1949

NEW ZEALAND

MARINE DEPARTMENT

ANNUAL REPORT FOR THE YEAR 1948-49

Presented to Both Houses of the General Assembly by Command of His Excellency

Marine Department,
Wellington, 15th June, 1949.

YOUR EXCELLENCY,—

I do myself the honour to transmit for Your Excellency's information the report of the Marine Department for the financial year ended the 31st March last.

I have, &c.,
F. HACKETT,
Minister of Marine.

His Excellency the Governor-General of the Dominion of New Zealand.

REPORT

The SECRETARY, MARINE DEPARTMENT, to the Hon. the MINISTER OF MARINE.

SIR,— Marine Department, Wellington, 10th June, 1949.

I have the honour to submit the report of the Marine Department for the year ended 31st March, 1949.

A matter of momentous importance to the West Coast, and, indeed, to the whole of New Zealand, was finalized during the year by the receipt of Cabinet approval for the implementation of improvements to the coal ports of Greymouth and Westport, as recommended by the expert British engineers, and augmented by the recommendation of Messrs. Wood, Furkert, and Newnham.

In respect to Greymouth, plans have already been approved and the necessary material ordered for the repairs to the South Breakwater, combined with the placing of steel piling on the channel side.

At Westport, plans are in hand for the construction of the workshops, and an Assistant Engineer has been appointed to carry out preliminary investigation work in connection with the main improvement scheme at that port.

The Chief Surveyor of Ships and his Assistant represented New Zealand at the International Convention for the Safety of Life at Sea held in London during the middle of the year. This was a most important Convention, having a distinct bearing on the safety of our seafaring men. A feature of the Convention was the adoption by the meeting of a recommendation that all foreign-going cargo ships of 500 tons and upwards be inspected and certificated annually for life-saving equipment. It is interesting to note that New Zealand ships, both home-trade and foreign-going, have been subject to this requirement for many years.

Interesting and progressive legislation was enacted during the year providing for the appointment of worker representatives on Harbour Boards, in line with the representatives of shipping interests, who have been so appointed by their respective interests for many years. The practical knowledge of these new members should be of distinct advantage to the various Harbour Boards. Worker representation on the administrative side is not new to the Marine Department, as for the last twenty years men with waterside experience have been appointed in the Department to positions as Cargo Gear Inspectors, the responsibilities of which have been carried out with credit and distinction by all concerned.

It is pleasing to report substantial progress by way of the fitting of navigational aids on our vessels, such as direction-finders, wireless telephones, and radar. Most of the larger vessels on our coast are now equipped with direction-finders or wireless telephones—or both in some cases. The masters of vessels have gratuitously carried out tests with their instruments. This data has been of considerable advantage to the Department. This is a splendid response by shipping interests in the provision of additional safety devices on our vessels.

The scientific staff attached to the Fisheries Branch have carried out research during the year into the pollution of harbours and rivers by industrial and other wastes. The research so far is in the embryonic stage, but sufficient data has been established to warrant serious consideration being given to this question, if posterity is to derive the benefit of our administration rather than the disadvantages which continued pollution would store up for it.

ADMIRALTY CHARTS

The Department acts as agent for the sale of Admiralty charts and publications, and maintains a stock at Head Office and at the principal Mercantile Marine offices in the Dominion. The stock includes all charts of the Dominion and many other parts of the world to which ships trading to or visiting the Dominion may be diverted.

A very useful service—that of advising masters of vessels regarding the folios of charts required for a particular voyage—has been made use of most frequently and more particularly by masters of tankers voyaging to Balik Papan and the Shatt Al Arab ports. The correction of charts necessitated by the establishment of additional navigational aids, the clearing of minefields, and the discovery of rocks, shoals, &c., still continues, and no less than 12,000 hand corrections were made during the year to our saleable stock.

NEW CHARTS

During the year several new additions of overseas charts were issued and one New Zealand No. 1970, Auckland Harbour. To this chart the plan of Calliope Dock was extended, general amendments in vicinity of commercial harbour, and Devonport Naval Base, and new compass roses.

For many years the set-up of charts on the Dunedin–Bluff voyage has not been satisfactory, as positions had to be transferred from one chart to another at the vital turning-point on the voyage—*i.e.*, Waipapapa Point. A request was made to the Hydrographer at Admiralty that a chart should be constructed which would eliminate this danger, and a specimen copy was forwarded. I am pleased to report that the Hydrographer has agreed to construct a suitable chart, and this is greatly appreciated by mariners.

EXAMINATION OF MASTERS AND MATES

Examinations have been held in Auckland and Wellington on statutory days and on other occasions when circumstances have justified special examinations. It is the practice to grant special facilities to officers visiting New Zealand for the purpose of undertaking the examinations while their vessels are in port. The examinations have been conducted in a satisfactory manner, and in the case of foreign-going ships in accordance with the requirements of the Imperial Ministry of Transport. The number of examinations, 162, is an increase of 26 on the figures for last year. The passes and failures are as follows:—

	Per Cent.
Foreign-going Certificates	
Full pass	45
Partial pass	31
Failure	2
Partial failure	22
Home-trade Certificates—	
Full pass	48
Partial pass	38
Failure	0
Partial failure	14

The written part of the examinations for both foreign going and home trade, in so far as the navigation problems are concerned, will be altered considerably within the next two or three years as a result of the radical changes which are to be introduced into the "Nautical Almanac."

Examinations in sight tests during the year totalled 109, an increase of 18 on last year, of whom 102 passed and 7 failed.

"NEW ZEALAND NAUTICAL ALMANAC AND TIDE TABLES"

This publication for 1949 (forty-seventh edition) was published in ample time for circulation before the beginning of the year. It is very desirable that articles of interest to mariners should be included in the "Almanac," and in this year's edition the article on "Meteorology of the New Zealand Region" has been revised and brought up to date. The weather map showing the conditions experienced during the 1948 trans-Tasman yacht race is of particular interest.

Every endeavour is made to keep the port information up to date by co-operation with the various Harbour Boards and to maintain the accuracy of that information by the issue of "Notices to Mariners." The "Almanac" will have to be redesigned in the near future to bring it into line with the new set-up of the abridged "Admiralty Almanac." Information has been received that the "Admiralty Almanac" will be completely redesigned as from the year 1952. The new form will eliminate entirely the quantities R and E, which were introduced in 1925, and the quantities G.H.A. of the sun and G.H.A. of Aries are to be substituted. Although specimen sheets of the abridged "Admiralty Almanac" appear in "Admiralty Notices to Mariners No. 7 Weekly Edition of 1949," the form the New Zealand "Nautical Almanac and Tide Tables" is to take will require much study. It can be stated that the new "Almanac"

will differ radically from the present form both in principle and arrangement Every endeavour will be made to publish the 1952 " Almanac " as early as possible in 1951 to enable users to become accustomed to the new elements introduced and to the new form of setting up.

RADIO REGULATIONS

These regulations are now being revised and should be completed in the near future.

COMPASSES

The regulations for ships' compasses have been carefully administered and compasses have been maintained in a good state of efficiency.

SEARCH AND RESCUE ORGANIZATION

This organization continues to render valuable service to small ships in distress, and steps are being taken to improve its efficiency by setting up a committee representative of all bodies interested in land and sea rescues.

NOTICES TO MARINERS

Information relative to changes in navigational aids and to the discovery of obstructions, wreckage, or other dangers to navigation, and information of general interest to mariners, has been published in the form of " Notices to Mariners." During the year 56 such notices were issued. Many notices of an urgent navigational nature must be disseminated by radio, and the broadcasting and coast radio stations have been used for this purpose on many occasions during the year.

SMALL CRAFT REGULATIONS

Full agreement has not been reached between the Department and yacht clubs regarding the Small Craft Regulations. The majority of yacht clubs have been very co-operative and it is hoped that the disagreements, which are of a minor nature, will be ironed out satisfactorily.

NAVIGATION SCHOOLS

The tuition at both schools has been of a very high standard, and the Directors are making every endeavour to improve the academic side of the seafarer's education. It should be appreciated that our schools are mainly for the purpose of teaching navigation and must not be confused with residential nautical schools overseas, where young men are trained in all phases of the duties of a seaman. The number of candidates attending the schools during the year was 121, made up as follows :—

	Wellington.	Auckland.
Extra Master	2	..
Master, F.G.	10	11
First Mate	9	10
Second Mate	9	11
Vol. Exam. Comp. Dev.	6	3
Master, H.T.	6	11
First Mate, H.T.	7	5
Yacht Master	6	4
Master, 25-ton	..	2
Master, Fishing-vessel	..	2
Master, River Limits	..	7
	55	66

The percentage of passes was very high, and this is due entirely to the painstaking work of the Directors. The radical alteration in the set-up of the "Admiralty Abridged Almanac" and the introduction of G.H.A. of the sun and G.H.A. of Aries will throw additional responsibilities on to the Directors.

I am pleased to report that the Director, Wellington School, has been restored to health after an absence of three months on sick-leave.

SHIPPING CASUALTIES

The number of casualties on or near our coasts is shown in the table and summary at the end of the report. Magisterial inquiries were held in five cases—*i.e.*, m.v. "Eastgate," launch "Renehou," m.v. "Port Waikato," tug "Te Awhina," launch "Sambo" collision, and s.s. "Holmlea."

ENGAGEMENT OF SEAMEN

This service has been maintained. A record of seamen applying for work is kept for the purpose of filling vacancies.

SICK AND INJURED SEAMEN

The total amount paid by shipowners to sick and injured seamen under the provisions of the Shipping and Seamen Act, 1908, and amendments was £19,529 5s. 7d., as against £16,765 10s. 10d. for the previous year, an increase of £2,763 14s. 9d.

REGISTRATION OF SHIPPING

On the 31st December, 1948, there were on the register of vessels in the Dominion 43 sailing-vessels of 3,515 net tons register, 122 steamers of 64,052 net tons register, and 308 motor-vessels of 32,603 net tons register, as compared with 45 sailing-vessels of 3,547 net tons register, 136 steamers of 65,252 net tons register, and 297 motor vessels of 26,290 net tons register at the end of the previous year.

The number of seamen employed on board was 2,637, as compared with 2,691 for the year 1947.

LIGHTHOUSES, RADIO BEACONS, ETC.

The Department's proposals for the establishment of further navigational aids and improvement in some cases on existing stations has been prosecuted with the utmost energy. The delivery of the necessary materials from overseas has caused delay, but, in general, good progress has been made. Estimates have been approved, and specifications are in course of preparation, for complete electrification and installation of standard radio beacons at Tiri Tiri, East Cape, Portland Island, Godley Head, Taiaroa Head, and Dog Island. At Baring Head a modification of the electrical equipment has been commenced, and the distribution line is being constructed to enable this light to be connected to the Hutt Valley Electric-power Board's system. Construction work is completed for new automatic lights at Motuara Island, Gibson Point, and Slope Point, and delivery of equipment is anticipated within a few months. Specifications are being prepared for similar installations at Slipper Island, Ohau Point, Cape Farewell, and Bushey Point. The equipment has come to hand, however, for conversion of Cape Egmont Lighthouse to electric operation. At Whangaroa Head a fixed light has been installed: conversion to flashing characteristics will be made when equipment comes to hand. The construction and installation of a new light in Tauranga Harbour is almost completed. As an assistance to vessels plying on Lake Taupo, four automatic lights have been installed. At Awanui Harbour a small electric light on a buoy is under construction. Plans have been completed and work will commence shortly on new

dwellings for Portland Island and Godley Head. Extensive repairs and reconditioning have been carried out at Stephens Island, Cape Brett, East Cape, and Pencarrow Head. At Cape Campbell the access road has been improved.

It is interesting to note excellent liaison between the Department, the Merchant Service Guild, and the Bluff Harbour Board in connection with the proposal to relay the Fairchild Rock buoy. As a result of consideration, a decision has been reached to replace the buoy with a fixed light at Bushey Point. This will be a much more reliable navigational aid than the buoy moored near the Rock.

GOVERNMENT VESSEL "MATAI"

The necessity for other means of transport during the war period, and the progressive policy of the Department in providing improved access to lighthouses, has resulted in a decision to lay up the G.s.s. "Matai," or, alternatively, to use her in other services. During the past year, on two occasions the vessel has been engaged on cable-repair work for the Post and Telegraph Department, work for which she is particularly efficient.

BLUFF–STEWART ISLAND FERRY SERVICE

The service between Bluff and Stewart Island—thrice-weekly in the summer months and twice-weekly in the winter—has continued on an excellent footing. The installation of Diesel engines two years ago, and the reconditioning of the vessel to fit her for the special ferry work, were two steps in the right direction. In addition to the ferry service, the G.s.s. "Wairua" has carried out the servicing of the lighthouse at Puysegur Point, and done excellent service in the conveyance of mutton-birders to the South Cape Islands and return during the mutton-bird season.

PROSECUTIONS

During the year there were 157 prosecutions instituted by the Department; 140 of these constituted breaches of the Fisheries Act, and 17 were for breaches of the Shipping and Seamen Act.

The New Zealand Naval Board continues to conduct an excellent fisheries patrol in northern waters, in combination with our own vessels; and, in addition, patrol by air has been undertaken on several occasions.

HARBOURS

The Department continues to control the harbours of Westport, Picton, and Dargaville. At Picton, 288 coastal vessels, representing a net tonnage of 148,543 tons, and two intercolonial vessels, aggregating 2,760 tons, visited the port during the year. The services of a Pilot were required on two occasions. The harbour launch "Enterprise" has done excellent work in servicing the Brothers Lighthouse. This launch also carries out maintenance of automatic lights in the Sounds area, and is utilized for the servicing of Karori Rock light when required. At Dargaville during the year one vessel made this port with a coal cargo, and the absence of a Harbourmaster there was overcome by making available the services of Captain Dutch, from Westport Harbour staff. The maintenance of the buoys in this harbour is carried out by the District Inspector of Fisheries at Te Kopuru, combined with the Department's Auckland staff.

WESTPORT HARBOUR

For the measure of success in operation the port of Westport is dependent primarily upon the available depth of water at the entrance; and as bar depths were during this past year ended 31st March, generally speaking, the best experienced for many years, it was reasonable to expect that this would reflect very favourably in the trade statistics of the port. However, due to various reasons, the reverse was the case.

The average for the year of the "month by month" mean of daily high-water bar depths was 22 ft. 8 in., the best average depth since 1928. Nevertheless, the total coal shipments fell to 326,429 tons, the lowest since 1936.

Restricted loadings due to bar conditions were rare, and the decline in coal shipments could be attributed to a combination of—

(*a*) Reduced output from the mines.
(*b*) Shortage of shipping.
(*c*) Large quantity of coal going forward by rail to the east coast.

The first-mentioned factor is definitely a reflex of the war and subsequent years, when developmental work in the mines was necessarily retarded, but installation of larger and modern machines at the open-cast mines at Stockton, the construction of an aerial ropeway to convey the coal from the high to the low level, both of which are well under way, and, concurrently, the development of new coal areas should in due course undoubtedly increase the output of coal and thereby reflect a very substantial improvement in the trade of the port.

The number of days on which depth obtained on the bar at high water during the years stated (ended 31st March) are as set out in the following table:—

Depth.	1931.	1939.	1942.	1944.	1945.	1946.	1947.	1948.	1949.
14′–16′ ..	..	..	..	1	..	2	..	12	..
16′–18′ ..	25	2	1	39	23	35	..	16	3
18′–20′ ..	132	88	33	96	69	124	35	52	31
20′–22′ ..	165	149	181	150	142	117	151	154	97
22′–24′ ..	43	115	143	75	87	62	126	116	150
24′–26′ ..	..	11	7	5	43	24	51	13	77
26′–28′ ..	..	..	..	..	1	1	2	3	6
Over 28′ ..	..	..	..	..	..	..	..	..	1
Mean for year	20′ 2″	21′ 3″	21′ 9″	20′ 8″	21′ 4″	20′ 8″	22′ 2″	21′ 2″	22′ 8″

No overseas bunker or cargo shipments were made during the year.

In respect to the same years this next table sets down the coal shipments for such years in relation to the mean of high-water depths for those years:—

Year.	Mean of High Water Depths on Bar.	Total Quantity of Coal Shipped (Tons).
	Ft. in.	
1931	20 2	513,500
1939	21 3	426,400
1942	21 9	487,500
1944	20 8	401,300
1945	21 4	402,000
1946	20 8	385,300
1947	22 2	384,800
1948	21 2	382,400
1949	22 8	326,400

It will be noticed the extent to which coal shipments have declined since 1942. However the third factor is to be noted here. With connection of the Buller Gorge Railway to the South Island system in 1942, railage of coal from the Westport district to the

east coast shortly thereafter commenced and intensified, and well over 100,000 tons per annum is now so despatched. During this past year it was some 129,000 tons, with 159,000 tons the previous year.

Timber shipments were 1,092,438 superficial feet, compared with 1,262,000 superficial feet for the previous year.

During the year, 208 (247) vessels aggregating 152,789 (185,046) tons net register departed from the port, the figures in parentheses being those corresponding for the previous year. "In and out" totals for the year were 418 (491) vessels aggregating 307,340 (357,355) tons net register.

The second factor earlier mentioned may be noted in the reduced shipping returns just indicated, but there is immediate and increasing improvement available here as a result of valuable strengthening by the Union Steam Ship Co. of the company's collier fleet with new vessels designed to suit the west coast bar conditions of to-day. One such vessel, the "Kaitangata," has for some months past been in commission in the trade, and another has arrived in New Zealand and will shortly join in the service to North Island ports. During the ensuing year the service will be supplemented by two more such vessels.

Apart from the period from 3rd May to 18th July, when the vessel was undergoing slip survey and overhaul, and the greater part of the month of November, when extensive adjustments to pumps were necessary, the suction dredger "Eileen Ward" worked consistently throughout the year, removing 296,700 cubic yards from the bar, 96,360 cubic yards from the river fairway, and 15,200 from the berthage area. Heavy dredging was necessary in the lower reaches of the river between the lower end of the training-walls and the signal-station, where extensive shoaling had been caused by a series of moderate to strong freshes in the river opposed by sea conditions of similar intensity.

The ladder dredger "Maui" ceased working at Castlecliff on 17th April, and after slip repairs at Wellington returned to Westport on 23rd May, resuming dredging on 9th June.

Apart from a further period in Wellington for slip survey and overhaul from 18th August to 24th October, this dredger has worked as sea and weather conditions permitted. During the year she has lifted and dumped at sea 67,850 cubic yards of spoil from the floating-basin area.

Port equipment and property has been maintained in satisfactory condition throughout the year, and some valuable additions have been made to port facilities.

In addition to the provision of ship-to-shore electric-power connection for all shipping using the crane wharf, mention of which was omitted from the report for the previous year, a powerful radio-telephone station has been established at the signal-station, and this latter facility has already proved itself to be of inestimable value with routine shipping movements, and particularly in cases of emergency.

The harbour flotilla continues to be maintained in good working-order. Bar dredger "Eileen Ward" has now been in operation for over thirty-eight years, and the ladder dredger "Maui" is of the same age. Upkeep costs are heavy, but these two machines do very good work, considering the age factor. The suction dredger "Rubi Seddon" was laid up indefinitely early in 1948 and has done no dredging during the year under review. The vessel is forty-four years old and is not now an economic proposition to retain in commission.

Both working dredgers and the tug "James O'Brien" have been fitted with radio-telephone equipment, and at the close of the year echo-sounding equipment is being installed in the tug.

As last year, again during this year the availability of the tug has averted a serious shipping casualty. On 20th February the Holm Shipping Co's. collier s.s. "Holmlea" was in a sinking condition north of Westport. The tug went out under very adverse weather conditions and took the vessel in tow, bringing her into Westport.

The greatest credit is due to Captain Ness and his crew for their seamanship and efforts on this occasion. The availability of radio-telephone communication in this emergency greatly facilitated operations.

In my report of the previous year I referred to recommendations for improvement works which were receiving consideration. The outcome has been Government approval in principle of the recommendations, which embody (*a*) new workshops; (*b*) a new bar suction dredger; (*c*) dredging out of the western lagoon as means of tidal compartment enlargement for increased tidal scour at the bar, and (*d*) development of a new internal shipping basin in the eastern lagoon. Development of proposals in respect of the first three recommendations for implementation is in hand.

I again express appreciation of the services voluntarily rendered to the Department by the Harbour Advisory Committee, the members of which are representative of all interests locally concerned in the successful functioning of the port. The Committee has continued to meet regularly and consider matters for the betterment of the port and its operation, and it is pleasing to note that several points which they have steadfastly advocated have now received endorsement by Government.

Consequent upon the decision to place the "Rubi Seddon" out of commission, some staff reduction was necessary, and those employees whose services terminated were mainly of ages sixty-five years or more. Such employees had rendered sterling service to the Harbour, some of them for periods in excess of thirty years, and it was of some gratification to extend to them substantial retiring-leave payment in appreciation.

I desire to refer also to the retirement at the conclusion of the year of the Harbourmaster, Captain A. W. Tointon. Captain Tointon had been a member of the port staff for thirty-four years, the latter seventeen years as Harbourmaster, and throughout he rendered most valued service to the Department and to the many shipping masters who worked in and out of the port during the period without mishap. Captain A. R. Ness, of the harbour staff, succeeded to the position as Harbourmaster.

EXAMINATION OF MARINE ENGINEERS

During the year, 459 candidates were examined for Marine Engineer's Certificates of Competency at the various centres throughout the Dominion. Of these, 171 were examined for First- and Second-class Certificates of Imperial validity, 146 were examined for Third-class Marine Certificates, and 29 were examined for First- and Second-class Coastal Motor Certificates of New Zealand validity.

Candidates sitting for First-class Imperial Validity Certificates total 43, of which 13 passed for Certificates, 12 passed Part "A," 6 partly passed "A" or "B" sections, and 12 failed.

Candidates sitting for Second-class Imperial Validity Certificates total 128, of which 23 passed for Certificates, 36 passed Part "A," 22 partly passed "A" or "B" sections and 47 failed.

Passes for First-class Imperial Validity Certificates issued by the Department were subdivided as follows: 1 Combined Steam and Motor, 3 Steam, 2 Steam Endorsement, 1 Motor, and 6 Motor Endorsement.

Passes for Second-class Imperial Validity Certificates issued by the Department were subdivided as follows: 17 Steam, 4 Motor, and 2 Motor Endorsement, totalling 36 Certificates, issued as shown in the following table:—

Class.	Combined Steam and Motor.	Steam.	Steam Endorsement.	Motor.	Motor Endorsement.	Total.
First ..	1	3	2	1	6	13
Second ..	..	17	..	4	2	23

Candidates for Third Marine Examination total 146; of these, 94 passed and 52 failed.

Candidates sitting for First-class Coastal Motor Certificates total 6; of these, 5 passed and 1 failed.

Candidates sitting for Second-class Coastal Motor total 23, all of whom passed the examination.

The remaining 113 candidates were examined for River Engineer (Steam) and Restricted Limits P.V.O.S. (Oil) Certificates of Competency: of these, 6 passed for River Engineer and 98 passed and 9 failed for Restricted Limits P.V.O.S. Examination.

SURVEY OF SHIPS

Survey Certificates were issued during the year ended 31st March, 1949, for 4 steam and 4 motor foreign-going ships, 33 steam and 87 motor home-trade ships, and 39 steam and 293 motor restricted-limits ships and launches.

Equipment Certificates were issued for 23 foreign-going, 23 home-trade, and 1 restricted-limits ships, all of which carry certificates of class issued by classification societies.

Survey and Equipment Certificates issued for the year ended 31st March, 1949, total 507, as compared with a total of 465 for the year ended 31st March, 1948, and 451 for 1947.

Surveys were also made in 303 cases for sea-worthiness, efficiency of equipment, tonnage, radio-telegraphy, &c., as against 280 such cases surveyed during the year ended 31st March, 1948, and 297 during 1947. Of these surveys made in 1948-49, 76 were in respect of overseas ships not registered nor normally surveyed in the Dominion.

New Zealand's sea-going merchant fleet has been augmented during 1948-49 by the largest tonnage of reconditioned and new ships since 1939, including the trans-Tasman passenger and cargo liner "Monowai," which has been extensively reconditioned at Sydney after war service; the new cargo motor-vessel "Kaitoke," of 3,550 gross tons; and the "Kaitangata," of 2,485 gross tons. "Kaitangata" is of special interest and importance. She is one of a class of six similar motor-colliers which have been specially designed by the Union Steam Ship Co., Ltd., to suit the restricted draught of the Greymouth bar. On her maiden voyage from Greymouth the "Kaitangata's" cargo of 2,923 tons of coal was the largest ever taken from the port by a vessel drawing under 17 ft. 6 in. of water. This vessel carried 800 tons more coal, for an extra $2\frac{3}{4}$ ft. of draught, than her immediate predecessor, the steam-collier "Gabriella."

The "Kaitangata" and her sister ships "Konui," "Kaitawa," and "Kaiapoi" and two others not yet built embody the most recent advances made in naval architecture and marine engineering as applied to cargo-ships. Features of special importance are the steel hatch-covers which are removed and replaced entirely by mechanical means, thus overcoming the necessity for the usual manual removal and replacement of wood hatches and removing the risk of falls of watersiders down the holds. Steel hatch-covers provide also a superior means of protecting the ship from the ingress of water to the holds. The officer and crew spaces are also deserving of mention as providing a high standard of comfort not only in the very necessary domestic amenities, but also in the decorative finish, which it is now recognized is an important element in securing contentment and ship-pride in both officers and crew.

Another good example of the modern small cargo-ship is the new motor vessel "Puriri," which was built in the United Kingdom during 1948 for the Anchor Shipping and Foundry Co., Ltd., Nelson, to replace the minesweeper "Puriri" lost during war service off the New Zealand coast. The new vessel is of 1,248 gross tons and is propelled by twin screws, and is engaged in the coastwise cargo service.

There has been during the year under review a diminution in the tonnage of new ships constructed in this country. Included in the factors which account for this are the scarcity of steel and shipbuilding timber, high costs, and the more ready availability of new ships from the United Kingdom. Ship-repair work, however, has been maintained at a high level of activity at Auckland and Wellington. The central and local Docking Committees continue to allocate dry-dock and slip accommodation at the main ports, and this is an important necessity in accelerating the turn-round of overseas ships. In consequence of the extensive hull repairs made to m.v. "Wanganella" on the Wellington floating dock, this dock was not available for other ships for the unparalleled continuous period of nine months.

More than 80 per cent. of the total tonnage of New Zealand foreign-going and home-trade ships is dry-docked at Wellington and Auckland and less than 20 per cent. of the total tonnage is dry-docked at Lyttelton and Port Chalmers. The figures for the years 1947–48 and 1948–49 are shown in the table hereunder, and they include tugs, dredges, crane ships, ferries, and excursion vessels and other ships of similar size which ply in restricted waters :—

Port.	Percentage of Total Tonnage of New Zealand Ships Dry-docked for Annual Survey.	
	1947–48.	1948–49.
Wellington	40·5	45·0
Auckland	39·0	40·0
Lyttelton	11·5	4·0
Port Chalmers	9·0	11·0

In addition, of the overseas British and foreign ships which dock for repairs at New Zealand ports, the large majority of this tonnage is also docked at Auckland and Wellington.

There is clearly a marked preference by merchant shipowners for Wellington and Auckland as survey and dry-docking ports. At Auckland, however, the dry-docks are also required to accommodate warships of the Royal New Zealand Navy based on Devonport Dock-yard, and with the recent expansion of the Navy by the acquisition of the Lake class frigates the availability for merchant ships of the Auckland Calliope Dock is likely to be reduced in the future. On the other hand, the present dry-dock facilties at both Lyttelton and Port Chalmers are far in excess of the merchant-ship tonnage which has used these facilities in recent years, but, as shown in the above table, there is an accelerated trend of ship-repair and dry-docking work towards the two large North Island ports. During 1948 the demands for dry-dock and slipway accommodation at Auckland and Wellington have at times exceeded the available facilities, and the Department has met the situation by postponing the expiry dates of the survey certificates of ships at Auckland and Wellington which are due for dry-docking but for which no dry-dock or slipway is immediately available when required.

The International Conference on Safety of Life at Sea, foreshadowed in the Marine Department's annual report for 1947–48, was held in London from the 23rd April to the 10th June, 1948. The delegates appointed to represent the New Zealand Government were Engineer-Lieutenant Commander E. Brown, R.N. (Retired), Chief Surveyor of Ships, and Mr. V. G. Boivin, A.M.I.Mech.E., A.M.I.N.A., Deputy-Chief Surveyor of Ships, assisted by Dr. E. Marsden, D.S.C., F.R.S., Scientific Liaison Officer, London, and Captain C. H. George, Assistant Marine Superintendent, Union Steam Ship Co. of New Zealand, Ltd., as advisers.

On the 10th June, 1948, in London, the accredited delegates of the New Zealand Government, together with delegates of twenty-eight other nations, signed the International Convention for the Safety of Life at Sea, 1948. Copies of the Final Act of the Conference, including the text of the Convention and the report of the delegates of the New Zealand Government, have been tabled in both Houses of the New Zealand Parliament "by leave." With certain exceptions in matters of International Collision Regulations, the Convention for the Safety of Life at Sea, 1948, will come into operation on the 1st January, 1951, provided the necessary number of acceptances have been received by that date—namely, acceptances by fifteen countries, including seven each with not less than 1,000,000 gross tons of shipping. The convention will come into effect in New Zealand if and when it is ratified by the New Zealand Government.

Information received recently from London indicates that a ratifying Bill is now being prepared for presentation to the United Kingdom Parliament.

A detailed analysis of the new Convention is not included here as it is comprehensively dealt with in the delegates' report tabled in both Houses of Parliament in 1948. It is confidently expected that the Convention, if it is generally ratified by the maritime powers, will further advance the existing standards of safety of life at sea both in passenger and in cargo vessels.

High though the present standards of sea safety are, nevertheless in 1946—the first year of peace—179 vessels were lost on the high seas, representing a gross tonnage of not less than 373,000 tons.

The shortage of certificated marine engineers for small coastwise ships continues unabated, and it has been found essential for the continuance of the trading of certain small vessels to permit uncertificated engineers to act in these ships for a period not exceeding three months or until duly certificated engineers are available, whichever is the lesser period. So long as the expansion continues in such industries ashore as require the services of mechanically-trained men, so long is it probable that the small coastwise ships will fail to attract a sufficient number of certificated engineers. The factors which militate against a sea career as compared with shore employment are generally not rates of pay; they are rather the social factors of separation from home life, longer working-hours, and the physical discomforts which are the inseparable part of life in the small coastwise ships.

Owners of the small ships have in recent years made substantial improvements in crew accommodation and amenities, and are encouraged by the Department to effect further improvements where practicable.

INSPECTION OF MACHINERY

Steam Boilers, Air and Gas Receivers, and Unfired Steam-pressure Vessels

The following statement sets out the number of inspections made during the year ended 31st March, 1949, of steam boilers, air and gas receivers, and unfired steam-pressure vessels (Group "A"):—

Steam boilers	5,260
Air and gas receivers	5,193
Other unfired pressure vessels	6,348
Total inspections in Group "A"	16,801

The inspections included 76 new power boilers, aggregating 1,592 horse-power, manufactured in the Dominion, and 37 new boilers, aggregating 3,783 horse-power, imported from abroad.

The inspections also include 58 new air-receivers made in New Zealand and 33 made abroad, and 338 new unfired pressure vessels, other than air-receivers, made in New Zealand and 173 made abroad.

The past year has been notable for the large extensions of steam plant in dairy factories, freezing-works, and tire-factories. Boilers installed in such works during the year are of large sizes and embody the latest features in design, construction, and thermal efficiency. A very large unfired steam-pressure vessel 66 ft. long has been constructed for vulcanizing rubber hose, as well as many other special types of pressure vessels necessary for modern industry. There is still a desperate shortage of boilers and the steel from which to make boilers. No boiler or unfired pressure vessel explosions have occurred during the year ended 31st March, 1949; nevertheless, the problem of maintaining old boilers in a safe condition until they can be renewed is one of much concern to the Department and is of great importance to those industries which use steam and which cannot obtain new steam generating plant soon enough to meet requirements.

Machinery

The following statement shows the number of machines, machinery plants, lifts, cranes, hoists, and tractors (Group "B") inspected during the year ended 31st March, 1949, and the corresponding figures for 1947–48:—

	1948–49.	1947–48.
Machines driven by steam power in 1,449 plants	7,270	7,622 (1,419 plants)
Machines driven by power other than steam in 12,481 plants	88,287	88,136 (11,612 plants)
Electric-power-supply stations	63	137
Lifts	3,665	3,536
Cranes	729	682
Hoists	1,988	1,985
Tractors	269	297
Total inspections in Group "B"	102,271	102,395
Total inspections in Group "A"	16,801	16,438
Grand total of inspections (Groups "A" and "B")	119,072	118,833

The mechanization of industry in New Zealand proceeds steadily from year to year. Machinery increases not only in total volume, but in complexity of construction and in cost.

Plans of all new boilers, air and gas receivers, and other unfired pressure vessels and of new cranes and lifts totalling 789 units were examined and approved by the Department during the year ended 31st March, 1949. They include 53 new power cranes and 21 lifts.

For the year ended 31st March, 1949, the number of reported machinery accidents involving personal injury and death totalled 134, of which 10 were fatal and 124 non-fatal. The corresponding accidents for the previous year were 125, of which 4 were fatal and 121 non-fatal. The year's accidents confirm past experience that many arise from unsafe practices indulged in by the victims themselves, not necessarily wilfully or recklessly, but often through an inadequate understanding of the inevitable mechanical and physical consequences of the victims' voluntary actions immediately preceding.

Such accidents can be reduced by developing the foresight of machine operators by training them in safe practices. Such training is available and does much good in organized factories, but it is not often available at out-of-the-way isolated plants such as lime and stone crushers, which have been responsible for many fatal accidents to the mechanically unskilled types of men who usually work about such machinery.

One fatal accident arose from a fall under a bush tractor; the second from the victim entering a clay-bin and being crushed in the clay-feeding machinery; the third by the attempt of a worker to replace a belt on a running pulley, he being decapitated when caught in the belt; the fourth by a piece of timber which, having fallen from a stack on to a circular saw, was hurled against the saw operator; the fifth by a reel of paper being unexpectedly released from a hoist and falling on to and crushing a workman; the sixth by the victim being struck by a public-works locomotive; the seventh by the victim being crushed between an overhead crane and its supporting structure; the eighth by unskilful operation of a boiler blow-down valve, resulting in the scalding of the deceased; the ninth by a worker being caught in the belting of a stone-crusher; and the tenth by a crusher worker being impaled by a crowbar projected with great force from a lime-crusher which he was attempting to clear with a crowbar.

The circumstances of every accident, fatal and non-fatal, have been investigated by the Department, and improvements effected in the machine or the guards wherever practicable.

Inspectors of Machinery have been furnished during the year with additional valuable information concerning means for ensuring the safer working of drop hammers, guillotines and shears, and power presses. These have long been recognized as some of the most dangerous machines in industry, because accidents from them so often result in severe mutilation.

In the following table is given an analysis of the fatal and non-fatal machinery accidents which occurred during the year, indicating the principal machines and industries:—

Machine and Industry Analysis of Accidents, 1948–49

Description of Machines.	Industries.											Totals.	
	Woodworking.	Textile.	Refrigeration.	Printing.	Metal-working and Engineering.	Laundry.	Butchery.	Confectionery and Bakery.	Boxmaking.	Other Industries.	Total Accidents (Machinery).	Fatal.	Non-fatal.
Circular saws	13	..	1	..	..	..	..	..	..	..	14	..	14
Planers	6	..	..	..	..	..	..	..	..	..	6	..	6
Shapers	1	..	..	..	..	..	..	..	..	..	1	..	1
Power press	..	..	..	5	8	..	..	..	..	1	14	..	14
Guillotines	..	..	..	2	..	..	..	..	..	1	3	..	3
Laundry machinery	..	..	..	..	..	1	..	..	..	..	1	..	1
Cranes and hoists	..	..	..	1	1	..	..	..	..	2	4	2	2
Lifts	..	..	..	..	..	..	..	..	..	4	4	..	4
Belting	..	1	..	..	..	..	..	..	..	2	5	2	3
Shafting	..	..	..	..	1	..	..	..	..	2	3	..	3
Gearing	..	..	..	..	..	..	..	..	..	..	..	..	..
Mincers and other cutting machines	..	..	..	..	..	..	1	..	..	3	4	..	4
Other	11	11	4	4	10	..	..	6	3	26	75	6	69
Total accidents	31	12	5	12	20	1	1	6	3	41	134	10	124

GENERAL HARBOUR REGULATIONS

For the year ended 31st March, 1949, 323 accidents were reported under Regulation 103 of the General Harbour Regulations. These accidents were suffered by persons engaged in the loading and unloading and repair of ships, and one of the accidents was fatal. The number of accidents for the previous year ended 31st March, 1948, was 327.

The sole fatal accident reported this year was caused by a fall down a ship's hold. The following is an analysis of the waterfront accidents and their causes:—

Handling goods	90
Persons slipping or falling	56
Persons struck by swinging or falling loads	92
Persons stepping on or striking fixed objects	22
Contact with power-driven machinery	2
Failure of gear	16
Not otherwise classified	45
Total	323

The General Harbour (Safe Working Load) Regulations 1935 have been amended this year to take powers to require that cargo gear and lifting machinery which has not been inspected by a proper authority during the twelve months preceding the arrival of a ship at a New Zealand port shall be examined by a Surveyor of Ships and shall not be used until he is satisfied that such cargo gear and lifting machinery is in good condition.

The principal regulations have also been amended to require preventer guys to be fitted to the derricks in certain cases. The purpose of this amendment is to reduce the risk of injury to persons in the vicinity of cargo gear in the event of guy tackle carrying away during cargo-working operations.

The General Harbour Regulations have also been amended in Amendment No. 5 in respect of reducing the existing hazards associated with the loading and discharge of dangerous inflammable and explosive goods carried by sea. Also where a top hatchway of an overseas ship exceeds 125 lb. in weight such cover shall be lifted by winch or crane or other mechanical means. Additional provisions in the amendment of the General Harbour Regulations give control of certain lifting-gear used in ship-repair work to ensure that such lifting-gear will be sufficient in design and construction and will be maintained in a safe condition.

All of the provisions of Amendment No. 5 of the General Harbour Regulations were authorized by Order in Council upon the recommendations of the Marine Department, which were based on agreements reached by informal conference between the principal parties concerned.

EXAMINATION OF LAND ENGINEERS, ENGINE-DRIVERS, CABLE-TRAM DRIVERS, AND ELECTRIC-TRAM DRIVERS

Examinations for certificates issued under the Inspection of Machinery Act, 1928, were conducted at intervals during the year by Inspectors of Machinery throughout the country.

For the year ended 31st March, 1949, the candidates who presented themselves for examination totalled 626; of these, 520 passed and 106 failed, as compared with 509 successful candidates and 42 failures of the previous year. The total number of the candidates who presented themselves for examination during 1948–49 was 621.

In addition to the 520 certificates issued in 1948–49 to successful candidates, 106 certificates were issued as replacements, &c., under the provision of sections 53, 59, and 62 of the Inspection of Machinery Act, 1928.

An analysis of the certificates issued during the year, with the corresponding figures for 1947–48, is given hereunder :—

Class.	1948–49.	1947–48.
Service—		
First-class engine-driver	6	2
Cable-tram driver	..	34
Competency—		
Extra First-class Stationary Engineer	..	..
First-class Engine-driver	63	45
Second-class Engine-driver	289	256
Locomotive and Traction	69	84
Locomotive-engine driver	8	6
Traction-engine driver	7	11
Electric-tram Driver	175	185
Electric-tram Driver (One-man Car)	8	8
Cable-tram Driver	13	26
Steam-winding-engine Driver	1	..
Electric-winding-engine Driver	1	1
	640	658

Appended to this report is a statement of the number of candidates examined at each examination centre for the year ended 31st March, 1949, showing the number of successful and unsuccessful candidates.

A few special examinations were granted, but the holding of special examinations is not encouraged as it is considered that the regular examinations are of sufficient frequency, and except in very exceptional circumstances candidates are expected to attend the scheduled examinations.

The full list of places where the examinations were held is shown in an appended return, as also is the number of candidates examined at each place.

The total number of candidates examined was 626. Of this number, 520 were successful and 106 failed in their examinations. Six hundred and forty certificates were issued, which includes 520 to successful candidates, the remainder being replacements and issues under the provisions of sections 53, 59, and 62 of the Inspection of Machinery Act, 1928.

NEW ZEALAND STANDARDS INSTITUTE

The Marine Department has continued to be represented in the New Zealand Standards Institute on the Executive Committee of the Standards Council and the Mechanical Engineering and Divisional Committee, and departmental representatives have served on Committee meetings throughout the year. In the field of international standardization an event of truly enormous importance is the agreement reached between the Governments of the United Kingdom and the United States to adopt a unified system of screw-threads. At present the British standard thread form is the Whitworth standard, which has been widely used throughout the British Commonwealth and in Europe for more than a century. The United States' standard thread form is the Sellars standard. The new standard thread form, to be jointly adopted as the common standard of Great Britain and the United States, embodies features of both the Whitworth and the Sellars thread forms.

It is to be expected that the new Anglo-American standard thread will in the course of years gain general adoption in all countries, including New Zealand, where the inch system of linear measurement is in vogue. The ultimate economic savings in the metal industries of countries which adopt the new standard thread forms is expected to be immense.

STAFF

The Department has experienced staff-shortage difficulties common to almost every Government Department at the present time. These difficulties have been enhanced in our case by our willing release of several trained officers to other Departments, part relief being obtained by appointment of cadets or of clerical assistants with no prior Public Service training.

The Organization and Management Committee set up under direction of the Public Service Commission has been responsible for effecting several changes in office routine which, while not reducing efficiency or accuracy, have resulted in labour-saving. Due to improved conditions of employment and a higher standard of remuneration, the Department now has a waiting-list of suitable persons for appointment to the Lighthouse Service. This is a pleasing factor after so many years of catch-as-catch-can necessity.

During the year, nautical Superintendents of Mercantile Marine at Dunedin and Lyttelton were replaced by clerical officers, and the change-over has worked smoothly in the best interests of the Department and of the shipping industry.

FISHERIES

An abridged report of the working of the Fisheries Branch of the Department follows hereon, together with a report on the operations of the Marine Biological Station at Portobello.

I have, &c.,

W. C. Smith, Secretary for Marine.

REPORT ON FISHERIES FOR THE YEAR ENDED 31ST MARCH, 1949

Attention is drawn to the fact that all fisheries statistical data in this report is for the calendar year ended 31st December, 1948.

The estimated total quantity and value of the principal classes of fishery products marketed in the year 1948 are as follows:—

	Quantity.	Value. £
Wet fish	446,265 cwt.	838,334
Whitebait	4,517 cwt.	73,855
Oysters—		
Dredged	94,444 sacks	79,097
Rock	5,693 sacks	9,945
Mussels	14,414 sacks	4,904
Crayfish	27,230 cwt.	65,034
Toheroa (canned products)	26,560 lb.	2,213
Whale-oil	644 tons	25,760
Fish livers	677,435 lb.	26,815
Total values		£1,125,957

The detailed landings are summarized in Tables I to VIII (pp. 38 to 48).

The total landings of wet fish show an increase of 7,965 cwt. over the previous year's total of 438,300 cwt., while the total value has increased by £35,838. The quantity of oysters dredged from Foveaux Strait has increased by 12,926 sacks, and the rock oysters have increased by 413 sacks. The crayfish total is up by 9,178 cwt., but the quantity of mussels is down by 1,847 sacks.

In the most important group, the "wet fish"—*i.e.*, all the ordinary fishes caught by all methods of sea fishing—the annual totals for successive years are as follows:—

	Total Quantity. Cwt.	Total Value. £		Total Quantity. Cwt.	Total Value. £
1934–35	331,415	294,267	1942–43	311,971	442,976
1935–36	363,448	313,106	1943–44	294,445	489,268
1936–37	363,128	360,406	1944	308,237	522,954
1937–38	355,687	413,516	1945	331,773	558,404
1938–39	356,114	424,643	1946	380,321	660,096
1939–40	339,231	416,480	1947	438,300	802,496
1940–41	328,594	440,308	1948	446,265	838,334
1941–42	326,863	458,393			

While the total weight of wet fish, 446,265 cwt., is the highest recorded total, the small increase over last year's total indicates that the factors which have in successive years since the war given such substantial increases in the total annual catch are now almost spent. The effect of the return of the large catching units after war service, and the re-engining and replacement of many vessels after the war, upon fisheries that had enjoyed a comparative rest period during the war years is now very much reduced. These changes that have taken place in the post-war years have, in effect, greatly increased the potential of the fishing effort and have to date consumed their energies upon rested fisheries. It now remains to be seen whether this greatly increased potential can maintain the correspondingly increased level of production. Already in a number of ports there are indications that the upper level of production has been reached. The cost of maintaining this increased fishing potential in the light of seasonal fluctuations of supply is now in the process of sorting itself out as the industry goes through its final stage of settling down again.

Fishing-vessels and Personnel

The number of licensed fishing-vessels operating in 1948 was 813, an increase of 55 units, most of which occurs in the class motor set-net and line vessels. The details of the rearrangement of the fleet in respect of the various classes of fishing-vessels operating at each of the ports is shown in Table I, and the effect of the changes is dealt with in the text covering operations at the main ports.

Fish Landings

The total landings of fish and shell-fish landed at the various ports are shown in Table II.

A table showing the total quantity and value of each kind of fish is set out below. Snapper is the most abundant species, and the other species, headed by tarakihi, remain almost in the same proportion as before :—

Kinds or Class of Fish.	Quantity.				Value.			
	Cwt.		Percentage of Total.		£		Percentage of Total.	
	1948.	1947.	1948.	1947.	1948.	1947.	1948.	1947.
Snapper	148,828	129,482	33·35	29·54	234,224	180,553	27·94	22·50
Tarakihi	93,251	91,692	20·90	20·92	163,508	157,723	19·52	19·65
Blue cod	32,877	33,296	7·37	7·59	71,863	79,755	8·57	9·93
Hapuku	32,771	32,218	7·34	7·32	108,234	101,845	12·91	12·69
Sole	23,911	25,354	5·36	5·78	73,481	76,276	8·77	9·50
Gurnard	22,239	21,291	4·98	4·86	22,424	21,294	2·68	2·64
Flounder	18,581	19,723	4·16	4·50	64,773	63,045	7·73	7·85
Barracouta	13,090	16,670	2·93	3·80	6,391	8,117	0·76	1·01
Ling	12,060	15,683	2·70	3·58	25,213	34,900	3·01	4·35
Trevally	9,326	6,969	2·09	1·59	7,846	6,115	0·90	0·76
"Mixed rounds" ..	7,949	11,330	1·78	2·58	6,580	11,200	0·78	1·39
Elephant-fish	4,701	3,718	1·05	0·85	9,815	7,185	1·17	0·90
Red cod	4,654	8,212	1·04	1·87	4,784	7,833	0·57	0·97
Pioke	3,502	3,522	0·78	0·80	4,677	4,422	0·56	0·55
Hake	2,452	2,554	0·55	0·58	7,712	7,484	0·92	0·98
Moki	2,401	1,763	0·54	0·40	4,084	3,104	0·49	0·39
Mullet	2,240	2,967	0·51	0·68	3,541	4,386	0·42	0·55
Butterfish	1,572	1,896	0·35	0·43	4,794	5,351	0·57	0·67
Shark	1,476	1,129	0·33	0·26	1,610	1,311	0·19	0·16
"Mixed flats" ..	1,449	4,790	0·32	1·09	4,605	17,356	0·55	2·16
Herring	1,397	1,326	0·31	0·30	1,149	1,049	0·14	0·13
Kahawai	1,220	1,160	0·27	0·27	1,131	951	0·14	0·12
Sardine	896	97	0·20	0·02	1,046	90	0·12	0·01
John-dory	826	965	0·19	0·22	1,252	1,387	0·15	0·17
Warehou	405	613	0·09	0·14	802	1,238	0·10	0·15
Trumpeter	381	248	0·09	0·06	1,064	694	0·13	0·09
Swordfish	379	1,131	0·09	0·26	391	1,100	0·05	0·14
Whiptail	344	267	0·08	0·06	244	234	0·03	0·03
Cream fish	289	..	0·06	..	202	..	0·02	..
Kingfish	229	295	0·05	0·07	359	413	0·04	0·05
Mackerel	172	350	0·04	0·09	118	302	0·01	0·04
Conger-eel	169	199	0·04	0·05	121	148	0·01	0·02
Parore	80	621	0·02	0·14	69	393	0·01	0·05
Tuna	40	..	0·01	..	36	..	0·01	..
Perch	32	49	0·01	0·01	21	33	0·01	0·01
Brill	25	10	0·01	..	70	30	0·01	..
Garfish	20	43	0·01	0·01	68	113	0·01	0·01
Frost-fish	11	69	..	0·02	11	53	..	0·01
Skate	10	50	..	0·01	11	41	..	0·01
Maomao	10	11	..	..	10	16	..	..
Whiting	..	377	..	0·09	..	264	..	0·03
Bonita	..	7	..	..	..	18	..	..
Totals ..	446,265	442,147*	..	..	838,334	807,822*	..	..

* Chatham Island correction included.

Methods of Capture

Of the total catch (446,265 cwt.), 88,310 cwt. (19·79 per cent.) was landed from steam-trawlers, 128,195 cwt. (28·72 per cent.) from motor-trawlers, 88,980 cwt. (19·94 per cent.) from Danish-seine boats, while motor-vessels (line and net fishing) accounted for 137,153 cwt. (30·74 per cent.) and row-boats 3,627 cwt. (0·81 per cent.).

The total quantity of wet fish caught by each of the common methods of fishing is shown below (the figures in parentheses represent the 1947 quantities and values):—

Method of Fishing.	Quantity.		Value.	
	Cwt.	Percentage of Total.	£	Percentage of Total.
Trawl ..	216,505 (204,654)	48·51 (46·69)	396,597 (376,738)	47·30 (46·95)
Danish seine ..	88,980 (96,715)	19·94 (22·07)	130,112 (131,915)	15·52 (16·44)
Long and hand lines	102,496 (102,452)	22·97 (23·37)	232,862 (231,397)	27·78 (28·83)
Set and drag nets	38,284 (34,479)	8·58 (7·87)	78,763 (62,446)	9·40 (7·78)
Totals ..	446,265 (438,300)	..	838,334 (802,496)	..

Landings at Ports

Ports where the total landed catch is in excess of 10,000 cwt. are shown in order of importance in the table below. The percentage of the grand total is also included:

Port.	Quantity.				Value.			
	Cwt.		Percentage of Total.		£		Percentage of Total.	
	1948.	1947.	1948.	1947.	1948.	1947.	1948.	1947.
Auckland	142,766	142,304	31·99	32·47	208,079	186,504	24·82	23·24
Wellington	40,117	44,291	8·99	10·11	91,255	96,784	10·89	12·06
Port Chalmers ..	38,460	44,849	8·62	10·23	59,404	70,583	7·09	8·80
Napier	27,254	23,525	6·11	5·37	53,329	46,099	6·36	5·74
Timaru	20,661	21,216	4·63	4·84	53,615	55,016	6·39	6·86
Bluff and Stewart Island	17,638	19,523	3·95	4·45	44,323	50,624	5·29	6·31
Thames	17,105	13,035	3·83	2·97	31,858	22,200	3·80	2·77
Tauranga	13,763	7,086	3·08	1·62	20,064	9,178	2·39	1·14
Gisborne	13,260	10,926	2·97	2·49	21,432	17,356	2·56	2·16
Lyttelton	12,520	17,387	2·81	3·97	27,487	37,695	3·28	4·70
Chatham Islands ..	12,490	9,412	2·80	2·15	15,262	12,248	1·82	1·53
Nelson	11,314	10,040	2·54	2·29	20,074	19,429	2·39	2·42
Total	367,348	363,594	82·32	82·96	646,182	623,716	77·08	77·73

Auckland.—A total of 142,766 cwt. of wet fish was landed at Auckland. This represents a very slight increase of 462 cwt. over the 1947 total of 142,304 cwt. Of the thirty-seven Danish-seine boats, five changed to trawling during the year; hence the decrease in the quantity caught by this method from 90,824 cwt. last year to 86,191 cwt. in this year was expected. This total of 86,191 cwt. consisted of 69,548 cwt. of snapper, an increase in quantity and in proportion over last year's figure of 67,757 cwt. for this method. Three steam-trawlers, one of which operated for ten months, the other for nine months, and the third for eight months, caught a total of 41,892 cwt., whereas last year the total was 45,309 cwt. Motor-line-fishing boats landed 4,287 cwt., compared with 2,998 cwt. for the previous year, and the netting boats 1,580 cwt., compared with 3,050 cwt. in 1947.

The annual totals by methods and the annual quantities of the four main varieties landed at Auckland over the past five years are given below :—

Method of Fishing.	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Danish seine	105,376	97,608	96,990	90,824	86,191
Steam-trawl	1,929	19,553	36,964	45,309	41,982
Motor-trawl	..	..	172	39	8,637
Line-fishing (motor)	1,409	2,493	3,097	2,998	4,287
Net-fishing (motor)	2,303	3,092	4,125	3,050	1,580

—	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	111,078	122,789	141,406	142,304	142,766
Snapper	79,844	81,706	93,792	101,470	110,911
Tarakihi	18,289	23,965	27,788	22,285	17,031
Flounder	1,857	2,047	1,457	3,036	396
Gurnard	3,206	5,570	7,370	6,199	5,139

Thames.—The total this year, 17,105 cwt., shows a further recovery, the total this year being 4,070 cwt. over last year's total. Netting boats landed 14,960 cwt., of which 6,763 cwt. was snapper and 4,849 cwt. flounder.

The methods of capture and the annual totals landed at Thames during the past five years are given below :—

Method of Fishing.	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Danish seine	1,273	582	..	..	..
Set-nets	18,361	16,483	9,552	12,152	14,960
Lines	57	180	1,272	883	2,145
Totals	19,691	17,245	10,824	13,035	17,105

Tauranga.—The total catch for this year (13,763 cwt.) is almost double that for last year (7,086 cwt.). The one Danish-seine vessel operated for eleven months and landed 2,496 cwt., as against 1,526 cwt. for nine months' fishing last year. The one motor-trawler also fished for eleven months and landed 5,394 cwt., as against 1,817 cwt. last year.

The tables below summarize the methods of capture and kinds of fish respectively landed during the last five years :—

Method of Fishing.	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Danish seine	2,907	418	364	1,526	2,496
Motor-trawl	..	1,783	2,579	1,817	5,394
Nets and lines	7,578	5,258	3,473	3,743	5,873
Totals	10,485	7,459	6,416	7,086	13,763

—	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	10,485	7,459	6,416	7,086	13,763
Snapper	4,152	2,513	1,459	2,021	4,426
Tarakihi	1,057	1,289	1,917	1,998	5,226
Trevally	2,509	1,219	1,091	777	2,479
Kahawai	732	1,070	1,029	681	495

Gisborne.—An increase of 2,334 cwt. brings the total for this year to 13,260 cwt. This continues the steady increase in the quantity of fish landed at Gisborne, as shown in the table below. Of this year's total, 12,453 cwt. (93·91 per cent.) was caught by motor trawlers :—

——	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	7,703	8,236	10,052	10,926	12,260
Tarakihi	5,641	6,308	7,547	6,864	8,907
Gurnard	1,244	1,167	1,549	1,444	1,117
Hapuku	289	359	358	775	857

Napier.—The annual increase in the quantity of fish landed at this port during the last four years has been continued this year. Of the total quantity landed (27,254 cwt.), 25,827 cwt. (94·76 per cent.) was caught by motor-trawlers. Last year the total for this method was 20,947 cwt. The motor-vessel which operated the Danish-seine method last year changed over to trawling at the commencement of fishing this year.

Motor line and net vessels landed a total of 1,415 cwt., of which 363 cwt. (355 cwt. blue cod and 8 cwt. hapuku) were landed by a Napier boat as a result of two trips to the Chatham Islands fishing-grounds. The total quantity of fish caught by motor line and net vessels on local grounds this year was 1,052 cwt., which is considerably more than last year's total of 238 cwt. This increase was largely made up of hapuku, which increased from 95 cwt. last year to 763 cwt. this year for this method of fishing.

The annual totals and main species over the last five years are given below :—

——	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	17,865	19,194	22,249	23,525	27,254
Tarakihi	8,966	9,744	11,489	16,201	19,955
Gurnard	4,621	5,362	5,994	4,180	3,596
Sole	1,710	1,036	2,746	1,297	886
Hapuku	986	1,443	378	715	1,481

Wellington.—This year's total is 4,174 cwt. below that of last year, the two totals being 40,117 cwt. (1948) and 44,291 cwt. (1947). Two steam-trawlers operated and landed a total of 25,764 cwt., compared with 25,544 cwt. for this method last year. Of this year's total for steam-trawlers, the amount of tarakihi was 22,694 cwt. (88·08 per cent.). The total for motor-trawlers (1,132 cwt.) is well below the total for last year of 3,243 cwt. This drop is to be expected because three motor-trawlers operated during 1947, but only two during 1948, and one of these changed to the Auckland registry in August. The total catch for the Island Bay line-fishing fleet is 12,815 cwt. This is 1,896 cwt. below the corresponding figure for 1947. Out of the total of 12,815 cwt. caught by these line boats, 7,749 cwt. was hapuku and 3,013 cwt. ling. The total for net boats is down from 783 cwt. in 1947 to 400 cwt. in 1948.

The annual totals landed at Wellington over the past five years are given below :—

——	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	14,019	31,554	39,744	44,291	40,117
Tarakihi	999	16,857	21,204	22,455	23,423
Hapuku	6,714	5,403	7,132	8,017	8,075
Ling	2,761	3,208	4,046	5,420	3,124
Hake	705	928	973	1,000	1,355

Lyttelton.—The total catch landed was 12,520 cwt., which is 4,867 cwt. less than last year's total of 17,387 cwt. The only steam-trawler landed 480 cwt. before becoming a total loss early in March of this year. Motor-trawlers accounted for 11,888 cwt. (94·95 per cent.), compared with 13,542 cwt. (77·89 per cent.) for last year. Line boats landed a total of 38 cwt. and net boats a total of 114 cwt.

The figures for the main types of fish landed at Lyttelton for the last five years are given below:—

—	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	16,221	11,430	15,400	17,387	12,520
Tarakihi	6,202	4,840	7,094	8,895	6,101
Ling	1,556	1,447	2,133	2,278	1,539
Elephant-fish	2,611	1,632	1,805	1,413	1,016
Gurnard	2,537	1,203	1,269	1,105	895
Red cod	191	46	200	424	659

Timaru.—This year's total of 20,661 cwt. is slightly lower than that recorded for last year (21,216 cwt.).

The annual catches of the main types of fish and the methods by which they were caught are given below:—

—	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	13,022	11,386	21,223	21,216	20,661
Red cod	919	432	3,823	2,630	1,535
Ling	1,568	1,047	3,136	3,817	3,459
Gurnard	2,265	1,879	2,946	2,051	2,244
Hapuku	1,635	1,275	2,796	2,560	3,416
Elephant-fish	1,795	2,155	2,445	1,714	2,938
Flounder	1,600	1,819	2,367	4,318	3,486
Sole	2,278	1,903	2,571	2,652	2,357

—	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt
Total quantity landed	13,022	11,386	21,223	21,216	20,661
Motor-trawl	8,142	7,880	15,794	15,785	15,073
Danish seine	1,804	1,292	..	..	..
Line-fishing (motor-vessels) ..	3,076	2,214	5,429	5,431	5,588

Port Chalmers.—This year the total amount of fish landed is 6,389 cwt. below last year's high total of 44,849 cwt., this year's figure being 38,460 cwt. The amount landed by the one steam-trawler is 15,827 cwt., compared with 14,670 cwt. last year. The total for motor-trawlers is down from 16,863 cwt. last year to 12,693 cwt. this year, and the total for motor line-fishing boats is down from 13,264 cwt. last year to 9,938 cwt. this year.

The figures for the main types of fish caught over the last five years are given below :—

——	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	23,264	25,533	23,250	44,849	38,460
Barracouta	6,300	7,502	8,171	13,938	11,262
Soles	4,993	6,282	8,366	10,963	9,652
Tarakihi	3,166	173	81	9,977	8,476
Red cod	4,033	7,605	3,846	2,536	1,304
Flounder	1,163	1,366	745	1,062	766

Nelson.—This year's total of 11,314 cwt. continues the steady increase over the past five years at this port. Of this total, 6,530 cwt. was snapper, compared with 6,053 cwt. for last year, and 3,278 cwt. was gurnard, compared with 1,905 cwt. for last year.

The annual totals for the various methods of fishing during the past five years are given below :—

——	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	5,541	6,372	7,078	10,040	11,314
Danish seine	2,714	3,081	2,648	2,098	..
Trawl (motor)	878	1,888	3,260	7,574	10,683
Lines (motor)	1,936	1,138	1,043	363	623
Other methods	13	265	127	5	8

Chatham Islands.—As the returns for this area were incomplete, the totals for 1947 were given as 5,565 cwt., £6,948. These totals should have been 9,412 cwt., £12,248. The total for this year is 12,490 cwt. All the fish landed at the Chatham Islands are caught by motor line-fishing boats.

The figures for the only two types of fish caught over the past five years are given below :—

——	1944.	1945.	1946.	1947.	1948.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	4,420	2,078	3,586	9,412	12,490
Blue cod	4,248	2,011	3,442	9,246	12,265
Hapuku	172	67	144	166	225

The correction referred to above affecting the 1947 catch for the Chatham Islands has not been altered in all other tables referring to the 1947 figures.

Exports and Imports

The imports of fish for the year amounted to 38,943 cwt. of canned fish such as herring, salmon, sardine, and 1,198 cwt. of fish otherwise preserved, with a total value of £440,811.

The total value of fish and shell-fish exported during 1948 was £493,736, which represents an increase of £135,518 on the previous year's figure of £358,218.

The totals for the principal classes of fishery products exported for the last three years are given below :

	Quantity.			Value.		
	1946.	1947.	1948.	1946.	1947.	1948.
				£	£	£
Oysters, fresh ..	85,400 doz.	950 doz.	1,020 doz.	2,819	27	30
*Mussels	..	..	75 cwt.	..	..	531
Fish, frozen ..	27,698 cwt.	41,800 cwt.	54,671 cwt.	139,065	235,079	340,441
Crayfish, frozen ..	1,487 cwt.	2,335 cwt.	3,731 cwt.	7,455	17,140	44,466
Fish, smoked, dried, &c.	2,602 cwt.	4,384 cwt.	1,625 cwt.	15,277	27,533	11,419
Fish and shell-fish (canned)	450,044 lb.	649,565 lb.	755,307 lb.	66,618	78,439	96,849
Total values ..	..	..	..	231,234	358,218	493,736

* In previous years mussels have been included in fish, frozen.

A more detailed report of the quantities and kinds of fish and shell-fish is given in Table VIII.

Sardines

The landings of sardines at Picton show an increase over last year's figures.

The figures for the total sardine catch at Picton during the last five years are as follows :

	Cwt.
1948	896
1947	97
1946	1,191
1945	1,458
1944	4,281

Fish-liver Oil

This branch of the industry showed a decrease over last year's figures. The weight of livers treated 677,435 lb., a decrease of 20,871 lb., and fish-liver oil produced 24,083 gallons, a decrease of 6,344 gallons, as compared with last year's figures.

A total of 17,712 gallons of fish-liver oil was exported, a decrease of 9,313 gallons on last year's figure.

Whaling

A total of 92 whales, all humpbacks, was taken during the season, the first whale being caught on 4th May and the last on 29th July. The best period during the season was from 16th June to 10th July, during which 60 whales were taken. The total of 92 whales was made up of 45 males and 47 females.

Bad weather and discoloured water in Cook Strait, with the whales migrating closer than usual to the coast of the North Island, weighed against the work of the hunters.

The yield was 644 tons of oil, 80 tons of bonedust, and 40 tons of whale-meat (canned).

Seals

The close season for taking seals was extended for a further three years. Another scientific expedition to gain further information on seal colonies took place during July, 1948. It is hoped to have the results of these expeditions published as a fishery bulletin in the near future.

Rock Oysters

A total of 5,693 sacks were picked. Picking started on 24th May and finished on 7th August.

The yield of oysters in sacks from each of the various areas was as follows: Bay of Islands, 2,242; Whangarei Harbour, 226; Coromandel, 368; Great Barrier Island, 240; Kaipara Harbour, 1,027; Manukau Harbour, 54; Hauraki Gulf, 1,536.

The quantities from Hauraki Gulf were obtained from the following areas: Ponui Island, 627; Waiheke Island, 592; Rakino Island, 95; Takatu to Gull Point, 94; Crusoe Island, 49; Noises Islands, 42; Motutapu Island, 25; Pakatoa Island, 12.

Oyster-cultivation for the Year Ended 31st March, 1949

Area.

II. Whangarei Harbour: 134,200 borers and 769 pupu destroyed, 48 square yards of rock cleared of dead shell. Cost, £61 4s.

V. South Shore: 146,000 borers and 42 pupu destroyed, 63 square yards of rock cleared of dead shell. Cost, £4 14s. 3d.

XIII. Waiheke: 392,000 borers and 111 pupu destroyed, 146 square yards of rock cleared of dead shell. Cost, £14 17s. 3d.

XIV. Ponui: 185,000 borers destroyed and 314 square yards of rock cleared of dead shell. Cost, £5 16s.

XVI. Great Barrier: 1,485 square yards of rock cleared of dead shell and 318 square yards cleared of grape weed. Cost, £34 3s.

Total for all areas: 857,200 borers and 922 pupu destroyed, 2,056 square yards of rock cleared of dead shell, and 318 square yards cleared of grape weed. Cost, £120 14s. 6d.

Dredge Oysters: Foveaux Strait, 1948

The total catch of 94,444 sacks shows an increase of 12,926 sacks over last year's total and constitutes an all-time record.

One vessel which was under overhaul for practically the whole of the 1947 season operated throughout 1948, bringing the number of vessels oystering up to ten.

August showed the highest landings. Nearly two-thirds of the oysters taken came from the East Bed and from other beds in the vicinity of Ruapuke Island. The weather throughout the season was fair to good. In view of the high catch in 1948, the dredge size has been restricted to 11 ft. in length for the 1949 season. This will not only assist conservation, but should ensure better culching of the oysters on the part of some of the oystermen, who tend to become careless when the daily catch is too high.

The totals for the last six years are set out below:—

Year.	Sacks.
1943	73,119
1944	63,949
1945	76,038
1946	89,356
1947	81,518
1948	94,444

Toheroas

The Ninety-mile Beach toheroa-beds are not yet showing any signs of recovery.

On the other beaches the toheroa stocks are holding in spite of heavy abstractions by increasing numbers of the public. Surveys during the year indicate that any further increase in abstractions by the public is likely to have a marked adverse effect on the toheroa population on most beaches.

Mussels

The catch of mussels in the Thames-Coromandel-Auckland area totalled 14,224 sacks this year; of the balance, 186 sacks came from Tauranga and 4 from Napier.

The table below shows the catch of mussels over the last five years:—

	1944.	1945.	1946.	1947.	1948.
	Sacks.	Sacks.	Sacks.	Sacks.	Sacks.
Total quantity landed	15,390	13,156	10,568	16,261	14,414

Whitebait Fishery, 1948 Season

District.	Principal Rivers Fished for Which Returns Were Received.	Best Period.	Number of Fishermen (Approximately).		Total Quantity Caught (Approximately).
			Regular.	Casual.	
					Cwt.
Auckland ..	Waikato	Sept. ..	120	60	881¾
	Raglan and Kawhia Harbour streams	.. ..	..	..	14
Bay of Plenty ..	Kaituna, Tarawera, Rangitaiki, Waioeka, Otaro ..	Sept. ..	39	103	94½
Hawkes Bay ..	Tukituki, Ngaruroro	Sept. ..	53	90	14
Wairarapa ..	Lake Onoke	Mid. Sept.	2	6	2
Wellington ..	Waikanae, Waimeha, Mangone, Otaki, Waiotahu, Ohau, Hokio, Manawatu, Kaikokopu, Rangitikei	Nov. ..	69	170	483¾
Wanganui ..	Turakina, Kai-iwi, Wanganui	Nov. ..	4	10	4
Patea ..	Waitotara, Whenuakura, Patea, Kakaramea ..	Mid. Sept.	20	62	27½
Taranaki ..	Kaupokonui, Ohawe, Tangahoe, Waitara, Mokau, Waiongona, Awakino, Waiwakaiho, Mimi, Urenui, Te Henui	Oct. ..	8	200	222½
Marlborough ..	Wairau, Omaka, Opawa	Oct.–Nov.	4	..	4½
North Canterbury	Waiau, Conway, Hurunui, Waipara	..	..	..	13
Christchurch ..	Saltwater, Ashley, Waimakariri, Avon	..	..	..	122
South Canterbury	Rakaia, Orari, Opihi, Ashburton, Rangitata, Waitaki (north bank)	..	..	..	57
Otago ..	Molyneux, Puerua, Taieri, Waipori, Kakanui, Shag, Waikouaiti, Tokomairiro, Tahakopa, Maclennan, Owaka, Catlins, Tautuku, Pleasant, Wainakarua, Waitaki (south bank)	Sept.–Oct.	24	102	118¾
Southland ..	Mataura, Titiroa, Oreti, Waihopai, Waimatuku, Aparima, Waiau, and Big Bay (south-west coast)	Nov. ..	47	..	237½
West Coast—					
Wataroa ..	Maori, Haast, Karangarua, Okuru, Waiotahi, Turnbull, Cascade, Fox, Jacobs, Mahitahi, Parenga, Blue, Big Wanganui, Poerua, Wataroa	..	307	50	940
Hokitika ..	Hokitika, Mahinapua, Arahura, Totara (Ross) ..	..	183	350	619
Greymouth ..	Grey, New, Teremakau	..	38	320	225
Westport ..	Karamea, Little Wanganui, Mohikinui, Ourawhaiti, Buller, Totara	..	57	480	1,042
					4,517

On the Waikato River the season was much the same as last year—that is to say, a poor one: elsewhere it was extremely poor.

Though the West Coast again supplied the bulk of the catch, the season here was very disappointing.

The estimated total of 4,517 cwt. is a considerable drop on last year's total of 7,056 cwt.

Quinnat Salmon

This season was again a good one compared with the standards prior to 1946. On the Waimakariri River the first netted fish was landed on 6th February. The two nets on this river took a total of 849 fish, compared with 983 last year.

Canned Fishery Products

A small quantity of the fishery products are canned. These include toheroa, paua, mussels, crayfish, eels, trevally, herring, pilchard, mackerel, whitebait, and whale-meat. The quantity canned is set out below :—

	lb.
Shellfish (including crayfish)	61,756
Whitebait	215,207
Sea fish generally	750,788
Eels	17,520
Whale-meat	89,600
Total	1,134,871

Fresh-water Fisheries

Fresh-water Fisheries Advisory Council.—The Council held a two-day meeting in September, 1948. As both the research programme and major administrative changes recommended by the Council call for steady long-term progress, the Council's business can be and is efficiently conducted by infrequent full meetings and the circulation of matter of interest between meetings.

Legislation.—With the assistance of the acclimatization society representatives on the Advisory Council, a substantial redrafting of Part II of the Fisheries Act was carried out. This Act had remained little changed since 1908 and both the Department and societies had long been aware of anomalies and irksome restraints on necessary work imposed by it. The amending Bill was passed without division by the Legislature. In addition to removing obstructive provisions, it amplifies considerably powers of regulation and also simplifies the procedure for making local regulations.

Regulations.—The general fresh-water fishery regulations have not been consolidated for twelve years, and a comprehensive revision, in harmony with the provisions of the amending Act, is in hand. Following on this, consideration will be given to a revision of all local regulations, and, where expedient, regional sets of regulations will be substituted for several district sets. The general aims are to substitute for the present unwieldly mass of regulations simpler and more concise sets having greater uniformity from area to area.

Pollution.—A fact-finding survey on the state and causes of pollution of inland and coastal waters and on the law and administrative machinery for coping with it has been carried out by the Assistant Fishery Officer for an inter-departmental committee. This survey has been conducted essentially in the general public interest rather than from a purely fisheries interest. Arising from the survey, certain recommendations are being made to the Government for dealing progressively with the unsatisfactory conditions disclosed. There is no easy and speedy solution to this trouble, but it is hoped that it will prove possible first to arrest any increase of pollution and then slowly to bring about an improvement.

Fisheries Officers' Training Scheme.—A limited number of junior officers is being trained by the Fisheries Branch for ultimate staff-replacement needs of the Department of Internal Affairs. South Island societies have shown keenness to give their future employees a broader basic training than has been available hitherto, and the question of extending the present scheme to enable societies to benefit by it is being examined.

Pacific Science Congress.—Opportunity was taken when the Pacific Science Congress met here to introduce some of the distinguished overseas fisheries scientists to acclimatization officers, and in Auckland, Rotorua, North Canterbury, and Southern Lakes visitors were enabled to see local field conditions through the courtesy of local authorities. Drs. W. A. Clemens and R. E. Foerster, of Canada, met and gave short addresses to the South Island Council of Societies. Members of the Department's staff contributed papers in the zoological sessions of the Congress.

Publications.—A series of minor scientific papers and informative articles have been prepared by the staff.

Fisheries Bulletin No. 9, "Trout Fisheries in New Zealand—Their Development and Management," has been distributed during the year. A free allocation was made to acclimatization societies against the needs of councillors, staff, and honorary officers. In addition, substantial quantities were made available through societies to anglers at the concession rate of 2s. 6d. a copy before the need to husband remaining stocks compelled reversion to the issue price of 4s. for paper-bound and 12s. 6d. for cloth-bound copies. Early indications are of a very favourable reception of this work overseas. There has been a heavy demand for copies for fisheries staffs and libraries in several countries, and a gratifying feature has been the request for the work from several universities, which propose to use it for instructional purposes in their schools of fisheries or in their divisions of economic zoology.

Local Administrative Policy.—The Council of South Island Acclimatization Societies has responded immediately to suggestions for improvement of local administration made in Bulletin 9 and has officially adopted the recommendations made in it as a broad basis for future policy. Already consultations are proceeding with a view to bringing about greater uniformity of fisheries effort as between financially weak and strong districts.

Fresh-water Research

The research programme which has been outlined in earlier publications has been actively pursued during the year. While it has not yet been possible to obtain additional permanent scientific staff, two temporary Biologists were employed during the University summer vacation and gave valuable assistance. There has been a considerable increase in technical assistant staff at the Laboratory, and this is now adequate to present needs. The increase is largely the result of the action of the Department of Internal Affairs, which is making a contribution to the upkeep of fisheries research by seconding junior officers to serve as assistants in the Laboratory for a few years.

Eels.—The investigations on eels which deal with populations, relations with trout, and methods of trapping have been continued. The data collected in Southland in 1947-48 have been fully analysed, and further field-work has been undertaken in the Wellington and Auckland districts. It has been found that conventional methods of trapping take relatively few eels less than 25 in. in length. Since eels begin to feed freely on trout at a size only slightly greater than this, fairly frequent retrapping is necessary if their predations on trout are to be significantly reduced. Present evidence suggests that trapping at least every third year is required for this purpose, even where almost all the takeable eels are removed each time. In rivers of medium size a gang of twenty pots skilfully operated can probably remove 90 per cent. of the trappable eels from one and a quarter miles of water in a five-day week. The investigations show wide differences from stream to stream in the extent to which eels have been feeding upon trout, even in cases where trout are equally abundant. The differences seem to depend upon the nature of the cover and on the quantity of other foods, such as koura, which are available.

Erosion and Flooding.—The study of the effects of flooding and erosion on the supply of trout-food in the Horokiwi has been completed, and the results are now being analysed and prepared for publication. The results support the belief that this factor may in some cases have played an important part in the deterioration of trout stocks, since the amount of fish-food present may be seriously reduced in this way. Some preliminary studies were also undertaken on the Ashley River, in North Canterbury, regarding the direct effects of the same factors on the numbers of trout by the disturbance of redds and the destruction of eggs.

Angling Data.—The 1947-48 season was the first in which an attempt was made to organize a Dominion-wide scheme for the collection of information by means of angling diaries and rangers' reports. The results varied widely in different districts, but although some societies were unable to obtain any records, a satisfactory response was received in other areas, particularly in the South Island, and a total of about 180 diaries was available for study. In the most successful district about 10 per cent. of

the anglers co-operated. Reports on the results were sent to all societies sending in diaries, with the suggestion that they be circulated as widely as possible among anglers. It is believed that the demonstration in this way of the amount of valuable data which can be obtained from diaries will do much to encourage participation in the scheme and so build up the fund of detailed information which all acclimatization societies require for the efficient management of their districts.

Horokiwi Investigation.—Good progress has been made with the analysis of the very detailed studies of the trout population of this stream which were made in 1939–42. If other commitments allow, it is hoped to publish an account of this work in the coming year.

Lake Surveys.—A survey of troutless waters has been started with the object of determining whether the conditions prevailing in them would make them suitable for some other desirable fish which could be introduced. The lakes on the west coast of the North Island between Otaki and Hawera were selected for the first year's work and a survey team made a close examination of ten of these and less-detailed observations on several others. The results are now being examined, but it is apparent while some lakes offer good prospects for the establishment of suitable species of fish, others have features which make the successful introduction of any desirable species of fish improbable.

Fiordland Expedition.—Two members of the staff of the Fisheries Laboratory have accompanied the New Zealand - American Fiordland Expedition to Caswell Sound in order to take the opportunity so provided to study fishery conditions in this little-known part of the country.

Marine Research

The newly appointed Marine Biologist, who commenced duties in February, was mostly occupied on becoming acquainted with fishery problems.

The research vessel "Ikatere" has been engaged in experimental work on trawl-mesh selectivity as her major task during the year. Other work included an assignment to clarify existing knowledge of the underwater behaviour of Danish seines and a brief experiment in the use of gill nets for taking pelagic fish pending the arrival of more suitable equipment for this work.

A detailed survey of toheroa stocks was made on Muriwai in July. Ninety-mile, Mitimiti, Dargaville, Ohope, and Waiterere toheroa beaches were also surveyed, though in less detail. A census of available stocks and an analysis of environmental factors affecting toheroa populations were the principal objects of this work.

Legislation

The Fisheries Amendment Act, 1948, was passed during the year. This Act gave power to increase the penalties for the more serious offences such as fishing in prohibited waters, clarified certain sections of the principal Act, and extended other sections to cover practices which have come into use during recent years.

The Fisheries (General) Regulations had two minor amendments, both dealing with crayfish.

The Boats and Licences Regulations had a small amendment dealing with the measurement of boats and the form of certain Schedules in the principal regulations.

Staff

The addition of one Marine Biologist to the staff has helped somewhat, but we are still short of trained scientific and clerical staff. This is hampering development of our work, which consists of rendering the maximum assistance to the industry and at the same time maintaining a close check on the state of the various fishing-grounds.

M. W. Young,
Chief Inspector of Fisheries.

APPENDIX

The Distribution and Quantities of the Four Most Important Species

In the maps that follow, the distribution of the four most important commercial species is indicated—namely, Snapper, Tarakihi, Hapuku, and Blue Cod. The range of distribution shown in each case is based on the incidence of the species in the catch of commercial boats.

The activities of the commercial boats are in turn bound up with such factors as suitable harbours in relation to nature and extent of fishing-ground, market demand for the species, and quantities available. Thus the bulk of the fishing is done from east coast ports, where known grounds are more extensive and where there is more shelter. Because of the exposure to the prevailing westerly weather, lack of shelter and suitable harbour facilities, the west coast of New Zealand generally is only lightly fished.

Snapper, the most abundant species, is mainly caught by trawl and Danish-seine, though a significant quantity is caught in set and drag nets and by lines. The range of this species in commercial quantities is remarkable in that it is more clearly defined than is the case of the other species discussed. Snapper form the principal species in the catch in the north-western part of the South Island, the west coast of the North Island, and the east coast of the North Island to just south of East Cape.

Tarakihi is caught by the same methods as snapper, trawling being the most important. The principal tarakihi fisheries are on the east coast south of East Cape, though significant quantities are taken on the Auckland east coast and in Bay of Plenty and a smaller quantity on the west coast of the South Island.

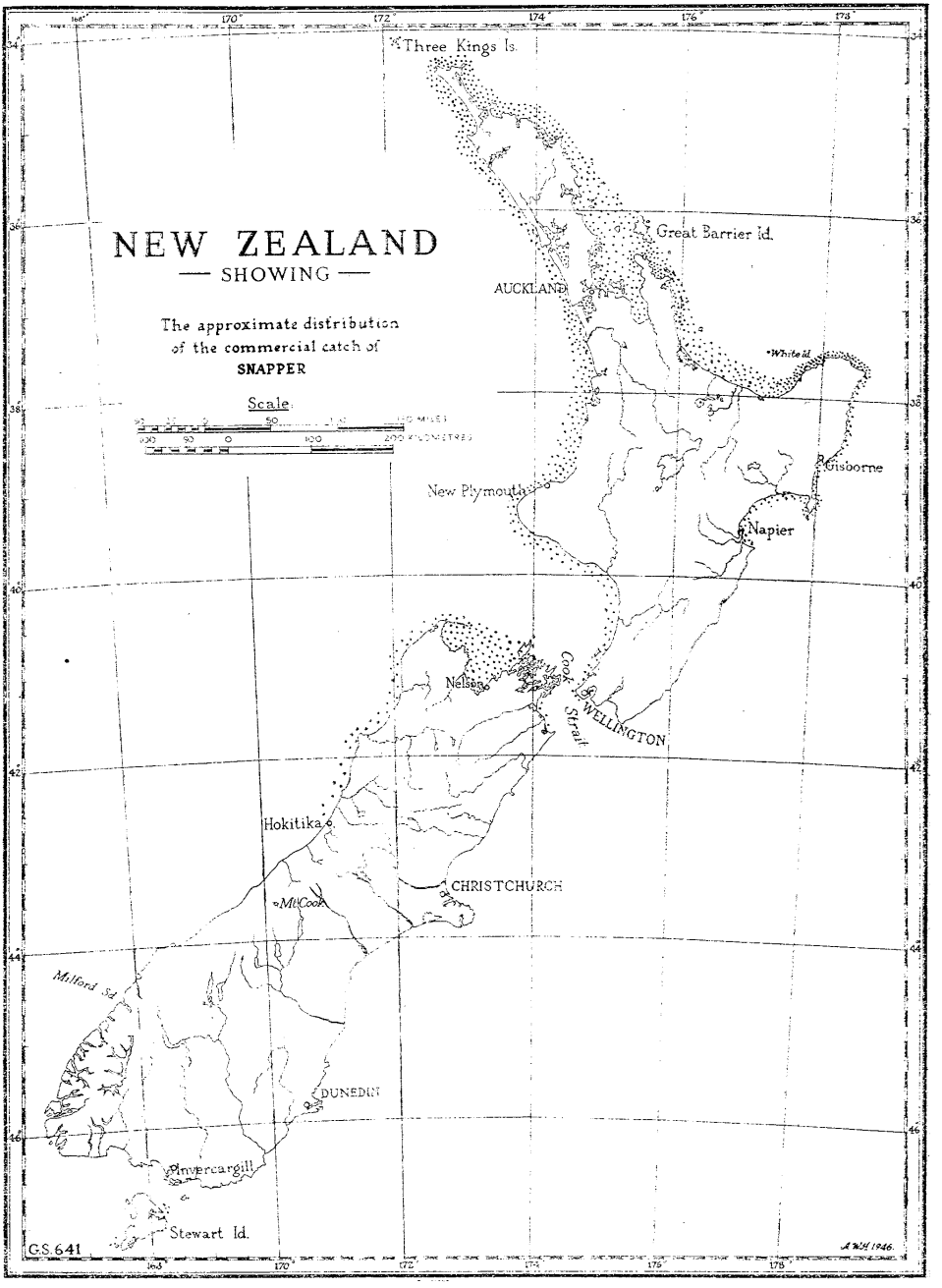
Hapuku or groper is mainly a line-caught fish associated with rocky bottom and a depth of about 60 fathoms. The distribution is general where the bottom is suitable: it forms a principal fishery in Cook Strait and on the rocky parts of the east coast of the South Island.

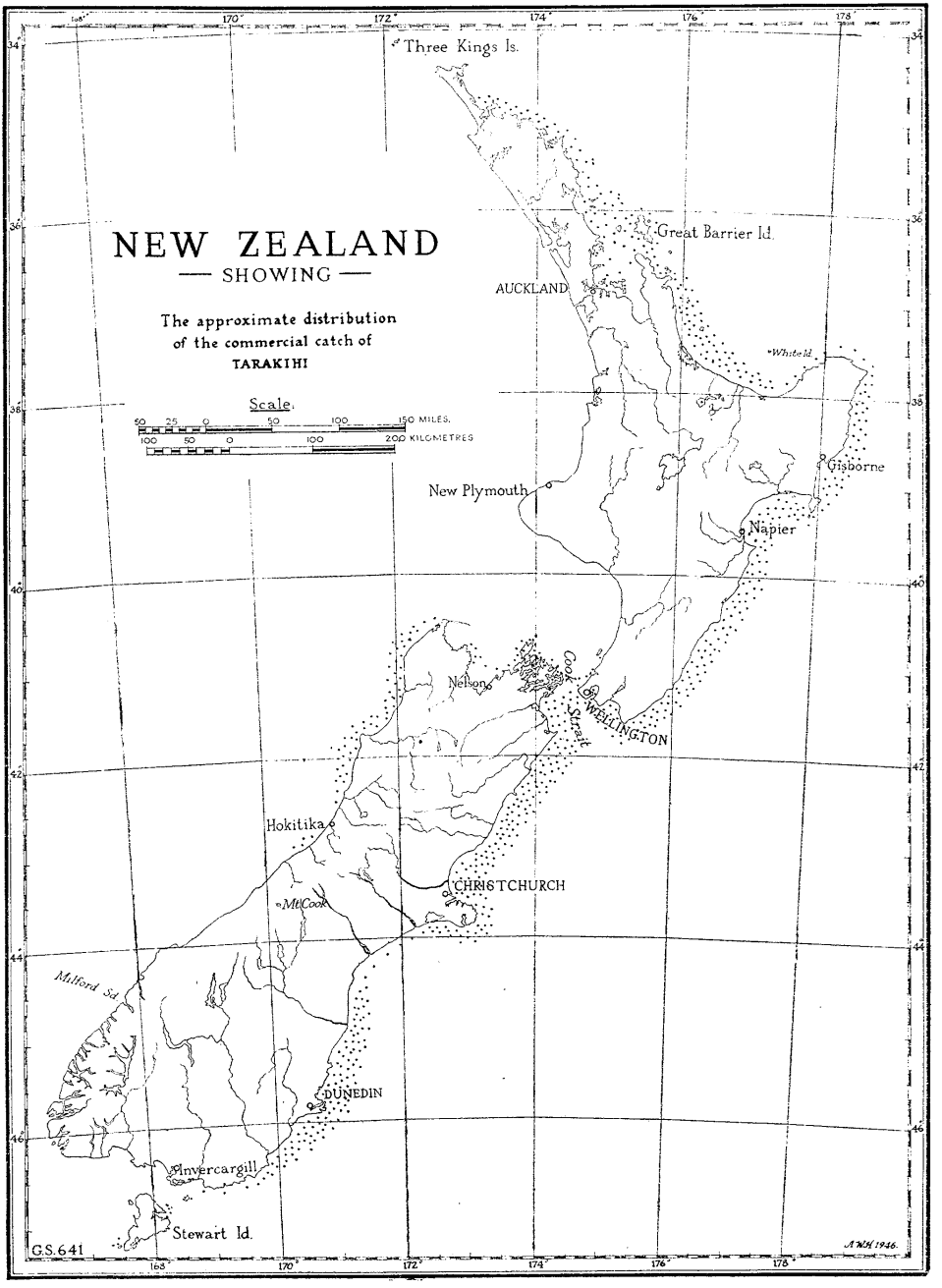
Blue cod, also a line-caught fish associated with rock bottom, is principally a southern fish, with the main fishery about Foveaux Strait and Stewart Island. Though represented in the North, the species in these waters is not numerous or of the same consistent size that is to be found in South Island waters.

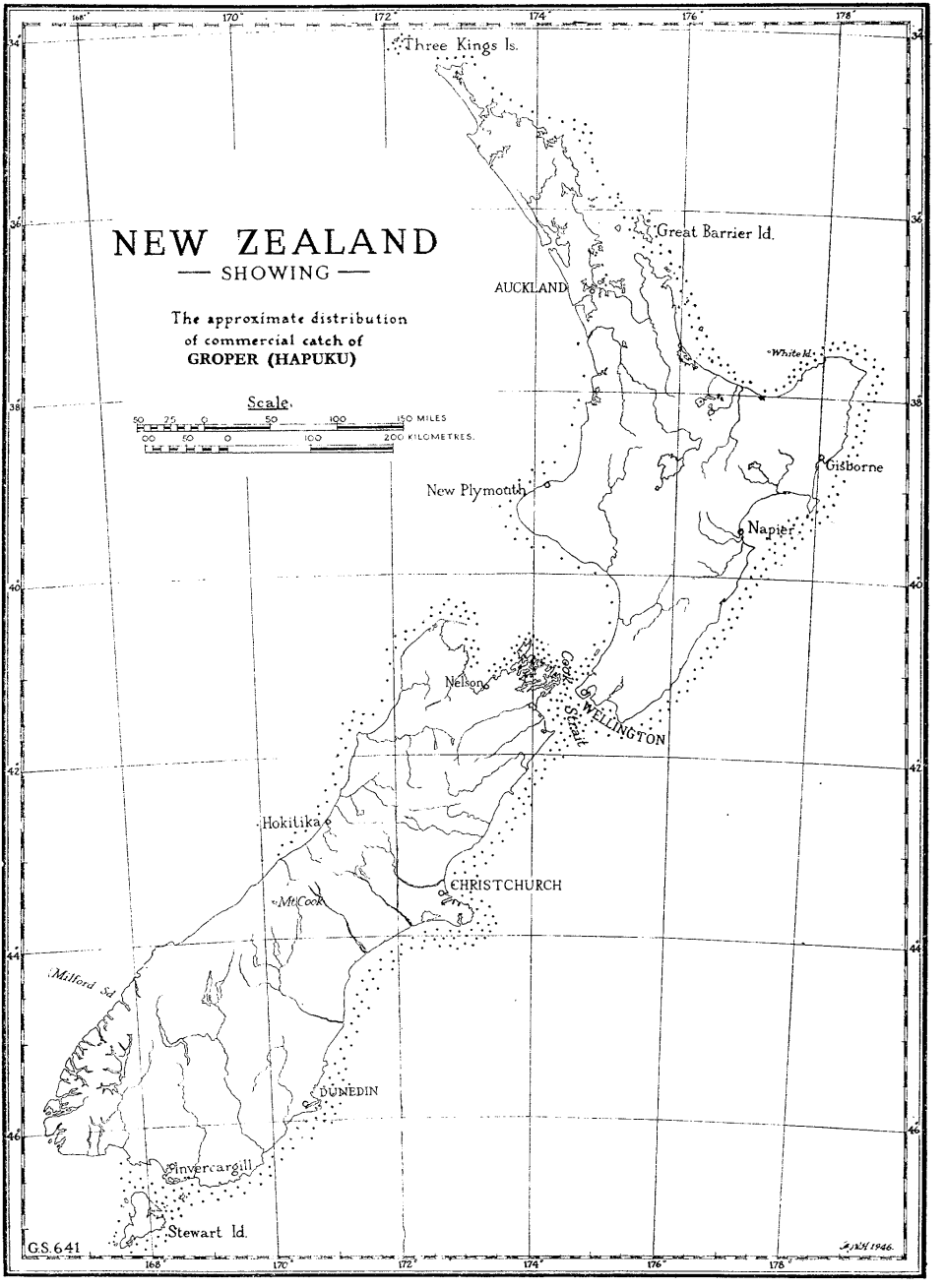
The total annual production of each of these species since 1936 is shown in the accompanying graph. Snapper and tarakihi, being principally trawl caught, show a depression during the war years while steam-trawlers were otherwise engaged. The addition of modern steam-trawlers to Wellington and Port Chalmers on the principal tarakihi grounds accounts for much of the increase in this species. The limit imposed by market demand for this species is partly responsible for the flattening-off of this line during 1948.

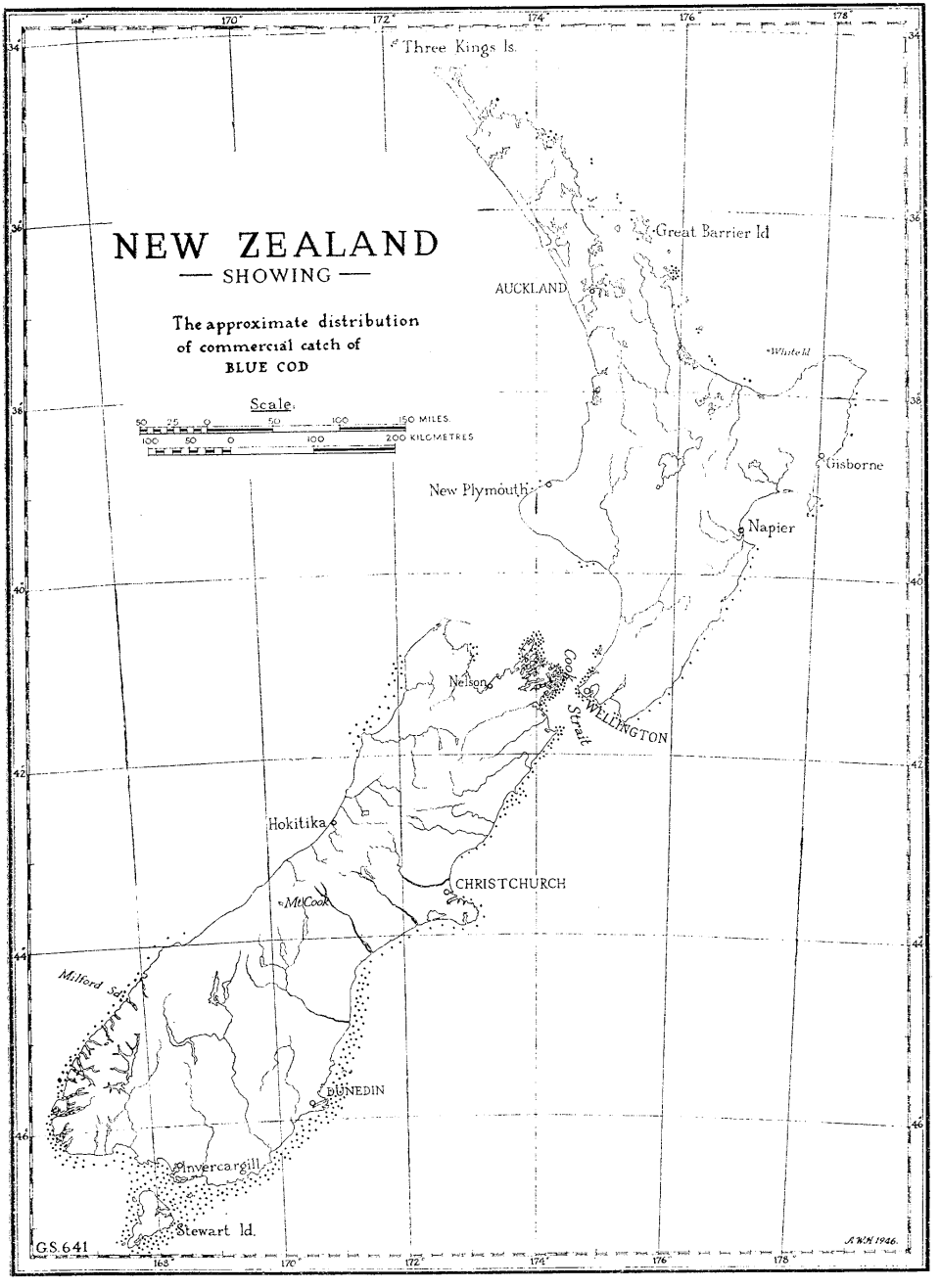
Hapuku, a line-caught fish, shows a slight rise in post-war years, due mainly to the re-engining and replacement of a considerable number of the boats.

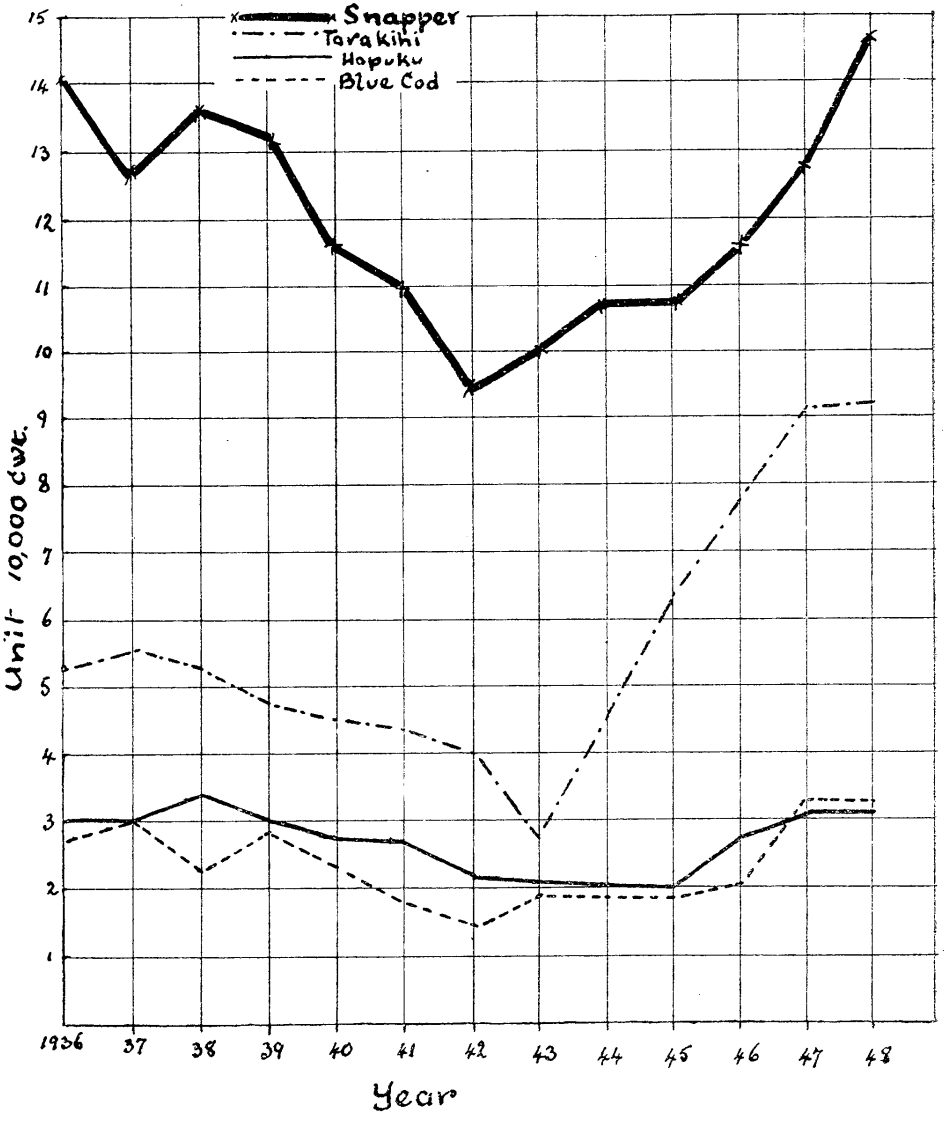
The rise shown in the Blue Cod catch during 1946–48 is due mainly to the Chatham Islands fishery, which was only lightly fished during the war years.


NEW ZEALAND
— SHOWING —
The approximate distribution of the commercial catch of
SNAPPER
Scale
Three Kings Is.
Great Barrier Id.
AUCKLAND
White Id.
Gisborne
New Plymouth
Napier
Nelson
Cook Strait
WELLINGTON
Hokitika
CHRISTCHURCH
Mt Cook
Milford Sd
DUNEDIN
Invercargill
Stewart Id.
G.S. 641


NEW ZEALAND
— SHOWING —
The approximate distribution of the commercial catch of
TARAKIHI
Scale.
50 25 0 50 100 150 MILES.
100 50 0 100 200 KILOMETRES
Three Kings Is.
Great Barrier Id.
AUCKLAND
White Id.
Gisborne
New Plymouth
Napier
Nelson
Cook Strait
WELLINGTON
Hokitika
CHRISTCHURCH
Mt Cook
Milford Sd.
DUNEDIN
Invercargill
Stewart Id.
G.S. 641
A.W.H. 1946.


NEW ZEALAND
— SHOWING —
The approximate distribution of commercial catch of GROPER (HAPUKU)
Scale.
50 25 0 50 100 150 MILES
00 50 0 100 200 KILOMETRES.
Three Kings Is.
Great Barrier Id.
AUCKLAND
White Id.
Gisborne
New Plymouth
Napier
Nelson
Cook Strait
WELLINGTON
Hokitika
CHRISTCHURCH
Mt Cook
Milford Sd
DUNEDIN
Invercargill
Stewart Id.
G.S. 641
168 170 172 174 176 178
34 36 38 40 42 44 46


NEW ZEALAND
— SHOWING —
The approximate distribution of commercial catch of BLUE COD
Scale.
50 25 0 50 100 150 MILES.
100 50 0 100 200 KILOMETRES
Three Kings Is.
Great Barrier Id
AUCKLAND
*White Id
Gisborne
New Plymouth
Napier
Nelson
Cook Strait
WELLINGTON
Hokitika
CHRISTCHURCH
*Mt Cook
Milford Sd
DUNEDIN
Invercargill
Stewart Id.
GS.641
A.W.N. 1946.



Total Annual Production of the Four Main Species

MARINE FISH HATCHERY AND BIOLOGICAL STATION, PORTOBELLO

SIR,—

I have the honour to submit the following report on the Portobello Marine Biological Station for the year ended 31st March, 1949.

Lack of funds and the prevailing difficulties with regard to material and labour have prevented the carrying-out of projected works for the reconditioning of the Station and for adding to its facilities for research. Only essential repairs, such as the renewal of the shaft and glands of the pump and the replacement of worn-out pipes, have been possible. The aged wharf is now in poor condition, and steps are being taken to effect such repairs as will make it reasonably safe for the time being. Improved access by land is much to be desired, but no possibility of providing this has yet been discovered.

Research work has been carried out at Portobello by various members of the Zoology Department of the University of Otago: Miss Brewin is continuing her work of the embryology of the compound ascidian, *Distaplia fasmeriana*, and Miss Richards and Miss Borland both used the Station for field observation and collection of *Tevebratella inconspicua Benhamina obliquata*, the subjects of their theses. Research work in zoology was also done by visiting members of the staff of Canterbury University College, Professor Percival continuing his research on *Dolichoglossus otagœnsis* and Miss Parry collecting sea anemones for her monograph of the sea-anemone fauna of New Zealand.

Early in spring, 1948, Dr. and Mrs. T. Levring, from Gottenburg, Sweden, spent a week at the Station collecting marine algæ. They were accompanied by Miss L. B. Moore, Algologist of the Botany Division, New Zealand. Other prominent algologists who visited the Station after the Seventh Pacific Science Congress were Dr. F. G. Papenfuss, Associate Professor of Botany, University of California; Professor H. J. Lam, Director of Rijksherbarium, Leiden, Holland; and Mr. H. B. S. Womersley, Lecturer in Botany, Adelaide.

All the oceanographers and marine zoologists who visited the Station after the Congress (Professor C. M. Yonge, Regis Professor of Zoology, Glasgow; Dr. Martin Johnson, Scripps Institution of Oceanography, California; Dr. R. W. Hiatt, University of Hawaii, Honolulu; and Dr. Anton Brunn, Keeper of the Zoological Museum, Copenhagen, and leader of the 1950–52 Danish Deep Sea Expedition) were impressed by the facilities offered by the Station and the possibilities for its improvement in the future.

I have, &c.,

A. E. HEFFORD,

Chairman of the Board.

TABLE I—SHOWING THE NUMBER OF FISHING-VESSELS AND THE NUMBER OF FISHERMEN AND OTHER PERSONS ENGAGED IN THE INDUSTRY AT EACH PORT FOR THE YEAR ENDED 31ST DECEMBER, 1948

Name of Port or District.	Vessels Licensed, 1st January, 1948, to 31st December, 1948.			Vessels Engaged in Fishing for Wet Fish.										Vessels Engaged in Shell-fishery.						Number of Fishermen.	
				Motor-vessels Danish-seining.		Steam-trawlers.		Motor-trawlers.		Motor-vessels Set-net and Line-fishing.		Rowing-boats.		Oyster-dredging Vessels.		Mussel-dredging Vessels.		Crayfishing-vessels.			
	Total Number.	Number Operating.	Number not Operating.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.
North Island																					
Mangonui	28	15	13	..	..	..	..	..	..	9	3	..	3	..	..	..	..	..	..	16	7
Whangaroa	21	12	9	..	..	..	..	..	..	..	5	3	..	..	..	..	..	4	4	13	6
Russell	58	32	26	..	..	..	..	..	..	10	17	1	2	..	..	..	..	..	2	19	27
Whangarei	26	18	8	..	..	..	..	1	..	5	9	..	1	..	..	..	..	1	2	21	14
Auckland	149	93	56	37*	..	3	..	2	..	14	23	..	..	..	..	1	..	8	11	199	42
Thames district	38	27	11	..	..	..	..	..	..	20	2	..	4	..	..	1	..	..	..	52	7
Coromandel	11	3	8	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	1	3
Mercury Bay	9	7	2	..	..	..	..	..	..	..	4	..	..	..	..	..	..	6	..	10	2
Whangamata	13	6	7	..	..	..	..	..	..	1	3	..	..	..	..	..	..	1	1	5	8
Waihi Beach	10	4	6	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	1	..	6
Tauranga and district	37	25	12	1	..	..	..	1	..	12	9	..	1	..	..	..	..	..	2	37	22
Whakatane	4	4	..	1	..	..	..	..	..	1	2	..	..	..	..	..	..	..	1	4	4
Ohiwa Harbour, Opotiki, and Cape Runaway	15	7	8	..	..	..	..	..	..	2	3	1	1	..	..	..	..	..	..	5	11
Gisborne	22	14	8	..	..	..	..	8	..	1	2	..	..	..	..	..	..	4	2	31	2
Napier	35	27	8	..	..	..	..	17	1	2	4	..	..	..	..	..	..	2	3	51	7
Castlepoint	8	4	4	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	2	1	6
Wellington	56	38	18	..	..	2	..	2	..	19	8	..	1	..	..	..	..	8	5	103	13
Makara	6	5	1	..	..	..	..	..	..	2	3	..	..	..	..	..	..	1	1	6	2
Paremata	11	7	4	..	..	..	..	..	..	5	2	..	..	..	..	..	..	..	..	10	2
Paraparaumu Beach	9	4	5	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	5	1
Manawatu Heads	13	5	8	..	..	..	..	..	..	1	..	1	3	..	..	..	..	..	..	4	3
Tangimoana	4	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wanganui	14	7	7	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	8
New Plymouth	16	10	6	..	..	..	..	1	..	6	3	..	..	..	..	..	..	..	1	16	4
Kawhia	7	6	1	..	..	..	..	..	..	2	2	..	2	..	..	..	..	..	..	4	6
Raglan	10	7	3	..	..	..	..	..	..	3	3	..	1	..	..	..	..	..	..	5	5
Manakau Harbour	28	9	19	..	..	..	..	..	..	4	5	..	..	..	..	..	..	..	1	4	6
Kaipara	44	27	17	..	..	..	..	..	..	17	9	1	..	..	..	..	..	..	..	23	12
Hokianga	21	5	16	..	..	..	..	..	..	1	3	..	1	..	..	..	..	..	..	1	4

South Island																								
Havelock	31	21	10	..	..	..	..	6	3	9	3	..	..	..	..	..	..	..	..	30	10
Picton	25	18	7	..	..	..	..	..	..	8	8	..	..	..	..	..	..	9	2	34	1
Blenheim (Wairau)	7	5	2	..	..	..	..	3	..	..	1	..	..	..	..	..	..	1	..	6	2
Kaikoura	30	24	6	..	..	..	..	1	1	13	2	1	..	..	..	..	..	7	6	29	2
Lyttelton	24	15	9	..	..	1	..	9	..	..	4	..	..	..	..	..	..	..	1	37	4
Akaroa	22	18	4	..	..	..	..	7	..	5	4	..	..	..	..	..	..	5	4	31	1
Lake Ellesmere	29	21	8	..	..	..	..	..	..	6	5	9	1	..	..	..	..	..	..	21	9
Timaru	33	33	..	..	..	..	..	17	..	16	..	..	..	..	..	..	..	..	..	68	..
Oamaru	16	14	2	..	..	..	..	..	..	10	4	..	..	..	..	..	..	..	..	19	6
Moeraki	15	13	2	..	..	..	..	..	..	11	2	..	..	..	..	..	..	..	2	15	3
Karitane	9	9	..	..	..	..	..	..	..	..	8	..	..	..	..	..	..	3	6	3	7
Port Chalmers	40	31	9	..	..	1	..	16	2	11	3	..	..	..	..	..	..	..	1	56	8
Taieri Mouth	7	7	..	..	..	..	..	1	..	6†	..	..	..	..	..	..	..	..	2	11	..
Nuggets district	17	13	4	..	..	..	..	10	..	3	..	..	..	..	..	..	..	..	..	24	..
Waikawa	9	8	1	..	..	..	..	5	..	3	..	..	..	..	..	..	..	..	..	16	..
Invercargill	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2
Bluff	31	28	3	..	..	..	..	1	1	13	4	..	..	10	..	..	..	..	4	83	7
Stewart Island	47	43	4	..	..	..	..	..	..	34	9	..	..	..	..	..	..	..	17	83	14
Riverton district	8	6	2	..	..	..	..	..	..	2	4	..	..	..	..	..	..	..	..	5	9
Hokitika	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Greymouth	10	7	3	..	..	2	..	2	..	1	2	..	..	..	..	..	..	..	..	11	3
Westport	16	3	13	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	1	5	1
Golden Bay	6	2	4	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	2	1
Motueka	10	8	2	..	..	1	..	2	..	3	2	..	..	..	..	..	..	..	..	14	2
Nelson	11	10	1	..	..	..	..	8	..	2	..	..	..	..	..	..	..	..	3	20	..
French Pass	26	21	5	..	..	..	..	..	..	11	8	1	1	..	..	..	..	..	..	16	16
Chatham Islands	6	6	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	19	..
Totals	1,210	813	397	39	..	10	..	122	8	316	215	19	24	10	..	2	..	60	88	1,324	348

* Five of these vessels changed over to trawling during the year and are *not* included in trawl column. † Four of these vessels transferred from Karitane during the year and are *not* included in Karitane..

Whole-time fishing = all boats with the year's catch valued at more than £200 gross; part-time fishing—all boats with the year's catch valued at more than £50 and not more than £200 gross; not operating = all boats with the year's catch valued at not more than £50 gross.

Table II—Showing Approximately the Total Quantities of Fish and Shell-fish Landed at the Fishing Ports for the Year Ended 31st December, 1948

Name of Port or District.	Quantity Landed (Fish).	Total Value (Fish).	Shell-fishery (Excluding Toheroa).							Grand Total Value.
			Oysters.	Value.	Mussels.	Value.	Crayfish.	Value.	Total Value (Shellfish).	
North Island	Cwt.	£	Sacks.	£	Sacks.	£	Cwt.	£	£	£
Mangonui and district ..	2,533	3,686	..	..	..	..	6	11	11	3,697
Whangaroa	844	1,420	..	..	..	..	1,233	2,772	2,772	4,192
Russell	4,071	6,391	..	..	..	..	342	690	690	7,081
Whangarei	4,163	6,376	..	..	..	..	205	576	576	6,952
Auckland	142,766	208,079	5,693	9,945	10,667	3,733	2,285	6,754	20,432	228,511
Thames district	17,105	31,858	..	..	3,557	1,076	1	4	1,080	32,938
Coromandel	358	477	..	..	..	..	14	41	41	518
Mercury Bay	1,005	1,861	..	..	..	..	1,522	4,662	4,662	6,523
Whangamata	259	507	..	..	..	..	198	602	602	1,109
Waihi Beach	210	386	..	..	..	..	39	70	70	456
Tauranga and district	13,763	20,064	..	..	186	93	74	212	305	20,369
Whakatane	637	1,121	..	..	..	..	44	141	141	1,262
Ohiwa Harbour, Opotiki, and Cape Runaway	605	1,428	..	..	..	..	1	1	1	1,429
Gisborne	13,260	21,432	..	..	..	..	1,121	2,494	2,494	23,926
Napier	27,254	53,329	..	..	4	2	433	937	939	54,268
Castlepoint	141	588	..	..	..	..	137	273	273	861
Wellington	40,117	91,255	..	..	..	..	3,705	10,213	10,213	101,468
Makara	677	1,591	..	..	..	..	500	1,264	1,264	2,855
Paremata	2,144	7,207	..	..	..	..	208	555	555	7,762
Paraparaumu Beach	506	1,762	..	..	..	..	..	..	..	1,762
Manawatu Heads	281	1,062	..	..	..	..	..	..	..	1,062
Tangimoana	34	98	..	..	..	..	..	..	..	98
Wanganui	363	865	..	..	..	..	..	..	..	865
New Plymouth	3,255	7,820	..	..	..	..	239	670	670	8,490
Kawhia	491	1,666	..	..	..	..	..	..	..	1,666
Raglan	646	1,738	..	..	..	..	..	..	..	1,738
Manukau Harbour	902	2,157	..	..	..	..	49	135	135	2,292
Kaipara	3,088	9,003	..	..	..	..	..	..	..	9,003
Hokianga	574	938	..	..	..	..	..	..	..	938
South Island										
Havelock	3,353	7,753	..	..	..	..	..	..	..	7,753
Picton	3,267	9,305	..	..	..	..	4,926	11,517	11,517	20,822
Blenheim	1,575	3,416	..	..	..	..	113	262	262	3,678
Kaikoura	3,171	8,395	..	..	..	..	2,094	4,205	4,205	12,600
Lyttelton	12,520	27,487	..	..	..	..	784	1,594	1,594	29,081
Akaroa	7,159	18,384	..	..	..	..	2,269	4,525	4,525	22,909
Lake Ellesmere	2,810	10,377	..	..	..	..	..	..	..	10,377
Timaru	20,661	53,615	..	..	..	..	95	240	240	53,855
Oamaru	3,389	9,529	..	..	..	..	..	..	..	9,529
Moeraki	1,580	4,546	..	..	..	..	245	239	239	4,785
Karitane	589	1,335	..	..	..	..	2,645	2,474	2,474	3,809
Port Chalmers	38 460	59,404	..	..	..	..	121	230	230	59,634
Taieri Mouth	732	2,379	..	..	..	..	169	160	160	2,539
Nuggets district	4,091	12,054	..	..	..	..	9	13	13	12,067
Waikawa	4,214	12,023	..	..	..	..	13	37	37	12,060
Invercargill	15	52	..	..	..	..	..	..	..	52
Bluff	5,244	14,806	94,444	79,097	..	..	222	768	79,865	94,671
Stewart Island	12,394	29,517	..	..	..	..	381	3,217	3,217	32,734
Riverton	647	1,489	..	..	..	..	..	..	..	1,489
Hokitika	1	3	..	..	..	..	..	..	..	3
Greymouth	3,818	8,887	..	..	..	..	..	..	..	8,887
Westport	2,368	6,525	..	..	..	..	68	181	181	6,706
Golden Bay	190	420	..	..	..	..	13	38	38	458
Motueka	6,050	9,135	..	..	..	..	38	92	92	9,227
Nelson	11,314	20,074	..	..	..	..	163	403	403	20,477
French Pass	2,111	5,997	..	..	..	..	..	..	..	5,997
Chatham Islands	12,490	15,262	..	..	..	..	..	..	..	15,262
Totals	446,265	838,334	100,137	89,042	14,414	4,904	26,724	63,272	157,218	995,552

TABLE III—SHOWING THE QUANTITIES OF DIFFERENT KINDS OF FISH CAUGHT BY THE DIFFERENT METHODS OF FISHING FOR THE YEAR ENDED 31ST DECEMBER, 1948

	Trawl.						Danish Seine.		Other Nets.					
	Steam.		Motor.		Total.		Motor.		Motor.		Row-boat.		Total.	
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£
Barracouta	3,393	1,708	78	73	3,471	1,781	..	..	..	..	..	..	..	..
Blue cod	..	..	42	115	42	115	14	35	..	..	..	..	..	..
Bonita (*Brama*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brill	..	..	25	70	25	70	..	..	..	..	..	..	..	..
Butterfish (greenbone)	..	..	1	2	1	2	..	..	1,555	4,738	16	54	1,571	4,792
Conger-eel	..	..	12	8	12	8	..	..	3	2	..	..	3	2
Cream-fish	289	202	..	..	289	202	..	..	..	..	..	..	..	..
Elephant-fish	97	166	4,570	9,589	4,667	9,755	..	..	..	..	..	..	..	..
Flounders	..	..	6,914	23,299	6,914	23,299	53	140	9,767	34,320	1,847	7,014	11,614	41,334
Frost-fish	4	3	..	..	4	3	..	..	..	..	..	..	..	..
Garfish	..	..	..	..	..	..	2	2	14	54	..	..	14	54
Gurnard	1,854	1,652	14,251	16,232	16,105	17,884	3,801	2,719	1,973	1,391	16	12	1,989	1,403
Hake	638	1,776	529	1,319	1,167	3,095	..	..	4	7	..	..	4	7
Hapuku (groper)	1,138	3,615	1,915	6,213	3,053	9,828	141	384	9	22	..	..	9	22
Herrings	..	..	..	..	..	..	..	..	1,219	934	178	215	1,397	1,149
John-dory	373	552	446	695	819	1,247	..	..	..	..	..	..	..	..
Kahawai	..	..	2	2	2	2	..	..	998	911	12	12	1,010	923
Kingfish	..	..	..	..	..	..	..	..	26	39	1	2	27	41
Ling	1,103	1,893	3,909	7,291	5,012	9,184	..	..	1	3	..	..	1	3
Mackerel	92	62	..	..	92	62	..	..	80	56	..	..	80	56
Maomao	..	..	..	..	..	..	..	..	10	10	..	..	10	10
Moki	710	1,186	1,444	2,456	2,154	3,642	..	..	234	411	9	26	243	437
Mullet	..	..	..	..	..	..	..	..	2,147	3,391	93	150	2,240	3,541
Parori	..	..	..	..	..	..	..	..	51	53	23	12	74	65
Perch	4	3	6	4	10	7	..	..	..	..	..	..	..	..
Pioki	647	585	1,405	2,047	2,052	2,632	344	469	356	505	1	1	357	506
Red cod	713	482	3,609	3,675	4,322	4,157	..	..	119	267	1	2	120	269
Sardine	..	..	..	..	..	..	..	..	896	1,046	..	..	896	1,046
Shark	463	649	43	44	506	693	4	5	50	67	7	6	57	73
Skate	2	3	6	6	8	9	..	..	..	..	..	..	..	..
Snapper	32,253	48,915	16,950	28,587	49,203	77,502	71,701	108,333	11,050	17,008	108	237	11,158	17,245
Sole	434	1,219	23,472	72,243	23,906	73,462	..	..	5	19	..	..	5	19
Swordfish (marlin)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tarakihi	36,187	63,349	45,085	82,287	81,272	145,636	11,404	16,893	56	103	18	67	74	170
Trevally	3,735	2,658	336	294	4,071	2,952	762	547	4,302	4,132	82	108	4,384	4,240
Trumpeter	..	..	365	1,023	365	1,023	..	..	..	..	..	..	..	..
Tuna	..	..	..	..	..	..	40	36	..	..	..	..	..	..
Warchou	20	28	..	..	20	28	..	..	371	748	..	..	371	748
Whiptail	341	240	1	1	342	241	..	..	..	..	..	..	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed flat fish	250	691	1,195	3,909	1,445	4,600	..	..	4	5	..	..	4	5
Mixed round fish and all fish not specified	3,570	1,282	1,584	2,194	5,154	3,476	714	549	474	507	98	96	572	603
Totals	88,310	132,919	128,195	263,678	216,505	396,597	88,980	130,112	35,774	70,749	2,510	8,014	38,284	78,763

TABLE III—SHOWING THE QUANTITIES OF DIFFERENT KINDS OF FISH CAUGHT BY THE DIFFERENT METHODS OF FISHING FOR THE YEAR ENDED 31ST DECEMBER, 1948—*continued*

	Lines.						Grand Total.	
	Motor.		Row-boat.		Total.			
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£
Barracouta	9,619	4,610	..	..	9,619	4,610	13,090	6,391
Blue cod	32,757	71,528	64	185	32,821	71,713	32,877	71,863
Bonita (*Brama*)	..	..	..	..	..	..	..	..
Brill	..	..	..	..	..	..	25	70
Butterfish (greenbone)	..	..	..	..	..	..	1,572	4,794
Conger-eel	153	110	1	1	154	111	169	121
Cream-fish	..	..	..	..	..	..	289	202
Elephant-fish	34	60	..	..	34	60	4,701	9,815
Flounders	..	..	..	..	..	..	18,581	64,773
Frost-fish	7	8	..	..	7	8	11	11
Garfish	4	12	..	..	4	12	20	68
Gurnard	340	403	4	15	344	418	22,239	22,424
Hake	1,279	4,605	2	5	1,281	4,610	2,452	7,712
Hapuku (groper)	29,487	97,748	81	252	29,568	98,000	32,771	108,234
Herrings	..	..	..	..	..	..	1,397	1,149
John-dory	7	5	..	..	7	5	826	1,252
Kahawai	208	206	..	..	208	206	1,220	1,131
Kingfish	192	302	10	16	202	318	229	359
Ling	6,937	15,797	110	229	7,047	16,026	12,060	25,213
Mackerel	..	..	..	..	..	..	172	118
Maomao	..	..	..	..	..	..	10	10
Moki	4	5	..	..	4	5	2,401	4,084
Mullet	..	..	..	..	..	..	2,240	3,541
Parori	6	4	..	..	6	4	80	69
Perch	22	14	..	..	22	14	32	21
Pioki	749	1,070	..	..	749	1,070	3,502	4,677
Red cod	211	355	1	3	212	358	4,654	4,784
Sardine	..	..	..	..	..	..	896	1,046
Shark	909	839	..	..	909	839	1,476	1,610
Skate	2	2	..	..	2	2	10	11
Snapper	15,957	29,761	809	1,383	16,766	31,144	148,828	234,224
Sole	..	..	..	..	..	..	23,911	73,481
Swordfish (marlin)	379	391	..	..	379	391	379	391
Tarakihi	495	789	6	20	501	809	93,251	163,508
Trevally	109	107	..	..	109	107	9,326	7,846
Trumpeter	16	41	..	..	16	41	381	1,064
Tuna	..	..	..	..	..	..	40	36
Warehou	14	26	..	..	14	26	405	802
Whiptail	2	3	..	..	2	3	344	244
Whiting	..	..	..	..	..	..	..	..
Mixed flat fish	..	..	..	..	..	..	1,449	4,605
Mixed round fish and all fish not specified	1,480	1,911	29	41	1,509	1,952	7,949	6,580
Totals	101,379	230,712	1,117	2,150	102,496	232,862	446,265	838,334

TABLE IV—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31ST DECEMBER, 1948

—	Mangonui.	Whangaroa.	Russell.	Whangarei.	Auckland.	Thames.	Coromandel.	Mercury Bay.	Whangamata.	Waihi Beach.	Tauranga and District.	Whakatane.	Ohiwa Harbour, Opotiki, and Cape Runaway.	Gisborne.	Napier.	Castlepoint.	Wellington.	Makara.	Paremata.
	Cwt.	Cwt.	Cwt	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Barracouta ..	16	1	..	..	858	..	..	..	..	..	3	..	..	..	..	..	634	2	..
Blue cod ..	4	10	24	5	51	6	1	25	..	..	4	..	..	..	355	6	114	8	5
Bonita (*Brama*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Butterfish ..	..	..	..	..	..	..	..	..	..	..	13	..	5	..	3	7	236	235	72
Conger-eel ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	72	18	2
Cream-fish ..	..	..	..	..	289	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Elephant-fish ..	..	..	..	..	..	..	..	..	..	..	..	..	..	19	..	..	8	..	16
Flounder ..	10	22	283	41	396	4,849	2	5	..	..	18	6	85	206	284	2	17	..	38
Frost-fish ..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	7	..	..
Garfish	..	..	..	..	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gurnard	..	..	6	2	5,139	2,057	..	..	2	..	127	43	7	1,117	3,596	..	270	..	2
Hake	..	..	..	2	8	17	..	..	..	..	..	..	3	1	13	..	1,355	..	5
Hapuku (groper) ..	232	55	310	129	737	9	..	68	15	..	333	36	13	857	1,481	104	8,075	21	1,780
Herring	..	..	1,129	..	2	4	241	..	..	..	20	..	..	..	..	..	..	..	..
John-dory ..	..	..	..	..	361	..	..	..	..	..	..	..	..	424	..	..	..	..	..
Kahawai ..	68	2	22	..	2	419	..	1	4	1	495	99	24	..	29	..	6	..	2
Kingfish	4	31	50	1	13	10	..	1	..	..	52	1	1	..	..	..	38	4	..
Ling	..	1	..	..	..	..	..	..	..	..	..	..	..	22	..	..	3,124	..	15
Mackerel ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	92	..	..
Maomao	..	..	9	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moki	..	..	..	..	..	..	..	..	..	..	..	..	..	429	293	2	614	20	6
Mullet	358	15	114	17	374	..	..	..	..	..	3	..	6	..	1	..	..	..	..
Parore	42	1	20	..	2	15	..	..	..	..	..	..	..	..	..	..	..	..	..
Perch	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pioke	..	..	..	1	525	279	..	115	..	..	7	1	12	62	..	..	457	..	15
Red cod	1	..	17	102	51	1	..	..	2	..	..	..	5	9	..	1	333	1	..
Sardine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shark	2	..	5	141	563	14	..	11	..	..	9	..	8	..	2	..	34	1	34
Skate	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	..
Snapper	1,040	686	1,928	3,058	110,911	8,730	113	775	206	85	4,426	416	380	555	224	6	257	9	41
Sole	..	..	..	1	1	..	..	..	..	..	..	..	..	283	886	..	6	..	..
Swordfish ..	..	..	..	..	..	..	..	..	..	..	368	11	..	..	..	..	..	..	..
Tarakihi	5	4	19	13	17,031	..	..	..	28	112	5,226	..	23	8,907	19,955	..	23,423	15	17
Trevally	611	1	5	601	4,631	600	..	..	..	..	2,479	23	18	..	..	..	177	16	2
Trumpeter ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	3	1	..
Tuna	..	..	..	..	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehou ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33	320	41
Whiptail ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed flat fish ..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed round and unspecified fish	140	15	130	48	763	95	1	4	2	12	179	1	15	368	132	12	700	6	51
Totals ..	2,533	844	4,071	4,163	142,766	17,105	358	1,005	259	210	13,763	637	605	13,260	7,254	141	40,117	677	2,144

TABLE IV—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31ST DECEMBER, 1948—*continued*

—	Paraparaumu Beach.	Manawatu Heads.	Tangimoana.	Wanganui.	New Plymouth.	Kawhia.	Raglan.	Manukau Harbour.	Kaipara.	Hokianga.	Havelock.	Picton.	Blenheim (Wairau).	Kaikoura.	Lyttelton.	Akaroa.	Lake Ellesmere.	Timaru.	Oamaru.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Barracouta ..	..	..	..	..	5	..	..	..	..	..	..	1	..	15	10	31	..	3	..
Blue cod ..	11	..	..	10	15	..	..	..	..	..	413	251	..	7	3	4	..	2	490
Bonita (*Brama*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Butterfish ..	152	..	..	..	..	..	..	..	..	3	260	123	10	78	13	5	..	..	..
Conger-eel ..	..	..	..	..	1	..	..	..	..	..	4	24	..	1	1	2	..	..	..
Cream-fish ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Elephant-fish ..	..	..	..	..	..	..	..	..	..	..	19	..	..	8	1,016	482	..	2,938	..
Flounder ..	..	91	3	..	..	250	164	339	1,992	42	370	25	157	1	436	410	2,810	3,486	..
Frost-fish ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Garfish	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..
Gurnard	3	10	1	..	211	..	..	2	..	..	83	2	..	18	895	759	..	2,244	..
Hake	..	..	..	..	5	..	..	..	..	..	3	7	..	17	279	153	..	110	3
Hapuku (groper) ..	88	30	1	27	369	11	6	..	..	..	385	2,516	43	1,182	375	1,109	..	3,416	2,851
Herring	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
John-dory ..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	..	..	..	..	..
Kahawai ..	1	7	..	6	4	..	4	2	1	..	..	..	..	..	..	..	..	..	..
Kingfish	..	..	..	..	15	7	..	1	..	..	..	..	..	..	..	..	..	..	..
Ling	..	..	..	5	1	..	..	..	..	..	5	13	122	1,538	1,539	989	..	3,459	37
Mackerel ..	..	..	..	..	..	..	..	..	..	..	..	..	80	..	..	..	..	..	..
Maomao	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moki	..	..	..	..	..	..	..	..	..	..	36	18	472	8	90	45	..	3	..
Mullet	..	..	..	..	..	..	..	331	557	464	..	..	..	..	..	..	..	..	..
Parore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perch	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pioke	..	..	..	..	81	19	2	21	6	..	34	13	..	1	304	8	..	67	..
Red cod	..	..	..	10	..	..	1	2	..	..	1	..	98	16	659	341	..	1,535	1
Sardine	..	..	..	..	..	..	..	..	..	..	896	..	..	..	..	..	..	..	..
Shark	..	7	..	..	14	..	3	..	190	..	239	170	17	..	..	..	..	..	..
Skate	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Snapper	243	134	28	305	2,326	196	455	173	314	17	336	42	6	..	21	4	..	50	..
Sole	..	..	..	..	24	..	..	..	..	..	149	3	182	57	543	994	..	2,357	..
Swordfish ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tarakihi	3	1	1	..	181	..	..	..	1	..	17	2	66	150	6,101	1,274	..	341	1
Trevally	..	..	..	..	..	6	..	4	..	30	..	..	..	..	2	9	..	..	..
Trumpeter ..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	1	364	..	..	..
Tuna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehou ..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiptail ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed flat fish ..	..	..	..	..	..	..	..	..	..	..	11	1	209	..	81	92	..	447	6
Mixed round and unspecified fish	1	1	..	..	3	2	11	17	27	18	81	56	113	66	151	84	..	203	..
Totals ..	506	281	34	363	3,255	491	646	902	3,088	574	3,353	3,267	1,575	3,171	12,520	7,159	2,810	20,661	3,389

TABLE IV—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31ST DECEMBER, 1948—*continued*

—	Moeraki.	Karitane.	Port Chalmers and Dunedin.	Taieri Mouth.	Nuggets and District.	Waikawa.	Invercargill.	Bluff.	Stewart Island.	Riverton	Hokitika.	Greymouth.	Westport.	Golden Bay.	Motueka.	Nelson.	French Pass.	Chatham Islands.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Barracouta	2	177	11,262	..	..	..	..	..	..	..	..	..	..	..	32	10	28	..
Blue cod	617	242	178	152	113	734	..	4,263	10,849	574	1	..	39	11	36	11	968	12,265
Bonita (*Brama*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brill	..	..	14	..	7	..	..	4	..	..	..	..	..	..	..	..	..	..
Butterfish	..	..	..	..	..	..	..	154	141	1	..	..	..	..	..	4	57	..
Conger-eel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	43	..
Cream-fish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Elephant-fish	..	..	21	..	..	..	..	..	..	..	..	..	142	..	31	..	1	..
Flounder	22	..	766	..	283	29	15	55	..	1	..	..	142	1	71	352	4	..
Frost-fish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Garfish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gurnard	1	..	368	1	38	24	..	29	..	..	..	606	293	2	987	3,278	16	..
Hake	..	..	434	..	..	..	..	..	..	..	..	3	..	..	..	..	34	..
Hapuku (groper)	846	119	1,124	390	362	475	..	287	737	69	..	606	99	31	22	91	624	225
Herring	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
John-dory	6	..	12	..	..	..	..	1	..	..	..	..	..	..	1	7	3	..
Kahawai	1	..	4	..	..	..	..	..	..	..	..	..	..	..	16	..	..	..
Kingfish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ling	10	15	1,081	1	25	10	..	..	..	..	..	40	6	..	..	1	1	..
Mackerel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maomao	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moki	42	3	277	..	..	..	..	24	..	..	..	..	..	..	..	..	19	..
Mullet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Parore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perch	14	..	11	..	1	..	..	6	..	..	..	..	..	..	..	..	..	..
Ploke	..	..	562	..	..	..	..	..	..	..	..	..	73	..	350	468	19	..
Red cod	5	..	1,304	5	13	..	..	3	..	2	..	..	55	..	37	40	3	..
Sardine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shark	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	11	..
Skate	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Snapper	..	..	4	..	..	..	..	..	..	..	..	41	100	145	3,319	6,530	193	..
Sole	12	33	9,652	183	2,994	2,931	..	267	..	..	..	1,244	676	..	33	384	16	..
Swordfish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tarakihi	1	..	8,476	..	1	..	..	..	..	..	..	3	711	..	1,108	..	34	..
Trevally	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	111	..	..
Trumpeter	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Tuna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehou	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiptail	..	..	320	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed flat fish	..	..	74	..	248	10	..	..	..	..	..	256	..	..	..	11	..	..
Mixed round and unspecified fish	1	..	2,508	..	6	..	..	151	667	..	..	1,019	31	..	5	16	37	..
Totals	1,580	589	38,460	732	4,091	4,214	15	5,244	12,394	647	1	3,818	2,368	190	6,050	11,314	2,111	12,490

Table V—Showing Total Quantities of Wet Fish Landed at Each of the Chief Fishing Ports Each Month of the Year 1948

Port or District.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
North Island	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Mangonui and district	100	155	251	317	316	366	324	129	141	158	155	121	2,533
Whangaroa	51	52	78	121	107	100	66	58	31	59	53	68	844
Russell	331	349	397	392	255	350	319	402	407	301	299	269	4,071
Whangarei	251	235	147	713	415	238	412	266	320	301	494	371	4,163
Auckland	9,005	10,041	9,966	9,001	9,841	11,116	11,992	15,583	14,712	14,178	16,010	11,321	142,766
Thames district	1,336	1,543	1,144	1,796	1,169	984	1,481	1,439	1,986	1,893	1,310	1,024	17,105
Coromandel	1	10	26	25	22	21	9	31	27	14	63	109	358
Mercury Bay	201	166	290	96	72	150	14	6	..	..	4	6	1,005
Whangamata	19	8	13	7	23	36	21	16	10	18	39	49	259
Waihi Beach	39	42	32	17	9	4	3	12	5	4	12	31	210
Tauranga and district	1,083	1,071	1,597	1,313	1,678	1,464	1,444	968	741	652	807	945	13,763
Whakatane	76	79	18	15	6	7	9	65	47	102	149	64	637
Ohiwa Harbour, Opotiki, and Cape Runaway	11	72	52	38	37	36	37	54	53	37	91	87	605
Gisborne	806	541	765	706	1,093	891	1,173	1,492	1,729	1,362	1,333	1,369	13,260
Napier	1,375	2,183	2,216	635	910	2,244	2,572	3,508	3,487	2,760	2,860	2,504	27,254
Castlepoint	12	9	13	9	7	10	1	1	1	10	20	48	141
Welington	3,648	3,714	3,770	3,649	2,940	4,375	4,195	1,761	2,265	3,326	4,033	2,441	40,117
Makara	16	47	48	69	33	253	112	53	20	2	19	5	677
Paremata	128	143	180	320	258	524	140	69	10	30	254	88	2,144
Paraparaumu Beach	41	14	74	34	12	41	36	77	27	44	57	49	506
Manawatu Heads	18	25	17	27	14	44	33	20	20	18	23	22	281
Tangimoana	4	1	5	6	1	1	1	2	1	2	2	8	34
Wanganui	2	6	28	61	21	51	35	22	21	5	33	78	363
New Plymouth	266	256	191	281	196	379	217	293	227	149	375	425	3,255
Kawhia	49	38	51	26	29	29	25	45	17	23	92	67	491
Raglan	39	7	23	53	32	43	15	48	45	54	135	152	646
Manukau Harbour	92	75	69	83	68	71	38	94	57	39	108	108	902
Kaipara	293	435	336	276	147	211	154	220	184	196	276	360	3,088
Hokianga	63	64	20	16	4	25	43	51	74	81	54	79	574
South Island													
Havelock	117	155	161	307	249	398	259	223	159	120	405	800	3,353
Picton	308	348	215	263	311	520	316	168	147	170	294	207	3,267
Blenheim (Wairau)	188	212	95	156	133	42	65	48	80	210	129	217	1,575
Kaikoura	172	251	252	254	245	280	226	131	305	410	298	347	3,171
Lyttelton	307	1,054	926	1,404	831	1,350	804	977	1,129	1,607	1,377	754	12,520
Akaroa	310	694	765	800	637	694	430	462	579	544	685	559	7,159
Lake Ellesmere	158	109	110	175	66	155	119	84	221	341	772	500	2,810
Timaru	1,264	1,882	1,485	2,071	1,904	2,418	1,971	1,545	1,483	1,339	1,708	1,591	20,661
Oamaru	177	443	421	490	299	232	130	178	147	184	402	286	3,389
Moeraki	99	141	172	146	104	121	58	113	87	208	237	94	1,580
Karitane	79	102	159	61	40	10	..	1	4	38	43	52	589
Port Chalmers	2,424	4,392	4,997	2,972	3,295	3,207	1,767	1,332	2,507	2,764	5,627	3,176	38,460
Taieri Mouth	16	37	103	56	51	53	21	7	49	100	107	132	732
Nuggets district	707	625	457	183	217	151	61	227	242	213	631	377	4,091
Waikawa	228	348	300	265	384	340	227	283	471	392	738	238	4,214
Invercargill	..	..	3	8	3	1	..	..	..	..	..	..	15
Bluff	406	496	267	487	656	639	642	652	187	161	489	162	5,244
Stewart Island	573	1,729	1,213	1,519	1,417	2,134	2,057	1,260	178	254	60	..	12,394
Riverton district	73	113	79	64	41	16	98	71	20	22	24	26	647
Hokitika	1	..	..	..	..	..	..	..	..	..	..	..	1
Greymouth	268	457	225	659	269	296	391	340	185	127	434	167	3,818
Westport	103	333	164	234	209	188	208	195	280	92	229	133	2,368
Golden Bay	11	19	27	22	28	22	6	7	..	1	26	21	190
Motueka	363	323	503	513	534	713	523	496	363	209	700	810	6,050
Nelson	579	436	631	1,015	1,060	1,152	740	1,039	1,243	892	1,696	831	11,314
French Pass	181	242	110	208	130	358	112	244	168	70	201	87	2,111
Chatham Islands	..	1,645	1,613	..	1,375	471	1,097	1,673	1,573	1,705	1,242	96	12,490
Totals	28,468	37,967	37,270	34,434	34,203	40,025	37,249	38,541	38,472	37,991	47,714	33,931	446,265

TABLE VI—SHOWING QUANTITIES OF THE MAIN SPECIES OF FISH LANDED AT THE CHIEF FISHING PORTS IN EACH MONTH OF THE YEAR ENDED 31ST DECEMBER, 1948

——	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
Auckland	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Flounder	85	80	36	13	21	4	3	12	16	23	50	53	396
Gurnard	298	435	493	514	527	637	346	373	309	340	444	425	5,141
Snapper	7,178	6,381	7,579	7,593	7,822	8,478	9,495	12,903	11,365	12,269	12,297	7,552	110,912
Tarakihi	953	2,649	1,059	458	795	1,286	1,166	1,350	2,120	747	2,183	2,265	17,031
Trevally	154	196	349	165	191	368	642	634	497	438	521	475	4,630
Thames													
Flounder	1,028	1,040	606	581	127	176	59	12	77	71	306	766	4,849
Gurnard	33	44	98	288	324	173	236	211	234	237	125	54	2,057
Snapper	223	415	359	645	597	582	1,101	1,077	1,499	1,248	820	165	8,731
Trevally	10	22	52	207	60	5	4	24	75	138	..	3	600
Tauranga													
Kahawai	48	65	84	78	69	52	43	16	12	8	13	8	496
Snapper	272	300	393	382	548	513	448	366	399	210	238	358	4,427
Tarakihi	438	149	416	510	664	470	575	412	256	357	472	507	5,226
Trevally	241	348	422	268	284	368	293	137	42	21	30	25	2,479
Gisborne													
Gurnard	38	29	70	154	63	38	11	101	124	207	108	174	1,117
Tarakihi	538	385	500	413	808	613	871	1,006	1,241	852	865	815	8,907
Napier													
Gurnard	351	370	310	278	127	82	75	213	257	586	498	449	3,596
Hapuka	38	28	31	24	117	160	240	218	202	117	143	163	1,481
Sole	162	146	84	23	9	3	1	4	34	148	158	114	886
Tarakihi	754	1,400	1,461	241	618	1,922	2,211	3,021	2,939	1,687	1,976	1,726	19,956
Wellington													
Hake	88	110	121	28	18	43	45	22	20	764	61	36	1,356
Hapuka	663	678	456	275	216	824	1,306	1,147	553	697	802	457	8,074
Ling	74	127	95	307	404	731	407	382	264	52	170	111	3,124
Tarakihi	2,536	2,415	2,803	2,701	1,898	2,230	2,004	86	1,189	1,223	2,631	1,700	23,416
Picton													
Barracouta	..	..	..	..	..	1	..	..	..	..	..	..	1
Blue cod	38	30	26	8	40	18	18	4	15	10	9	35	251
Hapuka	212	286	154	143	216	457	276	111	84	150	265	162	2,516
*Sardine	..	..	..	..	..	..	..	..	..	..	216	680	896
Lyttelton													
Elephant-fish	40	77	92	61	23	25	4	77	80	230	210	97	1,016
Gurnard	15	148	109	48	24	10	12	94	108	225	60	42	895
Ling	26	73	267	140	103	120	69	90	61	87	194	101	1,331
Tarakihi	11	39	126	890	572	841	587	597	697	758	681	303	6,102
Timaru													
Elephant-fish	184	87	65	165	314	132	113	389	408	300	308	291	2,756
Flounder	230	461	144	298	159	229	495	385	342	339	280	124	3,486
Gurnard	38	140	166	247	131	248	298	293	348	160	115	60	2,244
Hapuka	195	392	273	460	382	242	114	44	5	271	627	411	3,416
Ling	115	166	306	394	620	881	263	110	47	77	184	296	3,459
Sole	113	197	221	144	132	326	481	253	248	111	90	41	2,357
Port Chalmers													
Barracouta	1,044	2,524	2,405	618	353	815	143	69	103	430	1,974	784	11,262
Flounder	138	74	39	40	41	64	58	54	56	87	30	85	766
Hapuka	68	60	202	131	226	100	37	30	18	56	117	80	1,125
Red cod	198	203	65	113	170	206	145	20	35	40	47	61	1,303
Sole	826	1,014	961	656	902	571	235	383	716	861	1,619	908	9,652
Stewart Island													
Blue cod	518	1,408	1,005	1,309	1,238	1,891	1,924	1,239	153	114	50	..	10,849
Hapuka	29	157	115	120	123	124	43	12	9	4	1	..	737
Nelson													
Flounder	6	6	5	7	14	20	30	47	88	47	57	24	351
Gurnard	50	78	80	150	219	248	228	580	649	339	549	108	3,278
Snapper	370	310	513	813	729	720	383	303	405	442	938	604	6,530

* Taken in Pelorus Sound.

TABLE VII—SHOWING THE NUMBER OF SACKS AND VALUE OF THE OYSTERS OBTAINED IN THE DOMINION DURING THE YEAR ENDED 31ST DECEMBER, 1948

Locality.	Quantity.	Value.
DREDGE OYSTERS		
	Sacks.	£(N.Z.)
Foveaux Strait	94,444	79,097
ROCK OYSTERS		
Bay of Islands	2,242	
Whangarei Harbour	226	
Coromandel	368	
Great Barrier Island	240	9,945
Kaipara Harbour	1,027	
Manukau Harbour	54	
Hauraki Gulf (see text for detail)	1,536	
Total	5,693	..
Grand total	100,137	89,042

TABLE VIII—SHOWING THE TOTAL QUANTITY AND VALUE OF FISH, CRAYFISH, AND SHELL-FISH IMPORTED INTO AND EXPORTED FROM NEW ZEALAND DURING THE YEAR ENDED 31ST DECEMBER, 1948

Fish Imported

Kind of Fish.	Quantity.	Value.
		£
Anchovie—salted	1 cwt.	71
Fish—fresh, smoked, or dried	1,197 cwt.	13,719
Herring (canned)	1,002,957 lb.	79,890
Salmon (canned)	1,579,141 lb.	106,829
Sardines, bristling, and sild (canned) ..	997,048 lb.	171,681
Other kinds (canned)	782,493 lb.	68,621
Total	..	440,811

Crayfish and Shell-fish Exported

Kind of Fish.	Quantity.	Value.
		£
Crayfish, including crayfish tails	3,731 cwt.	44,466
Oysters	1,020 doz.	30
Mussels	75 cwt.	531
Total	..	45,027

Fish Exported—Frozen

Kind of Fish.	Quantity.	Value.
		£
Barracouta	1,230 cwt.	4,307
Blue cod	16,838 cwt.	105,642
Butterfish	56 cwt.	236
Brill	40 cwt.	272
Cream fish	2 cwt.	5
Elephant-fish	43 cwt.	254
Eels	18 cwt.	71
Flounder	1,513 cwt.	9,379
Gurnard	1,555 cwt.	9,145
Hake	187 cwt.	865
Hapuku	2,814 cwt.	19,112
John-dory	156 cwt.	1,034
Kahawai	15 cwt.	67
Ling	1,671 cwt.	6,513
Moki	140 cwt.	680
Mullet	3 cwt.	16
Perch	85 cwt.	230
Red cod	569 cwt.	5,506
Skate	5 cwt.	24
Snapper	7,414 cwt.	51,572
Sole	8,436 cwt.	51,059
Tarakihi	8,160 cwt.	55,468
Trevally	339 cwt.	1,886
Trumpeter	4 cwt.	27
Warehou	2 cwt.	9
White fillets	2,227 cwt.	12,305
Mixed flat fish	239 cwt.	1,054
Mixed fish	910 cwt.	3,703
Total	54,671 cwt.	340,441

Fish Exported—Smoked

Kind of Fish.	Quantity.	Value.
		£
Barracouta	391 cwt.	2,288
Blue cod	164 cwt.	1,578
Hake	41 cwt.	314
Red cod	419 cwt.	2,409
Snapper	277 cwt.	1,838
Silver strip	269 cwt.	1,811
Tarakihi	18 cwt.	205
Trevally	5 cwt.	37
Total	1,584 cwt.	10,480

Fish Exported—Dried, Pickled, or Salted

Kind of Fish.	Quantity.	Value.
		£
Includes ling, herring, anchovy	141 cwt.	939

Fish and Shell-fish Exported—Preserved in Tins

Kind of Fish.	Quantity.	Value.
		£
Oysters	2,378 lb.	244
Toheroa	6,461 lb.	499
Whitebait	266,558 lb.	52,643
Mussels	17,998 lb.	2,885
Crayfish	9,052 lb.	1,685
Clam chowder	480 lb.	26
Other kinds	452,380 lb.	38,867
Totals	755,307 lb.	96,849

Re-exports

Kind of Fish.	Quantity.	Value.
		£
Fish, salted	364 cwt.	2,418
Fish, canned	2,849 lb.	260
Total	..	2,678

TABLE IX—RETURN OF LAND ENGINEERS', ENGINE-DRIVERS', AND ELECTRIC-TRAM DRIVERS' EXAMINATIONS HELD THROUGHOUT NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1949, SHOWING THE NUMBER OF SUCCESSFUL AND UNSUCCESSFUL CANDIDATES

Place.	Extra First-class Stationary Engineer.		First-class Engine-driver.		Second-class Engine-driver.		Locomotive- and Traction-engine Driver.		Locomotive-engine Driver.		Traction-engine Driver.	
	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.
Auckland	..	..	21	7	42	12	..	..	..	..	..	..
Christchurch	..	..	6	1	26	5	..	..	2	1	1	..
Dunedin	..	..	2	..	11	6	..	..	1	..	3	..
Fairlie	..	..	..	..	1	..	..	..	..	..	1	..
Gisborne	..	..	..	..	2	..	..	..	..	..	..	..
Greymouth	..	..	2	1	12	1	3	..	3	..	1	..
Hamilton	..	1	11	2	41	12	3	1	..	..	..	..
Invercargill	..	..	3	3	17	2	..	..	..	..	..	..
Masterton	..	..	..	..	1	..	..	..	..	..	..	..
Napier	..	..	..	..	3	4	1	..	..	..	..	..
Nelson	..	..	1	1	2	1	..	..	..	..	1	..
New Plymouth	..	..	..	2	39	14	..	..	..	..	..	..
Palmerston North	..	..	..	..	17	5	..	..	..	..	..	..
Rai Valley	..	..	..	..	1	..	..	..	..	..	..	..
Rawene	..	..	..	..	..	2	..	..	..	..	..	..
Rotorua	..	..	..	..	1	..	..	..	..	..	..	..
Teviot	..	..	..	..	..	..	1	..	..	..	..	..
Timaru	..	..	..	..	8	..	..	..	..	..	..	..
Wanganui	..	..	..	..	6	2	..	..	..	..	..	..
Wellington	..	..	5	2	27	6	..	..	..	..	..	..
Whangarei	..	..	..	1	1	1	..	..	..	..	..	..
Waimate	..	..	..	..	1	..	..	..	..	..	..	..
Totals	..	1	52	20	259	73	8	1	6	1	7	..

Place.	Steam-winding-engine Driver.		Electric-winding-engine Driver.		Electric-tram Driver.		Cable-tram Drivers.		Total.		Grand Totals.
	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	
Auckland	..	..	..	..	68	6	..	..	131	25	156
Christchurch	..	..	..	..	33	..	..	..	68	7	75
Dunedin	..	..	..	..	21	..	6	..	44	6	50
Fairlie	..	..	..	..	..	..	..	..	2	..	2
Gisborne	..	..	..	..	..	..	..	..	2	..	2
Greymouth	1	1	1	..	..	..	..	..	21	2	23
Hamilton	..	..	..	..	..	..	..	..	57	17	74
Invercargill	..	..	..	..	4	..	..	..	24	5	29
Masterton	..	..	..	..	..	..	..	..	1	..	1
Napier	..	..	..	..	..	..	..	..	4	4	8
Nelson	..	..	..	..	..	..	..	..	4	2	6
New Plymouth	..	..	..	..	6	1	..	..	45	17	62
Palmerston North	..	..	..	..	..	..	..	..	17	5	22
Rai Valley	..	..	..	..	..	..	..	..	1	..	1
Rawene	..	..	..	..	..	..	..	..	..	2	2
Rotorua	..	..	..	..	..	..	..	..	1	..	1
Teviot	..	..	..	..	..	..	..	..	1	..	1
Timaru	..	..	..	..	..	..	..	..	8	..	8
Wanganui	..	..	..	..	4	1	..	..	11	3	14
Wellington	..	..	..	..	37	1	7	..	76	9	85
Whangarei	..	..	..	..	..	..	..	..	1	2	3
Waimate	..	..	..	..	..	..	..	..	1	..	1
Totals	1	1	1	..	173	9	13	..	520	106	626

Table X—Summary of Examinations for Certificates as Masters and Mates for the Year Ended 31st March, 1949

Class of Certificate.	Auckland.				Wellington.				Totals.				Total Examinations
	P.	P.P.	F.	P.F.	P.	P.P.	F.	P.F.	P.	P.P.	F.	P.F.	
Foreign-going Masters and Mates	15	12	2	10	25	15	..	9	40	27	2	19	88
Home-trade Masters and Mates	15	11	..	2	10	9	..	5	25	20	..	7	52
Master of River Steamer ..	4	..	4	..	5	..	2	..	9	..	6	..	15
Foreign-going Yachtsmaster ..	..	..	..	..	..	1	1	1	..	1	1	1	3
Home-trade Yachtsmaster ..	1	..	..	..	..	..	..	..	1	..	..	..	1
Compass Deviation	..	..	..	..	2	..	..	..	2	..	..	..	2
Square-rigged Endorsement ..	..	..	..	..	1	..	..	..	1	..	..	..	1
Totals	35	23	6	12	43	25	3	15	78	48	9	27	162

Table XI—Summary of Examinations of Marine Engineers for the Year Ended 31st March, 1949

Class of Certificate.	Auckland.			Wellington.			Christchurch.			Dunedin.			Other Places.		Totals.			Grand Total.
	P.	P.P.	F.	P.	P.P.	F.	P.	P.P.	F.	P.	P.P.	F.	P.	F.	P.	P.P.	F.	
Imperial Validity																		
1st and 2nd Class Steam ..	4	14	5	13	37	41	4	13	5	..	2	2	..	..	21	66	53	140
1st and 2nd Class Motor ..	2	3	2	4	5	..	..	..	..	..	2	1	..	..	6	10	3	19
1st and 2nd Class Steam Endorsements	1	..	..	1	..	1	..	..	..	..	..	..	..	..	2	..	1	3
1st and 2nd Class Motor Endorsements	..	..	..	7	..	2	..	..	..	..	..	..	..	..	7	..	2	9
	7	17	7	25	42	44	4	13	5	..	4	3	..	..	36	76	59	171
Valid in New Zealand Only																		
3rd Class Steam ..	35	..	18	32	..	22	9	..	6	17	..	7	..	..	93	..	53	146
River Steam	4	..	..	..	..	..	..	..	..	..	..	..	2	..	6	..	..	6
1st and 2nd Class Coastal Motor	8	..	..	18	..	1	1	..	..	1	..	..	..	..	28	..	1	29
River Oil	48	..	4	4	..	..	..	..	1	3	..	..	43	4	98	..	9	107
	95	..	22	54	..	23	10	..	7	21	..	7	45	4	225	..	63	288
Totals ..	102	17	29	79	42	67	14	13	12	21	4	10	45	4	261	76	122	459

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