1939.

NEW ZEALAND.

MARINE DEPARTMENT.

ANNUAL REPORT FOR THE YEAR 1938-39.

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

Marine Department, Wellington, 1st July, 1939.

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.,
P. FRASER,
Minister of Marine.

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

REPORT.

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

SIR,— Marine Department, Wellington, 30th June, 1939.

I have the honour to submit the annual report of the Marine Department for the financial year ended 31st March, 1939. This year the data in connection with finance has been deleted from the report in order to expedite publication. The full financial statement, however, is published in parliamentary paper B.–1 [Pt. IV], but it is appropriate here to state that increases have been shown in both revenue and expenditure.

A junior Biologist of this Department accompanied the Royal Research Ship "Discovery II," arriving back in New Zealand in the mid-year. This was a rare and valuable opportunity for a young scientist to take part in modern research work directed by eminent scientists with the best available equipment. This Department gratefully acknowledges its indebtedness to the "Discovery" Committee for the opportunity afforded.

A Fresh-water and a Marine Biologist from the Fisheries Section attended the meeting of the Australian and New Zealand Association for the Advancement of Science at Canberra, Australia, in January of this year, and valuable personal contacts were made with overseas workers engaged in the study of similar problems.

Good progress with the charting of the New Zealand coast-line, commenced last year, has been made by the Admiralty Surveying Ship "Endeavour." Complete charts of the approaches to Auckland, of the coast-line as far as Mercury Bay, and of Mercury Bay itself have now been accurately drawn and forwarded to the Admiralty. The survey of Great Barrier Island has been completed, while at the end of the year the survey vessel was engaged in the area to the northward as far as Bay of Islands.

The most serious shortcoming of the old charts is their lack of soundings: for the new charts sea depths are being recorded at close intervals as far out as the 100-fathom line, and such a complete charting of the sea bottom will be especially useful to ships equipped with echo-sounders when making a landfall bound for New Zealand. Representations have been made at times by masters of ships urging the prior claim of certain localities for the attention of the surveying ship. For instance, Cook Strait and Foveaux Strait have been mentioned as deserving of priority, and on this matter correspondence has been opened with the Admiralty.

Assistance to navigation by the installation of radio beacons at points on the coast-line has proceeded during the year, and the more rapid delivery of the apparatus from England has led to improved progress. It would now, perhaps, be safe to say that New Zealand is pushing ahead of some older countries in the provision of these aids to navigation. Cook Strait is now adequately served with radio beacons installed at Baring Head, Cape Campbell, and Stephens Island, the latter two being put into operation during the end of the year.

In the north the heavy constructional works for beacons and electrification at Cuvier and Moko Hinau Islands has been done, and the beacons will shortly be operating.

Plans are in the course of preparation for a new installation, including fourteen miles of access road at Cape Reinga, near Cape Maria Van Diemen. Attention is now being given to the provision of beacons on the coast of the South Island. Coincident with the installation of beacons at the stations already mentioned the lights have been converted from oil to electricity semi-automatically operated, thus making it possible to dispense with the old system of continuous night-watching. In the early stages some trouble was experienced in obtaining batteries which give a sufficient length of service, but this difficulty has now been overcome.

This Department's vessel, the G.S.S. "Matai," has been working at high pressure for the whole year. In addition to the normal servicing of lighthouses, both watched and unwatched, the vessel has transported all the material to stations where radio beacons are being installed. This is no mean feat when it is considered that up to 400 tons of cargo have been freighted to some stations in lieu of some 10 to 15 tons under normal conditions. In addition, full loads of cargo for the Public Works Department at Milford Sound are now shipped from Bluff each trip. All this extra work has been carried out with a minimum of delay, and the Department's thanks are conveyed to the master and his crew for a splendid effort during the past year under most difficult conditions.

The disabilities of isolation of lighthouse employees is being relieved as much as possible by improvement of amenities at the stations and the provision of better mail and victualling services. Where it is not possible for children to attend schools the education service supplied by the Correspondence School Section of the Education Department is proving invaluable, and during the year a pass in matriculation by the daughter of a lighthouse-keeper is recorded to the credit of the system.

The Department desires to place on record the very generous action of Mr. E. Riddiford in making available as a gift to the Department an area of 42 acres for the lighthouse reserve at Baring Head, this being additional to a previous gift of 40 acres.

The thrice-weekly service between Bluff and Stewart Island, instituted in January, 1938, under increased subsidy from Government, has been of great benefit to the island residents. The year's operations showed a great increase in the number of passengers and the quantities of cargo carried, and provides satisfactory transport for the large quantities of fish caught around the island. A substantial proportion of the increase in the number of passengers carried was due to visitors to the island, which is recognized as one of the best scenic resorts in the Dominion. Inquiries have been made by the present contractor with a view to procuring a better vessel for the service, but he has so far been unsuccessful. In the meantime the service is being continued.

The International Whaling Conference has continued its investigations into the condition of the whale fisheries in the Antarctic with a view to something further being done in regard to restrictions in catching in the interests of conservation. No licenses are at present issued in New Zealand for whale-factory ships or catchers in this region, as the S.S. "Southern Princess," which was formerly registered in the Dominion, is now registered in the United Kingdom. The question of license is therefore one for consideration by His Majesty's Government in England. The station at Tory Channel took seventy-seven whales last season, which is the best result for any season. The yield of oil was 400 tons and of by-products 15 tons. Unfortunately, sales of oil were not so great as in the previous season.

Harbours.

Most of the harbours in New Zealand are administered directly by Harbour Boards constituted under the Harbours Act; a few are vested in already existing local authorities, but at Westport, Picton, and Kaipara the Marine Department itself controls the harbour and carries out the normal functions of a Harbour Board.

Kaipara Harbour.—The new launch has given entire satisfaction, and has enabled a great deal of necessary work in connection with buoys, lights, &c., to be carried out during the year. The G.S.S. "Matai," on a recent trip, carried out reconditioning work to most of the buoys which required new chain, and the buoys in Kaipara Harbour are now in a satisfactory condition. The Harbourmaster at Kaipara also acts as a Customs officer and carries out certain duties for the Fisheries Branch of this Department.

Picton Harbour.—The Harbourmaster, who is also the pilot at this port, controls the harbour and foreshores and also acts as a Customs officer. Much responsible work has been carried out by the Harbourmaster during the year in the nature of inspection of launches as to safety apparatus, &c. General maintenance of the port and equipment, also repairs to the Harbourmaster's residence, have been attended to. Towards the end of the year the laying-down of the keel for the new fisheries launch was commenced at Picton, and it is hoped to have this vessel in commission towards the end of the current year.

Westport Harbour.—Trade at Westport was well maintained during the year, export of coal, on which the revenues of the port are largely dependent, being 614 tons greater than in the previous year.

During the year 359 steamers and 42 auxiliary sailing-vessels, aggregating 287,411 tons net register, entered the port, as against 375 steamers and 51 auxiliary sailing-vessels, aggregating 288,621 tons net register, for the year 1937–38, a net decrease of 25 vessels and 1,210 tons net register.

The total quantity of coal shipped during the year was 426,393 tons, as against 425,779 tons the previous year, being an increase of 614 tons. Incidentally, the tonnage of coal shipped during 1938–39 was the highest since the year 1930–31.

Between September and December of last year there was a demand for coal for export to Noumea and Pago Pago, a total quantity of 11,105 tons being shipped. This is quite a new field for Westport coal, and a continuance of the trade would be of benefit to the harbour and, indeed, to the

whole Buller district. The bunkering of vessels at Westport is encouraged by reduced port dues on vessels calling for bunkering purposes only. The following summary shows the number of vessels which called at Westport for bunkering or for coal for export since 1927–28, with the quantities of bunker coal and export cargo coal shown separately :—

Year.	Number of Vessels.	Quantity of Bunker Coal taken.	Cargo Coal exported.
		Tons.	Tons.
1925–26	20	..	..
1926–27	44	..	..
1927–28	51	54,993	..
1928–29	54	54,083	..
1929–30	57	61,546	..
1930–31	24	25,969	..
1931–32	10	7,637	..
1932–33	7	6,872	..
1933–34	14	12,703	..
1934–35	21	16,376	..
1935–36	34	20,647	1,108
1936–37	23	22,039	1,236
1937–38	31	24,824	1,255
1938–39	36	22,724	11,105

It was noted in last year's report that at the end of March, 1938, following the flood in the Buller River accompanied by adverse conditions at sea, the Westport Harbour bar shoaled to the extent of 3 ft. Although showing gradual improvement, bar conditions remained bad for the first three months of the year under review and some of the larger colliers were unable to load fully, but nevertheless the coal exported for these three months was 6,000 tons more than for the corresponding months of the previous year. This indicates that if there is a demand for coal it will be shipped even when bar depths are below normal. The suction dredger "Rubi Seddon," which had been idle for many years, was recommissioned, and commenced work in June, 1938, taking up the work of the "Eileen Ward" while the latter was laid up awaiting new boilers from Great Britain. The "Eileen Ward" will be in commission again in June, 1939. Towards the end of the year under review it was deemed advisable to do maintenance dredging at the berthages and on various areas on which the suction dredgers cannot operate. For this work the bucket dredger "Maui" was recommissioned in Wellington and is now in action. The following table shows the number of days on which the respective depths of water obtained on the bar at high water, and the comparative figures for several preceding years are given :—

Depth.	1929–30.	1930–31.	1931–32.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.	1937–38.	1938–39.
Over 14 ft. ..	..	..	..	..	365	365	366	365	365	365
,, 16 ft. ..	365	365	..	365	360	357	361	365	365	365
,, 18 ft. ..	363	340	366	350	279	353	355	356	361	363
,, 20 ft. ..	345	208	360	287	152	263	263	328	338	275
,, 22 ft. ..	276	43	252	144	42	81	90	257	222	126
,, 24 ft. ..	99	..	53	14	..	15	6	86	31	11
,, 26 ft. ..	11	..	10	..	..	..	..	7	..	..
,, 28 ft. ..	..	..	..	..	..	..	..	..	..	..

The rainfall for the year was 84·1 in., compared with 68·35 in. in the previous year.

During the year some heavy stone has been placed at the head of the western breakwater to strengthen and consolidate the foot of the wall where work abruptly ceased in 1931. Also, considerable second-class stone has been placed at Organ's Island to repair weaknesses which floods in the river during the last five years had developed. The stone for these works has been obtained from the harbour quarry at Cape Foulwind, and particularly good work has been done by the men employed on the works mentioned. The work at Organ's Island is of a permanent nature, and maintenance for the future will be reduced to a minimum. This work is not yet complete, but will be pushed on towards completion during the present year. The reconditioning of the bridge across to the Organ's Island work was completed during the year by the Department's own workmen and has proved adequate for the transport of heavy train loads of stone to the works.

The beacons and signal-station lights which were electrified during the previous year have functioned very satisfactorily, and early in this year the equipment at the signal-station on the western breakwater was further improved by the conversion of the port flashing light from gas to electricity and the installation of a daylight electric signalling-lamp. The various harbour light boxes and houses, beacons, signalling-station, and all idle plant were maintained in good order. Opportunity was also taken to have electric light installed in the harbour offices, and portions of the building were renovated internally. Emergency life-saving rocket apparatus and equipment was closely inspected, and is maintained ready for use at urgent call.

In November, 1938, Mr. J. W. Curtis, who had been Secretary-Manager of the harbour since the Department took control, retired on superannuation, and was replaced by Mr. A. C. Bascand as Engineer-Manager. The latter had several years' contact with harbour matters by virtue of his office as Public Works Engineer for the district.

The report of last year mentioned the intention to proceed with a proposal formulated by the Marine Engineer to remove by dredging two or three million cubic yards of material from low-lying backwaters adjacent to the entrance, thus increasing the tidal capacity and, in consequence, the scouring velocity of tidal movement. The scheme has received the approval of Government, and tenders for a shallow-draft suction dredger have been advertised by the Public Works Department both locally and in Great Britain. As this report goes to press, tenders have been received, and are now being considered by the Public Works Department.

Little Wanganui Harbour.—The harbour at Little Wanganui is controlled from Westport under a part-time Harbourmaster, Mr. Simpson, who acts as the Department's representative in that locality. Plans were prepared some time ago for the construction of a new wharf at Little Wanganui, but in view of the prospect of the reopening of the Port of Karamea the proposal was not proceeded with. However, in an endeavour to meet the situation and provide more space for the storage of timber the Department has now arranged for the T's of the wharf to be extended at a cost of £200. This will in no way prejudice the original proposal for a new wharf, but defers the matter until such time as the position at Karamea is clarified.

Awanui Harbour Dredging.—As a result of the initial dredging carried out by the Department between August and December, 1937, vessels have been enabled to work the port without interruption, and the improved conditions have brought about an increase in the trade. Regular sailings are of special importance in the export of butter, and to avert any risk of interruption a small amount of redredging was carried out in August, 1938, early in the export season. The annual revenue derived from a small harbour-improvement rate has exceeded the anticipated amount, and should prove more than sufficient to meet the full cost of any further dredging or other improvement to the port which may be needed in the future.

Mangonui Wharf.—The contract for this work was practically completed during the previous year. The principal work carried out during the current year has been the painting of the wharf shed. The wharf was formally opened by the Hon. Minister of Public Works in February, 1939.

Te Kao Wharf, Parengarenga Harbour.—A wharf in the form of a breastwork 60 ft. long has been completed in the upper reaches of the Te Kao channel, adjacent to the remote Native settlement of Te Kao. The work included the erection of a wharf shed, 25 ft. by 20 ft., and metalled road access thereto.

Te Kopuru Wharf, Kaipara Harbour.—A contract was let in May, 1939, for the replacement of the present structure, which was in a precarious condition.

Waikokopu Harbour.—The control of this harbour has been carried out by the Wairoa Harbour Board on behalf of the Public Works Department. During the year 116 vessels worked the port, and a busy year was experienced, over 8,000 tons of general cargo and 150,000 super feet of timber being brought in; while about 106,000 carcasses of mutton, lamb, and pork, &c., and a considerable quantity of general export business was handled. Maintenance work only has been carried out during the year.

Hicks Bay Wharf.—The engineering survey has been completed for the repairing or renewing of the approach to this wharf and repairs to the actual wharf structure. Plans and estimates are in hand.

Homewood Wharf, Pelorus Sound.—The end span on this wharf has been raised, three new piles have been driven, redecking completed, new steps installed, and the wharf generally reconditioned.

Wharves in Sounds County.—Surveys have been carried out for wharves at Ship Cove and Te Mehia in Queen Charlotte Sound, and at Tennyson Inlet in Pelorus Sound. Plans of Ship Cove and Tennyson Inlet wharves have been approved, and tenders will be invited shortly for the construction of both structures.

Karamea.—Repairs were carried out to the Harbourmaster's residence.

Okuru.—Erection of a new wharf shed is in hand.

Jackson's Bay.—Construction of the wharf 202 ft. long and 16 ft. wide in hardwood, with a trestle approach 400 ft. long and a launch landing, was completed. A second-hand mooring-buoy was fixed in the bay.

Okarito Harbour.—Further work to open up the new entrance south of the training-wall was carried out, and was sufficiently effective to allow the port to be worked towards the end of the year, for the first time for many years.

Bruce Bay.—Survey for a new wharf has been carried out here.

Akaroa Wharf.—Minor repairs were carried out in consequence of damage done by H.M.S. "Wakakura."

Waikawa Slipway.—A slipway for the purpose of providing facilities for the overhaul of fishing-vessels in the Waikawa Harbour was erected during the year, and the work was almost completed by March, 1939.

Bluff Harbour: Fairchild Rock.—The Bluff Harbour Board co-operated with the Department in placing in position the automatic light and buoy at Fairchild Rock, in the Bluff Harbour.

Lighthouses.

Cape Maria Van Diemen.—The erection of the new landing-crane to replace that damaged by a severe storm in June of last year has been completed, as has also the renewal of the cableway to the mainland, together with a new carrier and cage. Repairs to foundations of the tower were carried

out during the period. Arrangements were made for the carrying-out of a survey in connection with the removal of the station to Cape Reinga, and the machinery, switchboard battery, radio masts, &c., are on hand ready for the installation of the radio beacon and electrification.

Cape Brett.—Repairs were carried out to the landing-crane during the year.

Cuvier Island.—During the period operations were commenced in connection with the electrification of the station and the provision of a radio beacon. The construction of the power-house, the installation of duplicate generating-equipment, the erection of two lattice steel radio-beacon towers and earth mats, together with the electrification of the light, laying of cables, and the wiring of dwellings, was completed. The light is now functioning under electric automatic control, but the installation of the radio-beacon equipment, owing to the non-delivery of materials, is not as yet complete. Twenty chains of access road with the necessary culverting were constructed, and the drainage of the residential area and the fencing of the power-house site undertaken.

Moko Hinau.—The erection of a power-house in connection with the installation of a radio beacon and the electrification of the station has been completed. The power winch was moved 50 ft. uphill to facilitate the handling of power-house materials.

East Cape.—Repairs to plant at the lighthouse were carried out, and an inspection and report made covering the matter of improving the difficult access to this lighthouse round the Pouretua Bluff. Several slips on the track were removed.

Matakaoa Point.—An inspection and report have been made on storm damage to the access track leading to the lighthouse, but no repair work has been carried out.

Portland Island.—A survey has been carried out with a view to improving tramway and road access from the landing to the lighthouse station.

Stephens Island.—The three cottages occupied by the keepers have been cleaned and repainted and sundry maintenance work carried out to exteriors. All plumbing-work has been put into good order, baths and basins installed, and overhaul and repairs to drains effected. All interior maintenance work was carried out as required, and the buildings left in good order.

The roofs of both the wireless-house and signal-cabin have been repaired and painted.

The lighthouse tower, school, landing-shed, both engine-houses, and dry store all received the necessary maintenance work, and were repainted.

The whole of the tram-line was overhauled, new sleepers put in and repacked, and the line left in good working-order.

During the period the power-house for the electrification of the station and installation of a radio beacon was erected. Duplicate generating-equipment, switchboard, and battery were installed. The erection of two lattice steel radio-beacon towers and an earth mat, together with the electrification of the light, laying of cables, and wiring of dwellings, was completed. A short-wave aerial mast was also erected. The light is now functioning under electric automatic control, but the installation of the radio beacon has been delayed pending the arrival of equipment. This equipment is now on hand and installation work is under way.

Farewell Spit.—A hardwood-timber landing-stage, fabricated at the workshop, has been erected on site on this station.

Brothers Island.—A radio-telephone communication aerial mast and auxiliary gear, fabricated at the workshop, has been erected, and an engine-shed supplied and installed. The davit for the south landing-crane has also been erected.

French Pass.—A signal mast has been fabricated at the workshop for erection at this station.

Separation Point.—An acetylene automatic light has been erected at this point ready to be put into operation. A crab winch and landing-crane have been erected, and a tramway laid from the crane to the base of the steel tower.

This light, with lantern and sun-valve mounted on the steel tower, is all complete with gas cylinders and only remains to be put into commission.

Cape Campbell.—The work of electrification and installation of a radio beacon was put in hand early in the period. The power-house was erected during the period 1937–38. Duplicate generating-equipment, switchboard, and battery have now been installed, and the electrification of the light, laying of cables, and wiring of dwellings all completed. Four umbrella-type aerials were erected from the tower, and an earth mat laid round its base. The light is now functioning under electric automatic control, and the radio beacon is working to schedule.

Godley Head.—During the period minor repairs were carried out to the fog-signal engines.

In order to make room for Defence Department activity in the vicinity of the lighthouse, it has become necessary to move the light and the keeper's dwelling. After inspection of the locality, a suitable site was chosen lower down the cliff and preliminary survey work put in hand. As it is proposed to electrify this light when it is moved, estimates have been prepared covering both its removal and electrification.

Centre Island.—Plans and specifications were prepared for the erection of three lighthouse-keepers' cottages at this station, and during the year all the necessary materials were purchased by this Department and conveyed to the island. A contract was let in February last for the erection of the cottages, and it was anticipated that work would be in hand by the end of the period and completed by the middle of October next.

Puysegur Point.—A report on the condition of the three cottages, &c., at this station was submitted in July, 1938, and the necessary authority to effect repairs was subsequently issued. The materials were conveyed to Puysegur in December, but some difficulty was experienced in getting them from the landing to the site of the work. All materials are now on the site, and renovation work is in progress.

A reconnaissance survey of the access road from the landing to the lighthouse, a distance of approximately one and three-quarter miles, was made during the 1937–38 period, and an estimate of the work has been carried out. The construction of the road will probably be put in hand during 1939–40.

Tairoa Head.—During the year a new concrete building was erected for the fog-signal, and repairs and renovations were carried out to the lighthouse and dwellings.

Jackson Bay.—In connection with the proposed light at this point, a preliminary survey has been completed and tenders called for the supply of a lighthouse tower, landing-crane, winches, and light equipment, including lens.

Marine Works.

A number of applications were received from local bodies and private people for approval of works involving marine interests. Among the various applications were the following:—

Foreshore Licenses.—Mangonui Harbour; Kaipara Harbour; Paremata; Queenstown, Lake Wakatipu; Wairoa River, Kaipara Harbour; Mercury Island; Kohukohu, Hokianga Harbour; Dargaville, Wairoa River, Kaipara Harbour; Dudding's Creek, Kaipara Harbour; Terakohe, Golden Bay; Awanui River, Wharf; Whangaroa Harbour.

Wharves and Jetties.—Lyttelton Harbour; Graving Dock, Lyttelton Harbour; Matakana Island, Tauranga Harbour; Hobson Wharf, Auckland Harbour; Queenstown, Lake Wakatipu; Tauranga Harbour; Sumpter Wharf, Oamaru Harbour; Awanui River; Haulashore Island, Nelson Harbour.

Boat-sheds, Skids, Slipways, &c.—Anderson's Bay, Otago Harbour; Colinswood, Otago Harbour: Karitane, Waikouaiti River (fourteen); St. Mary's Bay, Auckland Harbour (two); Deborah Bay, Otago Harbour; Lower Portobello Bay, Otago Harbour; The Cove, Waverley, Otago Harbour (two); Picton; Broad Bay, Otago Harbour; Ponsonby, Auckland Harbour; Sulphur Bay, Northcote, Auckland; Evans Bay, Wellington Harbour; Smith's Bay, Ross Point, Otago Harbour; Roseneath, Sawyer's Bay, Otago Harbour.

Breastworks and Retaining-walls.—Wakefield Quay, Nelson; Punguru, Hokianga Harbour; Export Wharf, Auckland Harbour; Evans Bay, Wellington Harbour; Milford swimming-pool, Wairau Creek Estuary; Helensville Creek, Kaipara Harbour; Panmure.

Reclamation.—Haven Road, Nelson Harbour; Punguru, Hokianga Harbour; Export Wharf, Auckland Harbour; Evans Bay, Wellington Harbour.

General.—Extension to breakwater, Oamaru Harbour; anchorages and mooring-sites, Waipapa and Kerikeri Rivers, Bay of Islands; bridge, Narrows, Waikato River; bathing enclosure, Motueka; filling in old bed of Waiarohia Stream, Whangarei; embankments and bridges, Western Shore, Otago Harbour; water-main, Tauranga Harbour; beacons, Davey Bank, Bluff Harbour; bridge, Whenuakite River.

Harbour Board Legislation.

The Acts enumerated below affecting Harbour Board legislation were passed during the year, and the various Bills were investigated by the Marine Department before presentation to Parliament.

The *Greymouth Harbour Board Loan Act, 1938*, authorized the Board to borrow £40,000 for the purchase and delivery of a combined grab and hopper dredge and tug.

The *Opunake Harbour Act, 1938*, provided for the dissolution of the Opunake Harbour Board and the transfer of the function of the Board to the Opunake Borough Council and for the vesting of certain of the Boards endowments in the Crown as recreation reserves.

The *Otago Harbour Board Empowering Act, 1938*, authorized the Board to raise a loan of £400,000 for various harbour-works enumerated in Schedule to Act.

The *Paritutu Centennial Park Act, 1938*, vested certain lands formerly vested in the New Plymouth Harbour Board in the New Plymouth Borough Council as a recreation-ground.

In addition to the above legislation, sections dealing with harbour legislation appeared in the Acts mentioned below:—

(*a*) The *Local Legislation Act, 1938.*—Section 33 validated the expenditure incurred by the Auckland Harbour Board (i) for the reception and entertainment of the complement of the Imperial Airways flying-boat "Centaurus," (ii) in contributing to the fund for a memorial to the late Captain Musick and crew of the Pan-American Airways flying-boat "Samoan Clipper"; also authorized a grant toward the cost of the erection of a beacon as a memorial to the late Captain E. C. Musick and crew of the "Samoan Clipper."

Section 34 authorized the Auckland Harbour Board to contribute towards the cost of regrading Nelson Street, in the City of Auckland.

Section 44 authorized the Wellington Harbour Board to contribute £300 to the New Zealand Free Ambulance Transport Service (Wellington District), Incorporated.

(*b*) The *Reserves and other Lands Disposal Act, 1938.*—Section 5 set aside an area of land as a pilot and signal station to be vested in the Whaingaroa (Raglan) Harbour Board if ever a Board is constituted for that harbour.

Section 33 declared Crown land in Farewell Spit a reserve for the preservation of flora and fauna, authorized the reservation as a sanctuary of areas below high water in the vicinity, and provided for the care and protection of the same.

Section 38 vested part of the area of Waterloo Quay, formerly vested in the Wellington Harbour Board, in the Wellington City Corporation as a street.

RETURN SHOWING THE ORDERS IN COUNCIL WHICH HAVE BEEN ISSUED DURING THE YEAR ENDED 31ST MARCH, 1939.

Date of Order.	Purpose of Order.
1938.	
4th April	Licensing D. J. McKay to occupy foreshore, Mangonui Harbour (store, warehouse, and office site).
4th ,, ...	Licensing Phoebe Ethel Buckland to occupy foreshore, Kaipara Harbour (wharf-site).
4th ,, ...	Approving plan (M.D. 7699)—Boat-shed, Anderson's Bay, Otago Harbour; Anderson's Bay Boy Scout Group.
4th ,, ...	Approving plan (M.D. 7709)—Wharf extension, Gladstone Pier, Lyttelton Harbour; Lyttelton Harbour Board.
12th ,, ...	Making provision for representation of certain districts on Tauranga Harbour Board.
12th ,, ...	Appointing Waipara County Council to be principal authority for election of one member of Lyttelton Harbour Board by counties of Cheviot, Amuri, Waipara, Kowai, and Ashley.
12th ,, ...	Approving plan (M.D. 7714)—Boat-shed, Colinswood, Otago Harbour; F. Sturmer.
12th ,, ...	Approving plan (M.D. 7708)—Wharf at graving-dock, Lyttelton Harbour; Lyttelton Harbour Board.
12th ,, ...	Approving plan (M.D. 7710)—Jetty, Otapu Creek, Matakana Island, Tauranga Harbour; Whakatane Paper Mills, Ltd.
12th ,, ...	Approving plan (M.D. 7672)—Hobson Wharf, Auckland Harbour; Auckland Harbour Board.
26th ,, ...	Approving plan (M.D. 7717)—Boat-shed, Karitane, Waikouaiti River; J. Y. Love.
26th ,, ...	Approving plan (M.D. 7718)—Boat-shed, Karitane, Waikouaiti River; J. F. Morgan.
26th ,, ...	Approving plan (M.D. 7719)—Boat-shed, Karitane, Waikouaiti River; R. W. Edgar.
26th ,, ...	Approving plan (M.D. 7720)—Boat-shed, Karitane, Waikouaiti River; J. A. Howden.
26th ,, ...	Approving plan (M.D. 7721)—Boat-shed, Karitane, Waikouaiti River; E. R. Lavender.
26th ,, ...	Approving plan (M.D. 7722)—Boat-shed, Karitane, Waikouaiti River; D. M. Reid.
26th ,, ...	Approving plan (M.D. 7723)—Boat-shed, Karitane, Waikouaiti River; J. D. S. Pearson.
26th ,, ...	Approving plan (M.D. 7724)—Boat-shed, Karitane, Waikouaiti River; F. W. Bamfield.
26th ,, ...	Approving plan (M.D. 7726)—Boat-shed, Karitane, Waikouaiti River; J. M. Samson.
26th ,, ...	Approving plan (M.D. 7727)—Boat-shed, Karitane, Waikouaiti River; J. R. Fairbairn.
26th ,, ...	Approving plan (M.D. 7728)—Boat-shed, Karitane, Waikouaiti River; G. P. Fitzgerald.
26th ,, ...	Approving plan (M.D. 7729)—Boat-shed, Karitane, Waikouaiti River; R. C. Love.
26th ,, ...	Licensing James Andrews, Thomson Bruce, Joseph Foster, and Thomas Isbister (as trustees for fishermen of district) to occupy foreshore, Paremata (fishermen's reserve).
3rd May	Approving plan (M.D. 7725)—Boat-shed, Karitane, Waikouaiti River; Mr. and Mrs. J. G. Reid.
11th ,, ...	Approving plan (M.D. 7730)—Retaining wall, Wakefield Quay, Nelson; Nelson Harbour Board.
20th ,, ...	Approving plan (M.D. 7661)—Slipway, jetties, and storage space, Queenstown, Lake Wakatipu; Mount Cook and Southern Lakes Tourist Co., Ltd.
20th ,, ...	Licensing Mount Cook and Southern Lakes Tourist Co., Ltd., to occupy foreshore, Queenstown, Lake Wakatipu (slipway, jetties, and storage space).
20th ,, ...	Authorizing boat harbour and reclamation, St. Mary's Bay, Auckland Harbour; Auckland Harbour Board.
20th ,, ...	Approving plan (M.D. 7687)—Boat harbour, St. Mary's Bay, Auckland Harbour; Auckland Harbour Board.
20th ,, ...	Licensing A. E. Harding to occupy foreshore, Wairoa River, Kaipara Harbour (motor-garage).

RETURN SHOWING THE ORDERS IN COUNCIL WHICH HAVE BEEN ISSUED DURING THE YEAR ENDED 31ST MARCH, 1939—*continued.*

Date of Order.	Purpose of Order.
1938.	
1st June	Licensing E. Mizen to occupy foreshore at Mercury Island (cattle-race).
1st ,,	Approving plan (M.D. 7732)—Boat-shed, Deborah Bay, Otago Harbour; W. T. Plant.
22nd ,,	Licensing W. H. Kirkpatrick to use and occupy foreshore, Kohukohu, Hokianga Harbour (boat-shed).
22nd ,,	Vesting management of wharves at Onahau and Torea Bays, Queen Charlotte Sound, in Kenepuru Road Board, and prescribing dues.
22nd ,,	Approving plan (M.D. 7734)—Extension to breakwater; Oamaru Harbour Board.
20th July	Approving plan (M.D. 7752)—Anchorages and mooring-sites (yachts and small craft), Waipapa and Kerikeri Rivers, Bay of Islands; Bay of Islands Harbour Board.
20th ,,	Approving plan (M.D. 7738)—Boat-shed and slipway, Lower Portobello Bay, Otago Harbour; W. T. Clarke.
3rd August	Approving plan (M.D. 7750)—Boat-shed and slipway, The Cove, Waverley, Otago Harbour; S. Ikin.
3rd ,,	Amending regulations for salt-water fisheries: (*a*) The taking of crayfish; (*b*) Danish-seining in Kawau Bay; (*c*) taking of oysters, Marlborough and Nelson; (*d*) toheroa, Wellington District.
11th ,,	Approving plan (M.D. 7758)—Reclamation; Haven Road, Nelson Harbour; Nelson Harbour Board.
11th ,,	Authorizing Nelson Harbour Board to reclaim land near Haven Road, Nelson Harbour.
1st September	Amending regulations for taking trout and other acclimatized fish (Wellington Acclimatization District).
7th ,,	Amending regulations for trout-fishing (North Canterbury Acclimatization District).
7th ,,	Making regulations for trout-fishing (Otago Acclimatization District).
7th ,,	Revoking license of Alfred Subritzky to occupy foreshore at Te Kopuru, Wairoa River, Kaipara Harbour (wharf-site).
7th ,,	Approving plan (M.D. 7761)—Boat-shed and slipway, Picton; K. G. I. Stocker.
7th ,,	Approving plan (M.D. 7751)—Bridge, Narrows, Waikato River; Waikato County Council.
14th ,,	Authorizing the Hokianga Harbour Board to reclaim land, Panguru, Hokianga Harbour.
14th ,,	Approving plan (M.D. 7754)—Stop-banks, Panguru, Hokianga Harbour; Hokianga Harbour Board.
21st ,,	Licensing Dargaville Sawmilling Co., Ltd., to occupy foreshore, Dargaville, Wairoa River, Kaipara Harbour (timber boom).
21st ,,	Amending regulations for trout-fishing in the Waitaki Acclimatization District.
21st ,,	Making regulations for taking trout and other acclimatized fish in the Mangonui and Whangaroa districts.
21st ,,	Amending trout-fishing regulations for the Whangarei Acclimatization District.
21st ,,	Making regulations for trout-fishing in the Hobson Acclimatization District.
21st ,,	Amending regulations for trout-fishing (Southland Acclimatization District).
21st ,,	Amending regulations for trout-fishing (South Canterbury Acclimatization District).
21st ,,	Making regulations for trout-fishing (Westland Acclimatization District).
21st ,,	Making regulations for trout-fishing (Bay of Islands Acclimatization District).
21st ,,	Approving plan (M.D. 7745)—Breastwork and reclamation, Export Wharf, Auckland Harbour, Auckland Harbour Board.
21st ,,	Amending Order in Council licensing M. G. Dudding to occupy foreshore, Dudding's Creek, Kaipara Harbour (log-slip).
21st ,,	Authorizing reclamation, Export Wharf, Auckland Harbour; Auckland Harbour Board.
21st ,,	Approving plan (M.D. 7765)—Extension to jetty, Tauranga; Tauranga Harbour Board.
6th October	Approving plan (M.D. 7770)—Bathing-enclosure, Motueka; Motueka Safe Bathing Society.
6th ,,	Amending regulations for trout-fishing (Otago Acclimatization District).
6th ,,	Making regulations for trout-fishing (Marlborough Acclimatization Society).
6th ,,	Amending regulations for trout-fishing (Ashburton Acclimatization District).
6th ,,	Making regulations for trout-fishing (Taranaki Acclimatization District).
6th ,,	Amending trout-fishing regulations (Auckland Acclimatization District).

RETURN SHOWING THE ORDERS IN COUNCIL WHICH HAVE BEEN ISSUED DURING THE YEAR ENDED 31ST MARCH, 1939—*continued.*

Date of Order.	Purpose of Order.
1938.	
2nd November	Approving plan (M.D. 7771)—Sea wall and road-widening, Evans Bay, between Patent Slip and Kio Bay, Wellington Harbour; Wellington City Council.
2nd ,, ...	Approving plan (M.D. 7773)—Filling in old bed of Waiarohia Stream, Whangarei; Whangarei Borough Council.
2nd ,, ...	Licensing Golden Bay Cement Co., Ltd., to occupy foreshore, Terakohe, Golden Bay (power-house, store, and rubble facing).
2nd ,, ...	Revoking license of W. J. Hyde to occupy foreshore, Tawharanui Peninsula (removal of shingle and sand).
9th ,, ...	Approving plan (M.D. 7782)—Extension of wall, construction of culvert and groyne, and concreting of floor, Milford swimming-pool, Wairau Creek Estuary; Devonport Steam Ferry Co., Ltd., Auckland.
9th ,, ...	Vesting management of wharf, Waikato Heads, in Port Waikato Harbour Board for further period.
9th ,, ...	Approving plan (M.D. 7774)—Embankments and bridges, western shore, Otago Harbour; New Zealand Government Railways.
30th ,, ...	Vesting management of wharf at Waitapu in Takaka County Council, and prescribing wharfage dues.
30th ,, ...	Approving plan (M.D. 7778)—Water-main, Tauranga Harbour; Tauranga Borough Council.
13th December	Revoking license of Charles Spurgeon Rush and Charles Louis Bagnall, to occupy foreshore at Dargaville, Wairoa River, Kaipara Harbour (engine and storage sheds).
13th ,, ...	Revoking license of Robert Sharon Turner to occupy foreshore, Admiralty Bay (wharf).
13th ,, ...	Vesting control of part of foreshore at Paraparaumu, Paekakariki, and Plimmerton in the Hutt County Council.
13th ,, ...	Approving plans (M.D. 7744 and 7766)—Two beacons on Davey Bank, Bluff Harbour; Bluff Harbour Board.
13th ,, ...	Approving plan (M.D. 7791)—Extension to Sumpter Wharf; Oamaru Harbour Board.
13th ,, ...	Approving plan (M.D. 7794)—Boat-shed and slipway, The Cove, Otago Harbour; M. R. Morris.
13th ,, ...	Approving plan (M.D. 7793)—Boat-shed and slipway, Broad Bay, Otago Harbour; E. R. Kane.
17th ,, ...	Approving plan (M.D. 7805)—Reclamation, Evans Bay, Wellington Harbour; Wellington Harbour Board.
17th ,, ...	Authorizing Wellington Harbour Board to reclaim land in Evans Bay, Wellington Harbour.
20th ,, ...	Amending regulations for salt-water fisheries.
20th ,, ...	Approving plan (M.D. 7804)—Boat-shed and skidway, Ponsonby, Auckland Harbour; P. S. Hutchinson.
20th ,, ...	Approving plan (M.D. 7801)—Boat-slip, Sulphur Bay, Northcote, Auckland; A. Couldrey.
1939.	
10th January	Vesting management of wharf and shed at the Grove, Queen Charlotte Sound, in Marlborough County Council.
18th ,, ...	Revoking license of Gladys May Lisle to occupy foreshore, Whangape Harbour (wharf-site).
18th ,, ...	Licensing Kaitaia Co-operative Dairy Co., Ltd., to occupy foreshore, Awanui River (wharf extension).
18th ,, ...	Approving plan (M.D. 7802)—Extension to wharf, Awanui River; Kaitaia Co-operative Dairy Co., Ltd.
18th ,, ...	Vesting control of foreshore, Kaka Point, Otago; Kaka Point Welfare Society.
18th ,, ...	Licensing Lane and Sons, Ltd., to occupy foreshore, Whangaroa Harbour (store and boat-shed).
18th ,, ...	Vesting control of foreshore, Karoro Creek, Kaka Point, Otago, in Willsher Domain Board.
18th ,, ...	Approving plan (M.D. 7800)—Boat-shed and skidway, Evans Bay, Wellington Harbour; F. G. Cooke.
18th ,, ...	Approving plan (M.D. 7808)—Pile breastworks, Helensville Creek, Kaipara Harbour; Kaipara Co-operative Dairy Factory Co., Ltd.
18th ,, ...	Approving plan (M.D. 7811)—Boatshed and slipway, Smith's Bay, Ross Point, Otago Harbour; W. A. Johnston.

RETURN SHOWING THE ORDERS IN COUNCIL WHICH HAVE BEEN ISSUED DURING THE YEAR ENDED 31ST MARCH, 1939—*continued.*

Date of Order.	Purpose of Order.
1939.	
30th January	Approving plan (M.D. 7807)—Launch jetty, Haulashore Island, Nelson Harbour; Nelson City Council.
14th February	Revoking Order in Council of 21st October, 1935, licensing A. W. Bryant, Ltd., to use and occupy part of the land below low-water mark at Whangapoua.
14th ,, ...	Amending Order in Council of 24th June, 1919, licensing George Hunter Neill to occupy land between high- and low-water marks in Mangamuka River, Hokianga.
14th ,, ...	Revoking Order in Council of the 8th December, 1937, licensing Gideon Laurence Taylor and Edward Broadley Brown to use and occupy part of the foreshore at Matakatia Bay, Whangaparoa.
14th ,, ...	Approving plan (M.D. 7787) of a protecting-wall which the Panmure Yacht and Boat Club propose to erect at Panmure.
14th ,, ...	Amending salt-water fishery regulations.
28th ,, ...	Approving plan (M.D. 7785)—Bridge, Whenuakite River; Coromandel County Council.
28th ,, ...	Approving plan (M.D. 7824)—Boat-shed and slipway, Roseneath, Sawyer's Bay, Otago Harbour; H. J. Simpson.
8th March	Authorizing the further investment of £1,100 of the Auckland Harbour Board's insurance and other reserve funds in first-mortgage security of the real estate of Leonard Louis Orr at Horohoro, Cambridge.
8th ,, ...	Vesting control of foreshore, Tauranga, in Mount Drury Domain Board.
8th ,, ...	Revoking control of part of foreshore at Tauranga by Mount Maunganui Domain Board.
8th ,, ...	Approving plan (M.D. 7827)—Boat-shed, Karitane, Waikouaiti River; E. T. Barnett.
29th ,, ...	Prescribing dues for the use of wharves on Waitakaruru Stream and Piako River (Hauraki Plains County Council).

ADJUSTMENT AND INSPECTION OF COMPASSES.

The regulations for the adjustment of compasses have been carefully administered, and compasses continue to be maintained in a good state of efficiency. The results of the investigation of adjustments show that the work of the Inspectors and Adjusters has been carefully performed. Extra supervision has been necessary in a few cases on account of the changes in the magnetic forces in the vessels.

ADMIRALTY CHARTS.

The Department acts as agent for the sale of Admiralty charts, and maintains a stock at Head Office and at the Mercantile Marine offices at Auckland, Wellington, Lyttelton, and Dunedin. The stock includes all charts of the Dominion, and also a considerable portion of the world, which practically includes passages to all places where non-regular traders are likely to go after discharging in the Dominion. A supply of about 360 different charts is maintained to meet normal demands.

The charts, after their receipt, are periodically corrected to date, and to ensure that purchasers receive any further information received between the dates of correction a list of Notices to Mariners affecting the charts is maintained at each office for inspection. The sales last year amounted to 1,222 copies, an increase of 49 per cent. during the last four years.

EXAMINATION OF MASTERS AND MATES.

During the year examinations were held in Auckland and Wellington and were conducted in a satisfactory manner, those for foreign-going certificates being in accordance with the Imperial Board of Trade requirements.

One hundred and twelve examinations were held during the year, the percentages for foreign-going and home-trade certificates being as follows—Foreign-going: Full pass, 42 per cent.; partial pass, 42 per cent.; failure, 16 per cent. Home-trade: Full pass, 61·8 per cent.; partial pass, 23·5 per cent.; failure, 14·7 per cent. Two candidates passed for fore-and-aft sailing-ship endorsement and one for compass syllabus.

The regulations governing the examination for certificate as yacht masters in New Zealand waters were altered, as a result of representations made by the Auckland Branch of the Navy League, in the direction that the age-limit was raised to twenty-three and a period of three years' service in sea-going yachts subsituted for the ownership clause. Since the alteration thirteen candidates, all of whom passed, presented themselves for examination: they showed a good knowledge of navigation and a commendable standard of seamanship.

Examination in Form and Colour Vision.

These examinations are held at Auckland, Wellington, Lyttelton, and Dunedin. During the year seventy-one candidates were examined, of whom four failed.

Casualties.

The number of casualties on or near our coast is shown in the table at the end of the report and, as will be seen from their description, varied considerably in their nature and were of comparatively slight importance in the majority of cases and, fortunately, unaccompanied by loss of life.

A formal investigation into the collision between the tug "Te Awhina" and the S.S. "Kent" and the subsequent foundering of the tug was held at Auckland.

"New Zealand Nautical Almanac and Tide-tables."

This publication for 1939 (thirty-seventh edition) was issued for sale on the due date, 1st November. The publication provides mariners and others with much necessary and useful information, in addition to sailing directions and information concerning the various ports of the Dominion. The port information is corrected each year by the various Harbour Boards, and at the time of going to press—about the middle of October—is the latest available. Subsequent alterations are made by Notices to Mariners.

Notices to Mariners.

Information relative to changes in navigational aids and to the discovery of rocks, shoals, or other dangers to navigation and other general information necessary for the use of mariners is published weekly in the form of Notices to Mariners, sixty of which were issued during the year.

When the information is of an urgent character it is sent out in the form of a wireless warning by the Post and Telegraph shore stations to ships carrying an operator and to other ships by the National and Commercial Broadcasting Stations. The latter stations now play an important part in the safety of life at sea, and always render willing assistance when required.

In conformity with a scheme developed by the International Hydrographic Bureau, Monaco, the Mercantile Marine offices at Auckland, Wellington, Lyttelton, and Dunedin have been established as centralization offices for Notices to Mariners. Notices are now received from Great Britain, Norway, Sweden, Germany, France, India, Ceylon, Singapore, Philippine Islands, Netherlands, East Indies, Australia, Japan, Canada, and United States of America, and are available for inspection at these offices. At all other ports visited by foreign-going shipping notices from Great Britain, Australia, and Fiji are available for inspection.

The before-mentioned Bureau has suggested a further development of the scheme which will eliminate the long interval which elapses in New Zealand between the receipt of eastern notices in national language and the English translation in the notices from Great Britain.

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 its amendments, was £20,526 2s. 3d., as against £17,674 6s. 4d. for the previous year, an increase of £2,851 15s. 11d.

Registration of Shipping.

On the 31st December, 1938, there were on the Register of Vessels in the Dominion 47 sailing-vessels of 4,283 net tons register, 156 steamers of 71,060 net tons register, and 289 motor-vessels of 18,222 net tons register, as compared with 51 sailing-vessels of 4,587 net tons register, 158 steamers of 77,746 net tons register, and 273 motor-vessels of 17,209 net tons register at the end of the previous year.

The number of seamen employed on board was 2,965, as compared with 3,043 for the year 1937.

Survey of Ships.

The following table shows the number of certificates of survey issued to ships during the year, the figures for the previous year being shown in parentheses :—

Sea-going steam and motor ships	160	(160)
Restricted-limits steam and motor ships	361	(373)
	521	(533)

Three new sea-going motor-ships, "Puriri," "Milna," and "Mercury Belle II," and three new sea-going steamers, "Waipori," "Korowai," and "Komata," were surveyed for the first time during the year for the issue of certificates.

The largest of these vessels, the "Waipori," of 4,282 tons gross and 2,473 tons register, was built by Messrs. R. and W. Hawthorne, Leslie, and Co., Ltd., Hebburn-on-Tyne, and launched in July, 1938. She is propelled by a single set of triple-expansion steam-engines built by the North Eastern Marine Engineering Co., Wallsend-on-Tyne, steam being supplied by three single-ended cylindrical multitubular boilers at a working pressure of 200 lb. per square inch, oil fuel being used. The vessel is engaged in the inter-colonial cargo trade.

The steamship "Korowai," also in the inter-colonial cargo trade, was built by Messrs. Alex. Stephen and Sons, Ltd., Glasgow, in June, 1938. She has a gross tonnage of 2,525 and a register tonnage of 1,426, and is propelled by a single set of triple-expansion engines receiving steam at a working-pressure of 200 lb. per square inch from two single-ended cylindrical multitubular boilers which are coal fired.

The "Komata" was also built and engined by Messrs. Alex. Stephen and Sons, Ltd., being launched towards the end of 1938. This vessel was built on the Isherwood arcform combination system, and has a gross tonnage of 3,900 and a register tonnage of 2,028. Her propelling machinery consists of a single set of triple-expansion engines, steam being supplied at a working pressure of 200 lb. per square inch by three single-ended cylindrical multitubular boilers, oil fired. The "Komata" is engaged in the inter-colonial cargo service.

The "Puriri" is a motor-ship of 927 tons gross and 423 tons register, built in 1938 by Messrs. Henry Robb, Ltd., Leith, for the coastal cargo trade. She is propelled by two sets of two-cycle single-acting Diesel oil-engines with a total horse-power of 740, built by Messrs. British Auxiliaries, Ltd., Glasgow.

The "Milna," a wooden vessel built in Tasmania in 1935, was acquired for the coastal cargo trade. She has a gross tonnage of 109 and a register tonnage of 55, and is propelled by a single set of Diesel oil-engines of 119 horse power built by Messrs. Frederikshavns, Jernstoberi, and Maskinfabrik, Frederikshavn.

The "Mercury Belle II" is a small motor-vessel of 26 tons gross and 6 tons register, built at Auckland in 1938 for the private use of the farmer-owner in restricted home-trade limits. She is propelled by a single set of four-cycle Diesel engines of 120 horse power made by the Vivian Engine Works, Ltd., Vancouver, B.C.

Eight restricted-limits motor-ships, only three of which are new vessels, were surveyed for the first time during the year for the issue of certificates. The largest of these vessels is a wooden lighter of 169 tons gross and 98 tons register, built at Auckland in 1938 for service at Wanganui. The propelling machinery consists of a single set of 145 horse power "Petter" two-cycle Diesel engines.

The other two new vessels are passenger-launches, one being for lake service at Rotorua. The remaining five vessels surveyed for the first time are launches engaged in passenger and towing services and in fishing.

Plans and specifications of three new wooden vessels building for service in New Zealand waters were examined and approved by the Department during the year. One of these is a pilot launch for harbour service, 55 ft. overall length, propelled by a "National" Diesel engine of 160 horse power.

Another vessel is a motor-yacht for cruising within restricted waters, while the remaining vessel is a sea-going fishing-vessel of approximately 25 tons gross fitted with an internal-combustion engine.

In addition to the annual surveys, 304 seaworthiness, efficiency, and tonnage surveys were made during the year. Fifty-one seaworthiness and efficiency surveys were made to overseas vessels not registered or normally surveyed in the Dominion. Five of these surveys were connected with repairs to hulls, five with machinery, shafting, and propellers, one with main boilers, and one with winches. Seventeen surveys were made in connection with the renewal of International Safety Radio-telegraphy Certificates, and one for the extension of a Board of Trade Passenger and Safety Certificate.

Inspection of Machinery.

Boilers.

The following statement shows the number of inspections of fired boilers, unfired steam-pressure vessels, and air-receivers made during the year, the corresponding figures for the previous year being shown in parentheses :—

Fired boilers	4,855	(4,880)
Unfired steam-pressure vessels	3,889	(3,732)
Air-receivers	941	(815)
Total inspections	9,685	(9,427)

The inspections include 71 new power boilers, aggregating 1,575 horse power, manufactured in the Dominion, and 34 new power boilers, aggregating 884 horse power, imported from abroad. They also include 173 new steam-pressure vessels and 87 new air-receivers manufactured in the Dominion, and 403 new steam-pressure vessels and 158 new air-receivers imported from abroad. The total number of new boilers, pressure vessels, and air-receivers for the year was 666, against 647 for the previous year. Plans of all new work, both Dominion made and imported, were examined by the Head Office Staff, and in each case the design, scantlings, and method of construction were approved before the shop or field inspection was carried out.

No explosions from boilers, pressure vessels, or air-receivers were reported during the year.

Of the new boilers certificated by the Department during the current year the most notable are two large units imported from England by the Whakatane Paper Mills Co., Ltd., for process work and the generation of electric power. The boilers, of the John Thompson water-tube type, have each 6,220 square feet of generator heating-surface with economizers and superheaters whereby a final steam temperature of 725 degrees Fahrenheit is attained. The steam pressure for which they have been designed and have been approved by the Department is 450 lb. per square inch. In the matter of steam pressure and temperature these boilers far transcend all others in New Zealand, though falling short of the most advanced steam practice of Europe and the United States. The Whakatane boilers,

however, should prove to be economical and reliable steam-generators. Coal fuel burnt on power-driven chain-grate stokers will be used. In design, materials, construction, and tests these boilers have wholly conformed to the Department's requirements, and have been certificated for the designed working pressure of 450 lb. per square inch.

Machinery.

The following statement shows the number of inspections of machines, machinery plants, lifts, cranes, hoists, and tractors, the corresponding figures for the previous year being shown in parentheses :—

Machines not driven by steam power ; plants 10,721 (9,897)	72,123	(68,583)
Machines driven by steam power ; plants 2,385 (2,491)	11,391	(11,763)
Electric-power supply stations	134	(137)
Lifts	3,318	(3,146)
Cranes	460	(466)
Hoists	1,516	(1,461)
Tractors	367	(287)
Total inspections	89,309	(85,843)

The number of inspections show an increase of 3,466 over the previous year. Included in the inspections are fifty-five lifts and thirty-eight cranes inspected for the first time. The plans of these new machines were first examined by the Head Office staff for the purpose of computing the allowable safe working-loads.

Accidents reported in connection with boilers and machinery inspected by the Department during the year numbered 157, of which 5 were fatal and 152 non-fatal accidents. The corresponding figures for the previous year were 3 fatal and 126 non-fatal accidents. The total number of boilers and machines of all classes inspected during the year was 98,994, and the ratio of the number of accidents to the number of boilers and machines is 1 to 630. In each case the circumstances of the accident, including all contributory factors, and the safeguards and the condition of the machine were fully investigated, and, where practicable, improvements to the machine or to the safeguards or to the conditions under which the machine was being worked were effected in order to prevent a repetition of similar accidents. The importance of improved guards for particular classes of machines were stressed, and circular instructions were issued to the staff during the year in respect to the guarding of power-driven wool-cramps, power guillotines, and circular saws.

The fatal accidents were connected with a defective quarry-winch brake, a power-transmission belt, a log-hauling winch, a power-shaft, and a pipe-moulding machine. The following are brief summaries of each fatal accident compiled from the reports :—

(1) On 27th June, 1938, a truck ran away on an incline in a quarry at Pakakura and one of the quarry workmen was struck by the truck and fatally injured. Loads on the incline are handled by an electrically-driven winch and lowered by means of a brake attached to the winch-drum. A loose bolt in the brake gear rendered the brake ineffective at the time of the accident and was the cause of the runaway. The design of the bolt attachments have since been improved, for the purpose of preventing a similar accident.

(2) Transmission machinery was the cause of a fatal accident at the coal-screening plant of the Glen Afton Collieries, Ltd., on the 7th July, 1938. There is no clear evidence as to what actually occurred, but it is assumed that the injured person tried to pass through a hole in a wall through which a running belt operated. The clearance was not sufficient to enable him to do this with safety, and he was caught by the belt and fatally injured. The opening has now been reduced by suitable boarding, and the minimum clearance for the belt is now provided.

(3) Machinery which had only been in operation fourteen days and had neither been inspected nor certificated by the Department was responsible for the death of its owner at Waipu on the 8th November, 1938. A motor-car engine had been adapted for driving a log-hauling winch. Gear-wheels were quite exposed, and when the operator-owner leaned over the machinery to adjust the running engine his arm was caught between toothed wheels, with fatal results. The log-hauler was sold by an Auckland machinery-merchant, who was prosecuted for failing to notify the Inspector of the district of the sale as required by section 39 of the Inspection of Machinery Act.

(4) On the 21st November, 1938, an attendant was killed while oiling running machinery in a large sawmill at Ruatapu, Westland. He was attending to shafting bearings when some loose clothing was caught by the shaft. He was drawn round by the shaft and thrown violently to the ground some 8 ft. below. There is a departmental notice in the works drawing attention to the dangerous practice of oiling bearings near revolving shafting, but apparently the deceased had not heeded the warning. Oiling is now done when the machinery is stopped.

(5) The last fatal accident reported during the year occurred with a concrete-pipe-moulding machine in a works at Christchurch. Concrete is placed in a cylindrical sheet-iron mould which is spun on rollers at a fairly high speed for the purpose of forming the pipe. During spinning operations a mould jumped the driving rollers, broke into pieces, and a portion struck an attendant, who received injuries from which he died. The cause of the mould leaving the machine was either that it was out of balance due to uneven spreading of the concrete or to failure of a securing-bolt. The design and materials of the mould have now been improved.

One hundred and fifty-two non-fatal accidents connected with inspected boilers and machinery were reported and investigated during the year. In no less than 120 cases, or 79 per cent. of the accidents reported, the injuries received were to fingers or hands. Many of the machines were adequately guarded and practical additions to the safety equipment could not be made. Fortunately, accidents

with guarded machines are generally of a minor nature, and in most cases may be attributed to mental lapses, inattention to the work in hand, inexperience with running and repetition machinery, fatigue, age, and unsafe practices. Accidents with woodworking machinery were again high, and accounted for nearly one-third of the total accidents reported. Twenty-six accidents occurred with circular saws, again establishing the fact that the power-driven circular saw is responsible for more accidents among operators than any other machine used in industry in New Zealand. The primary cause of many of these accidents is the use of a saw with guards not properly adjusted, and unsafe practices such as the failure to use a push stick when working close to the face of the saw or to keep the working-space around the machine clear of obstructions that a worker might trip over. Many of those injured by circular saws were young people who did not appear to be aware that the power-driven saw is the most dangerous of all machines. In order to draw particular attention to these hazards and to the precautions necessary for the prevention of accidents at circular saws used in the woodworking trade a safety poster has been printed in two colours and widely circulated among machinery-owners. This is the first occasion on which the Marine Department has published a safety notice referring to the hazards of a specific machine, and it is intended to extend the service to cover other classes of machinery and safe practices in the operation of machinery generally. This service is desirable not only for its educational value, but to maintain interest which may be lost if posters are not changed occasionally. The safety poster is recognized as one of the most effective methods of obtaining the co-operation of the worker in the prevention of accidents.

No less than fifty, or over 30 per cent., of the total number of victims of accidents during the year were young and generally inexperienced persons of eighteen years of age and under. The highest number of persons injured of any one age was eighteen of the age of sixteen years.

Machines other than circular saws were responsible for twenty-two accidents in woodworking plants. Seven of these were power-driven wood-planers and five were shapers. Both these types call for hand operation close to the cutters, and are recognized as being among the most hazardous machines used in industry. Other machines at which accidents occurred included power presses (nine), guillotines (three), butchers' mincers (two), and lifts (six). Transmission machinery was responsible for six accidents.

The following table shows the number of accidents, both fatal and non-fatal, which occurred during the year. The various machines at which the accidents occurred are mentioned, together with the leading industries in which they are engaged :—

Machine.	Sawmilling and Woodworking.	Textile.	Refrigerating.	Printing.	Metal-working and Engineering.	Laundry.	Butchery.	Confectionery and Bakery.	Other Industries.	Total (Machines).
Circular saw	24	..	..	1	..	..	..	..	1	26
Other saws	2	..	..	..	..	..	..	..	..	2
Wood-planers	7	..	..	..	..	..	..	..	1	8
Wood shapers and moulders	5	..	..	..	..	..	..	..	..	5
Power presses	..	..	..	..	4	..	..	2	3	9
Guillotines	..	..	..	1	1	..	..	..	1	3
Mangles	..	..	..	..	..	..	..	..	..	..
Mincers	..	..	..	..	..	..	2	..	..	2
Lifts	..	..	..	..	..	..	..	..	6	6
Cranes and hoists	..	..	..	..	..	..	..	..	1	1
Belting	..	..	..	..	..	..	..	..	3	3
Shafting	..	..	..	..	..	..	..	..	3	3
Miscellaneous	8	7	3	12	16	1	..	6	36	89
Total (industries) ..	46	7	3	14	21	1	2	8	55	157

General Harbour Regulations.

The total number of accidents reported during the year under Regulation 103 of the General Harbour Regulations was 243, which can be considered very satisfactory in comparison with 826 accidents last year and 529 the previous year. Four of these accidents had fatal results, as against seven during the previous year.

The accidents may be classified as follows :—

Handling goods and other articles, including the use of hand-tools, and accidents due to lifting heavy goods and cases with sharp or rough edges, &c. ..	74
Persons falling or slipping off gangways, shafts, down hatchways, off ladders, or slipping or stumbling on the level when not handling goods ..	30
Persons struck by falling or swinging loads not being handled by injured persons	89
Persons stepping on or striking against fixed objects not included in other classification	2
Due to failure of gear (chains, ropes, slings, derricks, &c.)	42
Not otherwise classified (miscellaneous)	6

New Zealand Standards.

The Department was again represented on the Mechanical Engineering Divisional Committee and on the Technical Advisory Committee of the New Zealand Standards Institute.

Numerous reports were made during the year on draft and standard specifications of particular interest to the Department, such as welded steel boilers for central heating, cast-iron steam-jacketed pans, valves, gauges and similar fittings for land boilers, cylindrical vertical multitubular boilers, fuel oil for Diesel engines, oxy-acetylene welding as applied to steel structures, round-strand steel-wire ropes for cranes, steel-wire ropes for lifts and hoists, wrought-iron tubes, steel tubes, wrought-iron bars special grade, &c.

Staff.

During the year Mr. J. Y. Alexander was transferred on promotion to Senior Surveyor of Ships and Inspector of Machinery at Wellington, the position of Senior Surveyor at Dunedin being taken over by Mr. W. Mowatt. Mr. J. D. Forster was transferred from Christchurch to Auckland and Mr. W. P. Dowling from Wellington to Christchurch. Mr. C. H. Cowell was transferred from Wellington to Auckland.

There were no retirements during the year. Mr. Thomas Buchanan was a new appointee as Surveyor of Ships and Inspector of Machinery at Wellington.

The conduct and efficiency of the staff have been very satisfactory.

Examinations 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 were held were—

Electric Winding-engine Driver.
Steam Winding-engine Driver.
First-class Engine-driver.
Second-class Engine-driver.
Locomotive-engine Driver.
Traction-engine Driver.
Locomotive and Traction Engine Driver.
Electric-tram Driver.
Electric-tram Driver (One-man Car).

The total number of candidates examined was 619. Of this number, 474 were successful and 145 failed in their examinations. Five hundred and forty-four certificates were issued, which includes 474 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.

Examination of Marine Engineers.

The examinations for Marine Engineers' Certificates of Competency were conducted at the various centres throughout the Dominion, and during the year 139 candidates were examined. The table attached to this report sets out the numbers examined for the various certificates at the various centres, showing the successes and failures in the different sections. There were fifty-three candidates examined for first- and second-class certificates of imperial validity, and, of these, thirty were for First-class Steam, Motor, and Endorsements, of which sixteen were successful and fourteen unsuccessful. Of the twenty-three remaining candidates who sat for Second-class Motor and Endorsement Certificates, thirteen were successful and ten unsuccessful.

The reduction in the number presenting themselves for the various examinations during the year, as will be observed from the summary, was chiefly in regard to the Examination for Sea-going Engineering P.V.O.S., which has been discontinued and replaced by the First- and Second-class Coastal Motor Examinations. There was a further reduction of five candidates presenting themselves for Third-class Marine Examination, and it would appear from this that the effect of the depression period in relation to five-year apprentices has almost reached the lowest level. The number of candidates presenting themselves for this examination should now increase from year to year.

It is interesting to note that, on the other hand, there has been a very substantial increase of nineteen candidates presenting themselves for the high-grade examinations, this figure representing an increase of 56 per cent. over the previous year.

In September of last year the regulations relating to the examination of engineers in the mercantile marine were revised by the Board of Trade, London, to embody the recommendations of the departmental Committee set up in 1937.

It is proposed to issue new rules to comply with those of the Board of Trade. The principal revision is that the examinations of candidates for both First- and Second-class Certificates are divided into two sections "A" and "B," whereby a candidate after completing his apprenticeship

in a qualifying workshop is permitted to sit for the "A" section of the examination for Second-class Certificate after obtaining the Third-class Marine Certificate before going to sea; also, that a candidate for First-class Certificate may sit for the "A" section of the examination immediately he has obtained the Second-class Certificate before he has completed any further qualifying sea service. The examination will therefore fall under two separate headings, as follows:—

"A" Section. Fundamental Knowledge.	"B" Section. Practical Knowledge.
General engineering.	Electrotechnology.
Science.	Elementary naval architecture.
Heat and heat engines.	Engineering knowledge.
Drawing.	

Regarding the "B" section of the examination, the subjects under the heading of practical and verbal examinations can be taken only after the required eighteen months' qualifying sea experience.

The revised syllabuses are definite and clear, using modern terms for the subjects covered. It is the opinion of the Committee that they maintain, but do not increase, the existing standard of the Board of Trade examinations.

The response of candidates for Coastal Motor Certificates has not been up to expectations, due chiefly to the fact that apprentices in engineering industries other than those directly engaged with marine work are not generally acquainted with the fact that their service is, perhaps, a qualification for the Second-class Coastal Motor Examination. This may be corrected in due course, as during the latter half of the year the technical schools of New Zealand have shown great interest in the syllabus for the Second-class Coastal Motor Examination, and it is to be expected that an increase in the number of candidates will be a result of their co-operation.

The examinations for First-, Second-, and Third-class Certificates are held at the four main centres only, but examinations for Certificates of Competency, Restricted Limits, P.V.O.S., River Engineer, and Marine-engine Driver are held at fifteen centres throughout the Dominion.

Prosecutions.

Prosecutions were instituted in fifty-seven cases during the year under the various statutes administered by this Department. Proceedings under the Inspection of Machinery Act comprised fourteen cases, under the Shipping and Seamen Act three cases, and under the Fisheries Act forty cases.

Fisheries.

The report of the Chief Inspector of Fisheries and Director of Fisheries Research which follows gives a full account of the activities of this branch of the Department during the past year.

Staff.

During the year it became necessary to make room in the Customs Building for an expanding Customs Department, and part of this Department is now housed in the old Base Records Building, behind the Government Buildings. The Fisheries Branch of the Department, the Nautical Adviser, the Examiner of Masters and Mates, and the Examiners of Marine Engineers are now accommodated there along with the Government Shipping Office, which has been moved from Waterloo Quay. It may also be necessary, for the same reason, during the course of the present year for the remaining portion of Head Office staff to be removed elsewhere until such time as the whole Department will once again be accommodated as a complete unit.

In addition to the increase in normal work, the executive officers of the Department have been required to devote a great deal of time to work in connection with the organization for national security, with which, of course, the functions of the Department are naturally bound up. In addition to this extra effort, the staff of the Department as a whole have performed splendidly and maintained the usual efficient standard.

I have, &c.,
L. B. Campbell, Secretary.

REPORT ON FISHERIES FOR THE YEAR ENDED 31ST MARCH, 1939.

SIR,—

The annual report on fisheries submitted this year is based on a better supply of statistical data than has previously been possible. This is a matter for satisfaction, because sound and adequate fishery statistics provide not only a serial record of production, but also the information that is most necessary for a proper understanding of the condition of the fisheries as regards their soundness or unsoundness from the conservational point of view. Their interest and value tend to increase as time goes on, rendering possible comparisons between results shown for a series of years. In order that such comparisons may be truly significant and productive of reliable conclusions it is necessary that the data to be compared should have reference to factors that can be measured up with some approximation to accuracy and constancy. Endeavours are being made to improve the collection of data and the form in which they are published in order that this object may be achieved as early as possible. It is not sufficient, for instance, to show, as was the case up to a few years ago, that approximately a certain total weight of snapper was landed at a certain port in a certain year. It is also necessary to show what quantities were caught by the various methods of fishing employed, and it is further very desirable to indicate what amount of fishing-power and what amount of fishing-time were spent in the catching thereof. There are still gaps and imperfections in our collected data that one would like to see remedied. One can only claim that each year sees some progress towards the perfection that is our objective.

The statement which follows gives the estimated total quantity and value of the principal classes of fishery products marketed during the year :—

	Quantity.	Value. £
Wet fish	356,114 cwt.	424,643
Whitebait	3,053 cwt.	25,204
Oysters (dredged)	67,243 sacks	48,751
Oysters (rock)	4,870 sacks	6,696
Mussels	12,869 sacks	3,245
Crayfish	9,255 cwt.	11,031
Toheroa (canned products)	69,560 lb.	3,696
Whale oil	400 tons	8,000
Quinnat salmon (netted fish only)	10,727 lb.	536
Total value		£531,802

Comparing this summary with the totals shown for the various classes last year, one finds that the total landings of wet fish have remained at an almost unchanged level, the quantity having increased by 0·1 per cent. and the total value by 2·7 per cent. The total catches of whitebait show a very slight decline, but the decrease by 58 cwt. from the estimated total for the 1937 season cannot be considered significant owing to the imperfection of our data on this fishery (see p. 25). Dredge-oyster supplies present a still further increase of 856 sacks, or 1·3 per cent., over last year's record figure of 66,387 sacks, the value having increased by 15·2 per cent. (see p. 46). The yield of the Auckland rock-oyster fishery has also increased from 4,203 sacks (or 12,609 bushels) to 4,870 sacks (or 14,610 bushels) (see p. 46). The total quantity of mussels marketed has increased by 73·6 per cent. Crayfish, however, show a decline of 24·2 per cent. in the total weight and 7·8 per cent. in total value. Toheroa products are above last year's output in total weight but show a less value. A record whaling season in Marlborough Sounds raised the whale-oil production from 280 tons to 400 tons, but the fertilizer obtained from this source was negligible. The catches from quinnat-salmon netting in the Waimakariri increased from 6,236 lb. to 10,727 lb., the estimated total value being 72 per cent. higher than for the catches made in the previous season.

FISHING-VESSELS.

The nature and numerical strength of the fishing-fleet at each port is indicated in Table I (p. 41). The total number of fishing-vessels licensed during the official year was 1,213, exceeding the number in the previous year by 70. The total value of the New Zealand fishing-fleet is estimated at £447,372, or with the value of fishery gear added, £495,771.

The number of steam-vessels licensed decreased from 24 to 21 ; motor-vessel licenses increased from 813 to 854, and row-boats from 306 to 338.

An analysis, according to size-classes and manner of propulsion, of the vessels licensed for fishing in the past year is given below. The numbers in brackets are those for the previous year :—

Length (overall).	Steam-vessels.	Motor-vessels.	Row-boats.	Total.
Under 15 ft.	..	22 (22)	169 (155)	191 (177)
15 ft. to 25 ft.	..	236 (204)	169 (151)	405 (355)
26 ft. to 35 ft.	..	365 (352)	..	365 (352)
36 ft. to 45 ft.	..	185 (191)	..	185 (191)
Over 45 ft.	21 (24)	46 (44)	..	67 (68)
Totals	21 (24)	854 (813)	338 (306)	1,213 (1,143)

Of the licensed fishing-vessels, 150 did not engage in fishing at all, and 237 fished for less than five months of the year.

The total number of wet-fish landings—*i.e.*, fishing trips or voyages—was 49,413, a decrease of 2,925, or 5·6 per cent., compared with the previous year. Steam-trawler landings declined from 1,572 to 1,292, motor-trawler landings from 6,392 to 6,079, line and net landings (motor-vessels) from 34,839 to 32,770, and line and net landings (row-boats) from 5,656 to 5,360. Danish-seine-net landings on the other hand, increased from 3,879 to 3,912. Crayfish landings rose from 4,260 to 5,024, an increase of 17·9 per cent.; while mussel-dredger landings fell from 200 to 181, a decline of 9·5 per cent., although the actual mussel catch increased by 73·6 per cent.

The quantities of the different kinds or classes of fish constituting the grand total of all wet fish landed for the year, together with their values, are shown below in order of abundance :—

Kind or Class of Fish.	Quantity.		Value.	
	Hundredweight.	Percentage of Total.	£	Percentage of Total.
Snapper	137,811	38·69	131,533	30·97
Tarakihi	53,652	15·06	55,266	13·01
Groper	33,982	9·54	61,892	14·57
Blue cod	22,803	6·40	25,872	6·09
" Mixed round fish " ..	18,689	5·24	14,469	3·41
Flounder	18,482	5·18	46,661	10·99
Sole	13,423	3·76	27,438	6·46
Ling	8,155	2·28	9,113	2·15
Gurnard	7,991	2·24	6,600	1·55
Red cod	7,491	2·10	4,798	1·13
" Mixed flat fish " ..	6,543	1·83	12,026	2·83
Elephant-fish	3,952	1·10	5,102	1·20
Mullet (northern) ..	3,713	1·04	3,396	0·80
Moki	3,428	0·96	3,467	0·82
Hake	3,369	0·95	5,381	1·27
Barracouta	3,339	0·94	1,408	0·33
Warehou	2,214	0·62	2,453	0·58
John-dory	1,607	0·45	1,545	0·36
Trevally	1,420	0·40	737	0·17
Pioke	1,097	0·31	502	0·12
Butterfish	1,066	0·30	2,291	0·54
Trumpeter	596	0·167	1,232	0·29
Whiting	376	0·10	528	0·12
Kingfish (northern) ..	238	0·06	305	0·07
Herring	183	0·05	122	0·03
Bonita (*Brama*)	143	0·03	248	0·06
Kahawai	113	0·03	89	0·02
Conger eel	112	0·03	46	0·01
Skate	53	0·01	28	0·01
Parore	21	0·00	13	0·00
Turbot	17	0·00	35	0·01
Whiptail	15	0·00	21	0·00
Brill	10	0·00	17	0·00
Frost-fish	7	0·00	6	0·00
Maomao	3	0·00	3	0·00
Totals	356,114	..	424,643	..

Methods of Capture.

Steam-vessels (principally trawling) accounted for 89,938 cwt. (25·2 per cent.) of the total catch, motor-vessels 261,579 cwt. (73·5 per cent.), and row-boats 4,597 cwt. (1·3 per cent.).

The total fish caught by each of the more important methods of fishing is shown in the following analysis, which, however, as mentioned in the last annual report, is defective in that it has not been possible in tabulating data from the individual returns, to distinguish between long-line and hand-line catches, because landings sometimes consist of fish caught by both methods. Similarly, it should be noted that set-nets and seines may be used as alternative methods for the same boat.

Method of Fishing.	Quantity.		Value.	
	Hundredweight.	Percentage of Total.	£	Percentage of Total.
Trawl	119,873	33·7	136,653	32·2
Danish seine	119,933	33·7	124,545	29·3
Long- and hand-lines ..	87,172	24·5	120,115	28·3
Set- and drag-nets or seine	29,136	8·1	43,330	10·2
Totals	356,114	..	424,643	..

A comparison of the quantities taken by each method with those for the year 1937–38 shows that trawl-caught fish increased from 111,906 cwt. to 119,873 cwt. although there was a reduction of 593 in the number of trawl landings. Catches from Danish seiners increased from 116,442 cwt. to 119,933 cwt., long- and hand-line catches declined from 94,873 cwt. to 87,172 cwt., and set-net and drag-net or seine catches from 32,466 cwt. to 29,136 cwt. It will be noticed that the fish caught by lines, though 9·2 per cent. less by weight than the proportion caught by Danish-seining, is only 1 per cent. less in value. Tarakihi made up 40·2 per cent. of the trawl catch, with snapper, "mixed round fish," and soles contributing 14·2 per cent., 11 per cent., and 9·9 per cent. respectively to the total. Snapper formed the major portion of the Danish-seine catch, while snapper, flounder, and mullet were responsible for the bulk of the set- and drag-net landings. The line catch was made up principally of groper, blue cod, and snapper, the percentages being 36·8, 26·1, and 19·8 respectively.

For purposes of comparison the following table is included to show the quantities taken each year by each method of fishing since 1936–37, the year when the collection of fisheries statistics was first put into operation. A noteworthy feature of this table is the fact that the total catch in 1938–39 is 7,014 cwt. (1·9 per cent.) less than in 1936–37, whereas the total value has risen from £360,466 to £424,643, an increase of £64,177, or 17·8 per cent.

Methods of Fishing.	1936–37.		1937–38.		1938–39.	
Quantity.						
	Cwt.	Per Cent.	Cwt.	Per Cent.	Cwt.	Per Cent.
Trawl	127,711	35·2	111,906	31·5	119,875	33·7
Danish seine	114,909	31·6	116,442	32·7	119,933	33·7
Long- and hand-lines	94,478	26·0	94,873	26·7	87,170	24·5
Set-nets and drag-nets or seines	26,030	7·2	32,466	9·1	29,136	8·1
Totals	363,128	..	355,687	..	356,114	..
Value.						
	£	Per Cent.	£	Per Cent.	£	Per Cent.
Trawl	120,422	33·4	126,891	30·7	136,653	32·2
Danish seine	96,255	26·7	119,649	28·9	124,545	29·3
Long- and hand-lines	108,665	30·1	121,702	29·4	120,115	28·3
Set-nets and drag-nets or seines	35,124	9·7	45,274	11·0	43,330	10·2
Totals	360,466	..	413,516	..	424,643	..

Landings at Ports.

Of the total quantity of wet fish taken, 42·3 per cent. was landed at Auckland (including Manukau and Coromandel). The ports showing increases over the previous year's quantities were Auckland with an increase of 10,496 cwt., or 7·5 per cent.; Tauranga and district, 2,337 cwt., or 63·7 per cent.; Oamaru and Moeraki, 2,300 cwt., or 74·9 per cent.; Napier and district, 2,228 cwt., or 16·4 per cent.; Dunedin and district, 1,707 cwt., or 5·9 per cent.; Lake Ellesmere, 803 cwt., or 94·2 per cent; Whangaroa, 665 cwt., or 137·7 per cent.; and Kaipara, 600 cwt., or 22·7 per cent. Decreases occurred at twenty-three ports, the principal being Wellington and district by 5,065 cwt., or 10·7 per cent.; Stewart Island, 3,548 cwt., or 35·9 per cent.; Timaru, 1,697 cwt., or 10·8 per cent.; Bluff, &c., 1,569 cwt., or 33·6 per cent.; Thames, 1,493 cwt., or 8 per cent.; Akaroa, 922 cwt., or 22·7 per cent.; French Pass, 888 cwt., or 25·1 per cent.; New Plymouth, 660 cwt., or 45·2 per cent.; Picton and Havelock, 487 cwt., or 12·3 per cent.; and Blenheim, 460 cwt., or 30·2 per cent.

The three Auckland steam trawlers each operated during the year, one whole-time and the other two part-time. The number of landings from these vessels totalled eighty-five, an increase of seventeen on the previous year's total. Trawl-caught fish represented 27·4 per cent. of the total wet fish landed, Danish-seined fish 69·9 per cent., line fish 1·7 per cent., and net fish 1·0 per cent. of the total. The catch from Manukau Harbour was 1,835 cwt., the principal kinds of fish caught being mullet, flounder, pioke, and snapper in order of abundance.

A drop of 8 per cent. is recorded in the total quantity of fish landed at Thames. Fishing on the whole has been good, the catches of flat fish having increased by 1,205 cwt., and this is reflected in a slightly higher total value for fish caught than last year. The snapper catch declined by 17 per cent.

The considerable increase in the quantity of fish landed at Tauranga is largely due to the operations of a new Danish-seiner from that port. While the percentage of Danish-seine-caught fish has risen from 31·9 per cent. of the total catch to 57·1 per cent. and line-caught fish has fallen from 66·3 per cent. to 32·9 per cent., it is significant to note that the actual line catch, when compared with the 1937–38 figures, shows a decline of 15 per cent.

Much the same quantity of fish was landed at Gisborne as in the previous year, the decrease being only 1·1 per cent., or 67 cwt. The groper catch showed a decline of 33·5 per cent. and snapper 62·9 per cent., whilst fish designated as "mixed round fish" and containing, no doubt, a certain quantity of groper and snapper, recorded an increase of 5·9 per cent.

Although the trawler landings at Napier declined by 4·8 per cent., the line-vessel catch increased by 112·5 per cent. Fewer landings (or trips) were made by both trawlers and Danish-seiners, the former declining from 982 to 958 and the latter from 486 to 303. Landings by line-fishing vessels have increased from 771 to 1,165. The total value of fish landed at Napier was £22,423, an increase of £4,784 on last year's figures, and the total catch increased by 2,228 cwt. Groper and tarakihi together constituted 52·4 per cent. of the total catch, which exceeded the previous year's total by 16·4 per cent.

With reference to the Wellington fishing, the two steam trawlers made 109 landings, compared with 122 the previous year, bringing in 65·6 per cent. of the total quantity of fish landed at the port. The principal grounds fished were Cape Campbell, Kaikoura, and Palliser Bay. Decreases were recorded in the hake, groper, red cod, and tarakihi catches, the latter species of which constituted 62·2 per cent. of the total trawl-caught fish. Increases, however, were recorded in the barracouta and gurnard catches. Long-line catches decreased by 30·5 per cent. The returns show a decline in the average landings for ling and hake, with an increase for groper. The catch for the district totalled 42,219 cwt., valued at £55,649. This represents a decrease of 10·7 per cent. in weight and 11·1 per cent. in value compared with the previous year. During the year the fish-carrier " South Sea " brought to Wellington seven shipments of blue cod totalling 11,361 cwt., valued at £11,410, from the Chatham Islands.

A decrease of 888 cwt. is recorded in the quantity of fish shipped at the French Pass, which represents a decrease of 25·1 per cent. compared with the previous year. Groper, snapper, and blue cod in this district have fallen off slightly.

The chief features of interest concerning the returns from the South Island centres were the big decrease recorded in the catches from the Bluff and Stewart Island areas, due to the cessation in fishing owing to a dispute over prices, and the tendency towards a decline in the proportion of flat fish to the total quantity of fish caught in the Otago District, which is indicated in the following table :—

Dunedin and Otago District.

——	1936–37.	1937–38.	1938–39.
Total quantity of wet fish landed ..	21,968 cwt.	27,784 cwt.	30,779 cwt.
Total quantity of flat fish landed ..	10,915 cwt.	10,954 cwt.	13,218 cwt.
Percentage of flat fish landed ..	49·7	39·4	42·9

The statement which follows indicates the relative importance of each of the principal methods of fishing for each port :—

Port.	Methods of Fishing.	Percentage (by Weight) caught by each Method.	Principal Kinds of Fish caught by each Method (in order of Quantity).
North Island.			
Awanui	Lines	54·8	Snapper, groper.
	Set-nets	45·2	Mullet, snapper.
Mangonui	Set-nets	52·8	Mullet, flounder.
	Lines	47·2	Snapper.
Whangaroa	Lines	80·8	Snapper, groper.
	Set-nets	19·2	Mullet.
Russell	Lines	58·2	Snapper, groper.
	Set-nets	41·8	Mullet, snapper, flounder.
Whangarei	Lines	72·2	Snapper, groper.
	Set-nets	27·8	Snapper, mullet.
Auckland	Danish seine ..	69·9	Snapper, flounder, tarakihi.
	Trawl	27·4	Tarakihi, snapper.
	Lines	1·7	Snapper, groper.
	Set-nets	1·0	Mullet, flounder, snapper.
Thames	Set-nets	70·4	Snapper, flounder, gurnard.
	Lines	16·0	Snapper, gurnard.
	Danish seine ..	13·6	Snapper, flounder.
Mercury Bay	Lines	85·7	Snapper, groper.
	Seine-nets and seine	14·3	Snapper, mullet, flounder.
Tauranga	Danish seine ..	57·1	Snapper.
	Lines	32·9	Snapper, groper.
	Set-nets	10·0	Snapper, trevally.
Whakatane	Danish seine ..	95·7	Snapper, tarakihi.
	Lines	3·7	Groper, snapper.
	Set-nets	0·6	Flounder.
Opotiki	Lines	57·8	Snapper.
	Set-nets	42·2	Flounder, mullet.
Gisborne	Trawl	77·1	Tarakihi, " flats," gurnard.
	Lines	22·6	Groper, tarakihi.
	Set-nets or seine ..	0·3	Moki, mullet.
Waikokopu	Lines	100·0	Groper, tarakihi.
Wairoa	Lines	52·2	Gurnard, snapper.
	Set-nets or seine ..	47·8	Kahawai.
Napier	Trawl	48·7	Tarakihi, gurnard.
	Lines	37·6	Groper, snapper, hake.
	Danish seine ..	13·5	Tarakihi, gurnard, sole.
	Set-nets or seine ..	0·2	Moki.
Wellington	Trawl	65·6	Tarakihi, moki, barracouta.
	Lines	30·0	Groper, ling, hake.
	Set-nets or seine ..	4·4	Warehou, butterfish.
Makara	Set-nets	66·9	Butterfish, warehou.
	Lines	33·1	Snapper, groper.
Paremata	Lines	87·2	Groper, hake.
	Set-nets	12·8	Butterfish, warehou.

Port.	Methods of Fishing.	Percentage (by Weight) caught by each Method.	Principal Kinds of Fish caught by each Method (in order of Quantity).
NORTH ISLAND—*continued.*			
Paraparaumu	Lines	79·3	Snapper.
	Set-nets	20·7	Warehou, butterfish.
Foxton	Lines	71·4	Snapper.
	Set-nets or seine ..	28·6	Flounder.
Tangimoana	Lines	99·1	Snapper.
	Set-nets or seine ..	0·9	Flounder.
Wanganui	Lines	98·4	Snapper, groper.
	Drag-nets ..	1·6	Flounder.
New Plymouth	Lines	98·8	Snapper, groper.
	Set-nets	1·2	Flounder.
Kawhia	Set-nets	65·8	Flounder, pioke, snapper.
	Lines	34·2	Snapper.
Raglan	Lines	56·3	Snapper.
	Set-nets	43·7	Flounder.
Manukau Harbour	Set-nets and seine	97·4	Mullet, flounder, snapper.
	Lines	2·6	Snapper.
Kaipara	Set-nets	76·0	Flounder, mullet, snapper.
	Lines	24·0	Snapper.
Hokianga	Set-nets	97·4	Mullet, flounder.
	Lines	2·6	Snapper.
SOUTH ISLAND.			
Havelock	Set-nets and seine	89·5	Flounder.
	Lines	10·5	Blue cod, snapper.
Picton	Lines	93·3	Groper, blue cod.
	Set-nets and seine	6·7	Butterfish, moki.
Blenheim	Trawl	88·2	Flat fish, ling.
	Set-nets and seine	8·9	Flounder, butterfish.
	Lines	2·9	Groper.
Kaikoura	Lines	95·8	Groper, ling, trumpeter.
	Set-nets and seine	2·3	Butterfish.
	Trawl	1·9	Sole.
Lyttelton	Trawl	72·7	Tarakihi, elephant-fish, ling.
	Danish seine ..	19·3	Gurnard, elephant-fish.
	Set-nets and seine	6·0	Sole, elephant-fish, flounder.
	Lines	2·0	Groper, red cod.
Akaroa	Trawl	79·1	Elephant-fish, tarakihi, ling, gurnard.
	Danish seine ..	7·1	Mixed flat fish.
	Lines	9·2	Groper, ling.
	Set-nets and seine	4·6	Flounder, butterfish, red cod.
Timaru	Lines	40·1	Ling, groper.
	Trawl	34·6	Flounder, red cod, elephant-fish.
	Danish seine ..	25·3	Gurnard, soles, red cod.
Oamaru	Lines	96·5	Groper, red cod, blue cod.
	Set-nets and seine	3·5	Herring, moki.
Moeraki	Lines	99·9	Groper, blue cod, red cod.
	Trawl	0·1	Sole.
Karitane	Lines	94·2	Groper, blue cod.
	Set-nets and seine	5·8	Butterfish, flounder.
Port Chalmers	Trawl	74·6	Tarakihi, sole, red cod.
	Lines	20·3	Groper, red cod, barracouta.
	Set-nets and seine	5·1	Flounder, red cod, warehou.
Taieri Mouth	Trawl	81·1	Sole, flounder.
	Lines	18·9	Groper, blue cod.
Nuggets	Trawl	94·1	Sole, flounder.
	Lines	5·9	Groper.
Waikawa	Trawl	74·6	Sole.
	Lines	25·3	Blue cod, groper.
	Set-nets and seine	0·1	Flounder.
Invercargill	Drag-nets ..	70·7	Herring, flounder.
	Lines	29·3	Blue cod.
Bluff	Lines	85·2	Blue cod, groper.
	Set-nets and seine	14·8	Flounder.
Stewart Island	Lines	98·0	Blue cod, groper, trumpeter.
	Set-nets and seine	2·0	Moki, butterfish.
Riverton district	Lines	62·3	Blue cod, groper, hake.
	Trawl	36·5	Sole.
	Set-nets and seine	1·2	Flounder.
Hokitika	Lines	80·1	Groper, ling.
	Set-nets	19·9	Herring, kahawai.
Greymouth	Trawl	87·4	Sole, gurnard.
	Lines	12·6	Groper.
Westport	Trawl	50·3	Sole, gurnard.
	Lines	47·6	Groper.
	Set-nets	2·1	Kahawai, flounder.
Golden Bay	Lines	100·0	Snapper.
Motueka	Lines	85·9	Snapper, groper.
	Set-nets and seine	14·1	Flounder.
Nelson	Lines	73·9	Snapper.
	Danish seine ..	23·7	Flounder, gurnard.
	Set-nets and seine	1·6	Flounder.
	Trawl	0·8	Gurnard, flounder.
French Pass	Lines	91·5	Blue cod, groper, snapper.
	Set-nets	8·5	Butterfish, moki.

Exports and Imports.

Imports and exports of fishery products are shown in detail in Table V, the data for which have been supplied by the courtesy of the Comptroller of Customs. A summary of the main classes of exports, compared with the same for the five preceding years, is given in the following statement:—

—	1933–34.	1934–35.	1935–36.	1936–37.	1937–38.	1938–39.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Frozen fish (including crayfish)	34,738	46,714	54,267	50,727	45,036	43,213
Fish, smoked, dried, pickled, or salted	1,243	1,968	2,519	3,724	1,088	467
Fish, potted or preserved in tins—						
	lb.	lb.	lb.	lb.	lb.	lb.
Oysters	128,028	95,270	172,855	331,747	208,460	182,451
Other kinds	384,282	184,148	174,438	160,994	172,993	184,395

The total quantity of frozen products exported shows a decline from 45,036 cwt. to 43,213 cwt., with a fall in total value from £147,641 to £139,743. This is accounted for mainly by a fall in the exports of blue cod and crayfish. Flounder exports, though showing a slight deficit in quantity, have increased in value from £13,846 to £14,311, while "other kinds," not specified as to kind, have increased from 5,630 cwt. to 8,666 cwt. in quantity and in value from £13,691 to £21,969.

Of canned products exported, crayfish show a slight fall in total quantity from 31,098 lb. to 30,600 lb., with a rise in value from £2,480 to £2,678; oysters a decline from 208,460 lb. to 182,451 lb. in quantity and from £10,934 to £9,356 in value; toheroa a fall in quantity from 47,198 lb. to 42,302 lb., with a rise in value from £3,073 to £3,112. Canned whitebait exports, however, have increased from 94,697 lb. to 111,493 lb. and the value from £9,758 to £14,917.

The total value of exports of New Zealand fish and shell-fish was £171,037, as compared with £177,733 in the preceding year.

It is noteworthy that the value of imports into New Zealand of fish and shell-fish has risen from £205,860 for 1937–38 to £262,916 for 1938–39, a rise of 27·7 per cent.

Consideration of these figures would appear to suggest that there is scope for more canning of New Zealand fishery products provided that they can be put on the market at prices which do not confine them to the class of luxury articles. Most canned fish are particularly rich in elements that are essential for healthy growth and for the prevention of goitre as well as in vitamin D, the lack of which is considered by authorities on nutrition to be the principal cause of defective teeth. It will undoubtedly be to the benefit of the rising generation when the people of New Zealand are enabled to feed on substantially increased rations of food derived from the sea, which should be regarded as essentials in the daily diet and not as side-lines or luxuries.

Rock Oysters.

Picking for the 1938 season at the Bay of Islands, Whangarei, Kaipara, Coromandel, Great Barrier, and the Hauraki Gulf commenced on the 15th June. Rough weather in July and August hampered the work of picking and transport and at times created some difficulty in maintaining regular supplies to the depot.

All areas were picked this season. The condition of the oysters received at the depot was the best for many years. As usual, Hauraki Gulf produced the best-quality oysters, but the Bay of Islands oysters were also in splendid condition. Picking ceased on 29th August.

The number of sacks obtained from each area was as follows: Bay of Islands, 1,824; Whangarei, 75; Kaipara, 700; Hauraki Gulf, 1,586 (Takatu-Gull Point, 147; South Shore and Tamaki River, 20; Kawau, 66; Rakino, 130; Rangitoto, 191; Motutapu, 28; Brown's Island, 8; Motuihi, 40; Waiheke, 643; Ponui, 279; Noisies Islands, 10; Crusoe Island, 24); Coromandel, 348; Great Barrier, 337: total, 4,870 sacks (of 3 bushels each). The gross proceeds from sales amounted to £6,774.

At the Auckland depot 4,764 sacks were disposed of, and 106 sacks were sold at Russell. The small local sales at Kaipara and Whangarei are included in the Auckland depot total. The quantity of oysters required for retail sale at the depot was 873 sacks, as compared with 876 sacks in the 1937 season.

The demand for rock oysters at the depot was greater than the supply throughout the season. It was therefore necessary to adhere to a strict system of rationing between the various competing buyers. From the Department's standpoint as "producers" the situation could have been made easier by a greater increase in price, but it is not desired to adopt a policy that would tend to turn oysters into a luxury food. The price of oysters at the depot this season was increased from last year's price of £1 4s. per sack to £1 7s. 6d. per sack. Most of this increase was used in raising the pay of the pickers and improving the conditions under which they worked.

Oyster-cultivation.

The normal cultivation programme followed the picking season. No large-scale work was done this season. Some new rock was laid down at Bay of Islands. On the other areas the work could more rightly be termed maintenance. A great deal of this work was done by the Inspectors in each district, and when required skilled labour was engaged. The details are given in the following statement:—

Work done, Area and Cost—

I. Bay of Islands: 506,500 borers and 1,250 pupus destroyed, 3,356 square yards of clean rock moved down from high-water mark, 165 square yards of rock cleared of dead shell, and 7,503 square yards of rock cleared of weed. Cost, £200.

II. Whangarei: 127,300 borers and 1,891 pupus destroyed, 1,147 square yards of rock cleared of weed, 20 square yards of oyster-bearing rock moved to a better position, and 106 square yards of mixed oyster-bearing and clean rock laid down. Cost, nil.

III. Kaipara: 310,000 borers destroyed and 45,800 square yards of stone turned. Cost, £100.

IV. Takatu to Gull point: 236,000 borers and 121 pupus destroyed and 958 square yards of rock cleared of dead shell. Cost, £21 12s.

V. Tamaki: 219,600 borers and 132 pupus destroyed. Cost, £12.

VI. Coromandel: 686,000 borers and 4,546 pupus destroyed, capstones removed, and 299 concrete posts bearing young oysters transplanted from Kawau. Cost, £39 4s. 6d.

VII. Kawau: 300 concrete posts erected. Cost, £10 16s.

VIII. Rakino: 207,000 borers and 172 pupus destroyed and 375 square yards of rock cleared of grape-weed. Cost, £12.

X. Motutapu: 128,000 borers and 58 pupus destroyed. Cost, £7 4s.

XII. Motuihi: 867,000 borers and 131 pupus destroyed. Cost, £33 12s.

XIII. Waiheke: 569,600 borers and 375 pupus destroyed, 7,575 square yards of rock cleared of weed, and 116 square yards of rock bearing stunted oysters moved to a lower level. Cost, £156.

XIV. Ponui: 586,000 borers and 287 pupus destroyed and 4,214 square yards of rock cleared of weed. Cost, £72.

XV. Pahiki: 136,000 borers and 54 pupus destroyed. Cost, nil.

XVI. Great Barrier: 380,400 borers destroyed, 1,076 square yards of rock cleared of weed, 1,072 square yards of drift bed formed, 243½ yards of capstones renewed, 225 square yards of clean rock laid down, 1,525 square yards of high-water rock bearing stunted oysters moved down, and 132 yards of mixed oyster-bearing and clean rock laid down. Cost, £58 8s.

All Areas: 4,959,400 borers and 9,017 pupus killed, 27,710 square yards of rock cleared of weed, 1,123 square yards of rock cleared of dead shell, 1,661 square yards of oyster-bearing rock moved to a better position, 3,581 square yards of clean rock laid down, 238 square yards of mixed clean and oyster-bearing rock beds laid down, 243½ yards of capstones renewed, and 1,072 square yards of drift beds formed. Total Cost: £722 16s. 6d.

The gradual improvement in the condition of the beds which was recorded last year still continues. The conservative picking policy adopted by the Department in recent years, coupled with the cultivation and maintenance work, is now showing in the satisfactory condition of the stocks of oysters in the various areas.

Dredge Oysters.

The Foveaux Strait oyster-dredging season lasted from February to September inclusive, as in previous years. Thirteen vessels were licensed to engage in the industry, ten of which operated throughout the season. One operated for three months making only twenty landings, another only made three landings, and one vessel did not operate at all. The total number of landings for the year was 1,534, an increase of 276 over the previous year. The landings per month varied from 164 in May to 225 in July, both these figures being in excess of those for last year. The average number of landings for each boat fishing was 15·9 per month. The total quantity of oysters taken was 67,243 sacks (of 3 bushels each) and the total value of the oysters taken during the season was £48,751. Again the total landings exceed those of the preceding year and set a new record for production. This is not altogether a matter for congratulation in view of the scanty knowledge we possess of the real extent and potentialities of these beds and their capacity to withstand such heavy and increasing annual abstractions. The average quality of the oysters both as to size and condition was inferior to that of previous seasons, which would appear to indicate a deficiency of first-grade shell-fish on the beds that have been worked and which may be an ominous sympton of a general reduction in the stocks. It seems likely that these beds in the Foveaux Strait are the only *natural* beds of deep-sea oysters of any

considerable extent left in the world. In the case of practically all the oysters marketed at the present time in other parts of the world their production has been more or less assisted by artificial cultivation in some form or other. Farmed oysters naturally cost more to produce than those which are harvested from the natural beds. It therefore behoves us to see that our natural beds are duly conserved; and to ensure this it is necessary that investigations to give us a better understanding of their true extent and their potential productivity should be provided for as early as possible.

Toheroas.

Only the more northerly of the two canneries was in operation in 1938, during which season 69,560 lb. of toheroa products were packed—approximately equivalent to 73,920 lb. of shelled toheroa—valued at £3,696. The quantity exported during the year was 42,302 lb., valued at £3,112.

In reporting upon any class of our fishery assets the principal object should be to show how it stands up to date. It is a sort of stocktaking. This object is more easily stated than achieved. A complete understanding of the factors that make, on the one hand, for additions to the stock, and those on the other hand that make for subtractions from it, involves investigations that are both complicated and extensive. Without adequate and continued investigation the conditions can only be demonstrated imperfectly and to a limited extent. There is, also, inevitably a time-lag between the operation of the causative factors and the perception of their effects. For instance, a season may be much better or much worse than average for the natural propagation and survival of a species. The results, in a recognizably improved or deficient stock, do not show themselves, however, until some years later. In sea-fishes this will not be until the individuals from that particular supernormal or subnormal propagation have reached takable or marketable size unless, as is now the case in countries with highly organized fishery-research facilities, special investigations are made. Similarly, the depleting effects of over-fishing do not show themselves immediately, but are only apparent after a considerable lapse of time.

In the case of our toheroa resources the stocktaking task is simplified by the fact that the stocks do not wander about in obscurity in the ocean, like sea-fishes or crayfish do, but remain more or less in the same place, where their comparative abundance can usually be seen with the eye and confirmed by digging in the sand to a depth of six or eight inches. For this reason the conservation of toheroa stocks could, and should, be one of our easier problems. In practice, however, it is not so easy for a limited staff of competent observers to cover with satisfactory frequency the many miles of beaches that form the habitat of this species. For every visit made by a departmental official for inspection or for ranging there are hundreds made by motorists who go to the beaches to supply themselves with these shellfish. It is a delusion to suppose that, because they are private persons digging "only for a feed," their effects on the toheroa population are negligible. The obvious depletion of stocks in various areas as the result of their abstractions has been recognized for some time, and regulations restricting the taking of toheroa to a daily limit of fifty per person, prohibiting the taking of undersized toheroa, and forbidding the use of destructive implements for digging have been in force, at least on paper, since 1931. It cannot be said that the universal, or even the general, enforcement of these regulations has been achieved, for reasons that will be understood from consideration of the conditions described above.

The present abundance of toheroas on most of the beaches compares badly with that of former years. A considerable factor in bringing this about was undoubtedly the great mortality that took place in February and March, 1938, as mentioned in last year's report; but, in addition, the rate of abstraction by digging has also increased, and is likely to go on increasing unless something is done about it. It has therefore been necessary to submit measures for further restrictions on the taking of toheroas. The further decline in our toheroa stocks can be arrested only by the general application and observation of conservational regulations. Much depends on the disposition of those who frequent the beaches to put the community interest in natural resources and our obligations to posterity above petty individual selfishness, a disposition which, in the absence of strict supervision and drastic penal measures, has in the past been too frequently found wanting. If satisfactory conservation by the general observance of restrictions on individual exploitation is not achieved, the only alternative is the total closure of all toheroa-beds to digging by the general public and placing the taking and sale of toheroa under absolute Government control—the means by which the rock-oyster resources of the North were saved from virtual extinction a generation ago.

Whitebait.

The most significant and usually the most important fact to be registered in an annual report on any fishery is the sum total of the catches made for the period in question. In connection with the whitebait fisheries of New Zealand this is obviously a difficult figure to arrive at, owing to the large but indefinite number and scattered distribution of those who take part in whitebait-fishing. It is mainly by means of information for which we are indebted to various whitebait dealers or to transport agencies that it is possible to obtain data for a quantitative statement. A certain unknown proportion of whitebait taken during each season is directly disposed of by the fishermen and never finds its way to any dealer or wholesale market. These limitations must be mentioned regarding the statement that follows, which is collated from information obtained principally by the local Inspectors of Fisheries at the various centres. It is believed that the figures giving the quantities of fish caught, though only approximating in varying degrees to the actual totals, may be taken with reasonable confidence for comparing the total output from the various rivers or districts from year to year.

Whitebait Fishery.

Inspector's Centre.	Rivers fished.	Method of Fishing.	Fishing began	Best Month.	Number of Fishermen. (Approximately.)		Total Quantity caught. (Approximately.)
					Whole Time.	Part Time.	
							Cwt.
Auckland ..	Waikato	Hand-nets ..	1st July	September ..	100	50	1,171
Auckland ..	Kaituna	Hand-nets ..	20th July	September ..	15	..	45
Auckland ..	Tarawera	Hand-nets ..	15th July	September–October	..	20	51
Auckland ..	Rangitaiki ..	Hand-nets ..	28th July	September–October	..	6	22
Napier ..	Tukituki, Ngaruroro, Wairoa	Set-nets ..	1st July	September ..	18	30	48
New Plymouth	Mokau, Waitara, Mimi, Tongaporutu, Waiwakaiho, Urenui, Oakura, Stoney, Waiongona	Hand and set nets	1st July	October–November	..	100	60
Wanganui ..	Wanganui ..	Hand-nets ..	July ..	September–October	..	20	12
Foxton ..	Manawatu ..	Hand and set nets	July ..	October.. ..	9	13	55
Wellington ..	Whenuakura, Waitotara, Koputara, Ohau, Waikanae, Ruamahunga	Hand and set nets	July ..	October.. ..	32	..	30
Blenheim ..	Wairau, Rose's overflow, Opawa, Tuamarina	Hand-nets ..	September	November–December.	8	50	35
Nelson ..	Motueka, Moutere ..	Hand and set nets	August ..	October.. ..	10	20	40
Nelson ..	Takaka, Motupipi ..	Hand-nets ..	August ..	September ..	1	5	3
Karamea ..	Karamea, Little Wanganui	Hand-nets ..	August ..	October ..	4	35	12
Westport ..	Buller, Orawaiti, Nile, Totara, Little Totara	Hand-nets ..	August ..	October ..	20	150	272
Greymouth ..	Teremakau, Grey, New	Hand-nets ..	15th August	October ..	2	25	74
Hokitika ..	Hokitika, Arahura, Mahinapua, Totara, Waimea, Waite, Okuru, Waitaha, Wataroa	Hand and set nets	September	October ..	33	108	619
Christchurch..	Waimakariri, Styx, Ashley, Saltwater Creek, Kaiapoi, Avon	Hand and set nets	August ..	October ..	50	125	100
Temuka ..	Opihi, Orari ..	Set-nets ..	August ..	October–November	..	40	33
Dunedin ..	Taieri, Mataura, Clutha, Waikouaiti, Shag	Hand	August ..	September–October	14	26	226
Invercargill ..	Mataura, Oreti, Aparima, Makarewa, Waikiwi	Hand and set nets	1st August	October–November	49	..	145

The Kaituna, Tarawera, Rangitaiki, and Manawatu Rivers and also the whitebait-fishing waters in the Napier, New Plymouth, Wellington, Motueka, Takaka, Karamea, Westport, Greymouth, and Hokitika districts are reported to have yielded catches that fall below the usual average for previous seasons. In the Waikato River and the Wanganui district better catches than usual were made, but all the other waters in the North Island showed poorer results than usual, the cause in most cases being attributed to bad weather and flooding of the rivers. On the other hand, the fishing in the rivers of the east coast of the South Island from Marlborough to Otago provided distinctly better results than has been usual of late years. This improvement extended also to Southland, where catches considerably above normal were made in all rivers, including the Waiau.

The Karamea, Buller, Grey, and Hokitika Rivers all had a poor fishing season, but good quantities of whitebait were derived from the waters of South Westland, and some tons were transported by air both to the north and also southward to Invercargill.

Quinnat Salmon.

The Hakataramea River was 8 in. below its normal level when the construction of the rack for taking salmon for hatchery purposes was commenced on 4th April, 1938. The main Waitaki River was in high flood at this time, which tended to make the conditions adverse for a good run of salmon to the trap, and it was considered advisable to improve the mouth of the tributary leading to the rack by doing some excavation. The rack was completed on 11th April and the first salmon appeared there on the 14th, but a flood which raised the Hakataramea 2 ft. 9 in. above normal followed the heavy rain which fell on that date and damaged part of the rack, allowing most of the earliest run of fish to run past the trap. Further floods hampered operations from 21st April till 3rd May. Doubtless in consequence of the high state of the water, a greater number of fish than usual ascended the river, and

were seen as far up as Rocky Point, twelve miles above the rack. Eight male and eight female salmon were trapped between 3rd and 9th May in the Awakino River, which enters the Waitaki half a mile below the hydro dam.

The numbers of fish and ova taken for the hatchery were as follows :—

—	Males.	Females.	Ova.
Hakataramea River.			
April (4th to 30th)	19	20	75,000
May (4th to 16th)	52	131	776,000
Totals	71	151	851,000
Awakino River.			
May (3rd to 9th)	8	3	20,000
	79	154	871,000

In addition, three males and twenty-five females trapped in the Hakataramea and five males trapped in the Awakino were liberated above the trap. Brown trout taken from the Hakataramea trap and put over upstream numbered forty-five males and twelve females. Only one rainbow trout was trapped this season.

Two hundred thousand eyed ova were sent to the Westland Acclimatization Society for liberation in the waters of that district, and 40,000 were consigned to Melbourne. Of the fry produced at the hatchery, 585,000 were distributed in the Hakataramea River and 15,000 were placed in the ponds. Quinnat parr numbering 20,568, reared in the ponds from last season's hatching, were marked by fin-cutting and liberated in the Hakataramea backwater.

With regard to the spawning season in other rivers, the District Inspector of Fisheries for Canterbury reported in June, 1938, that the Waimakariri and Rakaia were inspected and found to be well stocked with spawning and spent fish. Possibly there was a larger escapement than usual owing to the prevention of fishing by the prevalence of floods during the fishing season. On the other hand, dead salmon were found stranded on the banks of the Waimakariri, Rakaia, and Rangitata Rivers which had not spawned but which had apparently been left when the heavy flood-waters of mid-April had receded.

In marked contrast to the 1938 season for salmon-fishing, anglers in the 1939 season found conditions almost continuously good while the fish were running, with the exception of two short periods about the middle of February and again about the middle of March, when floods in the Rakaia and Rangitata Rivers prevented angling. This circumstance, together with the entry of more than average numbers of salmon into most of the rivers, enabled some very big catches to be made. Rangitata anglers enjoyed the best salmon season on record, and the catches in the two much smaller neighbouring rivers, the Opihi and Orari, were also higher than had hitherto been known. We are indebted to Mr. F. W. Pellett, Inspector of Fisheries, Temuka, for making available his records of definitely known catches for these waters, from which the following figures are taken : 1,018 salmon were taken by rod and line fishing in the Rangitata—736 at the mouth and 282 upstream. The largest fish landed was 35 lb.; the smallest 2 lb. Towards the end of the season the proportion of small (5 lb. to 10 lb.) fish was exceptionally high. The average weights of the fish taken in the months of January, February, March, and April were approximately 15, 13, 12, and 10 lb. respectively. Six hundred and fifty-seven fish were caught at the mouth of the Opihi, two of 35 lb. weight being the biggest. The exceptionally low state of this river, due to abstractions for irrigation purposes, would undoubtedly check the salmon from running upstream and augment the number taken at the mouth. The river was so low at the latter end of the season that some salmon ascended Temuka Creek, whose waters join those of the Opihi in Milford Lagoon. Fifty quinnat salmon were caught by anglers at the mouth of the Orari River. The runs of salmon into the Rakaia River were good towards the latter part of the season, but the catches were not noteworthy in regard to numbers compared with those of the southern rivers. The reported capture of a 53 lb. salmon from this river, which received much publicity, was erroneous; the correct weight was 35 lb. Floods interfered with fishing during the earlier runs in this river, and later in the season failure to catch fish was ascribed to the exceptional clearness of the water. The Waitaki also provided a record season for anglers according to all accounts, but apart from the returns submitted by five selling-license holders, which represent an extremely small proportion of the total catch, there are no records available.

The returns made by selling-license holders have been collated in the usual way and the results are summarized in the following tabulated statement, which also shows the catches of the net fishermen who operated at the mouth of the Waimakariri River.

Quinnat Salmon, 1939.

—	Males.	Females.	Sex not given.	Totals.
Return from Rods.				
Waimakariri River, 28/2/39 to 29/3/39 (two rods)—				
Number of fish caught	5	5	..	10
Total weight	61 lb.	55 lb.	..	116 lb.
Average weight	12·2 lb.	11·0 lb.	..	11·6 lb.
Rakaia River, 31/1/39 to 30/4/39 (four rods)—				
Number of fish caught	120	99	15	234
Total weight	1,583 lb.	1,399 lb.	234 lb.	3,216 lb.
Average weight	13·2 lb.	14·1 lb.	15·6 lb.	13·7 lb.
Rangitata River, 31/1/39 to 15/4/39 (seven rods)—				
Number of fish caught	41	36	24	101
Total weight	440 lb.	535 lb.	256 lb.	1,231 lb.
Average weight	10·7 lb.	14·8 lb.	10·7 lb.	12·2 lb.
Orari River, 15/5/39 (one rod)—				
Number of fish caught	17	26	..	43
Total weight	155 lb.	248 lb.	..	403 lb.
Average weight	9·1 lb.	9·5 lb.	..	9·4 lb.
Opihi River, 15/2/39 to 15/5/39 (two rods)—				
Number of fish caught	8	3	61	72
Total weight	97 lb.	40 lb.	657 lb.	794 lb.
Average weight	12·1 lb.	13·3 lb.	10·8 lb.	11·0 lb.
Waitaki River, 15/2/39 to 15/5/39 (four rods)—				
Number of fish caught	31	26	..	57
Total weight	456 lb.	412 lb.	..	868 lb.
Average weight	14·7 lb.	15·8 lb.	..	15·2 lb.
Combined rivers, 31/1/39 to 15/5/39 (seventeen rods)*—				
Number of fish caught	222	195	100	517
Total weight	2,850 lb.	2,689 lb.	1,147 lb.	6,628 lb.
Average weight	12·6 lb.	13·7 lb.	11·5 lb.	12·8 lb.
Returns from Nets.				
Waimakariri River, 6/1/39 to 14/4/39 (three nets)—				
Number of fish caught	526	395	204	1,125
Total weight	4,814 lb.	4,072 lb.	1,851 lb.	10,727 lb.
Average weight	9·1 lb.	10·3 lb.	9·1 lb.	9·5 lb.

* Four rods fished on two rivers during the season.

The net catches in the Waimakariri represent a very considerable improvement on the results for the 1938 season—1,125 fish weighing 10,727 lb., as against 479 fish weighing 6,236 lb. The average size of the salmon taken in 1938 was 13 lb., which is well over the usual average, while in 1939 it was only 9·5 lb., which is well below the normal. The same unusual predominance of small fish in the catches, especially towards the end of the season, is shown as was noticed in the case of this season's run in the rivers of South Canterbury.

With regard to the average number of fish taken per net, this season's catch, averaging 375 salmon per net, is the highest recorded for the last ten years, and is only exceeded by the production for the 1928 season of an average of 628 salmon per net. With regard to the weight, however, the average total per net was exceeded in 1932 and 1934. The following statement shows the yield of the net-fishing for salmon in the Waimakariri since licenses were first issued :—

Year.	Number of Nets licensed.	Number of Fish caught.		Weight of Fish caught.	
		Total.	Average per Net.	Total.	Average per Net.
				lb.	lb.
1925	5	190	38	..	..
1926	8	1,126	141	13,121	1,640
1927	4	767	192	8,543	2,135
1928	4	2,514	628	28,006	7,001
1929–30	..	..	..	..	..
1931	4	446	111	6,878	1,719
1932	4	1,157	289	15,337	3,834
1933	4	928	232	12,318	3,079
1934	4	1,118	279	13,570	3,392
1935	4	512	128	5,835	1,459
1936	4	246	61	2,733	683
1937	2	106	53	1,067	533
1938	3	479	160	6,236	2,079
1939	3	1,125	375	10,727	3,576

The run of salmon in the Clutha River also appeared to show an appreciable increase, catches by anglers having been made in larger numbers and over a greater length of the river's course than

has hitherto been the case. A difference between this river and the Canterbury salmon rivers, which carry a smaller volume of water, is that practically all the salmon catches are made in the upper reaches above Cromwell and not in the lower and estuarine waters.

Atlantic Salmon.

No trap was constructed in the Upokororo River during the winter of 1938, and no salmon were taken for stripping except one pair, the ova from which were used to provide a stock of young fish for pond-culture experiments. The omission of the usual salmon-hatchery operations was arranged primarily to conform with the policy which the Southland Acclimatization Society desired to follow in connection with their interest in the Upokororo River as a source of supplies of brown-trout ova. Their Council wished to give the winter run of trout a season or two of respite from trapping with a view to increasing the numbers of fish to be available for subsequent years. It was considered that the diminished catches of Upokororo trout for hatchery purposes that had been obtained in recent seasons were due to the fish having developed "trap-shy" habits which led to their spawning to an increased extent below the "rack," which is the obstacle placed across the river in connection with the trap used for the capture of spawners. The site of the rack is about half a mile above the mouth of the river. There is no doubt about the decline in the magnitude of the spawning runs of trout into this river of recent years; but, in the absence of systematic records of observations over the period of time involved, the causative factors are not so readily demonstrable. The "trap-shy" explanation, if it held at all, would account for only a very small part of the decline. It seems probable that the reduction is due to the fact that during the last fifteen years as many trout as possible have been trapped and stripped and their artificially hatched progeny distributed in other waters, a small proportion only having been occasionally returned to the parent stream. There are no recorded observations from which one can compare the recent occurrence of spawning in the lower part of the Upokororo with what took place in past years, but two points may be mentioned. The rack itself acts as a trap for travelling shingle and so ensures that the bed of the river below it is kept more stable and therefore more suitable for spawning. The redds which are made there appear to be due to the work of late-running fish, which would tend to spawn in the lower reaches of the river in any case. There was no rack or trap operating in the winter of 1938 and therefore no obstruction to the movement of fish, but an inspection made on 7th August of that year revealed forty-six redds between the rack-site and the mouth. These redds may have been those of either salmon or trout, which here differ little in size. Several of them were washed out by a big flood which occurred on 16th October and which was subsequently found to have made substantial changes in the character of the river-bed, leaving deep channels at places where there had been fords on which fish had spawned, filling up other channels, and depositing new banks of shingle in some parts of the river-bed. The Upokororo River is particularly liable to these heavy floods in spring, and it is this contingency that makes it advisable to trap the spawners (trout or salmon) and place their ova within the sanctuary of a hatchery. But unless a sufficient proportion of the progeny is duly planted back in the waters of the parent river its stock is not likely to be maintained. These considerations are relevant to both trout and salmon, but this brief reference to the Upokororo position is merely a superficial glance at a problem that calls for more profound and prolonged investigation. It belongs to that class of problems on which, by systematic collaboration between local acclimatization societies and the central research staff, one may reasonably expect more light to be thrown in the future.

During the winter and spring of 1938 advantage was taken of the respite from the usual trapping, stripping, and hatchery operations to renovate the Department's old and much-dilapidated hatchery establishment at Te Anau. The main building has been rebuilt and somewhat enlarged, its internal water-distribution system renewed, the water-supply from two adjacent springs has been confined to one basin so that the whole of it may be available for the hatchery, and concrete flumes have been made to replace the old wooden ones. Four small rearing-ponds, each about 12 square yards in area, have been made, through each of which a water-flow of about 50 gallons per minute can be maintained.

No detailed records are available as to catches of Atlantic salmon made in the Waiau system during the angling season of 1938–39. On the basis of the general information obtained by the Southland Acclimatization Society, it is stated in their annual report that the fishing in the Te Anau neighbourhood was much the same as in the previous two or three years, although the average size of the fish appeared to be somewhat larger. This might possibly indicate better growth, but is more probably due to an increase in the average age of the fish caught, which would point to a higher rate of survival or else to a more successful reproduction in the season when the members of the older year-groups were hatched. The examination of a collection of scales from a representative sample of the fish caught would throw light on this question, but it has not been possible to obtain such a collection.

Research.

Sea Fisheries.

The Marine Biologist, Mr. A. M. Rapson, has been mainly occupied during the past year in continuing his investigation of phenomena connected with the reproduction and growth of some of the more important commercial species, and, in the absence of a special research vessel for this work, has made use of commercial fishing-vessels to take him to the fishing-grounds. The facilities for sea-work thus made available, while not affording the same scope for obtaining the special and extensive data that are obtained by means of the research ships now employed by the Fisheries Departments of older countries, are nevertheless valuable and may be regarded as appropriate for our requirements at this stage. Incidentally, such arrangements afford opportunities for the scientific worker to become acquainted with the fishermen's practical operations and with their ideas and

points of view regarding practical problems and for the fishermen to get some insight into the purpose and methods of the biologist's work, which is to their mutual advantage. The principal objects of study have been the spawning of blue cod and flat-fish species, the location of spawning "grounds," and the migrations of the early stages in the life of these fishes. Preliminary studies of the growth and age-distribution of some of the flat-fish species have been made, chiefly by means of the examination of the zones of growth that are shown on the otoliths (ear-bones). A report on this work is now being written. Periodical examinations of toheroa have been made to determine the incidence of spawning, size at first maturity, rate of growth, feeding-habits, and migrations. Some quantitative surveys of toheroa populations have also been made, together with observations on the physico-chemical character of the water on the beaches they inhabit. In January, 1939, the Marine Biologist attended the meetings of the Australian and New Zealand Association for the Advancement of Science at Canberra, where he was afforded the opportunity of hearing papers and discussions by Australian fishery-research workers, and later was enabled to visit the new Research Station of the Fisheries Section of the Commonwealth Council for Scientific and Industrial Research at Cronulla, to make a trip on a deep-sea trawler from Sydney, and to make an inspection of some of the rock-oyster farms of New South Wales. For their kindness in granting facilities for our Marine Biologist to obtain these very educative experiences we would express our obligation to the officials of the Commonwealth and the State of New South Wales and to the members of the fishing and oyster industries concerned.

Fresh-water Research.

In last year's report reference was made to Mr. Hobbs's work on the reproduction of trout and quinnat salmon, on which he had been engaged prior to his appointment to the staff of the Marine Department, and to the publication, as Fisheries Bulletin No. 6, of his first report on this work which covered observations made over a period of three years. During the past year data from additional waters in the Dominion have been collected for a second paper, which is nearing completion. From this study of material from a series of typical river systems in both Islands further light has been thrown on the general significance of natural reproduction in the maintenance of stocks. The general indications are that attempts to establish trout in various river systems have been successful or otherwise in relation to the extent of suitable spawning-ground available. It is proposed that the publication of the more technical aspects of this work should be followed by a second paper, for which data are now being assembled, in which past and present stock-maintenance practices in this country will be reviewed in the light of present knowledge. Data from the examination of the stomach-contents of large numbers of fishes are also being assembled which will provide material for a first report on the food of young trout and salmon and of certain indigenous fishes.

A gratifying and beneficial consequence of the publication of Fisheries Bulletin No. 6 has been the keen interest that Mr. Hobbs's work has evoked from fishery biologists in other countries. This has led to the interchange of views by correspondence, and has widened our circle of exchange of research literature, which has been decidedly to the benefit of our staff and of the work they are developing in this country. The handicap of our geographical remoteness from the most important centres of fishery research is thus being overcome. The visit of Mr. Hobbs in January last to the Science Congress in Australia, previously mentioned, also served the very useful purpose of enabling him to make personal contacts and exchange ideas with other biologists engaged in research on fisheries or associated subjects. He was also able, in the field, to widen his experience of fishery problems by observation of the conditions in some Australian rivers, which provide educative contrasts with those prevailing in New Zealand waters.

The investigation of the biology of fresh-water eels, begun last year by Mr. Cairns, as outlined in the last annual report, was carried on and extended considerably until June, 1938, when he left the service of the Department. With laudable enthusiasm and energy he has continued the study as a spare-time occupation, and has rounded off an important phase of this investigation so that a report will be available for publication in the near future.

As a preliminary to more general investigations on the growth of trout by means of scale examinations, a detailed study has been made of scales from yearling fish taken from two contrasting types of stream in the Inchbonnie district—Jim's Creek, a large spring creek with a short course, and Waterfall Creek, which drains a steep bush-clad hillside and is subject to frequent freshes. The first has a fairly uniform temperature, records taken over a twelve-month period showing a range of from 10·5° C. to 12·5° C. The temperature of the latter shows variations throughout the year from 1·3° C. to 18·5° C. The laboratory assistant, Miss V. K. Lawrey, has collaborated with Mr. Hobbs in this work, which will be carried to a further stage as opportunities permit. So far as it has gone it has furnished a significant and detailed picture of the characteristics of scale-development during the first year of life in two streams of contrasting type, which will facilitate the interpretation of scale markings in connection with general age investigations.

In December, 1938, Mr. K. R. Allen, B.A. (Cantab.), joined the Department as Fresh-water Biologist, having for the previous three years worked as a member of the staff of the Fresh-water Biological Association of the British Empire at their laboratory at Lake Windermere. Besides conducting investigations on the fishes of the English lakes, Mr. Allen has carried out investigations and published papers on the food and growth of young salmon in English and Scottish waters. His training and experience render him particularly well qualified to render valuable service in connection with the fresh-water-fishery problems of New Zealand. He is now engaged upon an intensive study of the relationship between the abundance and growth of the trout population of a stream and the abundance and character of its food-supply—a biological complex that is fundamentally involved in the problem of stock-maintenance, a subject that has often been discussed with a maximum of interest

but with a minimum of real knowledge and understanding of facts. In connection with this research, systematic observations are being made periodically on the fishes and other forms of life in a selected stream. The work involves determination of the age and manner of growth of individual trout, estimates of the numbers of trout of different year-groups in the population and the seasonal movements of immature and mature fish, quantitative determination of the available food organisms, their seasonal variation in abundance, their distribution according to the character of the water and stream-bed, and the kind and quantity of the food organisms eaten by trout at different times of the year. Special apparatus for collecting and sorting the material has been devised. The netting and marking of trout will form an important part of the scheme for affording material from which growth, migration, and population data will be worked out.

At the request of the Westland Acclimatization Society a preliminary survey was made by Mr. Hobbs and Mr. Allen in March, 1939, of Lakes Mapourika, Wahapo, and Ianthe. It is desired to develop the sport-fisheries in these waters as the lakes lie alongside the main South Westland tourist route, but attempts to establish trout have so far met with negligible success and fishing of a quality to attract the attention of visiting anglers is not available at present. Only a few days were spent in the district, so that a comprehensive biological examination was not possible. So far as could be ascertained, the conditions did not provide evidence that would be regarded as offering a promising prospect for the establishment of good trout-fishing. The principal limitation is the non-availability of adequate spawning-ground in tributary streams for the maintenance of a good stock of trout. Supplies of food for trout, as is commonly the case in glacial lakes with a relatively small area of shallow water, are very limited in Mapourika and Wahapo. They are better in Ianthe, and appear to be equal to those of other glacial lakes which provide moderate trout-fishing. The development of a sport-fishery in these lakes, as in some other troutless waters in New Zealand, would appear to depend upon the introduction of a species whose habits would render it capable of reproducing new generations in the particular environment and of finding continuous nourishment at successive growth stages. These are problems for the future which cannot be undertaken until more progress has been made in our study of the physical and biological factors of the habitats; nor should anything be done in the absence of very complete understanding of the habits of exotic species the introduction of which may be contemplated. A precaution that must be observed more particularly in connection with Westland waters is the possible effect of an acclimatized species on existing whitebait stocks.

In conclusion, I would like to record appreciation of the always zealous and often strenuous way in which the staff of the Fisheries Branch have worked during the year in the office, in the laboratory, and in the "field." The past year has been one in which working-conditions were rendered difficult by a removal to new quarters, preceded and followed by prolonged disturbances caused by structural changes being made to the building in which the office staff was working. At the same time, there has been a considerable increase in the volume and complexity of the tasks that need to be done to serve the requirements of present-day fisheries administration.

A. E. Hefford,
Chief Inspector of Fisheries and Director of Fishery Research.

TABLE SHOWING THE NUMBER OF SEAMEN ENGAGED AND DISCHARGED IN NEW ZEALAND, AND THE FEES RECEIVED, FOR THE YEAR ENDED 31ST MARCH, 1939.

Port.	Engagements and Discharges, Foreign and Intercolonial Trade.				Engagements and Discharges, Home Trade.				Total Engagements.		Total Discharges.		Grand Totals.	
	Engagements.		Discharges.		Engagements.		Discharges.							
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Auckland	1,566	153 9 0	1,532	151 1 0	1,464	129 8 0	1,428	126 3 0	3,030	282 17 0	2,960	277 4 0	5,990	560 1 0
Dunedin	476	47 10 0	425	42 6 0	104	10 0 0	120	11 14 0	580	57 10 0	545	54 0 0	1,125	111 10 0
Gisborne	6	0 12 0	6	0 12 0	48	4 1 0	49	4 3 0	54	4 13 0	55	4 15 0	109	9 8 0
Greymouth	26	2 12 0	28	2 16 0	27	2 10 0	35	3 6 0	53	5 2 0	63	6 2 0	116	11 4 0
Hokitika	..	..	..	..	24	1 5 0	24	1 3 0	24	1 5 0	24	1 3 0	48	2 8 0
Invercargill	29	2 18 0	28	2 16 0	63	3 15 0	66	4 8 0	92	6 13 0	94	7 4 0	186	13 17 0
Lyttelton	287	27 15 0	276	27 0 0	204	19 17 0	218	21 9 0	491	47 12 0	494	48 9 0	985	96 1 0
Napier	38	3 16 0	24	2 8 0	233	20 17 0	256	24 0 0	271	24 13 0	280	26 8 0	551	51 1 0
Nelson	7	0 14 0	15	1 10 0	410	31 4 0	461	34 5 0	417	31 18 0	476	35 15 0	893	67 13 0
New Plymouth	33	3 6 0	39	3 10 0	35	3 0 0	37	3 4 0	68	6 6 0	76	6 14 0	144	13 0 0
Oamaru	2	0 4 0	1	0 2 0	3	0 6 0	1	0 2 0	5	0 10 0	2	0 4 0	7	0 14 0
Onehunga	..	..	..	..	87	6 13 0	91	7 1 0	87	6 13 0	91	7 1 0	178	13 14 0
Patea	..	..	..	..	77	4 8 0	76	3 12 0	77	4 8 0	76	3 12 0	153	8 0 0
Picton	2	0 4 0	3	0 6 0	7	0 14 0	5	0 10 0	9	0 18 0	8	0 16 0	17	1 14 0
Tauranga	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Te Kopuru	2	0 4 0	2	0 4 0	..	..	..	..	2	0 4 0	2	0 4 0	4	0 8 0
Timaru	7	0 14 0	4	0 8 0	19	1 18 0	20	2 0 0	26	2 12 0	24	2 8 0	50	5 0 0
Wairau	..	..	..	..	1	0 2 0	1	0 2 0	1	0 2 0	1	0 2 0	2	0 4 0
Wanganui	12	1 4 0	7	0 14 0	94	8 5 0	89	7 11 0	106	9 9 0	96	8 5 0	202	17 14 0
Wellington	4,135	388 1 0	4,046	375 7 0	2,283	192 18 0	2,168	183 13 0	6,418	580 19 0	6,214	559 0 0	12,632	1,139 19 0
Westport	39	3 18 0	34	3 8 0	68	6 0 0	75	6 14 0	107	9 18 0	109	10 2 0	216	20 0 0
Foxton	..	..	..	..	14	1 8 0	16	1 12 0	14	1 8 0	16	1 12 0	30	3 0 0
Totals	6,667	637 1 0	6,470	614 8 0	5,265	448 9 0	5,236	446 12 0	11,932	1,085 10 0	11,706	1,061 0 0	23,638	2,146 10 0

TABLE SHOWING COST OF MAINTENANCE (EXCLUDING INTEREST ON CAPITAL AND DEPRECIATION) OF NEW ZEALAND COASTAL LIGHTHOUSES FOR THE YEAR ENDED 31ST MARCH, 1939.

Name of Lighthouse.	Salaries and Wages.	Fuel.	General Maintenance.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Akaroa Head	532 0 0	48 4 9	489 13 2	1,069 17 11
*Baring Head	835 13 5	54 16 7	709 5 2	1,599 15 2
Brothers	742 3 4	50 15 9	294 2 8	1,087 1 9
Cape Brett	782 7 6	41 0 1	268 14 3	1,092 1 10
*Cape Campbell	564 18 10	41 3 4	272 19 0	879 1 2
*Cape Egmont	256 19 0	20 15 0	188 11 10	466 5 10
Cape Maria	779 6 3	67 18 9	983 10 0	1,830 15 0
Cape Palliser	542 16 6	48 1 8	165 16 2	756 14 4
Cape Saunders	583 3 6	58 5 11	203 12 5	845 1 10
Castlepoint	580 19 6	51 15 1	123 11 6	756 6 1
Centre Island	798 10 0	54 14 11	204 1 1	1,057 6 0
*Cuvier Island	764 11 0	47 19 1	367 7 4	1,179 17 5
Dog Island	558 1 5	54 16 1	151 5 1	764 2 7
East Cape	590 6 7	48 1 11	218 12 9	857 1 3
Farewell Spit	788 19 8	68 2 4	498 7 4	1,355 9 4
French Pass	237 13 4	11 0 1	13 2 7	261 16 0
*Godley Head	302 4 0	46 16 0	188 13 4	537 13 4
*Kahurangi Point	255 0 0	11 14 3	221 14 10	488 9 1
Kaipara Heads	809 15 1	59 5 5	181 6 3	1,050 6 9
*Manukau South Head	255 0 0	12 17 4	51 6 4	319 3 8
Moeraki	561 14 0	54 19 0	111 12 8	728 5 8
Moko Hinau	760 18 3	49 14 6	352 16 9	1,163 9 6
Nugget Point	510 8 9	61 8 3	160 13 6	732 10 6
Portland Island	852 7 5	67 2 10	254 0 6	1,173 10 9
Puysegur Point	798 17 3	56 4 11	507 10 9	1,362 12 11
*Stephens Island	838 19 1	28 8 11	232 18 3	1,100 6 3
Tiri Tiri Radio Beacon	..	..	69 13 10	69 13 10
Waipapapa Point	556 9 3	50 8 9	120 0 7	726 18 7
Marine Store	1,199 15 9	..	92 7 8	1,292 3 5
Automatic lights (unwatched)	..	238 11 7	330 4 9	568 16 4
Fog-signals	694 1 8	91 4 3	248 18 5	1,034 4 4
Government steamer	15,181 9 5	4,465 0 10	7,057 13 0	26,704 3 3
	33,515 9 9	6,061 8 2	15,334 3 9	54,911 1 8

* Watched automatic lights.

RETURN OF ESTATES OF DECEASED SEAMEN RECEIVED AND ADMINISTERED IN PURSUANCE OF THE PROVISIONS OF THE SHIPPING AND SEAMEN ACT, 1908, DURING THE YEAR ENDED 31ST MARCH, 1939.

Name of Seaman.	Balance to Credit of Estate on 1st April, 1938.	Amount received.	Amount paid.	Balance to Credit of Estate on 31st March 1939.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
R. L. Earl	23 14 3	..	23 14 3	..
C. Ekstrom	..	26 12 10	26 12 10	..
J. W. E. Evans	..	15 10 0	15 10 0	..
Charles De Faire	7 12 0	..	7 12 0	..
A. Franklin	..	10 15 7	10 15 7	..
W. Gullion	..	1 4 10	0 7 4	0 17 6
H. Helgesen	8 0 0	..	8 0 0	..
W. Kenney	56 6 3	..	56 6 3	..
T. Laverty	..	7 7 2	7 7 2	..
P. A. Linton	0 1 0	..	0 1 0	..
John MacCormick	2 8 2	..	2 8 2	..
M. McDonald	..	12 18 3	12 18 3	..
J. McEvoy	0 1 3	..	0 1 3	..
J. Payne	..	0 17 6	..	0 17 6
H. A. Scollay	..	5 2 2	..	5 2 2
W. S. Smith	..	11 19 0	11 19 0	..
R. Wassel	0 1 3	..	0 1 3	..
T. Wright	..	4 3 7	..	4 3 7
	98 4 2	96 10 11	183 14 4	11 0 9

RETURN SHOWING AMOUNTS RECEIVED PRIOR TO 1ST APRIL, 1938, STANDING TO CREDIT OF ESTATES OF DECEASED SEAMEN AND FOR WHICH CLAIMS HAVE NOT BEEN PROVED.

Name of Seaman.	Balance to Credit of Estate, 31st March, 1939.
	£ s. d.
G. Banks, late seaman, s.s. "Marama"	6 16 6
W. H. Carle, late seaman, s.s. "Rata"	3 17 7
J. Payne, late trimmer, s.s. "Omana"	14 2 2
	£24 16 3

Return of Wrecks and Casualties to Shipping reported to the Marine Department from 1st April, 1938, to 31st March, 1939.

Date of Casualty.	Vessel's Name, Class, and Age.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Remarks, or Finding of Court of Inquiry.	Name of Master.
			Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1938.												
April 2	Weirbank, m.v.; 13 years	3,118	53	..	3,300 tons phosphate ..	Struck wharf-piling ..	..	Auckland	E.N.E.	Squally	A heavy gust of wind carried the vessel on to the wharf-piling, causing damage to the port propeller and shaft	J. A. F. Llewellyn.
,, 3	Rona, s.s.; 20 years ..	3,783	49	..	8,000 tons sugar and molasses	Damaged by heavy seas ..	..	Lat. 34° S.; Long. 164° E. (Tasman Sea)	S.	7	During heavy weather the vessel shipped heavy seas, which broke six ports and caused damage to the starboard lifeboat No. 1	W. G. Balharrie.
9	Nikau, m.v.; 29 years ..	97	11	..	Nil	Collision	..	Nelson	S.E.	Moderate	When the "Nikau" was leaving her berth the launch backed out from No. 9 berth. The "Nikau's" engines were stopped and helm ported, and at the same time two short blasts on the whistle were sounded. The launch did not respond to the signal, with the result that the "Nikau" hit her on the port side just abaft midships. No damage to the "Nikau," but the "Rangitoa" suffered slight damage	E. A. Eden.
	Rangitoa, m.v... ..	6	1	..	Nil							C. Smith.
9	Awatea, s.s.; 2 years ..	7,928	238	400	General	Damaged by heavy sea ..	..	Tasman Sea	E.	11	At 5.15 p.m. the vessel shipped a very heavy sea, which caused damage to the forecastle head, bulwark stays, breakwater, two windows in fore part of boat deck, and one window in the wheelhouse	A. H. Davey.
,, 14	Rangatira, s.s.; 7 years	2,629	106	977	150 tons general ..	Fouled anchor cable of H.M.S. "Achilles" ..	..	Off Clyde Quay, Wellington	N.	6–10	After leaving the Ferry Wharf during fierce, squally weather the vessel was forced to round up with the port anchor down. The anchor fouled the cable of H.M.S. "Achilles," which was berthed at Clyde Quay with starboard anchor out, approximately 60 fathoms of chain, and the vessel's bow extending 30 ft. over end of wharf. The "Rangatira's" engines were reversed and the anchor slipped, but the vessel swung stern down on to the warship, with the result that she collided with H.M.S. "Achilles." The "Rangatira's" docking-bridge rails were damaged	B. B. Irwin.
,, 17	Ranui, m.v.; 1 year ..	19	5	20	Nil	Stranded	..	Off Stewart Island ..	..	Calm	When entering the passage to Solomon Island at about three knots, the bow caught in an eddy, swinging the vessel too quickly, with the result that she grounded on a rocky ridge. The vessel floated off six hours and a half later, apparently undamaged	J. W. P. Thomson.
,, 20	Karepo, s.s.; 14 years ..	1,330	33	..	17 tons general	Collision	..	Wellington Harbour ..	N.	4	Both vessels were outward bound and the port quarter of the "Karepo" struck the bowsprit of the "Kohi." No damage to either vessel	A. Russell.
	Kohi, m.v.; 27 years ..	20	6	..	110 tons general							R. Goldie.
,, 23	Karepo, s.s.; 14 years ..	1,330	33	..	2,200 tons coal.. ..	Fire	..	Westport	N.	4	A fire was discovered in the crew's quarters aft. The bedding was dragged out and dumped. Fire probably caused through lighted cigarette	A. Russell.
May 2	Awatea, s.s.; 2 years ..	7,928	238	492	300 tons general ..	Engine-failure	..	Wellington	..	Calm	When berthing, the starboard engine failed to go astern. Repairs effected before departure	G. B. Morgan.
,, 4	Nikau, m.v.; 29 years ..	97	11	..	Nil	Stranded	..	Motueka Harbour ..	S.S.W.	1	When rounding the training-wall, the vessel was carried broadside on to the bank on opposite side of channel by the strong flood tide. Vessel was heaved off when the tide eased up and was found to be leaking. Vessel beached for temporary repairs	E. A. Eden.
,, 4	Herekino, s.s.; 13 years	185	15	..	Nil	Stranded	..	Auckland Harbour ..	W.	Half-gale	When nearing the western viaduct the vessel was caught by a heavy squall, which caused her head to pay off, with the result that the vessel struck the viaduct on starboard side and bounced off straight for the port side, when she struck head on. The vessel's stem was bent	F. Savage.
4	Lancia, m.v.; 17 years ..	6	2	..	Nil	Stranded; damaged beyond repair	..	Pahiki Island ..	W.N.W.	Gale	When sheltering under the lee of Pahiki Island the wind suddenly shifted, forcing the vessel to proceed to other side of island for shelter. A heavy sea washed a tow-line overboard, fouling the propeller and rendering the vessel powerless. The anchor was dropped on the barge which was in tow, but as the "Lancia" was too close inshore she was pounded against the rocks and damaged beyond repair	E. C. Lannam.
,, 12	Mahia, s.s.; 21 years ..	4,979	81	..	2,150 tons general ..	Fire	..	Dunedin	..	..	The after bunker was discovered to be warmer than usual, and on investigation the coal was found to be smouldering, due to spontaneous combustion	W. Thompson.

"	17	Rowanbank, s.s.; 19 years	3,168	37	..	Bulk phosphate	..	Struck wharf	..	Wanganui	..	..	The vessel struck, on her port side, against the Castiecliff Wharf, causing slight damage to hull plating	W. G. Loraine.
"	18	Port Montreal, m.v.; 1 year	3,458	39	..	3,882 tons general	..	Leakage in No. 1 oil-tank	..	Lat. 15° S.; Long. 126° 58" W. (Pacific Ocean)	S.E.	3	While on a voyage between Balboa and Auckland a leak was discovered in No. 1 port tank. On arrival at Wellington it was discovered that the margin plate welding on port side No. 1 tank was fractured	E. J. Syvret.
	27	Ethel Wells, m.v.; 30 years	19	4	..	56 yards sand ..	..	Collision	..	Tiri Passage, Hauraki Gulf	..	Calm	The "Ethel Wells" struck the "Alma" a glancing blow amidships. The bowsprit of the former was carried away and the latter's bulwark stanchions were bent on the starboard side. Casualty apparently caused through an inexperienced helmsman and his default in not calling the Master of the "Alma"	A. N. Matheson.
		Alma, m.v.; 36 years ..	21	5	..	Nil	..							S. Hakanson.
	27	Kaimai, s.s.; 24 years ..	784	23	..	550 tons coal ..	..	Stranded	..	Dunedin	S.W.	6–7	While manœuvring to berth, a heavy squall caught the vessel on starboard side, causing her head to fall off and drift bodily to leeward, with the result that the vessel grounded on soft mud. Vessel refloated same day	H. L. P. Brown.
June	17	Echo, m.v.; 32 years ..	99	10	..	General	..	Stranded	..	Wairau Bar	N.W.	1	While crossing the bar the vessel grounded. Casualty caused through alteration and shoaling of usual channel. Vessel eventually hove off on the 22nd June	A. Nelson.
"	19	Te Aroha, m.v.; 26 years	56	6	..	70 tons general ..	..	Broken thrust-shaft	..	Off Cape Farewell ..	N.W.	Light	The engineer reported that the thrust-shaft of the port engine had broken. The vessel proceeded on one engine	T. C. Sawyers.
July	3	Miena, sail; 3 years ..	49	6	..	Timber	..	Broken tiller	..	Tasman Sea	W.N.W.	7	The steel tiller broke about 4 in. from the rudder-stock owing to a bad weld, there being a fault nearly halfway through the bar	G. H. George.
"	4	Herekino, s.s.; 13 years	185	15	..	In ballast	..	Collided with viaduct	..	Auckland Harbour ..	W.	Squally	When passing through the Western Viaduct the vessel bumped on the head of a fender-pile, which caused a dent in plate on port bow and loosened a few rivets	F. Savage.
	10	Huntingdon, s.s.; 20 years	6,805	56	1	480 tons wool	..	Junk-ring stud carried away	..	Between Opua and Auckland	N.N.W.	Moderate	The starboard engine was stopped on account of a knock in the cylinder, and it was found that one junk-ring stud had carried away and the junk-ring fractured	A. E. Taylor.
"	13	Waima, m.v.; 28 years ..	5	..	..	Nil	..	Stranded, total loss	..	Tokomaru Bay ..	S.E.	8–9	The vessel was anchored fairly well offshore, but apparently the force of the gale caused the anchors to drag and the vessel was found smashed on the beach	..
"	18	Taupata, m.v.; 8 years..	143	12	..	50 tons general ..	..	Grounded	..	Motueka Harbour ..	..	Calm	On approaching the harbour at 10.29 p.m. and before it was ascertained that one of the red leading lights was obscured, the vessel grounded on the port side of the channel. The vessel was refloated at 10.35 p.m. next day, and it was found that the port propeller had been slightly damaged	W. McMillan.
"	27	Kakapo, s.s.; 1 year ..	1,278	35	..	2,300 tons general ..	..	Leaking rivets	..	Tasman Sea	E.	6–7	During heavy weather it was found that a leak had occurred in No. 1 hatch coamings and also a leak in No. 2 hatch, due to loose rivets	J. Ritchie.
Aug.	10	Tiri, m.v.; 7 years ..	69	9	..	30 tons general ..	..	Engine breakdown	..	Ranginui Bay ..	Squally	6	The Chief Engineer reported that the engines were out of action due to a small hole in the manifold. Repairs effected at Mangonui	H. Parker.
"	10	Trelawny, s.s.; 11 years	2,848	36	..	3,596 tons general ..	..	Damaged by heavy seas ..	..	Lat. 31° 12' S.; Long. 151° 40' W. (South Pacific Ocean)	S.E.	10–11	The vessel shipped a heavy sea over the port quarter, striking deck cargo in way of main rigging. The cargo was swept to leeward as the vessel rolled, carrying away guard rails for a length of 50 ft. and fracturing stanchions and sundry steam-pipe guards. Thirteen barrels of fluid were lost overboard	M. E. Sadler.
Aug.	11	Te Awhina, s.s.; 30 years	87	6	..	Nil	..	Collision	..	Auckland Harbour ..	S.W.	2	The Court found that the casualty was not caused through any negligent act on the part of any person, but by the towing-vessel getting out of position and being drawn against the "Essex" by the forward movement of the latter vessel, the set of the tide, and the suction of propellers from the "Essex." No order was made as to the costs of the inquiry	D. R. Probert.
		Essex, m.v.; 1 year ..	6,520	58	..	General ..	..							F. W. Wyatt.
"	12	Success, m.v.; 13 years..	4	3	..	62 tons fireclay ..	..	Stranded	..	Ngunguru River ..	S.	2	The vessel struck a sunken snag about two miles and a half from the Heads and grounded on a mudbank. The propeller was slightly damaged	T. Stephens.
"	13	Tiri, m.v.; 7 years ..	69	9	..	General	..	Collided with the "Motu"	..	Auckland Harbour ..	S.W.	2	The starboard quarter of the "Motu" touched the port bow of the "Tiri," causing slight damage to the latter vessel's false stem and also a leak in the forepeak	H. Parker.
"	23	City of Winchester, s.s.; 20 years	4,578	84	..	4,580 tons general ..	..	Fire	..	Lat. 25° 23' S.; Long. 140° 47' W. (Pacific Ocean)	E.S.E.	6	A fire was discovered in the Chief Officer's room at about 4.10 a.m. The crew were mustered to fire-stations and it was extinguished about 4.40 a.m. Cause unknown.	W. S. Coughlan.
"	25	Tamahine, s.s.; 12 years	802	44	43	50 tons general ..	..	Collided with wharf	..	Wellington	S.	4	When berthing, the vessel failed to respond and struck the corner of the Queens Wharf with the port bow. Three plates and three frames were bent, several rivets loosened, and forward end of belting was damaged	T. E. Bevan.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT FROM 1ST APRIL, 1938, TO 31ST MARCH, 1939—*continued*.

Date of Casualty.	Vessel's Name, Class, and Age.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Remarks, or Finding of Court of Inquiry.	Name of Master.
			Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1938. Aug. 26	Ronaki, m.v.; 16 years	128	11	..	21 tons general ..	Damage to port propeller	..	Kawhia	S.E.	6	A sudden gust of wind caught the vessel when leaving the wharf, and before she could be squared up the vessel touched some hard substance, causing damage to two blades of the port propeller. When rounding Puponga Point, Manukau Harbour, the next day the starboard engine-cylinder head cracked	A. H. MacDonald.
Sept. 9	Huia, m.v.; 44 years ..	166	12	..	Nil	Collided with jetty ..	..	Auckland	N.	4	While being towed out of the Calliope Dock the ebb tide swept the vessel's stern on to the jetty, crushing the bow of the lifeboat against a fender pile	S. J. Atkins.
19	Holmlea, s.s.; 17 years ..	251	17	..	581 tons coal	Collided with mole ..	..	Wanganui	W.	2	When entering the Wanganui River the vessel's steering-gear carried away and the vessel collided with the North Mole. Temporary repairs effected and vessel subsequently towed in by a tug	C. A. Barker.
„ 19	Dalfram, s.s.; 8 years ..	2,821	39	..	Timber	Damaged by heavy seas ..	..	Lat. 44° 58′ N.; Long. 128° 01′ W. (North Pacific Ocean)	S.E.	8	During a heavy gale with high seas and head swell the vessel shipped a big sea over the bow. The deck cargo on No. 1 hatch was struck, the lashings parted, and a considerable quantity of timber was washed overboard. The fore-deck rails and stanchions were damaged	R. C. Rees.
„ 23	Kairanga, s.s.; 16 years	1,726	29	..	General	Fire	..	Auckland	E.	2	A fire was discovered in the sailors' forecastle, but was immediately extinguished. The electric wiring was burnt and a small portion of the wooden bulkhead charred	A. F. Inman.
Oct. 2	Korea, m.v.; 1 year ..	190	3	8	3 motor-cars ..	Collision	..	Auckland Harbour ..	S.	Light	It appears that both vessels did not notice each other until it was too late to avoid a collision. The "Lena" appears to have been the overtaken vessel, and the Master took no action. On the other hand, the Master of the "Korea" took all action possible to avoid the collision	P. W. Manning.
	Lena, m.v.; 33 years ..	4	2	..	5 tons oil ..							N. Warren.
„ 12	Port Whangarei, m.v.; 32 years	286	14	..	426 tons general ..	Engine defects	..	Off North Head, Auckland Harbour	S.W.	Light	The Chief Engineer reported a slackness in the compression links of starboard engine. Both engines were reduced to slow and vessel returned to wharf, where repairs were effected	A. E. Webster.
„ 20	Arahina, m.v.; 13 years	12	4	..	..	Lost propeller	..	Wellington Harbour ..	N.	3	When the vessel was approaching the King's Wharf an order was given to go astern and the propeller dropped off, but was subsequently recovered	W. M. McLeod.
Nov. 2	Hananui II, s.s.; 28 years	44	10	..	4 tons fish	Propeller fouled ..	..	Off Cape Saunders, Otago	N.E.	2	The wire messenger used for heaving the fore trawl wire into the towing block fouled the propeller. The vessel was towed to port for repairs	J. Black.
„ 2	Ionoto, m.v.; 17 years ..	6	1	6	..	Rudder-stock carried away	..	Auckland Harbour ..	N.	5	When the vessel was leaving the wharf the rudder-stock carried away. No other damage	L. Kasper.
„ 8	Toa, m.v.; 10 years ..	110	10	..	230 tons general ..	Stranded	..	Whakatane River ..	N.E.	Light	When the vessel was proceeding to sea she touched on a sandbank, causing the vessel to run on to a stone groyne. Vessel returned to wharf, where it was found that no apparent damage had been caused	A. Pert.
„ 12	Port Whangarei, m.v.; 32 years	286	15	..	270 tons general	Collision	..	Auckland Harbour ..	W.	3	While the "Port Whangarei" was berthing, the tide, which was flooding, took the vessel close to the wharf. The engines were put full astern and starboard anchor dropped, but, the vessel tailing to the tide, was thrown against the "Baroona," causing damage to the latter vessel	A. E. Webster.
	Baroona, m.v.; 34 years	63	4	..	Nil							A. T. Day.
„ 17	Omana, s.s.; 23 years ..	1,513	20	..	Nil	Collision	..	Near Jubilee Dock, Wellington Harbour	..	Calm	The "Arahina" was assisting with the docking of the "Omana," and while attempting to pass between the dolphin and the "Omana" was crushed by that vessel. The "Arahina" was damaged considerably on the port side. No damage to the "Omana."	D. N. McLeish.
	Arahina, m.v.; 13 years	23	3	..	Nil							E. S. Rodda.
Dec. 10	Orari, m.v.; 7 years ..	6,228	60	..	5,917 tons general ..	Engine defects	..	Lat. 19° 25′ S.; Long. 177° 56′ E. (Pacific Ocean)	W.	1	The port engine stopped, and on investigation it was found that No. 7 bottom-end bearing and all the main bearings had been running hot. The vessel proceeded on the starboard engine	J. G. Almond.
„ 23	Cumberland, s.s.; 19 years	6,745	57	..	In ballast	Collided with breakwater ..	..	New Plymouth ..	S.S.W.	2	Owing to an error in the engine-room, the port engine was put full ahead instead of full astern, with the result that the vessel struck the breakwater a glancing blow with her stem, causing damage to the stem	E. A. Burton.

1939.												
Jan. 4	Durham, m.v.; 4 years	6,260	89	..	6,000 tons coal	Collision	Auckland Harbour ..	S.W.	3–4	While the "Waimarino" was proceeding to her berth the wind and tide set the vessel down on to the "Durham," causing slight damage to the sheer strake abreast of the foremast of the latter vessel. No damage to the "Waimarino"	C. R. Pilcher.
	Waimarino, s.s.; 9 years	1,752	15	..	Nil						W. D. Gardner.
4	Tongariro, s.s.; 13 years	5,463	52	..	6,000 tons general ..	Leaking	Between Auckland and Napier	N.W.	6	On the vessel's arrival at Auckland the forepeak tank was found to be making water. Investigation disclosed the fact that two plates near the stem were fractured, presumed to be caused by vessel straining during heavy weather	P. B. Clarke.
,, 8	Rimutaka, s.s.; 16 years	10,009	182	286	5,266 tons general ..	Fire	Lat. 132° 25′ S.; Long. 165° 16′ W. (Pacific Ocean)	..	Various	A fire broke out in No. 3 upper deck at 2.40 p.m. and was extinguished next day at 1.33 p.m. The cause was thought to be spontaneous combustion. A considerable quantity of cargo was damaged and slight structural damage was caused to the vessel	C. B. Lamb.
14	City of Delhi, s.s.; 13 years	4,731	74	..	General	Failure in refrigerator	Lat. 37° 47′ S.; Long. 179° 00′ E. (Pacific Ocean)	S.W.	5–6	The brine-line to "C" refrigerated chamber became choked. Cause unknown. No damage to ship or cargo	F. W. Pemberthy.
,, 15	Opawa, m.v.; 8 years ..	6,236	58	..	9,000 tons general ..	Damaged by heavy seas	Lat. 52° 39′ N.; Long. 5° 22′ W. (Irish Sea)	S.W.	10	A heavy sea struck No. 1 hatch, buckling same and springing forward section clear of coamings. The port section was washed overboard, striking No. 1 winch-house and port guard-rail in transit. A considerable amount of water gained access to No. 1 Bridge D shelter and lower shelter-decks	F. S. Hamilton.
,, 16	Pukeko, m.v.; 10 years..	388	15	..	300 tons general ..	Damaged ceiling and tank top ..	Auckland	W.	6	While loading a steel pipe weighing 2,412 lb. the chain sling carried away when the lift was being lowered into the hold and fell about 20 ft., piercing the ceiling and tank top	S. M. Petley.
,, 18	Tongariro, s.s.; 13 years	5,463	52	..	150 tons general ..	Anchor-chain parted	Off Taiaroa Head, Otago	W.S.W.	8	While the vessel was at anchor off Taiaroa Head awaiting high tide to enter the port, the starboard cable parted at the fourth shackle during a violent squall. The anchor and chain were subsequently recovered	P. B. Clarke.
,, 20	Waiotahi, m.v.; 7 years	104	10	..	100 tons general ..	Stranded	Opotiki Bay	..	Calm	The ship grounded inside the bar and remained fast till the next tide. It was found that the blade of the rudder had come away from the stock. The blade was later found on beach	W. Gash.
,, 25	Waimea, s.s.; 29 years ..	206	16	..	328 tons coal	Stranded	Golden Bay	..	Calm	The vessel stranded in the vicinity of Separation Point. Engines were put astern and vessel immediately came off. A slight leak developed between forepeak and fore hold, and plates on starboard bow were slightly dented	N. Collins.
Feb. 8	Awanui, m.v.; 32 years..	77	9	..	55 tons general ..	Broken propeller blade	Hauraki Gulf ..	S.	Light	When the vessel was between Tiri Tiri and Rangitoto a most unusual motion was felt. The engines were reduced to slow, and it was later found that one of the propeller-blades had broken off	J. Teixeira.
,, 12	Korea, m.v.; 2 years ..	190	3	18	Six vehicles	Collided with a fishing-boat ..	Auckland Harbour ..	S.	Light	The vessel collided with the fishing-boat "St. George." The casualty was caused through the Master of the "Korea," which was the overtaking vessel, not giving way in sufficient time to avoid the collision. Slight damage to the fishing-boat	C. Windsor.
,, 15	Echo, m.v.; 34 years ..	100	10	..	89 tons general ..	Main gaff carried away	Cook Strait	S.E.	Light	The vessel was on the port tack when the main gaff suddenly carried away, breaking short at about mid-length. It was considered that the gaff had been sprung during heavy weather on the previous voyage	W. H. Jessup.
,, 15	Otimai, m.v.; 28 years ..	111	10	..	90 tons general ..	Damaged propeller	Awanui River ..	..	Calm	When the vessel was approaching the wharf the propeller struck a submerged object, with the result that the tips of the propeller blades were bent	A. McDonald.
,, 20	Kopara, m.v.; 1 year ..	334	16	..	370 tons cement ..	Propeller fouled..	Whangarei	N.	3	When the vessel was departing from Whangarei, a mooring-line fouled the port propeller. Vessel proceeded to Auckland on starboard engine	F. S. Bates.
,, 21	Motu, m.v.; 15 years ..	109	10	..	75 tons general ..	Damage to port propeller ..	Awanui River ..	..	Calm	When the vessel was steaming up the Awanui River the port propeller caught on a snag, and on the return trip a blade of the propeller dropped off	A. Pert.
Mar. 26	Forresbank, m.v.; 14 years	3,115	53	2	8,550 tons phosphate ..	Damaged propeller	Lat. 24° 20′ S.; Long. 172° 40′ E.	E.N.E.	10	A heavy sea came aboard and struck No. 2 lifeboat, washing it out of the chocks and damaging the planks and part of the keel. The door of the washhouse was also washed away	E. R. Row.
,, 30	Storm, m.v.; 19 years ..	439	15	..	860 tons general ..	Engine-failure	Off Godley Head, Lyttelton	N.E.	4	The main engines stopped on account of the failure of the thrust-bearing housing the tap bolts. No other damage to ship or cargo	W. R. Williams.

Summary of Examinations for Certificates of Competency as Masters and Mates for the Year ended 31st March, 1939.

Class of Certificate.	Auckland.				Wellington.				Totals.				Total Examinations.
	Final Pass.	Partial Pass.	Failed.	Partial Failure.	Final Pass.	Partial Pass.	Failed.	Partial Failure.	Final Pass.	Partial Pass.	Failed.	Partial Failure.	
Foreign masters and mates ..	16	17	2	6	5	4	..	..	21	21	2	6	50
Home-trade, masters and mates ..	18	6	2	3	3	2	..	..	21	8	2	3	34
Master, river (steam)	6	..	..	..	3	..	1	..	9	..	1	..	10
Yacht-master, New Zealand waters	2	11	..	..	..	..	..	..	2	11	..	..	13
Compass syllabus	1	..	1	..	..	..	..	..	1	..	1	..	2
Fore-and-aft endorsement ..	2	..	..	..	..	..	..	..	2	..	..	..	2
Sub-Lieutenant, R.N.V.R. ..	..	..	1	..	..	..	..	..	..	..	1	..	1
Totals	45	34	6	9	11	6	1	..	56	40	7	9	112

Summary of Examinations for Certificates of Competency as Marine Engineer for the Year ended 31st March, 1939.

Class of Certificate.	Auckland.			Wellington.			Christchurch.			Dunedin.			Other Centres.			Totals.		
	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.
Imperial Validity.																		
First and second class (steam) ..	1	3	4	3	6	9	4	3	7	..	..	..	..	..	..	8	12	20
First and second class (motor) ..	1	2	3	5	3	8	..	1	1	..	..	..	..	..	..	6	6	12
First and second class (motor, endorsement)	..	..	..	14	5	19	..	..	..	..	..	..	..	..	..	14	5	19
First and second class (steam, endorsement)	..	..	..	1	1	2	..	..	..	..	..	..	..	..	..	1	1	2
Totals	2	5	7	23	15	38	4	4	8	..	..	..	..	..	..	29	24	53
Valid in New Zealand only.																		
Third class (steam)	8	2	10	12	1	13	4	1	5	3	1	4	..	..	..	27	5	32
River engineer (steam)	3	..	3	1	..	1	..	..	..	..	..	..	4	..	4	8	..	8
First and second class (coastal, motor)	5	3	8	2	1	3	..	..	..	..	..	..	..	..	..	7	4	11
Restricted-limits engineer, P.V.O.S. ..	10	2	12	4	..	4	3	..	3	1	1	2	14	..	14	32	3	35
Totals	26	7	33	19	2	21	7	1	8	4	2	6	18	..	18	74	12	86
Grand totals	28	12	40	42	17	59	11	5	16	4	2	6	18	..	18	103	36	139

SUMMARY OF CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT DURING THE FINANCIAL YEAR ENDED 31ST MARCH, 1939.

Nature of Casualty.	On or near the Coasts of Dominion.			Outside the 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	2	11	..	..	..	..	2	11	..
Damaged	13	9,115	..	..	..	..	13	9,115	..
Undamaged	3	913	..	..	..	..	3	913	..
Total strandings	18	10,039	..	..	..	..	18	10,039	..
Fires—									
Total loss	..	..	..	..	..	..	..	..	..
Damaged	1	1,726	..	2	14,587	..	3	16,313	..
Undamaged	2	6,309	..	..	..	..	2	6,309	..
Total fires	3	8,035	..	2	14,587	..	5	22,622	..
Collisions—									
Total loss	..	..	..	..	..	..	..	..	..
Damaged	11	13,262	..	..	..	..	11	13,262	..
Undamaged	7	5,188	..	..	..	..	7	5,188	..
Total collisions	18	18,450	..	..	..	..	18	18,450	..
Miscellaneous, including damage by heavy seas to hull and cargo, breakdown of machinery, &c.	20	36,605	..	11	42,475	..	31	79,080	..
Total number of casualties reported	59	73,129	..	13	57,062	..	72	130,191	..

RETURN OF LAND BOILER AND MACHINERY INSPECTIONS DURING THE YEAR ENDED 31ST MARCH, 1939.

Boiler inspections—	
Stationary, portable, and traction boilers	4,855
Steam-pressure vessels	3,889
Air-receivers	941
Total boilers	9,685
Machinery inspections—	
Lifts	3,318
Cranes	460
Hoists	1,516
Machines driven by steam power	11,391
Machines not driven by steam power	72,123
Electric-power-supply-station units	134
Tractors	367
Total machinery	89,309
Grand total	98,994

RETURN OF THE NUMBER OF CERTIFICATES ISSUED TO LAND-ENGINE DRIVERS AND ELECTRIC-TRAM DRIVERS DURING THE YEAR ENDED 31ST MARCH, 1939.

Class.	No.	Class.	No.
Service—		Competency—*continued.*	
First-class engine-driver	4	Locomotive-engine driver	12
Competency—		Traction-engine driver	22
First-class engine-driver	44	Electric-tram driver	108
Second-class engine-driver	298	Electric-tram driver (one-man car) ..	3
Steam winding-engine driver	5		
Electric winding-engine driver	2	Total	544
Locomotive and traction engine driver ..	46		

RETURN OF LAND ENGINEERS', ENGINE-DRIVERS', AND ELECTRIC-TRAM DRIVERS' EXAMINATIONS HELD THROUGHOUT NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1939, SHOWING THE NUMBER OF SUCCESSFUL AND UNSUCCESSFUL CANDIDATES.

Place.	Extra First Class.		First Class.		Second Class.		Locomotive and Traction.		Loco-motive.		Traction.		Winding.				Electric-tram Driver.		Total.		Grand Total.
													Steam.		Electric.						
	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	
Auckland ..	..	..	10	11	43	8	2	..	1	..	..	..	..	..	..	..	61	4	117	23	140
Blenheim ..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	2	1	3
Christchurch ..	..	..	3	2	18	7	2	2	..	..	4	1	..	..	..	..	28	1	55	13	68
Dunedin ..	..	..	1	3	6	2	1	..	..	..	1	1	..	..	..	..	3	..	12	6	18
Gisborne ..	..	..	..	..	5	2	1	..	..	..	..	..	..	..	..	..	..	..	6	2	8
Greymouth ..	..	..	6	4	17	5	3	..	4	..	..	..	1	..	1	..	..	..	32	9	41
Hamilton ..	..	..	2	5	26	10	..	..	..	..	..	..	2	..	1	..	..	..	31	15	46
Invercargill ..	..	..	2	..	37	4	1	..	3	..	6	..	..	..	..	..	1	..	50	4	54
Napier ..	..	..	..	1	4	..	2	..	..	..	..	..	..	..	..	..	..	..	6	1	7
Nevis ..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Nelson ..	..	..	2	..	5	2	..	..	..	..	1	..	..	..	..	..	..	..	8	2	10
New Plymouth ..	..	..	1	1	59	28	..	..	1	..	..	..	..	..	..	..	2	..	63	29	92
Oamaru ..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Palmerston N.	..	..	..	1	17	12	2	..	..	..	1	..	..	..	..	..	..	..	20	13	33
Timaru ..	..	..	..	..	3	1	..	..	..	..	4	..	..	..	..	..	..	..	7	1	8
Wanganui ..	..	..	1	2	6	2	1	..	..	..	1	..	..	..	..	..	1	..	10	4	14
Wellington ..	..	..	8	7	16	8	1	..	1	..	..	..	..	..	..	..	14	1	40	16	56
Westport ..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1
Whangarei ..	..	..	1	2	7	4	1	..	1	..	..	..	..	..	..	..	..	..	10	6	16
Totals	..	..	37	39	275	96	17	2	12	..	18	2	3	..	2	..	110	6	474	145	619

Table I.—Showing the Number of Fishing-vessels and the Number of Fishermen and other Persons engaged in the Industry at each Port for the Year ended 31st March, 1939.

Name of Port.	Vessels licensed 1st January, 1938–31st March, 1939.			Vessels engaged in Fishing for Wet Fish.										Vessels engaged in Shell-fishery.						Number of Persons employed.					
				Steam Trawlers.		Motor Trawlers.		Motor-vessels Danish-seining.		Motor-vessels, Set-net and Line Fishing.		Rowing-boats.		Oyster-dredging Vessels.		Mussel-dredging Vessels.		Crayfishing Vessels.		Fishermen.		Others.		Total.	
	Total Number.	Number Fishing.	Number not Fishing.	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.*	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.
Awanui and district	6	4	2	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	2	4	..	..	2	4
Mangonui	9	8	1	..	..	..	..	..	..	..	4	1	3	..	..	..	..	..	..	1	9	..	..	1	9
Hokianga	22	20	2	..	..	..	..	..	..	1	3	..	15	..	..	..	..	..	1	2	27	..	..	2	27
Whangaroa	19	14	5	..	..	..	..	..	..	1	6	..	7	..	..	..	..	..	3	2	21	..	..	2	21
Russell	20	16	4	..	..	..	..	..	..	2	10	..	4	..	..	..	..	..	3	4	23	..	..	4	23
Kaipara	43	35	8	..	..	..	..	..	..	12	20	1	2	..	..	..	..	..	..	16	24	..	..	16	24
Whangarei	17	12	5	..	..	..	..	..	..	2	10	..	..	..	..	..	..	..	..	4	16	4	..	8	16
Auckland (including Manukau and Coromandel)	200	154	46	1	2	..	..	42	5	9	47	3	42	..	..	1	2	4	8	208	165	60	50	268	215
Thames	52	47	5	..	..	..	..	2	..	22	16	1	5	..	..	1	1	..	1	69	32	20	4	89	36
Mercury Bay	13	9	4	..	..	..	..	..	..	2	3	..	2	..	..	..	..	1	4	10	8	..	1	10	9
Tauranga and district	61	43	18	..	..	..	..	2	..	8	24	..	8	..	..	..	..	..	10	16	47	4	1	20	48
Opotiki	9	9	..	..	..	..	..	..	..	..	2	..	7	..	..	..	..	..	1	..	12	..	..	..	12
Whakatane	8	4	4	..	..	..	..	1	..	..	3	..	1	..	..	..	..	..	1	3	7	..	..	3	7
Raglan	9	7	2	..	..	..	..	..	..	2	4	..	1	..	..	..	..	..	..	3	9	..	..	3	9
Kawhia	8	6	2	..	..	..	..	..	..	1	5	..	..	..	..	..	..	..	..	2	11	..	..	2	11
Gisborne	28	21	7	1	..	3	2	..	..	2	8	..	5	..	..	..	..	1	12	20	19	4	..	24	19
Napier	60	50	10	2	..	2	2	1	2	11	14	1	12	..	..	..	..	..	15	49	56	9	3	58	59
New Plymouth	18	11	7	..	..	..	..	..	..	2	8	..	1	..	..	..	..	..	2	5	17	3	..	8	17
Wanganui	22	14	8	..	..	..	..	..	..	..	12	..	2	..	..	..	..	..	..	..	31	..	..	..	31
Wellington and district	145	115	30	2	..	..	..	..	..	22	39	..	42	..	..	..	..	2	16	97	158	47	11	144	169
Picton and Havelock	31	24	7	..	..	..	..	..	..	6	17	..	1	..	..	..	..	..	..	15	30	..	..	15	30
Blenheim (Wairau)	12	9	3	..	..	3	..	..	..	..	5	..	1	..	..	..	..	..	5	6	11	..	1	6	12
Nelson and district	42	34	8	..	..	..	1	3	1	7	23	..	3	..	..	..	..	..	3	17	36	5	1	22	37
French Pass	43	33	10	..	..	..	..	..	..	8	23	..	1	..	..	..	..	..	..	14	42	..	..	14	42
Westport	18	14	4	..	1	..	1	..	..	..	10	..	2	..	..	..	..	..	4	..	27	4	3	4	30
Greymouth	9	9	..	2	1	..	4	..	..	..	5	..	..	..	..	..	..	..	..	12	5	7	..	19	5
Hokitika	7	5	2	..	..	..	..	..	..	..	3	..	2	..	..	..	..	..	1	..	16	..	5	..	21
Kaikoura	33	27	6	..	..	..	2	..	..	6	10	..	4	..	..	..	..	..	11	15	28	..	1	15	29
Akaroa	26	18	8	..	..	2	3	..	2	3	5	..	5	..	..	..	..	..	6	7	15	..	6	7	21
Lyttelton	49	48	1	2	..	..	4	..	2	6	10	..	26	..	..	..	..	..	5	34	39	20	..	54	39
Lake Ellesmere	36	30	6	..	..	..	..	..	..	2	7	5	16	..	..	..	..	..	..	11	35	..	..	11	35
Timaru	33	31	2	..	1	3	15	3	2	8	11	..	..	..	..	..	..	..	..	46	12	3	1	49	13
Oamaru and Moeraki	35	29	6	..	..	..	..	..	..	14	11	..	2	..	..	..	..	..	5	22	15	2	..	24	15
Dunedin and Otago	112	109	3	1	..	14	16	..	..	18	50	3	15	..	..	..	..	..	10	99	70	29	42	128	112
Invercargill, Bluff, and district (also Stewart Island)	129	119	10	..	..	..	2	..	..	10	83	..	15	10	2	..	..	..	..	70	207	12	33	82	240
Chatham Islands	14	13	1	1†	..	..	..	..	..	9	3	..	..	..	..	..	..	..	..	45	8	3	3	48	11
Totals	1,398	1,151	247	12	5	27	52	54	14	198	516	15	252	10	2	2	3	8	127	926	1,292	236	166	1,162	1,458

* Part-time vessels may appear in more than one place.

† Fish-carrier "South Sea." Vessel does not now trawl, but engages in line-fishing.

TABLE II.—SHOWING THE VARIOUS KINDS OF FISH CAUGHT AND APPROXIMATELY THE TOTAL QUANTITIES OF FISH* AND SHELL-FISH LANDED AT THE CHIEF FISHING-PORTS FOR THE YEAR ENDED 31ST MARCH, 1939.

Name of Port.	Principal Kinds of Fish caught.	Quantity landed (Fish).	Total Value (Fish).	Shell-fishery (excluding Toheroa).							Grand Total Value.
				Oysters.	Value.	Mussels.	Value.	Crayfish.	Value.	Total Value (Shell-fish)	
		Cwt.	£	Sacks.	£	Sacks.	£	Cwt.	£	£	£
Awanui and district	Snapper, mullet, groper, flounder	870	788	..	..	..	..	..	..	..	788
Mangonui	Snapper, flounder, groper, mullet, tarakihi	284	261	..	..	..	..	..	..	..	261
Hokianga	Mullet, sole, flounder	819	653	..	..	..	..	20	30	30	683
Whangaroa	Mullet, snapper, groper	1,148	1,084	..	..	..	..	152	126	126	1,210
Russell	Snapper, mullet, flounder, groper, crayfish, kingfish, tarakihi, gurnard, maomao	1,190	1,088	..	..	..	..	67	100	100	1,188
Kaipara	Flounder, snapper, mullet	3,242	5,601	..	..	..	..	..	..	..	5,601
Whangarei	Snapper, groper, mullet, blue cod, flounder	908	1,493	..	..	..	..	..	..	..	1,493
Auckland (including Manukau and Coromandel)	Snapper, flounder, tarakihi, groper, gurnard, pioke, dory, mullet, crayfish, blue cod, kingfish, trevally, frost-fish, barracouta, piper, oysters (rock), mussels, sardines	150,730	144,914	4,870	6,696	8,072	2,146	1,366	2,193	11,035	155,949
Thames	Snapper, flounder, dab, mullet, gurnard, dory, pioke, mussels	17,199	23,616	..	..	4,797	1,099	1	1	1,100	24,716
Mercury Bay	Snapper, tarakihi, groper, gurnard, blue cod, flounder, kingfish, crayfish	1,354	1,253	..	..	..	..	458	710	710	1,963
Tauranga and district	Snapper, tarakihi, groper, mullet, blue cod, kingfish, trevally, pioke	6,006	5,668	..	..	..	..	166	233	233	5,901
Whakatane	Snapper, tarakihi, groper	1,875	1,829	..	..	..	..	2	3	3	1,832
Opotiki	Snapper, flatfish, groper, gurnard, tarakihi	159	278	..	..	..	..	27	44	44	322
Raglan	Snapper, flounder	236	440	..	..	..	..	..	..	..	440
Kawhia	Snapper, flounder, mullet	383	513	..	..	..	..	..	..	..	513
Gisborne	Tarakihi, gurnard, snapper, groper, sole, flounder, kahawai, crayfish	5,722	6,961	..	..	..	..	394	576	576	7,537
Napier	Tarakihi, gurnard, sole, snapper, groper, flounder, barracouta, crayfish	15,767	22,423	..	..	..	..	476	655	655	23,078
New Plymouth	Snapper, groper, crayfish, tarakihi, cod, gurnard, kingfish, kahawai	797	1,219	..	..	..	..	3	5	5	1,224
Wanganui	Snapper, groper, blue cod, flounder, kahawai	444	626	..	..	..	..	..	..	..	626
Wellington and district	Tarakihi, blue cod, groper, ling, hake, snapper, barracouta, moki, butterfish, skate, warehou, crayfish, flounder, sole, kahawai, trevally, red cod, kingfish, gurnard, conger-eel	53,580†	55,959	..	..	..	..	1,983	3,465	3,465	59,424
Picton and Havelock	Flounder, butterfish, moki, blue cod, groper	3,465	6,160	..	..	..	..	..	..	..	6,160
Blenheim (Wairau)	Sole, flounder, moki, tarakihi, red cod, snapper, butterfish, groper, gurnard, crayfish	1,061	1,563	..	..	..	..	154	195	195	1,758
Nelson and district	Snapper, flounder, dab, groper	3,961	6,312	..	..	..	..	4	9	9	6,321
French Pass	Blue cod, groper, sole, flounder, snapper, butterfish, gurnard	2,649	4,108	..	..	..	..	..	..	..	4,108
Westport	Sole, snapper, groper, ling, flounder, crayfish, gurnard, turbot, red cod	481	945	..	..	..	..	39	47	47	992
Greymouth	Sole, groper, snapper, flounder, turbot, tarakihi, kingfish, red cod, ling	1,539	2,236	..	..	..	..	..	..	..	2,236
Hokitika	Groper, ling, snapper	267	540	..	..	..	..	3	9	9	549
Kaikoura	Groper, trumpeter, hake, ling, tarakihi, bass, blue cod, crayfish	2,675	5,748	..	..	..	..	1,281	930	930	6,678
Akaroa	Flounder, sole, groper, brill, red cod, blue cod, crayfish, barracouta, kingfish, kahawai, butterfish, moki	3,130	4,885	..	..	..	..	204	205	205	5,090
Lyttelton	Flounder, dab, groper, tarakihi, ling, gurnard, red cod, elephant-fish	10,673	17,998	..	..	..	..	119	119	119	18,117
Lake Ellesmere	Flounder, herring	1,655	3,905	..	..	..	..	..	..	..	3,905
Timaru	Flounder, sole, groper, ling, red cod, blue cod, kingfish, elephant-fish, gurnard, brill, barracouta	13,960	24,777	..	..	..	..	..	..	..	24,777
Oamaru and Moeraki	Groper, blue cod, red cod, ling, barracouta, crayfish	5,370	7,570	..	..	..	..	862	490	490	8,060
Dunedin and Otago	Sole, groper, flounder, snapper, red cod, blue cod, trevally, ling, moki, brill, barracouta, crayfish, gurnard, mullet, garfish, tarakihi, red perch, kingfish, trumpeter, skate, kahawai	30,779	42,856	..	..	..	..	1,474	886	886	43,742
Invercargill, Bluff, and district	Blue cod, groper, flounder, soles, greenbone, trevally, ling, kingfish	3,104	6,458	67,243	48,751	..	..	..	..	48,751	55,209
Stewart Island	Blue cod, groper, trumpeter, greenbone, moki	6,333	10,630	..	..	..	..	..	..	..	10,630
Chatham Islands	Blue cod, groper	2,299‡	1,285	..	..	..	..	..	..	..	1,285
	Totals	356,114	424,643	72,113	55,447	12,869	3,245	9,255	11,031	69,723	494,366

* Not including whitebait.

† Includes 11,361 cwt. blue cod caught at the Chatham Islands and landed at Wellington.

‡ Exclusive of fish shipped direct to Wellington from fishing-boats by s.s. "South Sea."

Table IIa.—Showing approximately the Quantities of Different Kinds of Fish landed at certain Ports during the Year ended 31st March, 1939.

	Russell.	Kaipara.	Whangarei.	Auckland.*	Thames.	Mercury Bay.	Tauranga and District.	Gisborne.	Napier.	New Plymouth.	Wellington and District.	Blenheim. (Waitau.)	French Pass.	Nelson and District.	Westport.	Greymouth.	Kaikoura.	Akaroa.	Lyttelton.	Timaru.	Oamaru-Moeraki.	Port Chalmers.	Bluff-Invercargill-Riverton.	Chatham Islands.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Barracouta ..	..	..	..	..	..	3	..	..	..	..	1,792	..	9	..	..	..	10	1	82	45	2	1,374	..	..
Blue cod	1	..	..	7	..	13	11	1	14	2	11,410	5	1,073	37	..	..	30	1	6	7	297	113	1,771	2,140
" Bonita " (*Brama*) ..	..	..	..	..	..	..	..	1	..	..	52	..	..	..	..	..	15	..	..	..	..	75	..	..
Brill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	1	..	..
Butterfish (greenbone)	..	..	..	..	..	..	..	..	1	..	572	15	174	35	..	..	42	16	2	..	..	10	3	..
Conger-eel	..	..	..	..	..	..	..	..	..	..	53	..	21	..	..	..	..	..	1	..	..	..	..	..
Elephant-fish ..	..	..	..	..	..	..	..	..	..	..	23	..	..	..	14	15	4	967	1,883	936	..	41	..	..
Flounder	47	1,774	3	5,340	4,249	36	..	27	98	9	100	60	..	350	5	..	..	166	253	2,180	1	1,213	240	..
Frost-fish	..	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..
Gurnard	1	2	..	1,353	742	5	11	394	1,647	2	447	48	25	210	92	229	2	250	1,058	1,369	..	74	127	..
Hake	..	..	..	..	..	..	..	2	141	1	2,120	..	2	..	..	1	10	..	284	..	..	635	..	..
Hapuku (groper) ..	19	..	50	1,287	..	115	203	841	4,437	38	9,657	23	635	103	200	186	1,366	312	559	2,793	3,854	2,019	288	159
Herring	2	..	..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..	52	..	31	..
John-dory	..	..	..	1,533	4	..	..	..	..	..	45	..	..	9	..	..	..	..	..	..	..	10	..	..
Kahawai	10	3	..	6	..	..	6	31	17	..	13	2	..	..	7	..	..	..	2	..	..	..	..	..
Kingfish	..	..	..	9	1	12	..	..	..	..	36	..	57	..	..	..	..	4	..	..	..	..	..	..
Ling	..	..	..	1	..	..	..	6	5	..	1,754	130	..	..	12	..	668	341	1,198	2,663	106	1,123	13	..
Maomao	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moki	..	..	..	..	..	1	3	53	181	..	2,658	72	34	..	..	..	2	26	198	..	34	59	..	..
Mullet	347	452	108	1,183	25	69	114	4	1	..	6	..	..	..	..	24	..	..	..	..	..	..	..	..
Parore	12	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pioke	..	..	..	576	59	..	..	..	..	2	20	..	..	..	..	6	..	6	176	6	1,013	184	..	..
Red cod	..	9	..	..	1	..	..	..	1	..	932	1	..	15	15	128	5	154	517	1,660	..	2,967	8	..
Skate	..	..	..	..	..	..	..	..	3	..	43	..	..	..	..	..	..	6	1	..	..	..	..	..
Snapper	743	1,002	717	107,252	11,123	1,069	5,338	67	729	742	1,603	5	568	2,826	12	15	..	..	..	1	..	4	..	..
Sole	..	..	..	2	..	..	..	1	603	..	15	46	..	49	92	560	37	91	355	1,177	3	4,689	118	..
Tarakihi	1	..	..	22,530	..	26	91	1,667	3,819	1	15,843	8	3	..	6	176	23	365	3,542	53	..	5,303	..	..
Trevally	..	..	28	841	84	..	181	..	..	..	272	..	..	..	..	..	..	..	12	..	..	..	..	..
Trumpeter	..	..	..	..	..	..	..	..	13	..	18	..	..	..	..	..	422	..	7	..	1	..	7	..
Turbot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..
Warehou	..	..	..	..	..	..	..	..	..	..	2,042	6	4	..	..	..	..	..	..	..	..	162	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	375	..	..	..	..	..	1	..	..	..	..	..	..	..
Mixed flat fish ..	7	..	1	1,742	908	..	..	422	378	..	11	273	..	274	1	182	20	17	121	118	1	1,195	487	..
Mixed round fish and kinds not specified	..	..	1	7,067	3	4	33	2,205	3,679	..	1,646	367	44	53	15	17	18	407	416	952	6	1,638	11	..
Whiptail ..	..	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	1,190	3,242	908	150,730	17,199	1,354	6,006	5,722	15,767	797	53,580†	1,061	2,649	3,961	481	1,539	2,675	3,130	10,673	13,960	5,370	22,889	3,104	2,299

* Includes Coromandel and Manukau Harbour. † Total includes 11,361 cwt. blue cod landed at Wellington by fish-carrier " South Sea " from Chatham Islands. ‡ Exclusive of fish shipped direct to Wellington from fishing-boats by s.s. " South Sea."

Table IIb.—Showing the Quantities of Different Kinds of Fish* caught by the Different Methods of Fishing for the Year ended 31st March, 1939.

—	Trawl.						Danish-seine.		Other Nets.						Lines.								Grand Total.	
	Steam.		Motor.		Total.		Motor.		Motor.		Row-boat.		Total.		Steam.		Motor.		Row-boat.		Total.			
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£
Barracouta	2,317	1,009	2	2	2,319	1,011	..	..	4	2	..	..	4	2	..	..	1,016	395	..	..	1,016	395	3,339	1,408
Blue cod	..	..	..	..	..	..	4	5	..	..	..	..	..	..	153	34	22,634	25,811	12	22	22,799	25,867	22,803	25,872
"Bonita" (*Brama*)	..	..	..	..	..	..	..	..	1	1	..	..	1	1	..	..	142	247	..	..	142	247	143	248
Brill	10	17	..	..	10	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	17
Butterfish (greenbone)	..	..	..	..	..	..	..	..	1,051	2,261	15	30	1,066	2,291	..	..	..	..	..	..	..	..	1,066	2,291
Conger-eel	..	..	..	..	..	..	..	..	..	..	21	8	21	8	..	..	90	37	1	1	91	38	112	46
Elephant-fish	1,237	1,871	1,679	1,932	2,916	3,803	907	1,161	121	130	1	1	122	131	..	..	7	7	..	..	7	7	3,952	5,102
Flounder	143	343	2,700	7,299	2,843	7,642	5,909	15,184	7,612	18,964	2,118	4,871	9,730	23,835	..	..	..	..	..	..	..	..	18,482	46,661
Frost-fish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	6	..	..	7	6	7	6
Gurnard	1,526	1,453	1,660	1,470	3,186	2,923	3,908	3,202	467	167	14	7	481	174	..	..	386	276	30	25	416	301	7,991	6,600
Hake	1,442	2,247	23	33	1,465	2,280	..	..	..	..	..	..	..	..	..	..	1,903	3,100	1	1	1,904	3,101	3,369	5,381
Hapuka (groper)	1,436	2,533	170	330	1,606	2,863	289	468	..	..	..	..	..	..	73	170	31,929	58,257	85	134	32,087	58,561	33,982	61,892
Herring	..	..	..	..	..	..	..	..	42	24	139	97	181	121	..	..	..	..	2	1	2	1	183	122
John-dory	1,270	1,211	..	..	1,270	1,211	330	325	..	..	..	..	..	..	..	..	7	9	..	..	7	9	1,607	1,545
Kahawai	..	..	..	..	..	..	..	..	41	25	35	43	76	68	..	..	8	5	29	16	37	21	113	89
Kingfish	..	..	4	8	4	8	5	5	4	3	1	1	5	4	..	..	223	286	1	2	224	288	238	305
Ling	1,757	2,314	624	670	2,381	2,984	32	45	8	5	..	..	8	5	7	8	5,724	6,067	3	4	5,734	6,079	8,155	9,113
Maomao	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	..	..	3	3	3	3
Moki	2,863	2,817	139	154	3,002	2,971	60	74	323	359	27	47	350	406	..	..	14	14	2	2	16	16	3,428	3,467
Mullet	..	..	..	..	..	..	..	..	3,376	3,092	337	304	3,713	3,396	..	..	..	..	..	..	..	..	3,713	3,396
Parore	..	..	..	..	..	..	..	..	..	..	9	5	9	5	..	..	12	8	..	..	12	8	21	13
Pioke	14	8	74	70	88	78	220	175	756	232	5	2	761	234	..	..	28	15	..	..	28	15	1,097	502
Red cod	1,907	1,277	2,435	1,467	4,342	2,744	682	614	140	109	186	99	326	208	..	..	2,080	1,198	61	34	2,141	1,232	7,491	4,798
Skate	32	15	8	6	40	21	..	..	..	..	..	..	..	..	..	..	13	7	..	..	13	7	53	28
Snapper	16,994	15,926	47	59	17,041	15,985	94,609	88,228	8,718	8,017	180	183	8,898	8,200	1	3	16,340	17,942	922	1,175	17,263	19,120	137,811	131,533
Sole	1,694	2,880	10,211	20,464	11,905	23,344	1,329	3,641	186	444	3	9	189	453	..	..	..	..	..	..	..	..	13,423	27,438
Tarakihi	44,478	45,224	3,725	4,317	48,203	49,541	4,913	4,782	24	28	2	2	26	30	..	..	488	884	22	29	510	913	53,652	55,266
Trevally	194	136	..	..	194	136	753	337	448	248	19	11	467	259	..	..	6	5	..	..	6	5	1,420	737
Trumpeter	10	16	2	1	12	17	..	..	..	..	..	..	..	..	..	..	584	1,215	..	..	584	1,215	596	1,232
Turbot	14	27	3	8	17	35	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	35
Warehou	73	68	..	..	73	68	..	..	1,730	1,899	148	119	1,878	2,018	..	..	263	367	..	..	263	367	2,214	2,453
Whiptail	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	21	..	..	15	21	15	21
Whiting	375	526	..	..	375	526	..	..	..	..	..	..	..	..	..	..	1	2	..	..	1	2	376	528
Mixed flat fish	202	319	3,166	5,810	3,368	6,129	2,706	4,632	458	1,238	11	27	469	1,265	..	..	..	..	..	..	..	..	6,543	12,026
Mixed round fish and kinds not specified	9,716	6,259	3,497	4,057	13,213	10,316	3,277	1,667	315	185	40	31	355	216	..	..	1,729	2,118	115	152	1,844	2,270	18,689	14,469
Totals	89,704	88,496	30,169	48,157	119,873	136,653	119,933	124,545	25,825	37,433	3,311	5,897	29,136	43,330	234	215	85,652	118,302	1,286	1,598	87,172	120,115	356,114	424,643

* Not including whitebait.

TABLE IIc.—SHOWING THE TOTAL QUANTITIES OF WET FISH LANDED AT EACH OF THE CHIEF FISHING PORTS IN EACH MONTH OF THE YEAR 1938-39.

Port.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Awanui and district	87	124	59	33	19	36	78	146	103	64	65	56	870
Mangonui	16	12	16	16	14	50	52	42	16	28	8	14	284
Hokianga	87	67	9	19	34	98	115	144	78	59	34	75	819
Whangaroa	77	146	133	67	58	127	138	138	57	39	118	50	1,148
Russell	73	88	86	71	72	108	103	66	75	111	163	174	1,190
Kaipara	259	380	229	241	284	391	247	122	171	185	308	425	3,242
Whangarei	79	64	37	53	53	87	89	74	74	81	100	117	908
Auckland (including Manukau and Coromandel)	10,324	13,218	13,868	12,735	15,073	16,197	15,467	12,446	10,912	10,808	9,024	10,658	150,730
Thames	1,336	1,288	1,282	1,368	1,973	2,088	1,612	1,306	895	1,142	1,413	1,496	17,199
Mercury Bay	126	222	160	33	72	149	88	73	97	39	90	205	1,354
Tauranga and district	292	417	308	533	759	672	595	636	585	467	408	334	6,006
Whakatane	89	149	167	125	196	196	175	131	145	146	144	212	1,875
Opotiki	13	18	9	6	6	15	10	16	7	8	35	16	159
Raglan	26	24	10	15	28	21	13	32	13	14	16	24	236
Kawhia	48	48	36	17	13	14	13	23	22	35	72	42	383
Gisborne	133	336	445	289	556	845	765	671	563	346	416	357	5,722
Napier	686	1,167	1,109	1,225	1,792	1,844	1,760	1,468	1,426	905	1,278	1,107	15,767
New Plymouth	62	37	51	31	38	49	43	90	67	107	76	146	797
Wanganui	25	18	55	70	21	44	22	30	3	12	25	119	444
Wellington and district	3,595	5,024	3,804	2,328	2,253	3,359	3,970	3,696	3,476	3,047	3,684	3,983	*42,219
Picton and Havelock	228	519	433	255	142	130	207	384	298	154	370	345	3,465
Blenheim (Wairau)	29	32	39	61	98	73	114	104	88	183	164	76	1,061
Nelson and district	320	531	416	335	288	241	293	331	344	265	255	342	3,961
French Pass	229	408	525	416	261	137	161	114	22	15	107	254	2,649
Westport	17	61	38	61	48	21	26	..	1	9	25	174	481
Greymouth	158	185	137	101	221	141	75	102	8	142	86	183	1,539
Hokitika	62	5	4	5	..	3	..	3	15	42	39	89	267
Kaikoura	101	360	325	233	281	229	365	184	142	118	127	210	2,675
Akaroa	371	281	290	154	126	154	162	380	288	220	299	405	3,130
Lyttelton	742	925	559	781	946	1,078	1,395	886	677	674	858	1,152	10,673
Lake Ellesmere	137	50	61	48	31	97	244	342	228	54	101	262	1,655
Timaru	1,084	2,144	829	647	571	804	963	1,113	1,022	1,106	1,481	2,196	13,960
Oamaru and Moeraki	347	752	415	337	574	466	398	230	291	356	582	622	5,370
Dunedin and Otago district	1,762	2,756	2,654	2,889	2,228	2,822	2,390	2,259	2,273	2,151	2,660	3,935	30,779
Invercargill, Bluff, and district	300	192	322	824	252	193	51	293	144	37	132	364	3,104
Stewart Island	1,210	543	1,882	1,689	328	138	34	46	30	1	48	384	6,333
Chatham Islands	916	2,161	649	1,519	2,333	1,400	557	356	..	658	1,398	1,713	13,660
Totals	25,446	34,752	31,451	29,630	32,042	34,517	32,790	28,477	24,656	23,828	26,209	32,316	356,114

* Exclusive of fish shipped to Wellington from the Chatham Islands.

TABLE III.—SHOWING THE NUMBER OF SACKS AND VALUE OF THE OYSTERS OBTAINED IN THE DOMINION DURING THE YEAR ENDED 31ST DECEMBER, 1938.

Locality.	Quantity.	Value (Wholesale).
DREDGE OYSTERS.		
	Sacks.	£(N.Z.)
Foveaux Strait	67,243	48,751
ROCK OYSTERS.		
Bay of Islands	1,824	
Whangarei Harbour	75	
Kaipara Harbour	700	
Hauraki Gulf*	1,586	6,696
Coromandel	348	
Great Barrier Island	337	
Total	4,870	
Grand total	72,113	55,447

* Takatu to Gull Point, 147; South Shore, Tamaki Strait and Tamaki River, 20; Kawau, 66; Rakino, 130; Rangitoto, 191; Motutapu, 28; Brown's Island, 8; Motuihi, 40; Waiheke, 643; Ponui, 279; Noisies, 10; Crusoe Island, 10.

TABLE IV.—SHOWING THE NUMBER AND SPECIES OF WHALES TAKEN OFF THE NEW ZEALAND COAST, WITH QUANTITY OF PRODUCTS, FOR THE YEAR ENDED 31ST MARCH, 1938.

Whaling-station.	Number of Whales taken.	Species.	Yield of Oil.	Quantity of Bonedust and Fertilizer.
			Tons.	Tons.
Marlborough Sounds (Picton)..	75	Humpback ..	400	Reported as "negligible."
	1	Blue.. ..		
	1	Sperm ..		

TABLE V.—SHOWING THE TOTAL QUANTITY AND VALUE OF FISH AND SHELL-FISH IMPORTED INTO AND EXPORTED FROM NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1939.

Fish and Shell-fish imported.

Kind of Fish.	Quantity.	Value.
		£(N.Z.)
Anchovies, salted, in containers of 28 lb. or over	32 cwt.	160
Other fish—		
Frozen, smoked, pickled, dried, or salted	1,796 cwt.	6,167
Potted or preserved in tins	6,165,606 lb.	256,589
Total value	..	262,916

TABLE V.—SHOWING THE TOTAL QUANTITY AND VALUE OF FISH AND SHELL-FISH IMPORTED INTO AND EXPORTED FROM NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1939—*continued.*

Fish and Shell-fish exported.

Kind of Fish.	Exporting Ports.	Quantity.	Value.
(a) Produce of New Zealand.			£(N.Z.)
Oysters, fresh	Auckland	568 doz.	29
	Wellington	7,198 doz.	190
	Invercargill	25,700 doz.	314
	Total	33,466 doz.	533
Blue cod, frozen	Auckland	7 cwt.	24
	Wellington	5,459 cwt.	18,016
	Dunedin	626 cwt.	2,090
	Invercargill	6,968 cwt.	24,073
	Total	13,060 cwt.	44,203
Snapper, frozen	Auckland	9,671 cwt.	30,709
	Wellington	465 cwt.	1,042
	Total	10,136 cwt.	31,751
Flounder, frozen	Auckland	2,095 cwt.	8,107
	Wellington	97 cwt.	324
	Lyttelton	422 cwt.	1,501
	Dunedin	957 cwt.	3,611
	Invercargill	226 cwt.	768
	Total	3,797 cwt.	14,311
Tarakihi, frozen	Auckland	5,176 cwt.	21,137
	Wellington	104 cwt.	228
	Dunedin	1,555 cwt.	4,200
	Invercargill	136 cwt.	313
	Total	6,971 cwt.	25,878
Crayfish, frozen	Auckland	46 cwt.	189
	Wellington	19 cwt.	52
	Lyttelton	69 cwt.	165
	Dunedin	449 cwt.	1,225
	Total	583 cwt.	1,631
Other kinds, frozen	Auckland	106 cwt.	279
	Wellington	1,325 cwt.	2,736
	Lyttelton	294 cwt.	637
	Dunedin	6,447 cwt.	17,096
	Gisborne	18 cwt.	42
	Invercargill	476 cwt.	1,179
	Total	8,666 cwt.	21,969
Total exports of frozen fish from New Zealand		43,213 cwt.	139,743
Smoked, dried, pickled, or salted		467 cwt.	1,231
Preserved in tins—			
Crayfish	Auckland	528 lb.	27
	Wellington	72 lb.	7
	Dunedin	27,937 lb.	2,468
	Invercargill	2,063 lb.	176
	Total	30,600 lb.	2,678
Oysters	Auckland	1,743 lb.	101
	Wellington	9,072 lb.	460
	Dunedin	12,013 lb.	861
	Invercargill	159,623 lb.	7,934
	Total	182,451 lb.	9,356
Toheroa	Auckland	41,568 lb.	3,044
	Wellington	18 lb.	2
	Dunedin	716 lb.	66
	Total	42,302 lb.	3,112
Whitebait	Auckland	65,166 lb.	8,871
	Wellington	5,735 lb.	671
	Dunedin	40,148 lb.	5,315
	Invercargill	444 lb.	60
	Total	111,493 lb.	14,917
Value of total exports of New Zealand fish and shell-fish			171,037
(b) Re-exports.			
Potted and preserved in tins		13,136 lb.	522

APPENDIX I.

LEGISLATION.

ORDERS IN COUNCIL UNDER PARTS I AND II OF THE FISHERIES ACT, 1908.

Part I.

3rd August, 1938	(*a*) Restricting the size of crayfish to be taken, and prohibiting the taking of egg-bearing females.
	(*b*) Prohibiting Danish-seining in Kawau Bay.
	(*c*) Prescribing a close season for oysters in Marlborough and Nelson Districts.
	(*d*) Restricting the taking of toheroa in Wellington District.
20th December, 1938	(*a*) Prescribing a close season for taking toheroas between the Otaki and Waikanae Rivers.
	(*b*) Extending the close season for oysters in Foveaux Strait.
14th February, 1939	Prohibiting Danish-seining in parts of the Bay of Plenty.

Part II.

1st September, 1938	Amending regulations for trout-fishing in the Wellington Acclimatization District.
7th September, 1938	Amending regulations for trout-fishing in the Otago Acclimatization District.
7th September, 1938	Amending regulations for trout-fishing in North Canterbury Acclimatization District.
21st September, 1938	Amending regulations for trout-fishing in the Whangarei Acclimatization District.
21st September, 1938	Amending regulations for trout-fishing in the South Canterbury Acclimatization District.
21st September, 1938	Amending regulations for fresh-water fishing in the Southland Acclimatization District.
21st September, 1938	Amending regulations for trout-fishing in the Waitaki Acclimatization District.
21st September, 1938	Making regulations for trout-fishing in the Hobson Acclimatization District.
21st September, 1938	Making regulations for trout-fishing in the Westland Acclimatization District.
21st September, 1938	Making regulations for trout-fishing in the Mangonui and Whangaroa Acclimatization District.
21st September, 1938	Making regulations for trout-fishing in the Bay of Islands Acclimatization District.
6th October, 1938	Amending regulations for trout-fishing in the Ashburton Acclimatization District.
6th October, 1938	Amending regulations for trout-fishing in the Otago Acclimatization District.
6th October, 1938	Making regulations for trout-fishing in the Taranaki Acclimatization District.
6th October, 1938	Amending regulations for trout-fishing in the Auckland Acclimatization District.
6th October, 1938	Making regulations for trout-fishing in the Marlborough Acclimatization District.

APPENDIX II.

AVERAGE TEMPERATURE OF SEA-WATER (AT THE SURFACE) FOR EACH MONTH OF THE YEAR AT FIVE DIFFERENT STATIONS.

Month.	Auckland Harbour (off Nelson Street Wharf).			Tamaki Estuary (off Panmure).			Bay of Islands (off Russell).			Kaipara Harbour (Whakapirau Estuary).			Coromandel (off Wharf).		
	1936–37.	1937–38.	1938–39.	1936–37.	1937–38.	1938–39.	1936–37.	1937–38.	1938–39.	1936–37.	1937–38.	1938–39.	1936–37.	1937–38.	1938–39.
	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.
May ..	15·2	15·9	17·4	14·3	14·2	17·9	15·7	14·6	17·7	14·3	14·7	15·2	14·7	14·8	17·6
June ..	12·9	13·9	15·3	11·5	14·9	13·8	13·7	13·5	13·7	12·2	13·2	12·8	12·3	13·6	14·5
July ..	12·5	12·2	12·7	11·7	..	12·8	13·2	13·0	12·6	11·6	11·9	11·5	12·0	12·4	13·3
August ..	12·6	12·6	12·7	14·6	11·2	12·6	13·5	13·2	12·8	11·2	12·6	11·9	13·2	12·8	13·2
Sept. ..	13·4	14·1	13·4	18·3	..	..	13·8	14·8	14·8	12·9	12·4	14·5	13·6	14·2	14·5
Oct. ..	14·6	15·4	16·1	18·7	15·6	15·0	17·0	16·3	16·2	16·8	16·6	16·7	16·6	17·5	17·2
Nov. ..	17·9	17·3	18·3	20·0	17·0	18·1	16·0	15·2	16·0	17·9	18·3	18·3	19·1	18·7	19·4
Dec. ..	18·6	20·0	19·1	20·1	22·3	18·7	18·1	21·1	18·1	19·2	23·5	20·6	19·0	22·8	19·6
Jan. ..	19·8	22·4	18·7	24·5	..	19·2	19·8	22·6	18·2	20·9	23·6	21·3	19·8	23·1	19·6
Feb. ..	19·5	23·0	19·3	21·9	..	..	19·1	22·6	19·0	20·8	23·9	20·1	19·9	22·6	20·4
March ..	19·9	22·5	20·8	20·6	24·2	21·0	19·3	22·1	20·5	20·1	23·4	20·1	19·3	22·4	20·3
April ..	19·3	22·0	18·7	18·5	..	19·5	18·6	21·3	18·8	18·6	22·6	18·6	17·9	20·6	18·8

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