1924.

NEW ZEALAND.

MARINE DEPARTMENT.

ANNUAL REPORT FOR 1923-24.

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

MY LORD,— Marine Department, Wellington, 28th August, 1924.

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

I have, &c.,

G. JAS. ANDERSON,

Minister of Marine.

His Excellency Viscount Jellicoe of Scapa, G.C.B., O.M., G.C.V.O.,
Governor-General of New Zealand.

REPORT.

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

Marine Department, Wellington, 31st July, 1924.

SIR,—

I have the honour to make the following report on the work of this Department during the year ended the 31st March last :—

ADMINISTRATION.

Mr. A. D. Park, who was appointed as Secretary for Marine on the 14th June, 1922, relinquished the position on the 31st October, 1923, when he assumed the position of Assistant Public Service Commissioner. A very considerable amount of reorganization work was successfully carried out by my predecessor. His work has been energetically carried on.

The Department's main work is administration of the Shipping and Seamen Act, Harbours Act, Inspection of Machinery Act, and Fisheries Act. Each of these Acts, with the exception of the Harbours Act, which was consolidated in 1923, dates from the general statute consolidation in 1908—sixteen years ago—and each (again excepting the Harbours Act) is subject to many subsequent amending Acts.

While the underlying principles of the main Acts may be sound, the general advance made and the changing conditions which have occurred in the intervening years, render administration of the Acts, amendments notwithstanding, a matter of considerable difficulty. The Shipping and Seamen Act particularly, and to some extent the Harbours Act, varied and extended in many respects by Arbitration Court awards, are the media of governance of an industry and interests in which there is frequent conflict. That perhaps, under present-day conditions, may be expected, and I offer no comment beyond saying that in an industry of so vital importance, not only to the parties directly concerned in its operation, but to the community as a whole, such a state of affairs is to be regretted.

What I have said of the main Acts and their amendments applies equally to regulations made thereunder, and similarly amended from time to time. In the meantime, I have directed the consolidation, in proof form, of all regulations made under Acts administered by the Department. This consolidation, when completed, will form the basis from which revision may be effected.

As to the Acts themselves, I suggest that, though much amendment is necessary, a comprehensive survey of the existing position cannot be satisfactorily accomplished, nor the way cleared for amendment, until consolidation has been effected. To this end, I hope that the consolidation of the Shipping and Seamen Act, Inspection of Machinery Act, and Fisheries Act may be undertaken during the next parliamentary recess.

Financial.

In years past the Marine Department, in common with many other Government Departments performing public service, carried out its operations without particular regard to requiring the various sections of the community served to make direct and adequate recompense for the service rendered: in other words, certain inadequate charges were made for some services and no charge for others, while the deficiency was made up from general or indirect taxation. The demand for departmental balance-sheets, and the introduction of commercial methods so far as they can be made applicable to State Departments, which are debarred many of the remedies and resources of purely commercial undertakings, has resulted to a considerable extent in recovery direct from the interests served instead of from the general public by indirect taxation. It is interesting to note, however, that, while the demand for commercialization of State Departments came largely from organizations of business men, those business interests have, in many cases, shown very great resentment of any charges which have been increased to cover cost of services rendered.

For the year 1922–23 the operating loss, without debit of interest charges on capital and depreciation, amounted to £45,421 6s. 6d., but during the past financial year this was reduced to £1,747 9s. 5d. The application of interest charges on capital and depreciation, however, increased the loss for 1922–23 to £69,172 18s. 6d., which was brought down to £26,570 17s. 5d. for 1923–24.

The Income and Expenditure Account for the years 1922–23 and 1923–24 shows the following comparison.

Comparative Statement of Income and Expenditure.

Expenditure.	1922–23.	1923–24.	*Income.*	1922–23.	1923–24.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Stock on hand ..	17,384 13 4	16,545 18 1	By Shipping and Seamen Act	48,576 14 0	87,384 15 2
Head Office ..	9,612 2 8	8,574 3 2	Harbours Act ..	1,901 8 7	3,677 13 5
Harbours	4,826 13 2	3,739 17 5	Fisheries Act ..	2,870 19 0	3,238 3 10
Lighthouses ..	26,995 19 5	25,302 19 4	Inspection of Machinery Act ..	17,744 19 6	16,760 9 2
Meteorological ..	5,374 0 3	5,572 6 2	Tramways Act ..	49 0 0	104 0 0
Mercantile marine ..	15,150 17 11	16,585 15 1	Miscellaneous ..	1,872 6 10	2,104 2 7
Inspection of machinery	27,015 0 0	25,802 1 2	Stock on hand ..	16,545 18 1	15,720 13 0
Fisheries	4,545 3 2	3,743 11 8	Excess expenditure over income ..	45,421 6 6	1,747 9 5
Government steamers	19,912 18 11	20,031 7 1			
Miscellaneous services	2,655 3 8	3,939 7 5			
Grants and subsidies	1,510 0 0	900 0 0			
	£134,982 12 6	£130,737 6 7		£134,982 12 6	£130,737 6 7

As to whether the capitalization of departmental assets is correct or not is open to some question. Generally speaking, the capital value represents recorded capital expenditure. Accounts in the past, however, were not so strictly kept, nor expenditure out of loan-money or Revenue Account so strictly regulated, as to ensure that recorded capital expenditure correctly represents the total capital expenditure. Furthermore, some assets are now of greater value than the expenditure thereon, whilst others are of less value. I mention this to show that, while at the end of the year the Department showed a total loss of £26,570 17s. 5d., after allowing for interest charges and depreciation, that figure is subject to a capital assessment which must be more closely figured as opportunity offers.

It may be mentioned that the income arising out of the Department's operations and credited to the Consolidated Fund is somewhat greater than the accounts show. That this is so arises from the fact that Treasury instructions require that all fines resultant upon breaches of statutes administered by the Department are to be credited to the Justice Department. This instruction applies in all cases, irrespective of the fact that the expenditure (with the exception of actual Court costs) incurred in obtaining such fines is a charge against the Marine Department.

Various sources of departmental revenue have already been explored with a view to making the Department self-supporting. Adjustments have been made in certain charges and fees, so that the resultant revenue is more nearly commensurate with cost of service, but even the increased charges are, in many cases, still below similar charges in other countries. Other sources of revenue are being investigated with a view to adjustment. The Inspection of Machinery is a branch of the Department's operations where it is obvious that increased charges are necessary. The present scale of fees was imposed at the beginning of the year 1915, when salaries and expenses of travelling were very considerably lower than they are now. It frequently occurs that a hard day's work by an Inspector will not produce an amount in fees to equal his salary and expenses.

Although during the year the expenditure on this branch was reduced by approximately £1,200 the deficit on the year's operations was approximately £9,000.

The Westport Harbour Account, a legacy inherited from the Westport Harbour Board, is another source of considerable loss to the Department. The working-expenses (excluding interest, sinking fund, and depreciation) in the last year of the Board's operations amounted to £33,154 7s. 10d., as compared with £16,830 10s. 11d. during the year 1923–24, yet fully efficient service was given.

The total revenue receipts in respect of special wharfage on coal, port charges, and special coal rate were adversely affected by stoppage of work at the mines for a period of seventeen weeks. The total coal-export for the year amounted to 439,707 tons, as against 572,342 tons for the previous year—a decrease of 132,635 tons, and approximately relevant to the period of stoppage of work. The annual approximate deficit in round figures, under existing normal conditions, will continue to be about £7,000, made up as follows :—

	Expenditure. £	Revenue. £
Maintenance charges	17,000	..
Interest on loans	23,000	..
Sinking fund instalments	5,000	..
Depreciation	3,000	..
Special coal rate (3d. per ton)	..	3,000
Special wharfage (9d per ton)	..	17,000
Endowment revenue	..	15,500
Port charges	..	4,500
Rents and miscellaneous receipts	..	1,000
	48,000	41,000
Estimated annual deficit after providing for depreciation, interest on loans, and sinking fund instalments ..	..	7,000
	£48,000	£48,000

It does not appear practicable to further increase charges, except perhaps port charges ; but an increase in these, within practicable limits, would not materially affect the position.

Before proceeding to deal in detail with various sections of the Department's operations, I wish to stress a departure in administration of the Harbours Act on which you have been good enough to take a determined stand.

The Harbours Act provides that before a " harbour-work " may be commenced the plans thereof must be approved, and the work authorized by the Governor-General in Council. Hitherto the attitude has largely been that if the work proposed would not " be or tend to the injury of navigation " the Department's function under the Act was fulfilled. It seemed clear, however, as the recommendation of approval to the Governor-General in Council rested in the Minister of Marine, that it was competent for the Minister, acting on expert advice, to exercise a discretion as to whether, in the public interest, every work proposed should be approved provided it was so designed as not to wreck a ship, regardless as to whether (*a*) it was really necessary, (*b*) adequate and/or alternative transport facilities did not already exist, (*c*) the expenditure was justified as a self-supporting harbour-work proposition.

Primarily, a harbour-work, being one in respect of which the constructing authority is authorized to levy adequate charges for services rendered, should be a self-supporting undertaking without recourse to special rating on property, particularly so in circumstances where other suitable and reasonably economical means are available for the transport of the goods imported into and exported from the district concerned. Since the general public must eventually pay all costs and losses arising out of any other transport ways, it is obvious that no advantage can possibly accrue to a district constructing a harbour which cannot, by reason of cost or lack of outstanding advantage, exist as a self-supporting undertaking and in spite of competition from other transport ways.

Our transport ways for goods and passengers are threefold—by road, by railway, and by sea. To meet the cost of construction and maintenance of the first, and the cost of construction, maintenance, and operation of the second, the general public must of necessity pay, since they are publicly owned utilities, and any loss must be made good by increased charges or indirect taxation. Internal communication by these means is an essential. Harbours are also essential, in first degree, for export from New Zealand of our products and receipt of goods from overseas. They are equally necessary for dealing with transport between islands, and between places where no other adequate or sufficiently economical means of transport exists. But they cease to justify essential category when constructed to provide for traffic which can be adequately provided for otherwise by publicly owned utilities (road or railway), and at a capital-plus-operating cost which cannot be met by charges on shipping and goods, but which requires the deficit to be made good by special taxation over the district. Interests particularly served by competitive transport ways quite naturally do not concern themselves with the loss accruing to the community, while the community, by reason of apathy or lack of understanding of the net result, or lack of opportunity to govern the matter, fails to assert itself ; but it has to pay in any event.

In what I have to say on this subject I exclude, of course, those harbours which I have termed essential. Apart from these, yet to a certain extent including some of them, it is submitted that in many cases costly and unsatisfactory harbours have been constructed in places where population has congregated, rather than at places in near vicinity where natural harbour conditions existed ; that large sums of money have been expended in creating harbours in competition with existing and economically suitable transport ways ; in piecemeal pottering at an essential harbour proposition which could be satisfactorily dealt with only as a comprehensive whole ; or in providing accommodation for overseas vessels where charges on vessels and goods cannot possibly be made to cover the expenditure involved in making the provisions. In dealing with harbours and the expenditure in constructing and maintaining them, we are merely dealing with one of three transport ways, each of

which, if it fails to financially justify its existence, becomes a charge on the general public. All capital indebtedness in connection therewith, whether local body or Government, combines in general public indebtedness. To meet that indebtedness, direct charges on users and goods are, or should be, imposed to their economic limit. Any shortage must still be provided by means of indirect taxation.

The particular object of this discussion of a matter which I believe to be of primary importance is to urge that each harbour-work proposed should be the subject of close investigation with a view to determining, before it is authorized, either by poll of ratepayers, special Act, or the Governor-General in Council, whether (*a*) a harbour-work is essential, transport of goods being not otherwise economically possible; (*b*) it is sound from the navigational and engineering points of view; (*c*) if other means of transport exist, whether the provision of an additional means of transport is justifiable; and (*d*) whether immediately, or within a reasonable period, the harbour-work will be of such advantage as to be self-supporting without recourse to special rating.

There is a marked tendency at present to indulge in heavy expenditure on harbours of secondary and tertiary importance to provide accommodation for overseas vessels. While this may give direct benefit in one direction, yet in others disadvantages follow. Such expenditure generally results in the application of rating-powers, and when these become objectionable or burdensome to the district concerned, appeal to the Government for financial assistance. It is unquestionable that increased freights are demanded by overseas shipping companies to compensate them for the expenditure involved in spending a very considerable period of time picking up cargo at several ports round the coast. It follows, therefore, that what is gained in one way is lost in others.

Examination of Marine Engineers.

Hitherto all Inspectors of Machinery have held appointment as Examiners of Marine Engineers. We have thus at the present time thirty-three possible Examiners. Part of the examination is written and part oral. With so many Examiners it follows almost naturally that there can be little real uniformity of standard of marking throughout the Dominion. To obtain the best results and standards, and in order to keep fully abreast of the times, an Examiner should be in constant association with this class of work, and not, as at present, simply take it up for a few days at long intervals. Furthermore, with examinations in so many hands, there is always a possibility, remote though it may be, of the integrity of examination being attacked. Arrangements are being made to adopt the same system as has been in operation for some years in connection with examination of Masters and Mates, whereby the whole of the examinations throughout the Dominion will be conducted by two specially selected officers who will work in close association with one another and under more direct supervision by the Chief Examiner. By this means uniformity of standard will be attained, and responsibility for integrity of examination will be confined to the narrowest possible limit.

During the year 211 candidates passed their examinations and 105 failed. Of those who passed, eighty-four were engineers of sea-going ships, twelve were engineers of steamers plying within restricted limits, thirty were engineers of sea-going motor-propelled ships, and eighty-five were engineers of such boats plying within restricted limits. The number of motor-vessels is increasing every year, and a higher standard of examination is now required for motor engineers.

The Department issues first- and second-class certificates to engineers of sea-going motor-ships, but these certificates are not of equal validity to similar certificates issued by the Board of Trade. Amendments to the Shipping and Seamen Act and to the regulations governing examinations will be necessary before the standard of the examinations can be raised to that set by the Board of Trade. It is important that the Department should obtain from the Board of Trade the same recognition for the motor certificate that has been granted the steam certificate.

Inspection of Machinery Act.

A considerable section of the general public—the owners of boilers and machinery—which is concerned equally with the Department in complying with the requirements of the Inspection of Machinery Act, appears to regard its legal obligations as optional. A number of prosecutions have been instituted and successfully carried through in order to impress on certain owners the fact that the law exists and must be observed. In certain glaring cases where accidents have occurred through neglect to comply with its requirements heavy penalties have been asked for and obtained; in other cases lesser penalties, according to the nature of the offence, have been asked for. If the warning conveyed by these prosecutions is not observed, maximum penalties will be asked for in every case. The Department has no desire to adopt a pin-pricking policy, but it cannot allow requirements observed by the great majority to be ignored by others, nor can it allow owners to disregard the necessity, legal and humanitarian, to satisfactorily safeguard human life by providing adequate protection for machinery-operators.

Inspection and Adjustment of Ships' Compasses.

The adjustment of compasses on home-trade and foreign-going vessels has been performed by compass-adjusters who are licensed by this Department, when and where necessary, and in accordance with the existing Compass Regulations; and the results of all compass-adjustments have been investigated at the Nautical Adviser's office. The majority of adjustments were found to have been performed in a skilful manner, and on the whole were satisfactory. The majority of vessels have their compassess adjusted by persons who are licensed for that purpose by this Department; whilst a few vessels have their compasses adjusted by their own masters in cases where the latter possess qualifications enabling them to do this.

In a few cases concerning casualties to small vessels the necessity for having a precise minimum standard of efficiency for the standard compass of such vessels has become evident; and it is intended to make provision for this to be carried out as soon as sufficient data becomes available to enable this to be performed.

The usual investigation of dredgers' compasses has been made; and in some cases the compasses of this class of vessel have required more than the usual remedy to enable a satisfactory compass adjustment to be carried out. Owing to the constructive nature of these vessels a satisfactory adjustment is seldom obtainable, and it has not always been possible to confine the compass errors within such limits as are prescribed by the present Compass Regulations.

Many important changes in the design and in the development of the gyroscopic compass have taken place; especially noticeable is the introduction of a mercurial ballistic, which has superseded the formerly used pendulous floating ballistic; the changes making for simpler manipulation and improved efficiency. Its exclusive use, as far as can be ascertained at present, is confined mainly to vessels of special design such as warships, &c., the design of which vessels makes the maintenance of an efficient magnetic compass very difficult, but in such cases the magnetic compass is used as a check on the gyroscopic compass. Judging by the number of vessels at present equipped with the gyroscopic compass it may be assumed that before long it will be found installed on some of the overseas vessels regularly trading to this Dominion.

The inspection of ships' compasses by the Department's Inspectors has been carried out in the usual manner.

"Nautical Almanac and Tide-tables."

The publication of the "Nautical Almanac and Tide-tables" was carried out in the usual manner, and the Nautical Almanac was available to the general public about a week before Christmas, its customary time of issue. Economic reasons continue to restrict its contents to bare requirements only. The necessary nautical ephemeris as used for the navigation of vessels was included, as formerly. An important change in the latter substance respecting the method of reckoning Greenwich mean time will take place on the 1st January, 1925, which will necessitate a complete revision of the tabulated methods for showing the nautical ephemeris as now shown in the Nautical Almanac. This revision, which follows the alteration recently made in the British Admiralty Nautical Almanac, is now being arranged.

Daily tidal directions through the year for high and low water were given for the ports of Auckland, Wellington, Lyttelton, Dunedin, Bluff, and Westport; and the tidal stream predictions for Tory Channel and French Pass were included. The latter tidal predictions were given as a result of a set of period observations taken some years ago, and it will be necessary to again obtain period observations during the coming year, which, with some additional information now to hand, should enable these tidal predictions to be given with greater accuracy, as the streams in both these localities are found to vary slightly from the tidal predictions.

The established ports of the Dominion, and those ports which are in process of development, are reviewed from a navigational standpoint; and the substance relating to them is kept up to date with information concerning navigational aids, soundings, pilotage, &c. Principally owing to this latter reason the publication is in much demand by overseas vessels, as much of the information is unprocurable elsewhere until a much later date.

Imperial notices to mariners, as published by the Board of Trade in Great Britain, and other information from authentic sources affecting the navigation of vessels when such relates to this Dominion, have been reproduced.

Marine Casualties.

The usual number of marine casualties occurred during the year. The casualty involving the greatest loss of property was the total loss by stranding of the s.s. "Port Elliot" near East Cape. Other casualties of minor importance, such as damage owing to fire, stranding, collision, &c., were investigated by the Department.

Many outbreaks of fire on vessels continue to occur, but in most cases little damage has resulted. The origin of such fires continues to be difficult of definition. The fires which assumed greatest dimensions during the year were those on the s.s. "Kaikoura" and the s.s. "Canadian Pioneer," at Auckland.

Fires among wool or part-wool cargoes have not been an outstanding feature of fires on vessels during the past year, but the possibility of such fires becoming more numerous is to be expected when vessels loading wool remain on the coast for considerable periods, visiting many ports and picking up a little at each place, as is done at present, as this necessitates the holds being opened and closed many times and their being visited by many different gangs of men, and of the visits often being of a hurried nature. Under such circumstances it is difficult for a vessel's officers to be continuously watchful to prevent matches being used in the holds.

Some of the outbreaks of fire may have resulted from the liberty enjoyed by the general public to walk and to smoke in the vicinity of vessels and cargoes whilst loading or discharging operations are being performed. Such liberty does not exist in older countries. The matter is primarily one for governance by Harbour Board by-law, and it is to be preferred that the Boards should act in the matter.

Collisions affecting sea-going vessels have been infrequent, and their infrequency shows, generally speaking, that the Collision Regulations are being well interpreted by those who necessarily have to observe them. Minor collisions between vessels of the launch class continue to occur, and the time has arrived when an elementary knowledge of the Collision Regulations, &c., should be

demanded of all persons who have charge of such launches. At present, launches which are licensed to carry passengers and cargo may be in charge of persons whose only qualification is an ability to drive the engine of such vessels. In the interests of safety to life and property it would appear necessary that such persons should be qualified so as to enable them to take proper action to avoid collision. The same would apply to pleasure-yachts, of which there are a large number, and the persons in charge of which are not at present required to possess any knowledge of the Collision Regulations, &c., or even to show a slight ability to avoid collision if such became imminent. This matter is now under consideration.

Notices to Mariners.

Information of importance to vessels, affecting the coasts of the Dominion and localities visited by vessels of the Dominion, also information of value to overseas vessels, mainly relating to changes in aids or obstructions to navigation, has been published. Notices regarding the various changes which occur in our harbours, and the alteration in coastal aids to navigation, have been promulgated amongst shipping as has been found necessary.

Radio Direction-finding for Navigational Purposes.

The development of radio direction-finding for the use of vessels has proceeded to great length in Europe and America. At present the development of this important phase of radio-telegraphy has slackened somewhat owing to divergence of views as to the best manner of its application and use, some favouring the method of position-lines being supplied to vessels on demand, others favouring the method by which a vessel becomes quite independent and may observe its own position-lines. The time, however, is fast approaching when each vessel may require to find its own position-lines, owing to the development and dimensions of ordinary traffic, also to the delay which oft-times occurs when a vessel wishes to get a position from a shore station.

Examination in Form and Colour Vision.

This examination, which is open to all persons who desire to follow employment at sea, has been performed for fifty-two candidates during the year. Of this number one candidate failed to pass the form-vision part of the test, and two candidates failed in colour-vision. This examination is carried out by the Department's officers at Auckland, Wellington, Lyttelton, and Dunedin in a manner similar to and with the same instruments as used by the Board of Trade in the United Kingdom.

Examination of Masters and Mates.

With the introduction of the new Regulations for the Examination of Masters and Mates, issued in 1923, the scheduled days of examinations were changed from weekly to quarterly, in accordance with the reorganization of the Nautical Adviser's Office. An Examiner now attends at the ports of Auckland and Lyttelton to conduct the examinations when necessary. The new regulations were brought into force so as to conform with the Imperial Board of Trade examinations. These prescribed for increased speed in signalling, and some alterations of a minor character in the other portions of the examination.

This year has again witnessed a decrease in the total number of candidates for certificates for sea-going vessels, the total number of candidates being sixty-nine; the total number of failures being thirty-four, and of successes thirty-five. From past records it would appear that the percentage of passes is slightly greater than usual. Of the total, forty-three were candidates for foreign-going certificates, and fifteen were candidates for certificates for home-trade vessels, and of these twenty-eight passed; whilst eleven were desirous of obtaining certificates for vessels which trade within restricted limits, of which seven passed. The percentage of passes for all grades was 51. Of the foregoing total, three examinations were held for the higher certificate of extra master. Mr. G. H. Kime, an ex-"Amokura" boy, was the only candidate who was successful in passing this examination; and it was pleasing to find that he possessed a good knowledge of the subjects in which he was examined. This examination embraces, in addition to the syllabus for ordinary certificates, advanced questions in stability, naval architecture, magnetism, elementary science, and scientific meteorology. It also embraces an examination in signalling at fair rates of speed. The examination lasts for a whole week, and it is not surprising that few candidates compete for this qualification.

All the examinations have been carried out in conformity with the requirements of the Imperial Board of Trade; and the signalling portion of the examinations is conducted with automatic signalling instruments similar to those used by that body in the United Kingdom. As foreign-going certificates issued in New Zealand are valid throughout the British Empire, it is necessary that the existing regulations in this Dominion should be identical with those issued by the Imperial Board of Trade, and this principle is strictly adhered to.

Signalling Examination for Lightkeepers.

Since inauguration of this examination, two years ago, the need for attaining efficiency in this important branch of a lightkeeper's duties has received due appreciation by the lightkeepers themselves, and during the past year nine lightkeepers have presented themselves for examination. In each case the candidate was successful in passing the examination prescribed by the Department.

On the occasion of a recent casualty by which a vessel became stranded on the shore beyond visible range of a nearby lighthouse, the signalling services of one of the lightkeepers were requisitioned by the salvors of the stranded vessel over a lengthy period, so as to enable them to maintain regular communication by signalling with the shore when other methods of communication were impracticable.

Government Shipping Offices.

In the Government shipping offices the administration of the Shipping and Seamen Act has been efficiently carried out. Appended is a statement showing the number of seamen engaged and discharged at the various ports during the year, and the fees received for such transactions. The total number engaged and discharged was 17,989 and 17,817 respectively, as against 18,009 and 17,817 respectively during the previous financial year. The transactions at the four main ports were as follows (the figures in parentheses being those of the previous year):—

Port.	Engagements.	Discharges.	Fees.	
			£ s. d.	£ s. d.
Auckland	6,214 (5,155)	6,228 (5,168)	1,135 2 0	(897 7 0)
Wellington	6,099 (5,937)	6,265 (6,147)	1,114 3 0	(1,068 5 0)
Lyttelton	1,854 (2,341)	1,663 (2,256)	326 9 0	(422 13 0)
Dunedin	1,549 (1,798)	1,549 (1,622)	287 6 0	(329 11 0)

The total amount paid by shipowners to sick and injured seamen, under the provisions of section 6 of the Shipping and Seamen Amendment Act, 1911, was £16,854 8s. 10d., as against £13,443 18s. 10d. in the previous year.

Inspection of Seamen.

This service has been maintained. A record of men applying for work is kept for the purpose of filling vacancies as they occur.

Registration of Shipping.

On the 31st December last there were on the register of vessels in the Dominion 127 sailing-vessels, of 19,812 tons register, and 428 steamers, of 80,850 tons register, as compared with 138 sailing-vessels, of 21,484 tons register, and 418 steamers, of 70,860 tons register, at the end of the previous year. The number of seamen and boys employed on board was 3,623, as compared with 3,393 at the end of 1922.

Surveys of Ships.

Certificates have been granted to 267 steamers, 540 oil-engine vessels, and 30 sailing-vessels, as compared with 282, 512, and 34 respectively in the previous year. Attached are returns of seagoing vessels, included in the above, to which certificates were issued.

The regulations governing the inspection and safety of ships and waterside cargo-gear have been well carried out by the Inspectors specially appointed at the four main ports, and by the ordinary Surveyors of Ships at the other ports. A very large number of inspection visits have been made by the officers, and defects found and remedied.

Forty-six vessels, of which seven are seagoing vessels, were surveyed for the first time during the year. One of these vessels is the "Muritai," a twin-screw oil-burning steamer plying in Wellington Harbour. The vessel's dimensions are—Length, 165·3 ft.; breadth, 30·1 ft.; depth, 11·35 ft. The hull is built of steel. The indicated horse-power of the propelling machinery is 900. The vessel was granted a certificate to carry 1,550 passengers. Another of these vessels is the "Mollyhawk," a composite built steamer engaged in the vehicular and passenger traffic on Auckland Harbour. The hull of the "Mollyhawk" was built in Auckland. The engines and boiler were imported. The dimensions of the hull are—Length, 128 ft.; breadth, 32 ft.; depth, 10·64 ft. The propelling-engines have cylinders 14 in. and 28 in. diameters by 18 in. stroke, and are supplied with steam from a marine-type multitubular boiler working at a pressure of 130 lb. per square inch.

For seaworthiness under section 226 of the Act, 123 vessels were surveyed. Some of the vessels were considerably damaged, notably the "Port Auckland."

Plans and specifications for two new ferry-steamers for Auckland have been submitted and approved by the Department. These vessels are now being built in Auckland shipyards. Plans and specifications of a scow, 72 ft. long, and of a ketch, about 70 ft. long, have also been submitted and approved, and these vessels will also be built in Auckland. As usual, a percentage of the proposals submitted for approval have been abandoned.

New instructions respecting oil-fuel installation in passenger steamships have been issued by the Imperial Board of Trade. The new circular is a reissue of a previous one, with the addition of a paragraph containing certain further recommendations which are a result of the experience of the last few years.

New rules for the sizes of shafting of internal-combustion engines, other than Diesel, for marine purposes have been prepared, and will be issued very shortly. These rules are practically the same as those of Lloyd's Register, and, as they are approved by the Board of Trade, the Department should have no difficulty in securing compliance with them. They will not come into force until the 1st January, 1925, in order to give sufficient time for makers of oil-engines abroad to be notified.

A new type of safety coal-hook, known as the Oliver safety releasing-hook, was this year approved in accordance with the requirements of the General Harbour Regulations of the 22nd May, 1919. The size submitted was suitable for a working-load of 5 cwt.

Particular attention has been given to spaces utilized for the carriage of petroleum, and to the testing of bulkheads in vessels utilized for this class of cargo. The bulkheads are tested for gas-tightness before certificates are granted.

Cargo-working Gear.

The tables of safe-working loads for chains, wire ropes, and manila ropes, referred to in last year's report, were submitted for the consideration of a conference consisting of departmental officers, with three representatives each from Harbour Boards' Association, Shipowners' Federation, and Waterside Workers' Federation. The various parties to the conference met one another in a most amicable spirit. Conclusions in practically all matters relating to chains and wire ropes were unanimous. The standard adopted for breaking-strain, proof loads, and working loads for chains is that of the Admiralty, while for wire ropes the British Wire-rope Manufacturers' standard specification was adopted. With regard to manila ropes, however, the factor of safety proposed by the Department's draft tables was regarded by all the other parties as being too high, the contention being that ropes of the dimension laid down could not be satisfactorily used in cargo-work. The conference, with the exception of departmental officers, unanimously adopted a considerably lower factor, with certain provisions limiting loads for ropes of certain dimensions, and providing for whipping and rigging of ropes for specified lifts. Departmental officers are now engaged in revision of the whole of the tables and governing regulations. The Department is not fully satisfied with regard to manila-rope standards as adopted by the other parties to the conference, and will further consult with the standing committee which was set up for the purpose of consultation.

Deceased Seamen's Estates.

The estates of sixteen deceased seamen, amounting to £166 13s., have come into the hands of the Department during the year, and, including estates previously received, thirty have been finally administered. A statement is appended showing the estates dealt with and those outstanding. The sum of £42 6s. 6d. has been paid into the Consolidated Fund, representing estates unclaimed for over six years.

Wrecks and Casualties.

Sixty-four inquiries, involving sixty-eight vessels, have been held during the year, of which sixty were preliminary and four Magisterial. Those relating to vessels on or near the coast of the Dominion were fifty-eight, of 61,729 tons register, as compared with seventy-five, of 94,441 tons register, for the previous year. No lives were lost.

A return of wrecks and casualties to shipping during the year is appended.

Lighthouses, Harbours, and Government Steamer.

Lighthouses.—The duties connected with the maintenance of the various coastal lighthouses have been satisfactorily carried out during the year, the lighthouses being tendered by the s.s. "Tutanekai." The inspection of lighthouses has been continued during the year, and good results have manifested themselves.

The sum of £76,867 17s. 2d. has been received as light dues on shipping during the year, as compared with £39,668 15s. in the previous year. This increase is mainly due to the increased scale of dues imposed as from the 1st April last, and referred to in the last annual report.

Harbours.—The work of overhaul and maintenance of navigation aids in harbours under the control of the Department has been satisfactorily carried out by the various Harbourmasters and by the master of the s.s. "Tutanekai." The latter has also attended to the coastal buoys and beacons under the control of the Department during the vessel's periodical trips.

The sum of £768 13s. 1d. has been collected as pilotage and port charges in respect of harbours under the control of the Department, as compared with £746 14s. 6d. during the previous year.

Lighthouses.

Three Kings Islands.—As indicated in last year's report, further investigations have been made with a view to demonstrating beyond doubt the efficiency of radio direction-finding equipment. A temporary wireless radio beacon was erected at Cape Maria van Diemen to work in conjunction with the direction-finding equipment aboard the s.s. "Tutanekai." The tests were carried out by the Marine Department's officers, assisted by Post and Telegraph officers. The results obtained proved entirely satisfactory. At a later date a demonstration was arranged to take place in Hauraki Gulf to afford an opportunity of carrying conviction to those who had not had personal experience of the efficiency of this apparatus and were therefore opposed to its adoption. The demonstration was carried out in circumstances ideal from the point of view of those experienced in radio direction-finding, and confident, as a result of that experience, in its ability to do full duty under any circumstances. A beacon station was erected at Tiri, and with that as objective the vessel proceeded a distance of several miles through a dense blanket of fog, and was brought to dead in line with and half a mile from the beacon. Every other test asked for by navigators taken aboard to witness the demonstration was responded to. At the conclusion of the demonstration all who witnessed it expressed themselves as satisfied and convinced of the efficiency of radio direction-finding.

The most satisfactory lighthouse fog-signal apparatus that can be designed for Three Kings would consist of two lights—one at either end of Big King, in order to reduce the blind sector which one light would produce over the western reef—and a fog-signal within the blind sector; this would cost approximately £40,000. Owing to the prevalence of fog at Three Kings the lights would be of very doubtful, if any, value just at the time they would be most required.

A radio direction-finding beacon, which can be erected at a fraction of the cost of lighthouse fog-signal apparatus, will serve efficiently day and night and under any weather conditions and in any direction. It has the additional advantage that by bearings taken at intervals not only direction but position can be accurately determined.

The result of all these experiments is to convince the Department's expert advisers that the interests of shipping will best be served by the erection of a modern radio beacon suitably placed in an accessible locality, and thus remove the menace of Three Kings more effectively than could be done by means of lights and fog-signal.

Tiritiri.—The apparatus has been ordered, and is now to hand, for the conversion of this light from a watched light to an automatic. The work of conversion will be put in hand shortly.

Ohena Island.—The erection of an automatic flashing light on a concrete base has been completed, and the light is now in operation.

Matakaoa Point.—Plans and estimates have been prepared and apparatus ordered for an automatic flashing light at this point. This light will be erected at a height of approximately 100 ft., and will have a range of fourteen miles, and an arc of visibility of 199° 30′. It will serve a twofold purpose. Owing to the shifting of the East Coast lighthouse from the island to the mainland, there is a small dark sector to the northward. The new light on Matakaoa Point will be of great assistance to ship-masters coming from the north for turning the Matakaoa Point before they come actually within the range of East Cape light. Secondly, it will act as a port light in connection with the new wharf now being constructed at Hicks Bay by the Hicks Bay Harbour Board.

Kaipara South Head Beacon.—A small automatic acetylene flashing light was installed at this beacon in place of the oil-burning lamps, which required an attendant. The new light is giving satisfactory service.

Somes Island.—This light was converted from a watched oil-burning to an unwatched automatic acetone-acetylene light, with a very considerable amount of saving, and handed over to the Wellington Harbour Board.

Stephen Island.—The installation of two oil-engine hauling-winches to take the place of the original horse-operated whims has been completed.

Cape Foulwind.—Surveys have been made and plans prepared for the erection of a new lighthouse at this spot. The existing light-tower, which is of wood, is commencing to deteriorate, and a new concrete tower will be required. The new lighthouse will be an automatic one of the Dalen type, utilizing an incandescent acetylene burner with automatic mantle exchanger. This is the latest development in the design of automatic lights for the higher-powered stations.

Chatham Islands.—It is proposed to erect a small electrically operated light on the wireless mast at the Chatham Islands. Details are being prepared, and arrangements have been made with the Post and Telegraph Department to allow the use of their mast and electric supply. It is anticipated that this light will be of great assistance to vessels wishing to make Waitangi after nightfall. At present the shipmasters do not care to approach these islands in darkness, owing to the dangerous outlying reefs.

Kahurangi.—This is at present a second-order watched oil-burning light; it is proposed to convert it to an automatic acetylene light. Plans and estimates have been made, and it is hoped to make a start with the conversion very shortly.

Anglem Point.—The necessary apparatus for the conversion of this light to an automatic flashing type has been obtained and installed, and is operating satisfactorily.

The Brothers.—New rollers and roller-paths have been fitted to the revolving portion of this light, to take the place of the original ones, which had become badly worn.

General repairs and maintenance works were carried out at the various light-stations, cottages, &c.

Harbour-works.

Gisborne.—A great deal of controversy has arisen concerning the proper solution of the Gisborne Harbour problem, and, with the idea of endeavouring to come to a settlement, the whole question was discussed with the Board and its officers in Gisborne. It was finally decided that certain definite questions concerning a scheme put forward by Mr. G. H. Lysnar should be answered by the Marine Engineer, and after a great deal of investigation the questions were answered, and the Board definitely decided to adhere generally to the scheme of harbour improvement devised by Mr. Leslie Reynolds, and approved some years ago by the Department. The Harbour Engineer is now working up the detail plans, which will be forwarded for formal approval in due course.

Waikokopu.—The Waikokopu Harbour Board having amalgamated with the Wairoa Harbour Board, the combined Board decided to do nothing further in the way of improvement to the Wairoa Harbour, but to concentrate on Waikokopu. However, after spending a considerable amount of money in an unsuccessful attempt to dredge out the inner basin, the Board found itself unable to proceed further for want of finance and public confidence. Eventually the Minister of Public Works agreed that his Department would erect a wharf in such a position and of such extent and depth of water as would cater for all coastal and lighter traffic, and would yet fit in without loss with the major breakwater scheme, should that be put in hand at a later date. The wharf will be ready for use very shortly. Being connected with the railway to Wairoa, and the freezing-works and other industries, it will be of great assistance to the district generally.

Westport.—Weather conditions were such that a sufficient depth of water was maintained on the bar to adequately serve any vessels visiting the port at that time.

No additional work was carried out on the breakwater, the work which had previously been carried out proving very satisfactory and maintaining its position well.

While the dredge was idle during the cessation of coal export, the work of painting and repairing all buildings in connection with the harbour-works was put in hand, and these buildings are now in first-class order. The fleet and all plant necessary for the prosecution of the works has been carefully attended to and kept in first-class repair throughout the year.

Waitangi Harbour, Chatham Islands.—A number of requests for improved harbour facilities at Waitangi having been received, arrangements were made to visit these islands and report on the position generally.

Surveys were made, and the various propositions put forward investigated. The present wharf is unsatisfactory in that the depth of water is insufficient at low tide for the boats lightering cargo from the steamers. This state of affairs can be improved by extending the wharf and deepening the channel, but not sufficiently to enable steamers to unload direct. It is naturally desired by the residents to have a wharf at which small steamers could lie while loading and unloading, and it has been proposed that a small breakwater be constructed. Unfortunately, this would be a fairly expensive undertaking, and the present volume of trade is not sufficient to justify it. There is at present no local authority with power to control and finance any improvement scheme and until such is established matters are not likely to improve to any great extent. A movement is now in progress to form a County Council, which could also act as a Harbour Board and attend to such matters.

Bruce Bay.—The crane landing and approach bridge at the Flowerpot Rock has been completed and is in operation. Considerable difficulty was experienced in erecting some of the piers, owing to very heavy weather when the concrete bases were being set. Loading and unloading can now be satisfactorily carried out here.

Kaipara Beacons.—These have been repaired, and arrangements made for protection work to be carried out at the North Head to guard against the sand erosion.

Tryphena Wharf, Great Barrier Island.—A very full investigation has been made to ascertain the best locality in which to erect this wharf. A subsidy has been provided by the Government, and immediately the site is definitely decided the work can proceed.

General repair and maintenance works were carried out at the various small harbours under the control of this Department, and regular surveys have been made, and complete records are being obtained of the various changes which have taken place at the Wairau bar.

As usual, a number of applications have been received from local bodies and private individuals for the approval of works involving marine interests. These have all been carefully investigated, and, where desirable, approved. Some of the principal items were :—

Wharves: Onekaka; Otanerau; Queen Charlotte Sound; Nelson Street Jetty, Auckland; Hicks Bay; Kutarere, North Auckland; Endeavour Inlet; Maori Beach, Stewart Island; Wairoa River; Warkworth Harbour; Hokianga Harbour; Whanaki, Whangarei; Pakawa Estuary; Nelson Electric Lines and Power House; Kennedy Bay.

Foreshore Leases: Heathcote Estuary; Mongonui; Mercury Island; Hokianga Foreshore; Paremata, Purakunui; Stewart Island.

Harbour-works: Gisborne; Hicks Bay; Bluff; Castlecliff; New Plymouth.

Westport Harbour.

During the year 543 steamers and seven sailing-vessels entered the port, aggregating 275,765 tons register, as against 546 steamers and seven sailing-vessels (332,401 tons register) for the previous year—a decrease of three vessels and 56,636 tons register. Coal export amounted to 439,707 tons, as against 572,342 tons for the previous year—a decrease of 132,635 tons. The decrease in shipping and coal-export is accounted for by the stoppage at the Westport Coal Company's and Westport-Stockton Coal Company's mines from the 13th September, 1923, to the 10th January, 1924; during that period only coal won from the co-operative parties' mines was available for shipment.

The average depth on the bar was 23 ft. 2 in., as against 25 ft. 1 in. The decreased average depth was due to the fact that the dredge "Eileen Ward" was laid up from the 29th August to the 13th January, 1924, there being no large vessels visiting the port during that period. The average depth in river fairway at high water from Crane Wharf to bar was 27 ft. 5 in., as against 28 ft. last year.

The dredge "Eileen Ward" worked on 116 days and removed 367,600 cubic yards of sand from the entrance at a cost of £10,124 10s. 9d., which includes £3,831 for overhead charges. She left for overhaul on the patent slip at Wellington on the 1st September, 1923, and returned to Westport on the 13th September and was then laid up until the 13th January. The dredge "Mawhera" was hired from the Greymouth Harbour Board from the 19th June to the 19th August, at a cost of £2,909 17s. 8d., for the purpose of improving the berthage area. The dredges "Rubi Seddon" and "Erskine" have not been in commission during the year.

The tug "Mana" was placed on the grid for cleaning, painting, and survey during February. Six vessels were towed outwards during the year.

The Priestman grab has been in commission on several occasions to remove snags from the fairway.

A complete survey of the roadstead was made during the year and soundings plotted regularly.

The largest vessel which visited the port was the R.A.F.A. "Biloela," of 3,366 tons net and 5,596 tons gross register.

The consultative committee met twice during the year.

The total staff employed on the 31st March, 1924, was thirty-nine, as against forty-one on the 1st April, 1923—a reduction of two.

The dredges "Rubi Seddon" and "Erskine," and the hoppers "Heathcote" and "Sumner," are laid up. Several attempts have been made to dispose of them, but so far without success.

Shingle and Sand Beaches and Foreshores.

The question of control of these areas has been given attention during the year, and steps continue to be taken to place effective supervision over the removal of material from, and the construction of wharves and other structures on, these areas. A good deal of ignorance in respect to the provisions of the Harbours Act, both concerning the removal of sand, shells, gravel, &c., and the erection of structures on foreshores, has manifested itself, and a policy of appointing honorary Inspectors of Beaches is in operation.

In view of the increasing demand for sand and gravel as the result of cost of timber-supplies, it is intended to strictly enforce the provisions of the Act in regard to any cases of unauthorized removal of materials from foreshores. A number of prosecutions have been successfully taken during the year. The Department became involved in a lengthy Supreme Court action which sought an injunction to prevent the Department from issuing permits for removal of shingle from a Crown foreshore. The Department was able to establish its right, and judgment was given against the appellant.

Government Steamers.

The s.s. "Tutanekai" has efficiently carried out the work of tendering the coastal lighthouses and departmental harbours during the year, and has visited the southern islands in search of castaways, and to replenish the provision-depots there.

During the year this vessel was reconditioned, extensive repairs and alterations being carried out. The cable-tank and after deep-water ballast-tank were taken out of the vessel, and the space thus cleared converted into hold for the carriage of cargo, which has added considerably to the commercial value of the vessel.

Inspection of Machinery.

The number of inspections of machinery carried out during the year total 25,111, as compared with 24,963 inspections last year. Many machines were found to be in a dangerous condition. The protection of machinery has been given careful consideration, particularly in cases where accidents have occurred. There is no doubt many accidents are brought about by the carelessness of operators. It should be the duty of every person employed on moving machinery to observe the regulations made by the Department for his protection. It might be desirable that the Department should have power to prosecute the operator himself when he removes fencing or otherwise interferes with safe-guarding-devices, or when he manipulates belts in motion by hand, or does other similar unauthorized actions.

One of the fatal accidents that occurred during the year happened to a man who was oiling an overhead shaft whilst it was in motion. The ladder on which the man was standing slipped, and he grasped the shafting to save himself from falling. His clothing, however, became entangled round the shaft, and he was whirled around with it. In this case there were ample opportunities for the oiling of the shafting when it was at rest.

It is a wise precaution to have ladders fitted with some kind of non-skid device when they are intended for use in factories, The suitability of the form and material of the non-skid device will depend upon the kind of floor. Iron spikes are suitable for soft floors; leather or indiarubber is satisfactory for hard floors, though unsuitable for greasy floors. For ladders which are required to be used at various angles of inclination, cast-iron swivel feet, shod with indiarubber or leather, are very satisfactory. The condition of the floor around machines has contributed to some accidents. Floors should be kept clear of waste and loose material, and should be maintained in a good and level condition.

It has come under the notice of the Department that buzz-planers have been worked with the circular heads frequently exposed for a greater length than necessary for the material being treated. The reason for the adoption of the circular head was the furnishing of an additional safeguard, and not with the view to dispensing with the guard as usually fitted before the use of the circular head was made compulsory. Only so much of the gap as may be required for the particular work in view should be exposed.

At the inspection of lifts and hoists many defects have been remedied. The danger of unfenced lift-wells and unprotected doorways and openings is in many cases not sufficiently realized. The cages of all passenger-lifts are fitted with doors, but it is the consensus of opinion that only where the doors must be fastened before the lift can be operated is it customary to close the cage-doors. This is a strong reason why the doors, particularly of passenger-lifts, should be fitted with interlocking-devices rendering it impossible to work the cage with the doors open.

A somewhat troublesome matter in regard to new lifts is the insufficiency of the fencing and safety precautions. As a rule the Inspector is not called in until the installation is nearing completion. Should any alterations be required by the Inspector involving additional expense, the owner, architect, building contractor, and lift engineer have all to be consulted before the work can be gone on with. In such circumstances delay and inconvenience appear to be unavoidable, and it would be much more satisfactory to all parties if a practice was made of submitting drawings of lifts to the Department for approval before the work of erection was commenced.

Boilers.—The number of boilers inspected during the year was 7,780, as compared with 8,158 last year. A large number of defects were discovered, many of them dangerous. It has been found difficult to make the necessary internal inspection of some boilers owing to the insufficiency of sighting-holes. During the year rules were issued prescribing minimum sizes for manholes and hand-holes for multitubular boilers of the under-fired type, and a distance of 10 in. between the steam-space stays where this is practicable.

New Boilers Inspected.—The number of new boilers inspected during the year is 275.

There is a tendency on the part of boiler-makers to crowd the tubes in boilers of the multitubular type, no doubt with a view to obtaining a maximum nominal horse-power for a minimum diameter of shell. Boilers so designed cannot be efficient, as the circulation of the water is impeded by the tubes. Bad circulation assists pitting of the boiler-plates. When air is present in the feed-water, oxygen is given off immediately the water comes in contact with the hot plates, and cannot escape if the circulation is poor. Due to the combination of oxygen with any acid that may be present in the water,

a process of rusting sets in, and the corrosion eats into the metal. The contraction and expansion of the plates causes the rust to break off and expose further metal, and so the pitting becomes deeper. This form of deterioration is very active in some boilers.

The tubes should be so spaced as to promote the circulation of the water. Unsatisfactory spacing cannot be put right after the boiler is built. In marine practice a clear space of $1\frac{1}{4}$ in. in a horizontal direction and $1\frac{1}{8}$ in. vertically is the standard spacing. For multitubular land boilers a space of $1\frac{1}{8}$ in. for tubes $2\frac{3}{4}$ in. diameter and upwards, and 1 in. for tubes under this size, is considered the least desirable if the circulation is to be satisfactory.

Examination of Land Engineers, Engine-drivers, and Electric-tram Drivers.

These examinations were held at the various offices of the Inspectors of Machinery throughout the Dominion at the regular intervals provided for in the regulations—namely, during the months of February, May, August, and November. Also, to suit the convenience of candidates, occasional special examinations took place at these centres and at several country places visited by Inspectors on their periodical tours. The full list of places where examinations were carried out 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: Extra first-class engineer, first-class engine-driver, second-class engine-driver, steam-winding-engine driver, electric-winding-engine driver, locomotive-engine driver, traction-engine driver, locomotive and traction engine driver, and electric-tram driver. The total number of candidates examined was 659; of this number 506 passed and 153 failed in their examinations. New examination-papers for first-class engine-drivers were issued from Head Office for each quarterly examination.

Recognition of Certificates from Abroad.—Under section 49, Inspection of Machinery Act, 1908, certificates of the appropriate grade were granted, without examination, to holders of certificates from abroad, as follows: United Kingdom, 1; Canada, 1; Queensland, 2; New South Wales, 1.

Fisheries.

During the year the Chief Inspector of Fisheries paid official visits to the following fishing-ports and fishing-grounds, namely: Whangaroa, Bay of Islands, Whangaruru, Whangamumu, Whangarei, Kaipara, Hauraki Gulf, Coromandel, Kawau Island, Mahurangi, Great Barrier, Manakau, Lower Wanganui, Cook Strait, Picton, Blenheim, Nelson, Kaiapoi, Marlborough Sounds, Lyttelton, Timaru, Oamaru, Port Chalmers, Bluff.

Special inspections were made of the oyster-beds at the Bay of Islands, Whangarei, Great Barrier, Hauraki Gulf, Coromandel coast, and Kawau Island. Visits of inspection were also made to the Government salmon-hatchery at Hakataramea. The Chief Inspector assisted with the hatching of 600,000 quinnat-salmon eggs and liberation of the young fish at the Maori Creek hatchery, Marlborough; planned and assisted with the erection of a salmon-hatchery at Waitea Creek, Upper Wanganui; and also the hatching of Atlantic-salmon eggs and liberation of the salmon-fry in the upper tributaries of the Wanganui River. At the request of the Coromandel Acclimatization Society he made an inspection of the streams in that district with a view to advising the society with regard to stocking these waters with the most suitable kind of trout.

From the annual reports and returns supplied by the Collectors of Customs and Inspectors of Fisheries it would seem that fish have been plentiful on most of the fishing-grounds, and favourable weather was experienced the greater part of the year. In the northern districts, Hawke's Bay, and Wellington the supply of fish during the summer months was at times in excess of market requirements, snapper and mullet being especially abundant on the northern fishing-grounds. The past season was one of the best for whitebait that has been experienced for a good many years. The fleet of steam trawlers has been increased during the year by three English-built trawlers purchased by Sanford Limited of Auckland from the New South Wales State Fisheries Department. During the year fishing by means of the Danish seine was started in the Hauraki Gulf by Sanford Limited. In the early part of the year this firm fitted up its small steam trawler "Countess" with the gear, and was most successful in obtaining good catches of snapper, flounders, &c. Munro Bros. also purchased a useful small trawler, and have been successful in obtaining good catches with the seine. As the Danish seine is less costly than a steam trawling plant, and also much more economical in working, and almost as effective as far as catching fish is concerned, it is pretty certain in the near future to be extensively used by fishermen throughout the Dominion.

Foveaux Strait Oysters.—The local Inspector of fisheries at Bluff reports that oysters were plentiful on all the beds in the strait. Four vessels were employed from Bluff dredging, and made good catches when the weather was favourable. The oysters were in splendid condition throughout the season, and there was a keen demand for them both in the local market and also in Melbourne. The quantity of oysters dredged from these beds for the season was 28,785 sacks, being an increase of over 1,500 of the quantity taken in 1922. The wholesale value of the catch was £17,991.

Rock-oysters.—The natural beds at Bay of Islands are in good healthy condition. On most of them there is a large crop of young oysters showing, and principally on that account some of the beds could not be picked without destroying a large number of immature oysters; this reason, and also the fact that most of the pickers were employed last season on the Hauraki Gulf and Kaipara beds, accounts for the smaller quantity of oysters sent from the Bay of Islands last season. The Whangarei beds were lightly picked; they are in splendid condition, and will again yield a good quantity for market this season. There has been a good "fixing" of young oysters all over the beds this season. The Kaipara beds were picked, and 1,381 sacks were taken for market. The beds were left in good condition, and they will yield a considerably larger quantity this season. The picking of these beds was done by a small gang of selected pickers from the Bay of Islands.

The beds picked in the Hauraki Gulf were part of Waiheke, Ponui, Pakihi, Motutapu, and Rakino Islands, also part of the Coromandel and Cabbage Bay sections. In all cases the beds were lightly picked, and left in such a condition that the same areas can be picked again this season if necessary. The beds at Great Barrier Island were not picked last season. These beds are limited in extent; they had been continuously gone over for a good many seasons in succession, and, although in good condition as regards the quantity of marketable oysters on the beds, yet, as there was a large quantity of young oysters on all the beds, it was considered advisable to give them a rest for a season. An inspection of the beds in Port Fitzroy and Port Abercrombie was made by the Chief Inspector, along with the Inspector for the Hauraki Gulf and the local Inspector at Port Fitzroy, and the whole of the beds were found to be in splendid condition. The local Inspector, who has lived at Great Barrier all his life, says the beds are in better condition now than they have been for the last fifteen years. They will be picked this season, and it is expected that they will yield more oysters than they have done any season since 1908.

Excepting on some areas which were overpicked previous to last season, the beds in the Hauraki Gulf are, on the whole, in splendid condition. The "fixing" of oyster-spat on the greater part of this section is more erratic than further north, and any areas which are too severely picked take a good many years to recover.

Oyster-cultivation work was continued at the Bay of Islands, where 1,500 yards of rock walls were built, and the rocks of a good many of the walls previously built were turned, so as to expose the young oysters, which fix readily on the underside, to the sun and atmosphere. All the walls built are now showing a good "fixing" of young oysters. On those built in 1918 and 1919 a quantity of oysters are now ready for picking. The "fixing" on the walls built this season promises to be the heaviest that has ever been experienced.

In the Hauraki Gulf, 740 yards of rock walls were built in sheltered parts of Brown's and Putiki Bays, Waiheke Island. The material for the walls was brought over in the Departments' ketch "Te Waipounamu" from Rangitoto Island, where an immense quantity can be obtained with practically no cost for quarrying.

A good many oysters are now showing up on the walls built on Te Kumu Bay, Coromandel, and in a short time there is every prospect of their being well covered.

The difficulty of protecting oyster-beds from poaching, particularly in the Hauraki Gulf, is more keenly realized year by year as the population of the City of Auckland and district increases. The increase in the number of Inspectors, which has been badly needed for several years, was given effect to during the year—a special Inspector being appointed for the Coromandel coast, and also an Inspector of Beaches, which will relieve the Inspector of Fisheries for the Hauraki Gulf of a good deal of work apart from the fisheries. Although there has been a large increase during the year in the number of convictions for poaching, and heavier fines have been imposed, yet there is no doubt that poaching is still being extensively carried on.

The Department is fortunate in having a staff of zealous and efficient Inspectors in connection with the protection and development of the fisheries and oyster-beds, and without exception they have carried out their duties in a most satisfactory manner.

Toheroa-beds.—The Inspector reports that the beds on the North Kaipara beach are improving. The two leasing-areas Nos. 3 and 4 are now showing a large number of young fish. From No. 2 area 980 cases were canned at Meredith's factory at Tikinui. The lessees of Nos. 1 and 2 areas, on the Ninety-mile Beach, north of Ahipara, have commenced canning. The output of their factory for the season was 502 cases.

Atlantic Salmon.—The Atlantic salmon in the Waiau and tributaries seem to be increasing satisfactorily. Good catches were made by anglers in the Upokororo, Eglington, and in Lake Te Anau near its outflow, and a number were caught in the lower reaches of the Waiau. The total number taken by anglers is reported to be approximately three hundred.

The Department decided to begin the systematic stocking of the Wanganui River with this fish, and a hatchery was built on the Waitea Creek, upper Wanganui, and about ten miles above Taumarunui. The hatchery has accommodation for a million eggs, and is centrally situated for distributing the young fish in suitable tributaries of the main river.

For the first time in the history of fish-culture in New Zealand—and, it may be said, in the Southern Hemisphere—the collection of Atlantic-salmon eggs was undertaken by the Marine Department for the purpose of stocking other suitable rivers.

The spawning season for Atlantic salmon commenced about the first week in June, the first ripe fish being taken in the Upokororo Stream by the Department's officer on the 7th. The Upokororo, a tributary of Lake Te Anau, was the only river netted last season. The number of salmon taken was 160—of these 77 were females and 83 males; and the total number of eggs collected was 637,000. These were "eyed" out at the Department's hatchery at Te Anau, and forwarded to the hatchery on Waitea Creek, upper Wanganui, where they were hatched out, and the young fish successfully liberated in tributaries of the main river.

Quinnat Salmon.—The run of these fish in most of the snow-fed rivers showed a considerable decrease in the number which came up the two previous seasons. All the rivers continued high and dirty the greater part of the time from the beginning of November well on in the autumn, and as a rule poor catches of salmon were made by anglers. The largest run was reported from the upper Clutha, and a late run was reported in the upper Rakaia, and also in the lower reaches of the Waitaki.

The size of the salmon caught by anglers, and also those netted during the spawning season, were of a larger average size than in 1923.

The collection of eggs was continued as usual. The rivers netted were the Hakataramea, Ahuriri, and Dobson, tributaries of the Waitaki. On account of floods, very few eggs were collected from the Hakataramea. The river conditions were favourable on the Dobson and Ahuriri, and good results

were obtained. The total quantity of eggs collected for the season was 1,031,000; of these, 631,000 were taken from the Ahuriri, 380,000 from the Dobson, and 20,000 from the Hakataramea. The eggs when "eyed" out were distributed as follows: 600,000 were sent to the Department's hatchery at Maori Creek, for stocking the Wairau River (Marlborough); 200,000 to the west coast for stocking the Hokitika River; 100,000 to the Tasmanian Government; and the balance, about 125,000, hatched at Hakataramea.

On account of the small run in the rivers and unfavourable river-conditions very few salmon caught by anglers were put on the market this season. A very large run may be expected next season, and, with favourable river-conditions, large quantities should be taken for market.

The following is a summary of the information supplied by Collectors of Customs and Inspectors of Fisheries in their reports for the year:—

Hokianga.—During the year the usual market fish have been plentiful. No outside market is available, and catching is confined to what is required for local consumption. The quantity taken is not given in the local Inspector's report. The number of boats engaged in fishing and the number of fisherman employed was similar to the previous year. The oyster-beds are in a depleted condition, and have shown no improvement for several years.

Bay of Islands (including Whangaroa and Mangonui).—The Inspector reports that all kinds of market fish were plentiful throughout the year, mullet and snapper being unusually so. The principal market is the inland towns and settlements. A few tons were shipped to the Auckland market, but the returns were in most cases unsatisfactory.

Last season the Bay of Islands oyster-beds were only lightly picked, partly on account of the best pickers being employed picking at Kaipara and Hauraki Gulf, and also because, on account of the large crop of young oysters on the principal beds, it was impossible in most places to take off many mature oysters without destroying large numbers of young ones. The number of sacks picked from the beds under my control was 2,485 sacks; this includes Kaipara, Whangarei, and Bay of Islands. On the local beds it is estimated that well on to 3,000 sacks can be taken for market this season.

Some 1,500 yards of rock walls were built this year, and the stones on a good many of the walls previously built were turned, so as to expose the young oysters, which fix on the underside, to the sun and atmosphere. All the walls built are now showing a good fixing of young oysters. On those built in 1918 and 1919 a quantity is now ready for picking, and oyster-spat is already showing in great quantities on the walls built this season. The oyster-cultivation work at Bay of Islands, Whangaroa, and Whangarei has been a great success, and it is advisable that it should be continued year by year.

Whangarei.—The usual market fish were plentiful throughout the year on the local grounds, and good catches were made when weather conditions were favourable.

Kaipara.—Fish have been plentiful all through the year. Mullet could have been caught in very large quantities, but, unfortunately, the mullet-cannery at Batley was not operating, and the quantity taken from Kaipara for the Auckland market is limited. Flounders, for which there is always a keen demand, were caught in large quantities. On account of the large quantities of snapper brought to the Auckland market by trawlers and seine boats there was no market for those fish caught by the Kaipara fishermen. The Inspector states that the toheroa-beds on the west coast are improving. Nos. 3 and 4 leasing areas are now getting well stocked with small fish. The oyster-beds are in very good condition, and last season 1,381 sacks were picked and forwarded to the Government oyster-depot at Auckland.

Auckland.—The Inspector says that the past year has been a remarkably good one for fish, snapper being particularly plentiful. The return given shows a very large increase in the quantity and value of fish marketed in comparison with the previous year. Vessels fitted with the Danish seine commenced operating in the gulf in the early spring, and they have caught large hauls of flounder, snapper, tarakihi, and gurnard. During the schooling season for snapper in the gulf the supply of these fish brought in was in excess of market requirements.

An inspection has been made of all the oyster-beds in the gulf and Great Barrier, and, taking them all over, they are in very good condition indeed. 4,324 sacks were picked for market from the gulf beds last season. On account of the large number of young oysters on the Great Barrier beds it was not considered advisable to pick them. These beds have shown a great improvement, and this coming season it is expected that fully five hundred sacks can be taken for market.

Tauranga.—Fishermen report good catches from the local grounds. During the summer months very good sport was obtained at Mayor Island with kingfish and mako shark, and visiting sportsmen speak highly of the fishing-grounds, and were well satisfied with the sport offering.

Gisborne.—The Collector of Customs reports that the past season has been a poor one for fishing. Quite a large quantity of the fish required for Gisborne and district was brought up from Napier.

Hawke's Bay.—The past year catches of fish have been quite equal to those of the previous year. The weather conditions have been very favourable, on the whole. The winter months, as is usual, were very lean, but the months covering the period from October to March were good, the catches being abundant; but, unfortunately, the supply during that period being greater than the demand, and the trawlers not being able to dispose of their catches, they were compelled to cease fishing regularly, going out only half-time while fish were so plentiful. The small-boat fishermen at West Shore have had a very profitable season, due to westerly winds prevailing, which brought the fish in on to the beach during the months of January, February, and March. Fish were retailed from the small boats at 2d. per pound.

New Plymouth.—Fishing has been rather poor during the past year. This was partly due to unfavourable weather extending over several months. The quantity of fish brought in shows a considerable decrease on the last two or three years.

Wanganui.—The Collector of Customs reports that little progress has been made in the industry during the year, and conditions remain unfavourable for its development, owing principally to the bar harbour, which is dangerous for small boats.

Foxton.—Whitebait was fairly plentiful during the season. The catches of other market fish were about the average of other seasons.

Wellington.—Good catches were made by the trawlers on the usual trawling-grounds, particularly during the spring and summer months. The line and net fishermen, who work the grounds on the west coast and off Kapiti and Mana Islands, have had a fairly good season. The fishermen from Island Bay, who work the Cook Strait grounds and east coast as far as Cape Palliser, have lost a good deal of time on account of the easterly and south-easterly winds. They complain that groper is scarce on some of the old grounds, but, on the whole, they have had a fairly good season. The return shows an increase on the quantity and value of fish marketed during the year.

Picton.—The quantity of fish taken was about equal to that of previous years. New grounds have been discovered by the fishermen, and large catches of hapuku have been taken. The number of humpback whales taken during the last season was seventeen, yielding 106 tons of oil.

Blenheim.—Fishermen have experienced a season well above the average as regards flat fish, especially during the last three or four months. As regards blue cod, groper, red cod, and snapper, the quantities caught on some of the old grounds were not satisfactory, and fishermen have had to seek for them at greater distances from the home port.

Nelson.—Fish were somewhat scarce on the usual fishing-grounds during the winter months, but were plentiful from November to the end of March, and good catches were made by netting and lining, and also by the launches, which have lately been fitted with trawl-nets.

Westport.—The whitebait season has been a very good one, but the supply of other kinds of fish has been only fair.

Greymouth.—The run of whitebait last season was above average; large catches were made as a rule, and big money earned. Although the quantity of other fish caught during the year shows an increase on the two previous years, yet the quantity is small in comparison to the extent of fishing-grounds available along the coast. The bar harbour is a great hindrance to the industry, as it is only occasionally that small vessels are able to get out.

Hokitika.—The past season has been a very good one for whitebait; large catches were made by fishermen, and good money earned. The Inspector reports that the quantity caught amounted to 640 cwt.

Kaikoura.—Fish were plentiful on the usual fishing-grounds, but a succession of heavy easterly weather prevented fishermen from getting out, and the result is that the catch for the year was considerably less than in 1922-23.

Rangiora.—The local Inspector reports that the fishing in his district has been very poor throughout the year. There was a fair run of whitebait, but all other fish were scarce.

Kaiapoi.—The fishermen have experienced a good season for whitebait, and fishermen earned good money. Fair quantities of flounders and other fish were taken in the estuary of the Waimakariri.

Southbridge.—The fishermen have experienced a fair season, flounders being more plentiful in the lake than during the previous year, and the catch shows an increase.

Lyttelton.—The quantities of flounders caught have been more than last year, but there has been a decrease in the quantity of other fish.

Akaroa.—The Inspector reports that the fishing industry in his district is in a very good way, and the local fishermen have done well.

Timaru.—The past year has been a good one for groper, and practically all the boats have engaged in this class of fishing. Only three are at present trawling. Flat fish have not been nearly so plentiful as is usual, and this fact, together with the increased price of benzine, of which much more is consumed in trawling, has operated to induce fishermen to adopt line fishing.

Oamaru.—The Collector reports that the fishery has had a somewhat varied experience during the past twelve months, the first part of the year being exceptionally poor, when fish of all kinds were scarce, and the weather conditions so unfavourable that the boats were frequently unable to put to sea during several days in the week. During the latter part of the year, however, matters improved, and the success of the last three months or so compensated the men to a large extent for the previous loss.

Moeraki.—Weather conditions in the early part of the year were unfavourable, and poor catches were made by fishermen. During the last six months of the year matters improved—fish were more plentiful, and good catches were made.

Otago District.—For the greater part of the year groper and ling were scarce. Fair quantities of kingfish were taken during the months of November and December: these fish met with ready sale, and almost without exception brought high prices. Barracouta have frequented the Otago coast in large quantities during the season. Taking the whole year into consideration, the fishermen have done fairly well. The Puketeraki fishermen have taken large catches of crayfish, and report a good season. The Owaka fishermen report good catches of flounders and mullet for the season.

Invercargill.—The fishing-grounds for the year have been well supplied, the various classes of fish being fairly plentiful, and the quality of the fish caught has been all that could be desired. The past season for whitebait was most successful as far as the fishermen were concerned, as a large run came up the different estuaries.

Bluff.—Fishermen have experienced a good season. Blue cod and other market fish were plentiful, and good catches were the rule. Oysters were plentiful in the Foveaux Strait bed, and in splendid condition, the catch for the season showing an increase of over 1,000 sacks on the previous year.

Stewart Island.—The Inspector reports that the fishing season has been a fairly good one, and fishermen have earned good money.

Ross Sea Whaling Expedition.

With the declaration of the Ross Sea area as a dependency of New Zealand, an agreement which had been entered into between the Imperial Government and Messrs. Magnus Konow and C. A. Larsen, of Christiania, was handed over to the New Zealand Government for administration. The financial benefits arising out of the agreement also became the property of the New Zealand Government. Under this agreement Messrs. Konow and Larsen are licensed to catch whales in the Ross Sea area for a period of twenty-one years. The license is not an exclusive one, but the licensees were given to understand at the time of its granting that they would be given some opportunity of recouping the heavy initial expenditure arising out of a pioneer expedition. The benefits accruing to the Government under the license are an annual payment of £200 in respect of each floating establishment (factory-ship), and a royalty of 2s. 6d. per barrel of oil taken over and above 20,000 barrels. The expedition is, by agreement, limited to two floating establishments, and five catchers to each establishment.

The floating establishment—the "Sir James Clark Ross"—a vessel of 7,630 gross tons register, arrived at Hobart on the 25th November, 1923, and was there joined by the five catchers, three of which had come from Seattle via Auckland and two direct from Norway. Captain G. S. Hooper, Nautical Adviser to the Department, was selected to accompany the expedition, which he joined at Hobart. The expedition, the personnel of which numbered 179, left Hobart on the 30th November, and proceeded to the Ross Sea, calling at Macquarie Islands on the way, at which place a reef very dangerous to navigation was discovered and duly notified.

Owing to severe conditions of weather and ice under which the expedition had to work the venture was not so successful as was anticipated, only 17,791 barrels of oil being taken. It was expected that whales would be found farther north than proved to be the case, and the vessel's equipment was hardly suitable to obtain the best results. It is hoped, however, that the experience gained will enable better results to be achieved next season. The vessel returned to Port Chalmers on the 9th April, and proceeded thence to Europe. The five whale-catchers were left at Paterson's Inlet, Stewart Island, for the purpose of being prepared for next season's operations.

Returns.

The following returns are appended hereto :—

(1.) The various kinds of fish caught, and approximately the total quantities and value of fish landed at the different ports, for the year ended 31st March, 1923.

(2.) The total quantity of oysters taken from the different beds, the quantity disposed of in the Dominion, the quantity exported, and total value.

(3.) The total quantity and value of fish imported into and exported from New Zealand during the year ended 31st December, 1922.

(4.) The number of steam-trawlers, oil-engine trawlers, and other vessels employed in net and line fishing, with the number of fishermen employed, and approximately the total number of persons engaged in the fishing industry, at each port, for the year ended 31st March, 1923.

(5.) The number and kinds of whales taken at each whaling-station, and the quantity and value of oil, bonedust, or fertilizer produced.

Portobello Marine Fish-hatchery.

A report by the Hon. G. M. Thompson, M.L.C., Chairman of the Portobello Marine Fish-hatchery Board, is appended.

Meteorological Branch.

The principal work of this branch consists of—(1) Preparation and distribution of morning and afternoon forecasts; (2) preparation and distribution of daily weather report; (3) forecasting and issuing telegraphic notification of special storm or flood warnings; (4) broadcasting evening weather report to shipping; (5) week-end weather reports furnished to the Press or others as asked for; (6) special or extended weather reports in respect to any locality or district furnished as required; (7) collection and publication of rainfall and climatological statistics.

Weather reports from ten stations are sent every evening to the radio-stations at Awanui, Auckland, and Wellington, and this information may be obtained by ships requiring it. The report is also broadcasted by radio at 9 o'clock every evening except Sunday.

General monthly weather reports, which were formerly supplied only to the *Journal of Agriculture* and to *Meat and Wool*, the cost being shared by these two publications, are now made generally available to the Press Association and local newspapers. The data for this return is obtained by telegraph at the beginning of the month, so as to make it quickly available to those interested.

The usual monthly and annual reports have been published in the *New Zealand Gazette*, Government Statistics, and Year-book. A special pamphlet on the "Climate of New Zealand" was prepared by the Government Meteorologist for the Empire Exhibition.

Looked at from a financial point of view, this branch is in a very unsatisfactory state. Expenditure during the financial year amounted to £5,676, and the income to £5 7s. 6d.

It is stated that morning and evening forecasts, and daily weather reports, &c., and monthly statistics are of very great value. Last year, on account of cost, the number of stations to which weather reports and forecasts were sent was reduced. Strong protest was made by stations which

were eliminated; but, despite the assertion as to value of the reports, no one is prepared to pay for them. If, as a matter of policy, it is desired that this information should be made available free of cost, then the cost is here revealed; but I must protest against the whole cost being made a charge against the Marine Department's accounts. It is said that the morning and evening forecasts and daily weather report are of value to shipping, and it is in this connection only that the Marine Department has any concern whatever in the matter. The shipping companies, however, do not pay for these reports, and it is doubtful if they would do so were the reports discontinued unless paid for. Furthermore, I am competently advised that these reports in no way govern departure of vessels from port—that shipmasters decide for themselves on their own observations whether or not they will proceed to sea.

In discussing the matter in this way I do not wish to deprecate the work of the staff. I believe they are doing excellent work, and it must be equally discouraging to them to find that it produces so little financial return.

The Science Committee of the New Zealand Institute has been good enough to offer the services of a professional and scientific sub-committee to investigate the whole system of meteorological and hydrological record, with a view to establishing a better distribution of recording-stations and co-ordination of resultant data into a comprehensive record of greater and more practical value. The offer has been gladly accepted, and it is hoped that the sub-committee will be enabled to undertake its work at an early date.

I have, &c.,
G. C. Godfrey,
Secretary.

The Hon. the Minister of Marine, Wellington.

MARINE FISH-HATCHERY AND BIOLOGICAL STATION, PORTOBELLO.

Sir,— Dunedin, 16th April, 1924.

On behalf of the Board of the Portobello Marine Fish-hatchery, I beg to forward herewith the report of the work carried on throughout the year ending 31st March, 1924.

In past years a considerable portion of our report has dealt with the turbot, lobsters, and European crabs introduced by the Board and later by the Government, in an endeavour to naturalize these species of valuable food fishes in New Zealand waters. The last shipment was made in 1913. The intervening war years, 1914–19, and the resultant conditions since, have made it practically impossible to resume importations of these species. The present position is as follows:—

Turbot.—A hundred and seventy fish, varying from 12 in. to 18 in., were liberated some sixty miles to the south of Otago Heads in 1916 and 1917. The remaining fourteen were kept in the hatchery tanks, and their number remained intact until this past year, when three died. The cause of death was in each case a cancerous growth close to the backbone on the under-side. As the remaining eleven fish appear to be quite clean and healthy, though they have not grown appreciably for over two years, it seems probable that their age is the deciding factor. They must be now at least fourteen years of age, and, though this is not a great age for fish living under natural conditions, it has to be borne in mind that these tank-fish have lived in confinement since they were 1½ in. long. The marvel is that they have remained so healthy and immune from disease or accident. It has always been noted that when the temperature of the water they live in becomes low the fish become sluggish and cease to feed. The temperature of the water in the tanks has therefore never been allowed to fall below 4° C. in the coldest weather, this being effected by passing it through pipes heated in a small coke heater. This last summer the fish have suffered from the heat, the temperature of the water averaging 16° C., and sometimes reaching as high as 20° C. The temperature of the ocean surface water outside the Heads ranges from a little over 5° C. in winter to 9° C. in summer, while at depths of from 20 to 50 fathoms it is probably more uniformly between 7° and 9° C. We have not the apparatus or the opportunities of recording these deeper-ocean temperatures.

Occasional reports are still received of turbot being brought in to various ports by fishermen, but no authentic information of the occurrence has yet been obtained, nor have actual specimens been received. That the fish is in New Zealand waters is highly probable, and it may be met with some day, just as has happened in the case of both the quinnat and Atlantic salmon. Meanwhile the Board would suggest to the Government the advisability of renewing the introduction of this fish as soon as the conditions become more favourable. If once naturalized in these southern waters and available as a food fish its value would be very great. The average *wholesale* price of these fish in Britain in 1921 (the last year for which we have figures) was 1s. 2d. per pound.

Lobsters.—In the last annual report Mr. W. Adams, the curator of the station, stated that the stock of these crustaceans was reduced to three males and two females. Two males have since died, probably from old age, as the animals are at least twenty years old. The females both carried large batches of eggs, which hatched out during the year, and were estimated to produce 10,000 larvæ.

This stock should also be renewed as soon as convenient. No practical response has been made to the offer of a bonus for the introduction of these animals, an offer which has been before the shipping people for the past two years. Meanwhile, as a very large number of lobsters have been liberated from time to time, variously estimated from one to two million larvæ, besides a few adult animals, the chances are all in favour of their being met with in our seas. These crustacea almost

certainly have habits somewhat similar to those of our common crayfish (*Palinurus lalandii*). The females keep mostly under cover in rocky ground, no doubt as a protection for the eggs, which they carry under the abdomen; while the males wander about, frequently in considerable numbers. Male crayfish are often encountered on the march, and are then taken in great numbers. When lobsters are met with it will probably be in numbers and not singly, unless they are taken in suitable traps or lobster-pots.

European Crabs.—These were turned out in the sea not long after their introduction into New Zealand. These crabs cannot stand low temperatures, and in European waters they always leave the coast before winter, to find in deeper waters temperatures that are higher and more uniform than prevail inshore. The deaths which occurred among the imported crabs during the winter of 1913 were probably due to the lowered temperatures of the ponds at the hatchery. The majority of the survivors were therefore liberated, and, in addition, over thirty million ova were set free. No reports of these have ever been received, but the probabilities of their ultimate rediscovery are no doubt as great as in the case of the lobsters.

Pilchards and Sprats.—For considerable time past the possibility of developing a fishery of the pilchards and sprats which are found on the coast has presented itself to our minds, but it was felt that the available knowledge as to the occurrence of all native Clupeids, or members of the herring family, was very fragmentary. It was therefore felt desirable that the staff of the hatchery should make this subject a special line of work, and in August last instructions were issued to Messrs. Adams, Young, and Broadley to endeavour to obtain all possible information as to the occurrence, migrations, and life-histories of these species of fish. A herring-net, imported some years ago by the late Mr. Sullivan, was secured, and the launch has frequently been out trawling on the coast from Papanui Inlet to Blueskin Bay. Dredging was also carried on at a depth of 60 fathoms, about nine miles east of Otago Heads. Up to the present the results, as far as the Clupeids are concerned, have been disappointing. In his annual report to the Board Mr. Adams states that "So far we have not seen any number of these fish that were at a safe distance off the shore, so as to allow the trawl to be worked. Sprats were reported to be in vast numbers off The Nuggets during the latter part of January, but so far only small shoals of these fish have been seen at Cape Saunders, where they usually make their first appearance in these waters. Since January the stomachs of numbers of fish have been examined, but none contained sprats. I have always found that when the sprats are on the surface of the water they are trying to escape from the barracouta, which are attacking them. Through the summer, whale-feed has been very plentiful, and it would appear as though the barracouta are satisfied with this kind of food, as the stomachs of not only the barracouta, but also groper, kingfish, ling, and cod, contain little else but whale-feed. Our own experience with the blue cod we have in the ponds is that they prefer whale-feed to any other feed. Sprats are usually in quantity in these waters until the end of June, so we have yet time to prove whether surface trawling is the best method to secure large numbers of these small fish."

This fishery may yet prove to be of great value to New Zealand. On the 14th December of last year an interesting letter was received by the chairman from Messrs. Angus Watson and Co. (Limited), of Newcastle-upon-Tyne, dated the 24th October, in which they say:—

"As you perhaps know, there is a large industry carried on in Norway at present in the packing of fish which is locally known as "brisling," but which is really a member of the *Clupea sprattus* family, the character of the fish being influenced by the local characteristics. For some time it has been evident that the supplies of this fish were not adequate to meet the requirements of the trade, and we have been looking for another source of supply. I have been informed on more than one occasion that large quantities of a similar fish are found in the New Zealand bays or fiords, but I have never been able to get any authentic information on this subject, and very often casual observers regard supplies as important which from an industrial point of view are really unimportant. It would be very helpful to me to know whether, in fact, the *Clupea sprattus* is common to the New Zealand waters, and, if so, whether the fish are found all round your coast, or only at certain points, or at certain seasons of the year. If you can easily obtain the following information for me, I would greatly value it:—

"(1.) Are large quantities of the fish available, and, if so, do adequate facilities at present exist for catching them?

"(2.) Are the supplies seasonal or periodic, and, if not, is the fish in better condition at some periods of the year than at others?

"(3.) To what size do the fish commonly grow, stating the average length in inches from snout to tail?

"(4.) Would adequate supplies of women workpeople be available if a packing industry were established in New Zealand, and what would be the average daily wage paid to such people?

"(5.) If the fish is available, would it be possible for you to send me a small quantity packed in salt or in spirits, so that I could examine the size and general condition of the fish?

"I would hesitate to trouble you in this matter had I not felt that the industry was one which would be immensely valuable to New Zealand if it could be developed."

This letter was forwarded to you for your information and consideration. By the return mail, on the 16th December, the chairman replied at length to Messrs. A. Watson and Co., stating that there was little accurate information on the subject at present, but that investigations were being made. Question 5 was, of course, answered in the negative.

In acknowledging this communication Messrs. A. Watson and Co. wrote again on the 5th February, and stated, *inter alia*,—

"We take it that there would probably be immigration laws against the importation of foreign labour to cope with the pack. If not, quite conceivably Norwegian labour could be transported for the purpose. The labour prices that you name sound so abnormally high that we should imagine it would be very difficult to make a commercial product with this type of work."

We quote this correspondence at length because it shows that the Board was justified in commencing this investigation. Until, however, proper drift-nets are available, progress must be slow and unsatisfactory.

Ova of Flat Fish.—The number of ova hatched out this past season was smaller than usual. The following is taken from Mr. Adams's report: "As is usual during August, the spawning season of the flat fish, the weather was mostly stormy. The fishermen reported it to be the worst month experienced for some years past. Owing to the unfavourable weather we were only engaged in trawling on four occasions during the early part of August. Soles were scarce, but the few taken were in good condition and ready for spawning. Common soles (*Pektorhamphus novae-zealandiae*) and lemon soles (*Pelotretis flavilatus*) were the principal fish caught. Brill (*Ammotretis guntheri*) were exceptionally scarce, only one male being taken during the four days spent in trawling. A few brill taken by the steam trawlers were examined, but we were unable to secure any ripe female fish. From the 16th to the 27th August no trawling was carried out by any of the boats, the weather being too severe."

On the 28th August two hauls of the trawl were made off Pipikariki, halfway betwen Otago Heads and Cape Saunders, when a considerable number of fish—soles, lemon soles, brill, and common flounders—were taken. All were spent and in very poor condition.

Rock-oysters.—Mr. Adams reports: "The cultivation of the southern rock-oysters was continued throughout the year. The largest oysters, which measure 2 in. in diameter, have not increased in size during the past twelve months. This is only what is to be expected, as, of the hundreds which have been attached to the walls of the ponds for at least ten years, I have only found a few which measured $2\frac{1}{4}$ in. The smallest oysters, this year's spat, on the roofing-slates, measured $\frac{5}{8}$ in. These slates have not proved so suitable as the heavier concrete plates, as, being brittle, several have been broken when being cleaned of marine growth. Trouble is also experienced with them during windy weather."

Suter, in his "Manual of the New Zealand Mollisca," gives the length of the Dunedin rock-oyster (*Ostrea tatei*) at 66 mm. and the height at 60 mm., which are respectively $2\frac{5}{8}$ in. and $2\frac{3}{8}$ in.; but this is a somewhat extreme size. The animal is nearly as large as the Auckland rock-oyster (*O. glomerata*), though the shell of the latter is about 80 mm. (or $3\frac{1}{8}$ in.) in diameter.

Collections.—Mr. Adams states in his report: "As much time as possible was spent in seining on the banks inside the harbour. The small-mesh net in the bunt allowed us to catch garfish and other small species during their season. These fish and all rare specimens were handed to Mr. Young. The observation-tanks were mostly stocked with fish taken by the seine net, and the greater part of the fish food used throughout the year was also caught inside the harbour. About a hundred fish have now been collected for a foreign order, and the greater part of this collection consists of species which are not common, and which have been somewhat difficult to secure."

Mr. S. Broadley, Assistant Curator, paid a visit of inspection to the outlying fishing-ports twice during the year. Visits were also paid by him to Milton and Clutha districts, in order to report on the proposed restricted fishing-areas. His district now includes Waikawa, and in consequence more of his time is taken up in his duties as local Inspector of Fisheries. The Dunedin fish-market was visited every week until October, when he received instructions that the market was to be inspected only once each month, and Port Chalmers weekly. The quantities and prices of the fish sold on the market during his visits have been recorded."

Mr. Maxwell Young, Biologist, has had a very busy year. The collection of fish for the College of Natural Science, Philadelphia, has been prosecuted steadily. The first shipment, mainly of local fish, was made in December last. At present date a further collection of forty-eight specimens is ready.

Professor Benham, of the University Museum, has been supplied with a varied collection of specimens during the year, consisting mainly of polychaetes, tunicates, and echinoderms.

Professor J. Malcolm, Professor of Physiology in Otago University, has been supplied with the epithelial islets of several fishes, notably blue cod and groper, for his researches on insulin; and also with considerable quantities of whale-feed, and red cod feeding on whale-feed, for his investigation on fish-oils and food-values. Dr. Malcolm's report on this material is as follows:—

"During the past, as in previous years, the Marine Station at Portobello has been of very great assistance in providing material for research work in this department. Mr. Maxwell Young went to a great deal of trouble to dissect out the minute islets of Langerhans from groper, blue cod, and various other varieties of fish. The identity of the islets having been established by microscopic examination, we are in a position to estimate the insulin present, and Dr. Stokes, of this department, is now engaged in this work. At present insulin is imported for the treatment of diabetes, but it may be necessary or economical at some future time to depend on local sources of supply, and the islets of fishes yield a powerful solution of the substance.

"Recently I have been obtaining from the station supplies of whale-feed and red cod taken at a time when the cod was feeding entirely on the former. The oil in both is being investigated with a view to obtaining some knowledge of the changes the oil undergoes in the body of the fish. During the winter Dr. Stokes and myself hope to be able to do some work directly on the living fish at the station. These facts speak for themselves. It would have been impossible to carry out such work without the facilities afforded by the station, and I sincerely hope that the Government will do more and more as time goes on to increase these facilities for research."

Mr. Harold J. Finlay, who last season undertook the preparation of a catalogue of the Mollusca of Otago Harbour and the adjacent sea, has been supplied with a large number of specimens from various sources by Mr. Young. Mr. Finlay has forwarded an interim report to the Board, which is of a somewhat technical nature. The concluding portion of it states that "Over two hundred species have been identified from the present rather small collections; a full list of these, and report on bathymetric range, distribution, &c., is, of course, withheld till further collections have been examined and more complete data obtained. . . . Interesting "finds" include a new species of *Pronucula*, making only the fifth member of this genus known; many separate valves of the true *Chlamys dichrous* (which has been confused with other species, but is a well-marked form, apparently restricted to deep water) . . . living specimens of *Verconella caudata*, *V. marshalli*, and *Cominella nassoides*, and several rare species of the Liotiidae. Some thirty new species have been separated, several belonging to genera not previously recorded from New Zealand. The molluscan fauna, on the whole, is very like that obtained by Captain Bollons in 50 fathoms near the Snares. Among the brachiopods obtained, the most interesting was the abundance of a new species of *Neothyris*, occurring together with *N. lenticularis* in the 60-fathom material."

Mr. Young has also supplied Mr. Marwick, Palæontologist to the Geological Survey, with marine Mollusca obtained from dredging. This material is wanted, as it would be of great use in clearing up problems of distribution and classification.

Mr. Raynor Bell, Professor of Clinical Dentistry in the University of Otago, who is continuing his researches on the development of teeth, has been supplied during the year with a number of the jaws of fishes, fixed and preserved for histological work.

Dr. Mortensen, of Copenhagen, has been supplied (through Professor Benham) with brittlestars of various species, together with a large number of specimens of *Goniocidaris umbulacrum*, collected in 60 fathoms. This species has previously been only rarely gathered.

During Health Week Mr. Young assisted the Public Health authorities with the identification, preservation, and setting up their fresh-fish exhibit. The regular routine work of the station carried on by Mr. Young includes—

(*a.*) Monthly measurement of the rate of growth of various species of fish in the hatchery tanks.
(*b.*) Examination of stomach-contents of all fish caught.
(*c.*) Rate of growth of Algae on wood slabs suspended in the ponds.
(*d.*) Collection of tow-netting. This work has been temporarily suspended on account of the impossibility of getting the mass of material already accumulated worked up.
(*e.*) Cross-indexing and card-cataloguing of various scientific journals in the library. The following have been completed: Bulletins of the United States Fish Commission, from 1889 onwards; Reports of the United States Fish Commission, from 1887 onwards; Journal of the British Marine Biological Association, to date.

This work will prove of great value to every research student who seeks to make use of the hatchery laboratory and library. The reports of the Scotch Fishery Board are also being indexed, and a basic list of New Zealand fishes as drawn up by Mr. Waite, but without any kind of index.

Mr. Young joined the scientific expedition to the Chatham Islands, organized by the Otago Institute, and was absent part of January and February. He has brought back considerable collections, and has left some formalin with Mr. Seymour, of Wharekauri, who is an enthusiastic and careful observer, and who will endeavour to preserve specimens for him. The scientific results of this expedition will be published in due course.

During the past year Messrs. Jenkin and Ellis, of the Dunedin School of Art, have paid several visits to the hatchery during the spring months, along with some of their students, for the purpose of studying and drawing the various species of fish and other marine animals in the aquarium-tanks. A good deal of the work produced by them was exhibited at the Art Society's annual exhibition, and created considerable interest.

The usual meteorological returns have been regularly kept and furnished to the Government Meteorologist.

The Board desires again to express its appreciation of the care and close attention given to the station by Messrs. Adams and Broadley. The launch and dinghy have been regularly slipped and painted; the windmill has now been in continual running for seven years, and, though kept in good order, is showing signs of wear, and will require a very thorough overhaul. The pump-engine is kept in first-class order, and is used whenever periods of windless weather prevent the working of the windmill. The dwellinghouses, hatchery buildings, tanks, ponds, and all iron and woodwork are continually overhauled. It will be necessary ere long to renew the iron piping of the hatchery building, which has been in continual use for twenty years. This will entail a large expense and necessitate a temporary stoppage of all tank work. It is perhaps desirable that this should be postponed until next spring or summer, when danger of frost is past.

The number of visitors to the station has been unusually large this past season, and the observation-tanks have been kept well supplied with twenty or more species of fish and numerous other interesting forms of marine life. This exhibit has considerable educational value.

The Board would again respectfully urge on the Government the urgent necessity of a catalogue of the fishes of New Zealand.

On behalf of the Board.

GEO. M. THOMSON, Chairman.

The Hon. the Minister of Marine, Wellington.

TABLES.

TABLE SHOWING THE NUMBER OF STEAM TRAWLERS, OIL-ENGINE TRAWLERS, AND OTHER VESSELS EMPLOYED IN LINE AND NET FISHING, WITH THE NUMBER OF FISHERMEN EMPLOYED, AND APPROXIMATELY THE TOTAL NUMBER OF PERSONS ENGAGED IN THE FISHING INDUSTRY, AT EACH PORT, FOR THE YEAR ENDED 31ST MARCH, 1924.

(Compiled from the returns given in the District Inspectors' reports.)

Name of Port.	Steam Trawlers.	Oil-engine Trawlers.	Line and Net Fishing Vessels.	Number of Persons employed.		
				Fishermen.	Others.	Total.
Russell	..	..	34	101	..	101
Whangarei ..	..	..	12	20	6	26
Hokianga ..	..	..	8	11	..	11
Kaipara	..	..	34	53	15	68
Auckland (including Thames, Coromandel, and Manukau)	8	..	191	498	255	753
	2*	3*	..	..	..	..
Tauranga ..	1	..	28	30	..	30
Gisborne ..	1	..	18	38	10	48
Napier	9	..	84	189	4	193
New Plymouth ..	1	..	27	45	16	61
Wanganui ..	..	..	3	8	..	8
Foxton	..	..	24	35	6	41
Wellington ..	1	..	106	175	110	285
Picton	1	..	43	76	..	76
Blenheim ..	..	3	6	12	4	16
Nelson	..	3	87	136	..	136
Westport ..	..	2	15	20	..	20
Greymouth ..	1	1	9	14	6	20
Hokitika ..	..	..	1	1	..	1
Kaikoura ..	..	..	20	40	3	43
Rangiora ..	..	..	17	17	..	17
Kaiapoi	..	..	60	60	..	60
Southbridge ..	..	..	16	25	6	31
Lyttelton ..	2	4	20	27	3	30
Akaroa	..	1	12	30	..	30
New Brighton ..	..	..	4	5	..	5
Timaru	1	19	..	22	8	30
Oamaru	..	..	9	12	..	12
Moeraki	..	..	28	33	..	33
Otago district ..	3	8	86	175	110	285
Invercargill ..	..	..	30	100	16	116
Bluff	4	..	52	120	15	135
Stewart Island ..	..	..	29	73	11	84
Chatham Islands†	..	..	..	..	..	..
Totals ..	35	44	1,113	2,201	604	2,805

* Seiners. † No return to hand.

TABLE SHOWING THE VARIOUS KINDS OF FISH CAUGHT AND APPROXIMATELY THE TOTAL QUANTITIES AND VALUE OF FISH LANDED AT THE DIFFERENT FISHING-PORTS FOR THE YEAR ENDED 31ST MARCH, 1924.

(Compiled from the figures given in the District Inspectors' reports for the year.)

Name of Port.	Principal Kinds of Fish caught.	Quantity.	Total Value.
		Cwt.	£ s. d.
Hokianga ..	Flounder, mullet, kahawai, and snapper	No quantity supplied.	
Russell	Flounder, snapper, mullet, crayfish	11,164	7,000 0 0
Whangarei ..	Mullet, flounder, hapuku, snapper, tarakihi, crayfish, garfish ..	2,712	5,226 5 0
Kaipara	Flounder, mullet, snapper, kahawai, trevally	4,600	7,350 0 0
Auckland ..	Snapper, tarakihi, john-dory, flounder, sole, mullet, hapuku, moki, gurnard, kahawai, rock-cod, frost-fish, kingfish, crayfish, mussel	106,783	100,023 0 0
Thames ..	Flounder, snapper, gurnard, kahawai, mullet, hapuku, kingfish, tarakihi, butterfish, barracouta, john-dory, eel, herring	15,506	19,900 0 0
Tauranga ..	Hapuku, flounder, trevally, kahawai, snapper, gurnard, moki, kingfish, mullet, garfish	2,000	3,733 6 8
Gisborne ..	Flounder, gurnard, hapuku, moki, red-cod, snapper, sole, tarakihi, crayfish	2,078	2,409 0 0
Napier ..	Flounder, sole, brill, snapper, tarakihi, moki, gurnard, hake, kingfish, butterfish, frost-fish	17,932	23,077 0 0
	Crayfish	850 bags	1,593 15 0
	Shell-fish	250 ,,	156 5 0
		Cwt.	
New Plymouth ..	Snapper, tarakihi, hapuku, cod, kahawai, crayfish	640	896 0 0
Wanganui ..	Snapper, flounder, hapuku, blue-cod, kahawai, mullet, barracouta, gurnard	630	853 1 6
Foxton	Flounder, snapper, hapuku, kahawai, whitebait	480	2,020 0 0
Wellington ..	Groper, moki, butterfish, blue-cod, hake, tarakihi, gurnard, flounder, sole, snapper, ling, warehou	42,850	74,439 15 8
Picton	Blue cod, butterfish, moki, crayfish, hapuku, oyster	2,800	3,500 0 0
Blenheim ..	Blue cod, red cod, flounder, sole, snapper, ling, groper, gurnard, kahawai, tarakihi, hake, garfish, crayfish, butterfish, kingfish, hapuku, whitebait	1,000	1,950 0 0
Nelson	Snapper, flounder, gurnard, crayfish, hapuku, blue cod, kahawai, mackerel, red cod	2,964	2,211 0 0

TABLE SHOWING THE VARIOUS KINDS OF FISH CAUGHT, ETC.—*continued.*

Name of Port.	Particular Kinds of Fish caught.	Quantity.	Total Value.
		Cwt.	£ s. d.
Westport ..	Flounder, sole, snapper, groper, herring, gurnard, turbot, ling, crayfish, kahawai, whitebait	845	1,948 5 0
Greymouth	Flounder, blue cod, red cod, groper, sole, snapper, whitebait, herring	90	500 0 0
	Whitebait	180	1,000 0 0
Hokitika	Flounder, kahawai, red cod, snapper, herring, whitebait ..	45	135 0 0
	Whitebait	640	3,500 0 0
Kaikoura ..	Groper, trumpeter, ling, kingfish, butterfish, blue cod, flounder	3,575	6,250 0 0
Rangiora ..	Whitebait, flounder, herring	16	237 0 0
Kaiapoi	Whitebait, herring, flounder, kahawai, red cod	400	2,000 0 0
Southbridge ..	Flounder, herring, red cod	560	3,300 0 0
Lyttelton ..	Barracouta, butterfish, blue cod, red cod, flounder, groper, gurnard, ling, kingfish, moki, skate, sole, trumpeter, trevally, warehou, tarakihi, crayfish	2,000	3,700 0 0
Akaroa	Groper, ling, tarakihi, butterfish, flounder, sole, moki, gurnard, hake, barracouta, warehou, garfish, trevally, crayfish	4,000	7,450 0 0
Timaru	Brill, flounder, sole, groper, ling, red cod, gurnard, kingfish, barracouta, elephant-fish	6,400	6,500 0 0
Oamaru	Groper, red cod, blue cod, moki, barracouta, ling, warehou, trevally, tarakihi	1,658	1,560 0 0
Moeraki	Blue cod, red cod, moki, trumpeter, groper, barracouta, ling ..	3,005	3,520 0 0
Otago District ..	Groper, kingfish, ling, barracouta, trumpeter, mullet, gurnard, moki, trevally, kahawai, red cod, tarakihi, elephant-fish, blue cod, bream, garfish, flounder, sole, brill, skate	45,900	45,900 0 0
Invercargill	Blue cod, red cod, ling, kingfish, barracouta, groper, moki, flounder, sole, whitebait, crayfish	2,150	4,000 0 0
	Whitebait	60	1,500 0 0
Bluff ..	Blue cod, groper, flounder, sole, trumpeter, trevally, whitebait	11,667	29,309 0 0
	Whitebait	852	1,182 0 0
Stewart Island ..	Blue cod, groper, trumpeter, moki, butterfish, crayfish ..	6,690	10,665 10 0
Chatham Islands	Blue cod, hapuku, trumpeter, tarakihi	No return	supplied.
	Totals	304,872	£390,475 3 10

TABLE SHOWING THE NUMBER OF SACKS AND VALUE OF THE OYSTERS DISPOSED OF IN THE DOMINION AND EXPORTED FOR THE YEAR ENDED 31ST DECEMBER, 1923.

Locality.	Disposed of in Dominion.	Exported.		Total Number.		Total Value (Wholesale).
Dredge-oysters.	Sacks.	Sacks.	Cases.	Sacks.	Cases.	£ s. d.
Foveaux Strait	27,919½	866	330	28,785½	330	17,991 0 0
Rock-oysters.						
Bay of Islands (including Whangarei)	1,096	..	..	1,096	..	1,132 19 0
Kaipara	1,381	..	..	1,381	..	1,458 9 0
Hauraki Gulf	4,324	..	..	4,324	..	4,540 4 0
Totals	34,720½	866	330	35,586½	330	£25,122 12 0

TABLE SHOWING THE TOTAL QUANTITY AND VALUE OF FISH IMPORTED INTO AND EXPORTED FROM NEW ZEALAND DURING THE YEAR ENDED 31ST DECEMBER, 1923.

Fish imported.

Description of Fish.	Quantity.	Value. £	Description of Fish.	Quantity.	Value. £
Anchovies, salted (in bulk)	10 cwt.	38	Fish, preserved in tins ..	2,675,198 lb.	110,246
Oysters, fresh	Nil	Nil	Fish, smoked, dried, pickled, and salted	1,793 cwt.	5,039
Other fish, fresh or frozen	Nil	Nil			

Fish exported.

Description of Fish.	New Zealand Produce.		Not New Zealand Produce.	
	Quantity.	Value.	Quantity.	Value.
Anchovies, salted (in bulk)	Nil	Nil	Nil	Nil
Oysters, fresh	71,680 doz.	£762	Nil	Nil
Other fish, fresh or frozen	17,109 cwt.	£44,100	Nil	Nil
Fish, preserved in tins	196,917 lb.	£22,730	64,447 lb.	£2,386
Fish, smoked, dried, pickled, and salted	1,213 cwt.	£2,498	Nil	Nil

Table showing Number and Species of Whales taken, and Value of Products.

Whaling-station.	Number of Whales taken	Species.	Yield of Oil.	Quantity of Bonedust or Fertilizer.	Total Value.
			Tons.		£
Whangamumu	62	Humpback ..	340	50 tons bonedust	9,000
Marlborough Sounds and Cook Strait ..	17	Humpback ..	106	..	2,226
Totals	79	..	446	..	£11,226

Statement of Receipts collected for the Year ended 31st March, 1924.

	£ s. d.	£ s. d.
Shipping and Seamen Act—		
Fees for engagement and discharge of seamen, and sale of forms	4,026 15 5	
Surveys of steamers and sailing-vessels	4,666 2 6	
Measurement of ships	22 10 0	
Examination of masters, mates, and engineers	369 12 0	
Light dues	76,867 17 2	
Fines and forfeitures	1,105 4 7	
Sundry receipts	107 7 2	
		87,165 8 10
Merchant Shipping Act—		
Sale of forms, &c.	..	96 8 6
Harbours Act—		
Pilotage, port charges	768 13 1	
Foreshore rents and sundry receipts	2,904 0 10	
		3,672 13 11
Fisheries Act—		
Sale of oysters	7,355 17 6	
Sundry receipts	925 14 1	
		8,281 11 7
Inspection of Machinery Act—		
Inspection of boilers and machinery	16,567 9 3	
Examination of engine-drivers	634 18 0	
Sundry receipts	1 16 6	
		17,204 3 9
Tramways Act—		
Examination of electric-tram drivers	..	104 0 0
Grand total	..	£116,524 6 7

Table showing the Total Payments of the Marine Department during the Year ended 31st March, 1924.

Division of Department.	Salaries, Wages, Bonuses, &c.	Travelling Allowances and Expenses.	Postages, Telegrams, and Telephones.	Rent, Office Equipment, Cleaning, Printing and Stationery.	Miscellaneous and Contingencies.	Totals.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Head Office ..	6,961 16 4	223 2 8	549 5 1	672 19 7	26 3 0	8,433 6 8
Harbours	2,531 12 10	221 15 0	25 3 7	123 1 9	3,377 17 5 (*a*)	6,279 10 7
Lighthouses ..	17,467 8 0	225 0 9	51 1 4	..	7,759 1 2 (*b*)	25,502 11 3
Meteorological Office	1,704 2 3	21 9 6	3,439 8 1	482 17 9	23 7 9	5,671 5 4
Mercantile Marine,&c.	11,042 6 0	994 7 7	233 4 4	623 2 9	528 14 2 (*c*)	13,421 14 10
Inspection of Machinery	18,049 10 3	5,051 13 0	447 8 6	822 16 6	449 17 2 (*d*)	24,821 5 5
Fisheries	3,168 4 2	506 2 11	..	95 12 11	7,021 15 5 (*e*)	10,791 15 5
Government steamers	10,591 2 11	..	..	..	10,563 17 8 (*f*)	21,155 0 7
Miscellaneous services	..	..	..	..	1,572 16 9 (*g*)	1,572 16 9
Totals ..	71,516 2 9	7,243 11 5	4,745 10 11	2,820 11 3	31,323 10 6	117,649 6 10

(*a*.) Includes £810 10s., buoys and beacons and harbour maintenance; £403 9s., engine for Hokianga launch; £75, grant for assistance to Mokau Harbour Board; £750, grant to Nelson Harbour Board for compensation on readjustment of rating-area; £186 2s. 3d., installation of automatic light on Kaipara South Head; £67 5s. 2d., prosecutions under Harbours Act; £1,007 4s. 11d., purchase of launches for Inspectors of Beaches.

(*b*.) Includes £97 12s. 9d., books and magazines; £502 5s. 6d., carriage of mails; £87 16s. 3d., fencing; £213 13s. 9d., fog-signals, cartridges, and maintenance; £292 11s. 2d., installation of automatic light, Somes Island; £771 16s., keepers' station allowances; £489 16s. 1d., maintenance automatic lights; £3,879 18s. 7d., oil and stores; £448 18s. 5d., purchase and upkeep of horses; £901 9s. 11d., repairs to lighthouses, dwellings, &c.

(*c*.) Includes £223 13s. 11d., administration of Shipping and Seamen Act, &c.; £216 19s. 5d., expenses connected with examinations.

(*d*.) Includes £65 10s. 11d., advertising, books, &c.; £129 15s. 6d., expenses connected with examinations; £230 6s. 1d., Magisterial inquiries.

(*e*.) Includes £1,498 0s. 11d., expenses in connection with salmon-fisheries; £775, grant for maintenance of Portobello Fish-hatcheries; £506 12s. 6d., maintenance and working-expenses of launches; £4,409 16s. 8d., picking and sale of oysters; £569 0s. 8d., planting oysters.

(*f*.) Stores and general maintenance of Government steamers.

(*g*.) Includes £55, maintenance of Waitapu leading-lights; £361 10s. 11d., checking overcrowding of steamers; £70 15s. 5d., maintenance of castaway depots; £65, maintenance of leading-lights, Piako River; £486 12s. 2d., "New Zealand Nautical Almanac"; £70 19s. 6d., relief of distressed seamen; £216 11s. 1d., repairs to beacon, Jackson's Head; £550, preparation of tide-tables.

TABLE SHOWING TOTAL COST OF MAINTENANCE OF NEW ZEALAND COASTAL LIGHTHOUSES FOR THE YEAR ENDED 31ST MARCH, 1924.

Name of Lighthouse.	Salaries and Wages.	Oil consumed.		Stores and Maintenance.	Totals.
		Gallons.	Value.		
	£ s. d.		£ s. d.	£ s. d.	£ s. d.
Akaroa Head	476 10 8	614	43 9 10	132 9 1	652 9 7
Brothers	898 0 10	695	49 4 7	217 0 0	1,164 5 5
Cape Brett	730 8 6	699	49 10 3	145 11 0	925 9 9
Cape Campbell	499 5 0	700	49 11 8	171 6 9	720 3 5
Cape Egmont	482 9 3	709	50 4 5	131 0 7	663 14 3
Cape Foulwind	441 15 0	724	51 5 8	92 7 9	585 8 5
Cape Maria	688 5 5	819	58 0 3	92 6 3	838 11 11
Cape Palliser	416 0 1	741	52 9 9	89 7 1	557 16 11
Cape Saunders	479 5 0	607	42 19 11	110 9 1	632 14 0
Castlepoint	496 16 9	684	48 9 0	209 7 2	754 12 11
Centre Island	696 13 4	713	50 10 1	152 17 2	900 0 7
Cuvier Island	676 14 9	702	49 14 6	216 2 0	942 11 3
Dog Island..	769 1 1	579	77 4 0	197 7 4	1,043 12 5
East Cape	507 8 1	711	50 7 3	256 17 9	814 13 1
Farewell Spit	710 13 9	639	45 5 3	192 10 7	948 9 7
French Pass	284 6 8	206	20 4 2	53 18 2	358 9 0
Godley Head	517 15 10	689	48 16 1	146 14 7	713 6 6
Jack's Point	278 0 0	327	23 3 3	96 17 5	398 0 8
Kaipara Heads	787 17 1	814	57 13 2	227 13 1	1,073 3 4
Kahurangi Point	700 19 8	647	45 16 7	179 10 5	926 6 8
Manukau Heads	451 15 0	632	44 15 4	114 11 5	611 1 9
Moeraki	489 1 8	577	40 17 5	51 15 6	581 14 7
Mokohinou	625 7 0	639	45 5 3	238 9 11	909 2 2
Nugget Point	676 17 2	740	53 3 4	106 14 10	836 15 4
Pencarrow Head	531 8 4	730	51 14 2	160 13 4	743 15 10
Portland Island	718 6 1	805	57 0 5	172 5 4	947 11 10
Puysegur Point	702 9 5	771	54 12 3	228 1 3	985 2 11
Stephens Island	685 1 4	705	49 18 9	209 10 9	944 10 10
Tory Channel	100 0 0	184	24 10 8	..	124 10 8
Tiritiri	509 5 4	663	46 19 3	102 7 9	658 12 4
Waipapapa Point	481 8 4	749	53 1 1	193 19 1	728 8 6
Automatic lights	..	..	..	489 16 1	489 16 1
Totals	17,509 6 5	..	1,485 17 7	5,179 18 6	24,175 2 6

TABLE SHOWING THE NUMBER OF SEAMEN ENGAGED AND DISCHARGED IN NEW ZEALAND, AND THE FEES RECEIVED, FOR THE YEAR ENDED 31ST MARCH, 1924.

Port.	Engagements and Discharges, Foreign and Intercolonial Trade.				Engagements and Discharges, Home Trade.				Total Engagements.		Total Discharges.		Grand Totals.	
	Engagements.	Amount.	Discharges.	Amount.	Engagements.	Amount.	Discharges.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Auckland	2,867	282 1 0	2,758	268 5 0	3,347	285 5 0	3,470	299 11 0	6,214	567 6 0	6,228	567 16 0	12,442	1,135 2 0
Dunedin and Port Chalmers ..	809	81 0 0	860	84 14 0	740	65 6 0	649	56 6 0	1,549	146 6 0	1,509	141 0 0	3,058	287 6 0
Gisborne	20	1 13 0	15	1 10 0	109	7 19 0	88	6 9 0	129	9 12 0	103	7 19 0	232	17 11 0
Greymouth	31	3 2 0	36	3 12 0	120	9 19 0	113	9 9 0	151	13 1 0	149	13 1 0	300	26 2 0
Hokianga	..	..	3	0 6 0	..	..	1	0 2 0	..	..	4	0 8 0	4	0 8 0
Invercargill	39	3 18 0	25	2 10 0	24	2 7 0	19	1 17 0	63	6 5 0	44	4 7 0	107	10 12 0
Kaipara	2	0 4 0	2	0 4 0	..	..	1	0 2 0	2	0 4 0	3	0 6 0	5	0 10 0
Lyttelton	587	58 2 0	515	51 4 0	1,267	113 16 0	1,148	103 7 0	1,854	171 18 0	1,663	154 11 0	3,517	326 9 0
Napier	29	2 18 0	20	2 0 0	368	28 5 0	379	27 15 0	397	31 3 0	399	29 15 0	796	60 18 0
Nelson	..	..	..	..	683	53 10 0	666	52 5 0	683	53 10 0	666	52 5 0	1,349	105 15 0
New Plymouth	63	6 6 0	52	5 4 0	37	3 2 0	38	3 4 0	100	9 8 0	90	8 8 0	190	17 16 0
Oamaru	4	0 8 0	2	0 4 0	9	0 18 0	8	0 16 0	13	1 6 0	10	1 0 0	23	2 6 0
Onehunga	..	..	..	..	408	31 0 0	378	29 0 0	408	31 0 0	378	29 0 0	786	60 0 0
Patea	..	..	..	..	54	2 7 0	54	2 5 0	54	2 7 0	54	2 5 0	108	4 12 0
Picton	1	0 2 0	4	0 8 0	18	1 16 0	13	1 6 0	19	1 18 0	17	1 14 0	36	3 12 0
Timaru	26	2 12 0	15	1 10 0	73	7 2 0	63	6 4 0	99	9 14 0	78	7 14 0	177	17 8 0
Wairau	..	..	..	..	17	1 1 0	16	0 19 0	17	1 1 0	16	0 19 0	33	2 0 0
Wanganui	4	0 8 0	9	0 18 0	68	6 6 0	62	6 4 0	72	6 14 0	71	7 2 0	143	13 16 0
Wellington	3,835	354 9 0	3,743	347 19 0	2,264	198 12 0	2,522	213 3 0	6,099	553 1 0	6,265	561 2 0	12,364	1,114 3 0
Westport	18	1 12 0	19	1 4 0	17	1 14 0	17	1 14 0	35	3 6 0	36	2 18 0	71	6 4 0
Whangape	..	..	..	..	13	1 6 0	13	1 6 0	13	1 6 0	13	1 6 0	26	2 12 0
Whangarei	1	0 2 0	..	..	4	0 7 0	5	0 9 0	5	0 9 0	5	0 9 0	10	0 18 0
Thames	13	1 6 0	16	1 9 0	..	..	..	..	13	1 6 0	16	1 9 0	29	2 15 0
Totals	8,349	800 3 0	8,094	773 1 0	9,640	821 18 0	9,723	823 13 0	17,989	1,622 1 0	17,817	1,596 14 0	35,806	3,218 15 0

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, 1924.

Name of Seaman.	Balance to Credit of the Estate on 31st March, 1923.	Amount received.	Amount paid.	Balance to Credit of the Estate on 31st March, 1924.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
S. Alexander	17 14 2	..	17 5 0	0 9 2
Alick	17 0 0	..	17 0 0	..
H. J. Burke	..	23 11 10	23 11 10	..
A. Devere	15 16 5	..	15 16 5	..
Dick	15 17 4	..	15 17 4	..
M. Fisher	28 6 8	..	28 6 8	..
E. Gale	..	5 4 9	5 4 9	..
P. Gunn	..	2 13 4	2 13 4	..
A. B. Henderson	..	12 12 1	12 12 1	..
W. H. Hopkins	1 9 6	9 17 10	11 7 4	..
S. Hughes	2 18 1	..	2 18 1	..
J. Karautu	2 14 0	..	2 14 0	..
B. Knip	10 5 0	0 12 3	0 2 0	10 15 3
E. Lockyer	71 18 6	..	71 18 6	..
Lupo	15 17 4	..	15 17 4	..
D. E. J. Macvean	..	2 11 5	2 11 5	..
A. Makeautu	..	2 3 0	2 3 0	..
B. Mangloo	..	8 15 6	8 15 6	..
J. Morley	..	1 11 10	..	1 11 10
T. Murray	76 15 9	..	76 15 9	..
D. G. McGregor	..	4 14 8	..	4 14 8
J. McKendrick	0 12 4	..	0 12 4	..
J. McLauchlan	3 14 8	..	3 14 8	..
F. Peterson	..	32 1 7	..	32 1 7
Puleiki	1 7 8	..	1 7 8	..
A. R. Rashley	..	23 14 4	23 14 4	..
R. Ritchie	..	6 13 7	6 13 7	..
F. H. Sainsbury	1 1 3	..	1 1 3	..
G. Smith	..	19 6 6	..	19 6 6
W. Suskoner	5 7 7	..	5 7 7	..
Tautonga	4 8 0	..	4 8 0	..
M. Titore	..	10 8 6	10 8 6	..
Tohata	15 17 4	..	15 17 4	..
Vasseau, C. R.	8 17 0	..	8 17 0	..
R. Wallace	7 8 1	..	7 8 1	..
J. Williams	5 17 6	..	5 17 6	..
	331 4 2	166 13 0	428 18 2	68 19 0

RETURN SHOWING AMOUNTS RECEIVED PRIOR TO 1ST APRIL, 1923, STANDING TO CREDIT OF ESTATES OF DECEASED SEAMEN, AND FOR WHICH CLAIMS HAVE NOT BEEN PROVED.

	£ s. d.
Ahlblad, A., late A.B., barquentine "Lyman D. Foster"	13 16 10
Carroll, D., late A.B., s.s. "Joan Craig"	4 14 0
Cossar, B., late cook, s.s. "Karamu"	3 8 5
Engdahl, A., late A.B., barquentine "Lyman D. Foster"	13 16 10
Flynn, W., late trimmer, s.s. "Kamo"	11 13 6
Fowler, C., late A.B., s.s. "Kokiri"	5 18 4
Geige, C., late A.B., s.s. "Alexander"	20 16 3
Gourlay, J., late fireman, s.s. "Kaiapoi"	3 16 9
Healey, P., late fireman, s.s. "Monowai"	8 14 7
Hogg, W., late cook, barquentine "Lyman D. Foster"	19 18 7
Kerfontain, P. M., late A.B., s.s. "Kaituna"	4 12 10
Larsen, A., late A.B., s.s. "Queen of the South"	7 16 0
Larseni, C., late fireman, s.s. "Manuka"	21 16 7
Linddahl, J., late A.B., s.s. "Kapuni"	5 2 5
Logan, J., late scullion, s.s. "Monowai"	5 11 10
Landgren, V., late A.B., barquentine "Lyman D. Foster"	13 16 10
Manchin, J., late fireman, s.s. "Maori"	26 12 9
Martin, Santiago, late A.B., barquentine "Antiope"	9 1 10
Millet, D., late A.B., barquentine "Lyman D. Foster"	17 17 2
Mitchelson, F., late A.B., s.s. "Te Teko"	4 14 11
McEvoy, J., late trimmer, s.s. "Koromiko"	0 6 10
McIntyre, A., late A.B., barquentine, "Lyman D. Foster"	11 8 7
O'Flaherty, B., late fireman, s.s. "Whangape"	1 17 8
Riley, J., late fireman, s.s. "Poherua"	8 9 0
Staw, C., late A.B., s.s. "Waihora"	7 1 4
Victor, C., late cook, s.s. "Kiritona"	17 8 4
Wold, H., late A.B., barquentine "Lyman D. Foster"	10 5 4
Wright (or Reece), E., late A.B., s.s. "Simplon"	18 16 1
	£299 10 5

Summary of Examinations for Certificates of Competency as Master, Mate, or Engineer.

Class of Certificate.	Auckland.			Wellington.			Lyttelton.			Dunedin.			Other Places.			Totals.		
	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.
Foreign-going masters and mates	5	3	8	22	24	46	3	5	8	..	..	..	..	..	..	30	32	62
Home-trade masters and mates	2	5	7	1	1	2	..	..	..	..	..	..	..	..	..	3	6	9
River-steamer masters ..	5	1	6	2	4	6	..	..	..	1	..	1	..	..	..	8	5	13
Master, fishing-boat or cargo-vessel under 25 tons register	4	1	5	..	..	..	..	..	..	..	..	..	..	..	..	4	1	5
Seagoing engineers (steam)	26	20	46	8	14	22	12	11	23	17	6	23	21	20	41	84	71	155
River-steamer engineers ..	1	4	5	1	2	3	..	..	..	..	..	..	9	3	12	11	9	20
Marine engine-drivers ..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	1	1	2
Seagoing engineers (mechanical power other than steam)	13	2	15	1	6	7	8	..	8	1	..	1	7	4	11	30	12	42
River engineers (mechanical power other than steam)	37	6	43	1	..	1	2	..	2	1	..	1	44	6	50	85	12	97
Totals ..	93	43	136	36	51	87	25	16	41	20	6	26	82	33	115	256	149	405

Return of Steamers and Oil-engine Vessels to which Certificates of Survey were issued in New Zealand during the Year ended 31st March, 1924. (River-limit Vessels not included.)

Name of Vessel.	Tons Register.	Nominal Horse-power of Steam-engines and Brake Horse-power of Oil-engines.	Indicated Horse-power of Steam-engines.	Nature of Engines.	Nature of Propeller.	Class of Certificate.	Minimum Number of following Classes of Crew Law requires to be carried.			
							Able Seamen.	Firemen.	Trimmers.	Greasers.
Akaroa	24	28	102	Compound ..	Screw ..	Home trade ..	1	1	..	..
Albsan	81	56	..	Triple expansion	Screw ..	Home trade ..	2	2	..	..
Alexander ..	185	72	360	Compound ..	Twin screw	Home trade ..	4	3	..	..
Apanui	135	28	214	Triple expansion	Screw ..	Home trade ..	4	2	..	..
Arahura ..	771	145	1,385	Triple expansion	Twin screw	Home trade ..	7	6	3	3
Arapawa ..	128	47	270	Triple expansion	Screw ..	Home trade ..	4	3	..	..
Atua	1,895	329	2,671	Triple expansion	Twin screw	Home trade ..	9	9	3	3
Aupouri ..	220	55	411	Triple expansion	Twin screw	Home trade ..	5	3	..	..
Awahou ..	151	74	285	Compound ..	Twin screw	Home trade ..	4	3	..	..
Baroona ..	54	24	149	Compound ..	Screw ..	Home trade ..	2	2	..	..
Breeze	286	84	382	Triple expansion	Screw ..	Home trade ..	5	3	..	..
Britannia ..	10	12	..	Oil-engine ..	Screw ..	Home trade ..	1	..	..	..
Calm	523	550	530	Triple expansion	Screw ..	Home trade ..	6	3	..	..
Canopus ..	835	250	1,058	Triple expansion	Screw ..	Home trade ..	6	3	2	3
Clansman ..	338	99	541	Compound ..	Screw ..	Home trade ..	5	3	..	..
Claymore ..	119	54	424	Triple expansion	Screw ..	Home trade ..	4	3	..	..
Corinna ..	791	141	819	Compound ..	Screw ..	Home trade ..	6	3	2	3
Countess ..	57	28	180	Compound ..	Screw ..	Home trade ..	2	2	..	..
Cowan	30	24	140	Compound ..	Screw ..	Home trade ..	1	2	..	..
*Cygnet	70	43	191	Compound ..	Screw ..	Home trade ..	2	2	..	..
Daphne ..	100	55	268	Compound ..	Screw ..	Home trade ..	2	2	..	..
Despatch ..	10	20	Under 50	Compound ..	Screw ..	Home trade ..	1	1	..	..
Dredge 222 ..	502	140	833	Compound ..	Twin screw	Home trade ..	6	3	2	3
Dredge 350 ..	488	117	641	Triple expansion	Twin screw	Home trade ..	6	3	..	..
Dunedin ..	125	500	1,053	Triple expansion	Twin screw	Home trade ..	4	3	2	3
Echo	98	90	..	Oil-engine ..	Twin screw	Home trade ..	2	..	..	..
Elsie	24	30	..	Oil-engine ..	Twin screw	Home trade ..	2	..	..	..
Endeavour ..	54	30	..	Oil-engine ..	Screw ..	Home trade ..	2	..	..	..
Excelsior ..	6	46	..	Oil-engine ..	Twin screw	Home trade ..	1	1	..	..
Express.. ..	36	25	89	Compound ..	Screw ..	Home trade ..	2	2	..	..
Fanny	55	30	133	Compound ..	Screw ..	Home trade ..	2	2	..	..
Flora	838	180	845	Compound ..	Screw ..	Foreign ..	6	3	2	3
Futurist ..	90	385	463	Triple expansion	Screw ..	Home trade ..	2	3	..	..
Gael	55	20	86	Compound ..	Screw ..	Home trade ..	2	2	..	..
Gale	287	450	357	Triple expansion	Screw ..	Home trade ..	5	3	..	..
Gilsan	81	56	..	Triple expansion	Screw ..	Home trade ..	2	2	..	..
Glenelg	156	75	273	Compound ..	Screw ..	Home trade ..	4	3	..	..
Hananui II ..	44	58	256	Triple expansion	Screw ..	Home trade ..	2	3	..	..
Hawera	92	31	174	Compound ..	Screw ..	Home trade ..	2	2	..	..
Hikurangi ..	163	64	266	Triple expansion	Screw ..	Home trade ..	4	3	..	..
Holmdale ..	295	99	485	Triple expansion	Screw ..	Home trade ..	4	3	..	..
*Houto	88	120	..	Oil-engine ..	Twin screw	Foreign ..	2	..	..	..
*Huia (Auckland)..	166	160	..	Oil-engine ..	Screw ..	Foreign ..	4	..	..	..
Invercargill ..	123	41	228	Compound ..	Screw ..	Home trade ..	4	2	..	..
Isabella de Fraine	76	60	..	Oil-engine ..	Twin screw	Home trade ..	2	..	..	..
Jane Gifford ..	6	19	..	Oil-engine ..	Twin screw	Home trade ..	1	..	..	..
John	134	90	242	Compound ..	Screw ..	Home trade ..	4	2	..	..
John Anderson ..	34	25	80	Compound ..	Screw ..	Home trade ..	2	1	..	..
Kaeo	146	120	..	Oil-engine ..	Twin screw	Foreign ..	4	..	..	..
Kahika	528	103	661	Triple expansion	Screw ..	Home trade ..	5	3	..	..
Kahu (Napier) ..	96	40	213	Compound ..	Screw ..	Home trade ..	2	2	..	..
Kaiaia	24	30	..	Oil-engine ..	Twin screw	Home trade ..	1	..	..	..

* Surveyed Twice.

RETURN OF STEAMERS AND OIL-ENGINE VESSELS TO WHICH CERTIFICATES OF SURVEY WERE ISSUED, ETC.—*continued.*

Name of Vessel.	Tons Register.	Nominal Horse-power of Steam-engines and Brake Horse-power of Oil-engines.	Indicated Horse-power of Steam-engines.	Nature of Engines.	Nature of Propeller.	Class of Certificate.	Minimum Number of following Classes of Crew Law requires to be carried.			
							Able Seamen.	Firemen.	Trimmers.	Greasers.
*Kaiapoi	1,246	201	1,005	Triple expansion	Screw	Foreign	8	3	2	3
Kaikorai	1,860	430	1,661	Triple expansion	Screw	Foreign	9	6	3	3
Kaimanawa	1,247	213	1,130	Triple expansion	Screw	Foreign	7	3	2	3
Kaitangata	1,195	200	846	Triple expansion	Screw	Foreign	7	3	2	3
Kaitoa	141	65	297	Compound	Twin screw	Home trade	4	3	..	..
Kaitoke	1,862	434	1,470	Triple expansion	Screw	Foreign	9	6	3	3
*Kaituna	1,208	200	999	Triple expansion	Screw	Foreign	7	3	2	3
Kaiwarra	1,847	2,000	1,807	Triple expansion	Screw	Foreign	8	6	3	3
Kakapo	949	90	740	Triple expansion	Screw	Foreign	7	3	..	..
Kamo	725	159	727	Triple expansion	Screw	Foreign	6	3	2	3
Kamona	903	117	741	Triple expansion	Screw	Foreign	6	3	2	3
Kapiti	114	35	216	Compound	Screw	Home trade	4	2	..	..
Kapua	6	31	..	Oil engine	Screw	Home trade	1	..	..	..
Kapuni	97	30	190	Compound	Screw	Home trade	2	2	..	..
Karaka	10	22	130	Triple expansion	Screw	Home trade	1	2	..	..
Karori	1,194	147	930	Triple expansion	Screw	Foreign	7	3	2	3
Katoa	1,382	335	1,492	Triple expansion	Screw	Foreign	8	6	3	3
Kauri	1,830	304	1,337	Triple expansion	Screw	Foreign	9	3	2	3
Kawatiri	1,856	429	1,693	Triple expansion	Screw	Foreign	8	6	3	3
Kawau	53	20	99	Compound	Screw	Home trade	2	1	..	..
Kekeno	18	50	..	Oil-engine	Screw	Home trade	..	..	..	..
Kennedy	131	38	..	Compound	Twin screw	Home trade	4	2	..	..
Kini	702	130	628	Triple expansion	Screw	Home trade	6	3	..	..
*Kiritona	75	150	..	Oil-engine	Twin screw	Home trade	2	..	..	..
Kittawa	708	120	734	Triple expansion	Screw	Foreign	6	3	..	..
Koau	77	170	..	Oil-engine	Twin screw	Home trade	2	..	..	..
*Kohi	20	90	..	Oil-engine	Twin screw	Home trade	2	..	..	..
Kokiri	713	135	813	Triple expansion	Screw	Foreign	6	3	2	3
Komata	1,294	260	1,218	Triple expansion	Screw	Home trade	8	3	2	3
Koromiko	1,541	313	1,325	Triple expansion	Screw	Foreign	8	6	3	3
Kotare	83	20	158	Compound	Screw	Home trade	2	2	..	..
Koutunui	98	26	153	Compound	Twin screw	Home trade	2	2	..	..
Kurow	1,564	333	1,398	Triple expansion	Screw	Home trade	8	6	3	3
Lady Eva	3	120	..	Oil-engine	Screw	Home trade	1	..	..	..
Lyttelton(Auckland)	24	108	294	Compound	Paddle	Home trade	1	3	..	..
Maheno	3,318	600	6,000	Turbine	Twin screw	Foreign	12	15	9	3
Mahoe	14	50	..	Oil-engine	Screw	Home trade	1	..	..	..
Mahurangi	90	80	210	Compound	Screw	Home trade	2	2	..	..
Mako	247	65	460	Triple expansion	Screw	Home trade	5	3	..	..
Manaia	630	104	832	Triple expansion	Twin screw	Home trade	7	3	2	3
*Manuka	2,813	357	3,572	Triple expansion	Twin screw	Foreign	11	9	6	3
Maori	1,567	5,600	5,859	Turbine	Triple screw	Home trade	9	15	9	3
Marama	3,992	1,500	5,070	Triple expansion	Twin screw	Foreign	13	12	6	3
Mararoa	1,329	530	2,935	Triple expansion	Screw	Home trade	8	9	6	3
Moeraki	2,715	357	3,476	Triple expansion	Twin screw	Foreign	11	9	6	3
Motu	109	160	..	Oil-engine	Twin screw	Home trade	4	..	..	..
Muriel	22	18	116	Compound	Screw	Home trade	1	2	..	..
Murihiku	369	70	497	Triple expansion	Twin screw	Home trade	5	3	..	..
Navua	1,773	220	1,641	Triple expansion	Twin screw	Home trade	9	6	3	3
Ngahere	556	118	747	Triple expansion	Screw	Foreign	6	3	..	..
Ngaio	718	130	932	Triple expansion	Screw	Home trade	7	3	2	3
Ngakuta	944	248	1,255	Triple expansion	Screw	Foreign	6	3	2	3
Ngapuhi	311	160	837	Triple expansion	Twin screw	Home trade	6	3	2	3
Ngatiawa	220	55	401	Triple expansion	Twin screw	Home trade	5	3	..	..
*Ngatoro	584	118	744	Triple expansion	Screw	Home trade and foreign	5	3	..	..
Nikau	98	55	281	Compound	Twin screw	Home trade	2	3	..	..
Nile	18	12	..	Compound	Screw	Home trade	1	1	..	..
Nora Niven	66	35	187	Triple expansion	Screw	Home trade	2	2	..	..
*Nor' West	6	15	..	Oil-engine	Screw	Home trade	1	..	..	..
Oban	24	20	..	Oil-engine	Twin screw	Home trade	1	..	..	..
Ohinemuri	52	30	123	Compound	Screw	Home trade	2	1	..	..
Onerahi	6	16	..	Oil-engine	Screw	Home trade	1	..	..	..
Opawa	54	120	..	Oil-engine	Screw	Home trade	2	..	..	..
Opihi	638	116	606	Triple expansion	Screw	Home trade	6	3	..	..
Opua	288	80	483	Triple expansion	Twin screw	Home trade	5	3	..	..
Orepuki	224	78	424	Compound	Screw	Home trade	4	3	..	..
*Oreti	72	30	182	Compound	Screw	Home trade	2	2	..	..
Orini	19	120	..	Oil-engine	Twin screw	Home trade	1	..	..	..
Otimai	111	160	..	Oil-engine	Twin screw	Home trade	4	..	..	..
Paroto	48	120	..	Oil engine	Twin screw	Home trade	2	..	..	..
Pegasus	10	30	..	Oil-engine	Screw	Home trade	1	..	..	..
Pearl Kasper	16	22	..	Oil-engine	Screw	Home trade	1	..	..	..
Pono	30	52	..	Oil-engine	Twin screw	Home trade	2	..	..	..
Progress	181	28	179	Compound	Screw	Home trade	4	2	..	..
Putiki	168	60	324	Compound	Screw	Home trade	1	3	..	..
Rakanoa	1,367	200	917	Triple expansion	Screw	Foreign	7	3	2	3
Rakiura	13	10	..	Oil-engine	Screw	Home trade	1	..	..	..
Rama	244	97	..	Triple expansion	Screw	Foreign	4	3	..	..
Rarawa	460	140	1,183	Triple expansion	Twin screw	Home trade	6	3	2	3
Regulus	232	150	594	Compound	Twin screw	Home trade	4	3	..	..
Rimu	169	95	618	Triple expansion	Twin screw	Home trade	4	3	..	..
Ripple	187	80	269	Triple expansion	Screw	Home trade	4	3	..	..
Rita	5	11	..	Compound	Screw	Home trade	1	1	..	..

* Surveyed twice.

RETURN OF STEAMERS AND OIL-ENGINE VESSELS TO WHICH CERTIFICATES OF SURVEY WERE ISSUED, ETC.—*continued.*

Name of Vessel.	Tons Register.	Nominal Horse-power of Steam-engines and Brake Horse-power of Oil-engines.	Indicated Horse-power of Steam-engines.	Nature of Engines.	Nature of Propeller.	Class of Certificate.	Minimum Number of following Classes of Crew Law requires to be carried.			
							Able Seamen.	Firemen.	Trimmers.	Greasers.
*Ronaki	129	270	..	Oil-engine ..	Twin screw	Home trade ..	2	..	..	..
Ruru	62	50	175	Compound ..	Screw ..	Home trade ..	2	2	..	..
Savaii	9	16	..	Compound ..	Screw ..	Home trade ..	1	1	..	..
Scot	16	16	..	Oil-engine ..	Screw ..	Home trade ..	1	..	..	..
Serfib	82	58	340	Triple expansion	Screw ..	Home trade ..	2	3	..	..
Simplon	69	75	..	Compound ..	Screw ..	Home trade ..	2	1	..	..
Southern Cross ..	403	117	467	Triple expansion	Twin screw	Foreign ..	6	3	..	..
Storm	186	70	240	Compound ..	Screw ..	Home trade ..	4	3	..	..
Te Aroha ..	57	85	..	Oil-engine ..	Twin screw	Home trade ..	2	..	..	..
Te Awhina ..	87	99	449	Triple expansion	Twin screw	Home trade ..	2	3	..	..
Terawhiti ..	102	99	846	Triple expansion	Screw ..	Home trade ..	4	3	2	3
Tees	247	78	385	Triple expansion	Screw ..	Foreign ..	4	3	..	..
Theresa Ward ..	9	95	481	Triple expansion	Screw ..	Home trade ..	1	3	..	..
Tiroa	94	31	130	Compound ..	Screw ..	Home trade ..	2	2	..	..
*Titoki	247	86	539	Triple expansion	Twin screw	Home trade ..	5	3	..	..
Tofua	2,634	354	3,030	Triple expansion	Twin screw	Foreign ..	11	9	6	3
Toiler	22	13	..	Compound ..	Screw ..	Home trade ..	1	1	..	..
Tuatea	58	28	198	Compound ..	Screw ..	Home trade ..	2	2	..	..
Tuhoe	98	120	..	Oil-engine ..	Twin screw	Home trade ..	2	..	..	..
Wahine ..	1,798	720	7,938	Turbine ..	Triple screw	Home trade ..	9	18	12	3
Waihora ..	2,993	410	1,619	Triple expansion	Screw ..	Foreign ..	10	6	3	3
*Waikonini ..	6	60	..	Oil-engine ..	Screw ..	Home trade ..	1	..	..	..
Waikouaiti ..	2,379	327	1,916	Triple expansion	Screw ..	Foreign ..	9	9	3	3
Waimea	207	100	382	Triple expansion	Twin screw	Home trade ..	4	3	..	..
Wainui	411	99	550	Compound ..	Screw ..	Home trade ..	6	3	..	..
Waipori	1,221	180	1,002	Triple expansion	Screw ..	Foreign ..	7	3	2	3
Waipu	76	50	183	Compound ..	Twin screw	Home trade ..	2	2	..	..
Wairau	56	20	134	Compound ..	Screw ..	Home trade ..	2	2	..	..
Wairoa	48	16	70	Compound ..	Screw ..	Home trade ..	2	1	..	..
Waitangi (Auckland)	74	66	285	Compound ..	Twin screw	Home trade ..	2	2	..	..
Wakatu	95	30	137	Compound ..	Screw ..	Home trade ..	2	2	..	..
Wanaka ..	1,505	280	1,185	Triple expansion	Screw ..	Home trade ..	8	3	2	3
Wanderer ..	23	60	..	Oil-engine ..	Screw ..	Home trade ..	1	..	..	..
Waterlily ..	23	20	..	Oil-engine ..	Screw ..	Home trade ..	1	..	..	..
Waverley ..	93	25	121	Compound ..	Twin screw	Home trade ..	2	1	..	..
Whakarire ..	449	120	642	Compound ..	Twin screw	Home trade ..	5	3	..	..
Whangape ..	1,900	280	1,185	Triple expansion	Screw ..	Foreign ..	8	3	2	3
Wingatui ..	1,344	1,300	1,102	Triple expansion	Screw ..	Foreign ..	7	3	2	3
Wootton ..	90	33	128	Compound ..	Screw ..	Home trade ..	2	2	..	..

*Surveyed twice.

RETURN OF SAILING-VESSELS SURVEYED DURING THE YEAR ENDED 31ST MARCH, 1924, WITH PARTICULARS OF TONNAGE, ETC.

(River-limit Vessels not included.)

Name of Vessel.	Tons Register.	Class of Certificate.	Minimum Number of Seamen required by Law to be carried.		
			Able Seamen.	Ordinary Seamen.	Apprentices or Boys.
*Alert	98	Home trade	2	1	..
Alma	20	Home trade	1	..	..
Altair	57	Home trade	2	..	..
Combine	24	Home trade	1	..	..
Deveron	26	Home trade	1	..	..
Elsie Mary	99	Home trade	2	1	..
Ethel Wells	19	Home trade	1	..	..
Haere	99	Home trade	2	1	..
Herald	73	Home trade	2	1	..
Huanui	99	Home trade	2	1	..
Huon Belle	25	Home trade	1	..	..
Kiatia	20	Home trade	1	..	..
Kitty Fraser	25	Home trade	1	..	..
Lindstol	354	Foreign	6	1	1
Louis Theriault	385	Foreign	6	1	1
Mapu	247	Foreign	5	..	1
Moa	99	Home trade	2	1	..
Ngahau	85	Home trade	2	1	..
Ngaru	66	Home trade	2	1	..
Rangi	86	Home trade	2	1	..
Rimu	21	Home trade	1	..	..
Rira	99	Foreign	2	1	..
Saucy Kate	25	Home trade	1	..	..
Seagull	25	Home trade	1	..	..
Talisman	70	Home trade	2	1	..
The Portland	59	Home trade	2	..	..
Waiti	17	Home trade	1	..	..
War Lord	99	Foreign	2	1	..
Ysabel	148	Foreign	4	..	1
Zingara	90	Home trade	2	1	..

* Surveyed twice.

Return of Wrecks and Casualties to Shipping reported to the Marine Department from the 1st April, 1923, to the 31st March, 1924.

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1923.													
Feb. 1	Edna, sail, 19 years	Ketch ..	15	3	..	Explosives, 19½ tons	Stranded; total loss, £2,000	..	North Parenga Bar ..	N.E.	10	At the Magisterial inquiry the master was exonerated, but on a rehearing before a Supreme Court Judge and two fresh assessors he was held to have committed an error of judgment in not altering course to northward and in not having the deep-sea lead handy, but the Court did not deal with his certificate and made no order as to costs	Henry J. Burke.
April 7	Elsie, o.e.v., 19 years	Ketch ..	24	5	..	Cement and corrugated iron	Stranded ..	..	Hokitika	W.	4	When crossing bar inward was carried by heavy southerly on to beach at north of entrance.	A. Ingram.
„ 9	Hurunui, s.s., 2 years	..	5,871	78	..	Refrigerating and general, 2,890 tons	Collision	..	Lyttelton	S.W.	9	Owing to strong south-west gale blowing ship slightly grazed port bow on wetsern mole when entering breakwater under tow, but no damage was done	J. [illegible] Burton Davies.
„ 9	Kaikoura, s.s., 19 years	F. and A.	5,631	70	..	Frozen meat, &c.	Fire	..	Off East Cape ..	S.W.	Fresh ..	A fire was discovered in starboard side No. 2 hold, and measures taken to suppress same, but flames eventually burst through the hatch, and, although subdued four hours later, heavy smoke was seen issuing from hatch at 10 p.m. when entering Auckland, and fire was extinguished at midnight	Myles M. Downton.
„ 14	Orepuki, s.s., 15 years	Schooner	225	17	..	General, 90 tons	Stranded ..	..	Lyttelton	S.	Fresh ..	When proceeding down channel vessel stopped to avoid launch in fairway, resulting in wind causing vessel to sag to leeward, touch ground and become fast	F. McKenzie.
„ 20	Ngapuhi, s.s., 23 years	F. and A.	311	33	30 (about)	General, 200 tons	Damaged by sea ..	..	Off Castle Rock, Coromandel Peninsula	N.E.	Strong..	A heavy sea struck vessel, damaging boats, &c., and washing sundry small gear overboard, but doing no damage to hatches or cargo	T. Haultain.
„ 26	Rama, s.s., 27 years	Schooner	244	21	4	Fish, 27 tons ..	Stranded ..	..	Kaingaroa, Chatham Islands	S.E.	6	Owing to smooth ground, anchor dragged and vessel drifted broadside on to reef at harbour-entrance, doing sundry damage to vessel's bottom	Ed. Cartner.
„ 23	Motu, aux., 2 years	Schooner	109	9	..	General, 150 tons	Touched bar; £9 damage	..	Opotiki Bar ..	..	Calm ..	Owing to continual shallow water on the bar, and although vessel was in the channel, she bumped on bar, crashing shelving-piece and diagonal and breaking rudder-band	W. Gash.
May 5	Waitangi, s.s., 34 years	Ketch ..	74	11	..	Chaff and general, 46 tons	Stranded ..	..	Patea	S.E.	Strong..	Owing to heavy set when entering harbour vessel refused to answer her helm, struck western wall at entrance, and was subsequently beached	W. Bridgen.

May 5	Terawhiti, s.s., 16 years	Schooner	102	5	..	..	Collision	..	Glasgow Wharf, Wellington	S.	..	When assisting at berthing s.s. "Karori" vessel sustained damage to lifeboat and davits owing to fresh breeze catching "Karori" on port quarter and drawing "Terawhiti" under the counter of the s.s. "Hurunui"	E. H. Wilson.
„ 7	Ngakuta, s.s. ..	F. and A.	934	27	..	Coal and timber, 2,029 tons	Damage to No. 1 hatch, deck-house, &c., by heavy sea	..	Karori Rocks, Cook Strait	..	Calm ..	Vessel shipped a heavy sea forward which damaged No. 1 hatch, for'ard deck-house, forestay, rigging-screw, spider-band, foremast and rails, forecastle-head	A. H. Prosser.
„ 7	Scot (sail), 18 years	F. and A.	18	3	..	General ..	Stranded; £100 damage	..	Off Whakatane ..	E.	Light ..	When at anchor cable parted at hawse-pipe, and two other anchors were dropped, but these also failed to hold on account of the roll, the vessel eventually going ashore broadside on, damaging bulwarks and carrying away light top hamper	W. E. Aspden.
„ 28	Kaiaia, o.e.v., 14 years	Ketch ..	24	4	..	In ballast ..	Mainmast and rigging carried away; £50 damage	..	Off Bream Head ..	S.S.W.	Moderate	As result of heavy weather on voyage Auckland to Tutakaka port main rigging, mainmast, and both topmasts carried away	Arthur Berridge.
June 8	Otimai, o.e.v., 2 years	Schooner	110	9	..	General ..	Bracket of propeller carried away	..	Whakatane Bar ..	..	Calm ..	After leaving wharf vessel struck stone or snag with starboard propeller, knocking off bracket	L. McDonald.
„ 20	Corinna, s.s., 42 years	Schooner	791	32	..	Empty barrels and cases	Grounded ..	..	Off Victoria Wharf, Dunedin	..	Calm ..	When manœuvering ship for berthing she took the ground on south side of channel, neither ship nor cargo sustaining any damage	James Green.
„ 21	Devon City, s.s., 13 years	..	4,255	33	..	General, 7,000 tons	Collapse of furnace crown	..	Queen's Wharf, Wellington	..	..	The collapse was caused by impurities, such as soft mud, being pumped into boiler when vessel was at Port Arthur, Texas, and by salt water, due to a leaky condenser	John Stephens.
„ 27	Port Auckland, s.s., 1 year	Schooner	5,123	85	7	General and frozen, 6,600 tons	Buckled deck and damaged hatch-coamings	..	Lat. 51° S., long. 163° W.	S.E.	Gale (10)	The Court found that a heavy sea which crashed aboard buckled and puckered the deck and damaged hatch-coamings; that no allegation of any kind had been made against the master or any of his officers, and that in returning to New Zealand the master adopted the only safe course; that the ship was well found, well manned, and cargo properly stowed, and that cause of casualty was the "peril of the sea"	A. H. Brown.
July 2	Merry Duchess, o.e.v.	Fishing-boat	6	1	..	..	Fire; total loss ..	..	Rangitoto Channel ..	N.W.	4	A Primus stove which was alight is thought to have capsized and set fire to tin of kerosene alongside, the fire spreading to floor of boat, which was burnt and subsequently sank	G. W. Tatbury.
„ 10	Altair (sail), 20 years	F. and A.	57	4	..	Coal, 80 tons ..	Stranded; £100 damage	..	Orewa Beach, Auckland	N.E.	Gale ..	Vessel on lee shore; let go anchor at 5 a.m., and at 10 a.m. the cable parted and vessel went ashore	John Brown.
„ 13	Sea Queen, o.e.v.	Launch	6	2	9	..	Stranded; total loss, £800	..	Tryphena Bay, Great Barrier Island	E.	Strong	Vessel was moored as usual, and before leaving for the night the master saw everything safe, but at daybreak following morning found vessel ashore on rocks and damaged beyond repair; nevertheless, he salvaged all removeable gear. Accident attributed to wire rope, which was part of mooring-gear, chafing through until it parted	J. McKinnon.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued*.

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1923.													
uly 15	Lena, o.e.v., 16 years	Ketch ..	3	2	..	Firewood, 23 tons	Stranded ..	..	Great Omaha, North Auckland	E.	8	Vessel was blown out of Catherine Bay and had to heave to, and subsequently drifted into Omaha, touching spit on entering, carrying away rudder-gudgeon and stripping some sheathing	Frank Wills.
„ 21	Tuhoe, o.e.v., 4 years	F. and A.	98	8	..	General, 150 tons	Collision	..	Whangarei	N.	Calm ..	When passing under railway-bridge vessel collided with it, breaking off the jib-boom, also the stock of the port anchor	R. McKinnon.
„ 24	Storm s.s., 19 years	Schooner	186	15	..	General, 200 tons	Touched ground; damaged rolling-chock	..	Entrance, Piler Channel, Wanganui River	..	Light (1)	When proceeding up river vessel dragged, but did not lose way; however, about 15 ft. of starboard rolling-chock was torn from the angle-iron and rolled back to abreast of bridge	R. O. Manson.
Aug. 2	Paroto, o.e.v., 8 years	F. and A.	48	7	..	General, 10 tons	Stranded; £20 damage	..	Slipper Island ..	S.W.	Light ..	On way to Auckland vessel touched a rock and remained fast for five minutes, when she was pushed off by sounding-poles and proceeded to Auckland under sail and port engine, the starboard one being unworkable	E. H. Cathcart.
„ 11	Karaka, s.s., 12 years	Schooner	9	5	..	..	Fire; £400 damage	..	Bluff	..	Calm ..	Fire broke out on starboard side of engine-room, apparently near dynamo, which was badly damaged	George West.
„ 11	Swazzi, s.s., 22 years	Schooner	3,174	67	..	General ..	Fire	..	Lat. 36° S., long. 160° E.	S.E.	Strong	Fire was discovered in lower cross-bunker, which was full, and water was played thereon and coal worked to stokehold, and seat of fire discovered on 13th at 1 a.m. and put out	J. H. Rutter.
„ 21	Swazzi, s.s., 22 years	Schooner	3,174	67	..	General ..	Fire	..	Bay of Plenty ..	S.W.	Strong	Fresh outbreak of fire discovered in cross-bunker which was finally extinguished on the 23rd instant	J. H. Rutter.
„ 21	Muritai, s.s., 6 months	..	199	8	20	..	Collision	..	Wellington Harbour..	S.W.	8–9	When "Muritai" was manœuvring stern first from Eastbourne Ferry Wharf she attempted to come ahead and turn to starboard, but starboard engine failed to go ahead, resulting in her sheering towards "Naringa," striking her abreast after hatch, severely denting the plating, knocking out rivets, and bending frames, &c.	Reginald Bargent.
„ 21	Naringa, s.s., 4 months	Schooner	4,117	89	..	General ..	Collision						A. F. Andreason.
„ 24	Waimarino, s.s., 22 years	Schooner	2,712	41	..	Coal, 6,000 tons	Jowel-pin worked out	..	Lat. 46° 9′ S., long. 166° 25½′ E.	E.S.E.	2–3	Jowel-pin in inner crank-shaft found to be working out, and was forced back into position by screw-jack and wedges and secured by tap-bolt, but some hours afterwards pin was found to be crushing to pieces, therefore speed reduced to dead slow and tug asked for	P.S. Molyneaux.

Aug. 31	Kaipatiki s.s., 16 years	Sloop ..	23	3	..	Gum, 3 tons ..	Stranded; £600 damage	..	Auckland Harbour ..	..	Calm ..	In attempting to turn vessel at head of creek on falling tide she caught at both ends, breaking rudder and posts, and starting her after planking	George Moir.
Sept. 5	Westmoreland, s.s., 6 years	..	6,099	40	..	Frozen and general	Fire	..	Auckland Harbour ..	..	2	At 4 p.m. a fire was discovered in lower cross-bunker from no apparent cause, and was extinguished at 8 p.m., no damage being done	George F. Deith.
„ 6	Will Watch, o.e.v., 28 years	Ketch ..	48	5	..	Cement, 130 tons	Broken masts; £20 damage	..	Auckland Harbour ..	N.E.	Light ..	When at Prince's Wharf vessel was caught in eddy tide, swinging bow into wharf and causing topmast to catch on pile, pulling down both masts	Alfred Sandston.
„ 11	Kamo, s.s., 10 years	F. and A.	725	28	..	General ..	Touched ground ..	..	Inside Wellington Heads	N.W.	..	When entering harbour steersman misunderstood master's order and put helm wrong way, resulting in ship touching ground, but backed off clear on engines being put full astern; no damage done	D. McPherson.
„ 16	Waihora, s.s., 16 years	Schooner	2,993	59	..	Live bullocks, 720	Heated coal ..	..	King's Wharf, Wellington	N.W.	Various	Bulkhead at back of dynamo was found heated, and the coal in the reserve bunker discovered to be warm, but after discharging half of coal (30 tons) no trace of fire could be found	E. Harris.
„ 16	Bulli, s.s., 24 years	Cutter ..	29	2	..	..	Light-screen carried away, &c.; £5 damage	..	Auckland Harbour ..	W.	..	When leaving Oyster Depot Wharf Government ketch "Te Waipouramu" was caught by the wind and carried along, resulting in jib-boom running into port side light-screen of the "Bulli," carrying it away and doing slight damage to vessel. The clutch on propeller slipped and vessel had not enough way on to carry her clear	F. M. Olsen.
„ 24	Wanaka, s.s., 36 years	..	1,504	37	3	General ..	Grounded; no damage	..	Atiu Island, lat. 20° 1′ S., long. 15° 9′ W.	S.	Light ..	Touched outlying coral-reef with keel, and as all soundings showed everything in order, no damage evidently sustained	F. G. Bilton.
„ 25	Karamea, s.s., 23 years	Schooner	3,466	64	..	General ..	Fire	..	Lat. 5° 10′ S., long. 98° 58′ W.	E.S.E.	3	Fire discovered in port 'tween deck bunker, believed to be result of spontaneous combustion, causing no damage to cargo, but injuring casing of engine-room bilge suction-pipe	D. Christie.
Oct. 2	Arahura, s.s., 18 years	Steamship	771	54	..	General, 430 tons	Collision ..	..	Auckland	N.E.	3	When the "Arahura" was leaving her berth she went ahead instead of astern, owing to a mistake made in engine-room, and her stern struck counter of "Trecarrell," damaging two plates and moulding, "Arahura" receiving slight damage	H. Dryden.
„ 2	Trecarrell, s.s., 4 years	Schooner	3,198	41	..	General, 8,780 tons							Hall Pinkham.
„ 9	Seabreeze, o.e.v., fishing-boat, 39 years	Cutter ..	2	1	..	..	Fire; total loss ..	..	Off Moeraki Lighthouse	S.W.	Light ..	Whilst on fishing cruise in early morning the benzine-tank exploded, presumably owing to defective strainer which allowed benzine to leak, setting fire to ship, which was totally destroyed.	C. Sproule.
„ 19	Mako, s.s., 8 years	Schooner	247	21	5	20 tons ..	Leaking	..	Port Awanui ..	E.	Light ..	Owing to loose rivet the after end and port side of forehold found leaking, which was stopped by substituting a wooden plug for the rivet; afterwards a rivet was inserted at Waipara	S. Jones.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued.*

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1923. Oct. 24	Kaeo, aux., 18 years	Schooner	146	11	..	Copra, 80 tons	Stranded; total wreck; £11,000	..	Tuapa, Niue Island ..	W.	4	The Court found that a squall carried the vessel on the reef, and that with the small power available the master made an error of judgment in coming so close to land and in keeping too little way on; but in view of exceptional difficulties in working island, his lack of experience thereof, and the little help obtainable from charts available, the case would be met by ordering the master to pay £10 towards the costs	D. Macdonald.
Nov. 3	Karamea, s.s., 24 years	Schooner	3,466	63	..	General, 2,358 tons	Collided with wharf	..	Lyttelton	S.W.	3	When in charge of pilot vessel was being berthed at No. 7 jetty, when she struck No. 6 end on, denting two plates on starboard bow and one on port bow; although vessel had been going astern for two minutes starboard anchor and 15 fathoms cable let go	D. Christie.
,, 7	Norval, sail, 46 years	Ketch ..	56	4	..	General ..	Collision	..	Napier Harbour ..	N.E.	2	The "Norval" was berthing at Jull Wharf, and the "J.D.O." was entering harbour when the steering-gear jambed, resulting in her running into "Norval" and doing £30 damage	W. Macdonald.
,, 7	J.D.O., s.s., 3 years	Schooner	87	5	..	Stone.. ..	Collision						Fred. W. Nees.
,, 11	City of Naples, s.s., 15 years	Schooner	3,714	69	..	General, 4,000 tons	Bunker fire ..	..	Lat. 28° S., long. 146° 20′ W.	W.S.W. to S.W.	4	A fire was discovered in No. 3 lower hold, apparently caused by spontaneous combustion, and damaging ceiling over bilges and portion of side of the hold	H. Johnston.
Dec. 8	Ngatiawa, s.s., 17 years	Schooner	225	22	19	Gum and wool, 70 tons	Fire in pantry ..	..	Hauraki Gulf, off Whangarei	N.	Light ..	The electric wires in the pantry fused, causing incipient fire which charred cornice and scorched paint-work, but was extinguished by ship's hose in a few moments	John Wilson.
,, 27	Britannia, ferry-boat, 38 years	Paddle-boat	108	4	..	..	Burnt kelson; £500 damages	..	Auckland	..	..	Hot ashes overheated footplates in stokehold, resulting in asbestos-sheeting underneath being burnt through, and allowing ashes to fall on kelson, burning same.	J. H. Jackson.
,, 28	Ngatiawa, s.s., 17 years	Schooner	225	21	18	..	Propeller lost; tail-shaft broken	..	Flat Island Passage, Auckland	N.W.	Fresh ..	When going astern the port propeller dropped off, and on examination being made on slip tailshaft was found to be broken off	John Wilson.
1924. Jan. 16	Rira, sail, 18 years	Ketch ..	100	7	..	Explosives, 110 tons	Starboard bulwarks, &c., damaged by heavy sea	..	Lat. 41° 40′ S., long. 175° 29′ E.	S.W.	11	Ship was hove to on starboard tack when a heavy sea was shipped, which smashed starboard bulwarks stanchions and staysail boom	M. Himainen.

Jan.	12	Port Elliott, s.s., 14 years	Schooner	4,664	70	..	General, 1,000 tons	Stranded; total wreck	..	Near Hororea Point, East Cape	N.E.	Light ..	The Court held that there was a set inshore of which the master was unaware, and therefore could not provide against; that the course set at 10.5 p.m. would have cleared East Cape, but owing to the 3rd officer reporting a light in the direction and corresponding to that at East Cape the Master altered the course at 10.25 p.m., which the Court held he was justified in doing; that the set and the alteration of the course combined resulted in the casualty, but that under the circumstances and existing weather conditions it was not caused by the wrongful act or default of master, officers, or crew, and therefore the certificates would be returned	A. T. Fishwick.
,,	18	Tainui, s.s., 15 years	Schooner	6,298	80	379	General, 5,200 tons	Lower part of rudder lost	..	Needles Channel, Solent	S.W.	3	The starboard propeller fouled a submerged obstacle, bringing engine to a standstill, and on dry-docking at Port Chalmers (15th March) discovered loss of lower part of rudder, and that one blade of propeller was bent	A. J. Charman.
,,	20	Onewa, s.s., 16 years	Schooner	34	4	312	..	Touched bottom ..	..	Motuihi Island ..	E.	Light ..	When on course from Ostend to Auckland vessel touched bottom off Motuihi Island, no damage being done	H. F. Joyce.
,,	22	Pono, aux., 8 years	Ketch ..	25	4	..	General, 50 tons	Propeller-blades stripped	..	Ohinemuri River ..	N.E.	3	When proceeding up the river fouled a launch which was not showing any lights, and while clearing it drifted into bank, to clear which port engine was started, when propeller hit a snag and stripped off two blades	F. B. Wells.
,,	29	Mako, s.s., 9 years	Schooner	247	21	..	Benzine and kerosene, 460 tons	Touched bottom ..	..	Off Cape Palliser ..	N.W.	Light ..	During passage, Napier to Wellington, in foggy weather vessel touched bottom lightly with her after part	Samuel Jones.
Feb.	1	Fairburn, o.e.v., 15 years	Ketch ..	60	5	..	Wood, 55 tons	Fire; £125 damage	..	Gisborne	S.	..	When being started the port engine caught fire, which was extinguished by the fire brigade	Thomas Stephens.
,,	3	Britannia, s.s., 39 years	..	108	4	80	..	Grounded; no damage	..	Tamaki River, Auckland	S.	2	When about half a mile off St. Heliers Point the vessel "smelt ground" on mudbank, where she remained for half an hour, when the tide lifted her off, and she proceeded to Buckland's Wharf	G. A. Simmons.
,,	6	Ohinemuri, s.s., 33 years	F. and A.	52	9	..	Timber, 26,000 ft.	Touched bar aft ..	..	Whangape Harbour ..	S.	Light ..	When crossing bar on way to Onehunga vessel lightly touched aft bending-shoe, but proceeded to Onehunga, where vessel was slipped, and 1½ in. cut off blades which had touched shoe	W. Parker.
,,	7	Hero, sail, 19 years	Schooner	25	4	..	..	Touched bridge-piles	..	Piako River ..	..	Calm ..	Whilst towing down river from Kerepeehi through bridge, vessel touched bridge-piles on starboard side, causing her to sheer to port, when bridge-span caught topmast backstay, carrying away topmast, and vessel then touched s.s. "Ngatea" carrying away her after rail and bulwark	E. J. Morgan.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued*.

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Registered Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1924.													
Feb. 13	Tairoa, s.s., 24 years	Schooner	5,047	82	..	Frozen produce, 4,000 tons	Two plates dented, and several rivets started	..	Wanganui Roadstead	N.W. to N.N.W.	5 3	The "John" was lying alongside the "Tairoa" transhipping wool when, owing to the swell, she bumped the latter, denting two plates, starting two rivets, while the "John" sustained damage to her house and the tank on top	V. Geo. Summers.
„ 13	John, s.s., 25 years	Sloop ..	134	13	..	Wool, 140 tons..	House and tank damaged						John Harwick.
„ 23	Rangi, sail, 19 years	F. and A.	89	5	..	Iron girders, 120 tons	Port bulwarks and centreboard carried away; £60 damage	..	Colville St., Hauraki Gulf	N.E.	Light ..	Owing to vessel rolling heavily on voyage to Tauranga the cargo shifted, carrying away port bulwarks and part of centre-board above deck, and on everything being made secure vessel returned to Auckland	H. Anderson.
„ 26	Hikurangi, s.s., 35 years	Schooner	163	13	..	..	Propeller-blade lost; £100 damage	..	Auckland Harbour ..	..	Calm ..	After leaving slip, and on proceeding down harbour, vessel's propeller struck submerged object, carrying away one blade of propeller	I. Corbett
Mar 9	Westmoreland, s.s. 7 years	Schooner	6,099	80	..	General, 2,000 tons	Propeller-blade broken	..	New Plymouth ..	N.W.	Light ..	When berthing at wharf propeller struck some submerged object, and on examination it was found that the tip of one blade had been broken	G. T. Deith.
„ 9	Kotare, s.s., 20 years	F. and A.	83	10	..	Timber ..	Grounded ..	..	Head New River, N.Z.	S.W.	Fresh ..	When entering river vessel grounded on inner spit, which is extending considerably from position shown on chart; but vessel was eventually worked off, with no damage to cargo, but light straining to vessel	W. E. Mumb .
„ 14	Hawera, s.s., 12 years	Ketch ..	100	10	..	Cheese, 100 tons	Grounded ..	..	Patea River ..	S.E.	Light ..	Whilst proceeding down river vessel took ground, owing to silt after south-easterly gale and fresh, and on vessel swinging round she touched bank, damaging rudder	A. McKinnon.
„ 15	Daphne, s.s., 17 years	Schooner	100	12	13	General, 15 tons	Grounded ..	..	Warkworth River ..	..	..	When going down river vessel ran into fog and grounded on mudbank off Kerro Point, and on backing off she touched the opposite bank, breaking rudder-stock	B. Burk.

Summary of Casualties to Shipping reported to the Marine Department during the Year ended 31st March, 1924.

Nature of Casualty.	Casualties on or near the Coasts of the Dominion.									Casualties outside the Dominion.									Total Number of Casualties reported.		
	Steamers.			Sailing-vessels.			Total within Dominion.			Steamers.			Sailing-vessels.			Total outside Dominion.					
	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.
Strandings—																					
Total wrecks	2	4,670	..	1	15	..	3	4,685	..	1	146	..	..	..	..	1	146	..	4	4,831	..
Partial loss	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Slight damage	12	978	..	2	75	..	14	1,053	..	1	244	..	..	..	..	1	244	..	15	1,297	..
No damage	6	1,979	..	..	..	..	6	1,979	..	1	1,504	..	..	..	..	1	1,504	..	7	3,483	..
Total strandings	20	7,627	..	3	90	..	23	7,717	..	3	1,894	..	..	..	..	3	1,894	..	26	9,611	..
Collisions—																					
Partial loss	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Slight damage	16	23,724	..	1	25	..	17	23,749	..	1	6,298	..	..	..	..	1	6,298	..	18	30,047	..
No damage	1	5,871	..	..	..	..	1	5,871	..	..	..	..	..	..	..	..	..	..	1	5,871	..
Total collisions	17	29,595	..	1	25	..	18	29,620	..	1	6,298	..	..	..	..	1	6,298	..	19	35,918	..
Fires—																					
Total loss	2	8	..	..	..	..	2	8	..	..	..	..	..	..	..	..	..	..	2	8	..
Partial loss	1	9	..	..	..	..	1	9	..	..	..	..	..	..	..	..	..	..	1	9	..
Slight damage	5	9,198	..	..	..	..	5	9,198	..	3	10,354	..	..	..	..	3	10,354	..	8	19,552	..
No damage	2	9,092	..	..	..	..	2	9,092	..	..	..	..	..	..	..	..	..	..	2	9,092	..
Total fires	10	18,307	..	..	..	..	10	18,307	..	3	10,354	..	..	..	..	3	10,354	..	13	28,661	..
Miscellaneous, including damage by heavy seas to hull and cargo, loss of masts, sails, &c., and breakdown of machinery	6	5,996	..	1	89	..	7	6,085	..	2	7,835	..	1	100	..	3	7,935	..	10	14,020	..
Total number of casualties reported	53	61,525	..	5	204	..	58	61,729	..	9	26,381	..	1	100	..	10	26,481	..	68	88,210	..

Return of the Number of Land Boilers and Machinery inspected during the Financial Year ended 31st March, 1924.

Boilers.

Class.	Not exceeding 5 Horse-power.	Exceeding 5 but not exceeding 10 Horse-power.	Exceeding 10 Horse-power.	Total.
Stationary	2,970	752	2,272	5,994
Portable	189	1,104	493	1,786
Totals	3,159	1,856	2,765	7,780

Machinery.

Class.	Number.	Class.	Number.
Hydraulic lifts	249	Oil-engines	12,008
Electric lifts	774	Gas-engines	1,275
Gas-lifts	6	Electric motors	9,306
Oil-lifts	4	Miscellaneous	32
Steam-lifts	11		
Gas, hydraulic, and electric-motor hoists	959	Total	25,111
Water-engines, peltons, turbines, and water-wheels	487		

Return of New Boilers inspected for the Year ended 31st March, 1924.

District.	Made in Dominion.		Imported.		Total.	
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.
Auckland	40	545	39	1,647	79	2,192
Auckland North	..	..	1	5	1	5
Auckland South	5	30	3	107	8	137
Canterbury North	44	445	5	22	49	467
Gisborne	4	20	..	..	4	20
Hawke's Bay	2	27	..	..	2	27
Nelson	..	..	1	247	1	247
Otago	17	182	8	153	25	335
Southland	2	21	5	20	7	41
Taranaki	2	10	6	60	8	70
Taranaki North	..	..	1	5	1	5
Wellington	35	614	42	644	77	1,258
Wellington North	..	..	6	120	6	120
Westland	6	77	1	34	7	111
Totals	157	1,971	118	3,064	275	5,035

Return of the Number of Certificates issued to Land Engineers, Engine-drivers, and Electric-tram Drivers during the Year ended 31st March, 1924.

Class.	Number.	Class.	Number.
Service—		Competency—*continued.*	
First-class engine-driver	2	Electric-winding-engine driver	1
Locomotive- and traction-engine driver	1	Locomotive- and traction-engine driver	88
		Locomotive-engine driver	10
Competency—		Traction-engine driver	68
Extra first-class engineer	2	Electric-tram driver	88
First-class engine-driver	41		
Second-class engine-driver	252	Total	558
Steam-winding-engine driver	5		

Accidents.

During the year 4 fatal and 88 non-fatal accidents in connection with machinery were reported to the Department.

RETURN OF LAND-ENGINE DRIVERS' AND ELECTRIC-TRAM DRIVERS' EXAMINATIONS HELD THROUGHOUT NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1924, SHOWING THE NUMBER OF SUCCESSFUL AND UNSUCCESSFUL CANDIDATES.

Place.	Extra First.		First Class.		Second Class.		Winding.				Locomotive and Traction		Locomotive.		Traction.		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 ..	..	..	9	5	25	15	1	..	..	..	20	4	3	1	3	..	57	3	118	28	146
Awanui	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
Blenheim ..	..	..	..	..	4	1	..	..	..	..	..	1	..	..	..	..	..	..	4	2	6
Christchurch ..	1	2	2	3	12	2	..	..	..	..	3	..	..	..	9	..	22	..	49	7	56
Dunedin	..	1	1	4	16	4	1	..	..	..	2	..	..	..	11	2	..	..	31	11	42
Gisborne	..	1	1	..	4	3	..	..	..	..	1	1	..	..	1	..	..	..	7	5	12
Greymouth ..	..	..	5	3	12	..	..	..	..	..	1	..	3	..	1	..	..	..	22	3	25
Hamilton ..	..	..	..	3	28	8	1	1	1	..	10	1	2	..	..	1	..	..	42	14	56
Herekino.. ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
Invercargill ..	..	..	3	3	25	7	..	..	..	..	3	..	1	..	15	..	2	1	49	11	60
Mangonui ..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Maungaturoto ..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Napier	..	1	1	2	6	2	..	..	..	..	3	1	1	..	1	2	2	1	14	9	23
Nelson	..	..	4	..	10	6	..	..	..	..	1	..	..	..	8	..	..	..	23	6	29
New Plymouth ..	..	1	1	2	31	10	..	..	..	..	1	..	..	..	4	1	1	..	38	14	52
Palmerston North..	1	..	3	3	22	16	..	..	..	..	1	1	..	..	2	..	..	..	29	20	49
Picton	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Timaru	..	..	..	..	1	3	..	..	..	..	2	..	..	..	11	1	..	..	14	4	18
Wanganui ..	..	..	1	1	7	2	..	..	..	..	..	..	..	..	..	..	4	..	12	3	15
Wellington ..	..	..	1	3	8	6	..	..	..	..	2	1	..	..	1	..	7	2	19	12	31
Whakatane ..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Whangarei ..	..	..	2	..	20	4	2	..	..	..	4	..	..	..	..	..	..	..	28	4	32
Totals ..	2	6	34	32	236	89	5	1	1	..	56	10	10	1	67	7	95	7	506	153	659

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