages ninety percent lambs. High quality Southdown or Leicester rams are imported into the flocks every year to keep up good class lambs.

Mr. S. Toms, of Te Awaiti, is well-known throughout the Marlborough provincial district for his fat Romney lambs and has many times obtained top prices in the various markets held in Blenheim.

Unfortunately, land is everywhere too steep to permit the use of a horse and mustering has to be done on foot - a difficult and arduous task. To obtain a good muster the nine men and thirty dogs of the area are all employed. The dogs are not worked very frequently and the hills are very steep so mustering days are not popular days with the whalers. Sheep for the market are transported by motor launch-towed punts carrying up to two hundred and fifty sheep. Punts can be loaded, except at Wekenui, only at high tide; the sheep being driven, with considerable difficulty, up a ramp, or slung aboard by two men working side by side. One punt owner manages very well, for each year he trains a pet lamb to walk,

on a lead, up the ramp while the others follow!

Every year, for the past decade, a Te Awaiti farmer has bought young steers for fattening and they have proved quite useful in keeping the fern and scrub growth down for sheep. They are sold, as three or four year olds at Blenheim stock yards.

Average prices obtained for 1948 (1945) are:-

Fat Lambs 26/6d to 34/6d (27/8d)

Store Lambs 20/- to 24/- (21/-)

Five-Year old Ewes 26/- (22/-)

Cattle £16 to £22.10. 0 (£13.10. 0)

Wool up to 45d lb. (34d) and

Crutchings up to 23d lb. (12d).

The whaling season lasts three to four months and coincides with the slack season on the sheep farms; an unusually benevolent arrangement of nature. Nevertheless, part of the yearly farm programme has to be slightly adjusted to fit in with whaling activities.

#### The Farm Programme:

In March extra rams are bought and put out, dipping and crutching are done in April. These are busy months for the farmer-whaler. Fences are repaired, scrub and thistle grubbed and bad patches of



Fig. 15. Small whale swimming. Note open blow holes. This sperm whale when killed was estimated by the whalers at twenty-five tons.



Fig. 16. Whale chaser operating in Tory Channel. This photograph was taken a few seconds before the harpoon was fired.

fern are burnt. Whale chasers are driven on to wooden cradles and hauled up to the workshop at Wekenui, where they are cleaned, repainted and mechanically overhauled. Some store lambs, hoggets and wethers are sold early in April. From May to the middle of August the local people are fully occupied with whaling activities. Almost as soon as the whaling season ends lambing commences, followed by tailing and branding. Shearing is done in October and the last muster of the year takes place in December when fat lambs are sent to the market.

Farms:

Farms are all fenced but paddocks are large. A farm of two thousand four hundred acres, in Jackson's Bay, is divided into two large paddocks of over a thousand acres each and two small fields near the sheep sheds. Because of difficulty in obtaining food supplies each farm is practically self-sufficient in fruit, vegetables, meat, dairy and poultry produce. Three or four dairy cows, and a bull, are kept in one of the small paddocks, and the cows are brought in for milking by a trained cattle dog. In the farmyard itself are kept fowls, ducks, or geese, and a pig or two for bacon. The complete absence of horses is a noticeable feature. The late Mr. Norton brought to Te Awaiti, in 1930, a horse thinking that

it would provide a useful way of travelling round the various island tracks. However, some months later this horse fell over a cliff and was killed, so nobody has bothered about buying a horse since then.

Typical of each farmyard is the smoke-house where fish, whale-meat and bacon are prepared for use during the winter. Boiled whale-meat, resembling corned beef in appearance, but less salty to the taste, is often fed to the dogs, who regard it as a special treat.

#### Whaling Activities. 1910-1948:

The present system of whaling began thirty-seven years ago, when a whale came up beside a small boat, from which an Italian descended fisherman from Picton was plying his trade. It was so close that the oars were lifted from the rowlocks. The fisherman, J.A. Perano, returned to Picton, thought it over and decided that nothing in the sea was going to frighten him. If others could catch whales so could he. But catching whales from rowboats, as the early whalers' descendants did, was, at best, an uncertain business. Sometimes the boats could not come up to a whale in spite of chases known to have lasted fifteen hours or more. Many times they would kill a whale only to lose it because of the onset of rough

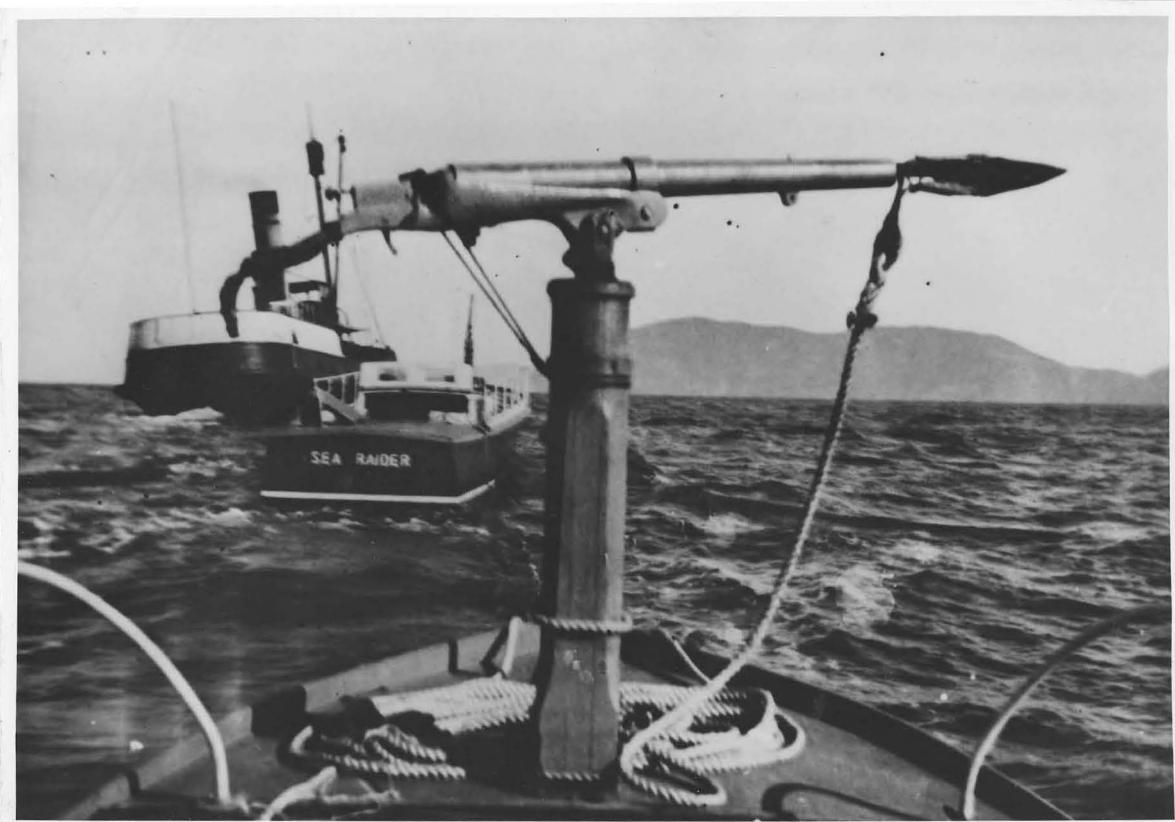


Fig. 17. Modern harpoon gun on a swivel base. Note the triple barb protruding from gun barrel; chaser and "Tuatea" in left background.



Fig. 18. Whale diving after harpoon has been shot.

weather before it could be towed to shelter.

So, in 1911, he bought a twelve-knot motor launch and five hundred acres of land at Wekenui. In his first season he settled his critics by catching nine whales - double the local average. His competitors did not retire immediately and it was perhaps natural that the vigorous competition and community rivalry should lead to brawls and smashed boats. At this time three shore stations were operating, two at Te Awaiti and one at Wekenui, the latter having first been located near Te Rua Bay. While still in their early teens J.A. Perano's two sons joined him in whaling and the business steadily developed as more efficient methods were introduced. The eldest Perano is now seventythree but still does his full share of whaling during the season. He and his sons are steersmen on the three chasers constantly in operation.

The whalers' day starts at dawn, by which time the look-out, overlooking the Tory Channel entrance, is manned. With the aid of powerful glasses they can sight a spout as far away as twelve miles, whereas an untrained eye would see nothing but sea and sky at half the distances. When the whale is sighted the whalers race down a rough cliff path to the chasers which roar out into the Strait at full speed. The



Fig. 19. Blowing air into the whale to keep it afloat.  
Hose pipe and harpoon line showing.



Fig. 20. Inflated whale awaiting arrival of the  
"Tuatea" to tow it back to the factory in  
Tory Channel for "cutting-in".

chasers, each powered by a three hundred horse-power fresh-water cooled Rolls Royce aeroplane engine, resemble the square bilge racing launches used on sheltered harbours. However, they are real sea boats for they operate up to twenty miles out in the open sea. Two men man each thirty-two feet long chaser, but the most exacting job is that of the steersman. He must not only put the boat within a few feet of the surfacing whale so that the gunner may get his shot in, but also remove the chaser from danger caused by the wounded whale as it dives after the harpoon is fired. The gunner directs the steersman over the last few feet, fires the harpoon from a paper-packed, cut-down Bofors gun, throws the lance bomb and looks after the air compressor.

It takes six seasons to train a gunner and much longer to make a first class steersman. The whale may surface up to a mile from where it was first sighted and the chaser must be within twenty feet of it or the gunner is to get a shot. If the boat is too close the very least that can be expected is damage to the chaser, but even if the steersman makes no mistake his boat may happen to share the same few feet of ocean with the surfacing whale. For example, in August, 1945, the under jaw of a whale became caught in the railing on the top of a chaser and tipped the boat up

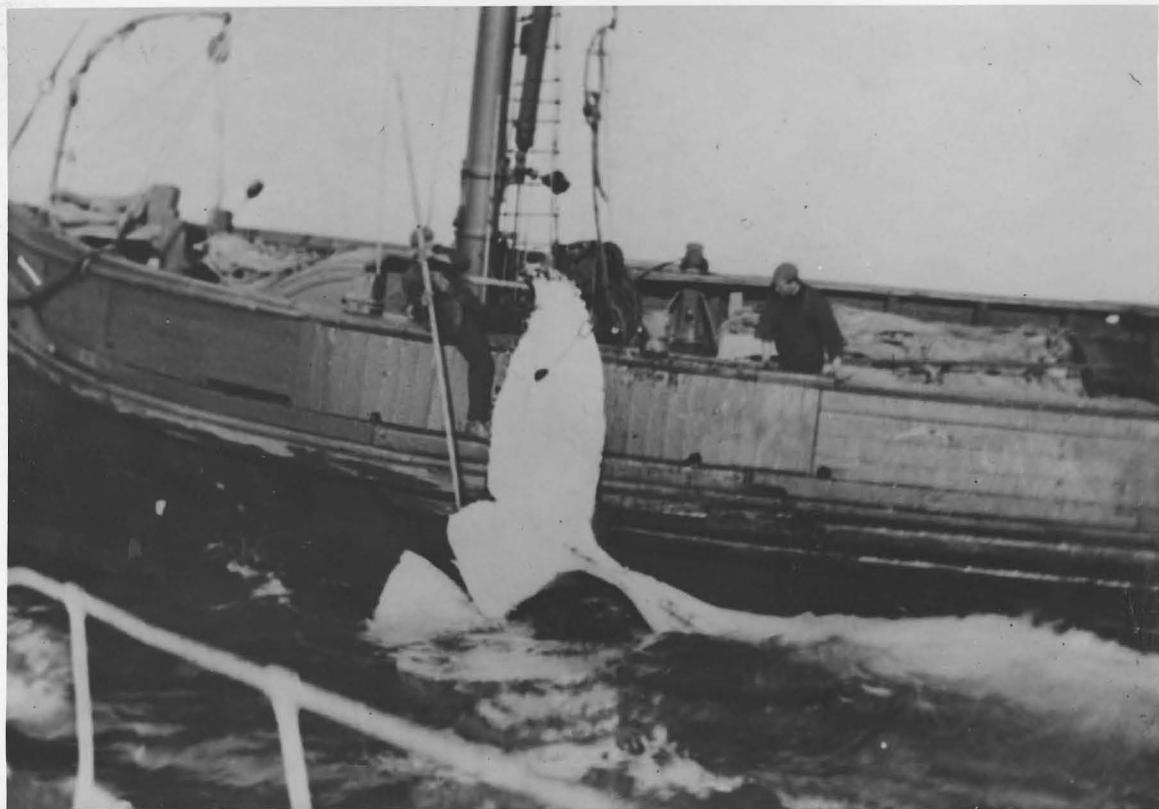


Fig. 21. Fastening a killed whale, tail first, to the "Tuatea" - the mother ship.



Fig. 22. "Tuatea" towing her capacity of two whales and a chaser. Because the chasers use about one gallon of fuel to travel one nautical mile they are often towed back to their base after a kill.

on its side. Fortunately, before the gunner and steersman had time to jump clear the railing broke and the boat righted itself.

Once a whale is sighted the boats, making up to thirtyfive knots, race towards it, repeating the process until the interval between dives becomes shorter. The whale, moving at an estimated speed of fifteen to twenty knots, cannot escape from, and seems frightened by, the roar of the engines. Although the whale's ear canal is so small that it would be difficult to slip a pencil into it, its hearing is very acute. Old-time whalers used to muffle their ears in the hope that the whale would not hear them coming. For safety and convenience three chasers work together. Sooner or later the gunner of one of the boats gets his chance and fires the harpoon. The whale dives immediately the harpoon, attached to a strong four hundred feet rope line, strikes but from now on its direction can be told from the taut harpoon line. The explosive in the harpoon head does not kill the whale outright, but merely weakens it so there will be less of a death struggle when the lance is thrown and exploded. The second time the chaser comes near the surfacing whale the gunner throws a lance, containing a time-bomb in its head, and the whale is killed.

Now the dead whale is inflated with compressed air passed through a hollow spear, which is connected to the engine by a rubber hose. The whale is handed over to the mother ship, "Tuates", a small coal-burning vessel of 110 tons, to be towed tail first to the factory in Fishing Bay; an ignominous end to a two thousand miles ocean pilgrimage.

It sometimes happens that mother ship is towing her capacity of two whales, one lashed to each side, when more whales are sighted. Then follows one of the more fantastic aspects of Cook Strait whaling. The chasers, working like dogs with sheep, will drive the whales perhaps ten miles nearer the whaling factory in Tory Channel and kill them in sheltered water.

Of the season's catch humpback whales form the majority, but a few sperm and right whales are caught every year<sup>1</sup>. Most are killed in Cook Strait within a fifteen mile radius of the look-out, but, occasionally, through faulty navigation whales will turn into Queen Charlotte Sound and have even been seen from the Picton wharf. The annual procession of whales through Cook Strait seems unaffected by the activities of either the local whalers or by those who, except in wartime, operate in the Antarctic. In the far south a single factory ship might handle hundreds

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(1) See Appendix 2.



Fig. 23. Wekenui - Te Awaiti whaling factory at Fishing Bay, Tory Channel. The rough roadway on the hillside above was constructed by soldiers stationed at Wekenui during the recent World War II.

Photo copyright V.C. Browne.

of whales in a season, but the Peranos have, nevertheless, discounted any idea of fitting out an Antarctic expedition when whales are so readily available from the New Zealand coast. However, the Wekenui Whaling Company are interested in a project to establish the industry in New South Wales. In 1943, Mr. J.A. Perano, at the invitation of the Australian Government, visited Eden on the New South Wales coast, and saw more whales in one week than were taken annually from Cook Strait. He promptly bought three sections of land and returned to New Zealand. Today the whalers still consider moving to Australia some day but, as yet, are loath to leave their New Zealand homes.

#### The Factory:

Although the present whaling station is known as Te Awaiti, and the company which controls it as the Wekenui Whaling Company, it is actually in the nearby Fishing Bay. Occasionally it is referred to as the Wekenui whaling station. The factory is built into the base of a steel hillside and is a crude wooden structure covered with unpainted corrugated iron (Fig. 22). At first it was only a small shed used for housing implements but now it covers a floor space of over 3,500 square feet. Had the factory been built where a small area of flat land is available at the head of the bay the task of pulling up the huge carcases would have been a major problem.

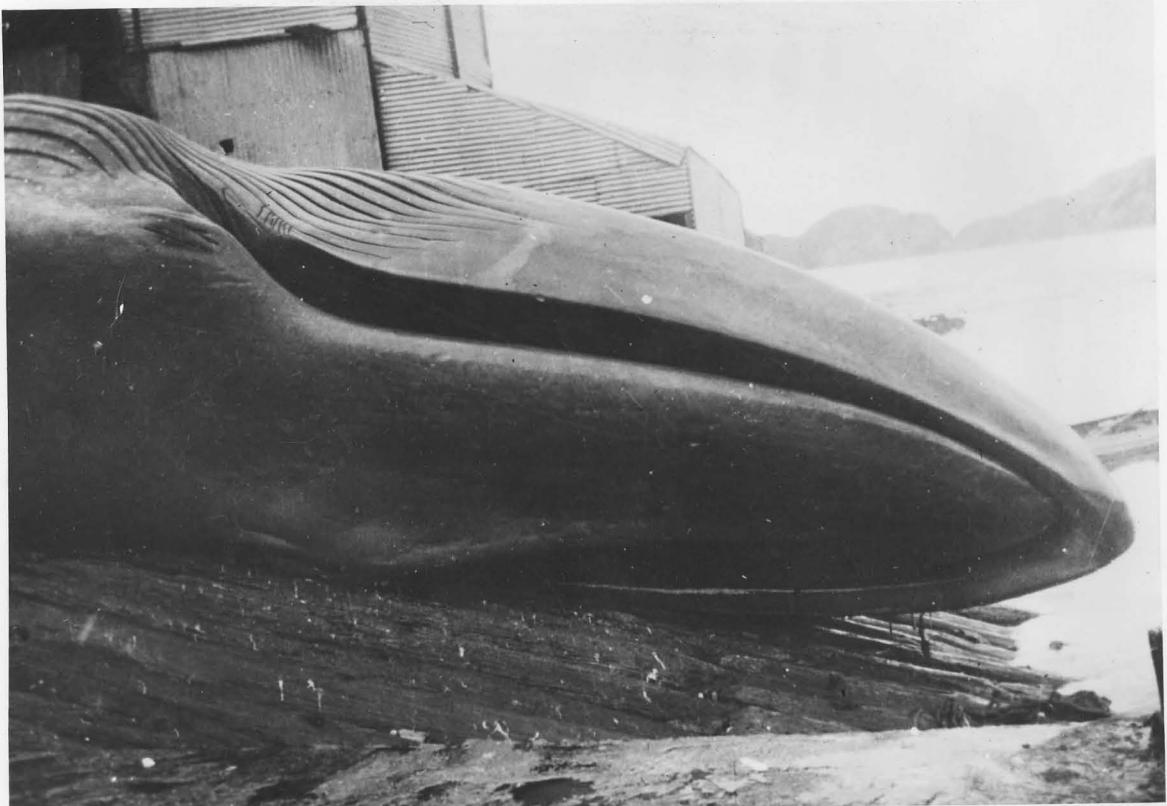


Fig. 24. Largest known blue whale caught from Te Awaiti. The over-all length was 97 feet (jawbone 23 feet 9 inches) and the animal weighed approximately 85 tons.



Figs. 25 and 26. Sixty-ton sperm whale on slip. Length of whale 38 feet. The folds of flesh showing occur only on the underside of the sperm whale between the front flippers.

During the season the three most noticeable features in Fishing Bay are the thousands of sea birds, the overpowering stench of decaying flesh and the distinctive colouring of the whale with its white blubber, bright red flesh and black tongue.

Continuing with the story of the whale after it has been killed by the chasers. The inflated whale, towed back to and anchored in Fishing Bay, must be cut-in within fortyeight hours of the killing.

Steam driven winches pull the carcase up a slipway and on to a concreted platform where the dead "fish" is cut into easily manageable pieces. Using long, sharp knives, which they repeatedly sharpen on hone stones attached to thongs tied round their waists, the men cut off two large steaks. For the average fifty ton whale these steaks are about fifteen feet long and four feet thick. They are dragged away, trimmed, cut into steaks two feet square and placed on to a loading platform ready for a launch to take them to Picton where they are canned and exported as ocean steak, the flavour of which, if properly cooked, is indistinguishable from beef. Unfortunately, some of the flesh is badly damaged by the harpoon and by the explosive charge in the lance bomb, and is unfit for human consumption. This flesh, together with the

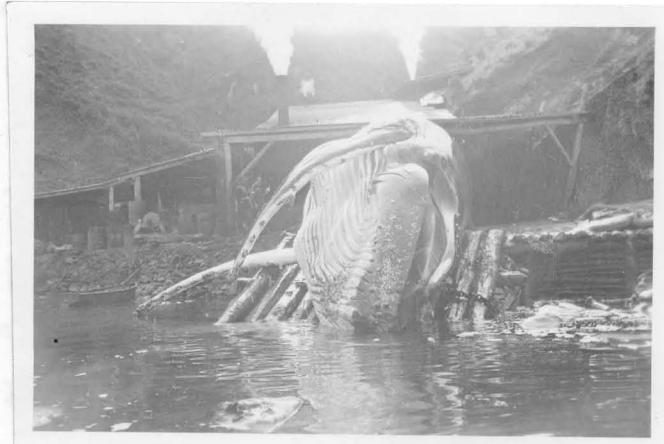


Fig. 27. Humpback whale on slipway.



Fig. 28. Humpback whale breaching after being hit with a lance bomb.

blubber and offal is hauled from the cutting-in platform on to an endless conveyor belt and fed through a guillotine which cuts the meat and fat into blanket pieces an inch thick and six or seven inches long. These small pieces are shovelled into one of three fifteen hundred-gallon digestors and boiled for twentyfour hours, after which the oil is dipped off into slightly smaller tanks and boiled again. When cool it is graded, through a series of screens into fortyfour-gallon drums, loaded two hundred to a punt, and taken to Picton to await shipment overseas.

On the other side of the slip are large vats in which the bone is boiled after it has been scraped. Bone is cooled in concrete baths and stacked up ready for removal to Picton or Wellington where it is crushed, mixed with burnt waste tissue and, subsequently, used as fertiliser. The Maori labour, used at the shore station, is paid a lump sum at the end of the season and all seem quite satisfied with the amount they receive. The whaling company provides fuel, food and accommodation for about sixteen to twenty Maoris with their women and children. Factory, "Tuatea" and chasers belong to the Wekenui Whaling Company in which four Peranos and Sydney Toms told the greatest number of shares, while Heberley, Mrs. Norton and Max Kenny, of Picton, all have a small interest.

Gunner and steersman also receive a bonus of £2.10. 0 for each successful shot.

Whale Products:

The present products of whales are oil, canned meat, baleen and fertiliser. Oil is used in such widely different industries as rope-making and candy manufacture, especially for the soft fillings of high grade chocolates. For over twenty years the entire output of oil has been purchased by the Australian Government<sup>1</sup>. Meat is canned, but this is a recent development and the export trade in canned ocean steak did not commence until 1946. For two years U.N.R.R.A. took all the meat available, but now it is going only to Britain. In August, 1948, 2,200 cases of edible whale meat left Wellington for London. Baleen, the horny plates through which some whales strain their food, is sent to a factory in Blenheim where it provides bristles for hairbrushes. Bone, used as a fertiliser, is crushed and mixed with burnt waste tissue left in the digestors after the whale flesh and blubber has been boiled. Small amounts of spermwhale bone are sent to India where they are fashioned into various ornaments and souvenirs and sold, to unsuspecting tourists, as genuine ivory. Laboratories in Wellington have conducted many experiments on whale glands and some kidney extracts have actually been used.

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(1) See Appendix 2.

## CHAPTER V.

PRESENT DAY PROBLEMS.Noxious Weeds:

Noxious weeds are not a serious problem on the Cook Strait whalers' farms, although some varieties occur fairly widely. Blackberry (Rubus fruticosus), "California" thistle (Grucus arvensis), a shrubby nettle (Urtica ferox) and bracken fern are the most common weeds. Bracken is regarded as a weed although it forms a natural part of the regeneration of bush. Its growth is most vigorous on the

shady slopes, where sheep are fewer, but it is kept down by periodic burnings and by stock. Sheep will eat young bracken shoots so burning is left till autumn. Blackberries are found in many gullies and on shady hill faces. Where they occur near farmhouses they are kept in check by dairy cattle, which seem very fond of blackberry leaves. The so-called "California" thistles are widespread on Arapawa Island and can only be kept down by grubbing before they have a chance to spread their seeds. This weed thrives on burning. A small patch of manuka scrub persists in reappearing on the north slope of the Te Awaiti valley but this is cut each year and proves more useful than otherwise for it provides good kindling fuel in an area where such fuel is in short supply. Isolated manuka and cassinia bushes on all hillsides are subject to periodical cutting and burning. On the borders of bushed gullies and valleys, especially where pigs have been rooting, giant nettles, carefully avoided by stock, are common.

#### Soil Erosion:

Because the settlers of the land adjacent to Te Awaiti have always been more concerned with whaling, and less with sheep raising, soil erosion today is not as serious as it appears in overstocked neighbouring

areas. In spite of this persistent understocking burning has bared much of the soil to the ravages of weather elements, such as wind and heavy southerly rains; and of pigs and goats. Accentuated creeping; flowing and sliding of fine and coarse materials, at higher elevations following fire and trampling by sheep, pigs or goats, and gullying are the most prevalent types of soil erosion. Wind erosion is also evident in various places.

On the higher slopes, especially where there are thin surface soils and sparse vegetation, water is discharged as surface run-off. In some places the rooting of pigs has loosened topsoil and subsoil and subsequent storms have washed away this soil and left bare rock faces. In a few places where seepage has occurred along a rock base topsoil has slumped away to reveal parent rock. Lower down the slopes where loess deposits are thicker slipping and soil creep are the commonest forms of soil erosion. The tough surface of grass, provided mainly by danthonia, seems to transmit rainwater rapidly down to the subsoil. Even manuka, scrub and bracken fern, because of their short roots, are unable sometimes to hold the soil. The loess subsoil absorbs moisture slowly at first and then quickly until it becomes a thick, sticky, mobile mass which may suddenly move downhill carrying the

surface soil with it. Scars of yellowish loess, left to heal themselves, remain as proof (Fig. 7). These scars also show that some underground drainage is responsible for slumping and subsequent slipping. Less than a foot from the surface water may be dripping or even flowing quite freely, from a scar face, while the soil above is comparatively dry. This is taken usually as a warning of possible slips which, in times of heavy rainfall, often follow slumping above a scar. In other places, where pressure of underground drainage bursts out to form a scar, cracks and bulges may show an imminent slip. A few years ago the largest known slip in the area ended up on the front garden of the Jackson's Bay homestead. House-high, this slip warned the settlers of a greater danger than they had hitherto imagined, so they promptly set to work and planted willow cuttings in places where the greatest danger to settlements existed. Everywhere sheep tracks may collect water and cause small slips, especially on the sunny slopes preferred by sheep to the shady, often manuka, fern or scrub-covered slopes. Only in very sheltered positions is the surface ever cracked by heat from the sun.

#### Marine Erosion:

Although marine erosion in Tory Channel

is normal for a landlocked waterway, high spring tides and strong south-westerly storms often cause damage in the various bays. For example, in February, 1947, a wind of whole gale intensity accompanied by tremendous seas, such as have never before been experienced by settlers in the outer reaches of the Marlborough Sounds region, wrought damage estimated at between £2,000 and £3,000 at the whaling station in Tory Channel. The roof of a workshop at Wekenui was ripped off by the wind and demolished; the retaining wall at the whaling factory was washed away, and surging water about six feed deep carried away the breastwork and approximately three hundred full 44-gallon drums of whale oil almost all of which were salvaged.

An unusual feature of the storm was that the tide at the entrance to Tory Channel, instead of changing every six hours, did not alter for two days. Due to the southerly winds piling up the water in Cook Strait the tide ran westwards into the Channel all the time. The entrance to the Channel, at the height of the storm, was a mass of kelp and a deposit about five feet thick covered the beach at Wekenui which is directly in line with the entrance. Over fifty different varieties of fish were washed up on the bay head beaches

in Tory Channel. Some were identified by a Picton fisherman, with considerable experience in Australian waters, as fish known only to fishermen plying their trade from various Australian ports, over a thousand miles away.

Jetties laboriously constructed by hand with large flat rocks are liable to be washed away in a few hours during high spring tides. In Jackson's Bay the jetty has been protected by the grounding of an old harbour ferry boat purchased cheaply from the Lyttelton Harbour Board, Canterbury. This vessel was dismantled, towed to the windward side of the bay, run aground and sunk in fairly shallow water where it now provides a good shelter for a jetty and for two chasers which are kept in the bay.

#### Fencing:

Keeping fences, portions of which are often damaged or destroyed by slips or by burning, in order is a minor problem today. Five-wire fences, with imported V.D.L. posts, are constructed mainly along ridges where they are easiest to maintain. Costs are fairly high and average about eighteen shillings per chain. Main-

tenance costs also are fairly high, for one or two men must work for over a week to tighten and repair less than five miles of fences on the Okukari farm.

Whaling difficulties:

While whales continue to pass regularly through Cook Strait, few problems confront the whalers of today. At present some difficulty is experienced in the disposal of the several whale products, for shipping services have been greatly disorganised as a result of the recent world war. After the 1947 whaling season seventeen hundred drums of oil remained eight months on the Picton wharf before space was found to ship them to Australia.

So long as sufficient whales can be caught each year the high costs of chasing with motor launches, using one gallon of fuel to travel one nautical mile, are not difficult to bear. With the rising price of oil and an annual average catch of a hundred whales in the last ten years the financial state of those who own and operate the Te Awaiti-Wekenui whaling station is very secure. However, in spite of modern methods whaling still remains a risky business at the best of times, i.e. risky in the sense that each time a whaler enters a chaser and prepares for a kill he is taking

his life in his hands. A wounded whale does not always dive after being harpooned and its lashing tail could quite easily smash a small chaser.

## C O N C L U S I O N.

In the land area adjacent to the whaling station in Tory Channel, Marlborough Sounds, climate, soil and topography favour pastoralism. The geographic study of the area indicates that, because of the steep hills, future development can be found only in the breeding of better wool and mutton sheep, or in the introduction of more cattle, which would be useful in trampling down or eating bracken fern and scrub, especially on the shady slopes. Although most of the natural forest cover has been removed the natural fertility of the soil has not been greatly reduced by persistent overstocking, even after the establishment

of the frozen mutton industry. Sheep farming, which began when whaling declined in the late eighteen forties, has been continued as an alternative occupation to whaling. No flat land is available for agriculture but, even if it were, the remoteness of the bay head flats would make agriculture impracticable and uneconomic. Today physical inaccessibility is countered by fast sea transport bringing the whole area within an hour and a half's journey of New Zealand's capital city, Wellington, or within an hour's journey of the township of Picton. Unfortunately Cook Strait is one of the roughest, windiest waterways in the world and, occasionally, even the 1989-ton Picton-Wellington ferry steamship has not dared to venture out into the Strait; so the small motor launches belonging to the settlers cannot be used always to cross Cook Strait.

From the dynamic point of view the land and sea area studied forms a unit for all the settlers have a common interest or occupation in whaling. Limitations are imposed at sea by the range of the whale boats and on land by the acreage which the whalers are able to farm economically during that part of the year when they are not engaged in whaling. Today, New Zealand's most exciting industry, whaling, is carried on

in Cook Strait, where a handful of Soundsmen vary their farming activities by whaling from speedboats. The tools of trade of these whalers would be unfamiliar to an old-time whaler. They use motor launches making up to forty knots; the modern harpoon is propelled by a gun and the whale is killed with a lance carrying a time bomb in its head. Delivery to the vats is assured by compressed air blown into the dead whale's stomach to prevent this giant of the deep from sinking. In spite of all these aids whaling still remains very much what it has always been - a few hardy men matching their wits and skill against the world's most powerful animal. The whale usually loses, but every season there are tales of narrow escapes, injury or damage to the frail boats. Weather is not the least hazard for the whalers operate in Cook Strait, the roughest part of a rough sea. Cook Strait whaling is of unique interest inasmuch as it represents a relic of what was once a major industry in the earliest settlement of New Zealand. The whalers are not worrying very greatly about future trends. If whales fail to appear in any season they will simply put away their gear and concentrate on farming.

## APPENDIX I.

CLASSIFICATION OF WHALES.

Ignoring fishes, marine faunae include two groups of mammals, the seals, and the whales and porpoises; and one group of reptiles, the turtles, all of which have been hunted and used by man. Species of each of these three groups have been used, at one time or another, as a fat resource. Today, whales and porpoises are the only group of fat yielding marine mammals that are important as a resource for large scale exploitation.

General Characteristics:

Whales and porpoises are the mammals most

perfectly adapted to an exclusively marine life. Though they never leave the water they breathe with lungs, therefore they have to surface at intervals to exhale used air and carbon dioxide and inhale fresh air. During this inhaling of fresh oxygen supplies the whales sink below the surface, after spouting, only to appear at the surface again after five to sixty seconds. After a number of these shallow dives, varying with the species from six to forty in number, the whales begin a deep dive lasting five to twenty minutes. Sperm whales can stay below for forty minutes. If undisturbed, each whale appears, with the precision of a watch at regular intervals for blowing. If disturbed, some whales can stay under water up to seventy minutes. The fact that whales have lungs is responsible for our knowledge of these sea giants. Had they gills, their life would probably be as obscure as is that of the deep sea monsters. The necessity to rise to the surface to take in air makes whales vulnerable to attack by men, their only important enemy.

Being genuine mammals whales have body temperatures averaging  $37.7^{\circ}$  C. For better heat economy, especially in the icy Arctic and Antarctic oceans, their

streamlined bodies are covered with a thick subcutaneous layer of fat, or blubber. The bones, meat tissue and organs all contain deposits of fat. The heavy blanket of fat also serves as a store of energy that enables the animals to migrate over great distances from one feeding ground to another and to survive long periods with little or no food. Finally, the blubber serves still another purpose. Since its specific weight is less than that of water, fat outbalances the sinking constituents of the body of the whale and causes it to float, or at least to come near that state.

All whales and porpoises live on animal food. Some forms feed on plankton while others live on large fish and deep-sea cephalopods, such as giant squids. A single form, the Killer whale, eats also other warm blooded animals such as seals, penguins and smaller whales, though, probably, only occasionally. The necessity of living either on plankton or on fish and squid that may be struck as individual prey, requires particular adaption of the catching organs, abilities and way of living of these huge animals.

Classification:

Whalebone whales comprise about ten species,

varying in length, with one exception, from nine to a hundred and five feet. All of them live on small crustaceans, or on masses of very small fishes of the herring and mackerel type, or on both. The shrimp-like krill is the basis of the life of the most important species among the whalebone whales, and the stomach of a killed whale often contains a ton or more of krill. To catch a sufficient volume of krill and other crustaceans or small fish, the whalebone whale is equipped with a technical apparatus that permits filling the mouth with prey-containing water, squeezing out the water with the powerful tongue, and retaining the prey. This contraption consists of from 260-360 horny elastic plates called whalebone or baleen. These plates are attached to the side of the upper jaw and carry a fringe of bristles at their inner rim. When the mouth, which in all species, has a protruding, wider and larger lower jaw, is closed the baleen is bent or folded backward. When the mouth is opened the baleen springs forward to form a grid entirely filling the space between the jaws, permitting the water to pass in and out but retaining the shrimps and small fish.

The second group is composed of a much larger

number of species of which some sixtyfive are known.

The two main varieties, sperm or cachalot and bottlenose, dive deeply and feed on large fish and squids. Most of the toothed whales are polygamous and live in large herds, occasionally composed of thousands of animals.

All the big species of whalebone and toothed whales have been hunted on a large scale in the past or are the objects of commercial exploitation today. In former days the whaling industry depended on right whales and sperm whales; at present the finners are the main source of yield. The blue whale, the largest of all whales with the thickest blubber, is nowadays the most precious species in the eyes of the whalers and the fin whale shares their main interest. Sick sperm whales are especially valuable for in their intestines is found the precious ambergris used in perfumes and flavourings.

I. WHALEBONE WHALES:1. Right Whales:

- (a) Bowhead N. Polar regions
- (b) Black Right Whale N. Atlantic
- (c) Pacific Right Whale N. Polar seas, N. Pacific
- \* (d) Pigmy Right Whale N.Z. waters

2. Finners or Rorquals:

- \* (a) Blue Whale Cold temp. seas - to 100'
- (b) Finback Antarctic seas - to 90'
- (c) Sei Whale Cold temp. seas - to 56'
- (d) Bryde Whale S. African seas - to 50'
- (e) Midget Whale Cold seas - to 20'
- \* (f) Humpback Whale All seas - to 65'

3. Gray Whale: N. Amer. & Jap. Coasts - to 50'.II. TOOTHED WHALES:1. Sperm Whales:

All seas especially in tropical and sub-tropical zones.

- \* (a) Cachalot or Sperm Whale to 65'
- (b) Pigmy Sperm Whale
- (c) Bottlenose Arctic and Antarctic seas to 20'

\* Caught in New Zealand waters

(d) Beaked Whale.

2. Porpoises:

- (a) Narwhal N. Polar seas - to 20°
- (b) Beluga or White Whale N. cold seas - to 20°

3. True Dolphins:

- (a) Grampus or Killer Whale All seas, cold and warm
- (b) Black Fish or Pilot Whale All seas
- (c) Risso's Dolphin All seas
- (d) Common Dolphin All seas
- (e) River Dolphin S. America, China.

## APPENDIX II.

SEASON'S CATCHES OF WHALES FROM SHORESTATIONS IN TORY CHANNEL.

From Te Awaiti three shore stations operated during the period from 1827 to 1925, when two amalgamated.

1827	Total caught	7	whales
1829	"	14	"
1833	"	17	"
1839	"	9	"
1840-1910	Average total catch for each station		4 whales
1911	Total caught by Peranos	9	; by others 5
1912	"	12;	" 6

1914-25 Average total caught by Peranos 23; by others 5

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1926-35 Average total catch from the TeAwaiti-Wekenui  
Whaling Station - 57 Whales

1935 Total catch 84 whales

1936 " " 62 "

1937 " " 75 "

1938 " " 91 "

1939 " " 78 "

1940 " " 97 " 71 humpback, 20 sperm, }  
4 right, 2 blue }

1941 " " 93 " 68 humpback, 24 sperm 1 right

1942 " " 101 " 73 " 25 " 3 "

1943 " " 96 " 62 " 32 " 1 "  
1 blue }

1944 " " 108 " 83 " 25 "

1945 " " 107 " 72 " 27 " 6 right }  
2 blue }

1946 " " 110 " 86 " 20 " 4 right

1947 " " 113 " 81 " 26 " 6 "

1948 " " 94 " 64 " 24 " 5 " )  
1 blue )

Prices 1930 - 1948:

Oil prices have varied from £10 to £43.10. 0  
per tun (252 gallons); the average yield being eighteen  
tuns a whale.

Bone prices have fluctuated between £16 and £35

per ton, and approximate yield from each whale is six tons.

Baleen is sold from £2 to £3 per pound.

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Fig. 29. 'Chaser operating in Cook Strait.