

1948
NEW ZEALAND

MARINE DEPARTMENT

ANNUAL REPORT FOR THE YEAR 1947-48

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

Marine Department,
Wellington, 8th June, 1948.

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.

Marine Department, Wellington, 4th June, 1948.

SIR,—

I have the honour to submit the report of the Marine Department for the year ended 31st March, 1948.

The Department is gradually getting back to the assumption of normal peacetime activities and able to devote its attention to progress prohibited during the war years. Consequent on the receipt of the report of the British engineers, Messrs. Buckton and Clarke, a committee of expert engineers—Messrs. W. L. Newnham, F. W. Furkert, and J. Wood—was set up by your predecessor in office to inspect Westport and Greymouth Harbours with a view to a report implementing the previous report of Messrs. Buckton and Clarke in an effort to decide (1) immediate necessities at those ports, and (2) long-range progress for improvements. The latter report is just to hand and is receiving the consideration of the appropriate authorities.

My report this year would not be complete without particular emphasis on the part played in industry by the Inspection of Machinery Branch of this Department. Prevention of accidents means increase in production in every phase of our industrial life, and it is interesting to note that our Inspectors of Machinery inspected 118,833 units of machines, lifts, cranes, and hoists, &c., during the current year. More interesting and pleasing is the fact that there were only 125 accidents concerned with these units and 4 deaths only, compared with 7 deaths from machinery accidents in the previous year. Apart from the factual situation emphasized by the above, our Inspectors of Machinery give valued service to owners by way of expert advice, and in general have a prestige in the community which is most satisfactory. Plans are in hand for an extension of the safety services rendered to owners and operatives in the hope that the present extremely low accident and death rates may be still further improved. Later in this report fuller details of this branch of the Department are included.

The usual preliminary inquiry by the Superintendent of Mercantile Marine was carried out in regard to various casualties to shipping during the year. Seven of these required further Magisterial inquiry, these being the "Stina"—"Rosina" collision off Cape Saunders, the loss of the m.v. "Haere" with all hands on the 28th May, 1947, the collision between the launch "Ionaero" and the vessel "Towerhill" in the Auckland Harbour, the collision between the fishing-vessels "Comet" and "Daisy Bell" in Auckland, the total loss of the fishing-vessel "Cowan" at Lyttelton, the collision of the vessels "Aranui" and "Coronation" in northern waters, and the stranding of the ferry vessel "Ngoiro" in Auckland Harbour towards the end of the year. Broadly speaking, the policy of the Department is to recommend formal Magisterial investigations in cases where (1) any ship is lost or abandoned, (2) any ship is materially damaged, (3) when there is any loss of life, and (4) where serious damage to any ship has been caused by the wrongful acts or default of a certificated officer.

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 main 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. The stock of foreign charts is still very large, a carry-over from the war years, when a very comprehensive stock had to be carried, but as new editions of charts no longer in demand are issued, old copies will be withdrawn and the charts in question deleted from our chart list. The correction to date of all Admiralty charts, which is an important condition of the agency, still continues on a large scale, due to the re-establishment of navigational aids, the clearing of mine-fields, &c. An estimate of the magnitude of the work involved may be appreciated when it is realized that no less than 10,000 hand corrections are made annually. During the year the existing chart of Otago Harbour (No. 2411) was cancelled and replaced by one showing corrections to waterwork at harbour entrance.

A request was made to the Hydrographer, Admiralty, suggesting that two new charts of New Zealand would be of great value to navigators—i.e., one of the North Island, including the Three Kings, and the other of the South Island, including Stewart Island and the Snares. The Hydrographer has agreed to the request and has intimated that the new charts should be completed in about twelve months. The Hydrographer's action is very much appreciated and will earn the grateful thanks of navigators on our coasts. The eleventh edition, 1946, of the "New Zealand Pilot" was published during the year, and copies are on sale at Mercantile Marine offices.

EXAMINATION OF MASTERS AND MATES

Examinations have been held in Auckland and Wellington on statutory days, and on occasions special examinations have been held where candidates from overseas ships are unable to attend on the regular days. The examinations have been conducted in a satisfactory manner and, in case of Foreign-going Certificates, in accordance with the requirements of the Imperial Ministry of Transport. The number of examinations, 140, is an increase of 6 on the figures for last year, and it is to be expected that the normal number will be reached in the near future.

The passes and failures are as follows :—

Foreign-going Certificates—						Per Cent.
Full pass	..	..	..	..	..	54
Partial pass	..	..	..	..	..	30·4
Partial failure	..	..	..	..	..	2·6
Failure	..	..	..	..	..	13
Home-trade Certificates—						
Full pass	..	..	..	..	..	65·1
Partial pass	..	..	..	..	..	20·9
Partial failure	..	..	..	..	..	2·3
Failure	..	..	..	..	..	11·7

Examinations in sight tests during the year amounted to 91, of whom 85 passed.

“NEW ZEALAND NAUTICAL ALMANAC” AND TIDE TABLES

This publication for 1948 (forty-sixth edition) was published in time for circulation before the beginning of the year. In co-operation with the various Harbour Boards, every effort is made to keep the port information and harbour plans up to date and to maintain it during the year by notices to mariners. New plans of Napier, Otago Harbour, Wellington, and Manukau provided by the local Boards appear in this year's edition of the Almanac. This publication is becoming increasingly popular with the general public, so much so that the entire stock was sold out in three months.

RADIO REGULATIONS

The revision of the Radio Regulations for ship installations has been further delayed until the deliberations of the London Conference have been finalized.

COMPASSES

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

AIR-SEA RESCUE SERVICE

An inspection of craft covered by Wellington Control suitable for air-sea rescue service was made by the Supervisor of Small Craft and a representative of the Air Department. Owners of craft were interviewed and arrangements made for requisition should such be necessary. The area covered included Plimmerton, Paekakariki, and New Plymouth on the west coast, and Opotiki, Gisborne, Napier, Wairoa, Cape Turnagain, and Castlepoint on the east coast. The air-sea rescue can be swung into action at short notice should assistance to craft in distress be required.

SMALL CRAFT REGULATIONS

As mentioned in last year's report, the Small Craft Regulations were discussed with yacht clubs. The final draft of the regulations is now almost complete.

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, 59 such notices were issued. Notices of an urgent nature are sent out by radio in the form of a "navigation warning" through the Post and Telegraph coast stations to vessels carrying an operator, and to other vessels through the National Broadcasting Stations. Notices to mariners from the following countries are available for inspection at the main ports: Britain, United States, Canada, Norway, Germany, Sweden, India, Siam, France, and Australia.

COASTAL SURVEY

It is pleasing to note a recent decision of Government to purchase a frigate from Admiralty for setting up under New Zealand Naval Board for continuing the necessary survey of our coast. This will be appreciated by navigating officers, both coastal and foreign-going.

BLUFF - STEWART ISLAND FERRY SERVICE

The G.s.s. "Wairua" continues to perform an excellent service to the Stewart Islanders by trips thrice-weekly in the summer months and twice-weekly in the winter. During the year the old steam plant was dismantled in the vessel and replaced by twin Diesel engines, and at the same time opportunity was taken to improve the accommodation so that, in addition to a satisfactory ferry service, the vessel would be more convenient for the conveyance of mutton-birders to the South Cape Islands and for servicing the lighthouse at Puysegur Point, at the southernmost portion of the west coast. The installation of Diesel engines has enabled the steaming-time on the ferry service to be reduced.

SCHOOLS OF NAVIGATION

The Schools of Navigation at Auckland and Wellington have held classes for all grades of certificates throughout the year, with the exception of a month's break to enable the Directors to have annual leave. It has been realized that, since the schools are catering for a mobile section of the community, every endeavour should be made to keep them continuous throughout the year, and this aspect has been kept in view when making recent appointments to the nautical staff. In future, both schools will remain in session throughout the whole year, and thus students will not suffer interruption to their studies as formerly. Nautical schools differ considerably from Universities and ordinary schools, in so far as there is no commencing date for classes and lectures, students enrolling to suit their own convenience, and usually on completion of their qualifying service. It will therefore be appreciated that the major portion of the teaching is devoted to individual tuition. Both schools are well equipped with textbooks and all the necessary instruments. The Wellington school has been at considerable disadvantage owing to the accommodation shortage, but I am pleased to report that a suitable home has been secured for it at the Ford Buildings, and with the added space, adequate lighting, and location in the centre of the city the efficiency of the school and its well-merited popularity will be enhanced considerably.

During the year the Director of the Auckland school was appointed Nautical Adviser to the Department, and with the schools now under his control the academic side of the seafarers' education will receive every attention. The following students attended during the year :—

		Auckland.	Wellington.	Total.
Master, Foreign-going	.. ..	6	7	13
First Mate, Foreign-going	.. ..	7	7	14
Second Mate, Foreign-going	.. ..	13	12	25
Master, Home Trade	.. ..	9	4	13
Mate, Home Trade	.. ..	6	4	10
25-ton Master	.. ..	2	..	2
Fishing-vessel Master	.. ..	..	2	2
River S.S. Master	.. ..	7	1	8
Yacht Master	.. ..	3	2	5
Vol. Exam. Comp. Deviation	.. ..	..	10	10
Short Course Nav.	.. ..	..	1	1
		53	50	103

It will be observed that there is a balance, more or less, when considering the attendance, and it is hoped that this balance will be preserved to enable the two schools to justify their existence. This can only be achieved by students domiciled in the area south of a New Plymouth—Napier line attending the Wellington school, while those domiciled north of this line should attend at Auckland. It is not the Department's desire to insist that an individual must attend a certain educational institution, but it is only by co-operation in this respect that the retention of two schools can be justified.

AIDS TO NAVIGATION

Good progress has been made with the establishment of the first three of the twenty-three automatic lights which it is intended to erect around our coast at the rate of approximately three units per year : the first three—viz., Slope Point, between Nugget and Waipapapa Points ; Gibson Point, between Lyttelton and Kaikoura : and Motuara Island, at the entrance to Queen Charlotte Sound. In each instance the site has been selected, the equipment ordered, and, in the case of Motuara Island, the new unit will be functioning, it is hoped, within one month from date. It was hoped, during the past year, to have completed the reinstallation of the Fairchild Rock buoy, but conditions beyond the control of the Department have prevented this. It appears that the special moorings for this buoy, which were utilized very properly for war purposes, were disintegrated, and it will now require the procurement of new chain for this work, which is regarded as an urgent matter.

In regard to major lighthouses, it is interesting to note that the reticulation of electric power throughout the two Islands is bringing the main power lines within reasonable distance of several of our watched lights and radio beacons. Opportunity will be taken to electrify these stations direct from the main service, thus economizing in the upkeep of the present watched lights, and in the case of radio beacons thus served, releasing the generating-equipment for use at outlying stations where the general supply will not be available for many years. Preliminary work has been carried out on the establishment of the standard type of beacon for East Cape, Godley Head, Portland Island, Taiaroa Head, Dog Island, and the replacement of the present temporary beacon at Tiritiri. During the year the radio-beacon station at Moko Hinau was taken over from Navy Department and is once again in full operation. The beacon station at Tiritiri Island, for many years operated by the Auckland Harbour Board, has been resumed by the Marine

Department and is in full operation also. The light at Kaipara Heads was relit during the past year and converted from a three-keeper watched light to a one-keeper automatic light. Our staff at lighthouses throughout New Zealand have continued to give satisfactory service throughout the year.

PROSECUTIONS

There were 152 prosecutions instituted by the Department under various statutes. Of these, 135 were concerned with breaches of the Fisheries Act, 1 with the Harbours Act, 1 with the Inspection of Machinery Act, and 15 in reference to the Shipping and Seamen Act. Although, in general, our patrol of fisheries is educational rather than the taking of prosecutions, the fact that prosecutions were taken in 135 cases indicates the total disregard some sections of the community have for regulations which are designed, in the long-run, for the conservation of fish for their benefit. Our fisheries patrol vessels, with faster and more suitable units, have been able to carry out a much better service. The air services have also been utilized, and it is hoped, with the improved models now available, to carry out more efficient work from the air. Part of our fisheries patrol in northern waters is carried out by an H.D.M.L. vessel under control of the New Zealand Navy. This unit has performed splendidly and has been of very great assistance to the Department.

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 £16,765 10s. 10d., as against £17,165 11s. 11d. for the previous year, a decrease of £400 1s. 1d.

REGISTRATION OF SHIPPING

On the 31st December, 1947, there were on the register of vessels in the Dominion 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, as compared with 44 sailing-vessels of 3,541 net tons register, 128 steamers of 61,350 net tons register, and 291 motor-vessels of 20,378 net tons register at the end of the previous year. The number of seamen employed on board was 2,691, as compared with 2,469 for the year 1946.

HARBOURS

The control of the harbours of Westport, Picton, and Dargaville has been the function of the Department. At Picton the duties of the Harbourmaster and his staff have included the servicing of lights in the Cook Strait area and the regular servicing of the Brothers Lighthouse. Opportunity was taken during the year to dispense with the necessity for Harbourmaster at Dargaville. The services usually provided there by the Harbourmaster are now performed by the District Inspector of Fisheries at Te Kopuru.

WESTPORT HARBOUR

It is customary to reiterate in my annual reports on the operation of this harbour that the success or otherwise of such operation, primarily for shipment of coal from the Buller coalfields, is dependent mainly upon satisfactory working depths on the bar at the entrance to the port.

The port itself is located on the Buller River close to its confluence with the Tasman Sea, the mouth of the river being confined and trained by heavy-rock breakwaters or training-walls forming the entrance to the port, and at this confluence the several factors of varying river flow, sea conditions, and ocean currents result in sand movement, which varies depths from even day to day, and such constitute "the bar."

These depths are related to a common datum of "low-water spring tides," and the changing high-water tidal rises—that is, varying according to daily changes between neap and spring tides—results in the "working depths"; all outward (loaded) sailings of vessels being effected on and affected by the high-water depths.

Taken over the year now under review—*i.e.*, 1st April, 1947, to 31st March, 1948—the average for the year of the "month by month" mean of daily high-water depths was 21 ft. 2 in., which average for the year approximated closely to the average over the past six years, but was definitely not as satisfactory as the more favourable average of 22 ft. 2 in. of the immediately preceding year, 1946–47.

Nevertheless, the total coal shipments from the port last year were only slightly less than the shipments during the preceding year,—*viz.*, 382,440 tons, as against 384,800 tons.

The detracting feature in respect to this past year was the very adverse bar condition which was experienced during the concluding month—March—when unusually appreciable shoaling on the bar reduced the depth to the unprecedented low-water depth of 6 ft., resulting in the mean of the high-water depths for the month reaching 16 ft. 6 in. only, as against 21 ft. the previous month and up to 24 ft. for another month during the year, a vast and most unfavourable difference.

It is usual that in the late summer and/or autumn lower depths on the bar are experienced, due to reduced river flow consequent upon less rainfall in the river watershed. Concurrently, more intense south-westerly winds obtain with resultant actuation of ocean drift up the coast which sweeps sand past the mouth of the river, and these two major factors combined seemingly to a greater extent than usual, with the very adverse outcome which I have stated.

Had it not been for that depreciatory circumstance, I would undoubtedly have been in the position to report a favourable improvement in the operations for the year as against the three preceding years. On the other hand, however, certain factors not necessarily governed by adverse condition of the port, such as supply of coal and availability of shipping, have at times affected the shipment output, as the port working-condition over the year as a whole was to some extent better than during some past years, as may be appreciated from the study of tabulations which follow.

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

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

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

During this past year 247 (254) vessels aggregating 185,046 (184,493) tons net register departed from the port, the figures in parentheses being those corresponding for the previous year. “In” and “out” the totals were 491 (508) and 357,355 (368,869) tons.

During the previous year two overseas vessels called at the port for bunker coal, the first since 1944, but again no vessels called within this past year under report.

Shipment of timber from the port, though for some years, as with “inward” cargo, not a major trade factor, continued on the average with 1,262,000 super. feet shipped, compared to 1,229,000 and 1,500,000 super. feet during the preceding years.

In direction of assistance to obtain and hold satisfactory depths on the bar the Department has continued dredging operations, the suction dredger “Eileen Ward” working consistently throughout the year, except during the referred to bad month of March, when the very poor depth on the bar, as well as restricting ship loadings, also greatly restricted operation of the dredger. Nevertheless, the “Eileen Ward” removed from the bar area some 366,400 cubic yards of sand, as against 344,700 the previous year.

In addition, during the earlier part of the year the suction dredger “Rubi Seddon” also lifted 66,000 cubic yards from the bar area. This dredger has only half the capacity of the “Eileen Ward,” is several years older in construction, and as the certificate expired later in the year, with a new boiler required and much structural repairs and strengthening needed, the Department has decided that in relation to the limited effectiveness of the dredger it is not justified to retain the vessel in use, and as at the close of the year the machinery and internal parts had been given lay-up attention and the vessel placed out of commission.

Except for a brief period at the port for overhaul attention, the Department’s bucket dredger “Maui” has continued to operate at Castlecliff, on hire to the Wanganui Harbour Board, clearing heavily silted berths at the wharves at that port. I am able to report that the dredger has since returned to Westport to resume normal work at such port.

Fortunately, the depths at berths for vessels at Westport remained satisfactory and there was not pressing need to recall the dredger from Castlecliff until the work there was satisfactorily completed.

In all, the “Eileen Ward” and the “Rubi Seddon” during the year lifted and disposed at sea 514,400 cubic yards of dredgings—432,700 cubic yards from the bar area and 81,700 cubic yards from the river fairway from the entrance to the wharves. During the preceding year the total dredgings lifted by four dredges (the Greymouth bucket dredge “Mawhera” supplementing the Department’s three dredges for a time) was 643,500 cubic yards.

Port equipment and property has been maintained in satisfactory condition throughout the year. Further new tools have been installed in the workshops, and more and valuable up-to-date machine tools are to hand. Of necessity these will have to be installed in the port's old and inadequate workshops, and full value and use will not become evident until the intended new workshops can be erected.

I referred in my report of last year to the wastage and breaking-away that had occurred in the rock half-tide channel training-wall abreast of the wharves, and that necessary repair work had been put in hand. This work was completed during this past year, and the men who were employed then engaged in the removal of numerous nests of drift logs which over a period had lodged in the channel of the river in the reach extending some distance upstream from the wharves, and, of course, above the actual ship-navigation area.

During the year the Department acquired from the War Assets Realization Board for the purposes of the port one of the 75 ft. steel tugs which were built at Auckland during the war under direction of the Shipbuilding Division of the Department to United States Navy specification. This craft, in effect, replaced the paddle-wheel tug "Mana," which for many years rendered valuable service and which was reduced to "scrap" for war salvage.

Shortly after this new tug became effective as a unit in the equipment of the port it was called to good use in an emergency such as had not arisen at any time previously in the history of the port. The collier s.s. "Kaimiro" outward bound with a cargo of coal inadvertently grounded on the bar in shoal water, and within two hours, on a falling tide, with a tow line aboard the tug in supplementation of the "Kaimiro's" own engine, the vessel was safely away without detriment.

Incidentally, I mention that as a gesture of appreciation by the Department of its late Hon. Minister, just prior to whose death the tug was acquired, the vessel was named "James O'Brien."

In my last report I referred to the setting-up of a committee of New Zealand engineers, under the direction of the Commissioner of Works, for the purpose of analysing several previous recent reports for effecting improvements to the harbour, and in particular with a view to gaining and more effectively maintaining satisfactory working depths on the bar, such committee to bring down final recommendations for consideration as to implementation.

The report of this committee, which comprised Mr. W. L. Newnham, Chairman, and Messrs. F. W. Furkert and J. Wood, each previously in their time Marine Engineer to the Government, has now been received, and is receiving consideration.

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 received endorsement by the committee of engineers.

In conclusion, I wish to refer to the loss to the Department's operating staff during the year of two long-service and valued officers, Captain L. W. Crowe, Senior Dredge-master, and Mr. C. R. Bignell, Mechanical Engineer, both of whom very faithfully served the harbour for thirty years. Captain Crowe retired, whilst unfortunately Mr. Bignell's service was prematurely terminated by his death.

EXAMINATION OF MARINE ENGINEERS

During the year, 364 candidates were examined for Marine Engineer's Certificates of Competency at the various centres throughout the Dominion. Of these, 130 were examined for First- and Second-class Certificates of Imperial validity, 95 were examined for Third-class Marine Certificates, and 30 were examined for First- and Second-class

Coastal Motor Certificates of New Zealand validity. Candidates sitting for First-class Imperial Validity Certificates total 37, of which 11 passed for certificates, 8 passed Part "A," 7 partly passed "A" or "B" sections, and 11 failed.

Candidates sitting for Second-class Imperial Validity Certificates total 93, of which 22 passed for certificates, 8 passed Part "A," 16 partly passed "A" or "B" sections, and 27 failed. Passes for First-class Imperial Validity Certificates issued by the Department were subdivided as follows : 4 Steam, 1 Motor, 1 Steam Endorsement, and 5 Motor Endorsement. Passes for Second-class Imperial Validity Certificates issued by the Department were subdivided as follows : 2 Combined Steam and Motor, 14 Steam, and 6 Motor, totalling 33 certificates, issued as shown in the following table :—

Class.	Combined Steam and Motor.	Steam.	Steam Endorsement.	Motor.	Motor Endorsement.	Total.
First ..	..	4	1	1	5	11
Second ..	2	14	..	6	..	22

Candidates for Third Marine Examination total 95 ; of these 67 passed and 28 failed. Fifty-nine passed at the first attempt, 4 at the second attempt, 3 at the third attempt, and 1 at the fourth attempt. Candidates sitting for the First-class Coastal Motor Certificate total 4, all of which passed at the first attempt. Candidates sitting for Second-class Coastal Motor Certificates total 26, of these 18 passed at the first attempt, 4 at the second attempt, and 4 failed. The remaining 109 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 94 passed and 9 failed for Restricted Limits P.V.O.S. examination.

The report shows that there has been a further increase in the number of candidates desiring Imperial Validity Certificates, although the percentage of passes for these certificates is slightly lower. The Ministry of Transport, London, during the year 1947 increased the standard and scope of the Electro-technology and Naval Architecture Section of Part "B" of both First- and Second-class Examinations. Therefore, to apprise the Principals of schools and colleges coaching such candidates, specimen papers were typed and forwarded to them with notification that the new section would be incorporated in the New Zealand examination as from April, 1948, commencing at Wellington.

SURVEY OF SHIPS

Survey Certificates were issued during the year ended 31st March, 1948, for 6 steam and 8 motor foreign-going ships, 28 steam and 74 motor home-trade ships, and 47 steam and 260 motor restricted-limits ships and launches.

Equipment Certificates were issued for 12 foreign-going, 29 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, 1948, total 465, as compared with a total of 451 for the year ended 31st March, 1947, and 434 for 1946.

Surveys were also made in 280 cases for seaworthiness, efficiency of equipment, tonnage, radio-telegraphy, &c., as against 297 such cases surveyed during the year ended 31st March, 1947, and 247 during 1946. Of these surveys made in 1947-48, 70 were in respect of overseas ships not registered nor normally surveyed in the Dominion.

Shipbuilding and ship-repairing in the Dominion continue at a rate limited only by the materials and skilled labour available. The claims of overseas ships upon the pool of labour and materials and the docking facilities very properly take precedence over

the requirements of new construction and the less important of the coastwise ships. The Central Docking Committee continues to fill a useful part in the allocation of dry-dock accommodation, to ensure the best use of all available facilities. Mute evidence of the world-wide shortage of steel is afforded by the "Wanganella," which, since her salvage from Barret Reef, Wellington, has been idle for twelve months awaiting the new steel plates and sections from the United Kingdom, by which alone the ship can be restored to usefulness. The "Wanganella" was dry-docked at Wellington in January, 1948, for permanent repairs, and it is anticipated that she should be fit to resume in the trans-Tasman service towards the latter part of this year.

The local shipbuilding industry continues to provide a flow of well-built small ships of various classes for the Dominion's harbour and off-shore services. Principal of these ships is a 134 ft. steel ferry motor-vessel under construction at Auckland for a harbour ferry company. She will be propelled by two Diesel engines having a total output of 900 b.h.p. The hull is of all-welded construction embodying methods of fabrication developed in the wartime ship-building programme.

The hull of m.v. "Coromel" has been completed at Auckland and towed to Coromandel for completion. This is an all-welded steel hull 90 ft. in length, on which a superstructure will be built of teak, mahogany, and deal salvaged from the former veteran cruiser H.M.N.Z.S. "Philomel." The "Coromel" will be engaged in the Auckland-Coromandel passenger and cargo service.

The Bluff-Stewart Island ferry steamer "Wairua" has been converted at Port Chalmers from steam to Diesel propulsion and the opportunity taken to modernize and extend the accommodation for both passengers and crew, including the provision of a hospital for the transport of cot cases of sickness from Stewart Island to the mainland. The speed of "Wairua" has been increased, with a consequential important reduction in the average time of crossing of Foveaux Strait, particularly in bad weather. The two sets of Diesel engines, each of 320 b.h.p., which have been installed, together with auxiliary machinery, are surplus war material and are proving satisfactory. There has been forged, by the modernization of "Wairua," a more satisfactory link between Stewart Island and the mainland.

Indigenous timbers, and particularly kauri, for shipbuilding and ship-repairing are still in extremely short supply, and permits for the use of first-class kauri, in particular, are not granted by the Timber Controller except upon the recommendation of the Marine Department. As the total demand for first-class shipbuilding kauri so much exceeds the present and prospective supply, the Department has had no option but to recommend timber permits only for the construction of new vessels and the repair of old vessels intended for or engaged upon essential services.

An important contribution to the Dominion's transportation system is afforded by the many motor-launches carrying passengers and cargo in the sheltered waters along the coasts and on the lakes of New Zealand. The marine petrol-engine hitherto widely used in these vessels is rapidly giving place to the high-speed, light-weight-Diesel engine, mainly by reason of the superiority of the Diesel engine in fuel costs. The low fuel costs of the marine Diesel engine are radically affecting the powering of motor-launches, for, whereas the very high cost of petrol compelled the use of low-power petrol-engines, owners, now not restricted by high petrol costs, are installing Diesel engines developing from two to four times as much power as the displaced petrol-engines. In an extreme case a new engine of 122 b.h.p. was installed to replace an original engine of 10 b.h.p.

The general benefit of increased power will be enhanced safety, by the provision of a reserve of power whereby shelter can be gained more quickly. At the same time, there is no doubt that some vessels recently re-engined have been over-powered, and only a relatively small increase of speed has been achieved for a heavy increase in capital and maintenance charges.

A launch plying with twenty passengers on Lake Okataina was totally destroyed by fire during the year. Due to an unsuspected defect in the engine reversing-gear which caused its intense overheating, adjacent accumulations of petrol vapour and oil were ignited. Fire-extinguishers, which were applied to the fire, were sufficient to damp the fire long enough to permit the vessel to be beached and the passengers and crew safely landed. But for the presence of the fire-extinguishers and their efficient condition and application, it is probable that a serious loss of life would have arisen from this casualty. Fortunately, the gradual decline of the petrol-engine with its highly dangerous fuel is effecting a corresponding reduction of the total fire risk.

It is with satisfaction that the Department reports the year's additions to the Dominion's seagoing merchant fleet. Several notable vessels have been acquired by the Union Steam Ship Co. of New Zealand, Ltd., including the twin-screw motor-vessel "Kamo" of 1,450 gross tons. She is the former German ship "Gaarden," which was allotted to New Zealand as the Dominion's share of German shipping reparations. "Kamo" is technically interesting in that she was built as a German supply ship with twin rudders designed to give her, as a merchant ship, exceptional ability to take evasive action. She was extensively repaired in a United Kingdom shipyard, and is now engaged in the New Zealand coastwise cargo service.

"Wairata," a single-screw motor-vessel of 5,255 gross tons, is an addition to the Union Co.'s New Zealand trans-Pacific service. Built in 1943 in the United States and named "Cape Igvak," this vessel was transferred to the New Zealand register in 1947. To effect transfer of registry, "Wairata" was completely measured at Wellington for British tonnage by the Marine Department. This is so far the largest ship completely measured for tonnage in New Zealand. The crew's accommodation was improved at Wellington to conform to the latest requirements of the Department.

The latest addition to the Union Co.'s fleet is the steamer "Koromiko," which recalls an earlier "Koromiko" celebrated as the only "turret" type ship ever registered in New Zealand. The new "Koromiko" is a steamer about 3,900 tons gross and is a sister ship of and replaces the "Komata," which fell a victim in 1942 to enemy action in the Pacific Ocean and was sunk.

Two modern steam-tugs, "Tapuhi," ex "Empire Shirley," and "Taioma," ex "Empire Jane," recently arrived in New Zealand to take up duty in Wellington Harbour to succeed the Union Steam Ship Co.'s veteran tugs "Terawhiti" and "Natone." Both of the new tugs, built in Aberdeen, are of recent design and burn oil fuel. They provide an important addition to the ship-salvage and general towage facilities available to Wellington and the coast south of Wellington. The steam tug "Terawhiti" was surveyed by the Department for the last time for a voyage to Sydney, to which port she proceeded in December, 1947, there to enter a new period of usefulness. The future of the tug "Natone" has not yet been decided.

In addition to the normal duties of the Ship Survey Branch, the consultative staff attached to the office of the Chief Surveyor of Ships has been occupied with various design projects for the Marine Department and for other Government Departments. The work has included the design of a motor oyster-carrier for the Fisheries Branch to operate in the Auckland oyster area, a combined tug and oyster-tender for Kaipara Harbour, two modern passenger motor-vessels for the Tourist Department's lake services, an inter-Island passenger and cargo motor-vessel for the Island Territories Department converted from a Fairmile patrol vessel, and other various lifeboats, surf-boats, and small craft for the lighthouse tender "Matai" and the dredges and other ships operated by the Marine Department.

Special services have also been rendered by the Ship Survey staffs at Auckland, Wellington, Christchurch, and Dunedin on local Docking Committees, in the valuation of various craft on behalf of the Rehabilitation Department, and generally in affording advice and practical assistance to other Government Departments and to private industry concerned with shipping.

The continued shortage of certificated marine engineers has compelled the Department to issue temporary permits for engineers not holding the requisite Certificates of Competency. Each application for a permit is considered on its merits, and a permit is granted only if the Department is satisfied that the person for whom the permit is required is reasonably experienced and competent. A permit is granted only for a limited period, and is terminable as soon as a duly certificated officer is available. In present circumstances, where more positions afloat exist than certificated men are available to fill them, it is inevitable that the small and, therefore, less-comfortable ships suffer a chronic and acute shortage of properly certificated men. Owners, understanding the reasons for the dearth of engineers for small ships, continue their efforts to improve the amenities of the living-accommodation aboard ship, and a good deal of worth-while improvement in the living-quarters of small ships has resulted from this stimulus of man-power shortage.

It is the invariable policy of the Department to encourage improvements in the hygiene and comfort of officers' and crews' accommodation, which will raise the standard of physical health and morale. These are indispensable factors in any efficient and contented mercantile marine.

International agreement upon safety measures for merchant shipping is at present based upon the International Convention for the Safety of Life at Sea, which was signed in London in 1929. This Convention was given early legislative effect to in most maritime countries, and in New Zealand by the Shipping and Seamen (Safety and Load Line Convention) Act, 1935.

At the request of signatory Powers, the United Kingdom Government has convened a Conference in London which will revise the 1929 Convention for the Safety of Life at Sea. The Conference was planned to open on the 16th April, 1948, which, appropriately enough, is the thirty-sixth anniversary of the loss of the White Star liner "Titanic" by collision with an iceberg in the Atlantic.

The Marine Department, in response to the invitation of the United Kingdom Government, has submitted proposals for the consideration of the 1948 Conference, and delegates comprising representatives of the maritime unions and shipowners, as well as technical officers of the Marine Department, will attend the Conference. In the application of radar to merchant shipping, New Zealand will be represented by Dr. E. Marsden, a former Secretary of the Department of Scientific and Industrial Research, who is now resident in London.

It will be the task of this international Conference to forge in the new Convention an instrument which shall turn to future profit the bitter experience and losses of merchant shipping at sea during the past twenty years. This Convention, if ratified by the maritime Powers, will be the modern charter of safety for all men and ships in all oceans of the world.

INSPECTION OF MACHINERY

STEAM BOILERS, AIR-RECEIVERS, AND OTHER PRESSURE VESSELS

The following statement sets out the number of inspections made during the year ended 31st March, 1948, of fired boilers, air-receivers, and other unfired pressure vessels (Group "A"), and corresponding figures for 1946-47:—

	1947-48.	1946-47.
Fired boilers	4,583	4,593
Air-receivers	4,853	4,154
Other unfired pressure vessels	7,002	6,905
Total inspections in Group "A" ..	16,438	15,652

The inspections include 87 new power boilers, aggregating 1,399 horse-power, manufactured in the Dominion, and 6 new boilers, aggregating 555 horse-power, imported from abroad.

The inspections also include 66 new air-receivers made in the Dominion and 33 made abroad, and 514 new unfired pressure vessels, other than air-receivers, made in the Dominion and 320 made abroad.

By reason of the world shortage of boiler steel, the demand for new boilers cannot be satisfied, and, in consequence, aged boilers which would otherwise be scrapped are of necessity kept in service. Chief of the possible dangerous defects of aged boilers are concealed cracks, which are invisible to ordinary methods of detection. Where a case arises in which a dangerous crack in a boiler-shell plate is suspected, it is the policy of the Department to take the boiler out of service and investigate the matter immediately. It is fortunate that many defects which at first sight indicate dangerous cracks prove, after expert investigation, to be of only minor importance.

It is satisfactory to report that there has been no explosion during the year of any boiler or other pressure vessels subject to statutory inspection.

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, 1948, and the corresponding figures for 1946-47 :—

	1947-48.	1946-47.
Machines driven by steam power in 1,419 plants	7,622	7,234 (1,500 plants)
Machines driven by power other than steam in 11,612 plants	88,136	87,074 (12,159 plants)
Electric-power-supply stations ..	137	138
Lifts	3,536	3,561
Cranes	682	595
Hoists	1,985	1,999
Tractors	297	337
Total inspections in Group " B "	102,395	100,938
Total inspections in Group " A "	16,438	15,652
Grand total of inspections (Groups " A " and " B ") ..	118,833	116,590

There has been again an increase in the total number of inspections, the increase during 1947-48 being 2,243 over the previous year, including 24 power cranes and 21 lifts inspected for the first time, and the revenue from the machinery-inspection service again shows an increase over that for the year ended 31st March, 1947.

Plans of all new boilers, air-receivers, and other unfired pressure vessels and of new cranes and lifts totalling 1,071 units have been examined and approved during the year ended 31st March, 1948.

Industrial power machinery during the year under review has been the cause of a number of accidents involving human life and limb, but, despite the fact of an increase in the total number of machines inspected during the year ended 31st March, 1948, there is a reduction of the incidence of fatal accidents. The figures for machinery accidents for the past year and for the preceding year are given below :—

	1947-48.	1946-47.
Fatal accidents	4	7
Non-fatal accidents	121	107
Total	125	114

Of the fatal accidents, one was caused by the victim, a sawmill worker, being caught by a revolving shaft and fatally injured; the second fatality arose from a workman employed on a gold-dredge being caught between the belting and an elevator roller; the third fatal accident occurred to a man employed about a drag-line winch, the victim being caught between a transmission belt and an engine pulley; and the final fatality was caused by shafting driving a rock-crushing mill, the victim being caught by his clothing. In each of the four cases here reported the victim was alone when he met his death and therefore the precise circumstances attending these accidents can never be known; but it is at least certain that each victim was engaged, at the moment of the accident, on some task adjacent to running machinery which it was highly dangerous to engage in whilst the machinery was in motion. Improvement of the existing safety arrangements has been effected in each case.

In the category of non-fatal machinery accidents many of the victims suffered injuries to fingers, hands, and arms. Of these, five cases involved the loss of an entire hand at wrist. The problems associated with the prevention of fingers and hands being injured by rollers, cutters, conveyors, punches, &c., are often complex and admit of no fully effective solution. The Department made inquiries this year overseas into the present state of the application of the photo-electric cell ray to machine guards, and would have been prepared to approve the use of the photo-electric ray had experience elsewhere been satisfactory. This method, whilst seeming to hold out attractive possibilities, has not yet proved itself the equal of other methods of guarding.

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, 1947-48

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	18	..	1	..	2	..	..	..	..	..	21	1	20
Planers	5	..	..	..	1	..	..	..	..	..	6	..	6
Shapers	7	..	..	..	..	..	..	..	..	..	7	..	7
Power press	..	..	..	2	8	..	..	..	2	3	15	..	15
Guillotines	..	..	..	..	3	..	..	..	..	..	3	..	3
Laundry machinery	..	..	..	..	..	2	..	..	..	..	2	..	2
Cranes and hoists	..	..	..	..	..	..	..	..	1	1	1	..	1
Lifts	..	..	..	1	..	..	..	..	..	1	2	..	2
Belting	1	..	..	..	1	..	..	..	..	3	5	1	4
Shafting	1	..	..	..	..	..	1	..	1	5	8	1	7
Gearing	..	..	2	1	2	1	..	2	..	2	10	..	10
Mincers and other cutting-machines	..	1	2	..	..	..	3	..	..	2	8	..	8
Other	3	3	2	1	6	..	1	5	1	15	37	1	36
Total accidents	35	4	7	5	23	3	5	7	4	32	125	4	121

GENERAL HARBOUR REGULATIONS

For the year ended 31st March, 1948, 327 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 3 of the accidents were fatal. The number of accidents for the previous year ended 31st March, 1947, was 348, of which 5 were fatal.

Of the 3 fatal accidents reported during 1947–48, one was caused by the slipping of a watersider on a ship's deck and falling heavily on his head; another death resulted from the victim being crushed by a power pole which, when being unloaded, fell out of control, due to a defective winch clutch slipping out of engagement; and the third accident, one of an unusual character, occurred on Bluff Harbour tug "Awarua," and it encompassed the death of a workman employed on board making repairs. The victim in the latter case incorrectly connected the cable of an electric grinder and thereby received an electric shock. As a result of the shock he overbalanced and fell down the engine-room, sustaining fatal injuries.

The following is an analysis of the accidents, and their causes:—

Handling goods	108
Persons slipping or falling	47
Persons struck by swinging or falling loads	105
Persons stepping on or striking fixed objects	19
Contact with power-driven machinery	..
Failure of gear	18
Not otherwise classified	30
Total	327

Cargo gear of ships registered in New Zealand has been maintained in a safe condition throughout the year and no serious accident arising from the failure of an important component of any New Zealand ship's cargo gear has been reported.

It is observed, however, that the general condition of the cargo gear of some ships registered at overseas ports and trading to New Zealand has been below the pre-war standard. In one case two steel cargo derricks, originally $\frac{3}{8}$ inch thick, had corroded completely through over a small area. One derrick collapsed when lifting a load of about 15 cwt., although it had been certified as sound for 5 tons a few months previously at a United Kingdom port. The temporary deterioration of the standard of maintenance can be attributed to the vast arrears of repairs and replacements which confront and hamper British shipping and, indeed, all branches of the British transport system during these early post-war years. Cargo gear fitted to British ships built for the New Zealand trade since 1945 is excellent, and the now generally adopted electric winches ensure silent and safe operation, and the reduction in the noise level of cargo-working definitely reduces industrial fatigue. Attention has also been given in some new ships to providing shelter for winch-drivers and safer and more convenient types of hatch-covers.

Chains used for cargo gear, and particularly chain slings, are subject to shock loading. For many years it has been the accepted practice the world over to require such chains to be made of wrought iron with forge-welded links. During the past decade or so chains made of mild steel with electric-resistance butt-welded links have been used for general purposes. Experience with this mild-steel chain is not yet extensive in New Zealand, but no unfavourable reports have come to hand of the small quantity for which provisional approval has been given by the Department. The reliability of mild-steel chain depends upon the percentages of carbon, sulphur, and phosphorus content of the steel being controlled strictly within the maxima specified. Due to the scarcity both of wrought iron and skilled chain-smiths, it is probable that hand-welded wrought-iron chains will be gradually superseded by machine-made electrically welded mild-steel

chains. The Department's Safe Working Loads Regulations require wrought-iron chains to be periodically annealed to remove surface hardening and brittleness. On the other hand, similar annealing of mild-steel chain is definitely harmful to the metallurgical structure of mild steel and is therefore prohibited by the Department. Where both wrought-iron and mild-steel chains are used together, an efficient record of all chains must be maintained to avoid mistakes in heat-treatment.

NEW ZEALAND STANDARDS INSTITUTE

The Marine Department has been actively represented during the year under review on the Mechanical Engineering Divisional Committee and the Executive Committee of the New Zealand Standards Institute, and, in addition, much work has been contributed on sub-committees to the formulation and approval of new Standard Specifications covering a wide range of engineering and ancillary items. Work of particular value in the interest of safety in transportation was initiated by the Dangerous Goods Marking Committee, on which the Marine Department was represented. The problems of establishing a New Zealand Code of Marking of Dangerous Goods is no easy one.

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, 1948, the candidates who presented themselves for examination totalled 621; of these, 509 passed and 112 failed, as compared with 611 successful candidates and 94 failures of the previous year. The total number of the candidates who presented themselves for examination during 1947-48 is approximately 12 per cent. less than that of the preceding year. Many ex-servicemen were examined during the year.

In addition to the 509 certificates issued in 1947-48 to successful candidates, 149 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 1946-47, is given hereunder:—

Class.		1947-48.	1946-47.
Service—			
First-class Engine-driver	.. ..	2	3
Cable-tram driver	.. ..	34	..
Competency—			
Extra First-class Stationary Engineer	.. ..	..	..
First-class Engine-driver	.. ..	45	43
Second-class Engine-driver	.. ..	256	259
Locomotive and Traction	.. ..	84	89
Locomotive-engine Driver	.. ..	6	7
Traction-engine Driver	.. ..	11	7
Electric-tram Driver	.. ..	185	313
Electric-tram Driver (One-man Car)	.. ..	8	10
Cable-tram Driver	.. ..	26	3
Steam-winding-engine Driver	.. ..	..	1
Electric-winding-engine Driver	.. ..	1	1
		658	736

Appended to this report is a statement of the number of candidates examined at each examination centre for the year ended 31st March, 1948, showing the number of successful and unsuccessful candidates.

There is a general shortage of certificated engine-drivers, and difficulty arises in obtaining certificated engine-drivers for certain steam plants, particularly those situated in isolated back-country districts. The Department has met the shortage by granting temporary permits to uncertificated engine-drivers whose competency to take charge is vouched for by the district Inspectors of Machinery as a result of private inquiry and personal interview and in consultation with local Engine-drivers' Union officials. It is indicative of the short supply of certificated engine-drivers in a manufacturing town, and the public-spirited willingness of the citizens to do something to relieve the shortage, to cite a case of a Justice of the Peace, a retired iron-worker, aged seventy-two, who successfully presented himself this year for the examination for a Second-class Engine-driver's Certificate with the object of acting as a temporary engine-driver whilst permanent engine-drivers are absent on holiday leave.

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

These examinations were held during the year at the various offices of the Inspectors of Machinery throughout the Dominion at the regular intervals provided for in the regulations. In addition, 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 arrange that they may 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 classes of certificates for which examinations are held are :—

- Extra First-class Stationary Engineer.
- First-class Engine-driver.
- Second-class Engine-driver.
- Steam-winding-engine Driver.
- Electric-winding-engine Driver.
- Locomotive-engine Driver.
- Traction-engine Driver.
- Locomotive- and Traction-engine Driver.
- Electric-tram Driver.
- Electric-tram Driver (One-man Car).
- Cable-tram Driver.

The total number of candidates examined was 621. Of this number, 509 were successful and 112 failed in their examinations. Six hundred and fifty-eight certificates were issued, which includes 509 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.

STAFF

The Department has been inconvenienced, as in the case of most other Government Departments, by the shortage of trained personnel, particularly typists. The organization and management of the Department has been carefully watched and advantage taken of any improvement in organization which could cut down the work of the staff commensurate with the full functioning of the Department and the providing of the requisite services to the public. During the year the Nautical Adviser to the Department, Captain W. Whiteford, retired on superannuation, his post being assumed by Captain W. W. Stuart. Captain G. P. Evans, Superintendent of Mercantile Marine at Lyttelton, has also retired on superannuation, likewise Captain A. Davies, who occupied a similar position at Auckland and who carried out many war duties in addition to his usual responsibilities. Mr. C. W. Peterson, Chief Engineer of the Government vessel " Matai " for a great number of years, has also retired on superannuation. To all these officers go the best wishes of the Marine Department staff for their enjoyment of health and prosperity for the rest of their years.

FISHERIES

An abridged report on 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, 1948

Attention is drawn to the fact that all fisheries statistical data in this report is for the calendar year ended 31st December, 1947.

The estimated total quantity and value of the principal classes of fishery products marketed in the year 1947 are as follows:—

				Quantity.	Value. £
Wet fish	..	..	..	438,300 cwt.	802,496
Whitebait	..	..	..	7,056 cwt.	79,027
Oysters—					
Dredged	..	..	..	81,518 sacks	61,138
Rock	..	..	..	5,280 sacks	9,240
Mussels	..	..	..	16,261 sacks	5,563
Crayfish	..	..	..	18,052 cwt.	42,134
Toheroa (canned products)	..	..	..	43,400 lb.	2,871
Whale-oil	..	..	..	640 tons	25,000
Total values	..	..	..		<u>£1,027,469</u>

The detailed landings are summarized in Tables I to IX (pp. 36 to 46).

The total landings of wet fish show an increase of 57,979 cwt. over the previous year's total of 380,321 cwt., while the total value has increased by £142,400. The quantity of oysters dredged from Foveaux Strait has decreased by 7,838 sacks, but there is a slight increase of 177 sacks of rock oysters. The crayfish total is up by 1,286 cwt., and the quantity of mussels is up by 5,693 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. £
1934-35	..	..	..	331,415	294,267
1935-36	..	..	..	363,448	313,106
1936-37	..	..	..	363,128	360,406
1937-38	..	..	..	355,687	413,516
1938-39	..	..	..	356,114	424,643
1939-40	..	..	..	339,231	416,480
1940-41	..	..	..	328,594	440,308
1941-42	..	..	..	326,863	458,393
1942-43	..	..	..	311,971	442,976
1943-44	..	..	..	294,445	489,268
1944	..	..	..	308,237	522,954
1945	..	..	..	331,773	558,404
1946	..	..	..	380,321	660,096
1947	..	..	..	438,300	802,496

The total weight of wet fish, 438,300 cwt., is the highest recorded total and represents a continuation of the rise shown last year. It is the cumulative result of the three principal factors listed last year—viz., (1) the return of several large catching units after war service; (2) re-engining and replacement of many vessels after the war; (3) exceptionally fine weather prevailing in most of the fishing-grounds, especially during the period of seasonal congregation of some of the more important types of fish, coupled with the comparative rest period imposed by the war years. It is a result that was expected and is a normal reaction in a fishing industry at this phase of getting into its stride after war years. The same result has been shown in other fishing-grounds elsewhere, and in some cases the peak has been reached in a much shorter period.

FISHING-VESSELS AND PERSONNEL

The number of licensed fishing-vessels operating in 1947 was 758, a reduction of 39 units, but this is offset by the fact that the catching-power of some of the remaining units has been increased. 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 :—

Kind or Class of Fish.	Quantity.				Value.			
	Cwt.		Percentage of Total.		£		Percentage of Total.	
	1947.	1946.	1947.	1946.	1947.	1946.	1947.	1946.
Snapper	129,482	116,832	29.54	30.72	180,553	158,973	22.50	24.08
Tarakihi	91,692	77,927	20.92	20.49	157,723	127,589	19.65	19.33
Hapuku	32,154	27,522	7.34	7.24	101,815	82,156	12.68	12.45
Blue cod	29,513	21,036	6.73	5.53	74,459	51,366	9.27	7.78
Sole	25,354	22,434	5.78	5.90	76,276	65,558	9.50	9.93
Gurnard	21,291	24,168	4.86	6.36	21,294	25,003	2.64	3.79
Flounder	19,723	14,442	4.50	3.80	63,045	47,010	7.85	7.12
Barracouta	16,670	11,440	3.80	3.01	8,117	6,999	1.01	1.06
Ling	15,683	11,584	3.58	3.05	34,900	25,317	4.35	3.84
“Mixed rounds”	11,330	7,478	2.58	1.97	11,200	8,467	1.39	1.28
Red cod	8,212	9,796	1.87	2.58	7,833	8,754	0.97	1.33
Trevally	6,969	6,819	1.59	1.80	6,115	6,075	0.76	0.92
“Mixed flats”	4,790	1,873	1.09	0.49	17,356	6,097	2.16	0.92
Elephant-fish	3,718	4,639	0.85	1.22	7,185	8,266	0.90	1.25
Pioki	3,522	2,247	0.80	0.59	4,422	2,851	0.55	0.43
Mullet	2,967	2,786	0.68	0.73	4,386	4,026	0.55	0.61
Hake	2,554	1,737	0.58	0.46	7,484	4,909	0.98	0.74
Butterfish	1,896	1,920	0.43	0.50	5,351	5,040	0.67	0.76
Moki	1,763	1,975	0.40	0.52	3,104	3,536	0.39	0.54
Herring	1,326	1,307	0.30	0.35	1,049	994	0.13	0.15
Kahawai	1,160	2,092	0.27	0.55	951	1,743	0.12	0.27
Swordfish	1,131	449	0.26	0.12	1,100	483	0.14	0.07
Shark	1,129	2,041	0.26	0.54	1,311	2,181	0.16	0.33
John-dory	965	730	0.22	0.19	1,387	1,020	0.17	0.16
Parori	621	1,574	0.14	0.41	393	1,212	0.05	0.18
Warehou	613	443	0.14	0.12	1,238	931	0.15	0.14
Whiting	377	316	0.09	0.08	264	223	0.03	0.03
Mackerel	350	195	0.09	0.05	302	201	0.04	0.03
Kingfish	295	330	0.07	0.09	413	387	0.05	0.06
Whiptail	267	289	0.06	0.07	234	352	0.03	0.05
Trumpeter	248	310	0.06	0.08	694	872	0.09	0.13
Conger-eel	199	173	0.05	0.04	148	135	0.02	0.02
Sardine	97	1,197	0.02	0.31	90	988	0.01	0.15
Frost-fish	69	4	0.02	..	53	4	0.01	..
Skate	50	70	0.01	0.02	41	56	0.01	0.01
Perch	49	50	0.01	0.01	33	42	0.01	0.01
Garfish	43	49	0.01	0.01	113	168	0.01	0.03
Maomao	11	10	..	..	16	13	..	..
Brill	10	20	..	..	30	56	..	0.01
Bonita	7	17	..	..	18	43	..	0.01
Totals	438,300	380,321	..	..	802,496	660,096	..	..

METHODS OF CAPTURE

Of the total catch (438,300 cwt.), 93,721 cwt. (21·38 per cent.) was landed from steam-trawlers, 110,933 cwt. (25·31 per cent.) from motor-trawlers, 96,715 cwt. (22·07 per cent.) from Danish-seine boats, while motor-vessels (line and net fishing) accounted for 134,288 cwt. (30·64 per cent.) and row-boats 2,643 cwt. (0·60 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 1946 quantities and values):—

Method of Fishing.	Quantity.		Value.	
	Cwt.	Percentage of Total.	£	Percentage of Total.
Trawl ..	204,654 (159,431)	46·69 (41·92)	376,738 (286,908)	46·95 (43·46)
Danish seine ..	96,715 (103,203)	22·07 (27·14)	131,915 (133,191)	16·44 (20·18)
Long and hand lines	102,452 (84,006)	23·37 (22·09)	231,397 (184,450)	28·83 (27·94)
Set and drag nets	34,479 (33,681)	7·87 (8·85)	62,446 (55,547)	7·78 (8·42)
Totals..	438,300 (380,321)	..	802,496 (660,096)	..

LANDINGS AT PORTS

Of the total quantity of wet fish, 32·47 per cent. was landed at Auckland, 10·23 per cent. at Port Chalmers, 10·11 per cent. at Wellington, 5·37 per cent. at Napier, 4·84 per cent. at Timaru, 4·45 per cent. at Bluff and Stewart Island, and 3·97 per cent. at Lyttelton.

In the following statement the total weights and values are given for some of the main ports alongside those for the previous two years, 1946 and 1945:—

Port.	Quantity.			Value.		
	1945.	1946.	1947.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	£	£	£
Russell	4,194	5,032	4,115	5,093	6,027	5,751
Whangarei	1,766	2,325	1,930	2,264	2,886	2,928
Auckland	122,789	141,406	142,304	156,979	179,341	186,504
Thames district	17,245	10,824	13,035	25,746	17,589	22,200
Tauranga district	7,459	6,416	7,086	7,745	7,853	9,178
Gisborne	8,236	10,052	10,926	9,160	13,309	17,356
Napier	19,194	22,249	23,525	29,186	36,979	46,099
Wellington	31,554	39,744	44,291	63,445	87,462	96,784
Manukau Harbour	1,229	1,215	1,401	2,217	2,426	2,607
Pictou	4,358	4,913	3,774	8,522	9,616	9,225
Lyttelton	11,430	15,400	17,387	26,764	33,670	37,695
Timaru	11,386	21,223	21,216	33,106	49,870	55,016
Moeraki	2,017	1,964	2,499	5,551	4,870	7,193
Nuggets district	4,250	4,565	6,177	10,969	12,945	17,480
Port Chalmers	25,533	23,250	44,849	36,225	36,853	70,583
Waikawa	2,610	2,964	4,456	6,757	8,371	12,759
Bluff, with Stewart Island	13,649	15,161	19,523	32,802	38,571	50,624
Westport	738	527	2,346	2,103	1,416	5,856
Motueka	1,097	1,653	4,918	1,979	2,691	7,310
Nelson	6,372	7,078	10,040	13,603	14,194	19,429
French Pass	3,278	2,749	3,293	9,188	7,143	9,174
Chatham Islands	2,078	3,586	5,565	1,868	3,278	6,948

Auckland.—A total of 142,304 cwt. of wet fish was landed at Auckland. This represents a very slight increase of 898 cwt. over the 1946 total of 141,406 cwt. The 37 Danish-seine boats accounted for almost two-thirds of the total, their catch being 90,824 cwt., which was a slight drop from their total last year of 96,990 cwt. The proportion of snapper landed by this method was very close to that of last year, the weight this year being 67,757 cwt., and last year 70,964 cwt. Two steam-trawlers operated the whole year, and a third commenced fishing in September. These three vessels landed a total amount of 45,309 cwt. Last year, with only two steam-trawlers operating, the total amount landed was 36,964 cwt. Motor line-fishing boats landed 2,998 cwt., compared with 3,097 cwt. for the previous year, and the netting boats 3,050 cwt., compared with 4,125 cwt. in 1946.

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

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	103,882	111,078	122,789	141,406	142,304
Snapper	75,153	79,844	81,706	93,792	101,470
Tarakihi	12,128	18,289	23,965	27,788	22,285
Flounder	5,489	1,857	2,047	1,457	3,036
Gurnard	1,361	3,206	5,570	7,370	6,199

Thames.—The total this year, 13,035 cwt., shows recovery from the declining totals since 1944, the increase this year being 2,211 cwt. over last year's figure. Netting boats landed 12,152 cwt., of which 5,030 cwt. was snapper and 4,307 cwt. flounder.

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

Method of Fishing.	1943-44.	1944.	1945.	1946.	1947.
Danish seine	2,229	1,273	582	..	..
Set-nets and drag-nets	15,545	18,361	16,483	9,552	12,152
Other methods	528	57	180	1,272	883
Totals	18,302	19,691	17,245	10,824	13,035

Tauranga.—An increase of 670 cwt. is shown by this year's total (7,086 cwt.) compared with 1946 (6,416 cwt.). The one Danish-seine vessel fished for nine months and landed 1,526 cwt., as against 364 cwt. for four months' fishing last year. The total catch for motor-trawlers decreased from 2,579 to 1,817 cwt.

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

Method of Fishing.	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Danish seine	2,518	2,907	418	364	1,526
Motor-trawl	..	..	1,783	2,579	1,817
Set-nets and lines	7,028	7,578	5,258	3,473	3,743
Totals	9,546	10,485	7,459	6,416	7,086
—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	9,546	10,485	7,459	6,416	7,086
Snapper	4,032	4,152	2,513	1,459	2,021
Tarakihi	29	1,057	1,289	1,917	1,998
Trevally	1,826	2,509	1,219	1,091	777
Kahawai	649	732	1,070	1,020	681

Gisborne.—Although the steam-trawler at this port did not operate during this year, the total catch showed an increase of 874 cwt. This continues the steady increase in the quantity of fish landed at Gisborne during the previous four years. This rise is clearly shown in the table below :—

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	5,275	7,703	8,236	10,052	10,926
Tarakihi	3,138	5,641	6,308	7,547	6,864
Gurnard	607	1,244	1,167	1,549	1,444
Hapuku	309	289	359	358	775

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 (23,525 cwt.), 20,947 cwt. was caught by motor-trawlers. Last year the total for this method was 19,225 cwt. The one Danish-seine boat fished for eleven months and landed 2,001 cwt., showing a decrease of 627 cwt. on last year's total for the same period of fishing.

Motor line and net vessels landed a total of 577 cwt., of which 339 cwt. (331 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 this method on local grounds therefore shows a further marked decrease, the decrease being from 1,509 cwt. in 1945 to 342 cwt. in 1946 and to 238 cwt. in 1947.

The annual landings at Napier over the last five years are given below :

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	16,615	17,865	19,194	22,249	23,525
Tarakihi	4,931	8,966	9,744	11,489	16,201
Sole	914	1,710	1,036	2,746	1,297
Hapuku	861	986	1,443	378	715
Gurnard	4,263	4,621	5,362	5,994	4,180

Wellington.—The total quantity landed at Wellington increased again this year from 39,744 cwt. in 1946 to 44,291 cwt. for 1947, an increase of 4,547 cwt. The total amount landed by steam-trawlers shows a slight increase, in spite of the fact that one of these vessels stranded on 19th March and subsequently became a total loss. During 1946, steam-trawlers landed 25,237 cwt., and during this year landed 25,544 cwt. Of this, tarakihi comprised 21,324 cwt. Three motor-trawlers landed at this port during 1947, in comparison with one during 1946. As a result, the catch for this method increased from 1,532 cwt. for 1946 to 3,243 cwt. for 1947. The Island Bay line-fishing fleet again increased their total catch; in 1946 their total catch was 12,277 cwt., and this year 14,711 cwt., an increase of 2,434 cwt. Out of the total of 14,711 cwt. caught by these line boats, 7,774 cwt. was hapuku and 5,255 cwt. ling. The netting boats increased their catch from 683 cwt. last year to 783 cwt. this year.

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

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	14,775	14,019	31,554	39,744	44,291
Tarakihi	855	999	16,857	21,204	22,455
Hapuku	6,924	6,714	5,403	7,132	8,617
Ling	2,217	2,761	3,208	4,046	5,420

Lyttelton.—The total catch landed was 17,387 cwt., which is an increase of 1,987 cwt. on the total for last year (15,400 cwt.). Motor-trawlers accounted for 13,542 cwt. and the one steam-trawler landed 3,421 cwt. Line boats landed a total of 74 cwt. and netting boats a total of 350 cwt.

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

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	14,050	16,221	11,430	15,400	17,387
Tarakihi	4,614	6,202	4,840	7,094	8,895
Ling	864	1,556	1,447	2,133	2,278
Elephant-fish	2,862	2,611	1,632	1,805	1,413
Gurnard	2,383	2,537	1,203	1,269	1,105
Red cod	451	191	46	200	424

Timaru.—This year's totals differ very little from those of last year, but there are some variations in the amounts of the various types of fish landed. This fact is shown in the first table below. The second table gives the total amounts caught by the various methods over the last five years :—

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	15,898	13,022	11,386	21,223	21,216
Red cod	1,672	919	432	3,823	2,630
Ling	2,887	1,568	1,047	3,136	3,817
Gurnard	2,634	2,265	1,879	2,946	2,051
Hapuku	1,897	1,635	1,275	2,796	2,560
Elephant-fish	1,149	1,795	2,155	2,445	1,714
Flounder	2,209	1,600	1,819	2,367	4,318
Sole	2,511	2,278	1,903	2,571	2,652

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	15,898	13,022	11,386	21,223	21,216
Motor-trawling	8,517	8,142	7,880	15,794	15,785
Danish-seining	2,508	1,804	1,292	..	..
Line-fishing (motor-vessels) ..	4,873	3,076	2,214	5,429	5,431

Port Chalmers.—The total amount of fish landed during 1947 at Port Chalmers is almost double that of last year, the two amounts being 23,250 cwt. for 1946 and 44,849 cwt. for 1947. This increase is largely accounted for by the fact that a modern steam-trawler commenced fishing from this port in February and landed 14,670 cwt. for the year. The motor-trawl total is up from 14,326 cwt. last year to 16,863 cwt. this year. The line boats also show an increase from 8,825 cwt. to 13,264 cwt.

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

—	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	21,523	23,264	25,533	23,250	44,849
Tarakihi	3,361	3,166	173	81	9,977
Sole	4,114	4,993	6,282	8,366	10,963
Red cod	4,501	4,033	7,605	3,846	2,536
Barracouta	5,157	6,309	7,502	8,171	13,938
Flounder	885	1,163	1,366	745	1,062

Nelson.—The total quantity landed, 10,040 cwt., shows an increase again this year. Of this total, that landed by Danish-seining, 2,098 cwt., shows a drop of 550 cwt., due probably to the fact that only two of the four Danish-seiners fished by that method for the whole year, the other two changed to trawling during the year.

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

	1943-44.	1944.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Total quantity landed	3,833	5,541	6,372	7,078	10,040
Danish seine	3,250	2,714	3,081	2,648	2,098
Trawl (motor)	93	878	1,888	3,260	7,574
Lines (motor)	475	1,936	1,138	1,043	363
Other methods	15	13	265	127	5

EXPORTS AND IMPORTS

Imports of fish for the year amounted to 32,160 cwt. of canned fish such as herring and 2,615 cwt. of fish otherwise preserved, with a total value of £387,309.

The total value of New Zealand fish and shell-fish exported in 1947 was £358,218, which represents an increase of £126,984 on the previous year's figures of £231,234.

Totals for the principal classes of fishery products exported for the past three years are given below :—

	Quantity.			Value.		
	1945.	1946.	1947.	1945.	1946.	1947.
				£	£	£
Oysters, fresh	640 doz.	85,400 doz.	950 doz.	18	2,819	27
Fish, frozen	22,663 cwt.	27,698 cwt.	41,800 cwt.	104,046	139,065	235,079
Crayfish, frozen	1,346 cwt.	1,487 cwt.	2,335 cwt.	6,462	7,455	17,140
Fish, smoked, dried, &c. ..	4,276 cwt.	2,602 cwt.	4,384 cwt.	26,390	15,277	27,533
Fish and shell-fish (canned)	371,776 lb.	450,044 lb.	649,565 lb.	50,465	66,618	78,439
Total values	..	..	..	187,381	231,234	358,218

The following table shows the incidence of the principal kinds of fish exported during the years 1945, 1946, and 1947 :—

Fish.	Quantity.			Value.		
	1945.	1946.	1947.	1945.	1946.	1947.
	Cwt.	Cwt.	Cwt.	£	£	£
Blue cod	7,644	8,236	15,311	38,682	42,605	91,251
Red cod	3,255	1,407	574	3,255	4,518	3,049
Barracouta	2,369	4,825	3,354	8,883	18,164	13,221
Sole	2,207	3,334	4,243	11,452	17,974	25,204
Tarakihi	1,037	1,886	5,819	4,895	10,740	33,302
Flounder	947	901	754	5,374	5,308	4,801
Snapper	752	844	2,797	4,244	5,584	17,113

A more detailed report than the above figures is given in Table IX.

SARDINES

The landings of sardines at Picton again showed a decline over the previous year's figures.

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

	Cwt.
1947	97
1946	1,191
1945	1,458
1944	4,281
1943-44	5,339

FISH-LIVER OIL

This branch of the industry again showed a steady increase. The fish livers treated, 698,383 lb., an increase of 27,719 lb., and fish-liver oil produced, 30,427 gallons, an increase of 504 gallons.

A total of 27,025 gallons of fish-liver oils was exported, an increase of 7,804 gallons over last year.

WHALING

Four vessels with a total complement of ten men were engaged in the whale-fishing based on Marlborough Sounds and fourteen men were employed ashore at the whale-factory. A total catch of 111 whales was taken, 101 of which were humpbacks, 9 sperms, and 1 blue whale. They yielded 640 tons of oil, 100 tons of bonedust, and 45 tons of whale-meat (canned).

Whaling commenced very early, the first whale being taken on 11th May, and the last one on the 6th August. July again was the month in which most whales were taken.

A feature of the season was that all whales were below the usual size and in poor condition, with the exception of the blue whale.

SEALS

There was no open season for the taking of seals this year. Two scientific expeditions made to the seal colonies covered most of the known haunts of seals. Primarily the purpose of these visits was to gain information on the composition and population of the seal colonies and to study the breeding habits and factors limiting the population level. This work is to be continued as opportunity occurs.

ROCK-OYSTERS

A total of 5,280 sacks was picked. Picking started on the 28th May and finished on 13th August.

The yield of oysters in sacks from each of the various areas was as follows: Bay of Islands, 2,385; Whangarei Harbour, 210; Coromandel, 370; Great Barrier Island, 328; Hauraki Gulf, 1,987.

The quantities from Hauraki Gulf were obtained from the following areas: Brown's Island, 133; Motutapu, 116; Waiheke Island, 351; Ponui Island, 455; Rotoroa, 147; Pakatoa, 95; Rangitoto, 610; Pakihi Island, 17; South Shore, 63.

Area. *Oyster-cultivation for the Year ended 31st March, 1948*

- I. Bay of Islands: 403,000 borers and 3,350 pupu destroyed, 192 square yards of rock cleared of weeds. Cost, £99 5s. 4d.
- II. Whangarei Harbour: 80,700 borers and 152 pupu destroyed, 9 square yards of rock cleared of dead shell, 31 square yards cleared of grape weed, and 133 square yards of high-water rock moved to lower level. Cost, £42 9s. 6d.
- IV. Takatu Point to Gull Point: 38,000 borers destroyed and 80 square yards of rock cleared of dead shell. Cost, £3 12s. 6d.
- V. South Shore: 14,000 borers destroyed. No cost.
- VIII. Rakino: 51,000 borers destroyed. Cost, £1 9s.
- X. Motutapu: 116,000 borers and 28 pupu destroyed, 43 square yards of rock cleared of dead shell. Cost, £2 16s.
- XIII. Waiheke: 922,000 borers and 194 pupu destroyed, 1,106 square yards of rock cleared of dead shell, and 83 square yards cleared of grape weed. Cost, £21 12s. 3d.
- XIV. Ponui: 468,100 borers and 60 pupu destroyed, 352 square yards of rock cleared of dead shell, and 421 square yards cleared of grape weed. Cost, £11 11s. 3d.
- XVI. Great Barrier: 804,000 borers and 333 pupu destroyed, 6 square yards of rock cleared of dead shell. Cost, £102 0s. 10d.

Total for all areas: 2,896,800 borers and 4,117 pupu destroyed, 1,596 square yards of rock cleared of dead shell, 192 square yards cleared of weeds, 535 square yards cleared of grape weed, and 133 square yards of rock at high water moved to a lower level. Cost, £284 16s. 8d.

DREDGE OYSTERS: FOVEAUX STRAIT, 1947

The total catch of 81,518 sacks shows a decrease of 7,838 sacks on last year's total. Of the total catch, two-thirds were taken from the East and Ruapuke Grounds. The condition of all catches landed up till August was good, but from then on they became poor as the oysters began to show signs of spawning. One vessel was under overhaul throughout most of the season having new engines fitted.

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

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

TOHEROAS

The recovery of the toheroa beds on Ninety-mile Beach from the mortality of several years ago is disappointingly slow.

A detailed survey of the toheroa stocks on Muriwai Beach formed part of the general programme of maintaining a close watch on the welfare of this fishery.

Particular attention was paid to the northern half of the beach, where the stocks are heaviest. In the course of this work over 12,000 toheroa were measured and grouped according to size. The result indicated that, while the stock was in a healthy condition with a balanced proportion of growing sizes, it was nevertheless insufficient to permit of commercial exploitation.

MUSSELS

The catch of mussels in the Thames-Coromandel-Auckland area showed a rise this year as compared with last year's figure. The grounds are still holding well, though on two occasions the quality of the mussels varied somewhat, but have picked up again now.

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

	1943-44.	1944.	1945.	1946.	1947.
	Sacks.	Sacks.	Sacks.	Sacks.	Sacks.
Total quantity landed	16,741	15,390	13,156	10,568	16,261

WHITEBAIT FISHERY, 1947 SEASON

The table given below summarizes the information obtained from the principal whitebait-fishing centres for the 1947 season:—

Whitebait Fishery, 1947 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, Paeroa	Sept. ..	127	70	887
Bay of Plenty ..	Kaituna, Tarawera, Rangitaiki	Aug.-Sept. ..	8	54	115
Hawke's Bay ..	Tukituki, Ngaruroro	Oct. ..	50	50	22
Wairarapa ..	Lake Onoke	Oct. ..	4	10	4
Wellington ..	Waikanae, Wainmha, Mangone, Otaki, Waiotahu, Ohau, Hokio, Manawatu	Oct.-Nov. ..	50	50	108
Marlborough ..	Wairau, Omaka, Opawa	Oct. ..	6	..	100
North Canterbury ..	Hurunui, Waipara	Oct. ..	..	7	8
Christchurch ..	Saltwater Creek, Ashley, Waimakariri, Styx, Avon, Selwyn	Oct. ..	53	99	145
South Canterbury ..	Rakaia, Ashburton, Orari, Tenuka, Opihi, Rangitata, Pareora, Waitaki (north bank)	Oct. ..	29	55	97
Otago ..	Molyneux, Taieri, Puerua, Waipori, Kakanui, Shag, Tokomairiro, Owaia, Waikonati, Catlins, Pleasant, Wainakarua, Waitaki (south bank)	Sept.-Oct. ..	34	54	116
Southland ..	Mataura, Oreti, Titiroa, Otakou, Aparima, Makarewa, Waihopa, Waiau, Waikiwi, Duck Creek, Pourakino and Onihi, Wainmatuku, Waikawa, Tokonui	Sept.-Oct. ..	46	61	315
West Coast— Wataroa ..	Big Wanganui, Little Wanganui, Wataroa, Waitangi, Okarito, Waikukupa, Cook, Saltwater, Karangarua, Jacobs, Mahitahi, Paringa, Blue, Waiaita, Haast, Okuru, Turnbull, Waitoto, Arawhata, Cascade	Oct.-Nov. ..	226	7	2,568
Ross ..	Totara, Waitaha, Mikonui	Oct.-Nov. ..	21	21	310
Hokitika ..	Arahura, Three-mile, Hokitika, Mahinapua	Oct.-Nov. ..	208	5	552
Greymouth ..	Grey, New, Teremakau	Oct.-Nov. ..	53	80	452
Westport ..	Karamea, Little Wanganui, Mokihinui, Granity, Fair-down, Orawaiti, Buller, Big Totara, Little Totara	Oct.-Nov. ..	72	240	1,257
					7,056

The season generally was a poor one. It was particularly disappointing in the Waikato, Hawke's Bay, and Canterbury districts.

The Bay of Plenty, Otago, and Southland, on the other hand, showed a slight improvement on last season. In Otago there was a particularly good run that was not fished at the close of the season.

The West Coast again supplied the bulk of the catch.

A feature of the season in all districts was the increase in the number of people whitebaiting, resulting in overcrowding on many rivers.

The estimated total catch, 7,056 cwt., compares favourably with that of previous seasons. Of this total catch, 3,927 cwt. of whitebait was canned.

QUINNAT SALMON

This season showed a marked improvement over the several preceding seasons, which were very poor. The run commenced on the Waitaki River at the end of January and, moving north, reached the Waimakariri River early in February. The early runs included a greater percentage of males than female fish. This year a total of 983 fish were taken according to licensees' returns, as compared with 324 fish for the same number of fishermen and same methods as were used last year.

CANNED FISHERY PRODUCTS

Only a small quantity of the fishery products are canned in New Zealand, the bulk of the total catch being used fresh or frozen. The fishing products that are canned include oysters, toheroa, paua, mussels, crayfish, kahawai, trevally, herring, pilchard, kingfish, gurnard, marlin, barracouta, mullet, mackerel, eel, whitebait, and whale-meat.

The following table sets out approximately the quantities canned :—

	lb.
Shellfish (including crayfish)	275,257
Eel	223,774
Whitebait	438,186
Sea fish generally	626,520
Whale-meat	100,800
Total	1,664,537

FRESH-WATER FISHERIES

Fresh-water Fisheries Advisory Council.—This Council is fully justifying its establishment. It provides for the discussion representatives of central and local administration and science of all major questions relating to trout and salmon fisheries. Through it a good team spirit is being fostered and there is, for the first time, real hope of seeing develop a progressive national policy in place of a series of dissociated local policies. Already there is clear evidence of a much more co-operative spirit in fisheries matters between the acclimatization societies themselves and between them and the Department.

Trout and Salmon Regulations.—General and local angling regulations and their amendments have increased in quantity over many years and now extend to one hundred and sixty pages or more of printed matter. There is so much confusion between general and local rules, so much reiteration of general regulations in local ones, and so much variation from district to district that the whole comprises a most untidy body of law, needlessly confusing to local anglers and probably incomprehensible to tourists.

There is urgent need for an overhaul of all these regulations. It is considered, however, that first there could very usefully be a change in the system of making them. At present even an unimportant district regulation altering, say, the amount of lead permitted when bait fishing in a particular part of one stream would have to be made by the fairly elaborate and expensive Order-in-Council procedure. It is considered that, while general regulations should continue to be made in this manner, authority might usefully be given to the Minister of Marine to approve all purely local restrictive variations, if recommended by the local acclimatization society council. An amendment to this effect of Part II of the Fisheries Act, 1908, has been drafted and, if passed, will greatly facilitate the reduction of the existing chaotic series of regulations to a briefer and more intelligible body of rules.

Amending Regulations.—Two significant amendments have been made to general regulations. One restricts the right of acclimatization societies of releasing fish in their districts to a right of liberating, without special consent, only species already established in particular waters. The aim is to ensure full consultation with specialist officers of the Department before the present distribution of species already established is modified or before any additional species can be introduced.

The second change involves a prohibition of unauthorized releases of any forms of aquatic life into rivers or lakes. The purpose is to ensure, as far as possible, that forms of life harmful to fish or to other kinds of animals are not released.

Pollution.—The fact-finding survey of the incidence of pollution of rivers and coastal waters and the extent to which it encroaches on fisheries and other aspects of public interest is approaching completion. The full-time services of a Fishery Officer were made available to co-operate with an inter-departmental committee on this matter. The study has already brought to light many facts of economic significance. Present indications are that much pollution arises from the draining into rivers and coastal waters of materials which could profitably be otherwise used.

El Fisheries.—Commercial exploitation of eels has continued on a small scale in Southland, Otago, and at Lake Ellesmere in Canterbury. In Southland the work has been actively supported by the local acclimatization society.

In some parts, especially in the North Island, there is a possibility of eel-control measures, taken in the interests of trout fisheries by acclimatization societies, conflicting a little with the interests of the Maori people. Commonly it is the case that eel stocks, which in earlier times were regularly exploited by Maoris, have been much neglected and have in consequence increased, as a wider choice of food has lessened the Maoris' dependence on eels. The position, however, is being carefully watched, and, where necessary, the Department will intervene to ensure that the interests of the Maori people in particular waters still fished by them are not adversely affected.

Advisory and Technical Services.—The basic need of councils of acclimatization societies for a fairly comprehensive reference work on fisheries management should be met at an early date by publication of "Trout Fisheries of New Zealand: their Development and Management," which is now in the printer's hands. A sufficient quantity of more cheaply bound copies of the work are being printed for release at a price which will ensure the availability of this work to all anglers.

The general advisory services which the branch offers are being used increasingly by societies. Many councils realize that they comprise amateurs and that they can best serve local interests by seeking professional assistance from Fisheries Officers on appropriate matters. Such services, which are free of cost to societies, sometimes involve simply preparation of abstracts from works in the Fisheries Library, and in other cases necessitate extensive field surveys followed by local conferences.

Wider use of these services is still desirable, for it is apparent that in some districts fisheries revenue is often spent very speculatively, and could be spent less so if societies were prepared to ask for the preparation of summaries of evidence on questions at issue.

Fishery Officers' Training Scheme.—Hitherto there have been no special facilities for training young men who may desire to make a career as Fisheries Officers of acclimatization societies or of Departments exercising similar functions. Present district employees have acquired some practical experience in hatchery work and as Rangers, but have not had the adequate basic training which would have enabled them to give the best service and justified their ultimate advancement to more remunerative positions.

It has now been arranged that the Fisheries Branch shall undertake the training of suitable cadets, seconded by the Department of Internal Affairs, for ultimate employment in the Rotorua and Southern Lakes Districts, and a comprehensive training course has started.

There have already been inquiries from individual acclimatization societies to learn if the scheme could be extended to include trainees for their districts. The Department is entirely sympathetic to any move which would assure a standard training for future employees of all districts, but at present awaits evidence of more general support from acclimatization societies and further information as to normal staff-replacement needs.

FRESH-WATER RESEARCH

With the completion of the reorganization referred to in last year's annual report, the research staff have, during the past year, been able to concentrate on the development of the investigations which were then in preparation.

The main fields of work have been :—

Eels.—The ultimate object of the present phase of the work is to determine the extent of the damage which eels may do to trout stocks both as competitors for food and by preying upon the trout themselves. This knowledge is necessary if we are to decide to what extent the resources of fishery-administering bodies may be economically used for eel control. As a first step, data are being collected regarding the quantities and sizes of eels which inhabit waters of various types in different parts of New Zealand. This work has been commenced in the Southland district, where the results of some commercial fishing were available for study and where valuable assistance was provided by the Southland Acclimatization Society. It will in future seasons be extended to other districts. As a beginning, all the available data regarding the trapping of eels for canning in 1946-47 were examined and yielded useful information regarding the quantities removed from various waters by different degrees of trapping effort. Since the information was often approximate and few of the waters were completely trapped out, it was decided to undertake further trapping in the 1947-48 season to obtain more detailed and accurate results. This was done by an officer of the Marine Department, assisted by the staff of the Southland Acclimatization Society. The results show that the amount of cover is one of the principal factors in determining the variations in abundance of eel populations, both from point to point along one and between one river and another. In order to make comparison between rivers of different sizes possible, all results are being expressed in pounds of eels taken per acre of water. With complete trapping, catches for long sections of river have ranged between 15 lb./acre and 90 lb./acre, with local concentrations as high as 400 lb./acre. Commercial trapping in rivers with more abundant cover gave results as much as 500 lb./acre over long stretches. The highest concentrations of eels have, however, been found in the small inland

lagoons and have often exceeded 1,000 lb./acre. The average size of eel caught is unexpectedly small, being usually between 2 lb. and 3 lb., while in a sample from the Waiau system only 9 per cent. were over 6 lb. and 1.5 per cent. over 10 lb. Studies are also being made on the relative efficiency of various forms of trap and on the amount of trapping required to clean out an eel population; but these are not yet far enough advanced to yield definite results.

Erosion and Flooding.—In this work, studies are being made of the effects of flooding and the shifting of river-beds on both the trout-food and on trout eggs and alevins before emergence from the gravel. The former studies are being made on the Horokiwi River, near Wellington, and the latter on the Ashley River, in Canterbury. In the investigations of effects on fish-food, observations are made regularly at a number of localities as to the exact position of the stream and shingle bed and the quantity of food animals present. From these observations the effects of each flood can be determined. Since the work began, several floods of moderate size have occurred and these have yielded some useful information. While in all parts of the river the floods have caused some destruction of fish-food, the loss has been much greater in the unstable regions where there has been considerable movement of shingle and shifting of the stream bed. As an example may be quoted the effects of two floods which occurred in July and September, 1947. In the unstable parts of the river the average quantity of food animals after each flood was only about one-seventh of what it had been before, while in the more stable parts an average of one-third survived. Although recovery seems surprisingly rapid, 60 per cent. of pre-flood numbers being reached six weeks after the July flood, it appears that frequent floods must reduce significantly the average amount of food present in a river. It is believed this work will ultimately make it possible to estimate the importance of this reduction and to judge how far it is affected by accelerated erosion of the water-sheds.

Angling Diaries.—A scheme is being developed for the collection of accurate information regarding the status of fish stocks in as many rivers as possible by means of standard angling diaries and Ranger's reports. Under this scheme printed diary forms are distributed to as many anglers as possible, collected at the end of the season, and carefully analysed to extract all useful information. The distribution and collection of diary forms is being undertaken by acclimatization societies, while the work of analysis and report is being done by the officers of the Marine Department. In the 1946-47 angling season the scheme was only in its infancy and only two societies took part. The limited number of diaries obtained in these cases did, however, yield useful information regarding the waters of these districts. It is understood, however, that many more societies have undertaken this work during the 1947-48 season, and that a correspondingly greater amount of data will be available for analysis.

Horokiwi Investigation.—A detailed account of the study of the trout stock of this stream is now in preparation, and it is hoped that it will be published during the coming year. This work, a brief account of which appeared as an Appendix to the 1945 annual report, had as its object the determination of the factors limiting the production of fish in a typical small trout stream.

MARINE RESEARCH

Throughout the year there was no Marine Biologist, but a new appointee commenced duty early in 1948. Preparations for certain classes of work with the research vessel "Ikaterere" were completed, and this vessel commenced work in the Hauraki Gulf.

By arrangement with Victoria University College, a graduate commenced preliminary work on crayfish research.

LEGISLATION

The general fishery regulations were consolidated and revised during the year. The previous regulations had been in force since 1939 and had been amended so frequently that a consolidation had become an urgent necessity.

The Whitebait Regulations, last issued as a whole in 1932, were also consolidated and revised for the same reason. The 1947 Whitebait Regulations aimed at not only consolidation, but at a much needed simplification of a set of regulations so pieced together over the years that the final result was too detailed and involved for practical use.

STAFF

As has been the case over the last four years, staffing has been a major problem. A gradual reorganization of the staff is taking place with a view to having a better balanced and more highly qualified staff.

M. W. YOUNG,
Chief Inspector of Fisheries.

MARINE FISH HATCHERY AND BIOLOGICAL STATION, PORTOBELLO

SIR,—

I have the honour to present the report of the Portobello Marine Biological Station for the year ended March, 1948.

The difficulties of the times which prevented the Board's plans for the repairs, structural alterations, and additions required for improving and enlarging the laboratory accommodation, as mentioned in last year's report, have unfortunately continued into the present year and the station can still only provide the minimal facilities for the carrying-out of marine biological research, which is, and should be, the most important of the services by which this Station justifies its existence.

The laboratory is ideally situated for marine biological research so far as natural environment is concerned, but its material structure and equipment fall very short of what is desirable at the present time. However, the Station has been regularly used during the year at week-ends and vacations by the Zoology Department staff and students of Otago University and by other visitors. It has again been utilized by members of the staff of the Zoology Department of Canterbury College who visited Portobello during the summer to collect specimens and to make observations of the local marine fauna. Among the principal researches conducted at Portobello have been a study of the embryology of the compound ascidian *Distaplia* by Miss Brewin and an investigation of the biology of *Benhamina obliqua*, principally anatomy and embryology, by Miss Borland. Miss Richards has worked on the anatomy and food of the brachiopod *Terebratella inconspicua*, and Miss di Menna on the anatomy and ecology of *Trochodota dunedinensis*, a synaptid holothurian.

The pipes for the supply of sea-water to the aquarium tanks, which had become very dilapidated and unsafe, have been renewed, but progress in the restocking of the tanks with sea fish has been disappointing, owing mainly to lack of fishing equipment. At present there is no means of keeping the aquarium water at a suitable and safe temperature for sea fish during severe winter frosts. The pump, which had been in use for forty years, broke down in March, and the worn-out parts had to be replaced. A row-boat was purchased during the year.

It is with great regret that I have to record the death, in September, of Mr. J. McGregor Wilkie, who had been a member of the Board for many years. With his qualifications as a harbour engineer and by his keen interest in the Station and never-failing readiness to help, his services to the Board were of very considerable value. Since May, 1946, he also acted as Treasurer.

The employment of a marine biologist as a permanent member of staff is much to be desired. It is to be hoped that in the near future it will be possible to provide means for re-establishing this position, which had to be eliminated in 1931 during the financial depression, for without a biologist attached to the Station its facilities cannot be fully utilized nor its proper purpose fulfilled.

With the substantial increase of recent years in the number of New Zealand workers in other science it is a remarkable fact that this Dominion, surrounded by seas that are teeming with unelucidated fishery and other biological problems, should still be so peculiarly lacking in proper provision, and consequently in personnel, for the pursuit of this important branch of scientific research.

I have, &c.,

A. E. HEFFORD,

Chairman of the Board.

TABLE II.—SHOWING APPROXIMATELY THE TOTAL QUANTITIES OF FISH AND SHELL-FISH LANDED AT THE FISHING PORTS FOR THE YEAR ENDED 31ST DECEMBER, 1947

Name of Port or District.	Quantity landed (Fish).	Total Value (Fish).	Shell-fishery (excluding Toheroa).						Grand Total Value.	
			Oysters.	Value.	Mussels.	Value.	Cray-fish.	Value.		Total Value (Shell-fish).
<i>North Island</i>										
Mangonui and district	Cwt.	£	Sacks.	£	Sacks.	£	Cwt.	£	£	£
Whangaroa	4,058	4,242	..	..	..	..	7	14	14	4,256
Russell	904	1,514	..	..	..	..	583	1,500	1,500	3,014
Whangarei	4,115	5,751	..	..	..	..	194	347	347	6,098
Auckland	1,930	2,928	..	..	..	..	3	6	6	2,934
Thames district	142,304	186,504	5,280	9,240	11,747	4,090	1,628	4,156	16,712	203,216
Coromandel	13,035	22,200	..	..	4,514	1,464	..	..	1,464	23,664
Mercury Bay	43	70	..	..	..	..	..	..	..	70
Whangamata	831	1,375	..	..	..	..	809	2,082	2,082	3,457
Waikato	213	391	..	..	..	..	6	14	14	405
Waikato Beach	178	321	..	..	..	..	2	3	3	324
Tauranga and district	7,086	9,178	..	..	..	..	91	212	212	9,390
Whakatane	601	925	..	..	..	..	17	41	41	966
Ohiwa Harbour, Opotiki, and Cape Runaway	301	775	..	..	..	..	..	..	..	775
Gisborne	10,926	17,356	..	..	..	..	1,084	2,338	2,338	19,694
Napier	23,525	46,099	..	..	..	..	723	1,450	1,450	47,549
Castlepoint	56	219	..	..	..	..	48	99	99	318
Wellington	44,291	96,784	..	..	..	..	3,820	9,389	9,389	106,173
Makara	638	1,379	..	..	..	..	338	835	835	2,214
Paraparaumu Beach	2,498	7,651	..	..	..	..	64	172	172	7,823
Manawatu Heads	828	2,634	..	..	..	..	..	..	..	2,634
Tangimoana	279	882	..	..	..	..	..	..	..	882
Wanganui	20	59	..	..	..	..	..	..	..	59
New Plymouth	214	571	..	..	..	..	..	..	..	571
Kawhia	2,792	6,576	..	..	..	..	190	532	532	7,108
Raglan	832	2,189	..	..	..	..	..	..	..	2,189
Manukau Harbour	212	514	..	..	..	..	..	..	..	514
Kaipara	1,401	2,607	..	..	..	..	39	208	208	2,815
Hokianga	3,792	9,007	..	..	..	..	..	..	..	9,007
.. .. .	634	1,121	..	..	..	..	..	..	..	1,121
<i>South Island</i>										
Havelock	2,781	8,384	..	..	..	..	..	..	..	8,384
Pictou	3,774	9,225	..	..	..	..	2,331	10,453	10,453	19,678
Blenheim	1,293	2,594	..	..	..	..	84	190	190	2,784
Kaikoura	3,870	10,495	..	..	..	..	1,652	3,022	3,022	13,517
Lyttelton	17,387	37,695	..	..	..	..	96	184	184	37,879
Akaroa	5,136	12,734	..	..	..	..	729	1,560	1,560	14,094
Lake Ellesmere	940	3,338	..	..	..	..	..	..	..	3,338
Timaru	21,216	55,016	..	..	..	..	..	..	..	55,016
Oamaru	3,646	10,261	..	..	..	..	..	..	..	10,261
Mosseraki	2,499	7,193	..	..	..	..	573	543	543	7,736
Karitane	1,361	2,427	..	..	..	..	2,697	2,578	2,578	5,005
Port Chalmers	44,849	70,583	..	..	..	..	44	41	41	70,624
Taieri Mouth	669	2,114	..	..	..	..	..	..	..	2,114
Nuggets district	6,177	17,480	..	..	..	..	23	21	21	17,501
Waikawa	4,456	12,759	..	..	..	..	2	5	5	12,764
Bluff	5,054	14,270	81,518	61,138	..	..	..	61,138	75,408	75,408
Stewart Island	14,469	36,354	..	..	..	..	..	..	..	36,354
Riverton	907	2,234	..	..	..	..	..	..	..	2,234
Hokitika	1	2	..	..	..	..	..	..	..	2
Greymouth	2,498	5,725	..	..	..	..	..	..	..	5,725
Westport	2,346	5,856	..	..	..	..	86	159	159	6,015
Golden Bay	618	1,074	..	..	..	..	4	12	12	1,086
Motuka	4,918	7,310	..	..	..	..	3	6	6	7,316
Nelson	10,040	19,429	..	..	..	..	78	162	162	19,591
French Pass	3,293	9,174	..	..	..	..	..	..	..	9,174
Chatham Islands	5,565	6,948	..	..	..	..	..	..	..	6,948
Totals	438,300	802,496	86,798	70,378	16,261	5,563	18,052	42,134	117,292	920,571

TABLE III.—SHOWING THE QUANTITIES OF DIFFERENT KINDS OF FISH CAUGHT BY THE DIFFERENT METHODS OF FISHING
FOR THE YEAR ENDED 31ST DECEMBER, 1947

	Trawl.			Danish Seine.		Motor.		Motor.		Row-boat.		Other Nets.		Total.	
	Motor.			Total.		Motor.		Motor.		Row-boat.		Other Nets.		Total.	
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.
Barracouta ..	3,159	1,718	474	247	3,673	1,965	13	35	..	23	..	..	..	7	23
Blue cod ..	1	2	130	422	131	424	..	..	..	..	..	..	..	..	..
Bonita (<i>Brama</i>) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brill ..	..	..	10	30	10	30	..	..	..	..	..	..	..	..	..
Butterfish (greenbone) ..	..	..	10	7	10	7	..	..	..	..	..	..	..	..	..
Conger-eel ..	346	637	3,341	6,485	3,687	7,122	1,883	5,313	19	15	13	38	1,896	5,351	15
Elephant-fish ..	5	14	7,555	25,536	7,560	25,550	..	..	..	..	..	..	..	1	1
Flounder ..	65	46	2	3	67	49	3,056	9,469	7,702	23,017	1,405	5,009	9,107	28,026	..
Frost-fish ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Garfish ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gurnard ..	2,445	2,404	11,055	12,462	13,500	14,866	6,451	5,323	19	50	1	3	20	53	..
Hake ..	946	2,603	753	1,883	1,699	4,486	..	..	1,033	757	3	3	1,036	760	..
Hapuku (groper) ..	937	3,067	1,818	6,131	2,755	9,198	104	264	..	15	..	..	..	7	15
Herring ..	597	772	331	560	928	1,332	18	34	1,312	1,027	14	22	1,326	1,049	..
John-dory ..	..	..	104	77	104	77	..	..	867	674	32	22	899	696	..
Kahawai ..	..	..	..	..	..	..	..	..	48	52	..	..	48	52	..
Kingfish ..	5	5	3,907	7,933	5,023	10,022	..	..	3	4	2	6	5	10	..
Lang ..	1,116	2,089	..	..	221	195	..	..	129	107	..	..	129	107	..
Mackerel ..	216	191	5	4	..	..	..	..	..	..	..	..	..	..	..
Mahi-mahi ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mullet ..	543	975	824	1,920	1,367	2,395	..	..	344	586	13	34	337	620	..
Moonfish ..	..	..	..	..	..	..	..	..	2,917	4,250	50	136	2,967	4,386	..
Parrot ..	..	..	..	..	..	..	..	..	591	354	29	38	620	392	..
Perch ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ploki ..	541	576	965	1,074	1,506	1,650	477	657	775	1,081	..	8	780	1,080	..
Red cod ..	1,299	1,132	6,393	5,993	7,692	7,125	48	50	97	60	1	2	45	90	..
Sardine ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shark ..	394	522	..	..	365	523	6	8	51	60	..	..	51	60	..
Skate ..	..	..	24	17	24	17	..	..	1	1	..	..	..	..	..
Snapper ..	31,743	41,422	8,322	14,900	40,065	56,322	68,582	89,838	8,040	11,042	133	308	8,173	11,350	..
Sole ..	750	2,106	24,301	73,323	25,051	75,459	295	800	..	4	7	43	..	8	47
Swordfish (marlin) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tarakihi ..	41,551	72,315	33,511	63,562	75,362	135,877	15,809	20,871	103	200	3	5	106	205	..
Trevally ..	2,098	1,547	309	385	2,407	1,932	266	189	4,143	3,824	22	44	4,165	3,868	..
Trumpeter ..	..	..	220	609	220	609	..	..	..	..	..	..	..	..	..
Wahoo ..	..	..	6	6	..	..	..	..	..	..	..	..	..	..	..
Wanchou ..	21	19	19	15	265	231	..	..	585	1,212	..	..	585	1,212	..
Whiting ..	246	216	19	15	265	231	..	..	..	..	..	..	..	..	..
Whiting ..	377	264	..	..	377	264	..	..	..	..	..	..	..	..	..
Mixed flat fish ..	581	1,879	2,933	10,572	3,514	12,451	892	3,802	371	1,034	13	69	384	1,103	..
Mixed round fish and all fish not specified ..	3,729	1,735	3,303	4,820	7,032	6,555	698	555	1,538	1,632	102	162	1,640	1,794	..
Totals ..	93,721	198,256	110,933	238,452	204,654	376,738	96,715	131,915	32,631	56,494	1,848	5,932	34,479	62,446	..

TABLE III.—SHOWING THE QUANTITIES OF DIFFERENT KINDS OF FISH CAUGHT BY THE DIFFERENT METHODS OF FISHING
FOR THE YEAR ENDED 31ST DECEMBER, 1947—continued

	Lines.				Grand Total.			
	Motor.		Row-boat.		Total.			
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£
Barracouta	12,987	6,141	10	11	12,997	6,152	16,670	8,117
Blue cod	29,322	73,847	40	130	29,362	73,977	29,513	74,459
Bonita (<i>Brama</i>)	7	18	..	..	7	18	7	18
Bull	..	..	..	..	..	..	10	30
Butterfish (greenhonic)	..	..	..	..	..	..	1,896	5,351
Cod	170	126	..	..	170	126	198	148
Elephant-fish	30	62	..	..	30	62	3,718	7,185
Floinders	..	..	..	..	..	..	19,723	63,065
Frost-fish	..	..	..	..	..	..	69	193
Gardfish	2	4	..	..	2	4	43	113
Gardfish	92	59	1	1	93	60	21,291	21,294
Gurnard	305	339	1	6	306	345	2,554	7,484
Hake	855	2,998	..	..	855	2,998	32,154	101,814
Hapuku (groper)	29,268	92,286	20	52	29,288	92,338	1,826	1,849
Herring	..	..	..	..	..	..	1,965	1,887
John-dory	19	21	..	..	19	21	1,160	951
Kahawai	157	178	..	..	157	178	205	413
Kingfish	239	351	3	5	242	356	15,883	34,900
Ling	10,653	24,862	2	6	10,655	24,868	350	302
Mackerel	..	..	..	..	..	..	11	16
Macomao	11	16	..	..	11	16	1,763	3,104
Moki	1	2	38	87	39	89	2,967	4,386
Mullet	..	..	..	..	..	..	621	393
Parori	1	1	..	..	1	1	49	33
Perch	42	28	..	..	42	28	3,522	4,422
Poki	759	1,026	..	..	759	1,026	8,212	7,833
Red cod	425	582	2	5	427	587	97	90
Sardine	..	..	..	..	..	..	1,129	1,311
Shark	707	720	..	..	707	720	50	41
Skate	25	23	..	..	25	23	129,482	180,563
Snapper	12,023	22,029	639	994	12,662	23,023	25,354	76,276
Solifish (mulin)	..	..	..	..	..	..	1,130	1,130
Solifish	1,131	1,100	..	..	1,131	1,100	91,422	157,122
Tarakihi	408	755	7	15	415	770	6,963	6,163
Trevally	130	125	1	1	131	126	613	1,238
Trunpeter	28	85	..	..	28	85	287	284
Warehou	1	1	..	..	1	1	377	284
Whipall	2	3	..	..	2	3	4,790	17,356
Whiting	..	..	..	..	..	..	11,330	11,200
Mixed flat fish	..	..	..	..	..	..	438,300	802,496
Mixed round fish and all fish not specified	..	..	..	..	..	..	..	..
Totals	101,657	230,050	795	1,347	102,452	231,397	438,300	802,496

TABLE IV.—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31ST DECEMBER, 1947

	Mangoni.	Whangaroa.	Russell.	Whangarei.	Auckland.	Thames.	Coromandel.	Mercury Bay.	Whangamata.	Waikī Beach.	Tairāra and District.	Whakatāne.	Ohāwa Harbour, Opothi, and Cape Runaway.	Gisborne.	Napier.	Castlepoint.	Wellington.	Makara.	Parematea.
Barracouta	..	..	3	..	1,307	..	1	37	2	2	6	..	..	..	331	3	486	17	..
Blue cod	7	..	24	1	85	..	..	..	..	..	..	..	..	..	..	..	106	..	..
Bonita (<i>Brama</i>)	..	..	..	..	311	..	11	..	..	..	31	..	..	..	..	..	6	130	67
Butterfish	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..	..	397	..	..
Brill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75	9	2
Conger-eel	..	..	88	38	3,036	..	..	6	..	1	26	77	37	10	..	1	94	..	18
Elephant-fish	8	25	..	..	65	..	..	..	..	..	97	49	8	99	249	..	15	..	..
Flounder	22	..	3	..	17	882	..	..	..	..	244	2	18	775	715	42	1,009	30	7
Frost-fish	..	..	..	..	6	148	..	128	6	1	..	..	..	..	4,180	..	531	..	..
Garfish	..	..	7	..	6,199	..	..	..	..	..	681	..	..	..	61	..	1,009	..	..
Gurnard	..	..	1	47	575	..	..	..	..	..	87	..	..	122	15	..	8,017	..	2,122
Hake	184	62	433	..	6	..	..	7	3	2	..	..	..	..	2	..	5	1	..
Herring	..	..	1,134	28	450	201	..	4	..	..	..	..	..	..	1	..	21	5	3
John-dory	..	23	12	..	60	..	..	..	..	..	..	..	..	..	4	..	5,420	..	..
Kahawai	18	14	33	..	158	3	..	..	..	..	83	..	..	..	4	..	58	1	7
Kingfish	..	..	1	..	11	..	..	..	..	..	..	..	..	..	..	..	811	24	22
Maifire	..	..	..	..	790	2	..	..	37	139	19	..	..	..	180	..	..	..	..
Maomao	..	..	..	..	52	140	2	..	1	..	25	..	..	..	..	..	..	..	..
Moki	328	113	55	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mullet	334	..	17	51	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Parore	..	..	..	..	868	427	..	47	2	..	..	..	4	33	19	..	487	5	75
Pike	5	..	..	..	..	..	..	..	..	..	..	..	..	21	..	..	883	1	..
Red cod	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sardine	..	3	12	64	400	17	..	33	6	..	11	..	..	..	..	..	2	..	..
Shark	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Skate	727	652	1,734	930	101,470	5,796	34	555	54	69	2,021	283	143	197	224	1	250	31	21
Snapper	..	..	..	..	4	..	..	2	..	..	..	..	..	131	1,297	..	..	..	..
Sole	..	..	..	..	..	..	..	..	..	..	..	..	..	6,864	10,201	1	22,455	10	14
Swordfish	..	..	280	..	22,285	2	..	3	140	96	849	51	..	..	..	..	3	183	19
Tarakihi	7	3	21	4	2,293	391	..	..	..	..	1,777	..	26	1	..	..	123	349	80
Trevally	2,228	..	6	732	..	..	..	..	..	..	..	..	..	..	..	..	371	..	..
Trumpeter	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehou	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whipail	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed fat fish	94	5	251	6	221	336	..	..	..	..	1	3	..	12	34	8	2,309	5	57
Mixed count and unspecified	..	..	..	3	1,635	366	43	9	..	5	127	90	27	1,074	..	56	14,291	638	2,498
Totals	4 058	904	4,115	1,930	142,304	13,035	43	831	213	178	7,086	601	301	10,926	23,525	..	44,291	638	2,498

TABLE IV.—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31ST DECEMBER, 1947—continued

	Paraparaumu Beach.	Manawatu Heads.	Tangimoana.	Wanganui.	New Plymouth.	Kawhia.	Raglan.	Manukau Harbour.	Kaipara.	Hokiangā.	Havelock.	Pieton.	Blenheim (Wairau).	Kaikoura.	Lyttelton.	Akaroa.	Lake Ellesmere.	Timaru.	Oamaru.
Barracouta																			
Blue cod	2			3	3						3	221		7	8	21		27	414
Bonita (<i>Brama</i>)				5							638	205		24	2	2			
Butterfish	237										183	158		24	3	1			
Brill																			
Conger-cod											19	34			6				
Elephant-fish	3										17	16		24	1,413	275		1,714	
Flounder											200	79		2	958	79	938	4,318	
Frost-fish											2								
Garnish																			
Gurnard	5	12			7						95	12	1	21	1,105	426		2,051	
Hake	6											3		12	472	220		7	2
Hapuku (groper)	273	18	1	13	289	28	4				359	2,431	18	1,599	640	1,104		2,560	3,126
Herring		1									48	2							3
John-dory												73			1				
Kahawai	2	8		1	2	1	1												
Kingfish					38	9													
Maifaka																			
Maifakere	1																		
Maomao																			
Mullet						10					96		8	5	91	23			1
Parore						1													
Perech																			
Pike					2	36					38	33		31	28				
Red cod	1	5				10	4				135	87	699	31	424	246		1	16
Sardine		9									106	197						2,630	
Shark					17													1	
Skate	256	129	15	197	2,420	486	132				229	24	48		17	1		2	
Snapper		5									17	5	240	4	327	115		2,652	
Sole																			
Swordfish											16	5	7	42	8,895	1,053		47	
Tarakihi	9					11	1	5	1					21	8	219			
Trevally														13					
Trumpeter																			
Warehou	31																		
Whiting																			
Whiting		11																	
Mixed flat fish		15																	
Mixed flat and un-																			
specimens																			
Totals	828	279	20	214	2,792	832	212	1,401	3,792	634	2,781	3,774	1,293	3,870	17,387	5,136	940	21,216	3,646

TABLE IV.—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31st DECEMBER, 1947—*continued*

	Moeraki.	Kaitiaki.	Port Chalmers and Dunedin.	Tairāwhiti Mouth.	Nuggets and District.	Waikawa.	Bluff.	Stewart Island.	Riverton	Hokitika.	Greymouth.	Westport.	Golden Bay.	Motueka.	Nelson.	French Pass.	Chatham Islands.
Barracouta	Cwt. 3	Cwt. 331	Cwt. 13,338	Cwt. 50	Cwt. 232	Cwt. 526	Cwt. 4,235	Cwt. 12,819	Cwt. 1	Cwt. 783	Cwt. 79	Cwt. 71	Cwt. 13	Cwt. 130	Cwt. 11	Cwt. 35	Cwt. 5,463
Blue cod	736	211	365												24	1,976	
Brama (<i>Brama</i>)															2	254	
Bottersfish	2	1			1			62									
Brill			9														
Conger-eel																54	
Elephant-fish																1	
Flounder		16	1,062		644	12	23		5			118	1	30	305		
Great-fish														47			
Garfish.																	
Guard					63	28											
Hake	1		494		6	3											
Hapuka (groper)	1,565	161	1,418	230	333	229	329	788	117	1	448	363	108	687	1,905	13	102
Herring			731									47	63	68	43		
John-dory												5		20			
Kahawai			18									4	9	237	50		
Kingfish	1		3														
Ling	21	244	972		20	11	5								1	2	
Mackerel			4														
Maomao		83	15														
Moki			209														
Mullet																8	
Parore					12												
Perch			7														
Poke			447		38	7	10					82	32	331	462	54	
Red cod			2,536									52	1	46	192	11	
Sardine.		131															
Shark																	
Skate		1														8	
Skipper																1	
Swordfish	169		10,965	380	4,258	3,608	237				32	134	383	2,350	6,053	109	
Tarakihi											912	17			4		
Trevally			9,977		1						4						
Trumpeter			3														
Warehou			16									579		815	248	3	
Whaitahi			142														
Whiting																	
Mixed flat fish			14		555	29											
Mixed round and unspecified		8	1,460		12	6	210	800	1		15	683	7	25	730	24	
Totals	2,499	1,361	44,849	669	6,177	4,456	5,054	14,469	907	1	2,498	2,346	618	4,918	10,040	3,293	5,565

TABLE V.—SHOWING TOTAL QUANTITIES OF WET FISH LANDED AT EACH OF THE CHIEF FISHING PORTS EACH MONTH OF THE YEAR 1947

Port or District.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
<i>North Island</i>	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Mangonui	435	498	280	399	401	137	211	205	348	863	130	151	4,058
Whangara	148	71	44	73	76	72	71	55	65	65	79	85	904
Russell	565	451	392	320	397	258	223	175	314	260	445	315	4,115
Whangarei	250	200	302	188	237	149	162	95	58	92	124	73	1,930
Auckland	8,925	10,291	11,724	8,642	10,159	9,994	12,430	11,828	17,347	14,686	12,811	13,467	142,304
Thames district ..	897	1,113	910	585	910	878	883	963	1,666	2,164	1,118	948	13,035
Coromandel	12	2	3	2	1	1	1	1	3	3	7	9	43
Mercury Bay	151	160	138	45	140	57	1	1	6	6	90	36	831
Whangamata	74	35	14	18	19	3	4	4	6	16	8	16	213
Waihi Beach	54	9	21	23	13	13	2	3	3	12	10	18	178
Tauranga and district	474	366	1,391	334	383	287	351	521	574	400	1,188	817	7,086
Whakatane	108	46	48	62	33	3	13	7	39	98	99	45	601
Ohiwa Harbour, Opotiki, and Cape Runaway	38	45	48	13	17	15	18	19	17	31	37	3	301
Gisborne	588	515	680	529	903	725	1,038	691	1,299	1,174	1,432	1,352	10,926
Napier	1,033	1,070	1,061	820	1,153	1,152	2,754	2,227	3,205	3,476	3,201	2,373	23,525
Castlepoint	23	11	2	6	5	3	3	1	1	2	2	1	56
Wellington	2,641	4,536	4,913	2,472	3,778	1,388	5,884	3,466	2,233	2,737	5,939	4,304	44,291
Makara	32	59	94	190	81	15	110	11	4	3	15	24	638
Paremata	187	151	196	120	288	240	968	43	6	27	134	138	2,498
Paraparaumu Beach	78	50	68	97	105	70	138	67	1	3	90	61	828
Manawatu Heads ..	14	16	45	48	59	2	33	13	15	11	3	20	279
Tangimoana	3	1	2	3	7	..	..	..	1	1	1	1	20
Wanganui	13	17	21	69	27	11	20	9	2	7	13	5	214
New Plymouth ..	634	197	297	245	203	70	208	104	46	91	244	453	2,792
Kawhia	124	110	149	108	85	18	3	27	30	21	84	73	832
Raglan	58	18	12	16	1	2	8	4	15	15	16	47	212
Manukau Harbour ..	85	149	152	134	174	98	136	52	92	85	138	106	1,401
Kaipara	335	291	320	267	406	149	241	333	294	425	396	335	3,792
Hokianga	55	54	61	81	58	60	64	80	8	29	35	49	634
<i>South Island</i>													
Havelock	105	161	280	277	421	297	435	117	161	136	228	163	2,781
Pictou	432	282	285	307	319	374	379	86	54	180	574	502	3,774
Blenheim (Wairau) ..	110	90	12	87	319	118	107	40	80	52	154	124	1,293
Kaikoura	218	258	251	246	392	219	353	240	295	510	609	279	3,870
Lytelton	729	746	1,391	1,806	1,939	1,056	2,477	905	1,747	1,866	1,727	998	17,387
Akaroa	301	211	307	252	645	422	604	224	570	445	738	417	5,136
Lake Ellesmere ..	25	63	51	75	44	6	34	17	77	156	171	221	940
Timaru	1,336	1,521	2,000	1,746	2,385	1,397	3,377	1,264	1,819	1,204	1,650	1,517	21,216
Oamaru	328	241	494	559	622	116	156	68	191	233	306	332	3,646
Moeraki	123	209	354	251	221	187	260	88	222	173	267	144	2,499
Karitane	231	156	176	253	124	88	36	1	43	38	124	91	1,361
Port Chalmers	3,536	4,798	6,376	4,315	4,088	1,806	3,160	1,738	2,503	2,570	5,054	4,905	44,849
Taieri Mouth	96	42	108	81	59	46	76	47	19	33	52	10	669
Nuggets district ..	862	596	650	385	127	119	618	362	125	465	846	1,022	6,177
Waikawa	369	260	335	163	190	217	435	198	266	745	795	483	4,456
Bluff	574	678	696	399	374	240	702	203	28	253	357	550	5,054
Stewart Island	938	1,851	2,607	1,967	1,091	1,211	2,926	927	4	539	379	29	14,469
Riverton district ..	37	78	83	54	23	48	144	105	16	43	163	113	907
Hokitika	..	..	..	..	..	..	..	..	..	..	..	1	1
Greymouth	195	114	231	267	284	122	240	110	19	194	396	326	2,498
Westport	81	129	253	280	210	113	342	246	51	114	292	235	2,346
Golden Bay	144	104	199	17	57	46	7	4	..	..	23	17	618
Motueka	132	94	133	449	603	218	753	480	485	570	668	333	4,918
Nelson	428	432	869	817	1,202	603	950	753	784	1,190	1,167	845	10,040
French Pass	306	345	432	282	484	242	342	224	59	125	252	200	3,293
Chatham Islands ..	..	..	944	..	776	1,269	763	270	605	520	418	..	5,565
Totals	29,670	33,991	42,905	31,244	37,118	26,449	45,647	29,717	37,921	39,157	45,299	39,182	438,300

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, 1947

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
<i>Auckland</i>													
Flounder	Cwt. 75	Cwt. 198	Cwt. 44	Cwt. 30	Cwt. 60	Cwt. 22	Cwt. 24	Cwt. 449	Cwt. 761	Cwt. 806	Cwt. 519	Cwt. 58	Cwt. 3,036
Gurnard	515	439	478	395	515	581	532	522	760	563	565	334	6,199
Snapper	5,004	6,178	6,679	5,662	7,249	7,774	8,340	8,333	12,655	12,183	9,702	11,771	101,470
Tarakihi	2,185	2,773	3,844	2,178	1,493	977	2,834	1,765	2,076	170	1,297	693	22,285
Trevally	130	200	248	47	177	191	236	221	276	166	158	243	2,293
<i>Thames</i>													
Flounder	495	1,013	725	287	490	41	58	36	19	26	340	777	4,307
Gurnard	17	2	14	28	31	158	140	101	140	150	77	24	882
Snapper	290	28	84	180	134	511	535	606	1,257	1,712	432	27	5,796
Trevally	1	..	15	32	34	47	14	37	110	84	14	3	391
<i>Tauranga</i>													
Kahawai	147	76	147	47	25	55	1	74	53	25	10	21	681
Snapper	188	110	178	122	176	98	91	116	159	115	558	110	2,021
Tarakihi	69	12	384	46	118	36	121	237	94	67	256	558	1,998
Trevally	..	1	2	4	35	72	66	51	141	116	234	55	777
<i>Gisborne</i>													
Gurnard	111	55	42	58	167	93	139	94	101	154	263	167	1,444
Tarakihi	322	310	455	347	565	494	647	455	887	784	808	790	6,864
<i>Napier</i>													
Gurnard	261	381	309	253	371	195	369	290	572	424	352	403	4,180
Hapuku	24	28	22	22	52	31	67	42	38	93	174	122	715
Sole	216	101	84	52	76	30	45	54	165	89	186	199	1,297
Tarakihi	500	493	438	272	615	882	2,468	1,826	2,300	2,732	2,400	1,475	16,201
<i>Wellington</i>													
Hake	39	63	65	66	39	16	55	17	7	149	254	230	1,000
Hapuku	770	292	377	258	456	317	1,595	649	510	753	1,110	930	8,017
Ling	89	218	564	363	757	501	1,509	321	238	133	405	322	5,420
Tarakihi	1,126	2,473	2,986	1,334	1,863	324	2,037	2,010	1,142	1,024	3,631	2,505	22,455
<i>Pictou</i>													
Barracouta	2	1	2	107	21	47	..	..	..	28	10	3	221
Blue cod	28	4	81	22	2	5	5	5	2	12	12	27	205
Hapuku	290	212	161	96	173	209	303	15	10	120	459	383	2,431
Sardine	..	..	..	..	..	..	..	..	..	..	52	45	97
<i>Lyttelton</i>													
Elephant-fish	178	87	57	74	60	41	89	67	117	301	164	178	1,413
Gurnard	43	86	284	140	52	29	33	34	202	75	47	80	1,105
Ling	137	153	147	249	150	179	296	112	158	174	301	222	2,278
Tarakihi	219	62	89	855	1,397	602	1,854	558	904	1,030	972	353	8,895
<i>Timaru</i>													
Elephant-fish	162	131	84	48	229	40	99	21	92	156	405	247	1,714
Flounder	414	305	176	270	328	464	454	421	512	478	345	151	4,318
Gurnard	30	150	173	85	102	39	515	162	310	118	135	232	2,051
Hapuku	120	162	442	426	295	179	165	21	10	65	269	406	2,560
Ling	164	138	456	327	642	421	1,012	186	71	70	146	184	3,817
Sole	74	175	352	146	227	48	643	217	417	116	104	133	2,652
<i>Port Chalmers</i>													
Barracouta	1,666	2,427	3,701	1,660	1,002	198	224	29	56	34	890	2,051	13,938
Flounder	101	159	85	33	27	47	132	109	138	11	88	132	1,062
Hapuku	61	82	125	158	310	69	101	33	19	138	204	118	1,418
Red cod	502	285	130	241	268	216	349	146	92	26	106	175	2,536
Sole	687	679	952	1,225	918	414	912	387	749	982	1,936	1,122	10,963
<i>Stewart Island</i>													
Blue cod	838	1,599	2,290	1,703	953	1,097	2,667	876	1	466	303	26	12,819
Hapuku	53	112	159	151	85	64	116	17	..	10	21	..	788
<i>Nelson</i>													
Flounder	1	45	42	18	120	18	25	4	5	12	7	8	305
Gurnard	60	140	333	107	145	100	167	180	233	240	139	61	1,905
Snapper	298	101	348	556	726	389	629	412	430	777	815	572	6,053

TABLE VII.—SHOWING THE NUMBER OF SACKS AND VALUE OF THE OYSTERS OBTAINED IN THE DOMINION DURING THE YEAR ENDED 31ST DECEMBER, 1947

Locality.					Quantity.	Value.
DREDGE OYSTERS						
Foveaux Strait					Sacks. 81,518	£(N.Z.) 61,138
ROCK OYSTERS						
Bay of Islands					2,385	} 9,240
Whangarei Harbour					210	
Great Barrier					328	
Hauraki Gulf*					1,987	
Coromandel					370	}
Total					5,280	..
Grand total					86,798	70,378

* Browns Island 133; Motutapu, 116; Waiheke Island, 351; Ponui, 455; Rotoroa, 147; Pakatoa, 95; Rangitoto, 610; Pakihi, 17; South Shore, 63.

TABLE VIII.—SHOWING THE NUMBER AND SPECIES OF WHALES TAKEN OFF THE NEW ZEALAND COAST, WITH QUANTITY OF PRODUCTS, FOR THE YEAR ENDED 31ST DECEMBER, 1947

Whaling-station.	Number of Whales Taken.	Species.	Yield of Oil.	Quantity of Other Products.
Marlborough Sounds (Picton) {	101 9 1	Humpbacks .. Sperms .. Blue ..	Tons. 640	Tons. { 100 (bonedust). 45 (canned meat).
Total	111			

TABLE IX.—SHOWING THE TOTAL QUANTITY AND VALUE OF FISH AND SHELL-FISH IMPORTED INTO AND EXPORTED FROM NEW ZEALAND DURING THE YEAR ENDED 31ST DECEMBER, 1947

Fish and Shell-fish imported

Kind of Fish.					Quantity.	Value.
Herring (canned)					1,666,965 lb.	£(N.Z.) 120,882
Salmon (canned)					679,434 lb.	72,525
Sardines (canned)					1,255,523 lb.	159,077
Other fish, fresh, smoked, dried, pickled, salted, or frozen					2,615 cwt.	34,825
						387,309

Fish and Shell-fish exported

Kind of Fish.	Exporting Ports.	Quantity.	Value.
Oysters, fresh	Auckland	950 doz.	£(N.Z.) 27
Blue cod, frozen	Auckland	4 cwt.	29
	Wellington	7,021 cwt.	48,460
	Lyttelton	800 cwt.	4,663
	Dunedin	200 cwt.	1,150
	Other ports	7,286 cwt.	36,949
	Total	15,311 cwt.	91,251
Flounder, frozen	Auckland	106 cwt.	740
	Wellington	161 cwt.	1,132
	Dunedin	248 cwt.	1,530
	Other ports	239 cwt.	1,399
	Total	754 cwt.	4,801
Snapper, frozen.. ..	Auckland	914 cwt.	5,219
	Wellington	1,883 cwt.	11,894
	Total	2,797 cwt.	17,113
Tarakihi, frozen	Auckland	99 cwt.	691
	Wellington	3,029 cwt.	18,853
	Dunedin	1,319 cwt.	6,664
	Other ports	1,372 cwt.	7,094
	Total	5,819 cwt.	33,302
Red cod, frozen	Auckland	6 cwt.	26
	Wellington	90 cwt.	464
	Dunedin	53 cwt.	282
	Other ports	425 cwt.	2,277
	Total	574 cwt.	3,049
Hupuku, frozen	Auckland	1 cwt.	9
	Wellington	24 cwt.	126
	Dunedin	579 cwt.	3,086
	Other ports	666 cwt.	3,574
	Total	1,270 cwt.	6,795
Barracouta, frozen	Auckland	268 cwt.	1,356
	Wellington	740 cwt.	3,685
	Dunedin	674 cwt.	2,324
	Other ports	1,672 cwt.	5,856
	Total	3,354 cwt.	13,221

Fish and Shell-fish exported—continued

Kind of Fish.	Exporting Ports.	Quantity.	Value.
Sole, frozen	Auckland	25 cwt.	£(N.Z.) 165
	Wellington	136 cwt.	907
	Dunedin	2,253 cwt.	13,462
	Other ports	1,829 cwt.	10,670
	Total	4,243 cwt.	25,204
Crayfish, frozen	Auckland	269 cwt.	4,170
	Wellington	1,599 cwt.	10,688
	Dunedin	466 cwt.	2,279
	Other ports	1 cwt.	3
	Total	2,335 cwt.	17,140
Other kinds*, frozen	Auckland	424 cwt.	2,595
	Wellington	3,274 cwt.	18,642
	Lyttelton	90 cwt.	396
	Dunedin	809 cwt.	4,283
	Other ports	3,081 cwt.	14,427
	Total	7,678 cwt.	40,343
Total export of frozen fish (including crayfish) from New Zealand		44,135 cwt.	252,219
Smoked, dried, pickled or salted ..	Auckland	370 cwt.	2,293
	Wellington	1,138 cwt.	8,038
	Dunedin	535 cwt.	3,319
	Other ports	2,341 cwt.	13,883
	Total	4,384 cwt.	27,533
Preserved in tins— Oysters	Auckland	5,720 lb.	537
	Wellington	141 lb.	12
	Dunedin	3,300 lb.	250
	Other ports	32 lb.	4
	Total	9,193 lb.	803
Whitebait	Auckland	72,312 lb.	14,387
	Wellington	101,737 lb.	19,555
	Lyttelton	3,833 lb.	797
	Dunedin	86,875 lb.	17,941
	Other ports	900 lb.	214
	Total	265,657 lb.	52,894
Toheroa	Auckland	13,778 lb.	1,065
	Wellington	329 lb.	33
	Total	14,107 lb.	1,098

* Includes mussels, 74 cwt., £477; whitebait, 72 cwt., £1,207.

Fish and Shell-fish exported—continued

Kind of Fish.				Exporting Ports.	Quantity.	Value.
Mussels	..	..	..	Auckland	67,392 lb.	£(N.Z.) 4,035
				Dunedin	95 lb.	8
				Total	67,487 lb.	4,043
Crayfish	..	..	..	Auckland	2,992 lb.	457
				Wellington	32,123 lb.	4,106
				Dunedin	25,236 lb.	3,754
				Total	60,351 lb.	8,317
Clam chowder	..	..	..	Auckland	1,152 lb.	54
Other kinds	..	..	..	Auckland	6,312 lb.	471
				Wellington	27,018 lb.	1,995
				Dunedin	25,104 lb.	1,571
				Other ports	173,184 lb.	7,193
				Total	231,618 lb.	11,230
Value of total exports of New Zealand fish and shell-fish				..	..	358,218
Re-exports: Fish (canned)	..	..	..	Auckland	809 lb.	91
				Wellington	23 lb.	6
				Total	832 lb.	97

TABLE X.—RETURN OF LAND ENGINEERS', ENGINE-DRIVERS', AND ELECTRIC-TRAM DRIVERS' EXAMINATIONS HELD THROUGHOUT NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1948, 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	..	..	14	12	40	15	1	..	..	..	1	..
Christchurch	..	..	1	2	24	3	..	..	..	..	4	..
Dunedin	..	..	3	..	16	5	3	..	1	..	1	..
Gisborne	..	..	..	..	2	..	..	..	..	..	..	..
Greymouth	..	..	7	5	5	..	..	..	..	..	1	..
Hamilton	..	..	5	4	24	4	2	..	2	..	..	..
Invercargill	..	..	2	1	12	2	1	..	1	..	1	..
Napier	..	..	2	1	7	4	..	..	..	..	..	..
Nelson	..	..	1	..	6	1	..	..	..	..	..	..
New Plymouth	..	..	1	..	46	18	..	..	..	..	..	..
Palmerston North ..	..	..	2	..	14	7	..	..	..	..	..	..
Timaru	..	..	..	1	6	2	..	..	1	..	1	..
Wanganui	..	..	1	..	10	5	2	..	..	..	..	..
Wellington	..	..	2	1	25	6	..	..	..	..	..	..
Whangarei	..	..	..	1	1	..	..	..	..	..	..	..
Other places	..	..	..	..	2	2	..	..	..	..	..	..
Totals	..	..	41	28	240	74	9	..	5	..	9	..

Place.	Steam-winding-engine Driver.		Electric-winding-engine Driver.		Electric-tram Driver.		Electric-tram Driver (One-man Car).		Cable-tram Drivers.		Total.		Grand Total.
	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	
Auckland	..	..	..	..	71	6	..	..	..	..	127	33	160
Christchurch	..	..	..	..	45	..	..	..	..	..	74	5	79
Dunedin	..	..	..	..	15	..	..	..	12	..	51	5	56
Gisborne	..	..	..	..	..	..	..	..	..	..	2	..	2
Greymouth	..	..	1	..	..	..	..	..	..	..	14	5	19
Hamilton	..	..	..	..	..	..	..	..	..	..	33	8	41
Invercargill	..	..	..	..	..	..	5	..	..	..	22	3	25
Napier	..	..	..	..	..	..	..	..	..	..	9	5	14
Nelson	..	..	..	..	..	..	..	..	..	..	7	1	8
New Plymouth	..	..	..	..	2	..	..	..	..	..	49	18	67
Palmerston North ..	..	..	..	..	..	..	..	..	..	..	16	7	23
Timaru	..	..	..	..	..	..	..	..	..	..	8	3	11
Wanganui	..	..	..	..	..	..	3	..	..	..	16	5	21
Wellington	..	..	..	..	43	4	..	..	8	..	78	11	89
Whangarei	..	..	..	..	..	..	..	..	..	..	1	1	2
Other places	..	..	..	..	..	..	..	..	..	..	2	2	4
Totals	..	..	1	..	176	10	8	..	20	..	509	112	621

TABLE XI.—SUMMARY OF EXAMINATIONS FOR CERTIFICATES AS MASTERS AND MATES FOR THE YEAR ENDED 31ST MARCH, 1948

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	16	9	1	2	25	14	1	8	41	23	2	10	76
Home-trade Masters and Mates	17	6	1	5	11	3	..	..	28	9	1	5	43
River Masters	7	..	6	..	1	..	1	..	8	..	7	..	15
Examinations in Compass Deviation	..	..	..	..	4	..	..	..	4	..	..	..	4
Square-rigged Endorsements	1	..	..	..	1	..	..	..	2	..	..	..	2
Fore and Aft Endorsements	..	..	..	..	1	..	..	..	1	..	..	..	1
New Zealand Pilots ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	41	15	8	7	43	17	2	8	84	32	10	15	141

TABLE XII.—SUMMARY OF EXAMINATIONS OF MARINE ENGINEERS FOR THE YEAR ENDED 31ST MARCH, 1948

Class of Certificate.	Auckland.				Wellington.				Christchurch.				Dunedin.				Other Places.		Totals.				Grand Total.
	P.	P.P.	F.	P.F.	P.	P.P.	F.	P.F.	P.	P.P.	F.	P.F.	P.	P.P.	F.	P.F.	P.	F.	P.	P.P.	F.	P.F.	
IMPERIAL VALIDITY																							
1st and 2nd Class Steam	3	9	..	10	15	28	..	27	1	5	..	9	..	3	..	1	..	..	19	45	..	47	111
1st and 2nd Class Motor	1	..	..	1	6	1	..	3	..	1	..	..	..	..	..	..	..	..	7	1	..	4	12
1st and 2nd Class Steam Endorsement	1	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	3	..	..	..	
1st and 2nd Class Motor Endorsement	2	..	..	..	3	..	..	..	1	..	..	..	..	..	..	..	..	..	6	..	..	..	6
	7	9	..	11	25	28	..	30	2	6	..	9	1	3	..	1	..	..	35	46	..	51	132
VALID IN NEW ZEALAND ONLY																							
3rd Class Steam	26	..	7	..	29	..	12	..	5	..	2	..	7	..	7	..	..	..	67	..	28	..	95
River Steam	1	..	..	..	1	..	..	..	2	..	..	..	..	..	..	..	2	..	6	..	..	..	6
1st and 2nd Coastal Motor	13	..	2	..	12	..	2	..	..	..	..	..	1	..	..	..	..	..	26	..	4	..	30
River Oil ..	45	..	4	..	4	..	..	..	4	..	..	..	2	..	1	..	39	4	94	..	9	..	103
	85	..	13	..	46	..	14	..	11	..	2	..	10	..	8	..	41	4	193	..	41	..	234
Totals ..	93	9	13	11	71	28	14	30	13	6	2	9	11	3	8	1	41	4	228	46	41	51	366

TABLE XIII.—SUMMARY OF CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT DURING THE YEAR ENDED 31ST MARCH, 1948

Nature of Casualty.	On or near Coasts of Dominion.			Outside Dominion.			Total Number of Casualties reported.		
	Number of Vessels.	Tonnage.	Number of Lives lost.	Number of Vessels.	Tonnage.	Number of lives lost.	Number of Vessels.	Tonnage.	Number of Lives lost.
Strandings—									
Total loss ..	1	20	..	..	..	..	1	20	..
Damaged ..	5	748	..	..	..	..	5	748	..
Undamaged ..		10,751	..	..	..	..	8	10,751	..
	14	11,519	..	..	..	..	14	11,519	..
Fires—									
Total loss ..	..	..	..	..	..	..	..	..	..
Damaged ..	4	4,779	1	..	..	..	4	4,779	1
Undamaged ..	..	..	..	1	4,490	..	1	4,490	..
	4	4,779	1	1	4,490	..	5	9,269	1
Collisions—									
Total loss ..	1	4	..	..	..	..	1	4	..
Damaged ..	12	15,958	..	..	..	..	12	15,958	..
Undamaged ..	2	5,636	..	..	..	..	2	5,636	..
	15	21,598	..	..	..	..	15	21,598	..
Miscellaneous, including damage by heavy seas, breakdown of machinery, &c.	12	13,214	5	3	1,958	..	15	15,172	5
Totals	48	51,119	6	4	6,448	..	49	57,558	6

Approximate Cost of Paper.—Preparation, not given; printing (678 copies), £165

By Authority: E. V. PAUL, Government Printer, Wellington.—1948.

Price 1s. 3d.]