1937–38.

NEW ZEALAND.

SEA FISHERIES INVESTIGATION COMMITTEE

(REPORT OF THE).

Laid on the Table of the House of Representatives by Leave.

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TO THE REPORT OF THE SEA FISHERIES INVESTIGATION COMMITTEE.

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PART I.

APPOINTMENT OF COMMITTEE.

THE Sea Fisheries Investigation Committee, comprising as members Mr. James Thorn, M.P., Mr. M. W. Young, Assistant Chief Inspector of Fisheries, Marine Department, and Mr. E. Sheed, Investigating Accountant, Department of Industries and Commerce, was appointed by His Excellency the Governor-General on the 25th February, 1937, and the Hon. D. G. Sullivan, Minister of Industries and Commerce, delegated to its members the powers of judicial inquiry and investigation conferred upon him by the Board of Trade Amendment Act, 1923.

REPORT.

To the Hon. DANIEL GILES SULLIVAN,
Minister of Industries and Commerce.

SIR,—

Upon the appointment of the Sea Fisheries Investigation Committee, you furnished it with an order of reference setting out in general and in particular those matters upon which it was desired that investigation and report be made. This order of reference was as follows :—

" The Committee shall inquire into and report upon—

" (1) The condition and prospect of the sea-fishing industry of New Zealand, including investigations into any matter relating to the exploitation and conservation of our sea fisheries ; the catching, landing, treatment, preservation, storage, transport, internal and external marketing and distribution (both wholesale and retail) of sea fish, shellfish, and other marketable marine products.

" (2) The scientific evaluation, control, and administration of the sea fisheries."

Extending over a period of years and up to the time of the Committee's appointment, Dominion-wide representations had been made to the Government as to the difficulties under which the sea-fisheries industry generally was operating, and as to the apparent lack of any real co-operation amongst the various units engaged in production and marketing. So varied and conflicting in their nature were the complaints received, that it was obvious that before any remedial measures could be formulated complete information concerning the conditions prevailing should be in the hands of the Government. As any effective investigation would necessarily have to cover fully the ramifications of the industry, the order of reference gave the Committee sufficient power to inquire into all the problems associated with its main objective as they were confronted.

The Committee commenced its duties at Bluff on the 15th day of March, 1937. Between this date and the 8th day of September, 1937, the Committee visited thirty-eight ports and centres and heard evidence continuously. Additional evidence was taken at intervals up to early in November, when the investigation was closed. In all, the Committee took evidence from and examined a total of 537 witnesses, besides making contact with 288 others associated with the industry, these latter being met during the Committee's visits to wholesale markets, refrigerating-plants, retailers' shops, fishing-vessels, harbours and landing-places, and at general meetings of the fishermen. Ample notification of the Committee's sittings in each of the centres visited was given beforehand, so that all parties interested were enabled to submit evidence to the extent desired. The witnesses comprised fishermen and fishing-boat owners, wholesalers, exporters, retailers, canners, representatives of employees and associations, and certain others who, while not directly connected with the industry, were invited to place before the Committee suggestions they thought constructive. Wherever possible and whenever there was an identity of interest, witnesses were encouraged to come before the Committee in groups, the right being reserved, of course, to witnesses to appear individually if they so preferred. During the Committee's inquiries, extending from Stewart Island to North Auckland, over 3,102 foolscap pages of evidence were taken, and, in addition, a wide variety of " exhibits " was handed in for examination, together with statements of accounts, costs, and financial operations. Further information as to the earnings of fishermen, costs of handling, and financial results generally was extracted from the records kept by fishermen, wholesalers, retailers, and others.

THE IMPORTANCE OF THE INDUSTRY.

Before proceeding to a description of the fishing methods and problems in the various ports and to a statement of the Committee's recommendations thereupon, it is desirable to outline in some detail certain considerations which establish the very great importance of the industry to New Zealand. These mainly relate to—

(*a*) The financial investment, employment in, and revenue from the fisheries ;
(*b*) The value of fish products as a foodstuff, and the desirability of their increased consumption in the Dominion ; and
(*c*) The influence of the export trade on local supplies and on the economic organization of the industry.

The relevant facts are set out as follows:—

INVESTMENT, EMPLOYMENT, REVENUE.

Value of fishing-fleet as at 31st December, 1936	approximately £438,000
Number of fishermen engaged during year ended 31st March, 1937:—	
1,381 full-time.	
711 part-time.	
Landings of fish during year ended 31st March, 1937:—	£
Fish, 363,128 cwt., valued at	360,466
Oysters, 67,445 sacks, valued at	44,472
Mussels, 10,415 sacks, valued at	2,809
Crayfish, 8,686 cwt., valued at	7,848
Total value	£415,595
Exports, year ended 31st March, 1937:—	£
Frozen fish, including crayfish, 50,727 cwt., valued at	132,401
Oysters, fresh, 135,533 doz., valued at	1,447
Fish, smoked, dried, pickled, or salted, 3,724 cwt., valued at	12,069
Fish, preserved in tins, 492,741 lb., valued at	29,205
Total value	£175,122
Value of land, plant, and buildings ashore (wholesale establishments only)	approximately £192,000
Number of wholesale establishments	43
Number of retail establishments	410

In the wholesale and retail establishments the number of men and women employed is considerable.

These figures leave no doubt that the stability of this industry and its protection and development are essential to the welfare of the Dominion.

THE FOOD VALUE OF FISH.

The industry derives added importance from the nature of the commodity it supplies to the public. To summarize the evidence on the food value of fish, we cannot do better than quote the following extracts from the statement tendered by Dr. John Malcolm, Professor of Physiology at the Medical School, Dunedin:—

"It is a matter of common knowledge that fish is a valuable article of diet. . . . The value to a nation of its fish-supply is shown by the care taken by Governments to preserve their right to the fisheries. . . . Being closely incorporated with the other constituents of the fibre, the fat of fishes is not so obvious to the consumer as the fat of meat. It is also more oily, and the greater part of it is more easily digested and absorbed than the fat of meat. . . . The fat or oil contains a greater amount of vitamin A and probably vitamin D than is found in bacon or mutton fat. . . . The protein content of fish is more uniform than the fat (which varies in different species) and amounts to nearly that of meat. It is of high quality and is easily digested. . . . The minerals present in fish are more abundant and more varied than in ordinary meat, thus there is more lime in the ash of fish, and, what is still more important, more iodine. . . . Two classes of fish foods deserve special mention—viz., shellfish such as oysters and toheroa, and whitebait. Both these as eaten contain relatively large amounts of certain vitamins and minerals, partly because the whole fish is consumed, including the liver or what corresponds to it in the case of the shellfish. The iodine in these cases is especially valuable, because weight for weight oysters supply more iodine than any other article of diet with the exception of seaweed in any form, and the butterfish (greenbone), which feeds on seaweed . . . If the whole population of New Zealand could be induced to consume regularly from childhood a small portion of a seaweed preparation or about half a dozen oysters per head per week, it can confidently be stated that the occurrence of goitre would be greatly lessened, if not abolished."

Other medical authorities who submitted statements to the Committee agreed, for reasons similar to those given by Professor Malcolm, as to the desirability of making fish more accessible at reasonable prices to all classes and in all parts of the country.

That the consumption of fish per head in New Zealand is low compared with that in, for instance, Great Britain is borne out by interesting figures contained in a statement prepared for the Committee by Dr. Elizabeth Gregory, of the Home Science Department of the University of Otago. Dr. Gregory said: "The average consumption per head per week as given in the New Zealand Year-Book for 1936 is 6·9 oz. This is considerably lower than the average consumption of fish in Britain (8·9 oz.), and lower than the figure, 8 oz. to 9 oz., recommended by the Advisory Committee on Nutrition (Great Britain). These figures, however, are averages, and it is only by records of family dietaries that the variations can be obtained. In one hundred and thirty family dietary studies investigated during 1935–37 at the Home Science School, consumption averaged out at 5·1 oz. per head per week—considerably lower than the New Zealand average quoted above. Of these families, 25 per cent. did not consume any fish during the week in which the investigation was made. In the remainder, the variation was very great—from 1 oz. per head per week to 20 oz. Thus it would appear that the level of consumption is low in a considerable proportion of the population."

The dietary studies referred to may, we think, be taken as indicative of the fact that the consumption of fish by large numbers of people in the Dominion is very low. From this, the question arises as to whether, supposing the cessation of export were practicable, our people could consume virtually all the fish caught in New Zealand waters. If this were possible, its effect would clearly be beneficial to the health of New-Zealanders and, as will be shown later, to the organization of the fisheries. After close examination of this question the Committee is satisfied that, granted certain conditions, the fish landed from New Zealand waters could easily be consumed within the Dominion. These conditions are :—

(*a*) The capacity of our population to so add to the weight of its present per head fish consumption as to absorb the quantity—or the major portion of it—now exported.
(*b*) Improvement in transport and distribution so as to make the fish available all over the country in good condition.
(*c*) A reduction in price.

CAPACITY FOR EXTRA CONSUMPTION.

The Committee is of opinion that there can be no doubt about (*a*) if (*b*) and (*c*) are possible of operation. This opinion is based upon the following calculations, the figures used being those for the year 1936–37 :—

		Cwt.
Total wet fish, *landed weight*		363,128
Total exports—50,717 cwt.—converted to the landed weight	approximately	100,000
Consumed in New Zealand—landed weight	approximately	263,128

The population of the main towns which are also fishing centres—*i.e.*, Auckland, Wellington, Christchurch, Dunedin, Invercargill, and Napier—is 609,030, of whom approximately 25 per cent. are children under fourteen years of age. This leaves a population of 456,773 adults. It may safely be assumed that 80 per cent. of the fish consumed in New Zealand is used by the population of the towns mentioned.

We have now the formula that 456,773 adult people consumed 80 per cent. of the 263,128 cwt. of fish landed and used in New Zealand—that is, 210,502 cwt., or 51·6 lb. per head per annum. Now, the total landings were 363,128 cwt., and if the same people were to consume the relative portion of this —80 per cent.—consumption would be increased to 290,502 cwt., or 71·2 lb. per head per annum, or more simply, an increase from just under 0·99 lb. per head per week to 1·37 lb. per head per week. This small increase—only 0·38 lb. (6 oz.)—per head in the weekly consumption of fish by the adult (over fourteen years) population of the six main towns would absorb 80 per cent. of our present exports. Such a consumption at this figure should not be unattainable, yet it takes no account of any possible increased consumption by people outside the towns mentioned, and does not allow for any consumption by children up to fourteen years of age.

At the last census the total white population of New Zealand, less children under five years of age, was 1,374,746. Now, these people consumed only 263,128 cwt. of fish landed, or 21·44 lb. per head per annum. To absorb all the exports they would have to consume 363,128 cwt., or 29·58 lb. per head per annum, an increase of 8·14 lb. per annum per head of total white population over five years of age. This means a weekly increase per head of only 2·5 oz.—that is, from 6·60 oz. to 9·10 oz. It should be noted that this latter figure is approximately the consumption recommended by the British Advisory Committee of Nutrition, whose figure was 8 oz. to 9 oz. We cannot believe that it is impossible to increase the consumption of fish in New Zealand by only 2·5 oz. per head per week.

It is necessary now to consider the factors which to some extent will govern the possibility of the consumption by the Dominion population of the fish at present exported.

TRANSPORT AND DISTRIBUTION.

The transport of fish in New Zealand leaves much to be desired. In most cases where transport is by rail the fish will only be taken on goods-trains, which are far too slow for so perishable an article. Freights over anything but short distances are too high, more especially when compared with the value of the product. Insufficient inducement is offered by way of rebates on returned empties and free railage of ice to encourage the firms to use suitably heavy containers and plenty of ice to ensure the arrival of the fish at its destination in first-class condition. For the quantities of fish forwarded to the smaller country centres, fast motor transport and a possible adaptation of the rail car appear to be the most suitable methods. A number of anomalies in the present rail freight rates should be removed. It should not be difficult to overcome all of the transport difficulties, given real co-operation between the merchants and the transport services, including the Government. The details are dealt with elsewhere in this report. Unquestionably more efficient transport is essential if fish is to be distributed plentifully throughout inland areas in which marine products are now conspicuous by their absence, and to the extent it is provided an increased proportion of the total catch will be consumed within the Dominion.

REDUCTION IN PRICES.

The price of fish in New Zealand to-day is determined to a large extent by several factors which operate after it leaves the fishermen. In no case, except under the auction system when occasional poor supplies result in high prices, do the fishermen receive an excessive price per pound for the fish

they land. In many cases the wholesale margin is too high, more especially where the fish is merely passed through a shed and goes out in the form in which it was received. The retail trade as a whole is also a contributing factor in unnecessarily high prices, in that the overhead of many of the shops is far too burdensome. This is caused to a large extent by the redundancy of retail shops in certain localities. These shops, in close proximity to one another, are all trying to make a living out of a too small turnover of fish. On this small turnover, rents, rates, wages, book-keeping, and other expenses are piled, all of which would be reduced materially if the number of shops had any proportional relation to the amount of fish sold. Finally, the people desire to get their fish from elaborately fitted shops in the best streets where the rents are exorbitant, and also want their fish ready for the pan, wrapped up in greaseproof paper and good brown paper—facilities which are commendable, but which add a cost which up till a very few years ago never entered into the retail price of fish.

It is necessary to point out here that although there is a wide spread between the price received by the fishermen and that paid to the retailer by the consumer, considerable misunderstanding exists as to the causes of this. It is assumed that interests between the fishermen and the consumers levy extortionate charges, and the deduction is made that there is no reason whatever for a good deal of the difference between the prices mentioned. Laymen frequently put it this way: "The fishermen get 2d. a pound, but we have to pay 1s. per pound." The Committee, however, is bound to point out, that while the discrepancy certainly obtains, the article bought at 1s. is not the same fish as the fisherman sells for 2d.

The example of snapper, the principal fish brought in from the Auckland waters, may be given. The fishermen in Auckland get 2d. per pound for the green fish—that is, the fish as it is caught. Take, say, 8 lb. of the green fish as landed, for which the fisherman receives 1s. 4d. This yields at best only 2 lb. 14 oz. of snapper fillets with the wings off. These are sold at 1s. per pound, giving a total of 2s. 10½d. This shows a spread of 1s. 6½d between the price the fisherman gets on landing and what the consumer has to pay in the retail shop, and this is equal to 2·3d. per lb. on the original fish. This 2·3d. has to cover a number of charges—the wholesaler's costs of intake, his labour and overhead charges, transport to retail shop, labour in preparation as fillets, cost of disposal of waste, cost of wrapping, labour in selling, and the shop overhead charges.

In this report suggestions are made by which some reductions in the price of fish may be brought about, but generally it may be stated here that unless more fish can be made available to the New Zealand market and be more evenly distributed, unless some check is made on wholesalers' charges to the retailers, and unless unnecessary overhead arising from a redundancy of shops is eliminated, price-reductions will be difficult except at the expense of the fishermen, which contingency the Committee regards as most undesirable.

THE EXPORT TRADE AND ITS REACTIONS.

The foregoing statement is submitted to show that if such reorganization as is needed to make possible the small additional per head consumption that would absorb the total fish caught in New Zealand waters could be carried out, the export trade would be non-existent. As the loss of an export trade may appear detrimental to the interests of the Dominion, it is necessary to point out that, while such a trade in a commodity that may be increased at will and much beyond local consuming-capacity will serve New Zealand's welfare, an export trade in a commodity like fish, which is a form of wild life, the replenishment of which through human control is not easy, and which does not exist in the inexhaustible quantities imagined by many people, may result in the destruction of an asset that ought to be conserved. In the Committee's view the best interests of New Zealand would be served if the fish-export trade were almost totally dispensed with, and this view has been arrived at after grave consideration of the whole of the evidence tendered, and in conjunction with a careful study of the exhibits and accounts submitted.

This evidence has forced the Committee to the conclusion that the phenomenal rise of the export trade in recent years is the root of most of the troubles in the New Zealand fishing industry to-day. On superficial examination this trade appears to be a justifiable business activity, because it brings into the Dominion an income through the sale abroad of a primary product, but a close investigation establishes that the great expansion of the export trade from 21,241 cwt. in 1927–28 to 54,267 cwt. in 1935–36, falling slightly to 50,727 cwt. in 1936–37, has only been possible through vicious price-cutting tactics on the part of many of the firms engaged.

On these figures it would appear that the increase from 1927–28 to the peak year 1935–36 has been of the order of 155 per cent., but this is not the whole story. Up to and including the year 1932–33 practically the whole of the exports were in the form of either whole fish or fish which had only been trimmed by heading. Early in 1933 the export of fish fillets started, and to-day the bulk of the export takes place in this form. The significance of this is that the export of, say, 20,000 cwt. of fish prior to 1932 represented a certain weight of green fish landed, but the export of 20,000 cwt. to-day, mainly filleted fish, would represent a far greater quantity of green fish. For example, the dressing of snapper from the stage where it has been gilled and gutted only to that where it is prepared as fillets represents a wastage of over 50 per cent. Therefore, under the new system of preparation for export, half as much more green fish is required to supply the same weight of fish as under the old system. If New Zealand is to have an export trade, it is better that the exports should be in the form of fillets to save freight, space, and so on, but the comparison of export figures for years when the bulk of the product is in the form of fillets with years in which the bulk of the product was either whole or trimmed fish must be made carefully if a fair estimate of the amount of green fish required in the preparation of the product is to be reached.

Up till very recently several of the firms engaged in the export trade operated at a loss over prolonged periods as the result of uneconomic practices that were not uncommon. Fish has been sold in Sydney and Melbourne at a price which, allowing for the charges required to cover handling, dressing, wastage, freezing, transport, and other costs, was lower than the price at which the same fish was made available to the retailers in New Zealand. Only this low price made the fish attractive to the Australian wholesalers. As soon as the price was raised to cover a fair, but not excessively high, return to the fishermen, plus the charges incidental to preparing and transporting the fish to Australia, it was not wanted. There can be no doubt that the Australian wholesalers have exerted all the means in their power to break efforts on the part of New Zealand export interests to trade advantageously. Means which, to say the least, are unethical have been employed by the Australian dealers with this object, and by playing off the South Island wholesalers against the North Island wholesalers they have succeeded to some extent.

When our traders were satisfied to export fish which was the surplus to the ordinary demands of the New Zealand market, it was a trade of value to the community, in that it tended to quit fish brought in during glut periods. It then yielded a dual benefit; it brought a profit to the exporting firm, and it safeguarded the fishermen producers against loss. With this small supply, good prices were realized, more particularly in view of the fact that the product was actually a surplus. The more recent development, unfortunately, has led to the entrance into the trade of various firms and fishing units designed to cater almost exclusively for export. These units on the fishing side—*i.e.*, on the production side—are hastening the depletion of our none too prolific inshore fisheries; and on the selling side several of them are quite unnecessary and superfluous. They represent over-capitalization, and they act as a disturbance to a proper organization of the industry. Under stress of the cut-throat competition which marked their entry into the trade, some of these firms with principles of the worst type have cut prices with the knowledge that the cutting would ultimately be borne by the fishermen in the way of reduced prices for their fish. The reduction in the prices to the fishermen caused overfishing of the grounds, because this was the only means of catching the heavy freights necessary to enable them to earn a livelihood. Moreover, the consuming public gained no advantage, because by the maintenance of local prices at a relatively higher level than those of exports it was saddled with a great proportion of the overhead which should have been carried by the export trade.

For these reasons the Committee favours an immediate restriction on the volume of the export trade in fish, this restriction to be accompanied by a concentration of policy on an increased distribution of fish throughout New Zealand. The restriction of export must also be progressive as the Dominion consumption of fish expands.

PART II.—PRODUCTION.

METHODS OF FISHING.

We will now proceed to describe the fishing methods followed by the fishermen at the various ports and state the problems associated with them. Although it would be convenient to deal with each method of fishing in a category by itself, this is sometimes difficult when, for instance, as in the case of trawling and seine-net fishing, there is a conflict which cannot be explained without reference to both. Some duplication may therefore appear in this statement, but this is unvoidable. The different fishing methods will be considered in the following order, and each port or district will be taken as it was visited in the Committee's itinerary:—

Trawling, Danish-seining, set-netting, drag-netting, other net fishing, dan lines and windy buoys, long-lines, and hand-lining.

Special sections will be devoted to the blue-cod fisheries in Foveaux Strait, to crayfishing, and to the dredge and rock oyster industries. Where necessary, the Committee's recommendations are appended.

TRAWLING.

Waikawa, Southland.

Only at Waikawa is trawling done to any great extent in Southland. One or two boats from Bluff have recently commenced trawling in Te Waewae Bay, and there are reports that others will start during the summer season. The weather will to some extent protect these grounds, because they are very exposed. At Waikawa trawling has been carried on for a number of years. Fish have been scarce in this locality for some time, but there is no serious depletion. The grounds are roughly one hour's steam from port, and produce a good class of lemon sole with no great quantity of rough fish.

Otago and South Canterbury.

At the main points of production—Port Chalmers, Timaru, Oamaru, Moeraki, and Taieri Mouth—fishing is carried on by the following methods: Line-fishing, both with hand and dan lines, and trawling, with a little Danish-seining at Timaru, and some, but not much, drag-netting and set-netting

at various points. The following table compiled from information given in the Marine Department's annual report for the year ending 31st March, 1937, will indicate the relative importance of the various types of fishing in these districts :—

Percentage of Total Landings by each Method.

Port.	Trawl.	Danish Seine.	Drag and Set Nets.	Lines.
Port Chalmers	48·6	..	8·9	42·5
Taieri Mouth	76·9	..	..	23·1
Moeraki	..	..	1·7	98·3
Oamaru	0·2	..	2·4	97·4
Timaru	9·3	28·9	..	61·8

From this table it will be seen that at Port Chalmers trawling and line-fishing are of nearly equal importance, although the advent of a large steam trawler since these statistics were compiled will increase the balance on the trawling side. Taieri Mouth is mainly a trawling centre, while both Moeraki and Oamaru depend almost entirely on line-fishing for their supplies. At Timaru over half the fish landed come from the line boats. With regard to the power netting, the Timaru figures given are of interest because, while the Danish-seiners landed 28·9 per cent. of the catch, the trawlers only contributed 9·3 per cent. Only two Danish-seiners were working whole-time and three part-time, as against one full-time trawler and nine part-time. This aptly illustrates the high catching-capacity of Danish-seine vessels, a matter dealt with more fully in another part of the report.

Trawling is in the main carried out by small motor-vessels, the two districts maintaining as at 31st March, 1937, two relatively small steam trawlers and eighteen full-time and nine part-time motor trawlers. The practically unanimous opinion of the men operating or owning these boats is that, although the total weight of the annual landings has been maintained, the grounds which have been consistently fished are showing evidence of strain, for which reason the fishermen have to go farther afield or stay out longer for the catches they bring in to-day.

In Timaru the catch per landing of the trawlers is stated to have fallen substantially since the advent of the Danish seine. Unfortunately, not until last year, 1936–37, were the statistics at this port collected in the detail which enables them to be used with any exactitude. Prior to this the catches of all types of vessels had to be lumped together in one grand total. This prevents the Committee from stating the actual decline of the catch per landing of the trawlers in figures. In the circumstances, we must accept the statements of the trawler-men on this point. We mention this because it illustrates the danger of administering any control policy over the fishermen as was done in the past without the guidance adequate statistical information provides. Since 1926–27 the Chief Inspector of Fisheries has stressed in his annual reports the need for the compilation of accurate information, and obviously without it policy may easily be mistaken.

Because of their high operating-costs the Danish-seiners are now fishing themselves out. The number of trawlers operating in these districts continued at approximately the same figure until 1934–35, when, with the elimination of boats laid up and more accurate descriptions in the returns, the total showed a fairly considerable drop. The following table shows the trend in the use of trawlers and Danish-seiners :—

Timaru Fishing-vessels using Power-drawn Nets.

Year.	Trawlers.*	Seiners.*	Total.
1927–28	23	..	23
1928–29	24	..	24
1929–30	22	5	27
1930–31	22	5	27
1931–32	23	5	28
1932–33	27	5	32
1933–34	29	5	34
1934–35	17	6	23
1935–36	15	4	19
1936–37	10	5	15

* Both whole-time and part-time. Due to the deficiency of the statistics prior to 1934–35, it is impossible to separate these classes accurately.

One reason why the operation of some of these boats is not economical is that, being small, they can only stay out for one day, and the number of hours fishing is too low in relation to the time spent in steaming to and from the grounds. Very little can be done to offset this deficiency, because if larger boats are obtained, while they certainly have a wider range, they simply move farther along the coast rather than seaward, so encroaching on the inshore grounds commonly used

by vessels from other ports. This is a practice which will have to be checked, as it is not fair for vessels in one port to fish out their own inshore grounds and then to move along the coast and assist the vessels of the next port to overfish their grounds. This question of the movement of fishing-vessels from their respective ports in considered in another place.

In Timaru the whole of the blame for the depletion is placed on the Danish-seiners, and the contention is that if the use of Danish-seiners were prohibited the trawling-fleet would be able to make a living. The main complaint is that the seine boats catch too large a proportion of immature fish, and clean up in two days a patch of fish that would keep a trawler going for a fortnight. With regard to conservation, the only concrete suggestion made by the fishermen was to increase the size of mesh of the trawl so as to allow a greater escapement.

We have no recommendations to make with regard to trawling in these particular waters. Some recommendations applicable to the whole of New Zealand are made at the end of this section of the report.

Canterbury.

Trawling is carried on at Lyttelton, Akaroa, and to some extent off Kaikoura. The grounds, particularly off Kaikoura, are restricted by the occurrence of foul bottom and the fact that the continental shelf falls off very steeply comparatively close to the land. From Lyttelton two steam trawlers are operated by the Canterbury Steam Trawling Co., Ltd.—one of these was wrecked recently on the Sumner bar—and the balance of the trawling-fleet consists of small motor-vessels of the type common to all the New Zealand trawling ports. The steam trawlers can only work up to thirty miles off Lyttelton, as beyond that the depth is too great. These vessels were put into service for the purpose of steadying the supply of fish to the Christchurch market. Prior to their advent bad weather caused too great fluctuations in the supply. The Akaroa boats work as far south as the mouth of the Rakaia River, but more often do not go past Taumutu. Until the coming of the Danish seine these boats used to work off Lyttelton and up as far as the mouth of the Waimakariri River. Since then they have kept on the grounds south of Akaroa. These vessels only tow for one to two hours and do not catch any considerable quantity of undersized fish. The main fish caught are flounder, English soles, some brill, gurnard in season, and in winter tarakihi in 40 fathoms to 45 fathoms. One of the Akaroa boat-owners supplies his own shop in Christchurch and sells his surplus through the Christchurch fish-auctioneering firm. All the others sell through this firm.

At all these ports it was alleged by fishermen and others that the depletion of the grounds, more particularly with regard to the catches of soles, had only been noticed since the Danish-seine boats commenced operations. It was recorded that the length of the foot-rope on the trawls used by these small vessels was excessive. Some of them are using 120 ft. of foot-rope plus 40 ft. extensions to the "boards." The following table, compiled from F. M. Davis's "Account of the Fishing Gear of England and Wales (1937)," will illustrate the excessive spread of these nets:—

North Sea.

Vessel (Type).	Head-rope.	Foot-rope.
	Ft.	Ft.
Large steam trawler	90 to 110	120 to 140
Steam trawler	81	120
Drifter trawler	60	85
Motor trawler (30 ton)	70	100
Motor trawler (under 15 tons)	60	90

West Coast.

At Greymouth trawling is carried out by three small steam trawlers and two motor trawlers. Westport has only one trawler, an up-to-date steam trawler previously fishing from this port having been sold recently. The main factor which controls fishing operations on the whole of the West Coast is the weather. With the prevailing weather coming from the westward and every harbour having a bar, the natural restrictions on the fishermen's occupation are considerable. Frequently a fortnight passes without possibility of any fishing operations. Over a period of fifteen months prior to the sitting of this Committee, the average number of days per week on which fishing operations were possible was two and a half. A scarcity of fish is reported, but the trawler-masters are all of the opionion that this scarcity is only temporary. We had visible evidence that a high proportion of the catch consists of large-sized fish, and this discounts any suggestion of depletion by overfishing. The fishing-grounds commonly used by the Greymouth trawling-fleet are within one hour's steam of the port. The maximum range of the vessels is within a radius of twenty miles of Greymouth. As the sea rises quickly with any increase in the force of the wind, the danger of working too far out is apparent, because if the vessel is more than one hour's steam from port the bar may be unworkable before she can be in a position to cross it. The vessels operate in from 8 fathoms to 20 fathoms. The 100-fathom line is within one and a half hour's steam from Greymouth. After 45 fathoms in depth is reached, the bottom drops off steeply. All the bottom off Greymouth is clean

sand and clear of obstructions to trawling. The fish caught are nearly all soles, with a fair proportion in season of large brill, turbot, snapper, a few lemon soles, flounder, yellowbellies, gurnard, tarakihi, and ling.

At Westport trawling is carried on in 16 fathoms to 20 fathoms, the catches and conditions being similar to those at Greymouth, except that the bottom has been fouled in many places by timber brought down by the rivers.

As the weather is, in effect, a conservation agent on the West Coast, we have no special recommendation to make.

Wairau Bar.

At Wairau Bar four small motor-vessels engage in trawling. The fishing-grounds are just outside the bar. In winter the vessels go from ten to twelve miles offshore to catch tarakihi. The flat fish are always caught close inshore in from 3 fathoms to 6 fathoms on a sandy bottom, the tarakihi being in 12 fathoms to 14 fathoms. The trawls used have a foot-rope of 80 ft. to 100 ft., with about 40 ft. extensions to either board. Fishing is worst from September to October, when the snow water is being discharged into the sea. Fish from this locality do not keep very well, due, it is thought, to the kind of food they live on, but the flavour when fresh is excellent. The catch consists of English soles and lemon soles when fishing near White Bay, some tarakihi in winter, and very few rough fish.

With the exception of some difficulty over the enforcement of the regulations governing the legal size of the mesh of the net, there appear to be no problems on the production side at this port, the supplies apparently being adequate for the successful operation of the present fleet.

Napier.

Napier has been mainly a trawling port for many years. The principal species caught by the trawlers are flat fish—English soles, yellowbelly flounders, and lemon soles—round fish—gurnard, snapper, tarakihi, and moki. Supplies of red cod, skate, kahawai, and an excess of gurnard taken by the trawlers cannot be marketed under present conditions and have to be dumped at sea. This is an economic waste, and every effort should be made to secure a suitable market for these fish. The boats land their fish daily or at the most make two-day trips. It is profitable to use the more distant fishing-grounds only when two-day trips are undertaken. Ice is carried by the boats for the two-day fish, and some of the vessels have properly insulated fish-holds.

One anomaly brought to our notice at this port was that vessels over 10 tons net, which are under survey, are expected to operate within the extended river limits, whereas the smaller vessels not under survey have no such restriction imposed on them. This is not fair, and all the fishing-vessels should be subject to the same restrictions as to the radius of their operations.

Small steam trawlers were the first catching-vessels employed at this port, but they are now gradually being displaced by small motor trawlers and Danish-seiners. The following table illustrates this trend :—

Vessels operating Power-drawn Nets at Napier.

Year.	Steam Trawlers.		Motor Trawlers.		Total Trawlers.		Danish Seine.	
	Whole-time.	Part-time.	Whole-time.	Part-time.	Whole-time.	Part-time.	Whole-time.	Part-time.
1927–28	10	1	..	..	10	1	..	1
1928–29	9	..	..	..	9	..	..	..
1929–30	8	2	..	..	8	2	..	..
1930–31	5	5	..	..	5	5	..	..
1931–32*	..	14	..	1	..	15	..	..
1932–33	5	5	2	..	7	5	..	..
1933–34	..	10	..	1	..	11	..	..
1934–35	7	..	2	1	9	1	1	..
1935–36	7	..	2	..	9	..	2	..
1936–37†	3	4	3	2	6	6	2	1

*Period following the earthquake of February, 1931. No markets available. † Since this report the total number of trawlers fishing has decreased from twelve to seven and the seiners have increased from three to four.

Several factors have contributed to the decline of the steam trawling-fleet :—

(1) They are nearly all very old vessels with a high annual maintenance charge.
(2) The cost of coal has advanced considerably and has made their working-costs unduly high.
(3) Under these circumstances they cannot compete with the more economical motor trawlers and more efficient seine boats, whose total costs per pound of fish landed are much less than the steam-trawler figures.

All trawler-men examined stated that the catches of flat fish have declined since the seine boats started fishing at Napier.

The following table shows that there has been a decline in the flat-fish landings over the last six years, more particularly over the last three, during which the seine boats have operated, but that the entire responsibility can be attributed to the few seine boats in the district seems incredible.

The flat-fish landings were :—

Year.	Cwt.
1931–32	5,700
1932–33	4,300
1933–34	5,386
1934–35	3,958
1935–36	2,329
1936–37	1,987

The drop in the total landings of flat fish coincides with the start of the Danish-seining in 1934–35, but if the Danish-seiners were to blame for the whole of the drop there should have been a lag of at least one year before the decline in the total landings was noticed. The effect of the Napier earthquake on the young-fish stocks of that year (1931) may be showing up now when these stocks and their progeny would have been mature. If there was a high mortality in the baby fish under a year old, which would normally be in the shallow inshore water at that time of year, that would account for the shortage of marketable fish in 1934–35 ; and the loss of the progeny which they would have produced, plus the more intensive inshore fishing of the Danish-seiners, would account for the increased shortage noticeable in 1935–37.

The earthquake also ruined a large area of ground—the inner harbour, which carried large stocks of tiny flat fish—and the loss of this nursery in conjunction with the loss of the crop of young fish of that particular year was probably a large contributing cause of the sharp drop in the total catch. The action of the Harbour Board dredge in dumping spoil all over one of the best inshore flat-fish grounds also affected the operations of the fishing-fleet. This nuisance has now been abated. At this port, as in many others, the lack of adequate statistics relating to the last ten years is proving a great handicap to efficient administration, the statements of interested parties having to be taken as being accurate without adequate statistical proof. One fact, however, is quite definite : there has been a steady decline in the flat-fish landings of recent years, and steps must be taken to avert the total ruin of the flat-fish fisheries in these waters.

Gisborne.

Four trawlers fish from this port, these being responsible for the bulk of the fish landed. One steam trawler has been laid up for a considerable period, due to the high price of coal and heavy operating-costs. It was proposed to install Diesel engines in this vessel, but finance has proved a serious difficulty, and the vessel will have to obtain a license under the Industrial Efficiency Act.

The motor trawlers use otter trawls with 90 ft. on the foot-rope ; some use short extensions of 12 ft. The trawling-grounds are from Karapiki to Table Cape, and the vessels work in water up to 48 fathoms in depth. All the vessels make daily trips and return to port each night. There has been some decline in the catches, but the weather rather than depletion was probably responsible for this. Unfortunately, failure to compile proper statistics in the past renders it impossible to separate the trawling landings from the landings made by line boats, but the following table shows that, allowing for small changes in the fleet, the total annual landings have varied inconsiderably and have been maintained with fair consistency :—

Gisborne Fleet and Annual Landings.

Year.	Trawlers.		Line Boats.		Total Landings.
	Whole-time.	Part-time.	Whole-time.	Part-time.	
					Cwt.
1927–28	1	1	4	..	3,761
1928–29	1	..	4	..	3,465
1929–30	1	..	10	..	2,717
1930–31	1	2	9	2	3,093
1931–32	1	..	13	2	2,937
1932–33	1	..	15	..	2,876
1933–34	1	..	14	..	3,281
1934–35	2	..	13	..	3,320
1935–36	?	?	9	4	2,190
1936–37	3	1	3	6	4,219

Auckland.

The only trawling carried out from the Port of Auckland is that done by the steam trawlers owned by Messrs. Sanford, Ltd. This firm maintained, and produced figures to show, that the trawlers could bring in more regular supplies throughout the year than the seine boats. In this connection it is interesting to note that for the year ended 31st March, 1937, the two steam trawlers operating full-time, plus one operating part-time only, landed 34 per cent. of the total fish landings at Auckland.

When it is realized that it took thirty-nine full-time and four part-time Danish-seiners to land 61 per cent., the capacity of the steam trawlers as a stabilizing influence on the market will not be doubted.

The questions of the distances which the trawlers have to travel and of operating-costs were fully dealt with in the evidence tendered. No objections to the Bay of Plenty restrictions proposed some time previously by the Marine Department were raised, so long as some shelter in easterly weather was left on the Auckland side of East Cape. The trawlers are manned under an award which limits their time at sea, and they have to compete with seine boats working under no such time-limit.

To a suggestion by the Committee that the size of the mesh in trawls should be raised, some objection was taken, but we feel that if a seine boat has to have 5 in. mesh in the cod-end, then the trawler should be under the same restriction. It may be stated here that the research work done in other countries with relation to the escapement of small fish from trawling-gear should be closely followed, and its results in determining satisfactory methods of preventing wastage should be adopted in New Zealand. With their large trawling-fleets and highly qualified staffs, which have specialized in this type of research, other countries have means of information that should form a sure guide and save the necessity of any investigation in the Dominion, unless it is required to check the effect of such improved gear on our own types of fish.

Trawlers should be subject to the same restrictions as recommended for Danish-seiners in the area between East Cape and North Cape.

New Plymouth and Wanganui.

At New Plymouth trawling has been tried by a small motor trawler from Lyttelton, but the results were unsatisfactory, and thereafter this vessel went lining and has now returned to Lyttelton.

At Wanganui the ground is not suitable for trawling, there being too many patches of rock.

One of the "Cam" boats from Australia was reported as having been seen off Kawhia lately.

A boat belonging to N.Z. Fisheries Ltd., prospected the grounds in this area, but could not trawl till she got off the Rangitikei Heads. The catch was then so poor that after a month spent in trying the grounds she went back to her home port.

Wellington.

At Wellington there are only two trawlers, the vessels "Futurist" and "Nora Niven." These vessels were responsible for 65 per cent. of the total landings of fish at this port last year. Obviously without these there would be no stability in the fish-supply in Wellington. They are fitted with refrigerators, and the catch is cleaned at sea, an improvement on the method used by the Auckland fleet of keeping the fish with the gut in for a week at a time.

Most of the fishing done by these boats is off Cape Campbell, Kaikoura, Kapiti Island, and Palliser Bay, tarakihi being the principal species landed. With the exception of a complaint against their working in Palliser Bay, no complaints were received about their operations.

In regard to Palliser Bay, it was maintained by Wellington line-fishermen that this is a nursery ground for small groper, and that it should be protected from operations of trawlers, so that the young fish might have a chance to mature. This argument is quite sound, but it can equally be applied to the operations of line-fishing vessels using "windy buoy" lines. The records of the Marine Department show that the trawlers made only eight trips to Palliser Bay during the last year, hence the problem cannot be so pressing as many others facing the Administration. Until such time as an investigation can be undertaken to prove definitely the statement that this is a nursery ground, it would be illogical to close it to all forms of fishing throughout the year.

Before passing on to its recommendations, the Committee wishes to draw attention to the value of large ocean-going trawlers for defence purposes. For mine-sweeping and general patrol duties they are invaluable, so that any factor which threatens the dispersal of their crews must be regarded as serious.

Recommendations.

New Zealand.

1. That the size of the mesh in the cod-end of all trawls be raised to 5 in. immediately, exemption being granted to those vessels operating at present to allow them to use up the gear in hand.
2. That all research carried on abroad as to the escapement of undersized fish from trawls be studied and adopted if found satisfactory under our conditions of fishing.

Napier.

3. That at Napier both trawlers and seiners be kept off the inshore grounds.
4. That at Napier there be no further increase in the number of fishing-boats using power-drawn nets for at least five years, unless statistics show a remarkable increase in the total annual landings of flat fish over a period of at least three years.
5. That efforts be made to find a suitable outlet for the excess catches of gurnard, red cod, skate, and other varieties, which are at present dumped by the Napier trawlers. With proper treatment, it should be possible to utilize all the red cod and gurnard caught.

East Cape to North Cape.

6. That trawlers be subject to the same restrictions as first-class Danish-seiners.

Cook Strait.

7. That an investigation be made to determine the following questions:—

(*a*) Is Palliser Bay a spawning-ground for groper?

(*b*) Is Palliser Bay a nursery ground for young groper?

(*c*) If it is a nursery ground for young groper, do the fish under the legal limit stay there all the year round or only for certain months of the year?

8. That, if Palliser Bay is proved to be a spawning or nursery ground, adequate protection from trawling and all other methods of fishing be granted.

Danish-seining.

South Canterbury.

Timaru is the only port in the South Canterbury district where this method of fishing is used, and its effects have been disastrous. Since this method began, supplies have shown definite signs of depletion, the boats having to go greater distances and to stay out longer to obtain the same total quantity of fish. Moreover, an abnormally large percentage of small fish just on or just over the legal limit has been landed. Many complaints were made by witnesses that these vessels by such practices as stropping up the wide-mesh portion of their cod-ends evaded the regulations. At one time eight seiners operated at Timaru, six being registered at this port, and two being outside boats, but now only two are left, and one of these is away for portion of the year at Nelson.

On the seine boats the men undoubtedly make a better living than the trawler-men, but the depletion is still going on, although not so rapidly as when the full muster of Danish-seiners was operating. However, no witnesses complained that the seine boats used the "flying shot"—*i.e.*, used their gear without dropping the anchor—which reprehensible practice is certainly the case elsewhere. The complaints made were generally that the seiners denuded a patch of fish in one-sixth to one-seventh of the time a trawler would take, that they damaged the fisheries through their ropes cutting up the bottom over a large area each shot, which had the effect of destroying feed and making the grounds barren, that they frighten the fish off the smooth bottom where the set-line boats work, and that they habitually work on the inshore nursery grounds.

Canterbury (Lyttelton and Akaroa).

For the purpose of discussing the Danish-seine method of fishing in Canterbury, the ports of Lyttelton and Akaroa may be taken together, as the fleet moves from one to the other.

Evidence tendered by reputable men in the trade at Christchurch supported that given by fishermen at Akaroa to the effect that since seining had started there had been a serious decline in the quantities of soles landed, and, what was more serious, that the soles had deteriorated greatly in size. Prior to the introduction of the seine net there were good supplies of large soles averaging about twenty fish to the case, but now the soles sent in averaged one hundred and twenty to one hundred and fifty to the case. At this latter size the fish is not useful to the trade, the customers who will take them being very limited. As long as trawling was the only method of fishing pursued, there was no decline in the catches, even when relatively high landings were being made daily. When the evidence of the trawler-fishermen was given, it was to the effect that the grounds could stand up to the operations of the small trawlers at present in commission plus the seine boats if the latter were converted into trawlers. The fishermen were convinced that the depletion of soles is quite definite, and they stated that the seine boats caught a small-sized sole which was never caught in the trawl. Like the Timaru trawler-men, they alleged that the Danish seine could fish out a patch in much less time than would be taken by a trawler, and that the seine would prevent the escapement of a greater number of small fish. They also contended that the fish were able to move between the trawls, whereas the seine nets cleaned up the whole of the bottom within the very extensive sweep of their nets.

The seine-boat men on examination admitted that the fish stocks were going down, particularly on the Lyttelton-Waimakariri grounds, but not so badly off Akaroa. The fish they tried to catch were soles and flounders inshore and tarakihi offshore in the deeper water. There are only two seiners left, whereas there used to be five fishing in this area. The present vessels work in 8 fathoms to 40 fathoms. It was also admitted that a seine boat could catch the same quantity of fish in half the time taken by a trawler, and that the seine boat would have a definite advantage over the trawlers when the fish were gathered together in patches. On their own evidence, therefore, we must come to the conclusion that a Danish-seiner is twice as effective a fishing unit as a trawler of the same size and power. This is borne out by the evidence submitted at all the ports where both methods of fishing are used on the same grounds.

West Coast

Only one seine boat has operated out of Greymouth. Some two years ago this vessel changed over to trawling and has been trawling ever since.

Off Westport there are too many snags to allow this type of fishing, and it has never been used from that port.

Nelson and the Sounds.

At Nelson the Danish-seining fleet operating whole-time has declined from twelve vessels in 1932–33 to three in 1937. In addition to these three local boats, one vessel from Timaru also operates for part of the year.

The history of power-net fishing at Nelson is very interesting. Up to 1923 the number of vessels using power-drawn nets (trawls and Danish seines) never exceeded one, and that one only operated for a period of about three years. In 1923–24 three trawlers were operating, and the position remained substantially the same until 1926–27, when the trawlers were joined by four Danish-seine vessels. The following table shows the changes in the fleet over a number of years, illustrating the gradual elimination of the trawlers by Danish-seiners, and the final stage of the story, the decline of the seine boats. This same story is common to every port from which small trawlers have operated and at which Danish-seining has been introduced.

Table showing the Incidence of Power-drawn Net-fishing Vessels at Nelson, 1926-27 to 1936-37.

Year.	Trawlers.		Danish-seiners.	
	Whole-time.	Part-time.	Whole-time.	Part-time.
1926–27	3	..	4	..
1927–28	..	..	8	..
1928–29	..	..	7	..
1929–30	1	4	2	2
1930–31	3	..	2	..
1931–32	2	..	7	..
1932–33	..	..	12	..
1933–34	..	2	12	1
1934–35	..	..	5	2
1935–36	..	..	5	2
1936–37	..	..	3	3

At this port it can be assumed that the vessels engaged part-time were really laid up for the major portion of the year.

The seine boats from Nelson operate at various places round Tasman Bay wherever the bottom is suitable. Many of the grounds are close inshore. Twenty-two fathoms is the maximum depth at which these vessels can work. The grounds are showing definite signs of depletion, particularly with regard to flat fish, which is the most important part of the catch, so much so that the men at present operating seine boats asked that the licenses for such boats be restricted in number. Over the last few months the highest daily catch for the most efficient of the seine boats has been eight cases (each 80 lb.) and the lowest catch one case. Only the high prices realized recently for the flat fish on the Wellington auction-market have made it profitable to operate these vessels. These prices have fluctuated during the autumn and early winter between 8d. and 1s. 2d. per pound, so that the effect of a drop to a normal and reasonable price of 5d. to 6d. per pound would be disastrous.

It was agreed by witnesses that a lesser precentage of undersized fish would be taken in the trawl, but that a greater percentage of the small fish so taken by the seine would survive *if* they were liberated promptly, whereas most of the small fish taken by trawlers would be killed by pressure during the long tow. Protests were made against any increase in the size of the mesh in any part of the seine, on the ground that this would allow too great a proportion of the fish just over the legal size to escape. The fact that the men are perturbed about the escapement of flat fish between 9 in. and 10 in. long shows that these fish must constitute an unduly large proportion of their catch, and this is a sure sign of trouble brewing in the near future.

At this stage it may be pointed out that the Committee is well aware of the serious effect some of its recommendations with regard to the conservation of the fish stocks will have on the men working in areas in which the depletion is already serious, but it is a fact that these measures are long overdue, and if they are not put into effect quickly and administered firmly and impartially there will be little chance of saving inshore fishing-grounds, particularly in the South Island.

It will be seen that so far as the South Island is concerned Danish-seining is carried on only from three ports—Timaru, Lyttelton (including Akaroa), and Nelson. These ports were capable of maintaining useful small trawler fleets prior to the adoption of the Danish seine, but the depletion has been such that the small trawlers are now in serious trouble. Each of these ports is only supporting two full-time Danish-seiners at the present time, and the operations of this small percentage of the fleet appears to have had a detrimental effect on the catches of the fleet as a whole. We maintain that Danish-seining could reasonably be prohibited all round the South Island. These Danish-seine boats should be given a year to wear out any gear they have, and thereafter they could be fitted out as trawlers or line-fishing vessels, forms of fishing by which the rest of the fleet have to support themselves.

Napier.

It is to be regretted that none of the Danish-seine men at Napier took the opportunity to appear before the Committee. Representatives of two of the companies operating seiners tendered evidence, however. In one case the company has no trawlers operating for it from Napier, but it has two seine boats, one of which is a recent addition to the fleet. This company naturally was in favour of the operation of Danish-seiners. The other company was not so dogmatic, as of its two

boats one is a trawler and the other a seiner. This company operates the largest seine boat at Napier, and was of the opinion that Danish seine netting is not a great success in these waters. This is to some extent borne out by the fact that the other seine boats occasionally go line-fishing, and they would not do this if the seining operations were successful.

The usual statements were made by the trawler-men as to the damage done by the seine ropes to the bottom, the effect seine-net operations had in disturbing the fish when they were congregated together, the high catching-capacity of seine boats in comparison with trawlers operating on the same grounds, and the destruction of undersized fish by seine boats. As to this last, it was stated that the crews left the small fish on deck until they had strung up the marketable fish, after which the small fish were swept overboard either dead or in a dying condition.

The fact that at the time of the Committee's sitting three of the four seine boats were line-fishing was given as evidence that the flat-fish stocks had declined so seriously as to make net fishing operations no longer profitable.

In these circumstances, it is regretted that none of the practical seine-net men attended the Committee's sittings to state their case, more particularly as they must have known of the strong opposition to their method of fishing the trawler-men would express. In every other port the seine-boat men submitted evidence, but apparently the Napier men were content to let their case go undefended.

The case with regard to depletion at Napier is covered under the heading "Trawling." The evidence relative to the decline in the flat-fish stocks suggests that the Danish seine is too severe for these grounds, and is likely to be more so seeing that the fleet has increased during the last few years.

At Napier the effects of the earthquake on the fishing-grounds and certain other factors render our decision difficult. We conclude, however, that as other small vessels can fish profitably by trawling out of this port the gradual elimination of Danish-seining would save further depletion of the inshore waters at a later date. At the very least, the seine boats should be on the same restrictive limits as the trawlers.

Gisborne.

There are no Danish-seiners at this port. One from another port did fish in this district, but only for a few days. It was stated that the small tidal range made these grounds unsuitable for seining operations.

Bay of Plenty—Whakatane and Tauranga.

At Whakatane all the witnesses with one exception stressed the necessity for the restriction of Danish-seining in the inshore waters. As elsewhere, their contentions were that there has been a steady depletion of the fish-supplies from the local grounds since the Auckland Danish-seiners commenced operations in the Bay of Plenty, that the seine boats by working close inshore have depleted the grounds used by the local line-fishing vessels to such an extent that the men cannot make a reasonable living, and that the food-supply of the Natives, both coastal and inland, has been seriously affected by the depletion. Finally, at recognized holiday resorts such as Whakatane and Ohope Beach the inshore fisheries are an asset as an attraction, and serious depletion affects the tourist trade to these places, a trade which is of material importance to the towns and townships of the district. The exception to these contentions was the operator of a Danish seine boat based on Whakatane. In his evidence he admitted that the grounds were not standing up to the fishing altogether satisfactorily, but he blamed the intensive operations of the Auckland boats for the depletion.

At certain periods, up to ten of the large Auckland boats have worked off Whakatane at the one time. One Auckland vessel was reported as having worked so close inshore that one of the crew was using a sounding pole continuously to avoid risk of the vessel going aground. The Auckland boats were further blamed for fouling the grounds by dumping overboard dead fish not only undersized and of species which are not marketable, but good edible fish usually marketed but not required by the Auckland markets at the time of capture.

At Tauranga the case was substantially the same as at Whakatane, except that the depletion had reached the stage where the small local seine boats have had to lay up because they can no longer make catches of sufficient value to enable them to be operated economically. With the laying-up of these vessels, and the severe reduction of the catches by the local line-fishing boats, the wholesale fish-markets at Tauranga have been seriously embarrassed because they cannot get sufficient supplies from the local boats.

Naturally, the operators of the Auckland Danish seine boats will object to any restrictions in this area, but in the Committee's view a firm stand must be taken. The people in these towns and districts are as much entitled to a local fishing industry as is Auckland, and they are entitled to receive fresh fish from their own boats in preference to fish which have been caught by the Auckland boats, carried for several days with the guts in on ice, taken to Auckland, and then railed back to the seaport towns off which the fish were originally taken. It may also be mentioned that a large proportion of the fish taken by the Auckland boats from these waters is caught almost solely for the export market. Apart from this, the question of the depletion of the inshore waters must be taken into account and measures of conservation adopted wherever necessary.

Evidence of depletion which supports the statements of the witnesses is furnished by the Marine Department's annual reports. The returns for the Port of Tauranga are :—

Year ended 31st March,	Fishing-vessels.		Fishermen.	Shore Hands.	Fish landed.
	Danish Seine.	Line and Net.			
					Cwt.
1932	2	28	72	6	8,818
1933	4	15	42	4	6,743
1934	3	10	25	4	6,046
1935	2	15	30	4	4,800
1936	3	15	30	4	4,250
1937	3	14	25	4	3,988

Following the date on which the Committee opened its sittings in the North Island, two of the three Danish-seiners which had fished out of Tauranga during the year ended 31st March, 1937, were withdrawn and laid up, it having been impossible to catch sufficient fish to make their continued operation profitable. In at least one case the engine had been removed on account of financial difficulties by the time the Committee reached Tauranga.

It will be seen that the landings dropped progressively each year from 8,818 cwt. in 1932 to 3,988 cwt. in 1937, although the fleet from 1933 onwards has been materially the same. Even allowing a certain weakness in the earlier years in the collection of statistics, any deficiency which might have occurred would not have altered the weight of the landings to the extent and in the manner shown. Under the circumstances, the Committee feels that some restriction on the activities of the Auckland Danish-seining fleet in these areas is called for. As the Auckland boats which work in these waters are all large, highly powered vessels capable of towing their gear, thereby changing their status from Danish-seiners to trawlers, a practice which they adopt on every possible occasion, it is reasonable that they should be subjected to the same restrictions as trawlers. The recommendations are intended to provide some measure of conservation of the inshore fisheries and to grant protection to the local fishing industry in the various coastal towns.

In regard to the Bay of Plenty ports, we feel that the operations of the present small Danish-seining fleet can safely be allowed to proceed, but no addition to the fleet should be permitted to operate in the waters we have recommended to be closed.

Mercury Bay and Whangamata.

The fishermen from these centres desired that the seine boats should be kept at least one mile off shore all along the coast, as they allege that the seiners have depleted their line-fishing grounds and also interfered with crayfishing operations. They informed the Committee that the number of fishing-vessels operating out of Mercury Bay had declined from twenty-six to seven, and that there had been a corresponding decline in the number of people supported by the industry and in the annual landings. Unfortunately, no statistics are available with which this statement might be supported. The men stated that three months after the seine boats commenced operations in this area the Kennedy Bay " bank " had gone back alarmingly as a line-fishing ground. First the hand-lines failed to return a satisfactory catch, then set-lines were used, but with a similar experience. The men were positive that there are snapper-spawning grounds in this district, they having caught fish which were " running ripe." They considered that the whole area enclosed by a line drawn from the south side of Port Charles to the Red Mercury Island and thence to the south side of the Bay should be restricted against Danish-seining from November to February. It was alleged that the Auckland seine boats make regular trips to Mercury Bay at six-weekly intervals, and that while there they all trawl and never put down their anchors. Moreover, it was asserted that the seine boats do not respect even the present small restrictions on seine fishing in the bay itself, and continually seine within the limits at night. Unfortunately, the men do not care to give such evidence to the authorities as would lead to the conviction of the offenders, as they rely on the seine boats for bait, and they consider that it is the Government's duty to provide an adequate patrol service. The Committee impressed on these witnesses that it was their duty to assist the Government in any endeavour it made to protect them, by reporting such offenders and by giving evidence in Court.

The Committee feels that if these large seine boats cannot operate economically at a distance of one mile off the shore, there is something radically wrong with their method of fishing, and it should be prohibited altogether.

Thames.

At Thames, where the main supply is drawn from the set-net boats operating on the flats at the head of the Firth, there is naturally strong objection to the operation of Danish-seiners, especially in the lower reaches of the Firth. The fishermen traced the decline of the inshore Danish-seining to overfishing and to the growth of the large modern fleet now operating in the outer Gulf and in the Bay of Plenty. Only the smaller units unfit to work outside are working the inshore grounds now left open. The effect of the operations of the Danish seine fleet on the " Dab Patch "—the flounder-spawning ground—and its repercussions on the set-net fishing on the Thames flats were also subjects of discussion during the

Committee's visit to this port. It was stated that the closure of the "Dab Patch" during the spawning season, plus the easement of the grounds during the period of the Auckland fishermen's strike in October, 1936, definitely let large quantities of fish, particularly snapper, up on to the Thames flats. This increase in fish in the Firth area helped the set-net men considerably and made it possible to keep their landings up somewhere near normal dimensions. Had this not been so, the Thames fishermen would have experienced a poor year, as the flounder fishery prior to the closure had seriously felt the effect of seining operations.

The result of seining operations on the flounder fishery was stressed by one important witness, who produced figures to show the decline in the production per fishing unit since the introduction of the seine net into the Hauraki Gulf. The following are the figures this witness submitted for periods when there were no restrictions (merchants' limits or quotas) on production. They cover the same groups of fishermen in each case :—

Flounder-production at Thames.

Year ended 31st March,	Number of Men.	Flounder produced.
		lb.
1933	38	419,950
1934	44	203,343
1935	41	267,801
1936	36	143,538

Set-net Boat Returns.

Year.	Trips.	Average Weight of Flounder per Trip.
		lb.
1929	177	93·3
1936	137	34·8

Seine-net Boat Returns.

Year.	Flounder produced.
1930	71,217
1934	29,174
1935	28,432

The effects of the ruthless fishing on the "Dab Patch" in 1932 were :—

(1) The price of flounder reduced to a level below the cost of economic production.
(2) The reduction in the price of flounder forced down the price of snapper.
(3) The excess of fish bought at low prices glutted the market, and new capital was attracted to the industry, with a view to dealing with the supply.

No doubt it was thought by some that this could go on for ever, but there was an end to it when the production per fishing unit dropped.

All the fishermen examined agreed that the flounder landings had been declining over a period of years, and all asserted that this decline was coincident with the introduction of and increase in fishing by means of the Danish seine. With the exception of one witness, the operator of a Danish seine boat, they all requested that further restrictions be placed on seining operations and that a complete closure of the "Dab Patch" to Danish-seiners should be enforced. Men who had been seining gave examples of the decline of seining returns within the Gulf in the form of the poorer results per "pull." It was admitted by the seine men that if one seiner got on to a patch of fish the others came round him, and they all worked till no more fish were left.

The statement of one fisherman was particularly apt, and agreed so closely with the views of the Committee after hearing a long and interesting debate on this subject by parties on both sides—the fishermen being present in large numbers—that it is worth quoting verbatim : "The whole trouble with regard to the seine boats is that we are very restricted as to the water that is suitable for them to work in. They have to hang round the shallow water and round the coast, and it is a very effective method of catching fish, but *I think that it is too destructive to the reproducing power of the fish.*" The italicized portion sums up the position as concisely as it is possible to do, and it covers nearly all the major complaints about the effect of Danish-seining on the fish stocks, more especially if it is interpreted as meaning that the seine boat working on inshore and often nursery grounds can abstract fish faster than nature can replace them. Actually herein lies the danger of allowing unrestricted freedom of operation to this method of fishing. The men requested that the Danish-seining be subject to further

restrictions, that the larger seine boats which habitually tow their gear should be classed as trawlers and be made subject to the same restrictions, that the Coromandel Inspector should be provided with a much faster patrol boat as his present one is too slow to catch the offending vessels, and that the penalties for illegal fishing should be made much heavier. They also requested that a local Inspector be appointed to keep the operations and gear of the set-net boats under observation.

The Inspector of Fisheries at Coromandel, who was unable to come before the Committee at Thames, submitted a written statement. In that portion of the statement dealing with Danish-seining he agreed with the Thames fishermen that the large, high-powered Danish-seiners should be put out of the Hauraki Gulf, his reasons being that this method is too intensive for the grounds, and that as the majority of the seine boats tow their gear they are trawlers in everything but name.

He stressed the difficulty of maintaining an efficient patrol with the boats at present in use by the Marine Department. He also recommended increased penalties for breaches of the Fisheries Act, on the ground that the small percentage of men who do indulge in fishing within the prohibited areas are not deterred by the penalties inflicted at present. He submitted that no new Danish-seining vessels should be built for at least three years, as the existing fleet is capable of exerting more catching-power than the grounds will stand.

The Committee agrees with the views expressed by these witnesses. As these complaints all relate to the Auckland boats, recommendations will follow at the end of this section of the report.

Auckland.

Danish-seining was first introduced into the Hauraki Gulf in 1923, and rapidly found favour with the fishermen as an efficient method of obtaining large supplies of fish from grounds already showing some signs of depletion. By 1926 the need for restricting the operations of these vessels on the schooling snapper of Hauraki Gulf was evident, and regulations had to be introduced for this purpose. A complete history of the power-net fishing (trawling and Danish-seining) in Hauraki Gulf is given by Mr. A. E. Hefford, the Chief Inspector of Fisheries, as an Appendix to the reprint of the Annual Report on Fisheries, for the year ending 31st March, 1929.

A table (Appendix A) has been prepared, and this shows the growth of the Danish seine fleet and the decline of the trawling-fleet in the Auckland waters. For the purposes of comparative production the line and set-net vessels may be omitted, as to-day their contribution to the total catch landed in the Auckland District is very low. At Mercury Bay the catch is landed almost entirely from the line-fishing vessels, and at Thames a large proportion of the catch comes from the set-net boats, but for the port of Auckland, from which practically all the seine boats operate, the landings from line and set-net vessels are practically negligible.

For the year ended 31st March, 1937, the first year for which figures of the requisite detail are available, the trawlers landed 34 per cent. of the total landings, the Danish-seiners 61 per cent., and the line- and net-fishing vessels only approximately 5 per cent. If we adjust these percentages of total landings to the round figures of 8,830 tons, this means that two full-time and one part-time steam trawlers produced 3,002 tons, whereas thirty-two full-time and twelve part-time Danish-seiners produced 5,386 tons. Of these forty-four seine-net boats, twelve are large modern vesesls of high power and capable of fishing over a wide range of coast. These are the vessels which mainly work in the Bay of Plenty and other distant grounds. Of the remainder, at least nine are modern boats, a little smaller than the preceding class, but capable of wide range action if required, so that approximately half the seine boats are modern vessels which are in no way comparable with the older type of small under-powered boat in use, say, ten years ago.

From this table (Appendix A) it will be seen that the fleet of ten years ago, consisting of four steam trawlers and twenty-two whole-time and seven part-time Danish-seiners, were capable of producing almost as much fish as to-day's more numerous and modern fleet. In addition, it must be taken into account that ten years ago the boats were nearly all on limits restricting the volume of fish they were allowed to land per trip, and a landing of one hundred baskets was worthy of note. To-day a seine boat has to come in with three times that amount to excite any comment, a fact that proves that the class of vessel has altered materially. Various references in the annual reports of the Marine Department show the catches which were taken by the other boats on the inshore grounds, and the gradual increase in the efficiency of the Danish-seiners and the extension of their operations to fishing grounds very far distant from their base. Some of the references which are of particular interest are briefly quoted here:—

Report 1924–25, Page 19.—"In fine weather good hauls have been made by the seiners throughout the year—as an instance, two launches working off the Coromandel Coast, for three hauls one had 3 tons of fish and the other for two hauls had fully 2 tons, all the fish being well over the regulation size."

To-day on the same grounds the same two launches operating the same gear would do very well if they got 600 lb. and 400 lb., or, say, ½ ton between them from the same pulls which yielded 5 tons in 1924.

Report 1927–28, Page 14.—"Until 1926–27, Danish-seining was confined to Hauraki Gulf, though some of the Auckland launches had occasionally voyaged to the coastal grounds beyond the Hauraki Gulf to the North and round the land to the Bay of Plenty. Such ventures were especially stimulated by the unsatisfactory fishing on the Hauraki Gulf grounds in the year 1926–27."

Report 1928–29, Appendix to reprint Fisheries Report, Page 45.—"We must shed the view held a few years ago that the all-important thing was the development of methods of fishing that would bring in increased catches, especially in view of the fact that increased supplies have also been accompanied by increased waste. And especially we must recognize that there is no reason

to think that New Zealand sea fisheries may be developed to the same degree as those of Europe or North America. There is no indication of anything approaching the same extent of fishing resources as those of the Northern Hemisphere. There is all the more reason therefore, for studying what assets we have, with a view to their most economical exploitation."

Report 1933–34, Page 16.—"Generally speaking, the Danish-seiners are decidedly the most efficient and productive of all fishing-vessels in the Dominion. In the Auckland vicinity considerable restrictions have been imposed on their operations by closing certain areas to this method, and there is at least ground for believing that it may be advisable to limit their operations in inshore waters off other parts of the open coast. Owing to the limited market, there has been a considerable amount of voluntary restriction of fishing intensity in the last two years. At the same time, however, the low price of fish or increased scarcity has induced more of the most enterprising fishermen to take up this method of fishing. Unfortunately, a comprehensive appreciation of the situation has been prevented by the lack of statistical information to which reference has already been made."

Report 1934–35, Page 12.—"Attention may be drawn to the fact that the Auckland Danish-seining fleet, from which the greater part of its fish-supplies are landed, has been considerably increased not only in number, but also in the tonnage, power, and fishing efficiency of individual vessels. This year the Danish-seiners at Auckland (the additional vessels as shown in Appendix A of this report were those based on Thames) numbered thirty-nine vessels, of which thirty-seven were occupied for the whole time. In the preceding year the fleet numbered thirty-eight, but only thirty-one were engaged continuously in fishing. The more distant fishing-grounds, especially those in the outer part of the Hauraki Gulf between Cape Colville and Great Barrier Island, and in the Bay of Plenty, have been increasingly exploited. These distant grounds have been the source from which the extra supplies of snapper have been derived. The nearer grounds in the Hauraki Gulf have yielded but moderate catches on the average. The seiners which specialize in flounder-fishing have operated for the most part in the vicinity of the 'Dab Patch' (about half-way between Ponui and Coromandel). It is clear from the diminished average catch per haul that the stocks on these grounds have not maintained their former abundance, and the question of their due conservation has become a matter of some concern to the Department as well as to the fishermen."

Report 1935–36, Page 13.—"There has also been a further increase in Danish-seining operations, eight new boats of greater tonnage and superior power to most of the older fishing craft of this type having entered the industry during the year. These vessels now operate beyond the confines of Hauraki Gulf to an increasing extent."

Report 1936–37, Page 22.—"In actual fact, however, the conditions under which fish is bought and sold and distributed have a very important effect on the fishermen's operations. The problems of distribution cannot therefore be dissociated from the problems of production; and nowhere does this apply more forcibly than in connection with the fisheries of Auckland, where competition for markets, especially the export markets which normally provide the maximum profit for the minimum overhead expenditure, has led to the increase in catching-power with a consequent rise in the costs of production, and has intensified the normal tendency on the part of the merchant to pay as little as possible to the fishermen for the fruits of their labour. The less price he got for his fish the more fish the fishermen had to catch to enable him to make a living, and the effect of this was to accelerate the depletion of the overworked fishing-grounds, to drive the fishing-vessels to more distant fishing-grounds, and to give rise to complaints from the local fishermen and settlers in distant coastal districts on account of the increased frequency with which the waters in their neighbourhood were exploited by these very efficient commercial vessels from Auckland. And all this appears to have done no good to any New-Zealander, least of all to the consumers of fish among the general public."

From the foregoing extracts the history of the Danish-seining movement may be followed from its introduction, when its efficiency led to its rapid adoption by a large fleet, to the stage where, when the depletion of the inshore grounds had reached an alarming point, the imposition of restrictions and the scarcity of fish (which resulted in lower catches) caused the movement to the more distant and practically virgin grounds which in the past had only to support the fleets of the smaller ports in the vicinity.

The addition of larger and more powerful craft to the fleet to allow of the exploitation of still more distant grounds, and the fact that intensive fishing on these distant coastal grounds inevitably lead to the depletion of the inshore fisheries, have evoked bitter, sustained, and justified complaint from the fishermen and settlers in these localities. At practically every port or district within reach of the Auckland fleet, from Whakatane up to Mangonui and the far North, these complaints were voiced by fishermen, fish-merchants, boat-owners, settlers, Natives, and local bodies and associations, such as Harbour Boards, County Councils, Borough Councils, Hospital Boards, Chambers of Commerce, Civic Leagues, and Progress Leagues. Hence it may be taken that the grievance is general, and is not confined to any one section of the community. Further, the available statistics bear out the statements that the fisheries at these outports have declined to such an extent as make it almost impossible for the local fishermen to obtain a livelihood.

We will now examine the case put forward by the interested parties at Auckland. Every one of the fishermen witnesses operating Danish-seiners appeared to realize that further restrictions were coming, and each of them put forward his ideas as to the most equitable method of applying such restrictions. One witness, who is in touch with a large number of the seine-boat men, favoured limitation of the catches of individual vessels, as this would not be a new departure, it having been practised for many years by the wholesale merchants in the adjustment of their supplies to the demand; many of the seine-net men had admitted to him that if they were allowed to go on as at present they would fish themselves out of a job. It was generally agreed that Danish-seining was

too intensive a method of fishing, but in the opinion of this witness the difficulty could be overcome by limitation of the catches and the closure of spawning-grounds. He held that Danish-seiners pursued a short-sighted policy when they denuded the local coastal markets of their supplies. He was not in favour of the proposed two-mile closure along the Bay of Plenty, as it had not been proved to be a spawning-ground, but he admitted that the seine boats were cleaning up the fish stocks in the area in question by being too effective and too concentrated in their operations.

Another witness, one of the pioneers of this method of fishing in Auckland, stated that he realized that if unrestricted seining were allowed the fish stocks would soon be exhausted. In his opinion, too many seiners were operating. He was in favour of zoning the areas available to each type of boat, and of restricting the catches based on the size and capital value of each vessel. A total prohibition of all deck loads was also recommended by this witness.

One man, who has been seining for many years and who now operates one of the larger vessels, was in favour of limitation of the catches and the abolition of deck loads, his reason being that the market could not absorb the sudden influx of large quantities of fish without disorganization. This man fishes mainly on the distant grounds.

Another fisherman, also among the first to use this method of fishing, was of the opinion that drastic limitations on the catch should be imposed. His operations had covered fishing from the time when fish were plentiful close to Auckland to the present day, when he can only operate successfully in the outer Gulf and the Bay of Plenty. He was also convinced that enclosed waters, such as at Russell and Whangarei, should be closed to seining, and that adequate patrols should be provided to ensure an effective inspection of such closures. Still another witness connected with the fishing industry in Auckland for many years, and now the operator of one of the larger seine boats, stated that he knew when he commissioned his vessel that the supply of fish was not inexhaustible. His vessel fishes mainly in the Bay of Plenty. He admitted that the snapper grounds of the Hauraki Gulf were depleted and that the boats have to go further afield to obtain profitable catches. He opposed the suggested two-mile closure in the Bay of Plenty on the following grounds :—(*a*) That it is not a spawning-ground ; (*b*) that the population in the district is meagre and cannot be affected ; (*c*) that such restriction would drive the seiners back to the Gulf, a known spawning-area. This witness went further. Being the owner of a large vessel, he said he would rather see the whole of the Hauraki Gulf closed to seining than that there should be any imposition of a two-mile limit in the Bay of Plenty.

The evidence of other witnesses may be summarized as follows : Snapper is not yet scarce, and if no more boats were allowed, and if there were load limitations over long periods, the stocks could be maintained ; stocks were definitely going down, fish being plentiful for only about four months of the year. A witness, interested in the handling of the fish after it is landed, objected to the practice of some of the seine-boat fishermen in bringing in excessive loads, because the fish at the bottom of the hold was usually in bad condition due to damage by the weight of the fish on top, and also to the drainage downwards of fish slime, ice water, and other impurities.

One of the best witnesses the Committee had before it was a man with long experience as a fisherman, who had engaged successfully in Danish-seining out of Auckland virtually since the adoption of this method of fishing. This man had given thoughtful consideration to the questions the Committee had to deal with. In his opinion, Danish-seining was not too severe on the fishing-grounds, but the catching-power at present in commission was too high, and some of the boats were increasing the effect of this by working night and day. He suggested a limit on the boats' landings in relation to their size and capital value.

Another fisherman, also a man of long experience in Danish-seining, who had gone to a great deal of trouble in preparing his case, supporting it by very comprehensive charts, contended that the Hauraki Gulf should be zoned so as to give each particular class of seine boat a certain area on which to work. He argued that the classification should be on the basis of power and size. Briefly the zones suggested by this witness were :—

(1) Boats under 36 ft. and working off the anchor—inside the area enclosed by a line drawn from the south point of Ponui Island to Deadman's Point, thence north to Goat Island, thence west to Thumb Point on Waiheke Island, thence south to the starting-point.
(2) Boats under 48 ft. working off the anchor—the area outside that specified above and bounded on its outer edge by a line from Turipaki Point (Coromandel) to Tiri, thence to Rodney Point (the present winter trawling-line).
(3) Other seiners operating without an anchor—outside the line (2) except in October, November, December, and January, when they should be outside a line from Colville–Canoe Rock, thence by the other lines to Rodney Point.
(4) Trawlers (steam, as different from the seine boats operating without an anchor, which are classed as trawlers)—outside a line Cape Colville to Rodney all the year round.

He proposed that no further licenses be issued to new or recommissioned boats to fish in areas (1) and (2), and as the vessels at present eligible to work in such areas became unseaworthy the areas should be closed permanently to Danish-seining. This witness urged the limitation of the landings of all power-net boats on a sliding scale from six hundred baskets per trip for the steam trawlers to fifty to sixty baskets per trip for the small seine boats, and that the carrying of deck loads of fish should be strictly prohibited. He stressed the necessity for more adequate and constant supervision of the fishing-grounds, and for the imposition of heavy penalties for illegal fishing, which he stated was rampant. The penalties he thought reasonable for the first offence were : Crew £5 each, master £25, owner £50 ; second offence, crew £25 each, master £50, owner, confiscation of boat and gear, cancellation of license, with no redress. For the greater part of the depletion which has occurred this witness held the modern Danish seine boats responsible, because by reason of their high power they were able to tow their gear. He proposed the replacement of seine-net fishing by the use of deep set-nets operated

by a leader, and this is a suggestion well worthy of seiners' consideration. This man's evidence was the most carefully thought-out and constructive submitted by any fisherman during the sittings of the Committee throughout New Zealand, and the care with which his case was prepared was greatly appreciated by the Committee.

Of the remaining witnesses, the majority agreed with the views expressed by those whose evidence has been summarized. The representative of one company that owned several boats objected to any limitation as to catch or restriction of the area open to seining in the Bay of Plenty, on much the same grounds as some of those already outlined, but this witness went further and stated that the seine boats could not operate successfully at any depth much over 30 fathoms, and if the two-mile limit were imposed the area available to seine-boat operations would be too constricted for successful fishing.

The inadequate policing of the Gulf was commented on by practically every witness. The Senior Inspector of Fisheries, Captain C. Daniel, was of the opinion that excessive fishing for the export trade plus the entrance into the industry of units the owners or operators of which were in the business only to get rich quick, with no thought for the effect of their operations on the available fish stocks, were the two primary causes of the trouble. He was emphatic that the first-class seine boats should be definitely classed with the steam trawlers and should operate under the same conditions, and he recommended that both the trawlers and first-class seiners should be restricted to outside the Cape Colville–Rodney line all the year round; the second-class seiners when towing their gear should be kept to the present trawling-limits, and when working with their anchors down left on the present seine limits, except that the line Cow Island to Hill 770 should be the inner boundary all the year round; the third-class seiners should be the subject to no further restrictions at present. (NOTE.—There is already a basis of classification of seine boats laid down in the Northern Industrial District Fishermen's award, and this, with any necessary modification, might be adopted as a definition of classes outlined above.) The senior Inspector was naturally concerned about restrictions on seining outside Hauraki Gulf, as this would tend to drive the fleet back on to the already overworked grounds.

The Committee has given the question of Danish-seining generally, and the operations of the Auckland Danish-seine fleet in particular, more attention and consideration than has been given to any other method of fishing. We are of the opinion that although Danish-seining is a very efficient method of catching fish, its operation is too severe for the fish population on our inshore fishing-grounds. If, as was stated by many of the witnesses, it is a fact that in the Bay of Plenty there are insufficient grounds outside the two-mile limit for the successful operation of the nine or ten seiners at present fishing in the Bay successfully, then there is all the more reason for putting on some restriction to ensure that they will not injure the inshore fisheries to a greater extent than has already been done. These grounds are quite capable of being worked by line-fishing vessels, which can land the fish in good order at the local coastal ports. We do suggest, however, some measure of easement from the general restriction, in that certain areas not handy to the main ports should remain available to and make provision for the continued operation of such small local seine boats as are fishing from the smaller ports.

With regard to the operations in Hauraki Gulf, we concur with the opinion expressed by Captain C. Daniel, Senior Inspector of Fisheries at Auckland, as to the necessity for further restrictions aimed at the protection of this valuable fishing-ground. Although not the only spawning-ground for snapper in the North, it is one of the most important, and only by its conservation can the fish stocks be maintained.

As a matter of general principle, we are of the opinion that all areas of water which are more or less enclosed should receive adequate protection by the restriction of Danish-seining, and that adequate protection should be given to the line-fishing vessels of each of the coastal ports. We are unable to agree to all the suggestions for restriction on the grounds used for Danish-seining which were submitted, but have given each case such consideration as was possible. We consider further that the present Danish-seining fleet operating from the port of Auckland and the neighbouring ports is in great excess of what is required for the provision of adequate supplies to the market, and that this excess of fishing power, much of it in the hands of persons and firms who only take a short view of the necessity for the conservation of our fish-supplies and are only interested in accumulating as large an immediate profit as is possible with no regard to future supplies, has contributed to the depletion of the grounds both in the Hauraki Gulf and along the coast. The modern high-powered vessels are certainly going out of the Gulf, but they are merely moving along the coast to fishing-grounds used by fleets that fish from the minor ports, and in turn are depleting these grounds.

Unfortunately, the statistics we have at our disposal do not go back for the requisite period to prove the whole of the case, or probably we would have suggested restrictions in addition to those recommended. Such figures as are available, however, do prove that this method of fishing operating continuously has cleaned up those inshore grounds on which it has been used. We are of the opinion that the present Auckland fleet can bring in more fish than can be disposed of under existing conditions in New Zealand at a reasonable price, and this has led to the development of an unstable export market, often only successful when the fish can be obtained from the fishermen at glut prices. Our limited fishing-grounds should not be exploited primarily for this type of market. In years to come New Zealand will require the whole of its fish-supplies, and every effort should be made to safeguard our small heritage in this respect. For this reason, no new Danish-seiners should be licensed except those built in replacement of existing boats, and any new vessels built should be classified as first-class seiners irrespective of their size. This will prevent the building of small boats suitable only for the inshore grounds. We agree that, as far as the landings of the Auckland and Thames fleets are concerned, there should be a limitation on the catch based on the size and capital value of the boat, so as to obviate the wastage of fish by excessive loading and by the overintensive fishing of any

particular unit. This limitation, however, can only be done by the markets concerned. Its equitable administration as a matter of Government regulation would be well-nigh impossible.

Examination of Case for Seine Nets.—The usual case put up for the Danish seine as against trawling is that it destroys less small fish. Usually the towing-time of the trawlers given by the supporters of such an argument is four hours, and this is correct for large steam trawlers; motor-trawlers of the size of the Danish seine boats only tow for one to two hours. The time occupied in hauling a Danish seine is from half to three-quarters of an hour, the actual time depending on the number of coils of warp used in the setting of the net. It is agreed that the Danish seine will land more undersized fish on her deck from one set of her gear than will a trawler for the same period of operation on the same ground. It is also agreed that the greater proportion of the small fish landed by the seiner will be alive when emptied on the deck, whereas most of the trawl fish will be dead, due to the pressure exerted on them while being towed in the net. If the small fish were sorted out quickly and returned to the water, a great number would survive, but in practice (especially when there is no Inspector aboard) this is not the case. The marketable fish are sorted out and put in the pounds or baskets, the sorting being usually done by means of a spike attached to a short piece of wood, each fish both large and small being spiked as it is sorted from the heap. The small fish left on deck, which have been out of the water for some considerable time and have been roughly handled, are then shovelled over the side. We cannot see how any great proportion of such fish are likely to survive this treatment, more particularly in the hot weather. This destruction of small fish which habitually congregate in inshore waters is one of the reasons for keeping both seine boats and trawlers off inshore fishing-grounds. Further, the Danish seine method of fishing is too intensive, and if it can only be carried on under conditions which allow the vessels to fish right in on the beaches, then the sooner it is abolished altogether the better. These inshore grounds in shallow water can be worked successfully by other methods, such as long lining, and in the absence of seine boats operating in the same area this method of fishing can give satisfactory results. Again, where the bottom is suitable and the tides fit in with the working-time the seine boat can clean up too large a percentage of the fish in one area by working the gear systematically from the one base, so that if the fish are congregated for spawning or feeding the abstraction of the stock is excessive and this must ultimately lead to depletion. We have no particular brief for trawling, but the large steam trawlers which can operate in all except the worst weather can be kept offshore and still be made to pay, while the small trawler working on the grounds used by Danish-seiners cannot make such heavy abstractions from the fishery stocks.

With regard to the Auckland Fishing District, taken widely as being from East Cape to North Cape, we have made our recommendations with the object of giving the seine boats as much sheltered water as possible while keeping them off the grounds of the local coastal fleets and enclosed waters. Perhaps we have not gone far enough in this respect, but we have weighed up each argument as fairly as possible, and we consider that our proposals will, while affording some protection to the inshore waters, still leave the seining fleet plenty of operating space. If the Auckland seining fleet cannot be made to pay under the circumstances, it is a greater argument in favour of the total abolition of Danish-seining as an intensive method of fishing suitable only for shallow inshore waters where operations can be conducted more or less in shelter.

It may be advanced as an argument that any restriction of the operations will affect the supply of fish to the Auckland market, but such will not be the case. Auckland had a good supply of fish before seining came into operation, and would have a good supply for its own requirements if seiners stopped in, say, a year's time. If all the trawlers and line and set-net boats were working full-time and their catch going on to the local market, there would be no need for the landings of the seine boats. Only the export market makes their operations really worth while, and the minute there is, for any reason, any check on the export trade the stocks in frozen fish in Auckland start to accumulate. This has been proved by recent developments in the export trade, so that any restrictions should not affect supplies to the New Zealand consumers, which are the most important. It is the aim of our recommendations to protect these supplies and to ensure their continuity in the future.

Whangarei.

At Whangarei the Committee received strong protests against the continued operation of the Auckland Danish-seining fleet in the inshore waters of the Bay. These representations were made by the various local bodies and were supported by the fishermen. In effect, the evidence affirmed that Danish-seining had so depleted the fishing-grounds as to make it impossible for the fishermen to earn a reasonable living, and many were giving up fishing for other occupations or relief work. This evidence was borne out by the Honorary Inspector of Fisheries, who stated that the Whangarei fleet had declined progressively since the Danish-seiners commenced operations in this area, the figures being as follows: 1933, 16 boats; 1934, 14 boats; 1935, 11 boats; 1936, 4 boats; and for 1937 only 2 boats have operated with anything like continuity. The grounds which Whangarei fishing interests desire to have closed were used by these line-fishing vessels, and from them the local district always received a plentiful supply of fish. Now Whangarei has to get the bulk of its requirements of fish from Auckland, thus bringing about relatively high retail prices. The value of the fish landed in Whangarei has declined from £5,222 in 1932–33 to £1,827 in 1935–36. Fish is now so scarce that the line boats can no longer make a living. It was stated that these inshore grounds are nurseries, as tiny snapper are found in the masses of seaweed some time after the schooling season. Representatives from Waipu tendered evidence along similar lines, and asked for protection. The Committee was also informed that the seine boats worked inside the present limits at night. One boat was reported to have had its numbers covered up when one of the witnesses rowed out and put a torch on it to see what boat it was. Wherever there are no limits the seiners work right in on the beach. When discussing the

question of the difficulty of catching the seine boats operating illegally, one witness made a suggestion that a minimum penalty of £50 for the offence be imposed, and that a reward of at least £10 for information leading to a conviction be given. The Committee believes this suggestion to be a good one. The closure to Danish-seining of the area enclosed by a line one mile offshore from Bream Tail to Ruakaka and thence straight to Bream Head is recommended, to give some measure of protection to Whangarei, Waipu, and McKenzie Cove.

Russell.

Here, again, the Committee received complaints about the operations of the Auckland Danish-seining fleet and requests for further restrictions. The minimum line suggested was that Danish-seiners should be forced out to the trawler limits or that both forms of fishing should be prohibited inside the Cape Brett–Ninepin line. In a place like Russell or, rather, Bay of Islands as a whole, the inshore fisheries are of considerable value to the tourist trade and for holiday-makers. In our opinion, the benefit which will accrue from the fostering of the fishing attractions of such a well-known resort as Russell is far more valuable than any results the commercial fisheries will receive if they are allowed to carry on their operations in these waters.

Whangaroa.

As the grounds for some ten miles on either side of Whangaroa Harbour are not suitable for Danish-seining owing to the foulness of the bottom, there were no complaints in this connection here. The seiners have not worked right inside the harbour in recent years, a practice which was common some time ago.

Mangonui and Kaitaia.

At these centres the Committee received delegations from the local bodies, and from fishermen, Maoris, and others, all protesting against the continuance of Danish seine operations in the inshore waters of Doubtless Bay and Rangaunu Bay. The catches of the line-fishing vessels have decreased by 90 per cent. since seiners started, and it is now impossible to provide a local fish-supply for the ten thousand inhabitants of the Mangonui and neighbouring counties. Seiners are working here systematically, and much night fishing goes on. Large numbers of dead small fish have been found on the shore after these boats have worked at night. In these bays seiners tow their nets continuously. At the beginning of February there were from eight to ten seiners working in the bay for over ten days. Line-fishermen do not consider it worth while taking their vessels to sea, as the catches are so low. At Houhora the seiners worked close inshore during the summer. There has been a gradual diminution in the line fish catches since 1932–33. One business man who runs a good hawking service supplies a total of 1,239 customers in thirty-six towns and townships, and there are also two hospitals and twenty-two hotels and restaurants to be supplied. This man can no longer get sufficient supplies. The Kaitaia Hospital Board's representative confirmed the evidence that the business man referred to could no longer supply the Board with anything like a sufficient quantity of fish for the patients' requirements.

Recommendations.

South Island.

1. That the Danish seine method of fishing be abolished all round the coasts of the South Island, the present Danish-seining vessels to be allowed until 1st January, 1939, in which to use up the seine gear which they have aboard or in stock.

Napier.

2. That at Napier Danish-seining be abolished by gradual stages, and in the interim Danish-seiners be placed on the same restrictions as regards grounds as apply to trawling.

Gisborne.

3. That, in view of the effect of Danish-seining at the other trawling ports, we recommend that Danish-seiners be not allowed to operate from Gisborne or anywhere in its vicinity. Danish-seining should be prohibited inside the three-mile limit from Gable End Foreland to Table Cape.

Bay of Plenty.

4. That in the Bay of Plenty the present trawling restrictions be applied to Danish-seiners, and, further, that the limits from Matata eastward be extended to the mouth of the Waiaua River. Also, that a two-mile limit be imposed for a distance of three miles on either side of the Whangamata River: Provided that these restrictions shall not apply to any Danish-seiner under 40 ft. in overall length. The 40 ft. exemption shall not be available to any seine boat built or licensed after the passing of the regulation.

Whangamata–Mercury Bay.

5. That a limit of one mile off shore be imposed on Danish seine boats from Whangamata to Cape Colville.

6. That an investigation be made to locate any snapper-spawning grounds in this vicinity, and if such grounds are found they should receive protection in the spawning season.

Hauraki Gulf.

7. That in Hauraki Gulf further restrictions on Danish-seining be enforced as under :—

(*a*) * First-class Danish-seiners to be restricted to outside a line from Cape Colville to Rodney Point all the year round.

(*b*) * Second-class Danish-seiners, while towing, to be restricted to the trawling-limits as they are to-day, summer and winter. If working as seine boats with the anchor down, they should be allowed on the present seine limits, excepting that the line Cow Island to Hill 770 should be their boundary all the year round, to keep them off the "Dab Patch." Any conviction for a breach of any of the seining regulations should, in addition to any other penalty, send the vessel out to the proposed trawler line.

(*c*) * Third-class Danish-seiners to be subject to no further restrictions, except that any conviction for a breach of the seining regulations should put them out with the second-class seiners.

(*d*) No vessel built or licensed as a seiner for the purpose of replacement shall be permitted to come under the second and third classes, whatever her size or power.

Whangarei District.

8. That at Whangarei that portion of the sea marked by a line one mile off shore from Bream Tail to Ruakaka and from there by a straight line to Bream Head be closed against Danish-seining.

Bay of Islands.

9. That at Bay of Islands the limits for seining as given for the months of November, December, January, and February in the regulations, Serial No. 152/1937, gazetted 15th April, 1937, shall be in force all the year round, consideration also to be given to the extension of the closed area to inside a line from Cape Wiwiki to Cape Brett.

Whangaroa.

10. That at Whangaroa the limits remain as at present.

Doubtless and Rangaunu Bays.

11. That at Doubtless and Rangaunu Bays the regulations as gazetted closing these areas for the months of November, December, January, and February be enforced for the whole year.

General.

12. That the carrying of deck loads of fish by seine boats be prohibited immediately.

13. That investigations be instituted to ascertain the effect on the escapement of small fish of an increase in the size of the mesh of Danish seine nets in (*a*) the balance of the cod-end, (*b*) other portions of the net.

14. That investigations be conducted into the practicability of replacing Danish-seining as a method of fishing in inshore waters by the use of deep set-nets lifted by mechanical means.

15. All proposed restrictions to be in addition to those already in force.

16. We also recommend that an adequate patrol service be provided by the Government to ensure that the limits be respected. This means the immediate strengthening of the Auckland fisheries patrol fleet. In addition to the new vessel, provision for which has been made, at least one other vessel, not necessarily fitted for fishing, but fast and seaworthy, is required in replacement of one of the present fleet, which are all far too slow.

17. That all fishermen be circularized by the Marine Department, drawing their attention to the fact that regulations are made to protect their interests, and urging them to assist the Government in the enforcement of the regulations issued.

SET-NETTING.

Southland.

Some of the line-fishermen working from the ports in this district use this method of fishing during the summer season and at odd times. The species of fish which constitute the bulk of their catch are greenbone (butterfish) and moki. The only recommendation made to the Committee was that the nets with a 4 in. mesh which are at present in use tend to catch a fish which is on the small side, and that the mesh should be increased to 4½ in. Most of the men have already used the larger mesh and think that the smaller mesh should be prohibited. It is only of late years that greenbone has reached any degree of popularity on the Southland market, and moki is not wanted, as it does not stand up to refrigerated storage.

Otago and South Canterbury.

Set-nets are not used to any extent in Otago and South Canterbury. A little set-netting is done by some of the boats, but is only used as an alternative method of fishing.

* For the definition of these classes, see page 17.

Lake Ellesmere.

The set-nets used here in the flounder fishery are 120 yards long, and twelve such nets constitute a "fleet." The question of what should be done to overcome the problem of trout, which the fishermen must return to the water dead or alive, received lengthy consideration at the Committee's sitting at Taumutu. The fishermen contended that in certain parts of the lake, particularly in Coves Bay, an unduly high proportion of the catch is trout. The figures given were that, for every 400 lb. of flounder caught, 100 lb. to 200 lb. of trout would be meshed in the nets. Many of these trout are dead or dying when released from the nets, and the fishermen argued that if they used nothing less than a 5 in. mesh they should be allowed to market the fish under supervision and subject to the payment of a royalty to the acclimatization society. The main objection by the acclimatization society to the royalty proposal was that trout from other rivers would be sold as coming from Lake Ellesmere. The Committee, however, thinks that the greatest danger would lie in the fishermen concentrating on the trout-netting instead of merely utilizing trout caught while fishing for flounder. Further, the increase of the mesh of the net to 5 in. would allow an unduly high escapement of full-grown yellowbelly flounders which are caught in the lake when the outlet to the sea is open. We were informed that a 9 in. yellowbelly required a net not exceeding $4\frac{1}{4}$ in. mesh, and a 10 in. yellowbelly a mesh of not more than $4\frac{1}{2}$ in. to $4\frac{3}{4}$ in. We are of the opinion that all matters relating to Lake Ellesmere should rest as they are at present, until such time as the permanent outlet to the sea has been constructed and its effect on the fisheries have been investigated. Research into the life-history of the black flounder is required before any alteration of the present netting-limits in Lake Ellesmere can be recommended, as it is not definitely known where these fish breed. Complaints were received as to the damage done to the fishermen's gear by week-end parties dragging their nets across set-nets.

French Pass, Picton, Blenheim, and Kaikoura.

Some of the fishermen at French Pass, Picton, Wairau Bar, and Kaikoura use set-nets for catching butterfish. At French Pass the suggestion was made by the fishermen who engage mainly in this method of fishing that the mesh of set-nets used for butterfish should be increased to 4 in. as very few men use the present legal net of $2\frac{1}{4}$ in. because it catches too many small fish. In their opinion, a definite shortage of these fish is becoming evident, and they wish that only the mature fish should be taken. The Picton set-net men, of whom there are only three, were not represented at our meeting, but the Kaikoura and Wairau Bar men are already using nets with a mesh of 4 in. or more, so the adoption of such a proposal would not affect the professional set-net fishermen.

Thames.

Set-netting is the most common method of fishing used by the Thames fishermen. The fishermen were mainly concerned with the effect on their fishing-grounds of the operation of the Danish-seiners in the southern end of the Firth and in the Hauraki Gulf itself. This matter has been dealt with fully under Danish-seining. It was stated that some of the fishermen working on the other side of the Firth were using nets the mesh of which was below the legal size of $4\frac{3}{4}$ in., which applies to set-nets (over 80 fathoms) used in this locality. Fishermen alleged that even a $4\frac{3}{4}$ in. mesh catches a substantial proportion of small flounders, particularly in the winter-time. In the opinion of many of the fishermen given at a general meeting called by the Committee, the nets should have a mesh of 5 in. when new and should be condemened as soon as they shrink below $4\frac{3}{4}$ in. The fishermen stressed the advisability of having a local Inspector in this district, as they contend that it is not fair that some men should evade the regulations respecting the mesh while the main body adhere to the regulation size. It was also alleged that certain fishermen make a practice of leaving their nets set during the time they take to come up to Thames with their fish. This allows these men to retain the good positions on the fishing-grounds for an indeterminate period, and also causes destruction of the small fish on the flats behind the nets if the latter are allowed to go almost dry.

From general discussions at the meeting the Committee gathered that some dry setting is going on in this locality. The whole of the evidence went to show that there is definite need for more active and continuous supervision. It was pointed out by the wholesale firms that normally there is only a poor sale for small flounders (those just on and just over the legal size of 9 in.).

Kaipara.

In this District the Committee was able to get a good expression of the opinion of the fishermen. We received a written statement from two fishermen on the Wairoa side, interviewed another full-time man at Pahi, and also got the opinion of one of the leading men through a communication sent to the Bureau of Industry. At Helensville the Committee had a largely attended meeting, all the commercial fishermen being represented, also a number of part-time men and other interested parties. Set-netting is the main, if not the only, method of fishing used in this district by the commercial fishermen, so the examination of this problem occupied the greater part of our sittings at Pahi and Hellensville.

In regard to set-netting, it may be stated that the Kaipara fishermen are allowed certain privileges and exemptions that are not permitted in any other part of New Zealand. These include permission to "stall" nets—*i.e.*, the nets are set across creeks, channels, and narrow bays and inlets, so that the fish may be left stranded at low tide—and, further, to use a smaller mesh in the set-nets than is allowed elsewhere. In Kaipara, if the "stalling" exemption is availed of, the mesh must be $4\frac{1}{4}$ in., but in Thames, the only other centre where set-netting is the principal method of taking fish, the mesh of the nets set must be $4\frac{3}{4}$ in. when the same length of net is used.

The "stalling" of set-nets, at one time a universal practice throughout New Zealand, was prohibited about 1894. Due to lack of supervision, this method continued to be used in Kaipara, and in 1914 it was legalized under certain conditions for use in this harbour. No evidence was tendered to the Committee that would justify a continuance of this privilege, but we think that, in view of its long prevalence in the Kaipara area, abolition should take place in easy stages. With regard to the size of the mesh of the net, this is 4 in. where the net is not "stalled" and $4\frac{1}{4}$ in. where "stalling" is used. In Thames the mesh is $4\frac{3}{4}$ in., and many of the Thames fishermen are of the opinion that it should be 5 in. As it is one of our recommendations in another place that the legal size of flat fish be increased from 9 in. to 10 in., we think that these men should be on the same limits as the men in Thames.

All the witnesses stressed the depletion of the flounder fishery which had taken place, and they desired the number of fishermen to be reduced or kept as at present, but the Committee could not agree to the granting of such a monopoly to the men at present engaged while they have the advantage of working under favoured conditions.

An investigation carried out by Captain Daniel, Senior Inspector of Fisheries at Auckland, revealed that a large mortality occurs amongst the small fish when stranded behind the stalled nets, particularly in the summer months.

Wellington.

A certain amount of set-netting is done by some of the Wellington fishing-vessels. They fish mostly for butterfish (greenbone) in Palliser Bay, Makara, and at Mana Island. The nets vary from 4 in. to 5 in. in mesh, and four nets of 60 fathoms to 70 fathoms each constitute a set. When using nets with full-sized meshes the men catch only large fish, but several of the men use nets which, though not illegal under the present regulations, are too small to be used for catching butterfish. The catches landed by these boats contain a large proportion of fish which is too small compared with landings from the other boats.

Recommendations.

New Zealand.

1. That a regulation be made fixing the size of mesh of set-nets used for taking butterfish at 4 in. This regulation should have Dominion-wide application.

Thames.

2. That the legal size of the mesh for set-nets in the Thames district be increased from $4\frac{3}{4}$ in. to 5 in., and that the nets be condemned as soon as they reach $4\frac{3}{4}$ in.

3. That, in common with the rest of New Zealand, the legal size of all flat fish taken by this or any other means be increased from 9 in. to 10 in. in length.

4. That as soon as possible this district receive more active and continuous supervision from a fisheries officer; the present staff at Auckland and Coromandel have enough work with their present duties and cannot give the fishing port of Thames the regular attention it requires.

Kaipara.

5. That "stalling" be prohibited in Kaipara during the months of December, January, and February in each year.

6. That the mesh of set-nets used for taking flounder be increased from $4\frac{1}{4}$ in. to $4\frac{3}{4}$ in., after allowing the men time to use up the gear in hand.

Drag-netting.

Southland (Bluff).

This type of fishery is employed in the shallow portions of Bluff Harbour and on the various beaches and estuaries. It is not an important fishery, most of the men working only part-time. Certain evidence was produced which tended to show the lack of supervision the fisheries receive in the district, but no serious problems were raised.

Otago and South Canterbury.

With the exception of a few small boats operating on the sandbanks in Otago Harbour, this method of fishing is not used to any extent by the commercial fishermen. Most of the professional fishermen abide by the regulations as to size of mesh and method and places for using this type of gear. Any trouble with this form of fishing comes from the amateur week-end fishermen using undersized gear and illegally dragging the net right ashore. The latter practice causes needless destruction of very small fish. The more rigid inspection which is being provided, and a series of prosecutions, should put an end to this trouble.

Canterbury (Lyttelton).

A number of the Lyttelton fishermen use drag-nets, but this fishery is relatively unimportant. Whiting-nets are used from May to August and flounder-nets for the balance of the year. A specialized form of drag-net fishing whereby the ropes are hauled by power instead of by hand is permitted in Lyttelton Harbour, where it has been in operation for many years. This method of fishing is not to be confused with Danish-seining, as there is no cod-end in the net and the detailed working is different. The supplies in the harbour are being maintained, but the men can only make a bare living at the best of times.

Whakatane and Tauranga.

The drag-net is not used in this district to any great degree by the professional fishermen. A little drag-netting is done at Ohiwa and at Tauranga, but with the exception of one man at Tauranga the landings from these boats are negligible. It was alleged by several witnesses that nets with undersized meshes were used in this district, and there is no doubt that more constant supervision is required. Some complaint was received concerning the operations of the fisherman who works a drag-net in Tauranga Harbour, but his method of fishing is quite legal and not likely to deplete the grounds. Further, his catch is of value to the town, as it is often landed in bad weather when the sea-going boats are unable to get out. The main trouble arises from the large number of drag-nets operated by amateurs all over this district. Many of these nets are not up to the legal standard, and a strict enforcement of the regulations is desirable. This matter can be dealt with only by more rigid inspection and some form of control of the unlicensed fishermen.

Kaipara.

All the commercial fishermen who came before the Committee in the Kaipara district or who submitted statements, and also the local Inspectors of Fisheries, both past and present, were in favour of the total abolition of drag-nets in this harbour, on the grounds that they kill too many small fish, that illegal nets which are difficult to detect are in common use by amateurs, and that these nets destroy the bottom by being dragged over the weed which harbours the food of the fishes. They further asserted that the nets are often used illegally by being dragged ashore instead of being emptied in the water. As the principal fish caught here are flounder and mullet, the Committee considers that the minimum size of the mesh of any drag-net used in this harbour should be 5 in.

Recommendations.

New Zealand.

1. That all nets, whether used from licensed vessels or not, be registered and checked by a fisheries officer.
2. That the possession of drag-nets having a mesh of less than 4 in., except where exempted for the catching of particular species of fish, be made illegal.
3. That the Fisheries Regulation No. 61 relating to nets used for the taking of other species of fish be altered so as to increase the mesh from $2\frac{1}{4}$ in. to 4 in.
4. That more adequate provision be made for the supervision of fishing in the district from Opotiki to Thames.

Kaipara.

5. That the minimum size of the mesh of any drag-net (hand seine) used in the Kaipara Harbour be 5 in., and that there be no exception to this rule—*i.e.*, for bait-nets, &c.

SPECIAL NETS.

Sardine and Pilchard Fisheries, Cook Strait.

A fisherman at French Pass applied to the Committee for financial assistance to enable him to complete the manufacture of a pilchard-net. Arrangements were made for such a loan to be considered, but in the meantime the fisherman had managed to raise the small sum required (£100) from an outside source.

Large quantities of this fish are seen from time to time, and quantities are taken for use as bait by the fishermen on the Wellington side of the Straits. Complaint was made that the Wellington fishermen come over to catch these fish as bait and take fish which are too small.

No regulations govern the minimum size at which this fish may be taken. It was suggested that these fish should be caught and either sold fresh, cured, or canned. If the evidence as to the quantities of these fish obtainable is reliable, some consideration should be given to the establishment of such an industry.

Sardines, Auckland.

Evidence was tendered that there had been an attempt to float a sardine industry in Auckland. Further developments are held up owing to financial difficulties and the requirements of the protection of fishing-rights. On the evidence submitted, this Committee cannot recommend any advance by the Government of the sum asked for by those interested in the project. If the possibilities of this fishery are as good as the promoter averred, there should be no difficulty in raising the money privately. Further investigation into the feasibility of the applicant's schemes and a survey to obtain knowledge as to the regularity of the appearance of the sardines in large quantities would have to be made before we could make any recommendation.

Recommendations.

General.

1. Investigations should be made to establish the relation of the length to the age of the pilchard or sardine, with a view to the prevention of its capture before maturity either for bait or for any other purpose.
2. After the establishment of such length, experiments as to the size of the mesh of nets necessary to allow fish under such length to escape should be undertaken.
3. The possibility of the establishment of an industry in cured or canned pilchards should be examined, and if such industry appears possible it should receive assistance and protection.

Fish-traps (Tiraus).

Whakatane and Tauranga.

Many of the witnesses who appeared before the Committee both at Whakatane and Tauranga complained that the use of fish-traps made of wire netting (tiraus) was common in the creeks running into Ohiwa Harbour and in certain portions of the Tauranga Harbour. This method of fishing is illegal, its danger being that it is destructive to young fish, and that if the traps are left unattended, which they usually are unless the owner requires fish, it will also trap a great many mature fish, many of which will die when the tide leaves them stranded. If the position is as bad as the witnesses declared, a few prosecutions are required to enforce respect for the law. We have already recommended more supervision in this district, so have no further recommendations to make.

Line-fishing: Dan Lines and Windy Buoys.

Otago and South Canterbury.

At Port Chalmers, Oamaru, Timaru, Moeraki, and off Taieri Mouth dan lines are the most common type of gear, very little hand-lining being done. Details of the dan-line gear used at the various ports are shown in Appendix B. Under this method of fishing, lines are suspended from drums to which flags are attached to indicate their position.

Dan-line fishing is responsible for a large proportion of the landings in this area, being almost the sole method of fishing used at Oamaru, and the catches from dan-line-fishing vessels comprise a substantial porportion of the fish landed at both Port Chalmers and Timaru. The main fish landed is groper, but large quantities of the less valuable ling swell the volume of the catch, and, in addition, other fish such as red cod and barracouta could be landed in greater quantities if there existed a demand at a price which would repay the fisherman for his labours and cover charges such as freight and commission.

Groper are markedly declining both in quantity and in size. From Taieri Mouth to Timaru the statements of the fishermen and merchants all agree that this fishery is in a serious state, so serious, in fact, that many of the first-class fishermen suggested a close season while the fish are in heavy roe, although such a closure would affect their already low earnings by cutting out their most profitable period of the year. A large proportion of the fishermen asserted that the depletion of the groper grounds had been accelerated by the use of dan lines. This view is strongly held by the men at Timaru and Oamaru, although they are fearful of the effect even on their present precarious livelihood if this method of fishing is abolished.

Canterbury (Akaroa and Kaikoura).

The most common gear for line-fishing at Akaroa is the dan line. Each boat uses fifteen dans per set (ten hooks per dan) and makes two sets per day. The fishing-grounds are up to three hours' steam each way from the Heads. The main fish is groper; some ling is also landed. The fish are landed cleaned, but the heads are not dumped at sea, as the men hold the opinion that this dumping of offal on the fishing-grounds frightens the fish away. The groper fishery is showing definite signs of depletion. The catch is declining noticeably both as to the numbers of fish caught per day and as to the average size. This decline has been steady since about 1930. The decline is not attributed to the effects of the dan lines, these lines having been used at Akaroa for some four to five years only. Even admitting the depletion, any restriction on the dan lines is not favoured by the men, who stated that they could not make a living with hand-lines.

At Kaikoura the line boats use dan lines with fifteen to twenty hooks per line and three to ten dans per set. The main fish is groper, but fair quantities of ling and trumpeter are also landed. Apparently the supplies of fish are being maintained.

West Coast.

The trawlers at Greymouth occasionally fish with the dan line, setting sixteen to twenty dans two or three times a day. They fish in depths up to 25 fathoms on sandy bottom up and down the coast. The supplies of groper are showing signs of decline, and some restriction of the gear appears to be desirable. The groper take off in August and September, the best fishing-season being from Christmas to Easter. Most of the line-fishermen on the West Coast have occupations other than fishing, which is only pursued in a part-time manner.

At Westport only one fishing-boat is working full-time and five others part-time. No shortage of groper is reported here. The use of dan lines began four years ago, but the total landings have not been large owing to the small number of vessels operating. The details of the dan-line gear used on the West Coast are shown in Appendix B.

French Pass and Picton.

Practically the whole of the groper caught by the fishing-vessels operating from French Pass and Picton is caught in various portions of Cook Strait by means of windy-buoy lines. These lines are the modern counterpart of the more simple dan lines used in the South. Instead of an oil-drum, a large specially prepared canvas buoy fitted with a pole is used as a float and marker. The hooks are increased from ten or twelve to twenty-five or fifty. Steel traces are used, and the whole of the lines and gear is much heavier. This gear, which is in common use throughout the Strait, is the most deadly line-fishing gear ever evolved. The boats are in the main fine large sea-going vessels and are maintained in a manner which is a credit to the fishermen-owners. The main fish landed by these

boats is groper (hapuka). Each of the fishermen examined admitted that the groper-supplies are going down in quantity and also to some extent in the size of the fish caught. The landings per annum may not be declining, but the boats are bigger and the amount of fishing-gear is greater and more deadly in its operation, which explains why catches are being maintained although stocks are depleted. The stocks are so far down that the men maintain that if they had to go back to straight-out hand-lining they could not make a reasonable living. It was admitted that if a man fishing to-day had to use a lot of dan-line gear to catch a quantity of fish equal to that which he could have caught on a hand line fifteen years ago, then the stocks must be showing signs of the strain. One competent witness, who has fished for years out of this port, stated: "Ten years ago, if they had been using the gear they are using now, they would have got launch loads of fish"; while another equally competent fisherman equipped with a good vessel and the best of gear stated that it was slavery now to get fish in payable quantities. All the fishermen were in agreement that some measures would have to be taken if their livelihood was to be safeguarded for, say, the next fifteen years. The quandary they were all in was that, whilst the windy buoy had depleted the fish, its continued use, although this would accelerate the depletion, was necessary for them to make a living.

Various suggestions were put forward, one being that windy-buoy fishing should be stopped in May, June, and July (just before the spawning season), when hand-lines only could be used. Another suggestion was to zone the boats fishing from each port. The limitation of gear was also urged.

Wellington.

With the exception of the two steam trawlers, practically the whole of the full-time fishing-fleet of the Wellington district consists of line boats. All these vessels use the improved dan-line gear known in the Cook Strait as "windy buoy" gear, and are responsible for approximately 27 per cent. of the total fish landed in the district. Groper is by far the most important species represented in the landings made by these boats, being twice as abundant as ling, the next most numerous species, which in turn is over three times more plentiful than hake, the ratios being 61 : 28 : 8. The rest of the catch consists of small quantities of various species expressed by the figure "8" if brought to the same ratio as the others quoted above. From this it will be seen that the effect of the fishing on the supply of groper is the main consideration in Wellington waters.

We were fortunate in having the opportunity of examining four of the most experienced men, two of them speaking for large groups of fishermen. These men admitted that the stocks of groper were declining, more particularly on the grounds nearest to Island Bay. The same depletion, however, was to be seen on the more distant grounds which were in frequent use. The average size of the groper caught is going down slowly, and although large fish are still being caught they are not in anything like the proportion to the total as was formerly the case. Although the total landings of the fleet might be the same or even more than it was a few years ago, these witnesses agreed that the real reason for this was that the fishermen are to-day using much more fishing-gear per boat and the gear itself is much more efficient. It was definitely stated that if the men had to go back to hand-lining—the only method in use in the old days—they could not make a living. So seriously do the more thoughtful fishermen treat this problem of the depletion of the groper grounds within working range of Wellington—*i.e.*, from Cape Palliser to Mana Island—that they suggest the building of large lining-vessels, 90 ft. in length, fitted with refrigerators, in order that the outlying grounds may be explored and worked profitably. The number of windy buoys used by some of the vessels was stated to be excessive, and some check on this was suggested.

The history of these fishing-grounds is rather a sorry tale. First, a new "bank" is discovered, and is intensively worked, the fish being landed in oversupply at glut prices or dumped at sea because the market could not absorb them. The next stage is the depletion of the ground from the state where the fish could be found on it practically all the year round to the point where payable catches can only be made at certain seasons of the year. The third and last stage is that where the catch is no longer profitable, and the boats move off to discover fresh grounds, where this process is repeated. After consideration of the evidence submitted, we feel that some restriction on windy-buoy fishing is warranted, and our recommendations are such as to prevent any further increase in the amount of gear used by the men and to reduce that used by some of the vessels.

Recommendations.

General.

1. That the number of windy buoys or dan lines be restricted to three for each man aboard the vessel.
2. That the number of traces on each windy-buoy line or dan line be fixed at not exceeding six.
3. That the number of hooks on each trace shall not exceed thirty.

Cook Strait Area.

4. That if the investigations recommended in regard to trawling prove that Palliser Bay is a nursery ground for groper, windy-buoy and dan-line fishing be prohibited in the same area as is closed to trawling.
5. That windy-buoy or dan-line fishing be prohibited all over the Cook Strait area during the months of May, June, and July.

LINE-FISHING: SET-LINES AND LONG LINES.

Otago and South Canterbury.

Set-lines (long lines) are mainly used by the fishermen at Timaru, but their use is not confined to this port. The evidence was to the effect that, although this form of fishery was not so destructive as the dan line, there should be some limitation on the number of hooks per line.

Nelson.

The line-fishing at Nelson as done by the professional fishermen is in the main long-lining. The lines carry six hundred to seven hundred hooks and are operated on grounds within roughly forty miles of Nelson in depths of 10 fathoms to 40 fathoms. Most of the line vessels in use are small, and they are not really fit to work so far off shore as is necessary to reach grounds on the 40-fathom line. Snapper is the main fish, with groper for about two months in the year, and a few gurnard. Catches have declined greatly since the seine boats commenced operations. Ten years ago the line boats could fish within a six-mile radius of the port and make a decent living. To-day they have to go up to forty miles distant from the port, yet only eke out a bare existence. Lack of storage for bait is a serious problem for the line-men, as they are forced to spend considerable time catching bait when conditions are unsuitable. To exploit the more distant grounds, such as off Farewell Spit, larger and more seaworthy boats are necessary, but none of the line-fishermen are able to arrange the necessary finance.

Napier.

A number of vessels operating from Napier use long lines solely, and some of the trawlers and seiners use this method of fishing in addition to the methods for which they are mainly fitted out. The main fish caught by the line boats are groper and snapper; at times tarakihi is also landed. The lines used carry from one hundred and fifty to two hundred hooks, and four to six lines are set—approximately eight hundred hooks. Bait is readily procurable in Napier at 1½d. per pound. The inshore fishery is not so good as it used to be, but off shore the stocks appear to be standing up to the abstractions. There are, of course, the usual fluctuations from year to year—the seasonal variation with each species, and fluctuations due to the effect of the weather. The grounds used by the line-fishing boats are comparatively small. Up to two years ago fish could be caught on the lines anywhere in the Bay, but latterly the radius of operations has had to be extended to within twenty miles of Port Ahuriri. There is some loss of gear, but it is not excessive.

Gisborne.

The long-line method of fishing is carried on by five boats at Gisborne. The lines carry from one thousand to one thousand six hundred No. 5 to 6 hooks on 16 lb. line, one thousand hooks being the most common number in use. The fishing-grounds used are between Table Cape and Gable End, roughly twenty-eight miles each way from the port. The main fish landed is hapuka, but tarakihi, snapper, and trumpeter are also caught. Last season the catches of hapuka were poor, but it was considered that this was due to a bad season and not to depletion of the grounds. No hapuka under the legal size of 2 ft. are caught on these grounds.

Whakatane and Tauranga.

At Whakatane there is one full-time long-line-fishing vessel and at Tauranga there are five. The lines carry one hundred and fifty No. 7 or 8 hooks, and three to six lines constitute a set. The main fish caught are snapper and tarakihi, with an odd hapuka. Each line costs approximately 17s. 6d. when completely assembled. Catches have declined considerably in the last ten years, and the blame is attributed to the operations of the Danish seine boats. Most of the men previously engaged in line-fishing have now abandoned it or changed over to part-time fishing, they having been unable to obtain a reasonable living at this occupation.

Mercury Bay.

Long-line fishing is carried on at Mercury Bay and Waihi Beach. At Mercury Bay sixteen to twenty lines each carrying one hundred and seventy hooks are used per set. Each line is made of No. 43 thread cotton tanned, and costs 13s. 6d. The men used to make the lines from trawl twine, but found that the tanned cotton gave much better results. The principal fish taken is snapper, and there has been a considerable decline in the landings within the last seven years. The grounds extend for thirty miles on each side of the port from Whangapoua to Whangamata. At Waihi Beach the set consists of eight lines totalling two thousand six hundred hooks. Here, the men use 11 lb. trawl twine to make the lines. Some of the vesssels use hand-lines in addition to the long lines, but the returns from this method of fishing are now so low that it has been abandoned except for use when waiting to lift the long-line gear or when the weather is not suitable for long lining.

Auckland.

At Auckland very few of the vessels use long lines. The depletion of the inshore grounds and the large quantities of fish brought in by the seine boats have made it unprofitable to operate long-line boats, although fish caught by this method can be landed in better condition than fish caught in the power-drawn nets. Further, when long lining is used there is no destruction of undersized fish.

North Auckland and Whangarei.

The Whangarei men use seven to eight sets of long lines, each comprising some two hundred and fifty hooks. There has been a great decline in the catches and in the number of vessels fishing. The decline is ascribed to the use of Danish seines near the Bay and is dealt with under "Danish Seining."

Russell.

Not many men here are engaged in long-line fishing for a living, the main difficulty being with regard to marketing. Whangarei is the only market available. It is a good market, but restricted as to the quantity it can absorb at one time. The long lines only carry two hundred hooks each, and two lines are set at a time. A considerable amount of gear is lost, due to the presence of sharks. Snapper are much scarcer than they used to be. Bait is very hard to obtain in the winter-time.

North of Russell.

The line-fishing here is intermittent, due to the decline in the supplies, which makes it unprofitable for men to engage in fishing as a full-time occupation.

New Plymouth and Wanganui.

The New Plymouth fishermen use long lines and hand-lines. The main trouble is the excessive distance to the fishing-grounds, especially in winter. In summer, when the fish are more plentiful and may be caught nearer home, the market will not stand the gluts caused by the quantities landed from part-time boats in fine weather. The launches fish from Kawhia in the north to Opunake in the south. The winter trips are usually three days in duration; in the short summer season daily trips are made. Snapper is the principal fish caught. Some hapuka are also taken, but their appearance is erratic. A great deal of time is lost, due to the bad weather conditions, sometimes only two or three trips being made per month.

At Wanganui long lines and hand-lines are also used, but long lines are not favoured, for the reason that the men lose too much gear, due to the suddenness with which the weather breaks. The main fish is snapper, with a few hapuka and blue cod. The nearest fishing-grounds are about fifteen miles distant, the best grounds being north of Patea. Snapper stocks are keeping up, but the blue cod are now very scarce. The snapper caught here are all of a large size, being about 8 lb. each in weight. A witness stated that a good day's catch is twelve dozen, but owing to weather conditions only about six days' fishing per month is possible.

HAND-LINING.

Otago and South Canterbury.

This method of fishing is used throughout the Otago and South Canterbury districts, but the fisheries have declined to such an extent that it is becoming practically impossible for the men to make a fair living by the use of hand-lines only, and they are used mainly as an auxiliary method of fishing either while waiting for the set gear to be picked up or when weather conditions make it inadvisable to use set or dan lines.

Canterbury.

The fishermen at Akaroa use hand-lines only when it is too foggy to use the dan lines. The catch on hand-lines is very poor—each boat would be fortunate if it could get more than twelve groper for the day. As the fish only average 10 lb. headed and gutted, this would not return sufficient to pay operating-costs and leave the fishermen a fair return for their labours.

At Lyttelton some of the men use hand-lines, fishing from Port Levy, but their returns are poor. They catch groper from October to March, then go on to ling and blue cod.

At Kaikoura hand-lines are used only when and where it is impracticable to use dan lines.

West Coast.

The use of hand-lines on the West Coast is confined to some of the part-time fishermen, and the landings from this method of fishing are negligible.

French Pass.

The most important fishery here is the catching of blue cod. This is all hand-line fishing, although the boats also engage in windy-buoy fishing for groper at certain times. The men at French Pass are well awake to the depletion of the grounds which has occurred, and by means of their organization have taken active steps to conserve their fishery. They were instrumental in having the size-limit for blue cod raised from 12 in. to 13 in., and prior to the regulation had disciplined themselves to take only those fish 13 in. or more in length.

The destruction by summer visitors of small fish in the Sounds was discussed by the Committee at a general assemblage of the fishermen. The men alleged that the holiday public use such small hooks that the undersized blue cod caught are killed by having a gullet torn, whereas if medium sized hooks were used the fish would not be so injured and would live if returned to the water. The French Pass fishermen were emphatic that mollymawks will not capture small blue cod which are returned to the water, nor will they be caught by barracouta on the way down, and they also stated that they found no necessity to handle their fish in the rough manner so common in Foveaux Strait.

(These questions are further considered in the section dealing with the Southland blue-cod fisheries.) We were also informed that, due to lack of supervision, the summer visitors take a large number of blue cod under the legal size, thereby offsetting the good done by the fishermen in conserving the stocks. When large parties are aboard launches, it is the practice for each individual to deny responsibility for any undersized fish found on the vessel, so no action beyond confiscation of the fish can be taken by the Inspector.

Napier.

The hand-line fishery in Napier is not important. One man catches a quantity of blue cod off Cape Kidnappers and also fishes for groper. He reported to the Committee that the groper are declining on the grounds where he carries on this occupation.

Whakatane, Tauranga, and Cape Colville.

Hand-lines are only used in the summer period in the Whakatane and Tauranga districts, but the grounds are now so depleted that their operation yields a meagre return for the labours of the men employed.

With the exception of certain special hand-line fisheries which are dealt with in the following pages, the hand-line fishery in the rest of New Zealand is negligible. The recommendations covering the special fisheries follow each section. Our recommendations with regard to hand-line fishing at the other ports are as follows:—

Recommendations.

French Pass and Sounds.

1. That investigations be undertaken as soon as possible to obtain definite information as to the quantity of undersized fish taken on the various sizes of hooks and the additional mortality or injury caused by hooks of small size. If this data shows that the use of these small hooks is detrimental to the fishery, they should be prohibited in these waters.

2. As it is believed that certain boat-owners (not fishermen) evade the regulation dealing with the size-limit of blue cod by filleting the undersized fish before landing, steps should be taken either to curb this practice or to evolve some method by which the size of the fish from which the fillet was taken can be accurately stated.

3. It should be made imperative for every hired launch taking fishing parties in the Sounds district to have the extracts of the blue cod regulations as issued free by the Marine Department prominently displayed aboard the vessel.

4. If it is possible to so legislate, the fish on board any boat should be legally defined as being in the possession of the master of such boat.

SPECIAL FISHERIES.

Chatham Islands.

The fishery at the Chatham Islands consists entirely of hand-lining for blue cod. A small quantity of hapuka (groper), trumpeter, and other varieties are also taken, but marketing difficulties prevent these fish from being utilized to the extent desirable. All the boats fish for one or other of two companies: the N.Z. Fisheries, Ltd., in which case the catch is landed daily at one of the two fishing ports equipped with freezers, or the South Seas Fishing Co., Ltd., in which case the fish are taken aboard the mother ship "South Sea," where they are cleaned, packed, frozen, and transported to New Zealand. The "South Sea" (mother ship) had six launches fishing with her at the time of our investigation, and N.Z. Fisheries, Ltd., was taking the catch from the balance of the fleet. (For total number of vessels in the fleet, see Appendix C.)

In the opinion of those well qualified to judge, the grounds, more particularly the nearby ones, are starting to show signs of strain. When only the shore stations were operating the fleet did not use the more distant grounds, and these acted as a reserve, but with the advent of the "South Sea" as a mobile factory the position was materially altered, all the grounds being then subject to exploitation. It is assessed that the annual production by the two companies should not exceed twenty thousand cases, and production should be limited to that amount. This quantity can be absorbed by the markets, mainly Australian, without causing any depression in the price.

The quantities of fish shipped from the Chatham Islands over a period of ten years, with the number of vessels making the catch in each year, is shown in Appendix C. This table shows that the average annual production of blue cod during the period in which both companies have been operating has been 17,014 cwt., which, taking the case as equal to 68 lb. net, equals 28,441 cases. This is something like eight thousand cases over and above what the grounds are estimated to be able to provide each year over a period.

The companies have suggested a close season during the spawning season, as this suits their arrangement to close down when the catches are normally low, but the Government could not make a close season, with all its attendant hardships to the men, until such time as an investigation established that some measures of conservation are necessary. When only one company was operating it was the practice to close the works during the summer, and as the two companies are now working in very close agreement there is nothing to prevent them from doing so now if they consider it desirable. Further, if a close season is declared it would be for a rigidly enforced period, but as the incidence of the spawning season varies and the weather interferes with fishing operations more in some years than in others it is not desirable that operations should be suspended on a definite date when perhaps freedom of operation for another month would make all the difference between a successful and an unsuccessful year not only for the fishermen, but for the companies concerned.

Blue-cod Fisheries, Foveaux Strait.

Fishing in Foveaux Strait may be divided into the following categories:—

(1) Hand-lining for blue cod;
(2) Hand-lining for hapuka (groper);
(3) Trawling;
(4) Drag-netting; and
(5) Set-netting.

Of these, the blue-cod fishing is by far the most important, with trawling next, and the other methods more or less negligible.

Hand-lining for Blue Cod.

Production.—This important fishery has developed several problems in recent years. These problems, although they appear to be rather varied, nearly all arise from the same prime factor—the depletion of the grounds inshore which are handy to the fishing ports. A great mass of evidence was tendered in this connection and can only be dealt with briefly under the various headings:—

(*a*) Depletion of the blue-cod fishery.
(*b*) The new size-limits for blue cod and the escapement of undersized fish.
(*c*) The necessity for close seasons and protection for blue-cod nursery grounds.
(*d*) Loss caused by bruised fish.

Of these problems, (*a*), (*b*), and (*c*) are very closely connected.

Depletion of the Blue-cod Fishery.—The consensus of opinion amongst the older and more experienced fishermen who are well qualified to judge is that the inshore grounds are showing definite signs of depletion, and that they are now only carrying stocks of younger and smaller fish. The more distant grounds, such as South Cape and The Traps, are still carrying a good stock of fully grown fish The handy grounds have been fished hard by the many new arrivals in the industry, particularly since the sawmills at Stewart Island closed down. The men employed at the sawmills, having to face the problem of earning their living when the occupation for which they had been trained failed, had to take to fishing as the only alternative available. Being in the main inexperienced in the handling of boats when they took over the new work, they concentrated on the nearby grounds, with results which, if the depletion is not checked in some way, will be serious for the industry as a whole.

The most disquieting fact is that these handy inshore grounds appear in nearly every case to be nursery grounds, in that they carry stocks a large proportion of which are young fish. If the cause of this excessive population of small fish is not that the grounds are nursery grounds, then an even more serious construction must be put on the evidence, and that is that the depletion of these grounds has been carried so far that the older age groups of fish have been practically fished out and the men operating now are concentrating on the smaller fish of the younger groups which have been left.

In making any recommendation tending to save these grounds, due consideration has to be given to the men in the small boats and the effect on their livelihood of any proposed restrictions, but we have also to remember that if the depletion is carried far enough their livelihood will vanish, without possibility of recovery.

The New Size-limits and the Escapement of Small Fish.—Up to April, 1936, the legal size for blue cod was 12 in. in the natural state or 10 in. when properly headed. In April, acting on representations received from fishermen in other parts of New Zealand, the legal limit was raised to 13 in. over-all and $10\frac{3}{4}$ in. when headed, with a proviso that fish taken by any person other than a licensed fisherman for his own use had only to be up to the original standard. The Half-moon Bay fishermen (Stewart Island) protested against the increase, on the following grounds: (*a*) That the loss of the fish between 12 in. and 13 in. would be serious, in that fish of this length constituted the greater portion of their catch; (*b*) that if such fish were put back in the water they would be lost in any case, as they would either die or be taken by mollymawks or barracouta before they were able to swim away.

On objection (*b*), in its reference to molymawks particularly, the following statement submitted to the Committee by Mr. R. A. Falla, Director of the Canterbury Museum, Christchurch, is illuminating:—

"In my experience of the habits of mollymawks of several species, I have not seen them dive to any depth beneath the surface. From the ordinary swimming position they can submerge the head and beak to a depth of about 2 ft., and by an effort at diving I have on one or two occasions seen them submerge the body in a position in which the bird's back and tail are below the surface and the beak therefore effective to a depth of nearly 4 ft. Their structure is such that they are able to do this only with great difficulty, the reason being that their plumage is not compact, as it is, for example, in diving ducks, shags, and shear-waters, and that probably they are unable to use their feet in making a dive to any depth.

"If a contention should be made by fishermen that they go deeper than I have stated, there is this to be said in favour of it—that the larger of the two species commonly found on the fishing-grounds has already adapted itself to a considerable extent. It is one of the species that seldom or never follows ships on the high seas, and has in consequence been called the shy mollymawk. Having thus far overcome the natural shyness, it may possibly have become a rather better diver than others of its kind, but I have no evidence to this effect, and for reasons given above think it unlikely. The size of the wings is also a hindrance in submerging."

The majority of our witnesses naturally favoured the retention of the old size-limits, mainly on the grounds that the fish between 12 in. and 13 in. would, if thrown back into the water, be lost for the reasons given above. The Committee had, however, sufficient evidence from experienced men that if the fish were handled properly a large porportion would survive. It may give the men some extra work to save these fish, but it is work that may reasonably be required of them and is definitely in their own interests.

It may be stated here that the large virgin stocks of fish on our costal fishing-grounds have definitely gone, and it is no longer possible to allow any fisherman to have unrestricted license to take what he desires from the fishing-grounds, with no heed of the future. Our known and possible new grounds are definitely restricted by the fact that New Zealand has only a very narrow continental shelf, and every effort must be made not only by the fishermen, but by the merchants and the Administration, to see that our fisheries, which are a national and not a private or provincial asset, are used in a rational manner which will ensure the maintenance of sufficient stocks for the supply of this essential foodstuff to our own people. Curiously, the financial loss due to not being allowed to bring in these undersized fish for sale to the merchant was not stressed nearly as much by the fishermen as we expected. If, however, it is a fact that the inshore grounds are yielding so high a proportion of small fish in relation to the total catch that any prohibition on their being taken will seriously affect the earnings of the men, it really resolves itself into a very strong argument for conservational measures. If the proportion of small fish is as high as the men asserted in their first objections to the new regulations, then the grounds must be one of two classes—nursery grounds which should be rigidly protected for the benefit of the future fishery, or depleted grounds where the depletion has reached such a stage that immediate protection is essential if they are to be preserved. It must not be forgotten that a large number of the small fish released will live to reproduce their kind and will be caught again when they have attained their full size.

The Necessity for Close Seasons and Protection for Blue-cod Nursery Grounds.—Many of the more experienced men favoured the imposition of a close season during the height of the blue cod spawning season as being the most equitable manner of applying a necessary restriction. The spawning season varies somewhat from place to place and from season to season, but the general opinion was that a closure from 1st October to 1st January would cover the spawning season in this district. It was argued that if such a closure were applied it would be necessary to provide other means of livelihood for the fishermen in these months, but as the fishing is to some extent closed by natural causes during portion of this period the actual loss to the individual fishermen would be small. In any case, past records of catches during this period of the year would have to be closely examined before any calculation could be made of the financial disadvantages suffered by the fishermen from the enforcement of such a closure.

Some of the witnesses, who were of the opinion that these inshore grounds are nurseries rather than depleted areas, stated that they should be protected by closure to all commercial fishing. This is a recommendation which, if desirable, could only be made reluctantly, as its effect would be to force the small boats farther afield, with a consequent increase in the risks normally taken in the fishing industry. The one good result from such a regulation would be a stimulus to the building of up-to-date vessels capable of fishing on the more distant grounds.

Loss caused by Bruised Fish.—Practically every merchant complained of the loss caused by the fishermen bringing in bruised fish. This bruising results from the practice, too often indulged in by the fishermen, of banging the fish against the gunwale and other portions of the boat when jerking them off the hook. Evidence of the bruising is usually not found until the fish is dressed and split. If the bruising is very bad, there may be external evidence, in which case the fish is usually condemned by the merchant, and the fisherman receives no payment. Competent fishermen informed the Committee that bruising is avoidable, and the bulk of the complaints about bruised fish can be traced to the more inexperienced fishermen. This is borne out by the merchants, who stated that certain boats send in practically no bruised fish. Some idea of the danger to our trade caused by this bruising will be evident when it is explained that a great proportion of blue cod caught in these waters is exported to Australia. This fish is shipped headed and gutted, and is not split until it has been bought by the merchants in Australia. When the fish is split the bruising shows as a discoloration which spoils the fish for the purpose for which it is required. The Australian merchant then either refuses to pay for the fish or wishes a reduction in the price. This is a commercial loss which could be avoided, and, further, there is the damage done to the good name of New Zealand products in Australia. This fault can be cured by education of the fishermen and by the merchants taking a firm stand in the matter of non-payment for fish which is noticeably bruised. Some of the fishermen have got into the habit of handling their fish in an unnecessarily rough manner. Fish is more easily damaged by rough handling than meat, and these men will have to learn that losses caused by careless handling will react to their own disadvantage.

The Committee suggests that educative leaflets explaining the reason for limiting the size of blue cod to be taken and for unhooking the fish instead of jerking them from the hook by a bash against the boat might be circulated among these fishermen with good effect.

Hand-lining for Hapuka (Groper).

This fishery is considerably less extensive than the blue-cod fishery. One of the witnesses engaged in it stated that he had to go twice as far as he did a few years ago to get his fish. Most of the groper landed are caught on hand-lines, but one or two men use a small number of dan lines. This fish has not met with a ready sale in Southland until recent years and has to some extent been neglected. The problem of the depletion of the fishing-grounds of hapuka is not nearly as serious here as it is on the more heavily fished grounds further north.

Recommendation.

Foveaux Strait.

1. The Committee recommends that the size-limits for blue cod as set out in the regulations gazetted on 2nd April, 1936—*i.e.*, that the length of blue cod in its natural state shall be not less than 13 in. and not less than $10\frac{3}{4}$ in. when properly headed—be enforced in this area.

CRAYFISH.

Southland.

There is no great activity in regard to the catching of crayfish in the Southland district. Sufficient are caught to supply the local requirements. Some attempt was made to build up a canned crayfish trade, but the intermittent supplies in conjunction with certain technical difficulties prevented this enterprise from being carried to a successful conclusion. Good stocks of crayfish are reported from various localities in the district, particularly in the west coast Sounds, but they are all found at points too far removed from the only available cannery. The erection of special plant at isolated points to deal with crayfish alone is an expensive and risky proceeding.

Otago and South Canterbury.

The main crayfishing centres in these districts are Karitane, Moeraki, and Taieri Mouth. Before the export market collapsed owing to the application of a quota in France, arrangements had been made for the purchase of large supplies from these districts by the various firms engaged in the industry. After one year of intensive fishing to supply the heavy demand, the grounds showed marked signs of depletion. This was noticeable not so much in the quantities of fish coming forward, but in the alarming decrease in size. The Moeraki grounds suffered worst and have not recovered. Taieri Mouth, which was not exploited so much, suffered least, and these grounds are now coming back to normal. The state of the Karitane grounds is rather doubtful, as, although it was noticed that when the question of conservation was being discussed the fishermen would agree to the prohibition of the taking of " berried " females, they would not agree to even a mild restriction on the size. From this it would appear that there is still a large proportion of small crayfish in the landings. The cannery at Dunedin provides a market for crayfish, but the fishermen complain that the low prices offered and the intermittent market, due to its dependence on overseas orders, make their livelihood precarious. The methods used in taking the crayfish in these waters by means of supplejack pots are satisfactory and call for no comment.

Canterbury (Akaroa and Kaikoura).

The Christchurch markets draw their supplies of crayfish from Akaroa and Kaikoura. At Akaroa the men use hoop-nets, generally working about twelve nets at a time. The excess catch is kept in floating boxes until required. The grounds in use are about four to five miles from the Heads. It was definitely stated that the size of the catch is declining. At one time it was possible for a boat to catch up to twenty sacks per day in September, October, or November, but to-day half that amount is a good catch. The decline is not attributed to overfishing, as there has not been any excessive fishing in the last ten years, and no definite reason was assigned to it. Very few small crayfish—*i.e.*, under 9 in.—are taken from these grounds, the mesh of the nets used being large enough to let the small fish escape. The proportion of " berried " females varies during the season. In the early part of the season two-thirds of the catch are females, but later on the males constitute the major portion of the catch. The crayfish cannery at Akaroa only operates for two or three months in the year, so that its operation cannot be blamed for the depletion. To illustrate the fact that the depletion here is not caused by overfishing, it may be noted that for the last seven or eight years only two or three boats have engaged solely in crayfishing, and then only for three months in the year. Ten years ago ten vessels were engaged, and each was landing from ten to twenty sacks per day. The only factor which we consider can have had any influence on the crayfish stocks off Akaroa is the unduly high proportion of " berried " females removed in the earlier part of the season.

At Kaikoura the grounds which have been exploited are those round about the Peninsula. The hoop-net is the usual type of gear employed. The season here extends over seven months, commencing in June, but the flush of the season is limited to three months. The crayfish landed are generally of fair size, the smaller ones being discarded. " Berried " females do not constitute an unduly high proportion of the catch. The fishermen were willing to accept a restriction from a proposed export company against the taking of crayfish under 10 in. in length and against the taking of " berried " females. The evidence received in regard to the available supplies and depletion was very conflicting. The older men, some of whom have been crayfishing in Kaikoura for up to twenty-five years, were positive that the catches landed per boat have decreased considerably in that time. The younger men were of the opinion that there are inexhaustible supplies. It may be as well to point out that the men who were most sanguine as to the supplies were those interested in the formation of a company which wished to enter the export trade. Admittedly, a large portion of the coast between Amuri Bluff and Cape Campbell is crayfish ground and might be used by the Kaikoura men if the present grounds become depleted, but it must be explained that the relatively higher working-costs on these more distant grounds will tend to keep the fleet working on the nearby grounds until the depletion reaches the stage where the returns realized will barely cover the cost of catching. When this occurs, the men, having to rely on the more distant grounds for supplies intended for the local market in Christchurch, will have to insist on an increase in price, and this is not desirable. It is essential that a careful watch should be kept on any large export activities in this area. At the first signs of overfishing, restrictions should be imposed to save the fishery before the depletion is so advanced as to make recovery impossible or at the best a very lengthy process.

Picton and Port Underwood.

The fishermen operating from Wairau Bar take crayfish at various points along the coast from White's Bay to Tory Channel. Hoop-nets approximately 2 ft. 6 in. in diameter are used. The main crayfish ground is, however, at Island Bay, near Port Underwood. The stocks here appear to have been well maintained, as the fishing has not been intensive and has been limited to a short season.

A recent development has been the exploitation of these grounds by fishermen from Wellington, who use methods which will lead to depletion of the worst sort and to other problems if they are not checked at the outset. The men are catching the crayfish by means of set-nets. It is reported that this method of fishing has ruined the grounds near Wellington, and the local men, while conceding the Wellington fishermen the right to come over and fish where they like, are perturbed about the methods adopted. The worst feature of this exploitation is that some of the Wellington men have been in the habit of leaving their nets set not only overnight, but, if bad weather comes on, for days at a time. After the nets have been down for a day the crayfish are nearly all dead or dying, and as dead crayfish are not accepted by the buyers they are thrown overboard and wasted. This excessive wastage is the source of much complaint. The attitude taken is that if these Wellington men desire to catch crayfish they should attend to their gear and not go off on other work or home to Wellington until the gear is lifted. It is also alleged that the large quantity of dead crayfish left by these Wellington men has attracted vermin, such as blind eels and sea lice, to these grounds, very much to their detriment as fishing areas.

Napier.

Very little crayfishing is done at Napier. Two men engage in this fishery for the bulk of their time, but supplies have been very scarce. At Cape Kidnappers one man uses ring-nets, and reports that the catch has been declining steadily on the inshore grounds.

Gisborne.

At this port three vessels do a little crayfishing to supply the local market. Box-type traps 3 ft. long are used, and the catch is landed each day and no surplus is kept alive in floating "coffs." The grounds are close inshore between Taumoto Island and the Breakwater. The crayfish grounds are not very extensive, but the supplies are being maintained. The landings could be increased slightly if there was any demand. "Berried" females are taken, as they can be sold in Gisborne. The men often catch many small crayfish between 7 in. and 8 in. in length, but these are returned to the water.

Mercury Bay.

The fishermen from Mercury Bay and Waihi Beach appeared before the Committee at Thames. They reported that crayfishing was carried on at various points between Whangamata and Cape Colville, the centre of the greatest supply being at Mercury Bay (Whitianga). There are two seasons for the taking of crayfish from these waters, one from July to September with a short break in October, and another from November till after Christmas. Supplies are not being diminished by the present fishing, and, indeed, stood up fairly well to the heavy abstractions of up to 25 tons per week during the short time the export trade flourished, but in the opinion of one of the more experienced men such a rate of abstraction could not have continued for long, there being unmistakable signs that the supplies were commencing to decline. "Berried" females are not paid for, and the small fish are not marketed in this district. These small fish are the cause of the break between Christmas and July, as they constitute the major portion of the catch—at least 75 per cent. during this period. The pots used are left down continuously, but are lifted each day and the fish removed. The crayfish-men follow the crayfish out when they leave the inshore rocks and migrate to the sand and kelp bottom. When fishing under these conditions, they suffer damage to their gear by the action of the seine boats shooting their lines round the area where the pots are placed. They asked for a limit of one mile offshore to be placed on the seiners, so as to leave some ground clear for crayfishing and lining.

As undersized and "berried" crayfish are not taken from these grounds for the market, the Committee has no recommendations to make except those applying to crayfishing generally. With regard to the action of the Danish-seine boats, the Committee's recommendations will be found under that heading.

Auckland.

The crayfish which supply the Auckland market both for local consumption and export come from the vicinity of Cape Colville and Mercury Bay and some from Kawau. Only seven vessels are engaged full-time in this fishery, the total landings from all sources in Auckland, Mercury Bay, and other places being no more than two thousand five hundred sacks for the year ending 31st March, 1937. Complaints were received as to the practice of taking undersized and egg-bearing crayfish. In the interests of conservation it is desirable that this practice should stop.

North Auckland.

Russell.—Crayfishing in a limited degree is done at the Bay of Islands. The restriction on the fishing is not imposed by the paucity of the stocks, but by the fact that the Whangarei market can only absorb a limited number of crayfish each week. Catches were stated to be good between July and Christmas in each year. The fishermen use about ten pots at a time. The crayfish caught average about 2 lb. weight each, and are shipped in beer cases holding two dozen crayfish. There is at present no satisfactory shipping service to Auckland, all the sea transport being done by auxiliary schooners whose schedules are not regular enough for the fish trade.

Totara North (Whangaroa).—Two of the three full-time fishermen here depend mainly on crayfishing. The supplies vary from year to year, but the average landing is roughly the same over a period of years. The crayfish grounds worked are from Matauri Bay to Whangaroa; about seventeen miles of coast-line. Mainly large crayfish are taken, up to 5 lb. in weight. The price realized is approximately 10s. per dozen, but the market is poor, there being no satisfactory service to Auckland or Whangarei. When the canning factory was in operation up to 6 tons per week were being taken from these grounds. The supplies were maintained during the period of operation of the factory.

New Plymouth and Wanganui.—These towns draw practically all their crayfish-supplies from Wellington. The Borough Inspector at New Plymouth and all the retailers interviewed in both towns complained of receiving large numbers of small and "berried" crayfish from Wellington, in spite of repeated protests. In one case the ova cleaned off a sack of females filled a gallon tin. In weight the retailer loses up to 20 lb. of ova (which he must remove to ensure sale in these towns) in every 100 lb. of the crayfish received. In one sack, sixty-three crayfish were found which measured less than 6 in. in length, and thirty-four of these were loaded with ova. The worst months for these complaints are July, August, and September. This Committee cannot condone such wastage, as it must ultimately have a damaging effect on the stocks.

Recommendations.

New Zealand.

1. That the legal size of crayfish be fixed at 9 in. in length.
2. That it be made illegal to take or sell female crayfish carrying external ova.
3. That it be made illegal to remove the ova (berries) from any female crayfish prior to either wholesale or retail sale.
4. That investigations be made as to the crayfish stocks at the various centres, and that a study be made of the habits, size, sex groups, and migrations of the crayfish, the results of these investigations to be the basis for future legislation.
5. That regulations be adopted immediately to force fishermen using set-nets for catching crayfish to stand by their gear until such time as it is lifted. It should be made illegal for such gear to be left set overnight.
6. The buoys on the set-net gear should be plainly marked with the registered letters and numbers of the boat from which the gear was set.
7. Fishery Inspectors should be authorized to lift and confiscate any net set for crayfish which has been set for any period exceeding four hours unless the boat to which the gear belongs is standing by the gear.
8. It should be ruled that any set-net to which bait of any description is tied or fastened is a set-net used for the purpose of taking crayfish.

THE OYSTER FISHERIES.

Dredge Oysters.

Foveaux Strait.

This industry may be divided into two parts—(*a*) Production; (*b*) Marketing.

Production.—The dredge oysters are more commonly referred to as "Bluff," "Stewart Island," or "mud" oysters, the last being a definite misnomer, as they are not found on a mud bottom at all, but on a bottom consisting of shell and gravel. The oysters are obtained by dredging from small steam and Diesel engined vessels operating in various parts of the Foveaux Strait. Contrary to public opinion, which unfortunately has often been misled by statements provided by interested parties and published in the press and in certain company prospectuses, the oysters are not distributed over the whole floor of the sea in quantities sufficiently large to be worth exploitation. In point of fact, the beds on which the oysters have been found to exist in such quantities as offer a fair return for the expenditure and labour necessary are definitely localized, so localized, indeed, that it requires a fair measure of skill to bring the vessels to those points which yield profitable returns. These beds may be primarily divided into two main areas—those in the shallow water lying to the eastward of a line drawn from Dog Island to Bird Island, and consisting of the East Bed and Ruapuke Bed, and those lying in deeper water to the westward of such a line and known as the West Bed and Saddle Bed.

It is an established fact that the oysters obtained from the eastern beds in comparatively shallow water are usually of larger size and in better condition than those from the beds in the deeper water. As a result of this higher quality, and also of the fact that the eastern beds are nearer to the Bluff, the bulk of the oyster-supplies has been taken from the East and nearby beds. Latterly, because of the decline in the catch per landing of the vessels operating on these eastern beds, more attention has been paid to the West Bed, but as the East Bed oysters are definitely of better quality this bed is never completely rested and given a chance to recuperate.

Nearly all the competent witnesses examined stressed the fact that the eastern beds were showing unmistakable evidence of depletion, so much so that in recent seasons the crews of the oyster vessels, who are all paid on the basis of their production, have shown a decided disinclination to work these beds, where the catch per day is so low as to materially affect their earnings. In some cases, more especially after complaints from retailers as to the size and quality of the oysters supplied, or to supply special markets, the owners have definitely ordered the vessels to proceed to these depleted grounds in order to procure a quantity of the better-class oysters. The depletion is

so evident that the majority of the oyster firms concerned offered to render assistance to the Government by way of the provision of vessels and gear with the object of making a comprehensive survey of the whole of the existing beds and exploration for new beds which are thought to exist further to the westward of those known at present, and also further to the eastward. Due to the fact that the main current in Foveaux Strait runs from west to east, the western beds probably supply a substantial proportion of the young oysters on the beds lying to the eastward. With this in view, heavy abstractions from the western beds should not be permitted until such time as the Government is satisfied that their stocks are not only sufficiently heavy to stand such abstractions, but to leave a sufficiency of breeding-stock.

In view of the alarming increase in the landings of oysters in recent years, and keeping before us the fact that any depletion of the oyster stocks cannot be made up by intensive cultivation or by other means suitable for overcoming deficiencies in commodities produced on land, the question of the limitation of the fleet was discussed by the Committee and the witnesses at considerable length. The fleet has increased from five full-time vessels in 1928 to ten full-time vessels and two part-time vessels in 1937, with at least one more full-time vessel for 1938, and, in addition, several other persons are desirous of entering the oyster industry. As during an eight-months season when the fleet is favoured by fine weather and no time is lost by casualties each of the full-time vessels is capable of producing ten thousand sacks of oysters, we can see the necessity for some limitation in the number of producing units, more especially since the beds are already showing signs of the strain caused by the increased production of recent years.

A table of the annual production of oysters from 1913 to 1937 is appended (see Appendix D). From this table it will be seen that the average annual production from 1913 to 1927 was 26,344 sacks, from 1928 to 1932 was 38,984 sacks, and from 1933 to 1937 had increased to 54,493 sacks. Consideration of these figures, coupled with the evidence tendered as to depletion, leads your Committee to believe that it is high time to call a halt in the increase of abstractions from these beds until such time as a proper stocktaking can be made. To give some idea of the proposals for increased production, the case of the Stewart Island Canneries, Ltd., may be cited. In 1932 this company required 1,000 sacks of oysters; in 1933, 2,017 sacks; 1934, 3,112 sacks; 1935, 4,511 sacks; and in 1936, 13,375 sacks. The company then found that it was impossible to obtain its full supplies from the other merchants, and application was made for permission to commence operations with a vessel of its own. After due consideration this was granted, the necessary licenses issued, and the vessel commenced operations. Before the end of the season the company had put in an application for an additional vessel, as the catch of the first vessel plus the surplus supplies purchased from the merchants was not sufficient to meet its requirements. This application was declined on the advice of the Committee, as the Committee did not favour any further abstractions from the beds until a survey had been made. The company hopes ultimately to use fifty thousand sacks per annum, or nearly as much as the supplies for the whole of New Zealand, and wants a minimum of twenty-four thousand sacks per annum. Practically the whole of this produce is required by the company for export.

Nearly every witness commented on the absurdity of the present legal size for these oysters. The relevant regulation states that the oyster must not pass through a metal ring having an inside diameter of $1\frac{3}{4}$ in. It is contended that the majority of oysters which would pass through a ring of even $2\frac{1}{8}$ in. diameter would not be worth the trouble of opening. So long as the limit remains at $1\frac{3}{4}$ in. there will be some carelessness in culching, which results in an excessive number of small oysters being put in the sack. As these small oysters are of little or no use commercially, they are dumped by the retailer and represent not only loss to the beds, but a cause of complaint in the trade. The raising of the limit size would not affect the men's earnings to any extent, but it would tend to bring crews that are careless in their culching up to the standard of the crews that do the job properly.

Many of the oystermen who tendered evidence were convinced that the use of oversize, heavy, and deep-bitted dredges was a serious contributing factor in the depletion of the beds. They asserted that these dredges break too large a percentage of the oysters on the bottom, and, further, that by digging in too deep they disturb the bottom unduly and tend to kill off the marine life which is necessary to the well-being of the oyster, and to cover up the good oysters with shell and rubbish. Limitation as to the size of the dredge and the depth of the "bit" was given serious consideration by the Committee.

Districts other than Foveaux Strait (Dunedin and Akaroa).

In recent years many statements have appeared in the press alleging the discovery of oyster-beds at various places on the east coast of the South Island, more particularly off Akaroa and Dunedin. There can be no claim to the discovery of these oysters recently, as the presence of oysters in small quantities wherever the bottom is suitable has been known to fishermen working off these ports for many years. There is, however, the question of whether these oyster-beds are of sufficient density to make it worth while either surveying or working them. With this object in view the Committee subjected competent witnesses at Akaroa and Port Chalmers to a close examination to ascertain if there were definite facts to support the statements made.

At Dunedin the Committee had before it the fisherman who was associated with the trial workings of the bed reported off Otago Heads. This witness gave every assistance in the Committee's inquiries. He stated that, although there are quantities of oysters to be obtained from the area which he prospected, the return he could get was insufficient to justify the fitting-out of his vessel with oyster-dredging gear, because he could earn much more in the same time by fishing. It may be pointed out here that oyster-dredging, if it is to be carried out successfully, calls for the installation of specialized gear, and the presence of this gear aboard a small or medium sized vessel would interfere with her normal fishing operations. The deck space on any of our motor-trawlers is so small that it would be necessary to dismantle and put ashore the oyster gear before the ship could use her trawling gear effectively. This rules out the possibility of a part-time fishery.

At Akaroa several fishermen of good standing were examined in regard to the beds off this port. The opinion of these men, and they were all in agreement, was that, although they got small quantities of quite good-sized oysters at times at various points off the coast between Peraki and a point north-east of Lyttelton Heads in depths varying from 25 fathoms to 40 fathoms, the oysters were not present in the volume necessary for profitable dredging.

The oysters in this locality are found over a wide area, but are very much scattered. Further, it was stated by the men that the shell was brittle, a fault also common in the oysters taken from the deeper portions of Foveaux Strait, which fault is serious both from the point of view of transport and difficulty in opening. An oyster with a brittle shell is hard to open, as the shell breaks when the opener inserts his knife. This causes loss of time, as the opener loses his point of leverage, the meat of the oyster is liable to mutilation by the slipping knife, and, further, this breakage results in the incursion of particles of shell into the oyster meat and liquor. The position with regard to these beds may be summed up in the words of one of the witnesses: "If the results obtained with the trawling gear had impressed me, I certainly would have put a dredge aboard."

Under the circumstances, first, that the men who have first-hand knowledge of these localities do not consider that the oysters are present in such quantities as to be worth exploiting, and, secondly, that the oysters found are in water of a depth exceeding 25 fathoms, which depth is about the maximum at which good quality oysters are found, we cannot unfortunately hold out hope for the establishment of a dredge-oyster industry at these ports. For Marketing, see Part III.

Recommendations.

1. That all oyster-beds inside a line drawn from Bluff Hill on the mainland to Dog Island thence to Bird Island, thence to South Point off Ruapuke Island, and thence to Waipapapa Point, be closed for a period of not less than three years.

2. That this portion of the industry remain subject to the Industrial Efficiency Act until such time as the Fisheries Act can be amended to provide for the refusal of licenses, and that no further license be issued until a survey of the beds has revealed that the stocks will stand up to additional abstractions.

3. That the width of the dredges used shall not exceed 12 ft.

4. That the "bit" of the dredge shall not exceed $2\frac{1}{2}$ in. in depth.

5. That the legal size of dredge oysters shall be increased from $1\frac{3}{4}$ in. to $2\frac{1}{8}$ in.

6. That a complete survey of the known oyster-beds be undertaken during the period October, 1938, to February, 1939, such survey to be a co-operative effort between the merchants and the Government.

7. That a further survey be conducted, again by co-operative effort, to establish the existence of new oyster-beds within working distance of Bluff.

8. That the oyster season be reduced by a fortnight in each year at the commencement of the season—*i.e.*, the starting date should be altered from the 1st February to the 14th February.

With regard to the dredge-oyster beds other than those in Foveaux Strait our recommendations are as follows:—

9. That any fisherman desiring to prospect these beds in the open season should be allowed to do so.

10. That in the event of any fisherman discovering beds of oysters in such quality and quantity as to encourage dredging operations full-time during the open season for oysters, he should receive protection by a grant of the sole right for a sufficient period to repay him for his enterprise.

11. That any licenses issued to persons desiring to exploit these grounds be definitely restricted to the grounds for which the license is issued, and that it be stipulated that in the event of the licensee not being able to make a financial success of his operations the license will not under any circumstances be varied so as to allow him to operate on the Foveaux Strait beds.

12. That at such time as the more important fishery investigations have been made and staff and funds are available, the Government should, in the general stocktaking of our fishery resources, prospect these beds in their due order. This recommendation does not infer that this particular investigation is urgent.

Rock Oysters.

Auckland District.

In view of the great interest in the rock-oyster industry expressed at meetings of various organizations in Auckland and the antagonistic attitude they are reported to have taken up with reference to the Government's policy of administration of the neighbouring beds, the Committee expected that a large number of witnesses wishing to deal with this question would come before it. However, only four witnesses made any comment at all. In three cases the main complaints were with regard to the allocation and distribution by the Department's depot at Auckland to local wholesalers and retailers in years of short supply. The fourth witness dealt with the question of cultivation of oyster-beds by the owners of adjacent lands. As so few witnesses gave evidence on this subject, we can state briefly the case of each.

The president of the Auckland Fish Retailers' Association drew attention to the inadequate supply during the last few seasons and to the picking of the poorer-grade oysters at the commencement of the season. The causes of these difficulties were explained to the satisfaction of the witness, who expressed the desire that the policy of planting new beds be expedited. His main plea was that the prices should be kept down. The relation of the wholesale price to the extra costs involved in certain methods of production was also discussed by this witness.

The representative of Sanford Ltd. complained that this firm's share in the allocation of supplies was not consistent with the magnitude of their business, and he asserted that the firm received no more than the allocation to small retail-shops. This was denied by the officers in charge of the depot, and the allocation list shown to the Committee proved that Sanford Ltd. were receiving as high an allocation as was desirable for any one firm to obtain. It was then suggested by this witness that as the present supplies are inadequate a considerably greater sum of money should be made available for oyster-cultivation.

The third witness, a retailer and restaurateur, complained that a competing restaurant was receiving a greater allocation than he was. This allegation was investigated and it was found to be correct, the allocation being based on a percentage basis of the number of sacks of oysters taken per week when supplies were plentiful. In explanation, it must be stated that much of the demand in times of shortage is false and is caused by small dealers trying to obtain an extra sack at the depot price, 24s. (and sometimes succeeding), so that they can turn it over to a larger concern at 35s. to 40s., a clear profit of 11s. to 16s. per sack solely for delivery. Another case of apparent favouritism in allocation was investigated personally by members of the Committee, but it was found that the person complained of was only getting his fair allocation from the Auckland depot. This dealer, however, had an arrangement with firms outside Auckland to order oysters which they did not require for their own purposes and to sell them to him at an increased price plus railage. The high cost of these oysters to this dealer was offset by his particular trade, and by the means outlined above he could be assured of a plentiful supply of oysters at times when other restaurants were either in short supply or out of oysters altogether.

The evidence of these three witnesses has been summarized to establish the impartiality with which the Department's depot in Auckland is administered.

The fourth witness, the owner of a number of small islands off the Coromandel coast, sought the right to cultivate oysters on the foreshores of these islands. He proposed that the right should be limited to the owners of the land abutting the foreshore, and that such owners should be licensed and pay royalty. By this method he contended the production of oysters would be increased.

The Department's attitude towards private enterprise in this connection is summed up in an appendix on pages 83 and 84 of the report of the fisheries section of the Marine Department's annual report for the year ending 31st March, 1929. While this Committee does not think that there should be any leasing of foreshores for oyster-cultivation in those areas from which oysters are being obtained by the Government, and on which public money has been or will be spent on cultivation and protection, it is of opinion that settlers in districts where the oyster-beds are never worked should have the right to lease the foreshore abutting their land for the purpose of cultivating oysters, subject, of course, to such regulation with regard to marketing as to prevent malpractice, such as the sale of oysters stolen from the Government beds. The areas we have in mind in particular are Hokianga Harbour, Manukau Harbour, Tauranga Harbour, Ohiwa Harbour, and any other bays or inlets not at present worked by the Government. There can be no just cause for the prevention of oyster-culture in areas which the Government does not intend to use. In the Hauraki Gulf, including all the coast-line round to Thames and the islands in the Gulf, Whangarei Harbour, Kaipara Harbour, Bay of Islands, and perhaps Whangaroa Harbour, the Government has sufficient space in which to carry out its policy and to absorb to advantage any moneys which are available for cultivation and protection. The best advantage will be obtained by doing the cultivation work in large contracts, thus lessening the cost, and ensuring sufficient work in one place to warrant special protection.

North Auckland.

In the North Auckland district very little interest was shown in the question of oyster cultivation and picking.

At Russell one witness had a scheme for utilizing unemployed labour on the oyster-beds on a long-term plan. Under this scheme coastal areas were to be allotted to selected unemployed, who were to be maintained from the Employment Promotion Fund while planting the oysters and awaiting their growth to the stage where they would become income-producing. The weakness of this proposal lies in the fact that the men would have to wait for six years before there would be any financial return from the sale of oysters, and there would be other administrative difficulties. One of these difficulties is that the prior right of settlers to the leasehold of the abutting land would arise where the leasing of foreshores for private cultivation of oysters was agreed to.

At Whangaroa there is a nice crop of young (one-and two-year old) oysters, but if this fine fixation is to be saved it will require protection until it reaches maturity. This fixation of oyster-spat is credited to some oyster-bearing rock shipped from Russell. If this spat is saved there would be a full-time job for one man in protecting and cultivating the beds.

Though no evidence was tendered in the Whangarei district, the same remarks apply, because good beds are going back for want of adequate supervision and attention.,

The Mangonui witnesses complained bitterly of the action of the Government in allowing the licensed pickers to clean up the beds in this port twenty-nine years ago (before the Government took over the direct supervision of the picking operations). Their claim was that these beds should be replanted to keep faith with the residents, and an assurance was given that local bodies would co-operate in the matter of protection during the initial stages of the cultivation work. The Mangonui Harbour could be used successfully for oyster-cultivation, but so much scope exists for development in the more convenient localities where staffs are already stationed that, with the exception of the Committee's recommendation in favour of private leasing of beds as applied to this harbour, we have no further recommendation to make.

Recommendations.

1. With regard to the picking and marketing of the oysters, we are definitely of the opinion that the present system should continue. The Marine Department should inquire as to ways and means of preventing the trafficking in oysters as far as possible.

2. The Government policy of oyster-cultivation should be implemented as rapidly as finance will permit.

3. That immediate steps be taken to appoint a full-time officer on Whangarei Harbour to protect, cultivate, and pick the oyster-beds and also to attend to routine fishery matters.

4. That the protection of the oysters in Whangaroa be considered, and if such protection is granted, but not before, further cultivation work to be carried out.

5. In those areas where the oyster-beds are not worked by the Government, and on which no public money has been spent on cultivation work, the leasing of foreshores for private oyster-cultivation work should be granted to the owners of the land abutting the foreshore, subject to the conditions mentioned in this section of the report.

TOHEROAS.

East Coast: Ohope Beach.

Toheroas were introduced to this beach some years ago, and the stock is reported to be increasing. There is a seasonal depletion at Christmas-time in each year, but the stocks at the far end of the beach where the people do not go, appear to be sufficient to maintain a supply of young toheroa for the beach near the township. It was stated that the toheroas were introduced by a white man named Spier, who brought some over from Kaipara, and the witnesses contended that as the transfer had been done by white people the Maoris had no special rights, and that a close season should be declared for ten months in each year. Supervision is required on this beach, particularly at week-ends and in the holiday season.

Dargaville.

It was brought to the notice of the Committee that the protection of the toheroa-beds on the coastal beaches near Dargaville is inadequate. No depletion was reported from the cannery areas. Most of the matters brought up were of purely administrative interest and have been submitted to the Marine Department for its consideration. The one matter of public interest to which the Committee's attention was drawn was that the daily limit of fifty toheroas per person was too high, an effect being considerable wastage owing to the toheroa not keeping well after being removed from the sand, more especially in the summer months. Such a limit must lead to depletion of the public areas, as, for instance, some cars take three hundred per trip and go to the beach very often in the summer. (If there are six people in the car, each is allowed fifty toheroas per day.)

Recommendations.

Ohope Beach.

1. That adequate supervision be made available by way of honorary Inspectors to prevent breaches of the regulations.

2. That a survey of the toheroa stocks on this bed be made when the staff is available, and that if the survey shows that more protection than is given by the present regulations is required such protection should be provided for by regulation.

Dargaville.

3. That more adequate supervision of these beds be provided.

4. If it is found that the present limit of fifty (50) toheroas per person is being abused, so as to cause wastage or depletion, a reduction in the limit should be considered.

WHITEBAIT.

Auckland.

The main commercial interest in whitebait in the Auckland District is that centred in the canning industry. Supplies are drawn from the Waikato and also from the Bay of Plenty rivers. Messrs. Brown, Barrett, and Co., Ltd., went to a great deal of trouble to pass on the results of their investigations to the Committee. Representatives of this firm stressed the necessity for the conservation of the whitebait stocks and the care of the spawning-areas. With Messrs. Sanford Ltd. they agreed that research was urgently required to determine the cause of the decline in the stocks of whitebait, and that, if the decline could be traced to any particular cause such as overfishing, the drainage of swamp areas, or the presence of trout, remedial measures should be put into operation immediately. This firm suggested the payment of a levy, the money received to be used to cover the cost of research.

Being interested in canning, Messrs. Brown, Barrett, and Co., Ltd., were anxious that the standard of the pack should be improved, as the poor product which has been turned out by some of the companies tends to injure the name of New Zealand whitebait. The Committee agreed wholly with the opinions expressed.

West Coast.

Representatives of the whitebait-fishermen travelled from Hokitika to Greymouth for the purpose of putting their views before the Committee. They reported a steady decline in the whitebait supplies during the past few years. The following problems were discussed :—

1. *Protection of Spawning-areas by Fencing.*—It was pointed out that a substantial portion of one of the best spawning-grounds had been lost by the construction of the aerodrome. It was suggestes that the balance, which is under the control of the local Harbour Board, should be fenced off.

2. *Pollution of Rivers by Sawdust.*—The damage done by the release into the rivers of sawdust by the sawmills, more especially during the whitebait-netting season, was explained to the Committee. Most of the millers observe the law, but there are some exceptions, and it was suggested that the penalties be increased, as the present penalty of £10 is apparently not a deterrent.

3. *Licensing of Whitebait-fishermen.*—This was agreed to in principle, as the Hokitika men are already fishing from registered trenches although no fee is paid. The damage done to the market price by the catch of non-professional fishermen, particularly at Greymouth, was drawn to the Committee's notice.

Recommendations.

1. That the known whitebait-spawning areas in all parts of New Zealand be protected by fencing wherever the land belongs to the Crown or where the owners permission can be obtained.

2. That a licensing system be inaugurated to cover the whitebait-fishermen. Such system to operate over the whole of New Zealand, and to embrace non-professional fishermen and Natives. In the case of Natives, the charge should only be nominal.

3. That the regulations covering the pollution of rivers be rigidly enforced, and that the penalties on conviction be increased proportionately for every conviction after the first.

4. That the causes of the depletion of the whitebait stocks be investigated, and that appropriate measures be adopted if the causes are capable of being remedially dealt with.

5. Co-ordination amongst the packers of whitebait should be insisted upon to facilitate agreement on a standard pack, such standard to be enforced if any company desires to export its product.

EELS.

Lake Ellesmere.

Several witnesses at Lake Ellesmere were of the opinion that some use should be made of the enormous quantities of eels in the lake. It was suggested that inquiries should be made as to the export market for eels in Europe and the methods to be used in the preparation of the eels for the market. There are large numbers of eels, the average size of which is 2 lb. to 4 lb., and it is thought that these would be suitable for canning or freezing.

Recommendation.

1. That inquiry be made as to the possibility of success in building up an export market for eels either frozen or canned.

PART III.—MARKETING.

THE EXPORT TRADE.

Southland.

Blue cod represents approximately 68 per cent. of the total fish and 76 per cent. of the round fish landed at Stewart Island, the Bluff, and adjacent landing-places.

The standard price now paid for blue cod is 25s. per 100 lb. (3d. per lb.) headed and gutted, but not blooded and scrubbed, but to the few free boats this figure rises as high as 30s. landed at Stewart Island, while for the company-owned boats prices of 27s. and 28s. are paid for the small quantities landed at the Bluff. Three to four pound is lost in each 100 lb. of fish in the blooding and scrubbing process. The greater bulk of this cod is frozen and shipped on consignment to Melbourne, there to be sold at auction, while certain quantities are sold f.o.b. Bluff principally for Sydney.

The cost of cleaning, handling, shipping, and smoking in Australia works out at a minimum of 8·91d. per pound based on 25s. per 100 lb., and prices realized vary ranging from 9d. to 1s. per pound. This trade is profitable to the exporters. Some loss is occasioned in Melbourne when it is found upon splitting blue cod for smoking that the flesh has been damaged by bruising through the fish being roughly jerked off the hook when caught. Shipment is usually made to Melbourne at general-cargo rates, the cases being block-stacked for the voyage across. Block-stacking means that the cases are packed tightly together so as to retain their freezing temperatures, and the outside of the stack is covered with straw and tarpaulins. One shipper uses insulated mattresses as a covering to keep the cold in and the heat out. A considerable saving in freight is effected in shipping this way, the space rate being as for ordinary cargo, 49s. 6d. per ton, and working out at approximately ½d. per pound, while refrigerated space is ¾d. per pound gross weight. In the warmer months refrigerated space is used, but on the "Marama" no general-cargo space for fish was available. There are now three vessels trading to Australia out of Bluff, the "Waikouaiti" to Sydney at three- to four-weekly intervals, the "Waitaki"

to Melbourne at three-weekly intervals from April to September, and the "Maunganui" to Melbourne in the summer months. Although complaints have been voiced as to shortage of space at times and to the length of time between sailings, the shipping services from Bluff can be looked upon as generally satisfactory and efficient.

Experiments have been made in smoking blue cod for export and exporting it in this form, but it has not been found a practicable proposition, for the reasons that the smoked fish takes up more space and mildews to a certain extent, and, moreover, it has been found essential to smoke to requirements in Melbourne from day to day.

For f.o.b. sales and for the local supplies the cost of cleaning and handling works out at 4·58d. f.o.b. Bluff upon the 25s. per 100 lb. basis. F.o.b. prices fluctuate throughout the year and have ranged recently from 5d. to 8½d. per pound (usually less agent's commission of 5 per cent.). Three years ago the fishermen received as low as 12s. 6d. per 100 lb., and f.o.b. prices were in the vicinity of 4½d. per pound. This class of trade, mainly to Sydney, has become profitable to the exporters during the past year, but the supply has not been anything like the demand, turnover being limited in volume.

Opinion has been expressed that blue cod for export might be more attractively packed, but it would appear that the standard 70 lb. case is at least satisfactory for the consignment trade to Melbourne if not for f.o.b. sales also. Possibly some attention might be given later to the utilization of smaller containers for the latter class of trade and to a saving in freight by packing fillets of blue cod.

At Stewart Island, Fish Freezers, Ltd., with a paid-up capital of £2,276, undertakes the storage and freezing of all fish landed at Half-moon Bay. The principal shareholders comprise three of the larger fish-exporting firms at the Bluff, and Messrs. J. R. Allen and Sons of Melbourne, to whom all export blue cod for auction is shipped. To the majority of the non-shareholding companies a storage fee of 2s. per case is charged in lieu of the ordinary rate of 1s. 6d.

Otago.

Exports of frozen fish from Dunedin have expanded considerably since 1933, the figures since 1931 and for the years ended 31st March being :—

	Cwt.		Cwt.
1931	312	1935	3,628
1932	204	1936	3,704
1933	685	1937	3,857
1934	3,192	1938 (first 6 months) ..	2,436

This increase in export was brought about in the main by the activites of the National Mortgage and Agency Co. of New Zealand, Ltd., which, together with the Otago Fish Supply, Ltd., found that the market in Australia could absorb increasing quantities of the varieties of fish available from this port. F.o.b. prices were attractive to Australian wholesalers, and for certain varieties such as soles and flounders in particular the demand has far exceeded ability to supply. To augment catches beyond the point of merely taking the surpluses from the fishermen, the first-mentioned company purchased and commissioned a steam trawler early in 1937. When it became clearly evident that the limited supplies of flat fish would not permit of any marked expansion in the export trade, both firms turned their attention to the possibilities of getting the Australian exporters interested in other varieties. So successful have these endeavours been that the range of fish exported from Dunedin is wider than that of any other port. In matters of processing, packing, and freezing, such has been the undivided attention given to detail that a reasonable market has been created for varieties such as red cod, ling, and barracouta, which were unsaleable in Australia only a few years ago. In common with the practices adopted in other ports, the tendency now is to pack to the requirements of the buyer by processing the product to various stages beyond the whole fish—*i.e.*, to fillets and other packs.

In Appendix E particulars are given of the prices paid to fishermen by Dunedin exporters.

Costs of handling export fish vary according to turnover, but at the time of the Committee's sittings in Dunedin these worked out at between 1·85d. and 1·93d. per pound upon the finished product without allowing for wastage in processing. The latter figure will be reduced owing to increased output, and even with the cost lowered to, say, 1·75d. or even less the profits on export at present appear to be no more than reasonable on the whole.

As mentioned earlier, the development of the export trade has been a boon to the fishermen in that, in contradistinction to the conditions which prevailed some years ago, there is now an outlet for all their catches. Representations were made as to the possibility of an increased price being paid by exporters and that an increased outlet be provided for rough fish such as red cod and barracouta. An all-round increase in price has recently been made to the Waikawa fishermen, whose catches are now mainly sold locally in Invercargill, but the whole question of prices to the Port Chalmers' fishermen is bound up with whatever action might be taken in the matter of direct marketing and any increase which might be made in f.o.b. prices for export fish.

Crayfish.—A small but important export trade in crayfish tails flourished in Dunedin some few years ago, but two factors intervened to bring this trade back to relatively small proportions. First, the French market was practicaly lost through the adoption of a quota system of imports into France under her policy of international trade, and secondly, supplies dwindled away under intensive fishing-methods. The National Mortgage and Agency Co. Ltd., is, however, still packing small quantities of crayfish tails for export and distribution through its London agency.

Shipping-facilities.—Compared with the Bluff, Dunedin is at a disadvantage in regard to shipping-facilities, in that no fish can be taken as general cargo and Dunedin is never the last port of call for Sydney- or Melbourne-bound boats. There therefore is often considerable but unvoidable delay in transit.

Canterbury.

Exports of frozen fish from Lyttelton have remained fairly steady for a number of years, the figures since 1931 and for the years ending 31st March being :—

	Cwt.		Cwt.
1931	1,119	1935	2,133
1932	1,571	1936	1,363
1933	1,839	1937	1,669
1934	2,069	1938 (6 months)	811

Messrs. P. Feron and Son, Ltd., are the only exporters, and sale is effected at prices f.o.b. Lyttelton for shipment to Sydney and Melbourne. Reference to export through Wellington by the South Seas Fishing Co., Ltd., a Christchurch concern, is made under the Chatham Islands section. The export from Lyttelton comprises the surplus taken over from the auction-market and not distributed to country clients or to retailers later as frozen stock. A proportion of the supplies from the two trawlers (one since wrecked) operated by the Canterbury Steam Trawling Co., the catches of which are sold through Messrs. P. Feron and Son is for export, but certain percentages of the catches come on the market for auction—33⅓ per cent. in times of a scarcity of supplies generally and from 15 per cent. to 20 per cent. at other times. Not all the balance of the trawler landings is exported, but, as mentioned above, some of this is also held to meet the requirements of country clients and local retailers.

The principal varieties exported are ling, tarakihi, red cod, and flounder.

Shipping-facilities.—Lyttelton is at a disadvantage with other ports in the matter of shipping-facilities. While the " Waikouaiti " makes regular sailings, there is often a difficulty in getting sufficient space when Dunedin exporters are shipping in any quantity. Sometimes the sailings of the " Waitaki " do not suit, and occasionally the " Maunganui " is on a special trip. The only satisfactory method of shipment to Melbourne is by the " Wanganella " from Wellington, although it is true that the " Waitaki's " space is sometimes available.

Auckland and Thames.

The export trade from Auckland and the problems associated with it have taken up a considerable portion of the Committee's time, and negotiations with the parties concerned in seeking solutions of immediate difficulties interrupted to no little extent the continuity of the Committee's investigations.

Exports of frozen fish from Auckland during the years ended 31st March have been :—

	Cwt.		Cwt.
1931	4,219	(including snapper	1,492)
1932	4,280	(„	938)
1933	5,884	(„	1,735)
1934	9,370	(„	4,326)
1935	15,353	(„	7,191)
1936	20,822	(„	11,133)
1937	21,105	(„	15,185)
1938 (6 months)	8,615		

A brief résumé of the history of the export trade in fish from Auckland will be of interest. In 1923 Messrs. Sanford Ltd. withdrew the two trawlers they were operating out of Sydney and they opened a branch there in the following year. This firm had the field to itself up to 1932, although it is true that certain quantities were being exported through Auckland from Thames and by one or two Auckland firms operating in export upon a relatively small scale. Hereunder are given the names of the companies now operating together with a reference to the years in which they commenced operations :—

Name of Company.	Year commenced Operations.
Auckland.	
Sanford Ltd.	1904 (capital reduced 1933).
Auckland Fishermen's Co-operative, Ltd.	1925.
Hauraki Fisheries, Ltd.	1930.
Fishermen's Co. (Auck.), Ltd.	1931.
Ocean Fish Co. (Yurak Bros.)	1931.
Auckland Fisheries, Ltd.	1932.
Kia Ora Fish-mart (Cole and Howarth)	1933.
Pearl Fisheries (N. Marinovich)	1933.
Waitemata Fisheries, Ltd.	1933.
Auckland Seine Boat Assn., Ltd.	1936.
Thames.	
Taylor Bros.	1908.
Thames Fisheries, Ltd.	1918 (capital reduced 1935).
Shortland Fish Co., Ltd.	1923.
Co-operative Fisheries (N.Z.), Ltd.	1927.

The total paid-up capital is £94,998, fixed assets £80,511, the value of the wholesale markets, land, and buildings (excluding vessels) £64,044, the total net profits less losses during the latest financial year of each was £7,392, which resulted in a return on paid-up capital of 7·8 per cent.

The Auckland Fishermen's Co-operative, Ltd., was forced into liquidation in 1931, the business being taken over in the same year by the newly constituted Fishermen's Co. (Auck.), Ltd. The Hauraki Fisheries, Ltd., was founded in 1930, principally to develop the export trade, but following upon the cessation of operations in 1933 this company's freezing-space was then rented to and has since been utilized by the Fishermen's Co. (Auck.), Ltd., which has no such plant of its own.

It was in 1932 that Sanfords Ltd. realized that the conditions of trade with Australia must be improved and the old method of packing and shipping in banana cases must be scrapped. Accordingly, they set themselves out to improve their packing, their processing, and their marketing methods generally, and commenced to send forward small consignments of a wider range of pack in smaller containers—*e.g.*, fillets of snapper and tarakihi. Sales increased appreciably as a result, and tarakihi fillets realized as much as 1s. 1d. and 1s. 2d. per pound, as against 6½d. in 1935 and 10½d. in 1937.

From 1931 onwards and during the period of the economic depression the local conditions in the trade reached a more or less chaotic state, culminating eventually in the fishermen's strike in October, 1936.

Following upon the failure of the Auckland Fishermen's Co-operative, Ltd., in 1931, a number of boats were temporarily left without a market, and competition for a decreasing local trade by those engaged and by those coming into the industry as time went on resulted in oversupply and the introduction of price-cutting methods of disposal. Prices to the fishermen went as low as 1d. per pound for tarakihi and snapper, and even flounder came down to 1½d. per pound., as compared with 5½d. per pound now.

As an outcome of the general disorganization in the industry, increasing attention was turned to the export market, and from the beginning of 1933, when the export of fillets commenced, the quantity and value of exports from Auckland increased year by year, the figures for the year ending 31st March last, together with landings at Auckland and exports from New Zealand as a whole, being shown in Appendix A.

As is pointed out elsewhere, the export in recent years of greater quantities of processed fish—*e.g.*, fillets—has resulted in the weights exported being relatively lower compared with the value than was the case when practically nothing but whole fish were exported prior to 1933.

From 1933 onwards competition amongst existing and new wholesale units for both local and export trade became intensified to the extent that prices generally were forced down to levels which became uneconomic, and the returns to the fishermen were so far from being satisfactory that in October, 1936, they decided to cease fishing until a higher and more stable price was guaranteed them. In the conciliation proceedings which ensued, Messrs. R. E. Price, Conciliation Commissioner, and E. W. J. Bowden, District Officer, Department of Industries and Commerce, were instrumental in bringing about a settlement which resulted in the men being assured of a price of 2d. per pound green weight on snapper and tarakihi, the two main varieties landed in Auckland. Prices for other fish were adjusted accordingly.

Concurrent with and subsequent to the termination of these negotiations arrangements were made to bring about a stabilization in wholesale and retail prices, and also to bring some order out of chaos in the matter of export arrangements. It was realized by the merchants other than Sanford Ltd. that it would be impossible for them to pay the 2d. per pound sought for snapper and tarakihi and continue export along profitable lines in competition with Sanford Ltd., who operated their trawlers and were only indirectly affected by the strike. Accordingly, an approach was made to Sanford Ltd. with a view to arrangements being entered into under which this firm would purchase export supplies and market them through its organization in Australia. Agreement was reached along these lines, and tentative arrangements were made in which conditions of supply and payments upon f.o.b. basis were incorporated. The Thames' merchants were also parties to the agreements in this connection. Such arrangements meant, of course, that all commercial relationship was severed as between individual exporters and their erstwhile wholesale distributors in Australia. Although it may be said that the Sanford agreement worked satisfactorily up to a point, and those concerned (including fishermen) expressed appreciation of the more stable conditions which resulted, a good deal of adjustment was naturally required to bring about smooth working in such a radical change in methods.

Messrs. Sanford Ltd. were confronted with difficulties at the outset, particularly when the new f.o.b. prices, based upon the 2d. per pound to the fishermen, compelled an increase of prices in Australia to an extent of approximately 30 per cent. upon a weighted average and which actually ranged from 11 per cent. to 40 per cent. on different species and packs (see Appendix G). Messrs. Sanford Ltd. continued this policy of direct distribution to their retail connections in Australia, and severe criticism has been levelled against them for adopting the policy of stipulating one price for both wholesalers and retailers and thereby limiting sales through wholesale channels. It was held by critics of Sanford Ltd.'s selling methods that this policy was instrumental in bringing about the accumulation of stocks which became a substantial and serious disturbing factor prior to July, 1937, but Sanford Ltd. have stoutly defended this policy by pointing to the limited volume of sales through wholesalers in years past, to the mere convenience these wholesalers have made of New Zealand suppliers and supplies, and to their failure to enter into any undertaking to take definite quantities over long periods in lieu of buying spasmodically when their own local wholesale market was unfavourable to buy in. Moreover, it appeared impossible to give Australian wholesalers any concession whatever except by raising the wholesale price to retailers and leaving a margin sufficient for the wholesaler in between. Any such extra increase in price to the retailers over and above that already made would

have had serious repercussions on this class of trade at a time when large stocks were piling in and the advantage gained in distribution through other wholesalers would not, we think, have been compensatory.

Messrs. Sanford Ltd. have done a great deal in Australia to popularize New Zealand fish and have built up a trade over the past several years which has resulted in a widening of retail distribution particularly in New South Wales.

Difficulties contended with since November, 1936, when the new export arrangements came into effect, may be enumerated as under:—

(1) The intensive fishing which has been indulged in since the fishermen's strike was terminated.
(2) The resultant accumulation of stocks.
(3) The necessity for restricting trawler catches in order to avoid, if possible, overloading the stock position.
(4) The faulty packing by some of the parties to the agreement—faults which were not brought to light until after complaints had been received from Sanford's clients in Australia. (NOTE.—Sanford's stood the resultant loss. They had no redress, as they had paid on a basis of f.o.b. Auckland.)
(5) The snapper versus tarakihi problem — to the extent tarakihi is pushed successfully, it is at the expense of snapper, the main Auckland fish—and the difficulties encounted in restricting tarakihi catches, which would in turn have affected the snapper sales.
(6) Competition in Australia from other New Zealand ports.
(7) The necessity for packing the bulk of snapper into fillets with wings off owing to the recent prevalence of a stain in the gut of these fish.
(8) The actions of some of the parties to the agreement, which could only be construed as attempts to undermine and destroy it.

Soon after the Committee's sittings in Auckland it became evident that some immediate action was required to deal with the stocks of fish, particularly snapper fillets with wings off, which had accumulated in Sydney and were beginning to mount up in Auckland also. After a series of conferences both in Auckland and in Wellington and a deputation to the Hon. the Ministers of Industries and Commerce and Marine, all parties concerned agreed that, failing the attainment of some mutual settlement, they would, through the Hon. the Ministers, abide by the terms of a direction from this Committee as to what line of action was to be adopted. They failed to reach a settlement, and upon the recommendations of this Committee there was set up an Auckland Fish Export Committee, representative of the Government and the merchants' and fishermen's interests. This Committee's personnel is Mr. R. E. Price, Conciliation Commissioner (Chairman); Mr. E. W. J. Bowden, District Officer, Department of Industries and Commerce (Deputy Chairman); Mr. T. F. Anderson, Secretary, Auckland Seamen's Union; Mr. J. J. Enwright, Manager, Sanford Ltd.; Mr. A. F. Bow, a Director of Auckland Fisheries, Ltd.; Mr. S. Vella, Manager, Auckland Seine Boat Association, Ltd.; Mr. E. Middleton, Secretary, Waitemata Fisheries, Ltd.; with Mr. E. W. B. Herrick as Secretary.

Prior to the appointment of this Export Committee a suggestion had been made that the Government might pay a subsidy to partly offset any loss occasioned by selling accumulated stocks in Sydney at below cost, but, as this was not acceded to, efforts were made to induce the firms concerned to contribute upon a *pro rata* basis towards any loss which might be so made. No agreement could be reached upon this point.

For the guidance of the Auckland Fish Export Committee we set out in general and particular detail the policy it was to adopt, and in respect of a number of conditions the Committee was not bound down to hard-and-fast rules, but was authorized to act at its discretion and in accordance with the trend of developments. In brief, this Auckland Fish Export Committee was empowered to handle and market all export fish from that port, to clear stocks in Sydney, to deal direct with wholesalers in Australia (including Sanford Ltd.) upon an f.o.b. basis of sales, to limit catches of the fishing-fleet, if necessary, and generally to bring the position back under control.

This Auckland Committee is financing itself by means of a small levy on each basket of fish landed and has done a tremendous amount of work in endeavouring to straighten out the tangle, and has even sent a delegation to Sydney. Unfortunately, however, the position is far from clarified yet. Wholesalers in Australia have formed an association, and between this body and the Auckland Export Committee a deadlock appears to have been reached on matters concerning allocations and prices. Negotiations are still proceeding. The Sea Fisheries Investigation Committee has kept in close contact with the Committee upon all developments.

In the matter of price the Australian wholesalers have been seeking some concessions, but in view of varying margins of profit realized by different markets upon f.o.b. sales (see Appendix H), and with reference to our recommendations in regard to the lowering of the wholesale prices to retailers in Auckland, it is difficult to see how f.o.b. prices can be reduced and remain reasonably profitable. In fact, under existing conditions there might even appear to be a justification for some small advance in certain of the export prices. In view of our recommendations as to the fishing-fleet operating out of Auckland and the conservation of supplies on the fishing-grounds, it is not considered that there is any justification for a reduction in the prices now paid to the fishermen.

In Appendix G are shown particulars of f.o.b. prices paid under the Sanford agreement, together with costs and selling prices ex store Sydney. This statement shows that Sanford Ltd. as selling-agent secured $\frac{3}{8}$d. per pound profit, but owing to the accumulated-stock position the extra storage charges incurred reduced this figure to a nominal margin only. Upon tarakihi, headed and shouldered, and upon kippered fillets of tarakihi, a loss has been borne, principally as an outcome of competitive selling from South Island ports.

In this connection it is interesting to note that in 1933, when Sanford Ltd. adopted a vigorous sales policy in Australia, it was noticed by them with some alarm that, in contradistinction to the position respecting local requirements in Auckland, there was a marked preference for tarakihi fillets over snapper. With a market in Australia not unlimited in its scope, this state of affairs, if allowed to continue, was significant in the detrimental effect it was likely to have upon the sale of snapper, the principal fish taken in Auckland waters and for which the Australian market was an outlet. The growth in sales of tarakihi from ports other than Auckland has accentuated the problem and was in part a contributory cause of the recent accumulations of Auckland snapper in store in Sydney. Any such realignment as may be required in the markets for these two varieties and for others more or less competitive is a matter not soluble at the moment, but is one which can only be dealt with by a supervisory body co-ordinating export marketing.

Recommendations relative to a reorganization of the wholesale units operating in Auckland and Thames appear under "Wholesale and Retail, Auckland." The Committee's interim recommendation relative to the immediate problems dealing with export from Auckland has already been put into effect by the Government in the establishment of the Auckland Fish Export Committee as now constituted.

Wellington.

Exports of frozen fish from the Port of Wellington during the years ended 31st March have been :—

	Cwt.		Cwt.
1931	3,668	(including blue cod	2,141)
1932	2,789	(,,	1,976)
1933	1,591	(,,	688)
1934	11,097	(,,	8,972)
1935	17,553	(,,	15,209)
1936	15,820	(,,	12,668)
1937	13,144	(,,	9,422)
1938 (6 months)	6,084		

Apart from blue cod, 9,442 cwt. of which out of a total of 13,144 cwt. was exported in 1936–37, the export of fish from Wellington is not extensive. It amounts to a small seasonal surplus for several of the summer months, and during part of the remainder of the year (particularly in the winter) Wellington itself is sometimes in short supply. The export trade is conducted by both the N.Z. Fisheries, Ltd., and the Fishermen's Co-operative, Ltd., and also by a small firm which exports crayfish only. Reference is made elsewhere to the competitive f.o.b. quotations being lower in ports other than Auckland, but here in Wellington one line—*i.e.*, snapper, heads off and scaled—is actually quoted and sold at ½d. per pound higher than the same product exported from Auckland. Two interesting features about export from Wellington are, first, the preparation of kippered fillets of barracouta for the trade—barracouta being brought in by the trawlers and is practically unsaleable locally—and, secondly, the shipment to Melbourne and Sydney of extra large crayfish (whole cooked) which do not readily find a local market.

It is unlikely that export from Wellington can increase to any appreciable extent—in fact, it is likely to decline in volume as local consumption increases.

Chatham Islands.

(*South Seas Fishing Co., Ltd., and New Zealand Fisheries, Ltd.*).—In 1933 the South Seas Fishing Co., Ltd., with an authorized capital of £15,000, was promoted with the object of taking blue cod at the Chatham Islands and marketing these in Australia. The company's vessel "South Sea," with refrigerated space for 50 tons of dressed blue cod, makes periodical trips to Wellington to discharge the catches of the six line-fishing boats which are operating for supply to the company and which fish into the vessel.

In the initial stages of the company's activities heavy losses were incurred through overflooding the New Zealand market and quitting surpluses on the Sydney market at unpayable prices. A new directorate was appointed, but this made little difference to trading conditions until a marketing agreement was entered into with the New Zealand Fisheries, Ltd., which company has been selling Chatham Island blue cod in Australia in direct competition.

Under the provisions of the agreement entered into as between the two companies the price payable in ship's slings, Wellington, is based upon the current f.o.b. Australian selling-price in Wellington, and this company should be able to operate profitably under normal conditions. At the moment, however, there appears to be some difficulty in selling in Australia the present stocks held on behalf of both companies at the relatively high price of 8d. per pound f.o.b. Stewart Island blue cod is, of course, sold competitively against the Chatham Islands product. Fortunately for these companies, the fishing ceased by arrangement in October at Chatham Islands, and no further supplies will be coming forward until February next.

Weather and other circumstances permitting and in the event of the fishing being favourable, the "South Sea" would make eight trips to the Chatham Islands in a year and bring over 400 tons of blue cod—*i.e.*, 50 tons per trip, or approximately 1,650 cases of 68 lb. net. The New Zealand Fisheries, Ltd., have an arrangement with the steamer "Tees" whereby this vessel is required to visit the Islands within a fortnight of request to pick up a load from the stocks held in the company's freezer on shore. The "Tees" has a refrigerated capacity of 1,400 cases, compared with the "South Sea's" 1,650, but both vessels in winter can take extra cases on deck if required.

Quantities of hapuka have been brought across from time to time, but even at a payment of as low as 1d. per pound green weight to the fishermen it was found impossible to market this fish competitively against the fresh hapuka in Wellington, nor would it be profitable to sell to Australia even if the

freezing difficulties peculiar to this fish were overcome. The existing freezing-facilities do not permit of this fish being frozen in a manner which would prevent discoloration and the softening of the tissues.

Prior to May, 1937, fishermen at the Chatham Islands were paid 1d. per pound green weight for blue cod, and since this date and as a result of the higher f.o.b. price being realized the 1d. has been increased to 1¼d. by both companies. With a loss of 33⅓ per cent. in weight from the green fish to headed, gutted, and scrubbed, and taking into account the cost of cleaning (now ¼d. per pound) and the cost of cases, the packed product brought over in recent shipments costs one company an average of 2·39d. per pound at the Islands. There is a wide margin between this cost and the selling-price of 8d. per pound f.o.b. and 8d. wholesale, Wellington, but there are relatively high costs involved in freezing aboard ship and ashore and in transport. The local wholesale selling-price of 8d. per pound is more or less governed by the realization f.o.b. and must move downward in sympathy if the export demand is not sustained.

An agreement as to wages and conditions of service has been entered into by the crew of the "South Sea" and the company, the wages being brought up to a level in keeping with the recent advances granted under the industrial awards to seamen.

The arrival of the "South Sea" in Wellington is timed, whenever possible, to coincide with the arrival of a trans-Tasman steamer, in order that direct transfer might be made from the one vessel to the other so as to save storage charges. Under this arrangement the whole of the South Seas Fishing Co.'s product is exported, while only a small proportion of the New Zealand Fisheries' blue cod is exported, the bulk being taken for local distribution either wholesale or through the company's shops for the retail trade.

Chatham Islands blue cod is, of course, a much heavier and better fish than the local (Wellington) product, and, despite its being frozen, commands a higher price.

Marine Products, Ltd.—Prior to the flotation of Marine Products, Ltd., a public company with an authorized capital of £15,000, representations were made to the Committee for a favourable recommendation to the granting of an export license for crayfish and fish by the Bureau of Industry under the provisions of the Industrial Efficiency Act, the main object of the proposed company being to procure supplies of crayfish at or adjacent to Kaikoura, treat these by a special process, and export them to Australia. Emphasis was laid by the company-promoters upon the fact that almost unlimited supplies of crayfish were available on the coast referred to, exploitation of these grounds having been confined up till now to narrow limits in the vicinity of Kaikoura. Already arrangements had been entered into with ten Kaikoura fishermen to catch the requisite supplies at prices to be agreed upon, these men having previously given confident assurances that the crayfish could be taken in great numbers. In view of the fact that these men were interested parties to the extent that they were to be allotted five hundred shares at £1 each upon the termination of a four-year contract to supply, and that their contentions as to potential supply were discounted by their older and more experienced colleagues at Kaikoura, the Committee was in some doubt as to the weight to be attached to the assertions made, particularly when evidence taken in other parts of the South Island showed that no crayfish grounds could stand up to such intensive fishing as is proposed for more than a few seasons, if as long as that.

Evidence taken at Kaikoura revealed that the prices for crayfish at the auction-market were on higher levels than they had been for years. This state of affairs was attributed to the scarcity of supplies generally and to scarcity at Kaikoura in the adjacent crayfish grounds. It was also pointed out that when Messrs. P. Feron and Son entered into arrangements five years ago for crayfish supplies from Kaikoura for export, the catches progressively declined to the point of virtual disappearance. In rebuttal of this, evidence was submitted by the fishermen that limits were placed upon catches, and also that the then prices (averaging round about 9s. per sack) were not attractive. However, the fact remains that, at the time of the Committee's visit to Kaikoura in June, crayfish were realizing from 30s. to 40s. per sack at auction in Christchurch, and as very few were coming forward from Kaikoura it was obvious that the supplies were not so prolific as portion of the evidence claimed.

However, after giving the whole matter the closest consideration from every aspect, and realizing that there was no definite evidence available as to how long the unexploited grounds might continue under intensive fishing, the Committee recommended to the Bureau of Industry that an export license be granted subject to certain reservations. The Committee's recommendations, dated the 10th June, 1937, were:—

(1) That the license be confined to the taking of crayfish between Cape Campbell and Motunau Island.
(2) That the company's catch be limited to one hundred and twenty sacks per week, and that if the catch falls below this quantity for a number of weeks in succession the grounds be closed to the company.
(3) That the restriction continue for a five-year period from the date of issue of the license.
(4) That the company shall operate at least three months in the year.
(5) That the license be issued to Marine Products, Ltd., only, and not be transferable.

The promoters of Marine Products, Ltd., had stated that one of the objects of the company was also to deal in fish and market it either locally or overseas, the intention being to handle fish during the off-season for crayfish and thus extend the company's operations over a full twelve-monthly period. It was proposed to take such fish as ling and barracouta, for which they stated there is at present no great market, and smoke these for sale in Australia. The Committee, however, looked with disfavour upon the granting of any further licenses for the export of fish, and accordingly confined its recommendations to apply to the export of crayfish only.

The Committee makes no variation in its recommendations as set out above and made on the 10th June, 1937.

Recommendations in regard to export generally appear at the end of the marketing section of this part.

WHOLESALE AND RETAIL IN LOCAL MARKETS.

Southland.

Evidence shows that the demand for local supplies has increased to some extent. Ex-freezer price for blue cod at the Bluff has been 5½d. per pound, which is approximately 1d. per pound advance on wholesaler's cost. Owing, however, to the existence of a consumer's prejudice against frozen fish, the bulk of the blue cod marketed in Southland comes in fresh from boats not associated with wholesalers, from retailers' own direct suppliers, or from the National Mortgage and Agency Co.'s boats at Waikawa.

The export of fish other than blue cod is negligible, and practically the whole of the supplies of groper, flounders, soles, and butterfish is consumed locally. Certain rough fish of the kind procurable and eaten in other parts of the Dominion is available but is not wanted for retail sale in Southland—*e.g.*, ling, barracouta, red cod, moki, trevally, kahawai. At the moment it is difficult to suggest ways and means by which such fish could be made available to the public or even exported. Prices must necessarily be lower to the fishermen for these species, and there arises immediately the primary difficulty that there would be no encouragement to bring these in when blue cod and hapuka are available.

Although it appeared that retail prices were on the high side in Invercargill, a careful check which was taken upon the wastage and expenditure involved showed that a recommendation for any reduction could not be fully justified. One retailer delivers in country areas at Invercargill retail prices.

Relative recommendations appear at the end of the marketing section of this part.

Otago.

Under normal circumstances practically the whole of the supply of fish to Dunedin is sold through the auction-market, which is conducted by two auctioneers as joint tenants, the selling rate of commission being 10 per cent. Volume of supply varies throughout the year, and, as prices naturally fluctuate from day to day in accordance with this varying supply and with the demand, retail prices are likewise affected. The development of the export trade has raised prices generally, and the periods of oversupply which were experienced some few years ago are now unknown, the export requirements absorbing any surplus. In turn, the fishermen are receiving a higher and more stable price. Excepting those few fishermen who are tied financially, all others have the option of selling direct to exporting firms at stipulated prices or of placing their catches upon the auction-market.

Complaints have been made by retailers that the export requirements are denuding the retailers' supplies and forcing auction prices much higher than would otherwise be the case. While there is some justification for complaints of this nature, the position has been eased to some extent through exporters acceding to requests to give first consideration to the needs of the local retailers, and when supplies have been short the exporters have forwarded to the auction-market certain quantities which would otherwise have been destined for export. Moreover, retailers' requirements are catered for when they are able to draw supplies at any time ex freezers, usually at export prices, sometimes below, but sometimes ¼d. to ½d. higher if fresh supplies are exceptionally short and commitments have been made by exporters to ship stocks held.

Complaints were also made to the effect that one of the auctioneers, who is also an exporter, deliberately holds supplies off the market, and, further, that at times he bids for export supplies in competition with buyers, maintaining that in the case of soles, for instance, the retailer should pay at least an amount equal to what the auctioneer could afford to pay for export. In this connection it should be pointed out that both auctioneers often buy in for country customers unable to attend the market. It has been difficult to substantiate these complaints and to gauge the extent and effect of the practices out of which they arise, but it is certainly true that the local retailer is paying more for his fish to-day than he was several years ago when there were periods of oversupply and when certain quantities of good fresh fish were often taken back to Port Chalmers and dumped in the sea as unsaleable. From the fisherman's point of view this is all to the good, and, although the position leaves much to be desired, the retailer is not unduly penalized when it is considered that gluts are avoided, all buy upon equal terms, and the intrusion of further retail units to the detriment of established businesses is more or less eliminated by the relatively uniform conditions which prevail.

While reference is made later to questions of consumers' demand and retail prices, it should be mentioned at this stage that with daily fluctuations in wholesale prices and with resultant variations in retail prices it has been found impossible to ascertain definitely whether or not the average level of retail prices is at all times in keeping with fair and reasonable margins of profit. Investigation made into the financial results of eight retail-shops in Dunedin shows that over their latest accounting period of twelve months the net profits averaged £308, which represented a return of 7·4 per cent. on turnover (see Appendix I). Four of these shops sell both wet and cooked fish.

All fish are sold in case lots at auction in Dunedin, except flounders, which are sold by the dozen, and odd fish, per fish. Supplies are drawn in the main from Port Chalmers, Moeraki, Taieri Mouth, and Oamaru.

Certain other matters brought before the notice of the Committee by the retailers and their association will be dealt along national lines later.

Dunedin Marketing.—After a close scrutiny of the conditions prevailing in other centres, the Committee is of opinion that the present system of marketing in Dunedin—by auction—is not in the best interests of the majority of the interests concerned. Attention has already been directed to the

unsatisfactory nature of the position which arises under a system of auction, particularly where such auction is conducted by a wholesaler-exporter and when, through the agency of this system, the returns to the fishermen are unstable and the wholesale prices are liable to fluctuate abnormally from time to time. Particularly is this general effect noticeable in the unfavourable reaction which occurs in the matter of consumption and demand when the public find retail prices anything but constant. On the one hand, the retailer prefers the auction buying when supplies are plentiful and wider margins of profit are obtained, and, on the other hand, in times of short supply a fixed price would suit him better. When wholesale prices fall there is not always an immediate reaction in retail prices, but as against this it must be admitted that very often the retailer cannot pass on to the public the relatively high prices paid at auction in times of exceptionally short supply. Fixed prices to the fishermen combined with fixed wholesale prices appear to be the remedies, and if brought into effect would, in so far as Otago is concerned, necessarily vary as between seasons—roughly as between summer and winter. The Port Chalmers Fishermen's Co-operative Society, which is likely to embrace shortly in its membership the fishermen of adjacent ports, has brought forward proposals whereby an organization for direct marketing might function. Such a departure from the existing arrangements could be effected through the adoption of some existing channel or through the society's own organization. Some little danger might be visualized in price-cutting from those who might not be members of the society, but with an outlet available for all fish landed it is considered that this practice should prove negligible.

In order that the fishermen's society might proceed with its project a request was made that some financial provision be made by the Government to enable it to arrange for storage and freezing space of a nature designed to hold surplus supplies and bait. The project involves the question of exporting any surplus beyond local requirements, but the Committee does not look with favour upon the granting of any additional export license. Nor, as an eventuality likely to arise, does it favour the provision of such a small and perhaps uneconomic freezing unit as may be required, but in this connection there is an extraordinary position at Port Chalmers in regard to a freezer and packing-shed owned by a private company, and which, owing to a chain of exceptional circumstances, is now lying idle. The Committee was informed that the fishermen's society had advanced £1,000 to a predecessor of the present owner and the only security (somewhat insecure in its title in relation to prior mortgagees) is now two freezing-machines valued at approximately £150. The building itself projects 17-odd ft. on to the road-line, is heavily mortgaged, and the freezing-chambers require no little expenditure upon them to place them in proper working-order. The Committee cannot see its way to recommend that any financial assistance, such as has been asked for from the Government, be granted along lines which will enable this building and place to be utilized again. It is evident, however, that the question of cool-storage accommodation for bait at Port Chalmers is becoming a pressing one, this bait being at present stored as a matter of convenience by the National Mortgage and Agency Co. in chambers which are required for the company's own purposes. The storage rates charged by the company are relatively high, and a saving could be effected if the society had its own plant and chambers. If the society could arrange to take its two machines out of the present building and install one or other of them in a small freezing plant, this would overcome the difficulty of the storage of bait, which in quantity might at times amount to five hundred cases and require a chamber 14 ft. by 14 ft. to hold it. A site for such a freezing plant is understood to be available at Port Chalmers—it being essential to store at Port Chalmers and not in Dunedin. Under the proposals relating to direct marketing there would still remain the question of cool-storage accommodation for fish in times of excess supply, and two alternatives present themselves in this connection :—

(1) The proposed cool-storage plant could be extended to provide for the storage of fish also ; or
(2) Arrangements to hold any such surplus might be with the Otago Fish Supply, Ltd., the National Mortgage and Agency Co., Ltd., or the Otago Dairy Producers' Cool Storage Co., Ltd.

Oamaru and Timaru.

Oamaru Wholesale.—One wholesaler operates here for supply to Oamaru and to surrounding districts at a delivered or f.o.r. price of 1d. over and above the amount paid to fishermen—groper being the principal fish handled—and he pays the fishermen 3½d. in the summer, rising as high as 5d. in the winter. The 1d. margin covers a small wastage in scrubbing, cartage, sometimes freezing, and general handling-expenses. In times of surplus local supply and when there is a likelihood of returns being favourable, certain quantities are railed to the auction-markets at either Dunedin or Christchurch. As local retailers draw supplies of fish (principally other than groper) from Dunedin and even Christchurch, this wholesaler's turnover is not substantial, and profits realized over the past two years have been on the low side.

Oamaru Retail.—There are five retail establishments in Oamaru, and they all either deal in cooked fish or operate restaurants in conjunction with their businesses. Supplies are secured locally and from Timaru, Dunedin, and Port Chalmers. While the local wholesale price remains fairly constant (and this is for groper mainly), other prices fluctuate in accordance with the prices paid at auction, and although an endeavour is made to keep retail prices as steady as possible these must necessarily rise and fall from time to time. Fishermen complain as to price spread between returns to fishermen and retail prices. Competition, however, keeps retail prices at reasonable levels and at times below what might be justified when exceptionally high wholesale prices must be paid to secure supplies. For three establishments profits over recent twelve-monthly periods averaged £301.

Timaru Wholesale.—Owing to prices realized being comparatively satisfactory on the Christchurch auction-market in the early part of 1937, an extraordinary position has arisen in Timaru, in that the bulk of the fish taken at Timaru is consigned to Christchurch and the greater part of local retail requirements is drawn from points south of Timaru, principally Dunedin. One or two boats fish for direct supply to retailers. The only wholesale organization is that of Messrs. P. Feron and Son, Ltd., which takes over all fish destined for the Christchurch market, and, in addition, supplies local retailers with fish at a wholesale price varying in sympathy with the daily auction price in Christchurch. All fish is held in a cooling-chamber overnight, and Christchurch consignments are railed the next day, except at week-ends, when the storage period is two nights. On occasions when the Christchurch market is likely to be bare, supplies are sometimes railed the same day as caught. A number of Timaru fishermen expressed strong disapproval of the system of sale by auction in Christchurch, maintaining, *inter alia*, that it would be preferable for them to undertake the marketing themselves at Timaru at fixed prices, provided that they had the facilities to do so. They complained that the rate of commission was too high, weights were not fully accounted for, the auctioneering firm operated trawlers to their detriment, that there was too big a spread between returns to fishermen and retail prices, and generally that more satisfactory marketing methods should be introduced. These matters are dealt with in the Christchurch section.

Timaru Retail.—There are five retail establishments in Timaru, three of these being straight-out vendors of wet fish. One man is engaged full-time in hawking in Timaru, Waimate, and surrounding districts. Supplies are drawn from Messrs. P. Feron and Son, Ltd., at Timaru at Christchurch auction rates, from Oamaru, Moeraki, Dunedin, Port Chalmers, Christchurch, and even Wellington when the weather interferes with the South Island fishing. Several Timaru boats are under an arrangement to supply direct to retailers. Retail prices fluctuate in accordance with variation in wholesale supplies, and over the past twelve months have averaged 8½d. to 8¾d. for groper in the piece, 9d. to 9½d. for flounders, 9d. for soles, and 1s. 6d. for sole fillets. For three establishments profits over recent twelve-monthly periods averaged £370 per annum. The profits of one of these establishments was supplemented by profits on the sale of rabbits.

Christchurch.

All fish for local consumption is sold in Christchurch at auction by Messrs. P. Feron and Son, Ltd., supplies being drawn from the Canterbury Steam Trawling Co.'s two trawlers, and from fishermen at Lyttelton, Kaikoura, Akaroa, Timaru, Greymouth, and Westport; also at times from Oamaru, Moeraki, and Port Chalmers. A selling commission of 10 per cent is charged, and fishermen are required to pay all freight and handling charges except cartage inwards and storage up to a period not exceeding one week. In regard to the whole system of sale by auction and its attendant advantages and drawbacks a wide range of representations, some justifiable as complaints and others not, were made to the Committee by fishermen and retailers alike, and questions concerning price and return were naturally uppermost in the minds of witnesses.

As is the case in Dunedin, the supplies fluctuate from day to day, and as a result prices are anything but stable. Fishermen suppliers maintain, *inter alia*—

(1) That the rate of selling commission is too high, that heavy freight rates are payable particularly by the suppliers in outports, and that the combination of these two charges when deducted from account sales leaves a poor return when auction prices are relatively low.
(2) That actual weights of fish forwarded are not accounted for in full.
(3) That the price spread as between the return to fishermen and the consumers' price is too wide.
(4) That Messrs. P. Feron and Son, Ltd., should not, as auctioneers, have any control, either direct or indirect, over steam trawlers operating in competition with fishermen whose catch is sold on the same market.

Taking these *seriatim*, it is pointed out that, although 10 per cent. is the customary selling commission in the trade, it might be regarded as relatively high for the large turnover in Christchurch and should be reduced. Freight charges are dealt with under another section. Some allegations were made as to the remarkable discrepancy as between weights forwarded for sale and weights accounted for, but it has been difficult to substantiate these when it was found that all cases were weighed by the auctioneer on a modern weighing-machine at the time of sale and no purpose other than that of courting trouble could be served by having a weighing-machine which did not give correct weight as between supplier and buyer. In regard to complaints made relative to the wide divergence between prices paid to fishermen and retail prices, this is a matter which is more fully dealt with elsewhere, and is accounted for not only by wastage and distribution expenses, but often also by a comparison being made between the prices when for a short period there is not the customary reconciliation between the two. To quote an extreme case, the wholesale price of soles, for example, might drop as much as 6d. per pound in a few days, but there would often be a longer time-lag in the downward revision of the retail price.

The complaints relative to Messrs. P. Feron and Son, Ltd., having virtual control of the steam-trawler catches is one which, of course, is not without some justification, as there is always present in the minds of a large number of fishermen a conviction that catches from these trawlers will discount the value of their own catches to a degree varying with the percentage of the trawler landings placed on the market. Centainly it might react to the advantage of fishermen if there were no such trawlers operating out of Lyttelton, but without the supplementary supply from these vessels further periods of short supply would undoubtedly eventuate and the retailer and the consumer would suffer accordingly. The Committee does not consider that the advantage held by the auctioneering firm in this connection is abused to the detriment of any or all of the interests concerned.

From the Christchurch Fish Retailers' Association and from retailers individually representations were made as to matters concerning :—

(1) The irregularity of supply and the shortage of fish experienced over a period of five months in the year.
(2) The methods allegedly adopted to keep wholesale prices high and the effect of export requirements upon wholesale prices.
(3) The relatively high level of wholesale prices as compared with former years, the uneconomic volumes of turnover, the necessity for utilizing rough fish as being lower priced, and other matters affecting retail distribution.

In regard to irregularities in supply and periods of short-supply, these are ever-present difficulties which are not incapable of being overcome through better organization of the industry as a whole. Complaints were made that the retention of certain quantities for export through the imposition of reserve prices was a factor instrumental in raising price-levels to the retailer, and, moreover, that the indirect interest held by the auctioneering firm in a large retail shop was used to the disadvantage of retailers generally. It is not considered that the latter position is abused, seeing that one shop only is concerned and its turnover must necessarily amount to only a very small percentage of the total sold from Christchurch retail shops.

As to export, retailers admitted that this trade is essential at times in order to relieve the supply position, otherwise there would be hopeless gluts at certain times of the year. As in Dunedin, however, it is clear that, while the fishermen benefit, the export trade results in the retailer and the consumer being called upon to pay higher prices than would otherwise be the case.

From the viewpoint of convenience to the public it would be difficult to say whether or not there are too many retail fish-shops in Christchurch (there are fifty odd), but the fact remains that uneconomic volumes of turnover, combined with irregularities in supply and fluctuating wholesale prices, have resulted in poor returns in a great number of cases, and retailers of cooked fish in Christchurch, more so than in any other part of the Dominion, have voluntarily or involuntarily adopted the practice of utilizing "rough" fish. They maintain that it is only by doing this that any profit margins within reason can be secured at all, and the practice has spread competitively until it is general throughout the city and will not readily revert to the general sale of what is usually looked upon as better-class fish. It should be clearly understood, of course, that "rough" fish, as it is called, is perfectly wholesome and no doubt contains a nutrition value equal to that of other varieties.

The question of shop hours appeared to be giving retailers some concern, particularly in regard to the competitive element as between wet and cooked fish shops, between shops employing labour and the "family" shop, and also between city and suburban shops. This is a matter of no little difficulty and upon which the retailers are submitting their representations to the Department of Labour. Mention should be made here of the frequency with which individuals with little or no experience enter the fish retail trade with a small amount of capital. After a brief period, in which they might go to extremes to build up custom, these people find themselves in difficulties and drop out, by which time they have caused serious concern and loss of trade to established units in the immediate vicinity. For this and other reasons the Christchurch Fish Retailers' Association sought the introduction of a licensing system concerning retail shops, but the Committee is of opinion that, while such a request might be considered when more important matters are dealt with, it should be deferred in the meantime.

Retailers pointed out that it is in their interests that the public should be acquainted with the reason why there is often such a wide price spread between the fishermen's return and the retail price. Publicity will be given to this matter in this report.

Christchurch Marketing.—Although few specific requests were made by fishermen and retailers for alteration in the present system of marketing, the general inference was that the position is unsatisfactory from many points of view, and the remarks applicable to Dunedin apply with equal force here. These may be briefly recapitulated as—

(1) Fluctuating and uncertain returns to the fishermen.
(2) The combination of auctioneering with that of exercising virtual control over steam trawlers and of exporting and selling wholesale.
(3) The insecure position of retailers in the matter of the wholesale price of their product.
(4) The adverse effect upon consumption of frequent variations in retail prices.

In regard to (4), it will be a matter of interest and no doubt of concern that in Christchurch over the past six months retail prices of representative varieties of fish have shown a range in price per pound of from, *e.g.*, 9d. to 1s. 3d., 3d. to 9d., 8d. to 1s. 4d., and in one class of fillets—viz., sole fillets—the range has been 1s. 3d. to 2s. 6d. per pound (see Appendix J). There is frequently a fluctuation in any one week from the lowest to the highest price, and, this being so, there must naturally be a discouragement on the part of the public to buy fish with any semblance of regularity. Retailers contend, and the Committee supports the contention, that if there were a continuity of supply of fish at an even price over the whole year there would be a considerable increase in turnover all round. The only way to secure an even price is by some method of fixation of the wholesale price.

Canterbury Steam Trawling Co., Ltd.—The Canterbury Steam Trawling Co., Ltd., with a paid-up capital of £7,000, operates two steam trawlers from Lyttelton—one of these recently being wrecked. The principal shareholder is the managing-director of Messrs. P. Feron and Son, Ltd. These two trawlers have supplied as high as 22 per cent. of the total fish coming into the Christchurch market in a six-monthly period, but, as mentioned elsewhere, the bulk of the trawler catches is retained for export or for sale ex freezer in times of relatively short supply.

Kaikoura.

Fishermen at Kaikoura, who forward all their catches to the auction-market at Christchurch, submitted representations to the Committee expressing dissatisfaction upon several matters affecting their industry. The main allegations were :—

(1) Full weights not accounted for.
(2) The demand for "prime" fish in Christchurch is affected by the quantities of "rough" fish coming on to the market.
(3) The effect upon auction prices of catches from trawlers controlled by Messrs. P. Feron and Son., Ltd.
(4) The wide spread between returns to fishermen and retail prices.

The same allegations were made in all other centres where similar conditions prevailed.

All these matters are dealt with elsewhere in this report.

In Kaikoura Messrs. P. Feron and Son, Ltd., have cool-storage accommodation similar to that in Timaru, but in the case of Kaikoura a charge of 7½ per cent. on selling-price at auction is made for storing and cooling. This amount is high compared with the charge of only 6d. per case in Timaru and appears to call for some justification.

Greymouth.

The main supply into Greymouth comes from two trawlers which were operated by the late Mr. George Scandrett. With adverse weather conditions for fishing the supply is not by any means steady, and, although an attempt is made to keep a week's supply in cool storage, at times fish is of necessity drawn from Christchurch. Alternatively, in times of good supply certain quantities are forwarded for sale by auction in Christchurch. From Greymouth distribution is effected to both Hokitika and Westport, wholesale prices for local and Hokitika requirements fluctuating in accordance with supply and season and averaging between 3d. and 6d. per pound for hapuka, 3½d. for soles, and 3d. for gurnard. In Westport, Mr. Scandrett supplied his own shop.

There are three retail-shops in Greymouth, all of which keep retail prices as steady as possible. These are usually 1s. 6s. to 2s. per bundle of soles (three large or five small ones, uncleaned) averaging 3d. to 4d. per pound, 7d. per pound for soles headed, cleaned, and skinned, 6d. for groper, and 8d. for best-quality fish such as brill and turbot. With limited supply and limited turnover these prices are considered very reasonable. A fair quantity of fish is sold on the wharf when the boats come in, this being mainly bundles of soles at 1s. 6d. per bundle.

Some little disturbance to the regular trade is caused by part-time fishermen selling hapuka on the wharf at roughly 3d. per pound, although it costs much more than this when caught by full-time fishing-vessels.

The Committee's attention was directed to the necessity for a wider distribution of fish on the West Coast, it being suggested that in centres where there are no retail fish-shops storekeepers ought to be encouraged to handle fish for sale, provided that they have proper facilities for storage under hygienic conditions. A case was instanced where in Greymouth a merchant acted as a distributor of oysters and smoked fish withouth having such proper facilities.

Westport.

The bulk of the fish taken at Westport is sold locally through four small shops, and any surplus, which once went to Wellington when there was a regular shipping service, is now forwarded for sale by auction at Christchurch. Groper is sold wholesale at not above 4d., flat fish at approximately 3d., and retail prices are generally on a par with those in Greymouth.

Nelson.

The one wholesaler in Nelson handles over half the supply coming into this port, but although his prices to the fishermen fluctuate in some degree they remain fairly constant at the levels shown in Appendix E. His wholesale prices are approximately 10 per cent. on the prices paid to the fishermen. Retail prices are also shown in Appendix E, and a comparison of these with the price paid to the fishermen and the wholesale price shows that they are no more than reasonable after taking wastage and distribution expenses into account.

In Nelson there is one wet-fish shop and six shops combining the retailing of wet and cooked fish with the management of restaurants. All retailers buy through the local wholesaler, except one who draws supplies direct from one fisherman at approximately the customary price paid by the wholesaler. One retailer delivers as far as Murchison and supplies the intervening districts.

Complaints were made by some of the fishermen that the wholesaler in Nelson with the only cool-storage chambers available for the storage of fish was not working harmoniously with certain of those engaged in the industry. Some line-fishermen have been refused space for the storage of bait. Fishermen, of course, have the option of shipping their catches to Wellington to the auction-market or to the wholesalers. A number do this, and the wholesale establishment itself in times of oversupply also ships to these markets.

Fishermen lodged their objections to payment for snapper by the dozen and crayfish by the count, maintaining that all payments should be on a basis of weight.

Blenheim.

There is no wholesale organization in Blenheim. Retailers in all cases buy direct from fishermen at Picton or Wairau Bar, paying at Picton 3½d. per pound for groper headed, 3d. blue cod and butterfish heads on, and at Wairau Bar 4d. per pound for flat fish and 2d. per pound for round fish heads on. Railage and cartage are extra in each case. Retail prices in comparison appear reasonable. They are: Groper cutlets, 7d.; blue-cod fillets 9d.; and flat fish, 9d. per pound. A complaint was made that sometimes fishermen sell at Wairau Bar in competition with the retail shops they supply in town.

Picton.

There is one retailer in Picton who buys from Picton fishermen at the prices paid by the Wellington wholesalers (see Appendix E). Sliced fish is sold at from 8d. to 9d. per pound. Turnover is relatively small in actual quantities of wet fish sold.

Napier.

The earthquake of 1931 disorganized the fishing industry at Napier, and, following upon the withdrawal of the N.Z. Fisheries, Ltd., in that year, the Napier Fisheries Co-operative, Ltd., was brought into being to market the catches of trawlers and fishing-launches. With one exception the original shareholders were boat-owners. From small beginnings the company is now well organized and managed. While supplies are taken in the main from vessels operated by shareholders, certain quantities are also accepted from fishermen who are non-shareholders.

This company works in amicable relationship with the Hawke's Bay Trawling Co., Ltd., which is the only other wholesale depot operating at Port Ahuriri. This latter company did not commence its activities until the end of 1935.

These two companies handle the whole of the fish brought into Napier (15,585 cwt. in 1936–37) with the exception of that landed by two trawling-vessels, one of which supplies its owner, a retailer, in Napier, and the other a retailer in Hastings. In the latter case an agreement to supply for twelve months has been entered into at relatively low prices, but these are compensated somewhat by the fact that certain rough fish not otherwise saleable are also taken.

Two limited-liability companies operate fishing-vessels from Port Ahuriri, one being the Dawn Fishing Co., Ltd., formed in 1936, and the other the Akina Trawling Co., Ltd., formed in 1933. Profits in the last financial years were relatively small. Both companies market their catches through the Napier Fisheries Co-operative, Ltd., the Akina Trawling Co., Ltd., being actually the largest shareholder in this marketing company.

Wholesale prices are subject to fluctuation depending upon volume of supply, and retail prices move up and down in sympathy. The June, 1937, level of prices is shown in Appendix E. A graph submitted by the Napier Fisheries Co-operative, Ltd., showed a remarkable weekly fluctuation in the quantities of fish handled.

A rather interesting and unusual custom in connection with payment to the fishermen and the wholesale margin of profit is the reference to "bundles" of fish, which are taken per bundle as 4 lb. for flat fish (soles and flounders) and 8 lb. for round fish. Recently, in order to provide funds for better facilities for the operations conducted by the Napier Fisheries Co-operative, Ltd., the shareholder-suppliers allowed their company to take an extra 3d. per bundle on round fish—*i.e.*, ⅜d. per pound. This company operates upon a gross wholesale margin of 6d. per bundle handling charge for round fish (¾d. per pound) to non-shareholders and 9d. per bundle (1⅛d. per pound) to shareholder-suppliers. For all suppliers the margin averages 6d. per bundle for flat fish. The wholesale price computed in this way is ex store, and, in addition, there is a delivered price on round fish of ½d. per pound advance which is charged for delivery to country and to provincial districts outside of Hawke's Bay. All are net prices except that to Hastings, which owing to its proximity is allowed 2½ per cent. discount. Perhaps the position is best exemplified as follows:—

—	Purchase-price (per Pound).		Selling-price (per Pound).		Margin on Non-shareholder Price (per Pound).	
	From Shareholders.	From Non-shareholders.	Ex Store.	Delivered.	Ex Store.	Delivered.
	d.	d.	d.	d.	d.	d.
Tarakihi, snapper, moki, hake, dory	2⅜*	2¾	3½	4	¾	1¼
Hapuka (groper)	3¾	3¾	4½	5	¾	1¼
Gurnard	1¾	1¾	2½	2¾	¾	1
Soles	4¾	4¾	6	6	1¼	1¼
Flounders	4¾	4¾	6½	6½	1¾	1¾

* Difference equals ⅜d. per pound, or 3d. per bundle of 8 lb.

From the above table it will be seen that, in so far as soles are concerned, the handling fee is 5d. only, while on flounders it is 7d. per bundle. By far the largest proportion of flat fish handled is represented by soles.

The selling-prices have been kept at competitive levels with those of the N.Z. Fisheries, Ltd., Wellington, in the territories where delivery is effected.

In times of oversupply a certain amount of fish is smoked or sent to, say, Wellington for temporary storage and a lesser handling fee is charged.

Quantities landed by all fishing-vessels into Napier during the year ended 31st March, 1937, were—

	Cwt.
Hapuka (groper)	1,383
Gurnard	3,857
Flats (mostly soles)	2,087
Mixed round fish	8,258
	15,585

The Hawke's Bay Trawling Co., Ltd., works upon a handling fee of 4d. per bundle, but increases this in the case of hapuka and certain other round fish to 6d. per bundle, the position being as follows :—

	Price paid Fishermen per Pound.	Wholesale Price per Pound.
	d.	d.
Gurnard	2	2½
Hapuka (groper)	3¾	4½*
Other round fish	2¾	3½*
Soles	5	6
Flounders	5	6

* In these cases an extra ¼d. per pound (2d. per bundle) is retained by the company to cover extra cost of transport out of Napier when these varieties are in oversupply.

Expenses of handling for this company over its last financial year worked out at 0·57d. per pound upon the weight of fish handled and the profit gained was only 0·08d. per pound. The 6d. per bundle (or 0·75d. per pound) charged by the Napier Fisheries Co-operative, Ltd., was sufficient to result in a profit of approximately 0·18d. per pound, and this amount deducted from the gross margin of 0·75d. leaves the cost in the vicinity of 0·57d. per pound on weights of fish handled.

The cost of handling is therefore identical for both companies.

As mentioned previously, retail prices are subject to fluctuation, and although those quoted in June last (see Appendix E) appeared somewhat on the high side an investigation of the financial results of two retailers does not reveal that excess profits are being made. Two hawkers operate, one supplying Napier and surrounding districts, while the other is a part-time fisherman-hawker who operates from Cape Kidnappers.

In regard to the whole question of marketing in Napier, however, it would appear that there ought to be some stabilization of wholesale (and retail) prices over more lengthy periods than is the case at present, when these are subject to variation at any time. Reference has been made to the fact that one trawler is disposing of its catch at prices paid under a twelve-monthly agreement. The Committee realizes, of course, that there are difficulties attendant upon efforts to stabilize prices in this centre—difficulties in the matters of continuity and volume of supply, inadequate freezing space, &c.

Gisborne.

There are two wholesale firms in Gisborne, the principal of these being the Gisborne Fisheries, Ltd., conducted by Messrs. Zame and Nicholas, who with two other partners recently merged their interests. The other wholesaler (W. Brown) is mainly concerned with country retail delivery, but does sell certain small quantities wholesale to a retailer in Gisborne and one in Tolaga Bay. The total weight of fish landed at Gisborne in 1936–37 was 4,219 cwt., compared with Napier, 15,585 cwt. No great proportion of Gisborne's fish is sold in other centres, but what small quantities are so sold are despatched freight forward. At times certain quantities and varieties are brought into Gisborne from Napier, Tauranga, Whakatane, Auckland, and Wellington.

Prices paid to the fishermen since 1st July, 1937, are as follows :—

From line boats:
- 3½d. per pound hapuka gutted and gilled, heads on, under 25 lb. (heads off, over 25 lb.).
- 3d. per pound tarakihi, gutted, heads on, up to 1,000 lb.
- 2½d. per pound tarakihi, gutted, heads on, over 1,000 lb.
- 2½d. per pound snapper, gutted, heads on.
- 4d. per pound blue cod, gutted, heads on.
- 1½d. per pound ling, gutted, heads on (if required).
- 1½d. per pound gurnard, green (if required).

From trawlers:
- 2½d. per pound tarakihi, gutted, heads on, up to 1,000 lb.
- 2d. per pound tarakihi, gutted, heads on, next 4,000 lb.
- 1½d. per pound tarakihi, gutted, heads on, over 5,000 lb.
- 4½d. per pound flat fish, gutted.
- 1½d. per pound gurnard, green (if required).

The quantitative payments apply to each vessel per week.

Payment is based on the landed weight less a drainage deduction of 5 per cent.

A better price is paid for fish taken by the line boats, for two reasons; first, the line fish keeps better and is not bruised as trawler fish sometimes is, and, secondly, the line boats bring in less tarakihi, snapper, and gurnard than the trawlers, and consequently it is recognized that a higher price is warranted.

Wholesale prices are based on an advance of ½d. per pound on the fishermen's price, which covers handling charges, shed wages, and so on.

There are five retail fish-shops in Gisborne—none of these being straight-out wet-fish shops. Retail prices remain steady, and are 6d. per pound for whole fish, 10d. per pound for soles and flounders, and 10d. per pound for cutlets and fillets of other fish. Gurnard varies in its retail price. It is principally sold as cooked fish or under contract orders. This is a simplification of the retail-price question and over all appears reasonable. Unfortunately, it has not been possible to separate profits made on wet fish from profits realized on cooked fish and the operation of restaurants. The Gisborne Fisheries, Ltd., have made an exceptional profit during the year ended 2nd March, 1937, but the whole business is so bound up as between wholesaling, retailing, and restaurants that, except to say that ½d. per pound covers wholesale handling, the separation of one section of this concern's activities from another has been found impossible. The bulk of the profit has been derived from the restaurants.

The other wholesaler referred to previously as conducting a small wholesale trade in Gisborne does an extensive retail trade in the country per medium of two motor-vans running up the East Coast beyond Ruatoria and as far south as Nuhaka. He charges the same price ex-van as the retail price in Gisborne. As an outcome of some conflict of interests in the past, this man can now secure supplies from the line boats only, and, unfortunately, is under no little handicap when supplies are short, as he affirmed that he could extend the country trade if he could get the supplies of fish he wants. He should be encouraged, by the removal of the difficulties under which he works.

Gisborne retailers complain as to the prevalence of the practice of selling fish by the fishermen at the wharf as the boats come in, often at a price as low as 1½d. per pound, when they expect the wholesaler to pay, as he does, 2½d. per pound. This practice has been established many years in Gisborne, and although it operates against the interests of retailers it is not considered sufficiently serious to warrant a recommendation for its abolition.

Whakatane.

There is only one wholesaler in Whakatane, and he owns and operates his own Danish seine boat. He supplies locally and to Rotorua by delivery-van, and sometimes small quantities are forwarded to Gisborne by transport lorries. The wholesale price delivered for snapper and tarakihi gutted is 3¼d. per pound. These fish cost 3½d. per pound f.o r. at Thames and Tauranga, and this wholesaler's price of 3¼d. is therefore quite reasonable in comparison. It was impossible for the Committee to separate the fishing from the wholesale operations, but a substantial profit was made in 1936–37. Two sons, however, assist in the business, one on the fishing-vessel and one on the delivery-van, and they receive nominal wages only.

The retail of wet fish in Whakatane is practically confined to round fish, flats being purchased from Thames by one retailer and used in his restaurant.

Retail prices are:—

Snapper	5d. to 6d. per pound whole. 8d. to 10d. per pound fillets. 6d. per pound steaks.
Tarakihi	5d. to 6d. per pound whole. 8d. to 10d. per pound fillets.
Hapuka	8d. per pound steaks, cutlets, and fillets.

The lower retail prices for fillets and the prices for hapuka are charged by a retailer whose shop is out of the main part of the town and who draws supplies from his own line boat. In fishing and in retailing, this man made a very small profit over a period of six months. The other retailer, who sells wet and cooked fish and conducts a restaurant, showed a reasonable profit of £375 over a recent twelve-monthly period. Only a part of this is derived from the sale of wet fish, and in view of this and the other retailer's low profits the retail prices in Whakatane appear to be no more than reasonable.

Tauranga.

Two wholesale concerns operate at this centre, one being the Union Fish and Ice Co., and the other the Moore Fisheries. This latter concern, after a period of unprofitable trading in fish and in bacon-curing, leased its premises in November, 1936, to a wholesaler, who has since carried on as a fish wholesaler only and made a small profit in the first six months' trading. The Union Fish and Ice Co. showed a substantial profit during 1936–37.

Prices paid are as follows :—

——	To Fishermen.	Wholesale.	Retail..
	Per Pound.	Per Pound.	Per Pound.
Snapper	2d. green	3½d. gutted ..	6d. whole.
Snapper	2¼d. gutted ..	3½d. gutted ..	10d. fillets.
Tarakihi	2d. green	3½d. gutted ..	6d. whole.
Tarakihi	2¼d. gutted ..	..	10d. fillets.
Hapuka	3d. gutted ..	6d. h. and g. ..	1s. steaks.
Flounders	5d. gutted ..	7d. and 8d. gutted ..	1s. whole.

With the exception of the prices for flounders to fishermen, all prices are now on a par with the Auckland scale, the price of groper to the fishermen having been raised recently to 3½d. green and 4d. gutted, and wholesale and retail prices have no doubt advanced accordingly. The fishermen receive 5½d. for flounder (gutted) in Auckland.

Besides delivering locally, both firms send fish as far as Opotiki, Rotorua, Waihi, the King-country, and occasionally to Gisborne, prices being freight forward in each case. In times of local shortage the retailers draw supplies from Thames at the same price as Tauranga, plus freight 3s. 6d. per 100 lb. case.

There are two retailers in Tauranga who also sell cooked fish and conduct restaurants, their retail prices for wet fish being as stated above. Financial results over a recent seven-monthly period in each case showed reasonable profit margins. Retail prices appear reasonable.

Auckland and Thames.

Wholesale.—Particulars are given under "Export, Auckland," of the wholesale prices operating in Auckland and Thames. Since the agreement with Sanford Ltd. relative to export and the revised scale of local prices came into effect, all wholesalers have benefited, but the majority of retailers, although they admit that sales have increased in 1937 as compared with 1936, have stated that they have not prospered as well in proportion to other sections of this and other trades. They were faced with an increase in wholesale prices consistent with the advance received by the fishermen—(*i.e.*, from between 1¼d. and 1¾d. to 2d. per pound), and after taking into account the wastage involved in processing they were not in all cases able to pass on the relative advance in retail prices, although, generally speaking, it may be said that they were not placed at any great disadvantage in this respect, except that the upward trend in prices resulted in a slackening-off in what was hoped to be the commencement of a marked expansion in consumers' demands at the time. Before commenting further upon the retail position it is advisable to refer back to the operation of the wholesale units and follow developments through to matters dealing with local consumption. Brief reference is made to the wholesale establishments hereunder :—

Sanford Ltd. : Operating since 1904. In 1932–33 reduced capital from £125,000 to £59,375. Only Auckland merchant operating steam trawlers. Profit latest twelve months, £3,794 ; previous fifteen months, £8,312.

Fishermen's Co. (Auck.), Ltd. : This company (a co-operative concern which itself owns no boats) was formed in 1931 by certain shareholders of the Auckland Fishermen's Co-operative, Ltd., which went into liquidation in that year. In 1936 fifteen boats were fishing for this company, but owing to differences between the company and the boat-owners who were later in the same year to form the Auckland Seine Boat Association the number was reduced to five boats by the defection of ten boats to the latter concern or elsewhere.

Ocean Fish Co. (Messrs. Yurak Bros.) : Established 1931. Owns no boats, and supplies local market only.

Auckland Fisheries, Ltd. : This concern took over and developed a small wholesale business which was under financial obligation to those who are now principal shareholders. The company was registered in 1932. Prior to the Fishermen's Co. (Auck.), Ltd., acquiring supplies from a number of boats whose owners were later to form the Auckland Seine Boat Association these boats fished for Auckland Fisheries, Ltd. Following upon the defection of these vessels a company, the Auckland Trawling Co., Ltd., was formed to operate three Danish-seine boats for Auckland Fisheries, Ltd. The capital is held by five shareholders who are directors of Auckland Fisheries, Ltd.

Kia Ora Fish-market (Cole and Howarth) : Own and operate four Danish seine vessels and dispose of practically the whole of the supply upon the local market. Certain small surplus quantities were handed over to Sanford Ltd. (under the merchants' agreement) for export.

Pearl Fisheries (N. Marinovich) : Formed 1933. Owns and operates two vessels and supplies mainly local market and his own two retail-shops. Packs limited quantities for export.

Waitemata Fisheries, Ltd. : Established in 1933. Owned and directed by Mr. M. A. Devcich, who wished to enlarge upon his source of supply for his wholesale and retail business in the Waikato. Began exporting in 1936.

Auckland Seine Boat Association, Ltd. : This is a co-operative concern which owns no boats as a company. As an outcome of differences in the matter of supply to Auckland Fisheries, Ltd., and subsequently the Fishermen's Co. (Auck.), Ltd., a number of boat-owners formed this company in 1936.

Thames.

Thames Fisheries, Ltd.: Established in 1918 and absorbed the old Co-operative Fisheries. Paid-up capital reduced from £15,150 in 1935 to £7,307. In 1929 a number of suppliers left to link up with the Co-operative Fisheries (N.Z.), Ltd., and it became impossible to operate profitably. This company has a depot at Mercury Bay and buys from the fishermen there.

Taylor Bros.: Established in 1902, and now owned and directed by Mr. C. W. Taylor. Supplies mainly on local market with small quantities for export.

Shortland Fish Co., Ltd.: Established 1923 by taking over Sanford's branch. Supplies are drawn from six vessels belonging to shareholders. Exports indirectly by handing surplus supplies over to Thames Fisheries, Ltd., at an agreed-upon advance on boat prices.

Co-operative Fisheries (N.Z.), Ltd.: Established 1927 as a co-operative concern, this being an outcome of dissatisfied suppliers breaking away from Thames Fisheries, Ltd. The company owns no boats.

At the outset it is evident that the number of units engaged is not conducive to the highest degree of economical operation. We have units here of varying magnitude competing with each other upon a basis of varying costs of handling, processing, and production generally, whereas (to take an extreme case) one unit in Auckland and one in Thames could with proper facilities handle the whole of the landings with the maximum efficiency. Apart from the question of the number of markets operating, it was realized by the wholesalers concerned, all of whom were party to the arrangements entered into for not only the settlement of the fishermen's strike, but their own difficulties and differences as well, that in common fairness each should retain its *status quo* in the matter of source of supply. Consequently, it was agreed that there should be no alteration whatever in the size nor in the numerical strength of the boats which were fishing for their respective markets at the time (November, 1936). Moreover, it was also realized, and in our opinion rightly, that the building and commissioning of any additional boats would not only add to the marketing problems then looming up, but would tend to lead to the competitive building of such boats with greater catching-power, to rendering the existing small boats unprofitable to operate, to certain markets securing an advantage to themselves which they did not have in November, 1936, and to hastening what would no doubt eventuate—*i.e.*, the ultimate depletion of supply from the fishing-grounds. Incidentally, it may be mentioned here that, strange as it might seem, it took a fishermen's strike to bring the affairs of the merchants into at least some semblance of unification and organization in marketing.

Despite the fact that the Auckland Fish Export Committee, which, as its name implies, deals only with export and related problems, has smoothed out many difficulties, the position remains far from satisfactory. Some of the handicaps and unavoidable difficulties which still face the industry in Auckland and in Thames might be summarized as below. Certain of these have been difficult to separate owing to their close association with both export and local supply problems:—

(1) There are obviously too many markets in each place, and consequently the overhead expenditure upon limited turnovers is adding unduly to costs of production. The combined existing markets are capable of handling a greater quantity of fish than is at present landed.

(2) Even now several of the units state that they cannot operate to the full economic operating-capacity of their plants, which have been built to handle greater quantities than their present fishing-vessels can bring in. They wish to acquire more vessels either by allocation from other companies or by building new ones.

(3) With the existing number of markets and the varying sizes of vessels fishing for them, combined with the limited number of vessels, there is an irregularity in supply, making shed-handling costs an indeterminate factor.

(4) There is an irregularity in dealer or retailer demand at each market, the retailers changing round from market to market at will and often, it is alleged, seeking and sometimes securing some small concession in the matter of weights or discounts. (NOTE.—Wholesale prices are held at agreed-upon levels since November, 1936.)

(5) Acting on the assumption that unlimited surplus supplies would be available for export, although other exporters were fishing and competing for the trade, several of the markets developed and increased their fishing-fleets unwarrantably.

(6) Many of the plants cannot be looked upon as efficient for modern demands in handling and storing fish.

(7) The condition of fish arriving into the sheds has not infrequently left much to be desired. Boats might remain out too long, there might not be sufficient ice aboard, spent or sick fish are sometimes brought in. (It should be made clear, however, that all fish unfit for consumption is rejected and dumped.)

(8) The quality of fish packed for export by some of the sheds has not been up to the high standard now required (further reference is made to this point under "Export, Auckland").

(9) The difficulties encountered at times in regulating supply to demand—particularly to export demand—with the result that stocks may accumulate beyond immediate requirements, which entails the marketing of old stocks over lengthy periods.

(10) The allegations made that the export market is denuding to some extent the supply for local consumption.

(11) The problem of marketing tarakihi against snapper.

(12) The sacrifice of much rough fish, which could well be utilized locally, by the crews of fishing-vessels in order to make room for the prime varieties. (Questions of price are naturally involved in this.)

(13) The relationship between wholesale and export prices.
(14) Fishermen supplying retailers direct.
(15) The desire of other interests to build boats, establish markets, and cater for local and export trade.

Some further explanation is submitted in respect of several of those questions which are not more or less self-explanatory :—

(11) Tarakihi versus Snapper : The principal fish demanded and consumed in Auckland and district is snapper. Despite the fact that attempts have been made to push the sales of tarakihi locally, no great success has been achieved except in the case of kippered or smoked tarakihi, when the price, however, goes somewhat beyond the means of the majority of people. Some of the factors militating against its sale are—(1) It does not keep so well as snapper when smoked, and tends to break ; (2) kippered tarakihi appears soft and flabby when kept in retailers' windows for any length of time ; (3) the dark membrane on the wing of the fresh fish or fillet finds disfavour in the eye of the customer. Tarakihi is, of course, sold wholesale at the same price as snapper, and retailers maintain that if they could receive it slightly more cheaply, then a proportionate lowering of the retail price would encourage wider sales. Moreover, it could be used to a greater extent in the cooked-fish trade, where any defects in appearance which detract from its value would not so readily show up. Further reference is made elsewhere to the snapper versus tarakihi position in relation to export.

(12) Rough Fish : In comparison with prime fish at 2d. per pound, the fishing-vessels are not encouraged to bring in any quantities of rough fish such as gurnard at 6d. per dozen (approximately ½d. per pound and trevally at 1s. per dozen (approximately ½d. per pound also). Fishermen complain that the price is unremunerative and that it does not pay to place this fish on ice. Usually only the last day's catch of rough fish on a trip is brought in. Retailers state that they could sell far greater quantities of this rough fish if they could only get supplies. It is all good, wholesome material for the wet as well as the cooked fish trade.

There is with respect to rough fish an unjustifiable price spread as between the return to the fishermen and the wholesale price, the markets having for some reason always looked to these varieties to return a relatively high margin of profit. For instance, gurnard is purchased from the fishermen at 6d. per dozen green (½d. per pound) and sold at 1s. 6d. per dozen green (1½d. per pound), while trevally for some unaccountable reason (except the custom which prevails) is purchased at 1s. per dozen green (½d. per pound) and sold at 4s. per dozen green (2d. per pound.) Some radical adjustment is required here. Prices to the fishermen should be raised and wholesale prices reduced to a level consistent with the margin of profit secured upon prime fish such as snapper and tarakihi.

(13) Wholesale and Export Prices : It may be said that the local consumer has been penalized to some extent in favour of export, in that the wholesalers secure a greater margin of profit upon local than they do upon f.o.b. sales. This may perhaps become a matter of controversy arising out of the manner in which costs are taken into account, but the fact remains that the system adopted is making the local sales carry an overhead expenditure which is unduly heavy and which, in our opinion, is an unwarranted impost upon the retailer and the consumer. The practice of loading costs in this way is perfectly in accord with accountancy principles, but from the viewpoint of practical working and the interests of local consumers it seems to be wrong to take into account the full overhead upon snapper and tarakihi received in a green state at a depot and sold as such without any processing whatever at an advance of 1d. upon the cost of 2d. per pound. In other instances the margin is relatively higher—*i.e.*, john-dory bought green 2d., sold green 3½d.—and the position with rough fish has been referred to above.

In seeking to justify this price spread some of the markets have even charged up a proportion of freezing-costs when the fish is not frozen at all, and, moreover, there is charged up a fixed amount of overhead upon weight sold whether sales are green fish or fillets for export. This reacts most unfavourably to the retailers and consumers when the bulk of local sales is fish in a green state. It has been claimed, of course (see Nos. (3) and (4) above), that the irregularity of landings results in the handling-cost becoming an indeterminate factor, but, while this is true, the Committee is of opinion that the wholesalers' margins upon local sales to Auckland City and suburban retailers is excessive in all cases under present conditions and should be reduced. If recommendations in respect of a reduction in the number of markets are put into effect, then, for instance, the 1d. per pound margin upon green fish ought to be reduced to something like ½d. per pound or even less, and processed fish in proportion thereto. As an advance in wholesale prices means a relatively greater advance in retail prices, the converse would be the case if a reduction in the former were effected. Although the Committee is very anxious to see some reduction in the price of fish in country districts brought about, it is not suggested in the meantime that there should be any variation in the wholesale price for country delivery from Auckland or Thames, for the reason that extra labour and packing (generally with the use of ice) is required to prepare such fish for safe transport. It has been submitted with some justification that the wholesale prices for country delivery should be higher than that charged to local retailers, most of whom effect their own delivery from the market.

It is appropriate here to comment upon export prices, and refer to Appendix H, where are shown f.o.b. costs, realization on f.o.b. sales, and profit margins secured upon five different packs of snapper and one of tarakihi. These profit margins are considered to be the maximum attainable under present conditions, seeing that in many cases the percentage of wastage might be greater than the figures shown, which are arrived at as a result of actual tests undertaken by Committee members. Moreover, the Thames people are faced with an extra cost of ¼d. per pound freight from Thames, payment having been made f.o.b. Auckland. If due and not unreasonable allowance, say, 0·40d. on cost (leaving a profit margin of 0·60d.), is made for overhead expenditure upon green fish passed through the depots to retailers, it will be seen that a lesser margin of profit is realized upon any export fish than upon local fish sold for local consumption—the highest based upon the same green weight of 100 lb. being 0·46d. per pound and only 0·33d. upon snapper fillets (wings off), the principal fish exported.

(14) Fishermen supplying Retailers direct: This is not a problem of major importance, but it is a source of irritation to wholesalers, who find retailers competing for their (the wholesalers') supplies in times of scarcity when all available quantities are wanted for general distribution. A case in point is Kaipara flounder forwarded to the wholesaler when in plentiful supply and to the retailer when scarce. In the opinion of the Committee the wholesalers should have the right to handle all fish except in isolated instances where a retailer owns his own fishing-vessel.

(15) Establishment of New Markets: See under separate heading of "Licensing."

Reverting to the question of reducing the number of markets operating, it is significant that the majority of these realize that their numbers are too great both in Auckland and Thames, and that some readjustment is essential to enable the industry to attain a greater measure of efficiency. In Thames, in particular, some form of an amalgamation of interests has been mooted for a number of years, and while there the Committee called a meeting of the four markets concerned to discuss ways and means by which such a merging could be put into effect. A complete review of the position was made not only in regard to the financial position of the companies and their fixed assets, but to the supplies of fish, catching methods, and marketing, both locally and overseas. In Auckland the representations submitted centred round a discussion on some scheme whereby two or three units would be sufficient to enable the industry to be conducted with the greatest efficiency, and it was realized that some form of compensation must necessarily be paid to those units falling out of the wholesale trade.

Following upon a full consideration of the factors involved, it would appear that the maximum efficiency and service could probably be obtained only per medium of a central depot, State or Municipally-owned, but such a revolutionary change-over in handling and distribution would be rather drastic in its effect and possibly unwarranted in application. The alternative appears to be the retention of two or, at the most, three of the more efficient wholesale units at present established. These would require reconstruction. This would mean that there would be two or three units only, and in turn there must be unification in the activities of these as between or amongst themselves.

Retail.—The membership of the Auckland Fish Retailers' Association embraces the majority of fishmongers in Auckland City and suburbs. Amongst other endeavours tending towards the maintenance of the welfare of its members' trade, the association has attempted to eliminate the evils of price-cutting, but has not altogether been successful in this respect, mainly for the reason that non-members of the association refuse to fall in with its policy, and no disciplinary measures can very well be taken against them by the organized body.

Reference has already been made to the retailers' position following upon the increase in wholesale prices in November, 1936, and representations in the main centred round the need for some reduction in these prices in order that retail prices might be reduced in turn and thus result in an increase in turnover. These representations are answered by our recommendations in respect of an immediate reduction in wholesale prices within the city area, and it is expected that the retailers will respond by reducing their prices in the proportion they bear to wholesale. Questions concerning the utilization of a greater quantity of rough fish and the tarakihi versus snapper position have been covered elsewhere in this report. Further representations were submitted dealing with:—

(1) The multiplicity of shops.
(2) The price spread between returns to the fishermen and retail prices.
(3) The competition from wholesalers' retail-shops.
(4) The sale of all fish by weight.
(5) The licensing of retail shops.
(6) The fixation of wholesale and retail prices.

Dealing with these questions together, the following comment is made: A number of witnesses have referred to what they regard as an uneconomic position in respect of the number of retail fish-shops—most of them small—in Auckland City and suburbs (these are approximately one hundred in number), and the effect of their multiplicity upon the turnover of each. In some localities the shops are more or less grouped and competition for custom is so keen that the tendency, more so than in other places, has been to cut prices below the levels agreed upon by association members as what they consider fair and reasonable. Retailers have themselves complained of the competition they experience from retail shops conducted by wholesalers not only in the city, but at the wholesalers' own depots. From a normal trading point of view this is not considered a serious complaint, particularly in view of the fact that these wholesalers' retail-shops are showing a tendency to decrease in number, the principal reason for this being, in the suburbs at any rate, that they have to compete with the "family" fishmonger, who is not under the obligation of complying in full with the provisions of the

Shops and Offices Act in respect of closing-hours and the payment of wages. Sanford Ltd. once had sixteen retail-shops; now they have seven, and some of these will be closed as leases expire. Two rather serious allegations, however, were made by the Fish Retailers' Association in respect of wholesaler competition along these lines. First, that in times of scarcity of certain varieties or of fresh fish generally the wholesale markets supply their own retail-shops, with the result that other retailers are starved of a range of fish. As an outcome of this practice it was stated that the retailers had been forced into the cooked-fish trade to the extent that there are now only three straight-out wet-fish shops in existence in Auckland. Secondly, the Committee's attention was directed to what is a serious matter if it could be substantiated, and that is the allegation relative to a wholesaler expressing his intention of opening a shop or shops in the vicinity of an established one if the latter does not draw supplies from him.

As an outcome of such complaints and of other matters affecting the economic operation of retail-shops, the Fish Retailers' Association asked for fixation of wholesale and retail prices, licensing of shops, and, in effect, complete Government control of the whole industry, or, failing this, at least a partial and yet effective control. Reference is made elsewhere to the question of some control being exercised over wholesale and retail prices, but in respect of the licensing of shops we are of opinon that while such a request might be considered when more important matters are dealt with, it should be deferred in the meantime.

As a means of circumventing strict adherence to standard prices, a number of retailers are showing a tendency to sell at so much per fish, per piece, or so many fillets for 1s. This might tend to develop into an unscrupulous practice, and in conformity with the recommendation made as to sale of all fish by weight upon the wholesale side we are of opinion that the same procedure should be adopted in the retail trade.

Coming now to the complaints made (mainly by fishermen) as to the price spread between their returns and retail prices, this is a matter that should be given some publicity, in order to allay the suspicion that is in their minds, and to some extent in that of the general public as well, that either the wholesaler or the retailer (or both) are securing a profit out of all keeping with the price paid to the fishermen. In comparing the two prices, the full volume of wastage incurred in cleaning and processing is not taken into account, and perhaps overlooked altogether by some. A reference to Appendix M will show that the retailer, upon the purchase of his fish at any price, is immediately faced with a heavy loss in wastage, and in respect of Auckland attention might be directed to the position with snapper and tarakihi :—

Price paid by Wholesaler to Fishermen.	Price charged by Wholesaler to Retailer.	Cost to Retailer.	Retail Price.	Gross Margin.
		Snapper.		
Per Pound.	Per Pound.	Per Pound.	Per Pound.	Per Pound.
2d. green ..	3d. green ..	4·5d. headed and gutted and scaled ..	8d. steaks ..	3·5d.
		5·6d. fillets, wings on	10d.	4·4d.
		8·3d. fillets, wings off	12d.	3·7d.
		Tarakihi.		
2d. green ..	3d. green ..	5·0 headed, gutted and shouldered ..	8d. steaks ..	3·0d.
		8·3d. fillets, wings off	12d. ..	3·7d.

Wholesalers' costs and profits on local wholesale have already been discussed under "Wholesale." The gross margins shown to the retailer above are required to cover cartage, rent, wages, wrapping-materials, and general expenses incidental to this class of trade plus profit. In the city areas shop-rents are exceedingly high, instances being quoted as £21, £20, £13, and £11 per week. Unfortunately, it has not been possible to arrive at a true cost upon selling-prices representative of the trade, owing to the combination of the sale of cooked fish with that of wet fish, but from a reliable source the cost has been worked out at 3¼d. per pound, thus leaving over and above this figure no excess profits upon the unweighted average of the above-mentioned margins. Perhaps the complaints as to the high price of fish in Auckland can best be answered by a reference to Appendix I, which shows that in the case of eleven representative shops over their most recent twelve-monthly accounting periods the average net profit upon turnover was 6·7 per cent. and the average net profit itself was £248 per annum. It should be explained, furthermore, that some of these retail units are "family" businesses and the payment of any ordinary wages as such is avoided. In accordance with the reduction recommended in local wholesale prices in Auckland, it is expected that a proportionate reduction will be effected in due course in retail prices.

In Thames no representations were submitted relative to retail prices, and investigation of the position showed that these were generally on a slightly lower level than Auckland and were quite reasonable. A loss on the latest year's working was sustained by one shop.

North Auckland (Wholesale, Retail, and Transport).

Whangarei.—A depletion of local supplies at Whangarei has resulted in the bulk of requirements being brought in from outside centres—Auckland and Russell—with a result that retail prices are rather high compared with ports similarly situated and with the prices which were ruling when Whangarei fishermen were able to supply all the demand. One retail-shop which draws supplies from local fishermen has often had to close for short periods, there being no local fish coming in. Reference is made elsewhere to the dwindling of the landings at Whangarei. An investigation made into wholesalers' and retailers' margins of profit show that no more than reasonable profits are being made—in fact, they are lower than they might justifiably be, on account of the limited turnover. There are five retail-shops in Whangarei.

Russell, Whangaroa, Mangonui, and Kaitaia.—In North Auckland generally the questions of insufficient and irregular supplies and of transport are the principal considerations. Under the section "Danish-seining" the depletion of the grounds by these vessels at the expense of local line-fishermen is indicated. As a consequence of failing local supplies, a retailer (Mr. J. Miller, trading under the name of "Northland Fish-supplies") who once drew his full requirements from Mangonui now finds that he cannot get anything like the quantity he requires in order to supply a wide range of customers (including hotels and restaurants and two hospitals) in the Mangonui, Hokianga, and Whangaroa Counties. These customers number 1,239, according to a statement submitted by this distributor (Mr. J. Miller), and he can now serve them only intermittently. There is something radically wrong in this situation, and Mr. Miller asked on his own behalf and on behalf of his customers that a stop be put on the wholesale depletion of fish in local waters. As a way out of the difficulty it was suggested to Mr. Miller that he might arrange for one or other of the Auckland seine boats to land certain quantities at Mangonui for his purposes, but he later advised that the proposition is unworkable, for the reason that the visits of any one of these vessels to local waters are so irregular that no reasonable guarantee of constant supply is possible. As an alternative he suggested that a seine boat (possibly requiring some small subsidy, he thinks) might be stationed permanently at Mangonui for the purpose of satisfying the local and inland demand. This is a problem, however, which is wrapped up with the general question of Danish-seining and until the position is clarified no recommendation unfortunately can be made in connection therewith. The remedy lies in our recommendations concerning the operations of Danish-seine vessels.

Transport in general in North Auckland is reasonable in regard to the rates charged for the conveyance of fish, but in some cases—*e.g.*, Totara North—there is an unavoidable infrequency of service which tends to retard distribution.

New Plymouth.

Owing to weather conditions and other causes the local supply of fish at New Plymouth is erratic, and as a consequence the bulk of Taranaki's requirements is drawn from outside sources, mainly Napier, Auckland, and Thames, with certain quantities occasionally from Wellington. An unsatisfactory feature of the trade at New Plymouth is that the local fishermen receive payment upon a relatively low scale compared with the cost of Auckland fish landed into the retail shops—*e.g.*, 3d. and 3½d. per pound for gutted snapper, when the same fish is 3½d. gutted on rail Auckland plus a cost of approximately ¾d. per pound railage and cartage, making 4¼d. altogether. The irregularity of local supply as against the certain supply from Auckland is, however, only one part of the difficulty, another being the quantity of "spent" fish brought in and not rejected by retailers. When weather conditions are favourable there is often a minor glut in local supplies, with the result that the fishermen, having no freezing space available, are forced to quit these supplies to the shops and elsewhere at prices competitive amongst themselves. There is no wholesale market in New Plymouth. Retail prices as quoted in Appendix E are rather high, but these are cut in some instances to a lower figure. Investigations made into the operations of two retailers show that one shop was reasonably profitable, whilst the other has only recently been able to turn a trading loss into a profit.

Wanganui.

Any local supplies at Wanganui are sold to the public by the fishermen direct, and all shop requirements are drawn from Auckland, Napier, and Wellington at stipulated "on rail" prices at these points. The principal complaint in the trade in this centre was the high wholesale price of fish generally, together with the cost of railage. These are matters outside the control of Wanganui and are dealt with elsewhere. Retail prices are correspondingly high, but an investigation of retailers' accounts showed that profit margins are by no means high.

Palmerston North.

In common with Wanganui, supplies for Palmerston North are drawn from Wellington and Napier and occasionally from Auckland. Complaint was made as to the general high level of wholesale prices compared with those ruling over twelve months ago. It was claimed that the full amount could not be passed on in retail prices, mainly for the reason that competition has kept these low. An investigation into the accounts of the principal retailer shows that, while a loss was sustained over the latest twelve-monthly accounting period, a small profit is now being made. This retailer also conducts a minor wholesale trade to restaurants and the like, to which he sells usually at 1d. per pound lower than retail prices. He submitted a number of suggestions for improvements in the trade, and these are actually dealt with specifically or generally in other parts of our report.

Wellington.

The wholesale trade is conducted in Wellington by—(1) N.Z. Fisheries, Ltd., as now constituted, has been in operation since 1929—paid-up capital, £145,207—operates two steam trawlers, and also draws supplies from Messrs. Townsend and Paul's auction-market and from Nelson, French Pass, and Picton fishermen, with occasional supplies from further afield.

(2) Fishermen's Co-operative, Ltd.: Since its inception in 1932 with a paid-up capital of £1,214 this co-operative concern has acted as wholesale distributors for its shareholder-fishermen and others, supplies being drawn from shareholders' launches fishing out of Island Bay and from fishermen at French Pass and Picton. Approximately eighty fishermen are dependent on the Co-operative as a market. Premises are leased from the City Council at a rental of over £500 per annum.

(3) Townsend and Paul Ltd.: This firm conducts the auction-market in Wellington, charging 10 per cent. commission on sales. The total fish handled through the auction-market in comparison with Wellington's supplies would approximate between 15 per cent. and 20 per cent.

(4) B. Barnao: Wholesaler and retailer—one depot and one shop—draws supplies from French Pass and Picton and also buys on the auction-market. Sometimes gets supplies of gurnard from Auckland and Napier.

(5) P. S. Isbister has a depot and a retail-shop at Island Bay. He draws supplies from his own launch, from Picton, and from the auction-market. His wholesale trade is not great, but it exceeds by a small margin the turnover in his retail business.

Following upon a period of depressed prices and after increases had been made in the returns paid to fishermen for their catches, wholesale prices in Wellington were advanced in September, 1936, but it was not until March, 1937, that the N.Z. Fisheries, Ltd., brought their prices up to their present level, which for the most part then became uniform with that of other wholesalers. It was not, however, until after the summer period—*i.e.*, in March, 1937—that retail prices generally were advanced by 1d. per pound, and 2d. per pound in the case of some lines of fillets and smoked fish.

Although it is recognized that Wellington retailers generally are now in a better position in regard to turnover and profit margins than they have been for a number of years, investigations into the financial results of a number of these showed that over their latest twelve-monthly accounting period nothing like excess profits were being made. In fact, as will be seen from Appendix I, the percentage return upon the turnover of five representative shops was only 3·8 per cent. As a consequence, it appears that upon the existing basis of wholesale prices no action can as yet be taken to effect a reduction in the price spread between wholesale and retail prices. As a safeguard, however, we are of opinion that the position should be reviewed by the Department of Industries and Commerce during the winter of 1938.

In the matter of the existing level of wholesale prices a difficulty arises, in that we have on the one hand a large wholesale concern handling the bulk of the supplies, and on the other hand the Fishermen's Co-operative, Ltd., with a relatively small turnover and two other wholesalers operating upon a still smaller scale. Our main criticism in regard to wholesale prices centres round tarakihi. As the N.Z. Fisheries, Ltd., operate steam trawlers and draw their main supplies of tarakihi from these (over 70 per cent. of the landings), they pay line-fishermen only 2d. per pound gutted for what small supplies they do receive, for which the other wholesalers pay 2½d. in order to secure any supplies at all. The wholesale price is 4d. per pound gutted (no change being made through processing the fish), and especially when it is considered that the trawler tarakihi can be landed at well under 2d. per pound it is evident that the price spread is too great in comparison with the margins operated upon profitably in other centres. For the year ended 31st March last the landed cost of trawler tarakihi was 1·59d. per pound gutted, but it will no doubt be in the vicinity of 1·80d. this year, owing to certain increases in operating-costs. The smaller wholesalers do not handle a great deal of tarakihi, and it would not be imposing any great hardship upon them if their gross margin upon the sale of this particular class of fish was reduced.

The N.Z. Fisheries, Ltd., contend, however, that a certain portion of the profit margin should be credited to the trawlers, but, while agreeing with this contention in part, we are still of opinion that the wholesale price of tarakihi (both fresh and smoked) is too high and should be reduced forthwith.

Messrs. Townsend and Paul, Ltd., operate efficiently the local fish auction-market, charging the usual 10 per cent. commission on sales, and selling upon a basis of "per fish," except in the case of flat fish, which are sold by weight. In common with Dunedin and Christchurch, although not, of course, to the same extent, complaints have been made as to the unsettling influence which fluctuating auction prices are likely to have upon the trade, more particularly in the case of Wellington from the fishermen's point of view than from the retailers'. Although it is unlikely that any very serious gluts will occur in the auction-market such as happened when the Fishermen's Reef was found in 1927, the very existence of an auction-market is looked upon as a menace by fishermen, the great majority of whom are supplying wholesalers all the year round at fixed prices, and who sense a danger in the difficulty they might experience in disposing of their catches profitably if gluts should occur or if a greater number of their members commenced to supply the auction-market. It was, of course, for this very reason that the Fishermen's Co-operative, Ltd., was brought into being in 1932, so that those responsible for organizing this concern could bring some measure of stability into the earnings of their shareholder-members. With an auction-market continually operating there is, moreover, the tendency for fishermen to chop and change from supply to a wholesaler or to the market at will, and, while this procedure quite well suits their purposes, it has, where it occurs, a very unsettling influence upon the trade generally.

A glance at the range of prices realized at auction (see Appendix E) will show that the same wide margin exists as it does in Christchurch, and if the auction-market were to have its activities extended to any great extent two eventualities would arise: first, the fishermen who have striven for and

secured some stability in their earning-capacity would find themselves back to the old order of disorganization and uncertain returns, and, secondly, retail prices would become liable to such fluctuations as would tend to lessen consumption.

The weight of evidence submitted has been against the functioning of this auction-market, and after giving very careful consideration to this problem and to the effect upon the interests of the auctioneering firm, which is mainly a fruit and vegetable marketing concern, we are inclined to the opinion that in the best interests of the industry the system of sale by auction should be abolished in Wellington also.

French Pass.

The whole of the French Pass catches of fish are shipped to Wellington. None of the members of the Fishermen's Association forward to the auction-market, the catches being sold to the wholesalers at fixed prices, the wholesalers paying all freight and handling charges. (See prices in Appendix E.) Complaints were made that full weights were not accounted for on occasions. The Committee's attention was also called to the disparity between the return to the fishermen and the retail prices in Wellington. This matter is referred to elsewhere.

Reference was also made by some fishermen to the entry into the industry of part-time and farmer fishermen, and as a means of checking their operations to some extent it was suggested to the Committee that license fees should be increased and that each individual fisherman should be licensed instead of the boat.

MARKETING OF DREDGE OYSTERS.

Bluff.

The names of the companies actively engaged in the dredging and marketing of oysters at Bluff are as follows: Dixon Bros., Ltd.; Foveaux Strait Oyster and Fish Supply, Ltd.; Rakiura Oyster Co., Ltd.; Bluff Fish and Oyster Co., Ltd.; Urwin and Co.; Russell and Co.; H. J. Roderique; Direct Fish and Oyster Co., Ltd.; Awarua Oyster Co.; Roderique Bros.

These companies were operating upon a total paid-up capital of approximately £20,000, and during the most recent twelve-monthly accounting period net profits ranged from £1,676 down to a loss in one case of £43. Each of the companies now operates only one vessel. There are two other licensed men in the industry both of whom were engaged part-time only last season—one operating out of Stewart Island for occasional local supplies, and the other out of Bluff for supply to an auction-market in Invercargill.

One of the unsatisfactory features about the distribution of oysters (and a feature which the distributors themselves have acknowledged and attempted to rectify to some extent) is the lack of proper organization in handling and marketing the whole of the supplies in the most economical way. While it is true that the majority of the nine firms actively engaged in the 1937 season have some system of pooling orders for the main centres and for the relatively small export trade to Australia, the others are selling independently to all points, and all nine are in direct competition with each other in those localities outside the main centres. When such a commodity as this (taken from identical localities in Foveaux Strait and landed at the one point for distribution to the consumer) is being considered, it becomes obvious that some form of co-operative marketing is essential not only to serve the interests of the companies themselves, but to eliminate overhead expenditure, with a resultant reduction in price to the consumer. Too often in the past indulgence in uneconomic price-cutting has been the rule, particularly when one or more new units come into the industry and found either that some reduction in price was necessary to secure custom or that the established firms were reducing quotations with the objective of eliminating this fresh competition.

A close examination of the costs of production has revealed that there is a fairly wide discrepancy between the lowest and highest—*i.e.*, 9s. 4d. and 10s. 10d. per sack of the nominal quantity of 60 dozen oysters (see costs in Appendix K). These costs were extracted early in the season and will necessarily require some little readjustment to find the true level of cost for the latter part of the season and for the season as a whole. It is likely that the gap between 9s. 4d. and the 10s. 10d. will be narrowed when such readjustments are made, and no great discrepancy will be revealed. An increase in costs has been provided for in the item of oyster-boat employees' wages shown in the following table in order to bring these into line with the provisions of the Otago and Southland Oystermen and Cannery Workers' award, which came into force as from the 1st May, 1937, and continues in force until the 30th day of April, 1939. Wages of the oyster-boat employees have moved upwards as follows:—

——	1936.	Early 1937.	From 1st May, 1937 (Award Rates).*
	s. d.	s. d.	s. d.
Rate per 1,000 dozen (crew of five), including craft share, $\frac{2}{5}$ths	80 0	100 0	..
Rate per 1,000 dozen (crew of five), excluding craft share, $\frac{2}{5}$ths	48 0	60 0	..
Rate per sack of 60 dozen (crew of five), excluding craft share	2 10·28	3 7·20	4 2
Extra cost per sack (crew of five), excluding craft share (over 1936 level)	..	0 6·8	1 3·72
Rate per sack of 60 dozen (per man), excluding craft share ..	0 6·85	0 8·64	0 10

* Award rate is 10d. per sack per man plus bonuses to skipper 2¼d. per sack and to engineer 1¼d. per sack. Bonuses of approximately the same amount were previously paid to the skippers and engineers on some of the boats. No bonuses are included in the above figures.

The nominal price of oysters was 12s 6d. per sack f.o.r. Bluff in 1936 and 14s. 6d. in the 1937 season. Of this 2s. advance, 1s. 3·72d. is therefore made up in the extra cost of oyster-boat employees' wages, and it would appear that the balance of 8·28d. is justified when it is considered that wages ashore are now fixed at higher levels under the award and that fuel and other items of expenditure have advanced since 1936. Moreover, the 14s. 6d. f.o.r. price is often nominal (as was the 12s. 6d.), and over the whole season it would not have been possible for these returns to be received in full, by reason of the fact that concessions are allowed in some instances and bad debts are incurred.

Most of the Bluff oyster-merchants handle fish also, but in respect of those five concerns handling oysters only returns for the latest year available ranged from a loss of £43 to a profit £1,232.

While the increase in price of 2s. per sack appears to be justified, it does not necessarily follow that 14s. 6d. is by any means the minimum for profitable working. Under the present arrangements it is evident, although each firm has only one boat operating, that the f.o.r. price of 14s 6d. is on the high side for those units which are operating more efficiently and economically than others, and, all things remaining equal, some reduction in this figure is necessary, and the reduced price would require to be one definitely fixed and not nominal as in many cases during the past. Such a reduction in price would bring up the question of the return to the least efficient unit, but in this connection and in respect of the whole matter of marketing generally it has become demonstrably clear that all units must be influenced to come into line and market co-operatively the whole of the supplies. As mentioned previously, there is a pooling of orders as amongst the majority of the firms, six in number (and, in addition, one whose supplies are bought in). This arrangement applies to orders from Dunedin, Christchurch, Wellington, and to export to Melbourne, but it does not go far enough. Something of this nature should apply to all supplies and to all markets. For economic purposes and for efficiency in the trade, distribution should be effected through one central organization, with a selling representative in each of the main centres.

Something along these lines was attempted in 1935, when the N.Z. Oyster Distributing Co., Ltd. (with a nominal capital of £150), was formed with the object of handling the whole of the output from each boat operating. For various reasons the project did not proceed, but the company is still legally in existence, and with proper safeguards it should be encouraged to go ahead as contemplated. A solution of the marketing problem could be found in the units of the industry formulating an industrial plan under the Industrial Efficiency Act and forwarding it to the Bureau of Industry for consideration.

To realize the need for an organization such as this, it is only necessary to direct attention to the individual overhead expenses of each one of the units operating and to the extent to which production costs could be reduced by the elimination of the bulk, if not all, of these, and substituting therefor the administration expenses of one efficient distributing concern. Then, of course, there would be a greater measure of co-operation in bagging operations and in handling generally. Through such an organization prices could be reduced to a point which would leave a fair and reasonable margin of profit to each company, and distribution could be arranged upon a fair and equitable basis to all ports of the Dominion now supplied.

From retailers and others complaints were made that sacks of oysters received were inconsistent in the volume of content, and that the sacks often contained loose grit and broken shell. It appears necessary to insist that some steps should be taken to remedy these faults.

The question of the sale of opened oysters from the Bluff has been considered, and there appears to be no reason why this should not be undertaken by transporting in insulated containers a portion of the total as opened oysters. A considerable saving in freight would be effected, for the reason that the meat and liquor content of a sack of oysters weighing approximately 180 lb. gross is only 25 pints.

Oamaru.

While the general quality of oysters was stated to be quite good, complaints were made that there was perhaps a little too much grit in the sacks, and that at times there might only be forty-five dozen good-sized oysters in a sack instead of the reputed sixty dozen.

Timaru.

The same remarks apply to Timaru as to Oamaru, and, in addition, a suggestion was made that the season should commence a fortnight later than it does at present.

These matters are covered by the recommendations relating to the dredge-oyster industry.

Dunedin.

Complaints were received from wholesalers and retailers as to the poor quality of oysters, lack of uniform weight of sacks, presence of small oysters, grit, and shell, and erratic prices and supplies over a period of years. Nationalization of the industry was suggested. All these matters are covered by the recommendations relating to the dredge-oyster industry.

Christchurch.

Messrs. P. Feron and Son, Ltd., are the principal distributors of oysters, handling between one hundred and twenty to one hundred and sixty sacks per week. There have been occasional complaints as to quality, and numerous complaints as to presence of small-sized oysters in the sacks. Mr. A. Goslin, who handles small quantities wholesale, stated that complaints have usually centred round small-sized oysters and the presence of quantities of grit in the sacks. The wholesale price is 21s. per sack, selling commission to the latter distributor being 2s. per sack and to the former 2s. 4d. or lower—*i.e.*, his

commission is the difference between the wholesale price of 21s. and 14s. 6d. f.o.r. Bluff plus railage and cartage, the railage upon a per-sack basis varying a little according to the quantities railed at any one time.

Retailers submitted representations asking for the fixation of the retail price of oysters, in order to eliminat : price-cutting, which has been more or less prevalent in the city. They also stated that if the grounds are being depleted the catching season should be reduced to six months, and suggested that in any event February should be cut out of the season, as losses are heavy in this particularly warm month.

These representations have been taken into consideration in forming the recommendations relating to the dredge-oyster industry.

Napier.

Oysters cost 24s. 6d. per sack on rail Wellington, and railage to Napier is 4s. 6d. plus 6d. cartage, making a total cost of 29s. 6d. They are retailed at 9d. per dozen in the shell, 1s. opened, and 10d. opened for large quantities. No complaints as to quality were made.

Gisborne.

Oysters cost 24s. 6d. per sack on rail Wellington plus 12s. 6d. freight to Gisborne, equalling 37s. They are retailed at 1s. per dozen on the shell and 1s. 6d. opened on the plate.

Wellington.

Complaints were made that oysters were too small during the 1937 season and that a number were stale. Under the best transport conditions oysters which leave Bluff on Sunday night arrive in Wellington on Tuesday morning. The selling commission received by the N.Z. Fisheries, Ltd., is 2s. per sack.

Stewart Island Canneries, Ltd.

This concern now confines its activities to the canning of oysters only. At one time blue cod and crayfish were canned also, but it was found that in the case of the former there was little or no demand, and in the latter technical difficulties in canning and irregularities in supply were encountered. The company as now constituted took over in 1930 from an earlier company which went into liquidation. In 1932 the paid-up capital was increased from £4,500 to £6,150. With the assistance of the Department of Industries and Commerce, overseas markets have been built up until in 1936 the total sales were 8,826 cases (of forty-eight 11 oz. tins), Australia taking 5,535 of these, the United Kingdom 775, while sales within New Zealand amounted to 2,257 cases. When it is considered that up to forty-five wage-earners are employed and close upon £4,000 per annum in factory wages is paid, it will be realized that this industry is of material benefit to Bluff. The product is well packed, and can now be sold in increasing quantities, but bound up with the development of the company are matters concerning the conservation of the oyster-beds and the claim of the local markets in preference to those of overseas.

While the cannery was limited to a certain turnover, no great difficulty was experienced in procuring the requisite quantities of oysters from the oyster fleet, but as the company's trade expanded, simultaneously with an increased local demand for fresh oysters, it became apparent that the surplus from each boat for supply to the cannery was likely to be shortened. Moreover, a basis of increased wages was being sought by the oyster-workers.

It became evident that the price of 7s. 6d. per sack for oysters supplied to the cannery must rise. It is now 9s. 6d. per sack. As an outcome, the company applied for, and was later granted, a license under the Industrial Efficiency Act, to operate its own boat. This followed upon the investigation and recommendation made by the Committee, and in its recommendation the Committee, having regard to the interests of the industry as a whole, made it quite clear that no additional license ought to be granted if application were subsequently made. That application was made, and the issue of a license refused. The Committee reiterates its recommendation, but qualifies it to the extent that a survey of the oyster-beds must be made prior to any consideration whatever being given to the granting of further licenses. (See recommendation in section dealing with the dredge-oyster industry.)

Medicinal Preparations.

Two small companies, Thyrodone Development, Ltd., and Hygienic Packers, Ltd., have recently been promoted in Invercargill with the object of manufacturing and marketing oyster concentrates in capsule form as medicinal preparations. The former commenced operations in 1936 and the latter in April, 1937, and altogether it is expected that approximately thirty-five sacks of oysters per day will more than cover the requirements of both companies. Even this quantity or less might be looked upon as making a substantial inroad upon fresh oyster-supplies, and the position will need to be watched in case there should be any sudden acceleration in the turnover of these companies.

EXPORT AND INTERNAL MARKETING OF FISH.

Bearing in mind the further conservational measures which we consider must be brought into effect to protect our fish stocks, and having regard to the desirability of increasing internal consumption by means of a better system of distribution, it becomes evident that our export trade in fish will not remain at its present volume, but will decline as time goes on. As a means of correcting in part New Zealand's adverse trade balance with Australia, which takes practically all our export fish, this product, had the stocks been available, would have been capable of finding a widening market under proper organization.

The trade, however, is one of no little importance—its value was £175,000 during the year ended 31st March, 1937—and ought to be much better organized than the Committee has found it to be. A brief résumé of the export trade to Australia shows that there has been insufficient recognition of the value of the trade from the national viewpoint, and export has been conducted by individual exporters without co-operation or consultation with their competitors.

Too often the result has been that this system of trading, or rather the lack of system, has suited the various Australian wholesalers admirably, for they have been enabled to play one New Zealand exporter off against another and force prices down to unpayable levels. So, also, have exporters in one port acted without any regard to the interests of those in other ports, and the general result for the most part has been simply that it has not been the New Zealand exporter who has made the profits. One instance might be quoted here of an unusually low f.o.b. price being quoted to Australia by South Island exporters for a certain variety of fish, and it was not until an Auckland firm pointed out the position that fully 2d. per pound more was almost immediately procurable.

Following upon the position which developed in Auckland in July, 1937, in regard to the accumulation of stocks in Sydney, principally in snapper fillets, wings off—see under "Export, Auckland"—we recommended the Hon. the Minister of Industries and Commerce to call a conference of all exporters, with the object of ascertaining whether or not there was any immediate way out of the impasse, pending the completion of our investigation and the submission of our recommendations upon the whole question of export. This conference eventuated on the 11th August, and was attended by members of the Committee and the representatives of the Department of Industries and Commerce and Marine Department. The discussion was productive of much good, in that the whole position was clarified to the extent that the attitude of each exporter to the various problems was definitely ascertained.

As has been the case in the past in connection with representations submitted by Auckland interests, the contentious subject of discussion at this conference was the competition encountered by Auckland from the other ports exporting fish: Wellington, Lyttelton, Dunedin, and Bluff. Criticism was levelled against the selling policy adopted in Auckland by Messrs. Sanford, Ltd., who, under the agreement entered into in November, 1936, were responsible for marketing the whole of the exports from Auckland up till 15th September, 1937, when the Auckland Fish Export Committee was set up—see under "Export, Auckland." As an outcome of that policy, the Australian wholesaler turned to ports other than Auckland for supplies, and such was the demand that there has been no possible hope of fulfilling requirements. In view of this state of affairs and the fact that in certain competitive lines the Wellington and South Island exporters' f.o.b. quotations and selling prices in Australia are lower than those of Auckland would be for a similar pack (see Appendix L), the pertinent question was asked these exporters why they did not secure for themselves the higher price which there appeared every prospect of securing.

In reply they stated that although the demand was there the existing prices appeared to be the maxima they could ask or, alternatively, the highest figure at which the whole of their export supplies could reasonably sell to Australia in competition not only with the local supplies there, but with the imports coming into Australia from South Africa and other countries. They also stated (and rightly, too) that their costs of production were lower than was the case in Auckland, where the basis of payment of fishermen is 2d. per pound green weight for snapper and tarakihi—the two principal varieties. However, in regard to tarakihi there was the question of the competition from Australian morwong, which is, in effect, the same species of fish as tarakihi, and which is taken in more or less abundant quantities in Australian waters for certain portions of the year. This morwong competes with tarakihi, and the popularizing of New Zealand tarakihi in Australia has led to an increased consumption there of morwong, which, it was contended, did not previously meet with any such consumers' demand until it came before the notice of the public in this manner.

While the shipments of all fish by individual exporters must necessarily be competitive upon the Australian market, there are one or two lines directly competitive with each other, particularly in so far as Auckland against the other ports is concerned. A further reference to Appendix L will show that these are:—

(1) *Snapper.*—Snapper is also exported from Wellington, but not in sufficient quantity to be a serious competitor with Auckland. One particular pack of snapper is actually quoted higher f.o.b. Wellington than Auckland.
(2) *Tarakihi.*—South Island quotations are 1d. to 2d. per pound lower than those of Auckland.
(3) *Snapper* v. *Tarakihi.*—Emphasis has been laid on the fact that, unless there was an unlimited demand for New Zealand snapper in Australia (which there has not been), any exports whatsoever of tarakihi in particular would popularize this variety of fish at the expense of snapper from Auckland and would overload the local market with snapper to the point where the fishermen would suffer. Recently there has been an increase in the quantity of tarakihi exported from Dunedin, and, in fact, this was one of the contributing causes of the accumulation of snapper stocks in Sydney.
(4) *Flounders* v. *Soles.*—The National Mortgage and Agency Co. has widened the market in Australia for soles (in fillets in particular), and this to some extent has had an adverse effect upon the sale there of Auckland and Thames flounders.

By agreement the exporters have now registered with the Department of Industries and Commerce their current f.o.b. prices, and, wherever necessary, a comparable check is thus obtained upon any complaints which may arise in regard to alleged price-cutting at the expense of others. A full description of the varieties of fish exported, together with the manner of processing, has also been submitted for purposes of information and comparison.

Agreeing that the whole of the fishery industry ought to be conducted on the assumption that it is a national asset, and to be safeguarded as such, the majority of the exporters showed a willingness to participate in any movement leading towards co-ordination of the industry along national lines, although naturally they sought the right to be able to sell to the best advantage. For instance, it was agreed that the highest standards of handling, processing, packing, and freezing methods were essential, and, further, that there should be a greater uniformity in the size of cases and the description of their contents.

Sufficient has already been said to stress the need for the employment of improved and co-ordinated methods of marketing, and, in our opinion, both in regard to internal and external marketing, some central authority, with Government representation (together with subsidiary provincial advisory committees), appears essential in order to bring about the highest state of efficiency in marketing the product with which we are concerned. While the whole question of supply is fundamental to all others, emphasis is laid here upon the problems of marketing rather than those of production, which are subject to some measure of control under the provisions of the Fisheries Act, 1908, and its amendments (see under "Administration—Fisheries Act").

The Auckland Fish Export Committee, which was set up in September last, was charged with dealing with the immediate problem of export stocks, but so closely associated are the questions of external and internal marketing that due cognizance has necessarily been taken of both these subjects in their relationship to one another. An extension of the authority conferred upon the Auckland Fish Export Committee therefore becomes necessary. In regard to a central authority, it would appear that this should consist of representatives appointed from the personnel of the Auckland Fish Export Committee and other provincial committees which would set up to deal with and advise upon local matters. The total membership, however, should not be too large. The functions of such a central authority would naturally fall under the headings of:—

(1) Co-operation with the Government in conserving supplies.
(2) Co-ordination of the export trade along national lines in lieu of unwarranted competitive marketing.
(3) Expansion of internal markets, and elimination of unnecessary overlapping in distribution to these markets.
(4) The absorption of uneconomic units.
(5) Improvements in the methods of handling, processing, packing, and freezing.
(6) A reduction in prices where possible.
(7) Publicity as to the value of fish as a foodstuff.

Recommendations.

New Zealand.

1. That the authority conferred upon the Auckland Fish Export Committee be confirmed and extended to cover supervision, co-ordination, and development of the internal market for fish and fish products within the Auckland Provincial District. This would mean the appointment of one or more representatives of the retail trade to the Committee.

2. That committees to function along parallel lines be set up, one in Wellington (including Napier representation), and one in the South Island with headquarters in Dunedin.

3. That a central authority consisting of representatives from these provincial committees, together with Government appointees, be set up to act as the supervising body for the whole of the export and internal marketing operations of the industry in the Dominion.

Otago.

4. That the present system of sale by auction in Dunedin be abolished.

5. That in lieu thereof a seasonal wholesale price be fixed in conjunction with a fixed price to the fishermen for the different varieties of fish, such prices and the distribution of the fish to be under the control of a central organization.

6. That an advance by way of loan be made to the Port Chalmers Fishermen's Society, Ltd., to enable it to finance the erection of a small plant for the cool storage of bait, the question of a storage place for the society's surplus fish supplies to be held over pending developments in regard to the proposed change-over from auction to direct marketing.

Christchurch.

7. That the present system of sale by auction in Christchurch be abolished.

8. That in lieu thereof a seasonal wholesale price be fixed in conjunction with a fixed price to the fishermen for the different varieties of fish, such prices and the distribution of fish to be arranged through Messrs. P. Feron and Son, Ltd., under the supervision of a Dominion organization.

Nelson.

9. That the price paid to the fishermen for all fish (including crayfish) in Nelson be fixed at agreed-upon rates, payment to be upon a basis of weight.

Napier.

10. That there should be the least possible number of variations in prices over any twelve-monthly period, and, if possible, the returns to the fishermen and the wholesale and retail prices should be standardized for periods of at least three months at a time.

11. That the number of wholesalers be restricted to those at present engaged in the industry.

Gisborne.

12. That the parties concerned in Gisborne be approached by a representative of the Marine Department or the Department of Industries and Commerce, with a view to providing adequate supplies of fish for country retail delivery.

Auckland and Thames.

13. That the number of wholesale markets be reduced in Auckland to more economical proportions by the elimination of all except two or three of the existing distributors. These will then require reconstruction in their constitution and organization.

14. That the units falling out of the wholesale trade receive some sort of compensation from those remaining, or, alternatively, that they be merged under some agreed-upon arrangement.

15 That the remaining units (two or three in number, as the case may be) be compelled to unify their activities to the greatest possible extent.

16. That the four Thames markets merge their interests and operate as one unit, upon a basis to be determined after further investigation and consultation.

17. That the wholesale price of snapper and tarakihi, john-dory, and kingfish (green) be reduced to retailers in Auckland City and suburbs by ¼d. per pound forthwith, and if recommendations Nos. 10 to 13 above are implemented, then the position to be reviewed in due course with the object of a further reduction being made. (NOTE.—In view of the position of the trade in Thames, no immediate reduction of a like nature is suggested.)

18. That the wholesalers' margin between the price paid to the fishermen for rough fish and their price to retailers be narrowed, so as to provide some advance to the fishermen and some reduction to the retailer—basis of discussion for settlement to be ¾d. per pound to the fishermen and 1¼d. per pound local wholesale for both gurnard and trevally (green weights). (NOTE.—Thames is already paying the fishermen ¾d. per pound for gurnard.)

19. That all wet fish handled at Auckland and Thames be sold upon a basis of weight.

20. That the position in regard to all supplies of fish be safeguarded, in order to ensure that local requirements are fully catered for in priority to those of export.

21. That where reputable markets are established all fish to be distributed through such markets, except in instances where on or before the 31st December, 1937, retailers were drawing supplies from fishing-vessels owned by them.

Auckland Retail.

22. That all wet fish sold retail must be sold by weight.

23. That if and when (in accordance with recommendations Nos. 17 and 18) a reduction in local wholesale prices is effected to Auckland City and suburban retailers, the retail price in turn is to be reduced proportionately.

24. That protection be afforded individual retailers against unfair competition from wholesalers' retail shops in the matter of supplies and freedom of buying.

Wellington.

25. That the wholesale price of tarakihi (both wet and smoked) be reduced in Wellington from 4d. per pound gutted to 3½d. per pound gutted, and from 10d. per pound for smoked fillets to 9d. per pound for smoked fillets. (NOTE.—One wholesaler in a small way is already selling the smoked fillets at 9d. per pound.) If this recommendation is implemented, then a relative reduction in the retail price of this fish must be effected.

26. That the system of sale by auction in Wellington be abolished.

Southland: Dredge Oysters.

27. That steps be taken to bring about a co-operative system of handling and marketing dredge oysters. This could be arranged through a company already in existence but not functioning—*i.e.*, the New Zealand Oyster Distributing Co., Ltd.—or by the setting-up of a central organization with similar objects and vested with power to control handling and marketing and fix prices f.o.r., Bluff.

28. That oysters be packed for sale in sacks of a standard size and containing a standard weight or volume of oysters.

29. That encouragement be given to experiments being made for transporting shucked or opened oysters, say, to Wellington, with the object of eliminating to some extent the relatively high transport costs to the more distant centres of distribution.

30. That the operations of concerns which are preparing medicinal preparations from dredge oysters be confined to within reasonable limits in the matter of supplies of their raw material.

TRANSPORT AND SHIPPING.

The Committee is convinced that any substantial expansion of fish-consumption in New Zealand is dependent upon the provision of faster and more convenient railway services and of reduced freightage rates. The general feeling was expressed by witnesses that considerably more fish would be distributed in the rural districts if assistance on these lines were given. It was stated that inconvenient time-tables, and sometimes the refusal of carriage on express trains had the effect of disorganizing supplies through late delivery to auctions and shops, of waste through loss of ice, and of injury to fishermen who frequently cannot land their catches in time for despatch by the first train available. It is apparent that for these reasons there is a loss of some business to the Railways Department. The speedy delivery of fish in a good condition is so essential as to require the immediate attention of the Railways Department on the problems mentioned.

Southland.

Few complaints as to freight services and charges were brought before the notice of the Committee in Southland. Opinion was, however, expressed that internal distribution could be expanded if concessions were granted in the existing freight rates. The rates on fish, particularly in quantity, from Waikawa to Invercargill appear to be high, as they equal ¼d. per pound. It is considered that there should be some concessions for quantities over 100 lb. For rail transport between Tokanui and Invercargill the totally enclosed type of "K" wagon suits best under present conditions, but should the traffic warrant it, then insulated wagons should be provided. Reference was made to instances of oysters failing to be placed aboard the steamer express at Lyttelton, the fastest transport possible being wanted for this commodity.

One retailer in Invercargill delivers fish and oysters over a fairly wide country area extending from Mataura to Ohai and Nightcaps.

Otago (Dunedin).

In Dunedin, as elsewhere, the Committee's attention was called to what appeared to be anomalies in the railway tariff on the different classes of fish, fresh, frozen, smoked; whitebait; and oysters. Recommendations in regard to this matter and as applicable to the whole of the Dominion appear elsewhere.

Local matters in regard to transport concern the desirability of placing ice in the warmer months in the fish-van running between Port Chalmers and Dunedin, and a reduction in the rate on small lots and on rough fish so that a market may be more readily found for these varieties. One important matter affecting adversely an increase in country trade is the fact that fish auctioned at Dunedin after 8 a.m. (the time at which selling commences) misses all morning train connections. Remedial measures which will avoid this may arise out of recommendations which appear later.

Oamaru and Timaru.

The attention of the Committee was drawn to what were alleged to be heavy freight charges on fish arriving at or being despatched from Oamaru. These charges were, however, applicable to small quantities and also to transport by express trains. As pointed out under the Dunedin section, any fish sold at the auction-market there for despatch by rail misses the morning connections, and in the case of Oamaru retailers are forced to bring forward any supplies they may require from Dunedin by the second express, otherwise, if despatched by a goods-train, half a day is lost, and such fish is not available for retail sale until the next day. Further, Sunday fish from Timaru has to be brought by express train in order to be sold in Oamaru on Monday.

Christchurch.

The only difficulties in regard to transport in Christchurch, apart from representations made by fishermen in respect of high railage charges, appear to relate to uncertainty as to prompt delivery to the auction firm from the railway-yards in the morning. In turn, retailers are handicapped thereby, through getting late delivery from the auction-market with resultant loss of morning trade. Fish from Lyttelton is not railed until after 7 a.m., and if trawler fish is coming forward this means a late market. Some delay which appears avoidable occurs in the delivery of Timaru fish from the railway-yards.

Greymouth.

Representations were submitted that rail-transport costs were high and should be reduced in order to facilitate wider distribution of fish generally.

Hokitika.

Complaints were made that the classification of whitebait in the railway tariff was anomalous compared with fish, and should be altered.

Kaikoura.

The charge of 2s. 1d. for through transport of a case of approximately 100 lb. of fish was considered quite reasonable.

Picton.

The thrice-weekly steamer service is somewhat awkward in winter-time for fishermen who have no cool-storage accommodation, but this appears unavoidable under present circumstances.

Blenheim.

Transport costs to Wellington by direct vessel or via Picton are identical, and Blenheim is at an advantage in having alternative channels for shipment.

Picton and French Pass.

No complaints were made as to freight rates as between these points and Wellington. From both Picton and French Pass, however, shipment is made in sacks, and, in so far as this affects or is likely to effect the quality of the fish conveyed in this way, the Committee looks with extreme disfavour upon the practice. In regard to French Pass there are, however, special difficulties to be contended with in shipping in cases in comparison with sacks. All fish has to be landed from launches on to the through steamer while she is under way. If cases were used, a difficulty to be encountered

would be in the return of empties owing to irregular service by cargo-steamer. On the other hand, empty sacks in bundles of one hundred can easily be landed by the passenger-steamer or by the cargo-steamer, as the case may be.

In regard to Picton, however, the Committee can see no reason why cases should not be used for the transport of all fish (exclusive of crayfish).

While the French Pass fishermen stated that they have received no definite complaints as to their fish arriving in Wellington in a sweated or damaged condition, evidence was submitted by Wellington buyers to show that in the summer-time in particular the quality of fish transported in this way leaves much to be desired. Shipment in sacks, particularly when they contain 230 lb. to 240 lb. net weight of fish, is contrary to the best interests of all concerned, in that the contents must necessarily become bruised in handling and crushed and sweated when stacked for transport; and, having in mind the fact that the small quantities of fish despatched from French Pass to Palmerston North are already packed in cases, we are of opinion that this fish should all be cased for transport.

Napier.

The Hawke's Bay Trawling Co., Ltd., forward all fish for beyond Napier by rail, the goods-train leaving at 6.30 p.m., instead of 5.30 p.m. as previously. An hour later still would suit better, as, with boats coming in at, say, 4.30 p.m., it is somewhat awkward at present to get the rail quantities properly packed in time. This firm's prices for country clients are the same as their local wholesale, but delivered free on rail, Napier. Representations were made by this firm as to the possibility of securing space on afternoon passenger-trains at goods' rates and as to the free return of empty cases.

For the purposes of the Napier Fisheries Co-operative, Ltd., it is unfortunate that transport by rail does not appear convenient, the reasons being:—

(1) Goods-train departs at 6.30 p.m. This is too early, as packing is seldom completed by that time.
(2) Abnormal catches require extra accommodation, and transport lorries can be engaged to suit the hour when the fish is ready. The train could not be delayed indefinitely.
(3) Even if the train could be delayed to a stipulated time, the arrival-times of trawlers owing to uncertainties of weather, tides, and fishing-conditions might preclude catching it.
(4) The Railways Department delivers to the station only, and fish would remain unprotected on platforms overnight.

The company has adopted the practice of using its own night transport lorries for despatch of fish as far as Palmerston North, deliveries being made to towns *en route*. From Woodville supplies for the Wairarapa are railed as far as Carterton, and from Palmerston North railage is effected to other Manawatu towns, to Wanganui, Taranaki, Taihape, and on occasions to Wellington and Auckland. Drivers are resident at either end of the lorry-run and change over at an intermediate point.

The company contends that this method of delivery gives it a decided advantage. It has increased sales and widened connections; fish caught to-day is sold to-morrow; close contact is maintained with customers; complaints are readily dealt with; and there is a prompt return of empty cases.

The company's delivered prices for fish quoted under the heading "wholesale" are for delivery to any of the points mentioned above, whether by transport lorry or by rail. At one time freight was payable forward by the customer, but following upon an objection from the Transport Board freight is now free. As it is engaged in transporting only its own goods, the company does not come under the Board's licensing provisions.

In regard to the question of the return of empties by rail (in the case of this company from Woodville or Palmerston North), it was pointed out that the customary concession rates on these goods should be granted irrespective of the stipulation that consignment-notes must be certified to the effect that the cases were carried outward by rail. If such certification has been omitted in the past, the full rates have been adjusted to the lower scale. It was suggested that the Railways Department should accept and return empty fish-cases only addressed or consigned to the company whose name is branded thereon. This would obviate the difficulty encountered when other fish-merchants are thus enabled to use cases not their own. Matters such as these will be more fully dealt with later from a Dominion-wide point of view.

Auckland.

In common with those in other centres, the Auckland wholesalers seek some improvement in transport facilities and a reduction in freights to encourage a wider distribution of fish to inland centres and country districts. Reference was made to the unsatisfactory position which arises when, for despatch by the goods-train which leaves Auckland at 8 p.m. for the King-country and Taranaki, packing has to start at 2 p.m. to permit of the fish being placed in the truck at the Railways Department's stipulated time of 4 p.m. This means that more ice is wasted than needs be, but if a modern type of fish-van were used the ice would not waste away unnecessarily. A complaint was also made that cases are dumped out carelessly at railway-stations and often knocked open, with a consequence that flies and dust get in. Messrs. Sanford, Ltd., suggested that it would be a great convenience to them if a railway-siding were established near the Western Wharf where fish could be trucked.

A number of witnesses agreed that an adaptation of the rail car would be an ideal means of speedy and efficient transport of fish to inland points.

In regard to internal distribution from Auckland, Thames, Tauranga, and Whakatane, it is quite apparent that some co-ordination is required and there is little or none at the moment. Instances were quoted of fish being railed south from Auckland crossing, fish going north from Thames for export. Under normal conditions it seems only logical that inland areas should be supplied from their nearest

fishing ports. Allowance would need to be made, of course, for irregularity of supplies due to weather and other conditions. The whole aim must be towards getting supplies to their destination as quickly and as cheaply as possible. The impression has been gained that the Auckland wholesalers think they have some right to dominate the supply position for the greater part of the Auckland Provincial District, but if this is true they must be brought to realize that Tauranga, Thames, Whakatane, and other centres have what might be regarded as a prior claim upon the local market in areas adjacent to these ports, consistent always with price and quality. With respect to the Bay of Plenty area in particular, it is pointed out here (as elsewhere in the report) that the Auckland vessels are fishing in the Bay, taking the catch to Auckland and returning a proportion of this to clients in, say, Rotorua and its vicinity. Complaints were made that supplies from Kawhia and Raglan are more than successfully competing with supplies from Auckland and Thames. There is one difficulty in this connection, but not a difficulty of the Auckland wholesalers, in that a retailer in a King-country centre may arrange to take the bulk of the supplies from, say, Kawhia or Raglan fishermen and leave his competitor in the same centre with no option but to order fish from Auckland or Thames at a higher cost at these points plus railage.

These instances of lack of co-ordination are quoted to show the need for it.

Thames.

In regard to the internal distribution from Thames, much the same remarks in respect of co-ordination as are applicable to Auckland apply here with equal force. Reference was made to Tauranga's claim that its "on rail" price should be lower, as rail freights were higher to most points served. The difference is neglible on the average, and it is now understood that Tauranga's prices are in keeping with those of Thames. Representations were made by a Thames fisherman that the rail freight upon mussels was out of all proportion to their value, which was 7s. 6d. per sack at Thames, while the railage to below Palmerston North was 8s. 6d. per sack, mounting to 10s. 10d. at New Plymouth.

The Thames markets arrange for transport of fish to Auckland by their own lorries, and under the Transport Regulations no backloading is permitted for any market other than that to which the lorry belongs. With the amalgamation of the four markets into one, difficulties such as these would not, of course, arise.

New Plymouth, Wanganui, and Palmerston North.

To these three centres fish has to be brought considerable distances, and freight rates add by no means an inconsiderable amount to the cost. From Auckland to New Plymouth the railage may go as high as 1d. per pound when small lots are coming forward. Mussels costing 7s. 6d. per sack at Thames bear an added cost of 10s. 10d. railage to New Plymouth, making 18s. 4d. in all.

Wellington.

Transport services upon the whole are generally satisfactory, but improvements were suggested in regard to the facilities for the railage of fish to the Wairarapa, and a request was made that certain quantities of fish might be permitted to be despatched to Auckland as required upon the 3 p.m. Express. It was also suggested that if the general system of internal distribution were better organized and insulated wagons were warranted for the transport of fish, sales to country customers could be extended.

TRANS-TASMAN SHIPPING SERVICES.

Under "Export" in this part reference has been made to the trans-Tasman shipping services from South Island ports, which are at a disadvantage compared with Auckland and Wellington in the matter of frequency of sailings. Quoted below are particulars of the refrigerated space available for fish on trans-Tasman vessels :—

	Cubic Feet.		Cubic Feet.
"Wanganella"	.. 8,250	"Waikouaiti"	.. 2,600
"Awatea"	.. 15,000	"Aorangi"	.. *
"Waitaki"	.. 8,000	"Niagara"	.. *
"Maunganui"	.. 7,000		

* These vessels can always take fish, but the space available varies according to the quantity of fruit in transit to Sydney.

Recommendations.

New Zealand.

1. That as ancillary to other recommendations the distribution of fish to inland centres in New Zealand be better organized so as to eliminate, wherever possible, the uneconomic overlapping in supply which takes place.

Auckland.

2. That the Railways Department be approached with a view to meeting the suggestions brought forward by the Auckland wholesalers in the matter of trucking fish at an earlier hour than appears necessary, of establishing a siding at the Western Wharf if found to be warranted, and of the feasibility of utilizing an adaptation of the rail car for quick transport of fish when the industry is better organized.

Picton and French Pass.

3. That the practice of shipping fish in sacks from French Pass and Picton be abolished and that all fish (except crayfish) be shipped in cases.

PART IV.

HARBOUR FACILITIES.

At all the ports visited the Committee not only questioned witnesses respecting the harbour facilities provided, but as far as time permitted made personal inspections. In many cases the facilities are inadequate to say the least, and remedial action is necessary if the fisheries industry is to be effectively organized. The results of the Committee's investigations follow.

Southland.

Bluff.—The harbour facilities at Bluff appear to be adequate, more especially as no berthage charge is made and the wharfage and water rates appear to be reasonable. The only complaint which could be justified by this Committee was the lack of berthage space for fishing-vessels. This causes overcrowding and consequent damage to the various craft during bad weather. The berthage of the oyster-vessels is satisfactory. We were informed that the question of more accommodation for the fleet is being considered by the Harbour Board, and we hope that it will be able to give the matter favourable consideration. It was brought to our notice that the length of the approach to the new oyster-wharf was so great that motor haulage to the railway was necessary, which involved an increase in costs, but the position of the oyster-wharf in relation to the depth of water and the necessity of having it removed from any source of contamination are matters for the Harbour Board and the Health Department to decide. Any complaints by the people concerned should have been made to the bodies when the erection of the wharf on the new site was under discussion.

Waikawa.—The fishermen here are very badly served with accommodation, and a new wharf and some type of slipway is urgently required. Some repairs to the wharf-shed were also requested, but this shed is already in the charge of a local committee. Since the Sea Fisheries Investigation Committee sat at Waikawa the question of repairs to the shed has been settled, the Marine Department having provided the material at a cost of £45 and the men to do the work. A good case was made for the provision of a wharf or landing-jetty and for some means of slipping the fishing-vessels for repairs or maintenance.

Stewart Island (Half-moon Bay).—The facilities here are adequate and no complaints were received.

Otago and South Canterbury.

Moeraki.—The men here are fairly well satisfied with the facilities provided, and these appear to be adequate.

Taieri Mouth.—A slipway is urgently required at this port. At present the boats have to go to Port Chalmers, which is not only costly but dangerous if the vessels have been damaged while crossing the bar. The formation of the foreshore here makes it impossible for the men to beach their boats for copper painting. A suitable slipway could be erected for approximately £250. The maximum lift would be about 12 tons.

Port Chalmers.—The harbour facilities provided at Port Chalmers are good, the system of unloading fish by means of an elevator being the best in New Zealand.

Oamaru.—The harbour facilities provided at Oamaru are probably the worst in New Zealand. Inspection showed that the fishermen have ample ground for complaint. The landing-ramp up which the men have to carry the heavy fish-cases is in bad repair and men have suffered injury through slipping on it. The slipway is not satisfactory, being out of date and fitted with a crude cradle. It is not workable if any surge is running.

Timaru.—The harbour facilities here are quite good, with the exception of the slipway. This is in a bad place and can only be used in fine weather. The present state of the slipway prevents its use for the larger craft, and if it is not put in order vessels over 35 ft. in length may have to go to Port Chalmers.

All the fishermen stressed the necessity for some sort of fog-signal at the entrance, either a bell-buoy, whistling-buoy, or fog-horn on the Eastern extension.

Canterbury.

Lyttelton.—The facilities provided for the steam trawlers are adequate, and the Harbour Board charges and Borough Council water rates are reasonable. The accommodation for the small boats does, however, call for some comment. Taking the boats size for size, the fishermen have to pay the same mooring fees as the private yachtsmen. The yachtsmen are provided with mooring-piles and ample space so that their vessels may be left in all weathers without risk of damage through bumping, but the fisherman has to be content with a mooring-ring on the breastwork for his stern line and has to provide his own mooring forward. The lateral space allowed to each boat is insufficient and much damage is suffered through the vessels bumping in bad weather. Further, there is no provision to enable the men to hoist the fish from their boats to the wharf at low water. At one end of the breastwork there is a large crane, but it is too heavy for the job even if it were available,

but no winding-handle was attached at the time of our inspection. There is no adequate space for hanging the fishermen's nets, a very necessary convenience in a port with a large fishing-fleet. The berthage rates, £1 5s. per annum for small boats and up to £2 10s. per annum for the larger ones, appear to be high in view of the facilities provided. The wharfage rates are reasonable. A slipway is available at a reasonable rate.

Akaroa.—The harbour facilities here are very good, more especially as no charge is levied except a reasonable wharfage on the fish. The only facility missing is a slipway, and this is a serious omission at any fishing port. There was a slip some years ago, but it had been erected in the wrong place and had no one in charge. This structure fell into disrepair. Through the lack of a slip, the fishermen lose considerable time. It was suggested that the local Council would give favourable consideration to the erection of a slip on certain terms.

Kaikoura.—As this is practically an open roadstead, the conditions here make it somewhat difficult for the fishermen. So far as slipway accommodation is concerned, the only complaint is the charge of 5s. per day after the fourth day. The fishermen consider that when they are unable to get off the slip because of the weather conditions this charge should be remitted. A light crane is required to assist the fishermen in unloading their catches. The most important request, and one which this Committee considers reasonable was that the anchorage should be cleared of sunken rocks so as to allow the boats sufficient swinging room. In an open roadstead it is essential that the boats when moored should have plenty of swinging room not only to avoid bumping other boats or rocks, but to allow the use of sufficient chain to mitigate the effect of the heavy surge.

West Coast.

Greymouth.—The facilities available for the fishing-fleet at Greymouth are by no means satisfactory. There is inadequate berthage for the number of vessels. To some extent this is due to the layout of the harbour, but accommodation could be provided on the inlet at the end of the wharf. Facilities for landing the catch are conspicuous by their absence, the fish having to be hauled up by hand from the deck of the vessel to the wharf, and as the height range between high and low water is very great this imposes a needless hardship on the men. The fish, after being landed in the wharf, have still to be carried across three lots of rails, often filled with trucks, to the motor-vans. No slipway or substitute accommodation is available for the vessels, some of which have to go to Westport, where they can be safely beached for repairs. No charge is made for berthage at Greymouth, but it would be in the interests of the fishermen if such a charge were levied and reasonable accommodation provided.

Westport.—At Westport suitable berthage is available free of cost, a grid is available at times, and, in any case, there are good places where a vessel may be beached so that repairs to any part of the hull may be carried out.

Nelson, Picton, and Wairau Bar.

Nelson.—At Nelson the main complaint with regard to harbour facilities was the inadequate berthage space provided. It is admitted that no berthage charge is made, but it would be better if the fishermen had to pay a small annual fee, and in return were provided with sufficient mooring space for their boats. Facilities for the landing of fish are absent and should be provided. Very good slipway accommodation is provided at a most moderate charge, and the Board is to be congratulated on this part of the facilities, as in many ports the slipway accommodation is either unsatisfactory or absent altogether.

Picton.—At Picton the harbour facilities are excellent and compare more than favourably with any port in New Zealand. The fishermen only desire one more facility, and that is the provision of a suitable weighing-machine so that their fish may be weighed before shipment to Wellington. The fishermen are quite willing to pay a small fee for each sack of fish weighed in addition to the usual wharfage.

Wairau Bar.—The Wairau Bar fishermen reported that they had no slip either inside the bar or at Blenheim, and that they had to proceed to Picton when they required the use of a slipway. The Committee was unable to inspect the facilities at Wairau Bar.

Napier.

This is one of the most burning questions among fishermen and fishing interests at Napier. Every witness who appeared before the Committee condemned the facilities provided and the charges levied by the Harbour Boad in no uncertain terms.

The main items of complaint were :—

(1) The loss of time and earning-capacity, due to insufficient depth in the channel leading up to the "Iron Pot."
(2) Bad berthage arrangements, with no fixed tenure of berths.
(3) Lack of facilities for landing fish from the boats.
(4) Lack of suitable channel to the only available slipway.
(5) Lack of slip accommodation at a reasonable cost.
(6) Excessive overtime charge for water supplied after 5 p.m.
(7) Excessive wharfage charged by the Harbour Board.

The Committee is well aware of the difficulties the Napier Harbour Board has had to face since the earthquake, but taking into consideration the high charges levied the Committee, after an inspection of the port, is of opinion that an effort should be made by the Board to improve the facilities.

To deal with the complaints as outlined above :—

(1) *Loss of Time and Earnings due to Insufficient Depth in the Channel leading up to the "Iron Pot."*—The fishermen complained that the earning-capacity of their boats is seriously reduced because of the insufficient depth of water in the channel to the "Iron Pot," where they are berthed. They asserted that the depth of water in this channel is so little that the larger boats cannot get out or enter in safety except between half tide flood and high tide. This means that the boats often have to leave earlier in the morning than the distance to the fishing-grounds warrants, and that they frequently have to stop fishing early in the afternoon in order to catch the tide at the port so as to be able to unload their fish in time for handling and transport by the packing companies. Fishermen stated that their boats have been damaged through attempting to enter port in heavy weather when there was a heavy swell running, and that the danger of damage was not to be always avoided even by waiting for full tide.

The opinion was expressed that, in view of the smaller amount of silt-laden water now coming into the "Iron Pot," the Board might be urged to make a determined effort to dredge the channel to a depth of 12 ft. at low-water spring tides.

(2) *Bad Berthage Arrangements and no Fixed Berths.*—Owing to the recent slackness in the coastal trade, more space was available for fishing-vessels at the date of the Committee's visit than is normally the case, but it was contended that each vessel should have her own fixed berth from which she should not have to shift, and that at no time should it be necessary for vessels to berth either two or more abreast, as has been the case in the past, and as will be the case again if the full fishing-fleet in is operation at the same time as the coastal boats are working on their normal schedules.

(3) *Lack of Facilities for landing Fish.*—The Committee inspected these facilities under working-conditions, and agrees with the men as to the poor conditions prevailing at this port. The wharf is very high, and fish has to be hauled up by hand from the vessels' decks. When accommodation is crowded and the tide is low, the fish has to be passed across the deck of the vessel having the inside berth and then man-handled on to the wharf. This additional handling tends to bruise the fish and cause damage to its quality. A suggestion was made that a central wharf should be erected with stages to allow easy unloading at all stages of the tide. Another suggestion was the provision of an elevator such as is used at Port Chalmers.

(4) *Lack of Suitable Channel to the only Existing Slipway.*—It was stated that there was insufficient depth in the channel leading to the slipway. This drawback, in conjunction with the high charges levied at the slip, has caused some of the boats to steam ninety-six miles each way to Gisborne, where adequate and reasonable slipway accommodation can be obtained.

(5) *Lack of Slip Accommodation at a Reasonable Charge.*—The alleged excessive charge made for the use of the slip was the subject of much adverse criticism. Their charges are, to the knowledge of this Committee, the highest in New Zealand for fishing-vessels. As an example, one small trawler is charged £12 for the first two days and £2 per day for each day thereafter. For four days, the normal slipping period, the cost was £14. The same service is provided by the Gisborne Harbour Board for £5 7s., so there seems to be no justification for this high charge at Napier. There is also the necessity in some cases for the vessel requiring the service to be towed to the slip owing to the shallow water in the channel. This entails a further charge, in some cases amounting to £3.

(6) *Excessive Overtime Charge for Water supplied after 5 p.m.*—The normal charge for water taken aboard vessels at Napier is 5s. per 1,000 gallons, which, although on the high side, may be passed as reasonable. The Committee was informed, however, that if a vessel required water after 5 p.m. an overtime charge of 7s. 6d. per hour has to be paid. Now, with the shallow channel governing the hour at which these vessels may enter or leave port, they are often compelled to enter at such a time as to make it impossible for the crew to land the catch and be ready to take in water before 5 p.m. Under the circumstances, the Committee thinks that the imposition of this overtime charge is unfair. If the normal charge were applicable up to 6 p.m. it would give vessels working a late tide the opportunity to unload and take in their supply of water in time to escape the penalty of the overtime payment. If this concession were granted, the overtime charge thereafter would be justified, because there must be a limit to the time when the water service can be rendered at normal rates.

(7) *Excessive Wharfage charged by the Harbour Board.*—In view of the poor service which this Harbour Board renders to the fishermen, the Committee cannot but agree that the wharfage rates levied by the Board are too high. Taking into consideration the unhealthy state of the production side of the fishing industry at this port, these charges are a severe hardship on the owners of the vessels. No item escapes wharfage ; that on fish, 6s. per ton, is very high, although it is admitted that the amount paid will be relative to the production of the vessel, but the high wharfage rates on coal and fuel oil in times when catches are low form a serious burden, and any relief would be of great assistance to a struggling industry.

The following table illustrates the high charges ruling at Napier in comparison with four other ports selected at random. Many ports charge no wharfage on fish being landed :—

Wharfage Rates.

	Fish.		Fuel Oil.		Coal.	
	Inwards.	Outwards.	Inwards.	Outwards	Inwards.	Outwards.
	Per Ton. s. d.	Per Ton. s. d.	Per Ton. s. d.	Per Ton. s. d.	Per Ton. s. d.	Per Ton. s. d.
Bluff	1 9 (frozen) 4 0 (other)	1 9 (frozen) 4 0 (other)	2 6	3 0 (Bulk 1s.)	1 6	1 6
Lyttelton ..	0 5	0 5	1 6	1 6	0 9	0 9
Nelson ..	4 6 (general rate)	3 6 (general rate)	4 6 (general rate)	3 6 (general rate)	1 10	1 10
Napier ..	6 0 (general rate)	4 9 (general rate)	6 0 (general rate)	4 9 (general rate)	3 6	2 0
Auckland ..	2 6 (general rate)	1 6 (general rate)	1 9	0 10	1 7	0 9

We would like to make it quite clear that this Committee is well aware of the magnitude of many of the problems which face the Napier Harbour Board, but our recommendations in so far as they affect this body are as reasonable as it is possible to make them. They are submitted after a careful weighing-up of the case presented by the fishermen. If the finances of the Board are in an unfortunate condition, some Government assistance may be warranted to carry out the improvements suggested.

Gisborne.

The facilities provided at this port are excellent. There is good berthage accommodation for the fleet, a slipway is available at very reasonable charges, and the Harbour Board allows the fishermen a good deal of latitude in regard to the landing and sale of their fish at the wharf. This Harbour Board charges *no* dues and *no* wharfage to the fishermen, and is to be congratulated on the assistance which it has rendered to the industry.

Whakatane.

No special facilities are provided at Whakatane, but as the fishermen are allowed to berth their vessels free of charge and no wharfage is charged they have no grounds for complaint.

Tauranga.

No complaints were received as to the facilities here, and they appear to be adequate. Two slipways are available at a reasonable charge, and the annual mooring fee of £1 10s. is also reasonable.

Auckland.

At Auckland, the most important fishing port in New Zealand, the facilities for the fishing-fleet leave much to be desired. No proper berthage is provided for the large fleet. The vessels in bad weather are piled up inside the Viaduct, where there is insufficient berthage, the boats having to lie abreast of each other, sometimes four deep. This leads to bumping, squeezing, and subsequent damage. It also causes great inconvenience to the men, in having to clamber over the boats to get themselves and their stores aboard their own vessels. There is also an insufficiency of ladders to enable the men to get from the boats to the wharf deck. The Harbour Board charges for these small boats—viz., £2 10s. per annum—are reasonable only if adequate berthage is provided. The wharfage of 1d. per 100 lb. basket of fish is considered reasonable. The steam-trawler berth is very exposed, and it was stated that the vessels are subject to heavy bumping at their berths. The effect of this might be overcome by the use of fender-piles.

North Auckland.

Whangarei.—The harbour facilities at Whangarei and Bay of Islands are very good and any charges made are reasonable. There is adequate provision for the mooring or berthing of boats, for slipways, and for repair facilities.

In the more northern harbours the boat-owners have quite reasonable facilities, considering their small numbers.

Helensville.

The fishermen at Helensville urged that the wharf used by the fishermen be put into order, it being at present in a dangerous condition. As the ownership of the wharf was in doubt, the matter was referred by the Committee to the Marine Department.

The Public Works Department, through its District Engineer, has now submitted an excellent plan for the rehabilitation of this wharf. The Department's view is that the wharf is in a very dangerous condition, and its Engineer recommends that the whole of the superstructure should be demolished, the piles drawn from the northern portion, a breastwork be constructed using the old piles and timber, and the southern portion of the wharf be reconstructed. This would give the fishermen adequate facilities for attending to their nets and berthage for their boats. The preliminary estimate was £600.

New Plymouth.

All of the witnesses in New Plymouth complained of the lack of harbour facilities. The men are quite willing to pay the usual small annual fee if proper accommodation is provided, but the Harbour Board apparently will not move in the matter. No mooring or berthage fees are charged, some of the boats being berthed at the wharf and others moored in the harbour. Water-supplies have to be carried 100 yards to the boats, and the facilities for landing fish are inadequate. It was suggested that facilities akin to those at Picton—*i.e.*, a staging under the wharf, and a crane—would meet requirements.

Another source of complaint was that there is no slip available. When boats need overhauling or repair the fishermen have to get them lifted on to the wharf, for which the cost is £3 for the lift and 5s. per day after four days on the wharf. The men would be willing to pay £1 per time for the use of a slip if one were provided either by the Board or the Government. The estimated annual revenue is £40.

One very important matter brought up was the necessity for the provision of permanent leading-lights at Kawhia, some eighty to ninety miles up the coast. This is the only port at which the New Plymouth men can get shelter if bad weather comes on when they are on the fishing-grounds. At present the leading-light at Kawhia is only put up by special arrangement. Obviously it is impossible for the fishermen at sea to make this arrangement, and as the bar cannot be crossed at night unless the lights are lit they have to wait till daybreak, by which time the bar may be unworkable. It was stated that if there had been permanent lights at Kawhia the last fishing-vessel that was lost would probably have been saved, because the men could have run for shelter.

A light on the North Wall at Waitara was also requested to assist the fishermen over the bar at night-time. The Committee considers that both these requests for lights are reasonable, and that the erection of the lights would give the men greater security and would assist in the saving of life.

Wellington (Island Bay).

At Island Bay, where the majority of the line-fishing vessels land their catches, facilities are non-existent if one excludes what Nature has provided. There is no jetty, no slip, and no provision for the storage of small boats and fishing-gear. The provision of suitable facilities at the Bay has been a subject of discussion for many years, and at no other port has there been so determined an effort to oust the fishermen from their natural rights. If there have been complaints about the insanitary state of the beach and its surroundings due to bait-boxes, &c., they can all be traced to this lack of provision of facilities.

The Committee made an inspection of the position, and favours the erection of the necessary facilities on the eastern rocks, as was recommended by the Commission which reported to the Wellington City Council in September, 1929.

In 1934 the Wellington City Empowering Act was passed. The purpose of this legislation was to authorize the City Council to lease portion of a recreation reserve at Island Bay to the fishermen. Taking into account the cost of erecting at the site suggested, proper accommodation in the way of a wharf, slipway, sheds, freezer, and approach, the term of the lease, twenty-one years, was so short as to afford no adequate security for the investment of the money required. In addition to the short term of the lease as noted in the Act, the fishermen were informed that there would be no right of renewal and no compensation or right of removal of improvements. This has produced an undesirable condition of stalemate. Until adequate facilities are provided there will be recurring friction at this point. We consider that, with the provision of adequate facilities, the present nuisance will disappear. We are of the opinion that the wharf, if possible, should extend far enough seaward to admit the berthage of vessels up to 80 ft. or 90 ft. in length at all stages of the tide, because the ever-increasing distance which the vessels will have to steam to the fishing-grounds will necessitate the construction of larger vessels than those in the present fleet.

Recommendations.

Waikawa.

1. That the Government give favourable consideration to the application of the Waikawa men for a modified wharf or jetty and for reasonable facilities for the slipping of their vessels.

Taieri Mouth.

2. That the fishermen at Taieri Mouth be assisted with the erection of a slip costing not more than £250.

Oamaru.

3. That the Government approach the Oamaru Harbour Board with regard to the provision of (*a*) a suitable slip, and (*b*) the provision of a suitable jetty to enable the men to land their fish in safety.

Timaru.

4. That the Government approach the Timaru Harbour Board with regard to the provision of a suitable slip in a situation where it can be used in all weathers.

5. That the Government or the Timaru Harbour Board erect a suitable fog-signal at the entrance to the port.

Lyttelton.

6. That the Lyttelton Harbour Board be approached to ascertain if it can meet the following requests: (*a*) Better mooring-facilities for the fishing-fleet; (*b*) the provision of a light crane for unloading fish; and (*c*) the provision of adequate space for the fishermen so as to enable them to erect suitable net-racks.

Akaroa.

7. That the Akaroa Council be approached in an endeavour to have an adequate slipway provided in a suitable position. Such slipway to be under the control of the Council and to be available at a reasonable charge.

Kaikoura.

8. That the Kaikoura County Council be approached with regard to the following matters:—

(*a*) The clearing of the anchorage of rocks and sunken reefs. In this case, if the Council agrees to do the work, we would recommend that assistance be granted by the Government by way of the provision of explosives or by meeting the charges for the services of a competent diver.

(*b*) The remission of the charge for the use of the slip after the fourth day when the weather is the sole cause of the vessel having to remain on the slip.

(*c*) The provision of a light crane to assist the fishermen in unloading their fish.

Greymouth.

9. That the Greymouth Harbour Board be approached with regard to the following proposals:—

(*a*) The provision of adequate berthage for the fishing-fleet.

(*b*) The provision of a fixed landing-place for the fish, with clear access for motor-trucks and a light crane for lifting the catch.

(*c*) These services to be rendered to the fishermen at a reasonable cost, such as an annual berthage fee and wharfage on all fish passing over the wharf.

Nelson.

10. That the Nelson Harbour Board be approached in an endeavour to obtain better berthage-facilities for the fishing-fleet, the cost of providing such accommodation to be met at least in part by the payment of a reasonable annual berthage charge.

11. That the Nelson Harbour Board be requested to give favourable consideration to the provision of adequate facilities for the unloading of the catches from the fishing-boats.

Picton.

12. That the Railways Department, which is in charge of the Picton wharf, be approached with a view to obtaining the installation of a weighing-machine, and service on the wharf for the purpose of weighing fish prior to transport. It would be reasonable to suggest that an additional sum not exceeding 2d. per sack be added to the present wharfage rates for fish to cover portion of the cost of such service.

Napier.

13. That the Napier Harbour Board be requested to consider making a determined effort to dredge the channel leading into the "Iron Pot" so as to leave a depth of 12 ft. at low-water spring tides.

14. That the Napier Harbour Board be asked to consider the provision of adequate and fixed berthage for each fishing-vessel.

15. That the Napier Harbour Board be asked to consider the proposal to supply good landing-facilities, preferably by way of the provision of a jetty standing out from the centre of the head of the "Iron Pot" and constructed so that fish may be unloaded at all stages of the tide. If the central jetty cannot receive consideration, the installation of an elevator is suggested.

16. That the Napier Harbour Board be asked to provide a suitable channel to the slipway navigable by any of the fishing-vessels under their own power from three-quarters flood to three-quarters ebb tide.

17. That cheaper slip accommodation be provided. If the Harbour Board us unable to finance such a slip, Government assistance should be made available to any co-operative group of fishermen willing to organize and administer a co-operative slip for the benefit of fishing-vessels only.

18. That the Government urge the Harbour Board to give some easement of wharfage rates. The most useful form that this relief could take would be the exemption of fuel—oil or coal—going aboard fishing-vessels from outward wharfage, and the reduction of the inward wharfage on fish.

Auckland.

19. That the Auckland Harbour Board be approached to ascertain if it is not possible to provide better berthage accommodation for the seine boats inside the Viaduct.

20. That the Auckland Harbour Board be requested to consider the provision of fender-piles at those berths used by the steam trawlers.

Helensville.

21. That the Government approve the scheme set out for the rehabilitation of the fishermen's wharf at Helensville as submitted by the District Engineer of the Public Works Department. (For detail, see files P.W. 12/1 and M. 4/277.)

22. That the wharf as reconstructed be vested in the Helensville Town Board, which body should make some small contribution to the cost.

23. That if the reconstruction is carried out, the fishermen using the port should be compelled to use this wharf for all purposes except possibly the landing of their fish, which is at present done at the Railway wharf for convenience of transport, and they should pay a charge not exceeding £1 5s. per boat per annum for the use of the facilities provided.

New Plymouth.

24. That the New Plymouth Harbour Board be approached to ascertain the possibility of improving the facilities available to the fishermen, more particularly with regard to satisfactory berthage, landing-facilities, water-supply, and the provision of a slip. An annual charge to be made for the harbour facilities and a charge of £1 per time for the use of the slip.

Kawhia.

25. That the Government give favourable consideration to the request for the erection of permanent leading-lights at Kawhia.

Waitara.

26. That, if possible, arrangements be made for the erection and maintenance of a light on the North Wall at Waitara.

Wellington (Island Bay).

27. That either the Government or the City Council embark on a comprehensive scheme to provide proper and reasonable facilities for the fishermen at Island Bay, such facilities to be on that area known as the "Eastern Rocks," and, *inter alia*, to consider the provision of berthage for large fishing-vessels and accommodation for the refrigerated storage of bait.

PART V.

REFRIGERATION.

As fish rapidly deteriorates unless frozen without delay after being taken from the sea, the desirability of having modern refrigerating-plants at the appropriate centres will be apparent. The Committee inspected nearly every plant in New Zealand, and from the details descriptive of the facilities available at the various ports given below (see Appendix N) there may be gathered some idea of the condition of the existing refrigeration units and of the changes needed to make them satisfactory.

Southland.

In this district there are six establishments in operation at which fish may be chilled, frozen, or stored for the export and local wholesale requirements. These freezers are as follow :—

No.	Location.	Owner.
1	Port Pegasus	Pegasus Fishing Co., Ltd.
2	Half-moon Bay	Fish Freezers, Ltd.
3	Bluff	Southland Cool Stores, Ltd.
4	Bluff	Johnston Bros., Ltd.
5	Waikawa	National Mortgage and Agency Co. of N.Z., Ltd.
6	West Coast Sounds	Johnston Bros., Ltd.

For details of each of the plants inspected see Appendix N. In addition to the above, there is another small chilling-plant at Stewart Island, but it was not in operation at the time of our visit.

Pegasus Fishing Co., Ltd. (Port Pegasus).—This is a small plant, the unit being a 3 ton Lindé cold-air machine. While this plant is still an effective freezing unit, it is now too small, and proposals have been formulated for the erection of a larger and more up-to-date plant with a 10 ton refrigeration unit. It is used to freeze and store the fish landed at Port Pegasus until such time as there is sufficient for transport to the Bluff. This plant was not inspected, and we could not obtain the details for the Appendix.

Fish Freezers, Ltd. (Half-moon Bay).—This freezer is owned and operated by a partnership of four of the Bluff wholesale fish firms. The fish are cleaned and cased at the freezer and put in the chamber until the transport vessel makes her next trip. This may be the next day, and there is no great length of storage at any time. The temperature of the room is not known. The policy of sending some of the fish over to the mainland in a half-frozen condition is to be condemned, as repeated freezing and thawing must affect the quality of the product. It would be better to freeze the fish hard if the plant was capable of doing this in a reasonable time, and then to ship it over in a vessel with an insulated hold so as to avoid as much rise in temperature as possible.

Southland Cool Stores (Bluff) (Fish Storage).—Five chambers at this plant are available for fish, but the whole of the space is let to a group of the merchants, who thus control the space and only allow other people's fish entry and storage on their own terms.

Johnston Bros., Ltd. (Bluff).—This plant is used by the firm for their own produce only.

National Mortgage and Agency Co. of N.Z., Ltd. (Waikawa).—This is an up-to-date chilling-plant used by the firm for their own produce only.

Johnston Bros. (Fiord Fisheries, Ltd.) "Stella" at Chalky Inlet.—This freezer is necessary because of the distance these fishing-grounds are from Bluff, and none of the fishing-boats are large enough to carry a freezer aboard. The highest load so far has been ninety cases per day. Average load, fifty to sixty cases on any one day. About six fishing-days per month.

We inspected all of the freezers except that on board the "Stella" and the one at Port Pegasus, Stewart Island. With the exception of the plant at Waikawa, which is really only a pre-cooler, none of the plant is up to date, and some of it is definitely out of date. In the case of the various plants used for freezing fish, the time taken to harden the fish, which is about three days, is too long to ensure the best possible results. The slow freezing of fish has many drawbacks and affects the quality of the product to a great extent. The fact that the merchants have been able to sell the fish is by no means a justification for turning out an article which could be definitely improved upon. It is only the popularity of blue cod on the Australian market which has facilitated the sale of this fish. As soon as better freezing methods are adopted in Australia and the public becomes educated to the difference between fish which has been properly handled and frozen and that which has been treated by the old-fashioned methods, these firms will be forced to erect plant which is capable of freezing the produce quickly. One other serious objection was raised in regard to these freezers. It will be noticed that, with the exception of the Southland Cool Stores, they all belong to firms engaged in the fish-export trade, and in the case of the Cool Stores all the space available for the refrigeration of fish is leased by a combination of four of the Bluff merchants. Several of the witnesses stressed the desirability of the provision of refrigeration space into which a fishermen could put his own fish without being forced to sell it to the firms controlling the freezers. It is agreed by the Committee that modern freezing-facilities are necessary both at Stewart Island and at Bluff, but as over 80 per cent. of the boats are owned or controlled by the merchants the balance of the fleet would not have sufficient catching-capacity to warrant the erection of modern refrigerative accommodation by any outside firm. This ownership of the largest portion of the fleet and control of the whole of the available freezing-space is apt to give rise to certain undesirable practices in the elimination of fair and reasonable competition. It is not desirable that any one firm or combination of firms should obtain a stranglehold on the industry unless there are adequate safeguards to prevent such a monopoly being abused, but it is even less desirable to have an influx of a number of small units uneconomic in operation and unable to handle the product in a satisfactory manner.

Otago and South Canterbury (Retail excluded).

This district has six fish-freezing establishments. These freezers are as follow:—

No.	Location.	Owner.
1	Dunedin	Otago Fish Supply, Ltd.
2	Dunedin	Otago Dairy Producers Cool Storage Co., Ltd.
3	Port Chalmers	National Mortgage and Agency Co. of N.Z., Ltd.
4	Moeraki	Alfred Hull.
5	Oamaru	North Otago Cool Stores, Ltd.
6	Timaru	P. Feron and Son, Ltd.

Otago Fish Supply, Ltd. (Gibbs), Dunedin.—This plant is owned and operated by the fish-auctioneering firm, and its primary use is for dealing with the excess supply of fish which is bought in by the auctioneer.

Otago Dairy Producers Cool Storage Co., Ltd., Dunedin.—This plant is available for use by the trade generally, but is not really adapted for the freezing of fish.

National Mortgage and Agency Co., Ltd., Port Chalmers.—This plant is a modern one used by the company for dealing with their own produce. It is the finest fish-freezing unit in the South Island, if not in New Zealand. Ample refrigeration is provided, and chambers are well designed and laid out. It is the only plant in Otago and Southland which really measures up to the standard required to turn out a first-class product for the export trade.

A. Hull, Moeraki.—This is a small privately owned unit which is not operated to capacity, as many of the fishing-boats here are now sending their fish to Dunedin for the National Mortgage and Agency Co.

North Otago Cool Stores, Ltd., Oamaru.—This is a small unit available to the trade generally, but the freezing of fish is only a side line.

P. Feron and Son, Ltd., Timaru.—This is a pre-cooling unit. The freezing-chamber requires overhaul, particularly the old wooden floor, which should be replaced if the plant is to continue handling fish.

Of the above units, only that operated by the National Mortgage and Agency Co., Ltd., is really up to date and fitted for its work. Some of the others are quite unsuitable for freezing fish and of doubtful utility even for chilling. The use of wooden floors in freezers which receive wet fish is to be strongly condemned, because after a period of years the floor becomes saturated with fish slime. Where these wooden floors exist, the firms should be compelled to replace them with concrete floors.

In addition to these units, there is the freezer at Port Chalmers owned by Thomas Anderson, Ltd. This plant has passed through several hands since its erection and is at present closed. Certain suggestions were made to the Committee whereby the plant could be reopened, but as the title is involved with mortgages and various other instruments, and the building encroaches on the road-line, we are unable to recommend favourable consideration to any project concerning this freezer which involves financial assistance from the Government. Some years ago the Port Chalmers Fishermen's Co-operative Society advanced certain moneys for equipment—unfortunately, without taking due precautions in the way of fixing the security—and its members now favour any measure which will release at least portion of their outlay, but all the suggestions tendered had grave possibilities, and there was no certainty that the control of the premises would remain with the fishermen even if assistance were granted.

Christchurch.

Apart from a large number of small freezers fitted into retail premises, the only space available in Christchurch is the plant of P. Feron and Son, Ltd. Outside Christchurch there are only the pre-cooling plants at Kaikoura and Timaru owned and operated by the same firm. The main plant at Christchurch, though by no means up to date so far as refrigeration is concerned, is suitable for the work which it has to preform when judged by New Zealand standards. Probably owing to the high value of land in this vicinity there appears to be some congestion in the working-space, but it must be borne in mind that the auction-market takes up space which would be utilized for the handling of the local and export fish if this firm did not conduct the auction as well as carry on its own wholesale trade. Details of the plant will be found in Appendix N.

Kaikoura.

At Kaikoura the plant is used purely for the pre-cooling of fish which are to be forwarded to Christchurch. It is out of date and will have to be remodelled if the trade from Kaikoura is to be extended or if the plant is to be brought up to modern standards. When the South Island Main Trunk Railway is completed and in operation there will be little need for this freezer, except perhaps for use as an ice-store. For details, see Appendix N.

Nelson, Picton, and Blenheim.

At Nelson there is only one freezer, and this is used by the owner for the purpose of holding his own supplies. Most of the space is reserved for fruit, only one small chamber being used for fish. As the chamber is actually used only as a cool-room, no details are given. The most interesting feature here was the use of a special deodorizer in the chamber. This special compound appeared to be very efficient.

Satisfactory accommodation is required at Nelson, because at present fish must either be shipped at once to Wellington to take its chance on a market perhaps already glutted by supplies from other ports or be sold to the local merchant at his price if he can store it in the small amount of space which he has available. At each port there should be some arrangement whereby the fishermen can store their fish at a fixed charge without actually having to sell it to the owner of the freezer.

At Picton the only refrigerated space available to the fishermen is that at the local meat-freezing works, and this plant shuts down for about five months in each year. The men are well treated by this company in the matter of charges, but it is essential that the fishermen should have a place to store their fish and bait over the whole year. As several of the local fishermen are men of good standing, it was suggested that a cool store with a storage capacity of 25 tons might be erected on co-operative principles.

No freezing-space is available to the men at Wairau Bar unless they send their fish to the meat-works at Picton, and to do this heavy transport charges are incurred. We are not satisfied that there would be sufficient fish offering to warrant the erection of a freezer at this point.

Napier.

The only refrigerated storage for fish at Napier, exclusive of retail-shops with freezers, is the chilling-accommodation owned and worked by the Napier Fisheries Co-operative, Ltd., at Port Ahuriri. The freezer owned by J. J. Niven and Co., Ltd., is not available for the storage of fish, as one of their main lines is butter, and they fear risking any taint in this commodity. The chill-rooms of the Napier Fisheries Co-operative, Ltd., are used for holding short-term supplies only, and are capable of handling

8 tons of fish. There is also provision for the manufacture of 4½ tons of ice daily. Fish intended for storage is sent to the Co-operative Dairy Producers Freezing Co., Ltd., Wellington. Fish is never stored in Wellington for more than three months. The freezing charges are reasonable. The chilling-accommodation provided at Port Ahuriri is modern and effective and quite capable of performing all the work necessary under the present marketing arrangements. For details of the plant, see Appendix N. On the present annual landings, and in consideration of the fact that gluts of fish seldom occur more than twice or thrice a year, there is no justification for any increased refrigerated storage in Napier. It would not be economical to erect plant to deal with the small quantities of fish sent to the Wellington firm for storage.

Gisborne.

No special accommodation at Gisborne for the storage of fish is provided. One chamber with a capacity of approximately four hundred cases, each 100 lb., is available at the local meat-freezing company's plant. This space is taken up by the wholesaler at a fixed annual rent of £50, but others may put fish in at a fixed price of ½d. per pound for three months.

It is doubtful if the amount of surplus fish in Gisborne warrants the erection of any further plant, as it might tend only towards the accumulation of stocks unless the whole of the marketing was under rigid supervision. Under the circumstances, the Committee has no recommendation to make.

Whakatane.

One small freezer owned by Mr. W. G. Wright is operated at Whakatane. It is a small Servel machine which is capable of producing 4 cwt. of ice per day and also cools a small chill-room. As the plant is not used for fish storage, no further details are supplied.

Tauranga.

At Tauranga two of the wholesale sheds have provision for refrigeration. As supplies are very short the plant is not operated at anything like full capacity. For details of the units, see Appendix N.

Thames.

At Thames there are four wholesale fish firms and each one has a freezer of some sort.

Thames Fisheries, Ltd.—The freezing-space of this company is large—too large for the refrigeration units installed if the whole of the chambers were in operation, which they are not, quite a considerable portion of the space not being in use at the time of our inspection. It was stated that this plant was capable of dealing with the whole of the Thames supply; it might be if the product was kept on the move in a normal manner, but any hold-up involving prolonged storage of a large proportion of the daily supply would soon cause the weaknesses to be revealed. The refrigerating units have only an output of refrigeration equal to 9 tons of icemaking capacity per day, and the total space for which these machines would have to provide refrigeration if the plant was in full operation is 15,618 cubic feet. It must be noted that, of the eight chambers, two totalling 4,050 cubic feet are only used as chill-rooms, which is all they are fit for, two others with a combined capacity of 3,564 cubic feet are not in use and would require renovation before they could be brought up to the standard required, and finally there is a large store chamber of 4,320 cubic feet very lightly piped and not in use at the time of our inspection. This leaves the company with three up-to-date chambers of a total capacity of 3,702 cubic feet which are used as freezers. These three rooms, plus the large store, comprise the refrigeration which the company has at its disposal. At this plant all the rooms except the three freezers have wooden walls. This fault would not be serious where the freezing-chamber floors are all concrete, but it is a factor which would prevent the passing of the plant as first class. The amount of refrigeration available is too low for such extensive capacity, more especially when it is remembered that to get the best results quick freezing of the fish is essential. In addition to the freezing-accommodation, there are two large ice-making tanks with a capacity of 9 tons of ice. We are of the opinion that the provision of refrigeration units with only a 9 ton ice capacity to keep these tanks in operation and at the same time to maintain the refrigeration of the rooms, even allowing only for the use of the freezers, store, and two chill-rooms, is inadequate. For details, see Appendix N.

Taylor Bros., Thames.—At this plant there are two small refrigeration units and two chambers. One is used as a chill-room; the other is not in use. The chambers were in a poor condition, having wooden walls and a wooden roof. The woodwork was found to be rotten in many places. The insulation appeared to be full of water, and water was dripping from holes in the roof lining. For details, see Appendix N.

Shoriland Fish Co., Thames.—At this plant there occurs again the problem of a comparatively small refrigeration unit—6 ton—which, were it in full operation, would have to take care of three large chambers totalling 17,490 cubic feet. Admittedly at the time of our inspection only one chamber of 5,832 cubic feet and an icemaking plant were in use. The ice output was stated to be 6 tons in twenty-four hours. Here, again, wooden walls were in evidence. For details, see Appendix N.

Co-operative Fisheries (N.Z.), Ltd., Thames.—This plant, the smallest in Thames, is the only one which can be rated first class. It has two well-kept cool-rooms, concrete throughout, with adequate insulation. The refrigeration unit, a 12 ton Sterne, is adequate, and a similar unit is to be installed as a standby and to provide refrigeration for any chambers which may be erected in future. For details, see Appendix N.

Thames is in an unfortunate position, in that is possesses too much refrigerated space, fully 70 per cent. of which would not come up to modern standards. Some of the plant is definitely in such a state that no value can be placed upon it. Only the fact that a large proportion of the Thames fish has been used for the country trade, leaving but a small surplus for the export trade, has kept these plants out of serious trouble. As a matter of economic policy there should be a reduction in the number of freezing-plants available in Thames, and those left should be brought up to modern standards and be capable of handling the entire *normal* output. There can be no valid reason for the maintenance of four firms in a small port like this. The question of co-ordination will be discussed under the heading of "Wholesale Trade." One difficulty which can be foreseen with regard to amalgamation is the absurdly high valuation which some of these firms have placed on their plants; a preliminary measure will have to be the valuation of the freezing-plants by some competent person not associated with the fish trade in any part of the Auckland Province.

Auckland.

At Auckland there are eight wholesale fish firms. Of these only four—Sanford Ltd., Waitemata Fisheries, Ltd., Auckland Fisheries, Ltd., and the Auckland Seine Boat Association—have freezing-accommodation of any size or efficiency. Sanford Ltd. is by far the largest plant, and, having had recent additions, is well up to date. Plenty of working-space is also available. The Waitemata Fisheries, Ltd., has a plant which is modern, well kept, and up to date in every particular. This firm is a little cramped for room. The Auckland Fisheries, Ltd., has a plant which is small but quite capable of doing the work for which it was intended. The layout could be improved, but is more or less governed by the space available. The Auckland Seine Boat Association's plant is much smaller in freezing-capacity than the other plants mentioned, but is up to date and kept in good order. The rest of the companies have either no freezer or only small 1 ton or 2 ton units which are really only coolers. Details of the principal freezing-plants will be found in Appendix N.

New Plymouth and Wanganui.

One merchant at New Plymouth has a small freezing-plant capable of holding some 5 tons of fish and of producing ½ ton of ice daily. The space is nearly always required for his own supplies, but, if not, the fishermen may use it at a charge of ½d. per pound of fish. The erection of public freezing-space in New Plymouth was requested by the fishermen, but, although this is desirable, it is doubtful if the expense would be warranted. At Wanganui there was also a request for freezer-space, but the amount of fish which comes into port would not warrant the expense. In these matters we have no recommendations to make.

Wellington.

Wellington is well served in the matter of freezing-space for fish. In addition to the excellent plant of the N.Z. Fisheries, Ltd., used for their own stocks and for that of their customers, there is the public storage available at the Co-operative Dairy Producers Freezing Co., Ltd.'s plant. The Committee made a detailed inspection of these plants and found that they were kept in splendid condition. Both are adequately piped, and each provide good control of the freezing-chambers, the latter by means of an electric temperature recording in the engine-room.

The one apparent weakness noted by the Committee at the Co-operative Dairy Producers Co.'s plant was the excessive size of the freezing-chambers used for fish. With a chamber of this size there would be difficulty in obtaining the rapid freezing of fish which is so necessary, and, further, the rise in temperature due to the influx of green fish must tend to have a deleterious effect on the fish already frozen. As complaints had been received that fish refrigerated at this plant did not turn out well after two months' storage, particular care was taken by the Committee in its inspection. So far as the plant itself is concerned no fault could be found, except the too-spacious area of the chambers, to account for any deterioration of the fish, but one obvious cause is the way in which much of the fish sent to the freezer is packed. One line was packed in close-boarded boxes of much too large a size. Fish packed in such boxes could not be frozen quickly by any plant in New Zealand. Other fish had been shipped in sacks. From the condition of the sacks it was obvious that this fish had been roughly handled in transit to the freezer. By the time it had been delivered it would in all probability have been badly bruised, and for this reason would thaw out badly. Unfortunately, the freezing company would then be blamed for trouble due to the faults of others.

The Committee is convinced, however, that the utility of this excellent plant could be increased as far as the freezing of fish is concerned if one-third of the present freezing-chamber could be partitioned off with an insulated wall and used as a freezing-room for the reception of green fish and where the fish could remain until hard frozen. If this small chamber could be coupled up with the Hall "booster" to enable the fish intake to be "hammered down" to zero in the minimum of time, we feel that excellent results will be forthcoming. In addition to the large freezing-chamber at these works, there is a large chamber providing adequate storage. For details of the plant, see Appendix N.

The other plant, that of N.Z. Fisheries, Ltd., was found to be in good condition and under adequate supervision. This plant is designed for the handling of fish, and plenty of refrigeration is available to take care of the sudden fluctuations in loading. The chambers are spacious and the layout is excellent. Plenty of piping is available in each room, and a proper log is kept of the temperatures and other data, the records being made at short intervals throughout the day. A well-laid-out icemaking plant and store has been built in conjunction with the freezer. Very low temperatures can be obtained and held by this plant, 38° F. below freezing being recorded on several of the daily logs which were selected at random for inspection. Details of the plant are supplied in Appendix N.

Chatham Islands.

N.Z. Fisheries, Ltd., has up to this year operated two fish-freezing plants at the Chatham Islands, one at Owenga and one at Kaingaroa. For various reasons it has become necessary to close down the works at Owenga. There is a proposal to open a new works at Whangaroa, but the details have not been finalized. For details of the plant at Kaingaroa, see Appendix N.

Recommendations.

New Zealand.

1. That the provision of adequate cold storage capable of freezing the fish in a reasonable time be made an essential qualification for those firms desiring to hold a fish-export license.
2. That all premises used for the refrigeration of fish or as pre-coolers be subject to regular inspection by qualified officers of the Health Department, more particularly with regard to the state of the freezing-chambers.
3. That, as the cost of freezing decreases in proportion to the quantity of fish handled, duplication of freezing units in any town be avoided. To avoid the cornering of freezing-space in any port by the wholesale firms, co-operative concerns with a personnel representative of the fishermen, wholesalers, and retailers should be encouraged.
4. Refrigeration plants should not be controlled by fish-auctioneering firms.

Nelson.

5. That the Maitland Cool Stores be approached, with a view to their making sufficient space available for the Nelson fishermen desiring to hold their own fish or bait.

Picton.

6. That, if a sufficient number of the Picton fishermen agree to co-operatively guarantee the repayment of any advance made to them by the Government, they should receive the necessary finance from the Government, on the understanding that any fisherman, whether one of the guarantors or not, should have the right to store his fish or bait in the freezer at rates sufficient to cover the cost of operation, the repayment of the loan, and any other charges. An allocation of space would have to be made to prevent any one person or group from monopolizing the chambers.

Thames.

7. That the number of fish-refrigerating units at Thames be substantially reduced, either by amalgamation or co-ordination of the companies concerned, and that the remaining unit or units (there should not be more than two) should be brought up to modern standards and be made capable of handling the normal requirements of the port.

Wellington.

8. That the Co-operative Dairy Producers' Freezing Co., Ltd., be approached to investigate the practicability of making certain alterations to the present freezing-room so as to make available a small chamber for the receipt of green fish.
9. That, in accordance with our recommendation covering harbour facilities at Island Bay, provision be made for a bait-freezing unit on the foreshore.

PART VI.—GENERAL.

LICENSING.

Prior to the commencement of the Committee's work it became apparent to the Committee that before its investigations could be completed and a report submitted there were possibilities of substantial as well as minor changes taking place in the industry, the effect of which would be to still further complicate an already seriously involved position. Following upon the Committee's recommendations to the Bureau of Industry, two Ministerial notices were issued under the authority conferred by the Industrial Efficiency Act stipulating that, with certain provisos, the export of fish and the taking of fish for the purposes of sale were to be branches of the industry conducted under the licensing provisions of the Act.

These provisions have enabled the general operation of the industry to be held unchanged as far as practicable, and thereby the Committee's work has been facilitated in a greater degree than would otherwise have been the case.

In regard to export, the Ministerial notice provided that in the case of persons lawfully engaged in the export of fish on the date of issue of the notice (15th April, 1937) the licensing provisions would take effect on the 1st December, 1938, and in all other cases as from the 15th April, 1937. In accordance with our findings with respect to export and the export market, we are of opinion that the provisions of this particular notice should continue in force.

The second Ministerial notice, dated the same day (15th April, 1937), directed in similar terms that all persons who were lawfully engaged in the taking of fish for sale on that date were not required to be licensed under the Act until the 1st December, 1938, but in respect of all others wishing to enter the trade and so operate on or after the 15th April, 1937, a license must be first obtained. After a close investigation of all problems connected with production and marketing and in accordance with our findings as set out elsewhere, we are of opinion that the relative provisions of this latter notice should now be reconsidered in the light of existing conditions.

With reference to the licensing of fishing-vessels as is now required under the Fisheries Act, 1908, the weight of evidence submitted by fishermen and others connected with the industry was distinctly in favour of some increase in the scale of license fees now applicable to these vessels, and, in addition, it was clear that many were in favour of each fisherman being personally licensed. At present the Fisheries Act, 1908 (not regulations made thereunder), stipulates that all *fishing-vessels* must be licensed, and that licenses *shall* be issued (there is no discretionary power of refusal) upon the payment of the fee of 5s. in the case of a vessel under 5 tons register and 10s. if of 5 tons register and upwards. Fishermen are not required to be licensed under the Act.

The representations submitted in connection with a suggested increase in existing fees under the Act and the provision of licensing fees for fishermen themselves may be summarized as follows:—

(1) The industry itself recognizes that the revenue derived by the Marine Department from the existing scale of fees is so low in proportion to the service, inspection, and supervision required that the fees should be increased. In this way sufficient revenue for these requirements to be fulfilled to the extent desired would be provided.

(2) The necessity for complete or modified surveys of certain fishing-grounds to be made, and the provision of revenue (at least in part) from the industry itself to meet the cost of such surveys seeing that these would serve the general benefit of all associated interests.

(3) The discouragement which the increase in license fees would give to part-time fishermen, who are looked upon as a menace to the professional fishermen, in that the former are usually engaged in other work for the greater part of the year and only turn their attention to fishing in the flush of the fishing season on the various grounds.

(4) The emphatic protests made against the incursion into the industry of week-end fishermen, who take fish for sale in competition with professional fishermen and who in certain localities where the grounds are confined occupy the vantage points for commercial fishing.

Recommendations.

New Zealand.

1. That the Fisheries Act, 1908, be amended to provide—

(*a*) For the fixing of license fees for fishing-vessels and fishermen by regulation; that the annual fees for the licensing of fishing-vessels and fishermen respectively be fixed at a minimum of 40s. and 5s. each; and, further, that the fees for fishing-vessels increase in proportion to their size up to a maximum of £10 for the larger steam trawlers.

(*b*) To give the Marine Department the right to refuse the issue of fishing licenses. With regard to part-time fishermen, the onus should be on the applicant to prove that he is dependent upon fishing for at least 50 per cent. of his livelihood.

(*c*) For the abolition of the issue of half-yearly licenses.

2. That the provisions of the notice issued under the hand of the Minister of Industries and Commerce dated the 15th April, 1937, and relating to the licensing of certain industries under Part III of the Industrial Efficiency Act, 1936, in this case the export of fish (whether fresh or preserved), continue in force.

3. That the provisions of the notice issued under the hand of the Minister of Industries and Commerce dated the 15th April, 1937, and relating to the licensing of certain industries under Part III of the Industrial Efficiency Act, 1936 (in this case the taking of fish for purposes of sale), be reconsidered in the light of existing conditions.

(4) That the Ministerial notice referred to in recommendation No. 3 or any amendment thereto continue in force only until it is superseded by the amendments to the Fisheries Act, 1908, the Ministerial notice then to be revoked, thus leaving the Marine Department as the sole licensing authority, and obviating any dual licensing and dual collection of fees which would otherwise arise.

EARNINGS OF FISHERMEN.

It has been thought preferable to discuss earnings of fishermen under one heading rather than in the particular provincial group to which they belong. While it was impossible to ascertain what the earnings actually were in many cases, a sufficiently representative number of men at practically all ports were able to make available to the Committee figures of fish landed, gross earnings, and operating-expenses. Appendix O shows the whole position in detail, and the summary attached thereto reveals that the 161 fishermen referred to (no steam-trawler employees included) earned an average of £194 (£3 14s. 7d. per week) over the most recent twelve months of their operations, their gross receipts being £55,241 (2·38d. per pound), their operating-expenses £23,960 (1·03d. per pound), and their net returns £31,281 (1·35d. per pound). If there is added to the above total of 161 men another 24 from which no particulars except net earnings were procurable, we find that 185 men earned £36,843 net or £199 per annum or £3 16s. 6d. per week each. These 185 men were representative

of the best and most energetic fishermen, and, this being so, the net earnings of the total full-time fishermen engaged (1,381 during the year ended 31st March, 1937) would on the average fall well below the £199 per annum mentioned. There were also 711 part-time men engaged.

Naturally, the figures vary with each port and even with each fisherman, depending upon the class of fish caught and its price, the type of vessel, and the methods of fishing employed. It is interesting to compare, for instance, Bluff (or Stewart Island) with Auckland, where at the former the average price realized was 2·87d. per pound and at the latter 1·79d. per pound, yet the average earnings are £103 as against £302 per annum. Although it is true that the Stewart Island men do not actually fish all the year round, this shows to what extent the men on the Auckland seine-fishing boats have the advantage over the line-fishermen.

In Auckland representations were submitted to us that under the industrial award (see below) the men, or at least the senior men, on the larger seine boats were earning a share of the proceeds disproportionately large compared with the boat-owner's earnings. This may be true in the case of a number of the larger boats in connection with which the costs of upkeep are heavy, but in view of our recommendations as to the operations of Danish seine boats generally we have no submissions to make in this respect.

Under this heading we give particulars of the industrial awards in force and covering the fishing industry. They are:—

(1) The Northern Industrial District Fishermen—

Upon a basis of 2d. per pound green weight for the main varieties of fish taken (snapper and tarakihi) the minimum wages and shares payable are—

(*a*) In vessels of the small class, three shares of one-fifth each.

(*b*) In vessels of the intermediate class, three shares of one-sixth each.

(*c*) In vessels of the large class: Skipper, two-elevenths shares; mate, two-thirteenths shares; engineer, two-thirteenths shares; fourth hand, for the first 80 baskets (100 lb. each) 1s. per basket, for the next 40 baskets 6d. per basket, for all in excess of 120 baskets 4d. per basket.

NOTE.—The shares are payable upon the return for the total catch after operating-expenses and the wages of the fourth hand are deducted.

(2) The Northern Industrial District Fish Trade Employees:—

Adult workers, £4 10s. per week; smokers—freezing or ice-room hands—£4 15s. 6d. per week.

(3) Wellington Fish-workers:—

Head smoker and curer, £5 5s. per week; experienced general hands, £4 15s. per week; general hands (under two years' experience), £4 5s. per week.

(4) Wellington Trawler Employees:—

Mate, £5 per week plus bonus 1d. per basket; Deck hands, £4 10s. per week plus bonus 1d. per basket; fireman, £5 7s. 6d. per week.

(5) Auckland Trawler Employees.

Same as Wellington Trawler Employees:—

(6) Otago and Southland Oystermen and Cannery-workers:—

Oyster-boat employees, 10d. per sack; master, 10d. per sack plus bonus $2\frac{1}{4}$d. per sack; engineer, 10d. per sack plus bonus $1\frac{1}{4}$d. per sack; baggers and bed-men, £4 15s. per week; oyster-openers, 4s. 6d. per sack.

In all awards the usual provisions are made for the scale of wages payable to youths.

UTILIZATION OF FISH OFFAL AND WASTE FISH.

At the time of our investigation there were only two fish-reduction plants in operation in New Zealand, one at Christchurch and one at Auckland. An attempt was made some years ago to establish a company in Christchurch to deal with the offal and waste fish, but the scheme never reached fruition. Two reasons were given for the non-success of the flotation: (*a*) That the flotation was attempted during the depression years when it was exceedingly difficult to raise money for any new form of enterprise; (*b*) the fact that the largest producer of the waste material would not join the company, as they wished to install their own plant.

In most of the ports visited the people concerned were warmly interested in the question of the utilization of fish offal. This interest was particularly keen in Dunedin, where two parties are considering the erection of suitable works. In all the minor ports the amount of offal and waste fish which would be available would not be sufficient to warrant the erection of the elaborate plant necessary, because the material offering could not be treated in an economical manner. The cost of transport, which is high in relation to the value of the finished product, precludes any chance of the offal being brought in from outports to centrally situated works. One aspect worthy of examination would be the erection of drying-plants at certain ports where the amount of offal is high enough to justify this limited activity but not large enough to keep a complete until in operation. In these cases, with some railage concession on the transport of the partly dried product from the outport to a central works where the process could be completed, there may be some chance of success. Such ventures could only proceed on co-operative lines with a payout of the profits on the basis of raw material supplied. The price realized for the finished article, which in bulk is only some 25 per cent. of the primary product disposes absolutely of the question of payment for the material in the first instance.

A modern plant should be capable of the following functions:—

(*a*) The manufacture of fish-meal for stock-foods.
(*b*) The manufacture of fertilizer.
(*c*) The extraction of (1) fish-oil; (2) fish-liver oil.

The plant should be capable of turning out a high-class product in each of these lines. The use to which the offal would be put depends entirely on the class of fish from which it is derived and the type of offal—*e.g.*, whole fish, consisting of fish unfit for human consumption or species not commonly used or offal in the usual sense, consisting of heads, guts, and trimmings.

Particular attention should be paid to the utilization of fish-livers, as the oil obtained from these can, if properly produced, be used as a basis for highly priced products which are of great medicinal value. Moreover, these products have to be imported at the present time. Tests made by competent workers in and out of the Government Service have shown that the livers of New Zealand fish are comparable in the potency of their oil with such standard lines as cod-livers and halibut-livers of the Northern Hemisphere. It is felt that with the growth of organization amongst the fishermen the collection of the fish-livers at the main ports will become possible and after preliminary treatment they could be shipped to some central point where the process could be completed. Such an industry is worthy of active Government assistance, as the product is a much needed one, and until the men get definite encouragement no forward move will be made.

Of the two plants in operation, that owned by the Christchurch company is the better. The plant at Auckland is, as its proprietors admit, quite out of date and incapable of producing the best class of fertilizer from the material supplied. The replacement of this plant has been under consideration by the company, but in view of the unsatisfactory condition of the fishing industry in Auckland the matter has been held up until such time as improvements warrant the outlay of further capital in the industry.

With regard to the plant at Christchurch, the product which is turned out is not of the same standard as that turned out by the modern machines in use in other countries. Whether this is due to the plant itself or to its manner of operation or to the nature of the material the Committee is not qualified to judge. For use as fertilizer it is essential that the oil content be as low as possible. Too high an oil content causes trouble when the product is stored for any length of time in bulk, raises difficulties in the mechanical spreaders due to clogging, and, finally, is not considered desirable in a fertilizer, as the general opinion appears to be that it causes the fertilizer to be too slow in disintegration and its availability is thereby restricted. There is, however, no definite proof of this, and if the trade is to become well established research on this point would be valuable.

The main users of fish fertilizer in New Zealand are the fruitgrowers, who favour it for their particular purposes. Farmers would probably use it more extensively if the cost were lower. At present they can obtain other fertilizers, probably not so useful, but certainly at a lower cost. On this point the Committee feels that an educational movement among the farmers as to the high manurial value of fish fertilizer should be undertaken.

For use as a fish-meal, which incidently must be prepared from perfectly fresh material, the oil content should be low, as an oil content exceeding 5 per cent. will, if the meal is used in large quantities, cause some risk of taint in the flesh or product of the animal being fed. Exhaustive research in Great Britain has proved that if the fish-meal is of good quality and used in the correct proportions as given by the English Ministry of Agriculture no taint will be induced. Any taint is due to the use of immoderate quantities of low-grade fish-meal for feeding.

The use of fish-meal in the feeding of stock is the quickest method of making available to animals pastured on mineral-deficient lands the valuable store of minerals avialable in the sea. In this country, where so many of our stock diseases are being traced to lack of certain minerals in the food of stock caused by mineral deficincy in the soil, it is imperative that every method of supplying this deficiency be considered. We are of the opinion that the great value of fish-meal and fish fertilizer to agriculture has not been realized in New Zealand.

Recommendations.

New Zealand.

1. Modern plants should be installed at those points where sufficient material is offering for economical conversion. If necessary, Government assistance by way of low-interest loans should be made available to companies consisting of representatives of the various firms and interests in the area to enable the plant to be established on a co-operative basis.

2. Drying-plants should be installed at outports where sufficient material for their economic operation is offering. At these ports the material would be dried for transport to the central plants. Here, again, financial assistance to enterprise on a co-operative basis may be required.

3. Research as to the value of the fish meal and fertilizers produced by these plants should be carried out by the Scientific and Industrial Research Department or the Agriculture Department, whichever is the better equipped for such research.

4. Educational work as to the value of these products should be done by the Agriculture Department.

5. All fish offal available within reasonable distance of the plants erected should be put through the plant, and not be wasted by being either taken to sea and dumped or by being buried, as is at present the common practice. Co-operation and education should make this possible without the need for regulation.

LEGAL SIZE OF FISH.

In many places attention was drawn to the small fish landed. Large numbers of these fish, although of the present legal size, were of little or no use for market purposes, and the opinion was expressed that these fish should have been left to grow to a size at which their value would be enhanced. This would not only give the public reasonable value for its money, which it does not get with these fish at the present time, but also give the small fish a chance to reproduce their kind before they are removed from the sea. Complaints as to the loss suffered by the sale of flat fish 9 in. long were general. The absurdity of many of the present legal sizes expressed as weights is apparent to all interests in the trade.

Recommendations.

New Zealand.

1. The legal size of all flat fish be raised from 9 in. to 10 in. forthwith.
2. Investigations be made as soon as possible to ascertain the length at which it is economical to take those fishes the legal size of which is at present expressed in weight, and that such length be then made the legal size.
3. That steps be taken to ascertain the relation of the legal size of the fish in its green state to the length at various stages in the dressing of the fish to the fillet, so that any attempted evasions can be nullified.

QUALIFICATIONS OF MASTERS OF FISHING-VESSELS.

At the present time the master of any fishing-vessel which is under 10 tons net does not require a certificate or qualification of any sort to allow him to take his vessel to sea. If the vessel is over 10 ton net she becomes liable for survey and must carry a duly certificated master. At every port evidence emphasized the necessity for having every fishing-boat under the command of an experienced man who knew the elements of navigation and seamanship. Reference was made to case after case in which accidents had occurred, sometimes involving loss of life, where the cause of the accident was either failure of the master to know the rule of the road or to poor seamanship on his part. The tendency to-day is for the fishing-boats to go further and further afield, and as very few of them are compelled to carry a certificated master danger is becoming increasingly great. Some fishing-vessels with masters who have no certificate and in certain cases little sea experience are making voyages of two hundred miles from their base. Fishing vessels are carrying crews of up to four men in addition to the master, and these men should be protected from any danger which may arise owing to the master's incompetency. We therefore feel that some degree of competency must be attained before any person should be allowed to take any fishing-vessel outside the restricted river limits. We consider that such degree of competency would be met if the master had—(*a*) at least three years' service as a deck-hand on a fishing-vessel; (*b*) knowledge of the main regulations for the prevention of collisions at sea, including lights and signals; (*c*) knowledge of the elements of seamanship; (*d*) knowledge of the elements of navigation, more particularly the use of the compass; (*e*) a working knowledge of the English language; (*f*) a sound knowledge of those fishery regualtions which apply to his particular port and method of fishing.

Further, the master of every fishing-vessel should be a British subject either by birth or naturalization. Provision should be made for the exemption of men who are present masters of fishing-vessels, but such exemption should only be obtainable by those who have been in charge of a vessel for at least three years, and even these men should have to satisfy the licensing authority on sections (*b*), (*e*), and (*f*) outlined above.

It is recommended that the change be made gradually, so as to obtain its full force in, say, three years.

Recommendations.

New Zealand.

1. That the master of every fishing-boat operating outside restricted river limits be compelled to hold a certificate of competency on the terms outlined in this report.

SURVEY OF FISHING-VESSELS.

At each of the ports visited the Committee discussed with the witnesses the question of the safety of the fishing-fleet. We also took the opportunity of inspecting as many of the vessels as possible. Most of the fishing-vessels in New Zealand are not subject to an annual survey of any kind, the only exceptions being the larger steam trawlers and a very small number of the larger motor craft. No survey is required by law unless the vessel is more than 10 tons net in measurement.

The question of tonnage is a centre of controversy, and the anomalies are well known to every person connected with shipping. By means of certain structural alterations it is possible to ensure that large vessels of comparatively high gross tonnage will be assessed as being just under 10 tons net, and these boats will thus evade the necessity of undergoing an annual survey. Under this system of evasion cases arise where, for instance, a steam-vessel fitted with a boiler does not have to have that boiler inspected each year if she is under 10 tons net, irrespective of the pressure that the boiler may be carrying or the condition it is in. These are the only boilers in New Zealand exempted from this inspection, and we do stress the absolute urgency of bringing these boilers under regular survey.

With regard to the vessels we inspected, many of them are very old; many between twenty-five and thirty years and some up to forty years of age were found to be still in commission. Some fine

well-kept boats were noticed, but in many ports there is far too large a proportion of old vessels. These vessels were suitable for use when the grounds handy to the ports were being worked, but in our opinion many of them are quite unsuitable for the long trips which the fishing-vessels of to-day must make to the more distant grounds.

As to safety appliances such as life buoys, boats, &c., the regulations appear to be honoured more in the breach than in the observance. Much of the life-saving equipment seen was kept in poor order, and it is doubtful if it would have fulfilled its purpose if an emergency had arisen.

The question of lights on fishing-vessels is always a burning one; on many of the boats it is apparent that only oil-burning lamps are used. In the Committee's opinion there is no excuse to-day for any vessel not being fitted with electrical navigating-lights. Where oil lamps are in use the trouble and mess of getting them lit and rigged causes too much inconvenience, and fishing-boats are continually being reported as steaming without lights often in the approach to our main ports. It is admitted that even if a vessel is not liable for survey she may be prevented from going to sea if she is unseaworthy, but the crews will not complain in many such cases because they either have a share in the ownership of the vessel or are afraid that they will lose their employment if they report the state of the vessel to the authorities.

The Committee holds strongly that every man who has to earn his living by going to sea in a fishing-vessel should have the protection from undue risk that would be gained by having the vessel under regular survey. With many questions of great technical difficulty to be solved, this Committee does not feel competent to express its recommendations in detail. We feel that the method of attaining our object should be left to the technical officers of the Marine Department. We do not wish harsh survey conditions to be made, our prime desire being to ensure that every power-driven fishing-vessel proceeding outside the harbour limits shall, irrespective of her tonnage, be seaworthy, carry the necessary life-saving gear in good order in its appointed place, be provided with fit and proper anchors, warps, lights, and other gear necessary for the safety of the vessel and her crew, and that her engine shall be in a fit state to do its work. On the question of boiler inspection we are quite firm that it should be done each year.

Recommendations.

New Zealand.

1. That every fishing-vessel propelled by power and proceeding outside harbour limits shall undergo at least a modified survey sufficient to ensure that she is in good condition.
2. That the boiler of any fishing-vessel propelled by steam shall be made subject to an annual survey, even if the vessel is herself exempt from survey under the relevant Acts and regulations.

INSURANCE ON FISHING-VESSELS.

This problem was brought up at every port. The men complained that the rates quoted were too high, that the franchises were too high, and that the amounts of the insurance in relation to the total value of the boats were too low in nearly every case. Many of the rates quoted, up to 17 per cent. and even 20 per cent., were so high that it was obvious that the companies quoting did not desire the business, and rather than decline it in a straightforward manner they resorted to the use of absurd quotations to prevent the fishermen from going any further.

Two companies, however, seem to have taken a reasonable view, and have attempted to do business at reasonable rates. One has accepted insurance risks at most of the ports, the premium varying from 3½ per cent. to 6½ per cent. according to the locality, the type and age of the boat, &c. These terms appear to be reasonable if the cover is sufficient. The other company accepts this class of insurance only at Auckland, where a system has been adopted which appears practicable, and is certainly generous to the fishermen. The company insures at the rate of £3 10s. per centum, with a low franchise of £15, over a wide fishing area, in that fishing operations may be carried out between North Cape and East Cape, and, most important of all, it accepts a reasonable amount of insurance, taking up to three-quarters of the market value of the vessel.

In a personal statement the branch manager informed the Committee that these terms were only made possible through the bulk of the insurance at the port being offered to the company. He was of the opinion that his company would be willing to extend the scheme to any port where there was sufficient business.

The State Fire Insurance Office has no authority to take marine risks and no data on which to work. In the opinion of the General Manager the co-operative system of insurance would be the best, with the State Office to control and advise, but to be indemnified against loss. We are agreed that it is necessary that adequate insurance should be available to owners of fishing-boats on reasonable terms. We recognize that such insurance is highly specialized and only by one company getting the bulk of the insurance offering can a rate be charged and conditions granted which are reasonable. As the men are at present in a disorganized condition, co-operative insurance does not appear to be feasible.

RESEARCH WORK (SURVEYS, ETC.)

At all ports the desirability of surveys of the known fishing-grounds and exploration for new ones was stressed by many witnesses. It was pointed out that in regard to the exploratory work the earnings of the fishermen did not permit them to take time and meet the expense of going farther afield to look for new grounds, and, further, that if a fisherman was enterprising enough to do the exploratory work and found a new ground he would not reap the value for his work, as the rest of the fleet would soon be working alongside him. It does, therefore, appear that any exploration for new

grounds reported to lie off shore must, in part at least, be the responsibility of the Government. If such grounds exist, and the fish are present in payable quantities, then the working of such grounds would relieve the strain on our already depleted inshore grounds.

A survey of the present grounds to establish the fact as to whether they are breeding, nursery, or feeding grounds was asked for in several places. The importance of this work cannot be stressed too highly, as without such knowledge fisheries administration will be largely in the dark as to the proper policy to pursue.

Most of the companies concerned expressed their willingness to co-operate with the Government in surveys and explorations, and their assistance would take the form of making vessels available at a price which would at most only cover the actual working-expenses.

Further knowledge of the habits of the more important species of fish, crustacea, and oysters is also urgently required if we are to make the best use of our resources.

One serious problem referred to elsewhere in this report is that of the gut stain in snapper. This trouble leads to considerable loss in the trade in Auckland and is worthy of special investigation. Several theories are advanced as to its cause, but one most favoured being that this is associated with the feed, but the Committee is of the opinion that, although this might be the primary cause, the holding of the fish for prolonged periods with the gut in is a contributory factor. We therefore recommend that as soon as finances become available and the staff can undertake the work the following research should be undertaken, either in conjunction with or after such special investigations as have been asked for in other portions of the Report.

Recommendations.

New Zealand.

1. That a survey be made of all outlying banks and possible fishing-grounds, the industry to bear portion of the cost.
2. That a survey be made of the present grounds to ascertain their stocks and the type of ground—*i.e.*, breeding, nursery, or feeding ground.
3. That investigations be made into the life-histories of the more important species of fishes, and also crayfish and oysters.

Auckland.

4. That the problem of gut stain in the snapper landed at Auckland be investigated as soon as possible.

FISHERMEN'S RESERVES.

French Pass.

When the Committee sat at French Pass the question of the provision of land for a fishermen's reserve was brought up. In this area the land held is in large blocks and is mainly very steep. There is little flat land except that portion in Elmslie Bay on which stand the local store, post-office, school, and other buildings. A small area of 6 acres at Reynaud Point, about two miles and a half from French Pass Wharf, has been set aside as a Fishermen's reserve—it has sufficient flat land for one house, already erected and occupied. Two young fishermen rent this house from the lessee of the reserve. The rest of the 6 acres is very steep and is not fenced at its boundary with the adjoining property. This reserve is quite unsuitable for the purpose for which it was provided.

The difficulty of arranging for a suitable reserve for the fishermen in this district is intensified by the lack of unoccupied flat land in conjunction with a safe anchorage for the fishing-boats. The Committee inspected one property on Big Flat at Catherine Cove which appeared to be suitable for the purpose. This property of 1,500 acres, of which 60 acres to 80 acres is more or less flat, could by draining be made suitable for the use of the fishermen. In common with all the properties in the neighbourhood, the bulk of the property is steep hillside, only fit for sheep-grazing. It is unfortunate that so large an area of hill country would have to be bought to obtain the flat land, but the owner is not likely to sell the flat land alone, as the other ground would be of little use except to the adjoining landholders. Undoubtedly it is difficult to provide accommodation for the local fishermen, who lack finance of their own, especially when the purchase of the land is so considerable an item, but your Committee is of the opinion that despite this every effort should be made to provide the fishermen with a suitable reserve.

Kaikoura.

The fishermen here complained of the action of the Government in proclaiming certain portions of the Coast Road as scenic reserve and forbidding them to land and squat at any spot which they desire, as has been the custom in the past. This Committee cannot support the men in this matter, but agrees that provision of a suitable reserve for the men should be made. It appears that there is a reserve in existence, the drawback to it being that until the railway-work was put in hand there was no road access. It was stated that when the railway-work is finished this road, a temporary one, would be closed. The Committee was unable to inspect the present reserve.

Taumutu.

Strong representations were made for an improvement in the living-conditions of the fishermen at Taumutu. As they have no tenure of the present site, which is a landing reserve, it was contended that they should get back the 62 acres of Maori commonage. This commonage is really Crown land and is

leased at an annual rental of 14s. per acre per annum and the rental received is handed to the Maoris. If the land was taken for the purpose of establishing a fishermen's reserve it would not injuriously affect the Maoris so long as they got the money at present received from the Government. The suggestion was that the commonage should be cut up into ½ acre sections and leased to the fishermen so that they could get assistance to build decent cottages. Some of the premises occupied by the fishermen were inspected, and although kept as clean as the circumstances will permit are mere hovels.

Recommendations.

French Pass.

1. That the Government provide a suitable fishermen's reserve in the vicinity of French Pass.

Kaikoura.

2. That if the present fishermen's reserve at Kaikoura is unsuitable, either because of the poor landing or for want of permanent road access, the Government should give favourable consideration to the allotment of a more suitable reserve or examine the practicability of keeping the present temporary road open for all time.

Lake Ellesmere.

3. That provision be made for a suitable reserve for the fishermen at Taumutu (Lake Ellesmere).

SUNDAY SALE OF FISH.

New Plymouth.

At New Plymouth the main cause of complaint by fishermen was that the police had recently prevented the sale of fish at the Breakwater on Sunday. All the fishermen and the local authorities were in favour of such sale being permitted. Mr. S. G. Smith, M.P. for New Plymouth, who interviewed the members of the Committee, gave strong support to the fishermen in the presentation of their case.

At first there was considerable doubt as to who was responsible for the stoppage of these sales, the local bodies, Marine Department, and police being blamed in turn. Investigation showed that action had been taken by the police after complaint had been laid under section 18 of the Police Offences Act.

At this port a large number of people, including many from rural areas, visit the Breakwater on Sundays, and they appreciate the opportunity to buy fresh fish at a reasonable price. In addition, during the summer the Railways Department runs excursion trains from the country districts to the port, and many of these country excursionists, who normally are unable to buy fresh fish at all, welcome this means of being able to procure a healthy change in their diet.

This practice of selling fish at the Breakwater when the vessels return from Sunday fishing has been in vogue in New Plymouth for years, as at nearly every other port in New Zealand, and this is the only place where the law has been invoked to prevent the sales. A great part of the livelihood of these men depends on these Sunday sales, and as many of their customers are people coming from outside New Plymouth the trade cannot very much affect the local retailers. Further, out of the eight local retailers only one runs a straight-out wet-fish shop, all the other being in the main fried-fish shops or restaurants. While the Committee admits that any decision allowing the continuance of these sales will open up the whole difficult question of Sunday trading, we consider that it is in the interests of the fishermen and the general public that the sale of fresh fish from licensed fishing-boats should be permitted on Sundays.

The fishermen in New Plymouth lead a precarious existence, and the earning of their livelihood is affected by storms and other acts of God, so that any alleviation possible should be granted.

In the country districts the distribution of fish is so bad as to be practically negligible, and as fish is a valuable food every opportunity should be given country dwellers to procure fresh fish at reasonable prices when they are able to visit the fishing ports.

Recommendation.

1. That the sale of fresh fish from licensed fishing-boats be permitted on Sundays, the necessary adjustments to the Police Offences Act to be made so as to exempt the sale of fish, on condition that the fish must be sold from the licensed vessel or her tender.

DESTRUCTION OF FISH BY EXPLOSIVES.

Bay of Islands.

At Russell and elsewhere in the North a considerable number of witnesses complained of the prevalence of dynamiting for bait on the coast. Places at which this practice appear to be most common are off Cape Brett, and at Matauri Bay, Whangaroa, and the Cavalli Islands. It was admitted that this offence was very hard to detect, but witnesses favoured the appointment of honorary Inspectors, the issue of instructions to the lightkeepers at Cape Brett to report vessels seen using explosives, the tightening-up of the regulations covering the issue or sale of explosives, and suitable publicity of a type likely to educate the fishermen and public with the object of gaining their assistance in putting down this reprehensible practice. It is well known that the use of explosives causes excessive wastage of fish, far more being killed than are ever picked up, and on crayfishing grounds the results are disastrous in that the shock destroys very large numbers of this variety.

Recommendations.

1. The appointment as honorary Inspectors at the outlying ports of men willing to report cases of this kind and to give evidence against the offenders.

2. The issue of instructions to the lightkeepers at Cape Brett to report all cases where they see explosives used from fishing-boats.

3. Investigation to ascertain standard tests which would prove that a fish had been killed by the use of dynamite.

4. That it be made illegal for any person to have in his possession any fish killed by the use of explosives. (NOTE.—At times fishermen pick up floating fish which have been killed by explosives used from vessels ahead of them. For this reason they condone the practice. Moreover, this practice leaves a loophole for the offender, because he may state that he did not dynamite the fish but only picked it up.)

5. That the instructions covering the issue and checking of explosive stores from the Public Works Department camps be tightened up if possible.

6. That the regulations for the sale of explosives also be made more stringent, so as to prevent explosives getting into the hands of people who have no legitimate use for them.

7. The issue of a suitable publicity folder showing the dangers of dynamiting to the operator and explaining the effect on the fish stocks.

LAKE ELLESMERE OUTLET.

When the Committee visited Taumutu strong representations were made by the fishermen regarding the policy of the Ellesmere Land Drainage Board in making the temporary outlet to the sea at a point half a mile north of the old natural site of the outlet. They contended that opening the lake in this position has destroyed a portion of the best fishing-grounds. The question of the construction of a permanent outlet to the lake is under consideration, and the fishermen desire that such permanent outlet shall be made at the old site. The Committee took the matter up with the Minister of the Crown concerned and with the Public Works Department in an endeavour to have at least a trial made at the old site. The Land Drainage Board was offered a sum of £200 to cover the additional expense that would be entailed in making the opening at the old site, but would not accept the offer and is persisting in its unhelpful attitude. At the present time all the control is vested in this body. If possible, the Public Works Department should make a trial at the old site before finally deciding on the position of the permanent outlet.

Recommendation.

1. That before the final decision is made as to the site of the permanent outlet for the lake a trial should be made of a temporary outlet at the old natural site.

COMPANY-PROMOTION.

Evidence with regard to the operations of a proposed company with a very substantial capital was submitted, and a brochure was also presented setting out in detail the objects of the company. In addition, the Committee was privileged with a statement by the Hon. Walter Nash, Minister of Finance, whom the promoter had contacted in London. The project is an ambitious one, but after a full consideration of the proposals submitted the Committee, in the light of its findings, more particularly those relating to the number of units engaged in the industry and to the necessity for the introduction of conservational measures, is of opinion that it is extremely doubtful whether a project of this magnitude would eventually become an economic proposition and return a reasonable rate of dividend to investors. Our recommendation in regard to company-promotion in general in relation to the sea-fisheries industry is as follows :—

Recommendation.

That where a prospectus invites persons to subscribe for shares in, or debentures of a company, such persons should take full cognisance of the value of extracts from any official document or publication which, owing to the lapse of time and to the separation from the full text of such document or publication, do not fairly represent existing conditions.

SEALS.

The general impression gathered from the evidence submitted was that the stock of seals has increased noticeably in recent years. Some requests for an open season were made, but in no case was evidence produced to prove that the stocks would stand the strain of even one open season without falling back to the state of depletion reached by the herds when the season was closed. The most promising suggestion made was that a survey should be made of the various rookeries at the time of year when the seals are ashore. Interests associated with the Chatham Island Fisheries urged that fishermen should be allowed to destroy hair seals, on the ground that they consumed large numbers of fish. Although the hair seals have no commercial value, any permission to destroy them would doubtless be availed of to take the valuable fur seals.

Recommendations.

1. That a survey be made to ascertain the state of the seal population on the West Coast and at the outlying islands to the south. Such survey to be made by a competent observer working from a fishing-craft and not tied down to a schedule.

2. Future administration of the seal fishery should be based on the results of the above survey.

AUSTRALIAN TRAWLERS.

Frequent references have been made to the Committee as to the visits of Australian trawlers to the New Zealand fishing-grounds and to the effect their operations are likely to have upon fish stocks generally and consequently upon the earnings of the New Zealand fishermen. This is a question bound up with that of international agreements in regard to territorial waters. The position now is that, although a license under the Fisheries Act must be held by fishing-vessels operating within the three-mile limit, no action can be taken in the meantime against Australian fishing-vessels operating outside the territorial limits.

ASSISTANCE TO THE INDUSTRY.

Means by which the Government could render assistance to the industry were discussed with many of the witnesses who came before us at the different centres. These have, with one exception, all been dealt with in the relevant parts of this report, the exception being the question of State aid to enable the fishermen to provide themselves with larger and more seaworthy vessels.

Fishing-vessels of to-day cost from £1,500 to £5,000, depending on the class and size of the vessel, compared with the few hundred pounds necessary to purchase the vessel of twenty years ago. The depleted state of the fishing-grounds in close proximity to the main fishing ports forces the men to go further and further afield to make catches of sufficient value to give them a reasonable living. To visit these more distant grounds large and seaworthy vessels are essential. We recognize that it is practically impossible for the ordinary fishermen to arrange the finance necessary to acquire a modern sea-going boat.

Several of the witnesses were in favour of State aid to the fishermen in the matter of the provision of the necessary finance. Some witnesses who had experience in the financing of fishing-boats sounded a note of caution. The main point made by the applicants for assistance was that it would obviate the necessity of any obligation to the fish-merchants, but the question of additional security (other than the security of the boat) might quite well have the effect of bringing about precisely the position they desire to avoid. The whole question bristles with difficulty, and caution should be exercised by the Government in adopting any policy for the financing of fishermen on a floating security only.

Recommendations.

1. That, if the Government decides to make money available for fishermen to assist them to build or acquire new vessels, caution should be exercised in the formulation of the policy to be adopted.

2. That, in the event of finance being made available, no fixed conditions be laid down, each case to be decided on its merits on the advice of a competent authority.

TUNA FISHERY.

At Auckland the question of the development of a new section of the fishing industry by the exploitation of pelagic fish such as tuna was brought up by Messrs. Sanford, Ltd., who have sponsored certain exploratory work with the object of determining the quantities of this fish which are available. This matter has been dealt with by the Chief Inspector of Fisheries in the last annual report of the Marine Department, and as his views coincide with our own we will quote them in full:—

"What may possibly be the preliminary effort of a new line of fishing enterprise for Auckland may here be recorded. In February, 1937, the 'Maud E,' an oil-engined fishing-vessel normally employed for Danish seining, was sent by Messrs. Sanford, Ltd., on an exploratory voyage for tuna. Starting from Auckland on 11th February, she cruised as far north as Whangaruru, and arrived back in Auckland on the 24th, trolling spinners of various patterns for practically the whole of the run in the open sea. The weather conditions on the whole were decidedly unfavourable, and this, together with the general inclemency of the 1936–37 summer, may be held accountable for the few fish caught. Altogether twenty-one fish of the tuna family were taken, consisting of four long-fin albacore and seventeen bonita. Evidence of the presence of the yellow-fin tuna was also obtained. It may be mentioned that all three species have been taken on odd occasions by amateur fishermen when trolling for pelagic game fish. At the present time there is apparently an unsatisfied demand for these fish for canning purposes in the United States. There is no doubt as to their seasonal occurrence in New Zealand seas, more especially between North Cape and the Bay of Plenty. Whether they can be caught in sufficient abundance and got to a market or to a freezer at working-costs that would provide for a profitable industry must for the present be left an open question. In the absence of anything but a very slight knowledge of the hydrology and marine biology of our seas which would afford some basis for conjecture as to the possible abundance and movements of these fish, the only way to provide an answer to this question is by direct fishing experiments. Since these could hardly be profitable in their early stages, there appears to be good ground for the Department assisting as far as possible in this exploratory work. The development of a new line of commercial fishing in New Zealand for kinds hitherto unexploited would be welcome, if only to relieve the pressure on stocks which show evidence of having been overfished. Our present fishing industry is dependent entirely upon bottom fish, which are sought by means of trawls, seines, and lines, and the nature and depth of the sea-bottom round our coast set definite limits to the available stocks of such fish. Pelagic fish such as the members of the

tuna family are limited only by suitability of the open waters in which they cruise as true ocean migrants. It has been shown by researches made in the Northern Hemisphere that the occurrence of the various species is correlated with water temperatures, which probably react directly upon the fish themselves and also indirectly upon them by conditioning the presence of food and their reproductive processes. However, as to these factors in New Zealand seas, next to nothing is definitely known. With regard to practical fishing possibilities, it may be remarked that the tuna-fishing industry by modern methods in the North Pacific is a comparatively new development, but it has already resulted in a marked depletion of the nearer fishing areas and only ocean-going vessels capable of cruising over a very long range are being built for the Californian tuna industry at the present time. I may venture to record my own doubts as to the occurrence of this class of fish in this part of the Pacific in anything like the abundance that is shown off the Pacific Coast of North America, because there is no evidence of anything like the same wide distribution and vast abundance of the smaller pelagic fish, such as sardines and mackerel, upon which they feed. Because our pelagic-fish resources may be comparatively small, however, there is no reason to assume that no use can be made of them. The nearness to the coast of the most 'fishy' waters should be an advantage in reducing the cost of the fishing operations that may become a practical proposition when more exploratory work has been done and more experience gained in this line of fishing."

Recommendation.

1. The Committee considers that the development of this phase of fishing operations can quite well be left to private enterprise.

MARINE BIOLOGICAL STATION AND PUBLIC AQUARIA.

Portobello.

The marine biological station at Portobello was inspected by the Committee while in Dunedin, and evidence was tendered by the Secretary of the Board which conducts the activities of the station. This station, established in 1904, has had a very chequered career, mainly due to lack of sufficient financial resources, but also because of its situation and the difficulties of providing adequate direction of the work.

For the last few years it has been merely existing on a small Government grant and functioning only as a public aquarium. The question of its closure has been brought up from time to time, but no final decision had been reached by the time this Committee commenced its investigations. An alternative to closure was proposed, it being suggested that the Government offer the station to the Otago University Council as a gift. It was hoped that, were the control of the station taken over by such an authority, it could be managed more effectively as an educational instrument. Unfortunately, the University Council could not see its way clear to accept the offer, but offered instead to make an annual grant of £50 towards the maintenance of the station. This Committee is of the opinion that, as the Otago University Council has had to decline the offer of the station as a gift, there is no alternative but to close the station. It is admitted that this is a retrograde step for the country to take, but we are unable to agree to the continual frittering away of public money on the maintenance of a station which apparently cannot be made of real use as a scientific institution. The station's main purpose has been to fulfil the functions of a public aquarium and to some extent to provide facilities for the University students. To raise it to the status of an efficient biological station would mean the expenditure of a considerable sum in (*a*) repairing and bringing the station and equipment up to date; (*b*) annual grants for maintenance and salaries; (*c*) the annual cost of direction from Wellington. We do not think that this expenditure would be justified.

The Otago people most concerned, with presumably their own financial difficulties in mind, apparently value the usefulness of the station to them at £50 per annum. Under these circumstances we do not think that a Government grant of £300 per annum is justified. The station should therefore be denied any further Government aid.

One final point we desire to make is that, in the event of the Portobello station being closed, a determined effort must be made to secure suitable employment for Mr. W. Adams, the caretaker at the station. This man has served the Board, and indirectly the Government, faithfully and well over a long period of years, and we feel that an injustice will be done if he is turned adrift at this period of his life without either a job or a pension of some sort. He is a capable, honest, and hard-working caretaker, and as he is a carpenter he is most useful in the maintenance of buildings.

Wellington.

There is a proposal to establish an aquarium at Wellington at the time of the Centennial Exhibition. This aquarium is to be designed so that it might later afford accommodation for a laboratory at which research work could be undertaken. Though we cannot agree to the plan in all its details as put forward by the promoter, we do, however, agree with the principle expressed.

We strongly recommend that support be given to the erection and maintenance of an aquarium and biological station at Wellington, where the work could have the personal direction of the Chief Inspector of Fisheries, who is the only person in New Zealand properly qualified to and capable of directing such a station in a manner which will ensure the maximum results for the expenditure. If such an aquarium were in operation in time to function during the period of the Centennial Exhibition, though not necessarily on the same site, we are of the opinion that the takings over that period may help to offset the capital cost.

Of the sites proposed, we favour either of the two sites at Island Bay as being (*a*) handy to tram services; (*b*) on a rocky foreshore so that short pipe-lines would suffice; (*c*) handy to the moorings of a large proportion of the Wellington fishing-fleet.

Recommendations.

1. That the grant to the biological station at Portobello be discontinued, provision to be made for the employment of the present caretaker in some other sphere.

2. That the Government support the proposal to establish an aquarium and marine biological station at Wellington, and provide the initial finance, subject to the direction of the station being under Government control.

CANNING.

Otago.

In season, Messrs. Irvine and Stevenson's St. George Co. can oysters at Dunedin and crayfish at Dunedin and Akaroa. In regard to oysters, representations were made that the cost of railage from the Bluff was relatively high, and reference has been made to this aspect of the position under "Transport and Internal Distribution." There were 1,465 sacks of oysters canned (mostly for export) in 1936, compared with 13,375 by the Stewart Island Canneries, Ltd. In 1936, 9,271 ½ lb. tins of crayfish were packed in Dunedin, and 1,578 in Akaroa. The bulk of this product is also exported, and certain quantities were admitted into France after the New Zealand Government had arranged to receive part of the United Kingdom's quota for canned crayfish into that country. This quota is based upon a quantity allocation, and following upon the company's representations that the quota should be cumulative to the end of the year this matter will be taken up with the Department of Industries and Commerce. No crayfish tails are now packed.

This Dunedin company also cans whitebait at Hokitika, Westport, Auckland, and Waikato, and the principal market for the product is Australia. Sample quantities of barracouta were packed successfully some time ago, but there was no local demand, and the cost landed in London was found to be non-competitive with salmon.

Totara North.

The Committee inspected the premises and plant of the now defunct Zealandia Packing Co., and while we were quite impressed with the potential efficiency of this modern plant, which is kept in good order and condition, we have no recommendations to make in regard to it.

TOHEROAS (CANNING).

The Committee visited the factory of Northland Canneries, Ltd., at Awanui just before production commenced for the season (end July). This firm is now principally concerned with the production of pulp for export in gallon cans, but by arrangement certain quantities are canned as soup by Messrs. Thompson and Hills, Ltd. The only other concern holding a lease from the Marine Department of toheroa-beds is Messrs. Meredith Bros., of Tikinui, near Dargaville, who are canning only the whole toheroa at the present time, but who contemplate extending their activities into the canning of soup also.

MULLET (CANNING.)

The evidence tendered to the Committee was in the main favourable to the establishment of a mullet-cannery in the Kaipara. The stocks are said to be plentiful enough to warrant such a venture, and in this case the establishment of such a plant would give the men an additional form of fishing. At present the market for fresh mullet is weak, and few of the men bother to fish for them. The history of mullet-canning not only in the Kaipara, but in other northern districts, has been somewhat chequered. We feel that the position here should be investigated by a firm competent to do so, such as Hansen Bros., who for many years have canned mullet at Purerua, Bay of Islands, before any definite action is taken. If in the light of their experience with their own cannery, now practically closed for want of supplies, Kaipara shows possibilities, then the erection of a small plant should be assisted.

Recommendation.

1. That the Government approach Messrs. Hansen Bros., of Purerua, with a proposal to investigate the possibility of the successful operation of a mullet-cannery in Kaipara. In the event of their report being favourable, assistance should be given in the establishment of such a factory.

QUINNAT SALMON.

The netting of quinnat salmon in the Waimakariri River by commercial fishermen was discussed at Kaiapoi. The principal complaints concerned the date of the issue of the licenses each year, the men contending that there was undue delay in some years, and the necessity for extending the areas available for netting owing to the fact that a considerable portion of the original fishing-grounds had been destroyed by flood.

These were matters of departmental administration, and we have been informed that the necessary action has been taken to meet the fishermen's wishes in these matters.

FISHERIES ADMINISTRATION.

It is difficult to report on the administration of the Dominion fisheries at this stage, as the Department's activities have been expanded during the last year, and it is not yet possible to gauge the full effect of this expansion. Certain definite defects, however, were brought to our notice during the investigation. These did not take the form of complaints about the inactivity of the Marine Department—or, rather, the Fisheries Branch of the Department—but were rather complaints about the inadequacy of the administration, due to lack of staff, equipment, and finance, all matters which, we are well aware, can only be remedied when the necessary finance is available.

In this portion of our report we have taken some guidance from material in a work on Fisheries Administration, by W. L. Scholfield, Director of Commercial Fisheries, California, and first published as Contribution No. 66 for the California State Fisheries Laboratory in 1927. Much of the advice given in this publication applies so aptly to the conditions prevalent in New Zealand that the Committee has relied upon it extensively in the comments made here, and we acknowledge our debt to Mr. Scholfield.

Here, as in California, it may be stated that the work of the Marine Department in connection with sea fisheries falls under three headings—Administration, Research, and Law Enforcement—but such a classification is artificial, because there is no definite division line for any one type of work. Each is so dependent upon and so interlocked with the other two that no one activity of the Department can be singled out and called purely administrative, research, or law enforcement.

Since fish constitutes a resource that is capable of reproducing itself, full utilization means continual and perpetual use rather than a brief period of over-utilization resulting in a resource that is depleted. A radical reduction in resource means less, or even no utilization whatever. Among the first and most important steps to be taken for the acquisition of knowledge about the fish-supply is the establishment of a complete and accurate system of statistical records that will show the daily catch of each species of fish for each fishing-region of the Dominion. No business can be run successfully without an efficient system of book-keeping. The total-catch records which we recommend should be compiled would be of the nature of book-keeping essential to the effective administration of the fisheries, because they would provide the means of understanding in each fishery, of determining seasons and other questions of relative importance, and of tracing the effects of legislation.

Important as these questions are, however, they are secondary to the real object of establishing this system of catch records—that is, the determination of changes that may occur from year to year in the supply of fish. The catch of one boat for a day may be accepted as a measure of the return in fish for a definite unit of fishing effort. It is a measure of the availability of fish. From these records a group of certain boats may be selected and their daily catches followed through a series of years in order to determine whether the trend of their success is declining, remaining constant, or increasing. The figures made available would, of course, have to be analysed, and the effects of factors other than the supply of fish allowed for before they could become useful to the administration. We repeat that the collection and computation of the necessary statistics over a period is the only means of gaining knowledge of the extent of our fish resources and of measuring the effects of the various methods of fishing on the stocks of fish in our fishing-grounds. Without such information, on which nearly all fisheries administration must be based, any move is in the nature of trial and error rather than one of a sound scientific character.

The need for this statistical activity has been stressed by the Chief Inspector of Fisheries on many occasions since his appointment in 1925, but only within the last year or so has any forward action been taken in the provision of the necessary staff to enable the work to be done. Repeatedly, during the Committee's investigations, we were faced with widely conflicting statements from groups of fishermen, and we had to weigh these to the best of our ability instead of having access to statistics which would at once have settled the argument. This lack of statistics has made our task, particularly on the productive side of the investigations, immeasurably more difficult than it otherwise would have been. If the Government will take expeditiously whatever action is necessary, in this connection the cost of this Committee will be repaid many times over in the more common-sense utilization of the Dominion's fisheries.

Research work is obviously necessary to enable the Department to learn something of the fundamentals of the fish-supply which it has to look after. Accurate observations on which it is possible to base conclusions are essential, but, while research must be carried on over long periods to get the best results, it is not necessary to complete the work before benefits can be gained.

Each new fact discovered supplants a guess, and the administration of the resource becomes increasingly effective as more facts are available and more assumptions are discarded.

As to the law-enforcement side of the administration, this is mainly a matter of the education of the people concerned. It is better to educate the fisherman so that he can see that the regulations made are for his benefit, and to ask for his co-operation, than merely to make the regulations and then enforce them by salutory measures. Still, even with the fisherman's co-operation at the service of the Fisheries Branch, the staff must be adequate for the duties that have to be performed. At present, supervision of the fisheries, although additions have been made to the staff lately, is woefully inadequate. The staff should be strengthened, and new patrol launches, especially in the North Island, are urgently required.

The Committee is strongly of opinion that, to obtain the results desirable, the status of the Fisheries Branch should be improved. The principal officer of the branch should be made the Director of Fisheries. At present the Chief Inspector of Fisheries has control of research work on both salt- and fresh-water fisheries, and he also has to carry out the tasks involved in administering the fisheries and developing the Government's policy. Inspection should not be part of his duties, and cannot be if the major issues are to receive the consideration they deserve. The description of his office—Chief Inspector of Fisheries—may have been appropriate in the past when he spent most of his time on inspection, now done by the district officers, but to-day it does not do justice to the position and is liable to cause confusion in communication with Departments overseas. In nearly every case the chief executive officers are known as Directors, and there should be conformity with this with respect to the head of the Fisheries Branch.

Furthermore, the Committee is of opinion that the Fisheries Branch must ultimately become a complete unit, with its own record system. The present system of working through the departmental Head Office tends to cause duplication of work, and this may lead to unavoidable delays. The final aim should be a unit dependent on the Head Office only for the purpose of accounts. No useful

purpose can be served by having a separate accountancy staff. It may be that there are practical difficulties in the way of such reorganization, but the Committee considers that it is so necessary for the proper administration of the fisheries as to be entitled to serious consideration.

One further point emphasized by the Chief Inspector of Fisheries in his last annual report is that "the administration by the Marine Department of fisheries is circumscribed by the authority given by the Fisheries Act, and the Department has no interest in fish after it has been brought ashore (except fish that has been taken illegally). In actual fact, however, the conditions under which fish is bought and sold and distributed have a material effect on the fishermen's operations. The problems, but not necessarily the administration, of distribution cannot be dissociated from the problem of production, and nowhere does this appear more forcibly than in connection with the fisheries of Auckland, where competition for markets, especially the export markets, has led to an increase of the catching-power with a consequent rise in the cost of production and an intensification of the normal tendency on the part of the merchant to pay as little as possible to the fishermen for the fruits of their labour. The lower the price the fishermen gets for his fish, the more fish he has to catch to enable him to make a living, and the effect of this in Auckland was to accelerate the depletion on the overworked fishery grounds, to drive the fishing-boats to more distant fishing-grounds, and to give rise to complaints from the local fishermen and settlers in the distant coastal districts that the operations of the Auckland vessels were depleting these grounds."

The administration of any marketing policy has always been vested in the Industries and Commerce Department constituted under the Board of Trade Act. In the past the great weakness has been that there has been no co-operation between the two Departments—the Marine Department, on the one hand, charged with the administration of problems connected with supply and production, and, on the other hand, the Industries and Commerce Department, charged with the work in connection with distribution and marketing. Within the last year or two the Departments have been working much more closely together, and this co-operation should be fostered and expanded in every way. It would not be advisable to pass over the administration of the marketing problems to the Marine Department, seeing that the Industries and Commerce Department has a specially trained staff to deal with these matters, including officers stationed in those countries which form our export markets. Our detailed recommendations with regard to distribution and marketing appear under another section of this report. The Fisheries Act itself requires to be rewritten, as many of its provisions are inadequate for present-day conditions. The present Act, passed in 1908, is really only a consolidation of a series of Acts and amendments passed between 1867 and 1907. There have been short amendments in 1908, 1912, 1914, 1923, and 1926, the last referring only to Freshwater Fisheries. Conditions in the industry and fishing methods and administration have changed so completely since the Act was written that a great deal of the text has no application whatever to present conditions, and there are many weaknesses in the balance of the Act which hinder administration. We suggest that the Hon. the Minister of Marine should instruct his officers to submit a detailed report on the Act as it stands at present. After the Government has decided its policy with regard to our recommendations, the regulations made under the Fisheries Act should be consolidated. This was last done in 1932, and there have been so many amendments in the meantime that difficulty in following the legislation has been experienced.

Recommendations.

1. That a reorganization of the Fisheries Branch of the Marine Department be carried out, with the aim of making it a separate unit responsible to the Marine Department only for accounts and discipline.
2. That the collection and compilation of fishery statistics be treated as a matter of urgency, and that every effort be made to attain the standards of other maritime countries as soon as possible.
3. That a movement for the education of the fishermen in matters concerning the administration of the fisheries, the value of conservation, and other matters of importance be undertaken and become a duty of the Fisheries Branch.
4. That the expansion of the Department's research activities be proceeded with as soon as the staff, equipment, and finances become available.
5. That the Inspectorate be strengthened by the appointment of full-time, part-time, and honorary Inspectors in those places where it is inadequate at present. The provision of an Inspector and launch for the Bay of Plenty is the most urgent requirement.
6. That the present co-ordination between the Marine Department and Industries and Commerce Department be fostered and expanded where possible.
7. That the Fisheries Act of 1908 and its amendments be rewritten to bring it up to date and to remove the anomalies and weaknesses which exist in the present legislation.
8. That, as soon as the Government has dealt with our recommendations on production, the Fisheries Regulations of 1932 and the additions and amendments thereto be consolidated. When this work is done, one copy should be issued gratis to the master of every licensed fishing-boat and to each new licensee.

CONCLUSION.

All our recommendations hereinbefore set out are marshalled on the following pages.

The Committee wishes to place on record its appreciation of the capable and conscientious assistance rendered by Miss O. B. Clist and Mr. Allan Sutherland (reporters) and Mr. D. A. Johnston, Secretary. It would not have been possible to secure a more efficient staff.

Dated this 24th day of December, 1937.

JAMES THORN, M.P., Chairman.
M. W. YOUNG, Member.
E. SHEED, Member.

COMPLETE LIST OF RECOMMENDATIONS.

PRODUCTION.

TRAWLING.

New Zealand.

1. That the size of the mesh in the cod-end of all trawls be raised to 5 in. immediately, exemption being granted to those vessels operating at present to allow them to use up the gear in hand.

2. That all research carried on abroad as to the escapement of undersized fish from trawls be studied and adopted if found satisfactory under our conditions of fishing.

Napier.

3. That at Napier both trawlers and seiners be kept off the inshore grounds.

4. That at Napier there be no further increase in the number of fishing-boats using power-drawn nets for at least five years unless statistics show a remarkable increase in the total annual landings of flat fish over a period of at least three years.

5. That efforts be made to find a suitable outlet for the excess catches of gurnard, red cod, skate, and other varieties which are at present dumped by the Napier trawlers. With proper treatment it should be possible to utilize all the red cod and gurnard caught.

East Cape to North Cape.

6. That trawlers be subject to the same restrictions as first-class Danish-seiners.

Cook Strait.

7. That an investigation be made to determine the following questions :—

(*a*) Is Palliser Bay a spawning-ground for groper ?
(*b*) Is Palliser Bay a nursery ground for young groper ?
(*c*) If it is a nursery ground for young groper, do the fish under the legal limit stay there all the year round or only for certain months in the year ?

8. That, if Palliser Bay is proved to be a spawning or nursery ground, adequate protection from trawling and all other methods of fishing be granted.

DANISH-SEINING.

South Island.

9. That the Danish-seine method of fishing be abolished all round the coasts of the South Island, the present Danish-seining vessels to be allowed until 1st January, 1939, in which to use up the seine gear which they have aboard or in stock.

Napier.

10. That at Napier Danish-seining be abolished by gradual stages, and in the interim Danish-seiners be placed on the same restrictions as regards grounds as apply to trawling.

Gisborne.

11. That, in view of the effect of Danish-seining at the other trawling ports, we recommend that Danish-seiners be not allowed to operate from Gisborne or anywhere in its vicinity. Danish-seining should be prohibited inside the three-mile limit from Gable End Foreland to Table Cape.

Bay of Plenty.

12. That in the Bay of Plenty the present trawling restrictions be applied to Danish-seiners, and, further, that the limits from Matata eastward be extended to the mouth of the Waiaua River. Also, that a two-mile limit be imposed for a distance of three miles on either side of the Whangamata River : Provided that these restrictions shall not apply to any Danish-seiner under 40 ft. in overall length. The 40 ft. exemption shall not be available to any seine boat built or licensed after the passing of the regulation.

Whangamata – Mercury Bay.

13. That a limit of one mile off shore be imposed on Danish seine boats from Whangamata to Cape Colville.

14. That an investigation be made to locate any snapper-spawning grounds in this vicinity, and if such grounds are found they should receive protection in the spawning season.

Hauraki Gulf.

15. That in Hauraki Gulf further restrictions on Danish-seining be enforced as under:—
(*a*)* First-class Danish-seiners to be restricted to outside a line from Cape Colville to Rodney Point all the year round.
(*b*)* Second-class Danish-seiners, while towing, to be restricted to the trawling limits as they are to-day, summer and winter. If working as seine boats with the anchor down, they should be allowed on the present seine limits, excepting that the line Cow Island to Hill 770 should be their boundary all the year round to keep them off the "Dab Patch." Any conviction for a breach of any of the seining regulations should, in addition to any other penalty, send the vessel out to the proposed trawler line.
(*c*)* Third-class Danish-seiners to be subject to no further restrictions, except that any conviction for a breach of the seining regulations should put them out with the second-class seiners.
(*d*) No vessel built or licensed as a seiner for the purpose of replacement shall be permitted to come under the second and third classes, whatever her size or power.

Whangarei District.

16. That at Whangarei that portion of the sea marked by a line one mile off shore from Bream Tail to Ruakaka and from there by a straight line to Bream Head be closed against Danish-seining.

Bay of Islands.

17. That at Bay of Islands the limits for seining as given for the months of November, December, January, and February in the regulations, Serial No. 152/1937, gazetted 15th April, 1937, shall be in force all the year round, consideration also to be given to the extension of the closed area to inside a line from Cape Wiwiki to Cape Brett.

Whangaroa.

18. That at Whangaroa the limits remain as at present.

Doubtless and Rangaunu Bays.

19. That at Doubtless and Rangaunu Bays the regulations as gazetted closing these areas for the months of November, December, January, and February be enforced for the whole year.

General.

20. That the carrying of deck loads of fish by seine boats be prohibited immediately.
21. That an investigation be instituted to ascertain the effect on the escapement of small fish of an increase in the size of the mesh of Danish seine nets in (*a*) the balance of the cod-end, and (*b*) other portions of the net.
22. That investigations be conducted into the practicability of replacing Danish-seining as a method of fishing in inshore waters by the use of deep set-nets lifted by mechanical means.
23. All proposed restrictions to be in addition to those already in force,
24. We also recommend that an adequate patrol service be provided by the Government to ensure that the limits be respected. This means the immediate strengthening of the Auckland fisheries patrol fleet. In addition to the new vessel, provision for which has been made, at least one other vessel, not necessarily fitted for fishing, but fast and seaworthy, is required in replacement of one of the present fleet, which are all far too slow.
25. That all fishermen be circularized by the Marine Department drawing their attention to the fact that regulations are made to protect their interests, and urging them to assist the Government in the enforcement of the regulations issued.

SET-NETTING.

New Zealand.

26. That a regulation be made fixing the size of mesh of set-nets used for taking butterfish at 4 in. This regulation should have Dominion-wide application.

Thames.

27. That the legal size of the mesh for set-nets in the Thames district be increased from $4\frac{3}{4}$ in. to 5 in., and that the nets be condemned as soon as they reach $4\frac{3}{4}$ in.
28. That, in common with the rest of New Zealand, the legal size of all flat fish taken by this or any other means be increased from 9 in. to 10 in. in length.
29. That as soon as possible this district receive more active and continuous supervision from a fisheries officer; the present staff at Auckland and Coromandel have enough work with their present duties and cannot give the fishing port of Thames the regular attention it requires.

Kaipara.

30. That "stalling" be prohibited in Kaipara during the months of December, January, and February in each year.
31. That the mesh of set-nets used for taking flounder be increased from $4\frac{1}{4}$ in. to $4\frac{3}{4}$ in. after allowing the men time to use up the gear in hand.

* For the definition of these classes, see page 20.

Drag-Nets.

New Zealand.

32. That all nets, whether used from licensed vessels or not, be registered and checked by a fisheries officer.

33. That the possession of drag-nets having a mesh of less than 4 in., except where exempted for the catching of particular species of fish, be made illegal.

34. That the Fisheries Regulation No. 61 relating to nets used for the taking of other species of fish be altered so as to increase the mesh from $2\frac{1}{4}$ in. to 4 in.

35. That more adequate provision be made for the supervision of fishing in the district from Opotiki to Thames.

Kaipara.

36. That the minimum size of the mesh of any drag-net (hand seine) used in Kaipara Harbour be 5 in. and that there be no exception to this rule—*i.e.*, for bait-nets, &c.

Special Nets.

General.

37. Investigations should be made to establish the relation of the length to the age of the pilchard or sardine, with a view to the prevention of its capture before maturity either for bait or for any other purpose.

38. After the establishment of such length, experiments as to the size of the mesh of nets necessary to allow fish under such length to escape should be undertaken.

39. The possibility of the establishment of an industry in cured or canned pilchards should be examined, and if such industry appears possible it should receive assistance and protection.

Line-fishing: Dan Lines and Windy Buoys.

General.

40. That the number of windy buoys or dan lines be restricted to three for each man aboard the vessel.

41. That the number of traces on each windy-buoy line or dan line be fixed at not exceeding six.

42. That the number of hooks on each trace shall not exceed thirty.

Cook Strait Area.

43. That if the investigations recommended in regard to trawling prove that Palliser Bay is a nursery ground for groper, windy-buoy and dan-line fishing be prohibited in the same area as is closed to trawling.

44. That windy-buoy or dan-line fishing be prohibited all over the Cook Strait area during the months of May, June, and July.

Line-fishing: Set-lines, Long Lines, and Hand-lines.

French Pass and Sounds.

45. That investigations be undertaken as soon as possible to obtain definite information as to the quantity of undersized fish taken on the various sizes of hooks and the additional mortality or injury caused by hooks of small size. If this data shows that the use of these small hooks is detrimental to the fishery, they should be prohibited in these waters.

46. As it is believed that certain boat-owners (not fishermen) evade the regulation dealing with the size limit of blue cod by filleting the undersized fish before landing, steps should be taken either to curb this practice or to evolve some method by which the size of the fish from which the fillet was taken can be accurately stated.

47. It should be made imperative for every hired launch taking fishing parties in the Sounds district to have the extracts of the blue cod regulations as issued free by the Marine Department prominently displayed aboard the vessel.

48. If it is possible to so legislate, the fish on board any boat should be legally defined as being in the possession of the master of such boat.

Blue Cod.

Foveaux Strait.

49. The Committee recommends that the size limits for blue cod as set out in the regulations gazetted on 2nd April, 1936—*i.e.*, that the length of the blue cod, in its natural state, shall not be less than 13 in. and not less than $10\frac{3}{4}$ in. when properly headed—be enforced in this area.

Crayfish.

50. That the legal size of crayfish be fixed at 9 in. in length.

51. That it be made illegal to take or sell female crayfish carrying external ova.

52. That it be made illegal to remove the ova (berries) from any female crayfish prior to either wholesale or retail sale.

53. That investigations be made as to the crayfish stocks at the various centres, and that a study be made of the habits, size, sex groups, and migrations of the crayfish, the results of these investigations to be the basis for future legislation.

54. That regulations be adopted immediately to force fishermen using set-nets for catching crayfish to stand by their gear until such time as it is lifted. It should be made illegal for such gear to be left set overnight.

55. The buoys on the set-net gear should be plainly marked with the registered letters and numbers of the boat from which the gear was set.

56. Fishery Inspectors should be authorized to lift and confiscate any net set for crayfish which has been set for any period exceeding four hours unless the boat to which the gear belongs is standing by the gear.

57. It should be ruled that any set-net to which bait of any description is tied or fastened is a set-net used for the purpose of taking crayfish.

Dredge Oysters.

58. That all oyster-beds inside a line drawn from Bluff Hill on the mainland to Dog Island, thence to Bird Island, thence to South Point off Ruapuke Island, and thence to Waipapapa Point, be closed for a period of not less than three years.

59. That this portion of the industry remain subject to the Industrial Efficiency Act until such time as the Fisheries Act can be amended to provide for the refusal of licenses, and that no further license be issued until a survey of the beds has revealed that the stocks will stand up to additional abstractions.

60. That the width of the dredges used shall not exceed 12 ft.

61. That the "bit" of the dredge shall not exceed $2\frac{1}{2}$ in. in depth.

62. That the legal size of dredge oysters shall be increased from $1\frac{3}{4}$ in. to $2\frac{1}{8}$ in.

63. That a complete survey of the known oyster-beds be undertaken during the period October, 1938, to February, 1939, such survey to be a co-operative effort between the merchants and the Government.

64. That a further survey be conducted, again by co-operative effort, to establish the existence of new oyster-beds within working-distance of Bluff.

65. That the oyster season be reduced by a fortnight in each year at the commencement of the season—*i.e.*, the starting date should be altered from the 1st February to the 14th February.

With regard to the dredge-oyster beds other than those in Foveaux Strait our recommendations are as follows:—

66. That any fisherman desiring to prospect these beds in the open season should be allowed to do so.

67. That in the event of any fisherman discovering beds of oysters in such quality and quantity as to encourage dredging operations full-time during the open season for oysters, he should receive protection by a grant of the sole right for a sufficient period to repay him for his enterprise.

68. That any licenses issued to persons desiring to exploit these grounds be definitely restricted to the grounds for which the license is issued, and that it be stipulated that in the event of the licensee not being able to make a financial success of his operations the license will not under any circumstances be varied so as to allow him to operate on the Foveaux Strait beds.

69. That at such time as the more important fishery investigations have been made and staff and funds are available, the Government should, in the general stocktaking of our fishery resources, prospect these beds in their due order. This recommendation does not infer that this particular investigation is urgent.

Rock-oysters.

70. With regard to the picking and marketing of the oysters, we are definitely of the opinion that the present system should continue. The Marine Department should inquire as to ways and means of preventing the trafficking in oysters as far as possible.

71. The Government policy of oyster-cultivation should be implemented as rapidly as finance will permit.

72. That immediate steps be taken to appoint a full-time officer on Whangarei Harbour to protect, cultivate, and pick the oyster-beds and also to attend to routine fishery matters.

73. That the protection of the oysters in Whangaroa be considered, and if such protection is granted but not before, further cultivation work to be carried out.

74. In those areas where the oyster-beds are not worked by the Government, and on which no public money has been spent on cultivation work, the leasing of foreshores for private oyster-cultivation work should be granted to the owners of the land abutting the foreshore, subject to the conditions mentioned in this section of the report.

Toheroas.

Ohope Beach.

75. That adequate supervision be made available by way of honorary Inspectors to prevent breaches of the regulations.

76. That a survey of the toheroa stocks on this bed be made when the staff is available, and that if the survey shows that more protection than is given by the present regulations is required such protection should be provided for by regulation.

Dargaville.

77. That more adequate supervision of these beds be provided.

78. If it is found that the present limit of fifty (50) toheroas per person is being abused, so as to cause wastage or depletion, a reduction in the limit should be considered.

WHITEBAIT.

79. That the known whitebait spawning areas in all parts of New Zealand be protected by fencing wherever the land belongs to the Crown or where the owners' permission can be obtained.

80. That a licensing system be inaugurated to cover the whitebait-fishermen. Such system to operate over the whole of New Zealand, and to embrace non-professional fishermen and Natives. In the case of Natives, the charge should be only nominal.

81. That the regulations covering the pollution of rivers be rigidly enforced, and that the penalties on conviction be increased proportionately for every conviction after the first.

82. That the causes of the depletion of the whitebait stocks be investigated, and that appropriate measures be adopted if the causes are capable of being remedially dealt with.

83. Co-ordination amongst the packers of whitebait should be insisted upon to facilitate agreement on a standard pack, such standard to be enforced if any company desires to export its product.

EELS.

84. That inquiry be made as to the possibility of success in building up an export market for eels either frozen or canned.

MARKETING.

New Zealand.

85. That the authority conferred upon the Auckland Fish Export Committee be confirmed and extended to cover supervision, co-ordination, and development of the internal market for fish and fish products within the Auckland Provincial District. This would mean the appointment of one or more representatives of the retail trade to the Committee.

86. That committees to function along parallel lines be set up, one in Wellington (including Napier representation) and one in the South Island with headquarters in Dunedin.

87. That a central authority consisting of representatives from these provincial committees, together with Government appointees, be set up to act as the supervising body for the whole of the export and internal marketing operations of the industry in the Dominion.

Otago.

88. That the present system of sale by auction in Dunedin be abolished.

89. That in lieu thereof a seasonal wholesale price be fixed in conjunction with a fixed price to the fishermen for the different varieties of fish, such prices and the distribution of the fish to be under the control of a central organization.

90. That an advance by way of loan be made to the Port Chalmers Fishermen's Society, Ltd., to enable it to finance the erection of a small plant for the cool storage of bait, the question of a storage place for the society's surplus fish supplies to be held over pending developments in regard to the proposed change-over from auction to direct marketing.

Christchurch.

91. That the present system of sale by auction in Christchurch be abolished.

92. That in lieu thereof a seasonal wholesale price be fixed in conjunction with a fixed price to the fishermen for the different varieties of fish, such prices and the distribution of fish to be arranged through Messrs. P. Feron and Son, Ltd., under the supervision of a Dominion organization.

Nelson.

93. That the price paid to the fishermen for all fish (including crayfish) in Nelson be fixed at agreed-upon rates, payment to be upon a basis of weight.

Napier.

94. That there should be the least possible number of variations in prices over any twelve-monthly period, and, if possible, the returns to the fishermen and the wholesale and retail prices should be standardized for periods of at least three months at a time.

95. That the number of wholesalers be restricted to those at present engaged in the industry.

Gisborne.

96. That the parties concerned in Gisborne be approached by a representative of the Marine Department or the Department of Industries and Commerce with a view to providing adequate supplies of fish for country retail delivery.

Auckland and Thames.

97. That the number of wholesale markets be reduced in Auckland to more economical proportions, by the elimination of all except two or three of the existing distributors. These will then require reconstruction in their constitution and organization.

98. That the units falling out of the wholesale trade receive some sort of compensation from those remaining, or alternatively, that they be merged under some agreed-upon arrangement.

99. That the remaining units (two or three in number as the case may be) be compelled to unify their activities to the greatest possible extent.

100. That the four Thames markets merge their interests and operate as one unit, upon a basis to be determined after further investigation and consultation.

101. That the wholesale price of snapper and tarakihi, john-dory, and kingfish (green) be reduced to retailers in Auckland City and suburbs by ¼d. per pound forthwith, and if recommendations Nos. 97 to 100 above are implemented then the position to be reviewed in due course with the object of a further reduction being made. (NOTE.—In view of the position of the trade in Thames, no immediate reduction of a like nature is suggested.)

102. That the wholesalers' margin between the price paid to the fishermen for rough fish and their price to retailers be narrowed so as to provide some advance to the fishermen and some reduction to the retailer—basis of discussion for settlement to be ¾d. per pound to the fishermen and 1¼d. per pound local wholesale for both gurnard and trevally (green weights). (NOTE.—Thames is already paying the fishermen ¾d. per pound for gurnard.)

103. That all wet fish handled at Auckland and Thames be sold upon a basis of weight.

104. That the position in regard to all supplies of fish be safeguarded, in order to ensure that local requirements are fully catered for in priority to those of export.

105. That where reputable markets are established all fish to be distributed through such markets except in instances where on or before the 31st December, 1937, retailers were drawing supplies from fishing-vessels owned by them.

Auckland Retail.

106. That all wet fish sold retail must be sold by weight.

107. That if and when (in accordance with recommendations 101 and 102) a reduction in local wholesale prices is effected to Auckland City and suburban retailers, the retail price in turn is to be reduced proportionately.

108. That protection be afforded individual retailers against unfair competition from wholesalers' retail-shops in the matter of supplies and freedom of buying.

Wellington.

109. That the wholesale price of tarakihi (both wet and smoked) be reduced in Wellington from 4d. per pound gutted to 3½d. per pound gutted, and from 10d. per pound for smoked fillets to 9d. per pound for smoked fillets. (NOTE.—One wholesaler in a small way is already selling the smoked fillets at 9d. per pound.) If this recommendation is implemented, then a relative reduction in the retail price of this fish must be effected.

110. That the system of sale by auction in Wellington be abolished.

Southland: Dredge Oysters.

111. That steps be taken to bring about a co-operative system of handling and marketing dredge oysters. This could be arranged through a company already in existence but not functioning—*i.e.*, the N.Z. Oyster Distributing Co., Ltd.—or by the setting-up of a central organization with similar objects and vested with power to control handling and marketing and fix prices f.o.r. Bluff.

112. That oysters be packed for sale in sacks of a standard size and containing a standard weight or volume of oysters.

113. That encouragement be given to experiments being made for transporting shucked or opened oysters, say, to Wellington, with the object of eliminating to some extent the relatively high transport costs to the more distant centres of distribution.

114. That the operations of concerns which are preparing medicinal preparations from dredge oysters be confined to within reasonable limits in the matter of supplies of their raw material.

TRANSPORT.

New Zealand.

115. That as ancillary to other recommendations the distribution of fish to inland centres in New Zealand be better organized so as to eliminate, wherever possible, the uneconomic overlapping in supply which takes place.

Auckland.

116. That the Railways Department be approached with a view to meeting the suggestions brought forward by the Auckland wholesalers in the matter of trucking fish at an earlier hour than appears necessary, of establishing a siding at the Western Wharf if found to be warranted, and of the feasibility of utilizing an adaptation of the rail car for quick transport of fish when the industry is better organized.

Picton and French Pass.

117. That the practice of shipping fish in sacks from French Pass and Picton be abolished and that all fish (except crayfish) be shipped in cases.

HARBOUR FACILITIES.

Waikawa.

118. That the Government give favourable consideration to the application of the Waikawa men for a modified wharf or jetty and for reasonable facilities for the slipping of their vessels.

Taieri Mouth.

119. That the fishermen at Taieri Mouth be assisted with the erection of a slip costing not more than £250.

Oamaru.

120. That the Government approach the Oamaru Harbour Board with regard to the provision of (*a*) a suitable slip, and (*b*) the provision of a suitable jetty to enable the men to land their fish in safety.

Timaru.

121. That the Government approach the Timaru Harbour Board with regard to the provision of a suitable slip in a situation where it can be used in all weathers.

122. That the Government or the Timaru Harbour Board erect a suitable fog-signal at the entrance to the port.

Lyttelton.

123. That the Lyttelton Harbour Board be approached to ascertain if it can meet the following requests: (*a*) Better mooring-facilities for the fishing-fleet; (*b*) the provision of a light crane for unloading fish; and (*c*) the provision of adequate space for the fishermen so as to enable them to erect suitable net-racks.

Akaroa.

124. That the Akaroa Council be approached in an endeavour to have an adequate slipway provided in a suitable position. Such slipway to be under the control of the Council and to be available at a reasonable charge.

Kaikoura.

125. That the Kaikoura County Council be approached with regard to the following matters:—

(*a*) The clearing of the anchorage of rocks and sunken reefs. In this case, if the Council agrees to do the work, we would recommend that assistance be granted by the Government by way of the provision of explosives or by meeting the charges for the services of a competent diver.

(*b*) The remission of the charge for the use of the slip after the fourth day when the weather is the sole cause of the vessel having to remain on the slip.

(*c*) The provision of a light crane to assist the fishermen in unloading their fish.

Greymouth.

126. That the Greymouth Harbour Board be approached with regard to the following proposals:—

(*a*) The provision of adequate berthage for the fishing-fleet.

(*b*) The provision of a fixed landing-place for the fish, with clear access for motor-trucks and a light crane for lifting the catch.

(*c*) These services to be rendered to the fishermen at a reasonable cost, such as an annual berthage fee and wharfage on all fish passing over the wharf.

Nelson.

127. (*a*) That the Nelson Harbour Board be approached in an endeavour to obtain better berthage facilities for the fishing-fleet, the cost of providing such accommodation to be met at least in part by the payment of a reasonable annual berthage charge.

(*b*) That the Nelson Harbour Board be requested to give favourable consideration to the provision of adequate facilities for the unloading of the catches from the fishing-boats.

Picton.

128. That the Railways Department, which is in charge of the Picton wharf, be approached with a view to obtaining the installation of a weighing-machine, and service on the wharf for the purpose of weighing fish prior to transport. It would be reasonable to suggest that an additional sum not exceeding 2d. per sack be added to the present wharfage rates for fish to cover portion of the cost of such service.

Napier.

129. That the Napier Harbour Board be requested to consider making a determined effort to dredge the channel leading into the "Iron Pot," so as to leave a depth of 12 ft. at low-water spring tides.

130. That the Napier Harbour Board be asked to consider the provision of adequate and fixed berthage for each fishing-vessel.

131. That the Napier Harbour Board be asked to consider the proposal to supply good landing-facilities, preferably by way of the provision of a jetty standing out from the centre of the head of the "Iron Pot" and constructed so that fish may be unloaded at all stages of the tide. If the central jetty cannot receive consideration, the installation of an elevator is suggested.

132. That the Napier Harbour Board be asked to provide a suitable channel to the slipway navigable by any of the fishing-vessels under their own power from three-quarters flood to three-quarters ebb tide.

133. That cheaper slip accommodation be provided. If the Harbour Board is unable to finance such a slip, Government assistance should be made available to any co-operative group of fishermen willing to organize and administer a co-operative slip for the benefit of fishing-vessels only.

134. That the Government urge the Harbour Board to give some easement of wharfage rates. The most useful form that this relief could take would be the exemption of fuel—oil or coal—going aboard fishing-vessels from outward wharfage, and the reduction of the inward wharfage on fish.

Auckland.

135. That the Auckland Harbour Board be approached to ascertain if it is not possible to provide better berthage accommodation for the seine boats inside the Viaduct.

136. That the Auckland Harbour Board be requested to consider the provision of fender piles at those berths used by the steam trawlers.

Helensville.

137. That the Government approve the scheme set out for the rehabilitation of the fishermen's wharf at Helensville as submitted by the District Engineer of the Public Works Department. (For detail, see files P.W. 12/1 and M. 4/277.)

138. That the wharf as reconstructed be vested in the Helensville Town Board, which body should make some small contribution to the cost.

139. That if the reconstruction is carried out the fishermen using the port should be compelled to use this wharf for all purposes except possibly the landing of their fish, which is at present done at the Railway wharf for convenience of transport, and they should pay a charge not exceeding £1 5s. per boat per annum for the use of the facilities provided.

New Plymouth.

140. That the New Plymouth Harbour Board be approached to ascertain the possibility of improving the facilities available to the fishermen, more particularly with regard to satisfactory berthage, landing facilities, water-supply, and the provision of a slip. An annual charge to be made for the harbour facilities and a charge of £1 per time for the use of the slip.

Kawhia.

141. That the Government give favourable consideration to the request for the erection of permanent leading-lights at Kawhia.

Waitara.

142. That, if possible, arrangements be made for the erection and maintenance of a light on the North Wall at Waitara.

Wellington (Island Bay).

143. That either the Government or the City Council embark on a comprehensive scheme to provide proper and reasonable facilities for the fishermen at Island Bay, such facilities to be on that area known as the "Eastern Rocks," and, *inter alia*, to consider the provision of berthage for large fishing-vessels and accommodation for the refrigerated storage of bait.

REFRIGERATION.

New Zealand.

144. That the provision of adequate cold storage capable of freezing the fish in a reasonable time be made an essential qualification for those firms desiring to hold a fish-export license.

145. That all premises used for the refrigeration of fish or as pre-coolers be subject to regular inspection by qualified officers of the Health Department, more particularly with regard to the state of the freezing-chambers.

146. That, as the cost of freezing decreases in proportion to the quantity of fish handled, duplication of freezing units in any town be avoided. To avoid the cornering of freezing-space in any port by the wholesale firms, co-operative concerns with a personnel representative of the fishermen, wholesalers, and retailers should be encouraged.

147. Refrigeration plants should not be controlled by fish-auctioneering firms.

Nelson.

148. That the Maitland Cool Stores be approached, with a view to their making sufficient space available for the Nelson fishermen desiring to hold their own fish or bait.

Picton.

149. That, if a sufficient number of the Picton fishermen agree to co-operatively guarantee the repayment of any advance made to them by the Government, they should receive the necessary finance from the Government, on the understanding that any fisherman, whether one of the guarantors or not, should have the right to store his fish or bait in the freezer at rates sufficient to cover the cost of operation, the repayment of the loan, and any other charges. An allocation of space would have to be made to prevent any one person or group from monopolizing the chambers.

Thames.

150. That the number of fish-refrigerating units at Thames be substantially reduced, either by amalgamation or co-ordination of the companies concerned, and that the remaining unit or units (there should not be more than two) should be brought up to modern standards and be made capable of handling the normal requirements of the port.

Wellington.

151. That the Co-operative Dairy Producers' Freezing Co., Ltd., be approached to investigate the practicability of making certain alterations to the present freezing-room so as to make available a small chamber for the receipt of green fish.

152. That, in accordance with our recommendation covering harbour facilities at Island Bay, provision be made for a bait freezing unit on the foreshore.

Licensing.

New Zealand.

153. That the Fisheries Act 1908, be amended to provide—

(*a*) For the fixing of license fees for fishing-vessels and fishermen by regulations; that the annual fees for the licensing of fishing-vessels and fishermen respectively be fixed at a minimum of 40s. and 5s. each; and, further, that the fees for fishing-vessels increase in proportion to their size up to a maximum of £10 for the larger steam trawlers.

(*b*) To give the Marine Department the right to refuse the issue of fishing licenses. With regard to part-time fishermen, the onus should be on the applicant to prove that he is dependent upon fishing for at least 50 per cent. of his livelihood.

(*c*) For the abolition of the issue of half-yearly licenses.

154. That the provisions of the notice issued under the hand of the Minister of Industries and Commerce dated the 15th April, 1937, and relating to the licensing of certain industries under Part III of the Industrial Efficiency Act, 1936, in this case the export of fish (whether fresh or preserved), continue in force.

155. That the provisions of the notice issued under the hand of the Minister of Industries and Commerce dated the 15th April, 1937, and relating to the licensing of certain industries under Part III of the Industrial Efficiency Act, 1936 (in this case the taking of fish for purposes of sale), be reconsidered in the light of existing conditions.

156. That the Ministerial notice referred to in recommendation No. 155 or any amendment thereto continue in force only until it is superseded by the amendments to the Fisheries Act, 1908, the Ministerial notice then to be revoked, thus leaving the Marine Department as the sole licensing authority, and obviating any dual licensing and dual collection of fees which would otherwise arise.

Utilization of Fish Offal and Waste Fish.

157. Modern plants should be installed at those points where sufficient material is offering for economical conversion. If necessary, Government assistance by way of low-interest loans should be made available to companies consisting of representatives of the various firms and interests in the area to enable the plant to be established on a co-operative basis.

158. Drying plants should be installed at outports where sufficient material for their economic operation is offering. At these ports the material would be dried for transport to the central plants. Here, again, financial assistance to enterprise on a co-operative basis may be required.

159. Research as to the value of the fish meal and fertilizers produced by these plants should be carried out by the Scientific and Industrial Research Department or the Agriculture Department, whichever is the better equipped for such research.

160. Educational work as to the value of these products should be done by the Agriculture Department.

161. All fish offal available within reasonable distance of the plants erected should be put through the plant, and not be wasted by being taken either to sea and dumped or by being buried, as is at present the common practice. Co-operation and education should make this possible without the need for regulation.

Legal Size of Fish.

New Zealand.

162. The legal size of all flat fish be raised from 9 in. to 10 in. forthwith.

163. Investigations be made as soon as possible to ascertain the length at which it is economic to take those fishes the legal size of which is at present expressed in weight, and that such length be then made the legal size.

164. That steps be taken to ascertain the relation of the legal size of the fish in its green state to the length at various stages in the dressing of the fish to the fillet, so that any attempted evasions can be nullified.

Qualifications of Masters of Fishing-Vessels.

165. That the master of every fishing-boat operating outside restricted river limits be compelled to hold a certificate of competency on the terms outlined in this report.

Survey of Fishing-Vessels.

166. That every fishing-vessel propelled by power and proceeding outside harbour limits shall undergo at least a modified survey sufficient to ensure that she is in good condition.

167. That the boiler of any fishing vessel propelled by steam shall be made subject to an annual survey, even if the vessel is herself exempt from survey under the relevant Acts and regulations.

Research Work (Surveys, etc.)

New Zealand.

168. That a survey be made of all outlying banks and possible fishing-grounds, the industry to bear portion of the cost.

169. That a survey be made of the present grounds to ascertain their stocks and the type of ground—*i.e.*, breeding, nursery, or feeding ground.

170. That investigations be made into the life-histories of the more important species of fishes, and also crayfish and oysters.

Auckland.

171. That the problem of gut stain in the snapper landed at Auckland be investigated as soon as possible.

Fishermen's Reserves.

French Pass.

172. That the Government provide a suitable fishermen's reserve in the vicinity of French Pass.

Kaikoura.

173. That if the present fishermen's reserve at Kaikoura is unsuitable, either because of the poor landing or for want of permanent road access, the Government should give favourable consideration to the allotment of a more suitable reserve or examine the practicability of keeping the present temporary road open for all time.

Lake Ellesmere.

174. That provision be made for a suitable reserve for the fishermen at Taumutu (Lake Ellesmere).

Sunday Sale of Fish.

New Zealand.

175. That the sale of fresh fish from licensed fishing-boats be permitted on Sundays, the necessary adjustments to the Police Offences Act to be made so as to exempt the sale of fish, on condition that the fish must be sold from the licensed vessel or her tender.

Destruction of Fish by Explosives.

176. The appointment as honorary Inspectors at the outlying ports of men willing to report cases of this kind and to give evidence against the offenders.

177. The issue of instructions to the lightkeepers at Cape Brett to report all cases where they see explosives used from fishing-boats.

178. Investigation to ascertain standard tests which would prove that a fish had been killed by the use of dynamite.

179. That it be made illegal for any person to have in his possession any fish killed by the use of explosives. (Note.—At times fishermen pick up floating fish which have been killed by explosives used from vessels ahead of them. For this reason they condone the practice. Moreover, this practice leaves a loophole for the offender, because he may state that he did not dynamite the fish but only picked it up.)

180. That the instructions covering the issue and checking of explosive stores from the Public Works Department camps be tightened up if possible.

181. That the regulations for the sale of explosives also be made more stringent, so as to prevent explosives getting into the hands of people who have no legitimate use for them.

182. The issue of a suitable publicity folder showing the dangers of dynamiting to the operator and explaining the effect on the fish stocks.

Lake Ellesmere Outlet.

183. That before the final decision is made as to the site of the permanent outlet for the lake a ial should be made of a temporary outlet at the old natural site.

Company-promotion.

184. That where a prospectus invites persons to subscribe for shares in, or debentures of a company, such persons should take full cognizance of the value of extracts from any official document or publication which, owing to the lapse of time and to the separation from the full text of such document or publication, do not fairly represent existing conditions.

Seals.

185. That a survey be made to ascertain the state of the seal population on the West Coast and at the outlying islands to the south. Such survey to be made by a competent observer working from a fishing-craft and not tied down to a schedule.

186. Future administration of the seal fishery should be based on the results of the above survey.

Assistance to the Industry.

187. That, if the Government decides to make money available for fishermen to assist them to build or acquire new vessels, caution should be exercised in the formulation of the policy to be adopted.

188. That in the event of finance being made available no fixed conditions be laid down, each case to be decided on its merits on the advice of a competent authority.

Tuna Fishing.

189. The Committee considers that the development of this phase of fishing operations can quite well be left to private enterprise.

Marine Biological Station and Public Aquaria.

190. That the grant to the biological station at Portobello be discontinued, provision to be made for the employment of the present caretaker in some other sphere.

191. That the Government support the proposal to establish an aquarium and marine biological station at Wellington and provide the initial finance, subject to the direction of the station being under Government control.

Canning.

192. That the Government approach Messrs. Hansen Bros., of Pururua, with a proposal to investigate the possibility of the successful operation of a mullet cannery in Kaipara. In the event of their report being favourable, assistance should be given in the establishment of such a factory.

Administration.

193. That a reorganization of the Fisheries Branch of the Marine Department be carried out, with the aim of making it a separate unit responsible to the Marine Department only for accounts and discipline.

194. That the collection and compilation of fishery statistics be treated as a matter of urgency, and that every effort be made to attain the standard of other maritime countries as soon as possible.

195. That a movement for the education of the fishermen in matters concerning the administration of the fisheries, the value of conservation, and other matters of importance be undertaken and become a duty of the Fisheries Branch.

196. That the expansion of the Department's research activities be proceeded with as soon as the staff, equipment, and finances become available.

197. That the Inspectorate be strengthened by the appointment of full-time, part-time, and honorary Inspectors in those places where it is inadequate at present. The provision of an Inspector and launch for the Bay of Plenty is the most urgent requirement.

198. That the present co-ordination between the Departments of Marine and Industries and Commerce be fostered and expanded where possible.

199. That the Fisheries Act of 1908 and its amendments be rewritten to bring it up to date and to remove the anomalies and weaknesses which exist in the present legislation.

200. That, as soon as the Government has dealt with our recommendations on production, the Fisheries Regulations of 1932 and the additions and amendments thereto be consolidated. When this work is done, one copy should be issued gratis to the master of every licensed fishing-boat and to each new licensee.

APPENDICES.

APPENDIX A.

SCHEDULE SHOWING THE FISHING-FLEETS OF THE AUCKLAND DISTRICT (AUCKLAND, THAMES, MERCURY BAY, COROMANDEL, AND MANUKAU), THEIR ANNUAL PRODUCTION OF FISH, THE EXPORTS OF FROZEN FISH FROM AUCKLAND, AND THE TOTAL EXPORTS OF FISH, FROZEN AND CURED, BUT NOT CANNED, FROM NEW ZEALAND FOR THE YEARS 1922–37.

Year.	Trawlers.		Danish-seiners.		Line and Net Boats.		Total Landings.		Exports of Frozen Fish from Auckland.		Total Fish Exports from New Zealand, Frozen and Cured, but not Canned.	
	Whole-time.	Part-time.	Whole-time.	Part-time.	Whole-time.	Part-time.	Hundred-weight.	Value.	Hundred-weight.	Value.	Hundred-weight.	Value.
								£		£		£
1922–23 ..	8	Not given	..	Not given	82	Not given	93,457	114,941	Not given	Not given	12,798	36,689
1923–24 ..	8	,,	5	,,	191	,,	122,289	119,923	,,	,,	18,322	46,598
1924–25 ..	8	,,	22	,,	123	,,	134,552	126,151	,,	,,	17,589	43,644
1925–26 ..	5	,,	23	,,	270	,,	159,588	147,429	,,	,,	14,874	38,424
1926–27 ..	5	,,	26	,,	215	,,	120,138	125,556	,,	,,	17,436	47,677
1927–28 ..	4	..	22	7	208*	..	153,410	139,633	,,	,,	21,245	56,757
1928–29 ..	2	3	26	2	131	9	97,684	89,522	,,	,,	21,822	63,528
1929–30 ..	4	..	27	7	80	44	121,241	108,415	5,057	12,334	23,174	65,980
1930–31 ..	4	1	28	11	90	55	131,089	119,194	4,219	10,116	18,806	50,791
1931–32 ..	1	3	35	11	110	32	112,486	95,215	4,280	7,463	14,736	32,246
1932–33 ..	1	3	30	14	106	49	105,027	77,038	5,884	10,563	20,375	40,878
1933–34 ..	1	2	35	7	112	68	110,587	80,395	9,037	14,185	35,981	67,046
1934–35 ..	1	1	39	3	186	34	122,721	88,253	15,353	30,642	48,682	101,533
1935–36 ..	1	2	35	8	74	47	150,875	108,713	20,822	47,211	56,782	130,014
1936–37 ..	2	1	32	12	114	36	176,647	135,985	21,105	61,714	54,451	144,470

* Rowing and sailing boats excluded from here on.

APPENDIX B.

TABLE SHOWING CLASS OF DAN-LINE GEAR USED AT THE DIFFERENT PORTS.

Port.	Type of Dan.	Line Material.	Number of Hooks.	Size of Hooks.	Dans per Set.	Sets per Day.	Type of Mooring.	Cost per Complete Dan.	Remarks.
				No.					
Waikawa ..	5 gal. drum	24 oz.	12	11	6	1 to 2	..	15s.	Number of sets depends on the incidence of slack water.
Dunedin ..	,,	20 to 24 oz.	12	10, 11	8	..	Grapnel	15s.	Lose lot of gear.
Moeraki ..	,,	20 to 24 oz.	10	9	..	..	,, ..	..	..
Oamaru ..	,,	18 oz.	7 to 10	6/0, 7/0	25	..	,, ..	..	All-day fishing, as little tide.
Timaru ..	5 gal. drum and canvas buoys	24 oz.	10	9	18 to 20	3	..	..	..
Akaroa ..	5 gal. drum	20 oz.	10	9/0, 10/0	15	2	Grapnel ..	..	Little loss of gear.
Kaikoura ..	5 gal. drum and canvas buoys	..	15 to 20	9	8 to 10	..	..	£1 5s. to £1 10s.	Wire traces used.
Greymouth	Drums ..	24 oz.	8 to 10	11	16 to 20	2 to 3	Grapnel ..	..	..
Westport ..	..	..	10 to 15	11	15	..	..	..	..
French Pass	Canvas buoy	6 lb.	..	3	6	..	..	£2 to £3 10s. (with labour)	..
Picton ..	,,	4 to 6 lb.	25	2/0	6 to 8	..	Sinkers and grapnel	£1 15s. to £2 (material only)	Inshore.
Picton ..	,,	4 to 6 lb.	50	2/0	9 to 10	..	Sinkers and grapnel	£1 15s. to £2 (material only)	Off shore.
Wellington	,,	6 lb.	Five to seven traces, each with thirty-three hooks		15 to 20	..	Grapnel ..	£3 10s. (material only)	..

APPENDIX C.

TABLE SHOWING FISH LANDED AT CHATHAM ISLAND.

Year ended.	Boats fishing.	Blue Cod landed.	Groper landed.	Other Fish landed.	Remarks.
		Cwt.	Cwt.	Cwt.	
31st March, 1928	12	4,955	Small quantities included with the blue cod.		
31st March, 1929	12	6,867			
31st March, 1930	12	12,359			
31st March, 1931	12	7,433			
31st March, 1932	9	2,906	31	..	..
31st March, 1933	6	2,177	..	..	..
31st March, 1934	17	16,764	487	..	"South Sea" operating.
31st March, 1935	18	12,880	659	..	"
31st March, 1936	18	23,555	1,371	18	"
31st March, 1937	17	14,864	242	6	"

APPENDIX D.

TABLE SHOWING THE ANNUAL PRODUCTION OF DREDGE OYSTERS FROM FOVEAUX STRAIT, 1913–37

Year.	Sacks.	Year.	Sacks.
1913	33,931	1925	25,857
1914	24,739	1926	27,828
1915	32,839	1927	21,009
1916	29,209	1928	38,793
1917	22,225	1929	39,331
1918	25,007	1930	42,774
1919	21,394	1931	36,538
1920	26,703	1932	37,484
1921	24,564	1933	42,176
1922	27,280	1934	52,254
1923	28,785	1935	49,712
1924	23,796	1936	63,412
		1937	64,912*

* 1937 returns not complete.

Average 1913–27, 26,344 sacks—lowest (1927), 21,009; highest (1913), 33,931.
Average 1928–32, 38,984 sacks—lowest (1931), 36,538; highest (1930), 42,176.
Average 1933–37, 54,493 sacks—lowest (1933), 42,176; highest (1937), 64,912.

APPENDIX E.

STATEMENT SHOWING PRICES PAID TO FISHERMEN, AND WHOLESALE AND RETAIL PRICES AT CENTRES SHOWN.

("h." = headed; "g." = gutted.)

Port.	Kind of Fish.	Prices paid to Fishermen.	Wholesale Price per Pound.	Retail Price per Pound.
Stewart Island, Bluff, Invercargill, and Waikawa	Blue cod ..	3d. to 3·6d., h. and g., Stewart Island	4½d. fresh, Bluff	8d. whole fish, Invercargill.
		3·25d., h. and g., Bluff ..	5½d. frozen, Bluff	10d. skinned and trimmed, Invercargill.
		3·25d., h. and g., Riverton ..	..	10d. smoked, Invercargill.
		3·3d., h. and g., Waikawa ..	4·3d. fresh, on trucks Tokanui	..
	Hapuka (groper) ..	1·5d. to 2·4d., h. and g., Stewart Island	5d. fresh, Bluff	10d. skinned and trimmed, Invercargill.
		3d., h. and g., Waikawa ..	4d. frozen, Bluff	..
			4d. fresh, on trucks Waikawa	..
	Soles	2½d., g., Waikawa	3½d. fresh, on trucks Waikawa	8d. whole fish, Invercargill; 1s. filleted, Invercargill.
	Flounders ..	5d., g., Bluff	..	8d. to 10d. whole fish, Invercargill.
	Ling	1d., h. and g., Waikawa ..	2d. fresh, on trucks Waikawa	..
	Oysters	..	14s. 6d. per sack f.o.r. Bluff (nominal sixty dozen)	5d. per dozen in shell; 1s. 6d. and 1s. 8d. opened per bottle of two and a half to three dozen.
Dunedin	..	Bulk of catch sold at auction-market. For direct supply to exporters prices are—	Bulk of supply from auction-market. Certain quantities sold by exporters at f.o.b. prices or slightly higher. Range of auction prices has been—	Retail prices fluctuate in accordance with auction prices, but average prices would be—
	Hapuka (groper) ..	3d., h. and g., Port Chalmers	2·7d. to 6·3d., h. and g., Dunedin	8d. to 9d. steaks, Dunedin.
	Soles (lemon) ..	2¼d. to 2½d., g., Port Chalmers	2·2d. to 7·5d., g., Dunedin	6d. to 8d. whole; 11d. filleted.
	Soles (English) ..	1¾d., g., Port Chalmers ..	..	..
	Flounders ..	4½d., g., Port Chalmers ..	3s. to 7s. 3d. doz., g., Dunedin	8d. whole; 13d. filleted.
	Red cod ..	¾d., green, Port Chalmers ..	0·6d. to 2·8d., green, Dunedin	8d. smoked fillets.
	Ling	1d., h. and g., Port Chalmers	0·9d. to 3·0d., h. and g., Dunedin	8d. smoked fillets; 4d. to 5d. steaks.
	Trevally ..	0·60d. to 0·75d., g., Port Chalmers	..	6d. trimmed.
	Brill	4½d., g., Port Chalmers ..	..	..
	Moki	1d., g., Port Chalmers ..	..	..
	Barracouta ..	2s. 6d. to 3s. doz., g., Port Chalmers	3s. to 3s. 6d. doz., g., Dunedin	9d. to 1s. each; 2d. trimmed.
	Oysters	..	19s. per sack, Dunedin ..	6d. dozen in shell; 9d. opened in pottles of one dozen (fourteen oysters); 1s. 6d. opened in pottles of two dozen (twenty-eight oysters); 2s. opened in pottles of three dozen (thirty-eight oysters).
Christchurch ..	..	Auction-market prices less commission 10 per cent. and freight charges. Range of auction prices has been—	Auction prices—	Retail prices fluctuate in accordance with auction prices; range has been—
	Hapuka (groper) ..	3½d. to 10¼d., h. and g., Christchurch	..	6d. to 10d. whole; 9d. to 1s. 3d. piece; 10d. to 1s. 6d. smoked.
	Ling	1½d. to 2½d., h. and g., Christchurch	..	3d. to 6d. headed, sounds out; 3d. to 9d. piece; 6d. to 1s. fillet; 8d. to 1s smoked.
	Soles	2½d. to 10d., g., Christchurch	..	6d. to 1s. 3d. whole; 8d. to 1s. 4d. headed and skinned; 1s. 3d. to 2s. 6d. fillets.
	Flounders ..	5d. to 1s. 4¾d., g., Christchurch	..	7d. to 1s. 3d. whole; 10d. to 1s. 4d. headed and skinned; 1s. to 2s. 6d. fillets.
	Gurnard ..	1·4d. to 4·3d., g., Christchurch	..	3d. to 6d. heads on; 5d. to 8d. headed and trimmed; 6d. to 1s. fillets; 8d. to 1s. smoked.
	Red cod ..	0·6d. to 5·1d., g., Christchurch	..	3d. to 6d. whole; 5d. to 8d. piece; 6d. to 10d. fillets; 7d. to 10d. smoked.
	Elephant fish ..	1·3d. to 11·3d., g., Christchurch	..	4d. to 6d. whole; 4d. to 6d. piece; 4d. to 1s. fillets; 8d. smoked.
	Tarakihi ..	..	..	5d. to 7d. heads on; 7d. to 10d. piece; 10d. to 1s. 2d. fillets; 10d. to 1s. 4d. smoked.
	Oysters	..	21s. per sack	6d. per dozen in shell; 8d. per dozen opened.

APPENDIX E.—*continued.*

STATEMENT SHOWING PRICES PAID TO FISHERMEN, ETC.—*continued.*

("h."= headed; "g."= gutted.)

Port.	Kind of Fish.	Prices paid to Fishermen.	Wholesale Price per Pound.	Retail Price per Pound.
Nelson	..	Proportion of catch sold to Wellington market and to exporters. Local wholesaler pays—		
	Snapper ..	18s. doz., g., approx. 2d. pound Nelson	Local wholesale prices are usually 10 per cent. advance on price paid to fishermen	7½d. to 9d. pound filleted.
	Hapuka (groper) ..	3d., h. and g., Nelson ..	..	..
	Blue cod ..	3d., g., Nelson	..	10d. to 1s. smoked.
	Flounder ..	5d., g., Nelson	..	9d. each.
	Gurnard ..	1½d., g., Nelson	..	..
	Warehou ..	4d., g., Nelson	..	..
Napier	..	Prices not constant. In June, 1937, they were—	Prices not constant. In June, 1937, they were—	Retail prices vary with fluctuation in wholesale. In June, 1937, they were: Tarakihi, snapper, moki, hake, dory, hapuka, 10d. cutlets and fillets; gurnard, 8d. fillets; soles, 10d., g.; flounders 1s., g.
	Tarakihi ..	2¾d., g., Napier	3½d., g. and cleaned and blooded, Napier	
	Snapper ..	2¾d., g., Napier	3½d., g. and cleaned and blooded, Napier	
	Moki	2¾d., g., Napier	3½d., g. and cleaned and blooded, Napier	
	Hake	2¾d., g., Napier	3½d., g. and cleaned and blooded, Napier	..
	Dory	2¾d., g., Napier	3½d., g. and cleaned and blooded, Napier	..
	Hapuka (groper) ..	3¾d., h. and g., Napier ..	4½d., h. and g., cleaned and blooded, Napier	..
	Gurnard ..	1¾d., green, Napier ..	2½d., green, Napier ..	..
	Soles	4¾d., g., Napier	6d., cleaned, Napier ..	..
	Flounders ..	4¾d., g., Napier	6½d., cleaned, Napier ..	..
	Oysters	..	Approximately 29s. 6d. per sack	9d. dozen in shell; 10d. to 1s. opened and sold in bottles.
Auckland	Snapper ..	2d., green, Auckland ..	3d., green, Auckland ..	..
		2¼d., g., Auckland	3½d., g.	6d. whole; 8d. steaks.
			7d., smoked	10d. smoked; 10d. fillets; 11d. skinned fillets, wings on; 1s. skinned fillets, wings off.
	Tarakihi ..	2d., green, Auckland ..	3d., green	..
		2¼d., g., Auckland	3½d., g.	6d. whole; 8d. steaks.
			7d. smoked	10d. smoked.
			11d. kippered fillets ..	1s. 3d. kippered fillets; 10d. fillets; 11d. skinned fillets, wings on; 1s. skinned fillets, wings off.
	Hapuka (groper) ..	3½d., green, Auckland ..	..	..
		4d., g., Auckland	5½d., g.	1s. 2d. steaks.
			7½d., h. and g., scaled ..	1s. 3d. smoked.
	Flounder ..	5½d., g., Auckland	8d., g.	1s. g.
	John-dory ..	2d., green, Auckland ..	3½d., green	1s. 2d. fillets.
	Kingfish ..	2d., green	3d., green	8d. steaks.
		2¼d., g.	3½d., g.	9d. smoked.
	Mullet (Auckland)	2½d., green	4d., green	..
			5d., g.	7d., g.
			8d., smoked	10d. smoked.
	Mullet (Kaipara)	2s. doz., green	3d., green	..
			4d., g.	5d., g.
			7d., smoked	9d. smoked.
	Gurnard ..	6d. doz., green	1s. 6d. doz., green ..	2d. each, g.; 1½d. per fillet
			3s. doz., smoked	5d. each, smoked.
	Trevally ..	1s. doz., green	4s. doz., green	7d. each, cleaned.
			6s. doz., smoked	8d. each, smoked.
			3s. doz., smoked fillets ..	4d. and 5d. per smoked fillet.
	Crayfish ..	3d., green	5d., green, small	..
			4½d., green, large	..
			5½d., cooked, small ..	9d., cooked, small.
			5d., cooked, large	9d., cooked, large.
New Plymouth ..	Snapper ..	3d. to 3½d., g.	Retailers buy from Auckland, Thames, and Wellington—freights, ¾d. to 1d.	6d. to 7d. snapper, whole; 9d. snapper, heads off; 1s. snapper, smoked; 1s. 3d. to 1s. 4d. snapper fillets; 6d. tarakihi, whole; 1s. 3d. to 1s. 4d. tarakihi, fillets; 1s. to 1s. 2d. flounder, g.; 1s. sole, g.; 9d. to 1s. groper fillets; 9d. to 1s. crayfish, cooked.
	Hapuka (groper) ..	3½d., g.		
Wanganui	Snapper ..	2s., g., each, off wharf ..	Retailers buy from Auckland, Thames, Wellington	8d. whole snapper and tarakihi; 10d. steaks, snapper and tarakihi; 1s. fillets, snapper and tarakihi; 1s. steaks, hapuka; 1s. 2d. whole flounder; 1s. 3d. smoked blue cod, hake, and tarakihi; 10d. crayfish, cooked.
	Blue cod ..	9d., g., each, off wharf		
	Oysters	..	24s. 6d. per sack Wellington and costs; 32s. per sack in shop	1s. dozen opened and in bottles

APPENDIX E—*continued.*

STATEMENT SHOWING PRICES PAID TO FISHERMEN—*continued.*

("h." = headed; "g." = gutted.)

Port.	Kind of Fish.	Prices paid to Fishermen.	Wholesale Price per Pound.	Retail Price per Pound.
Wellington* ..	Hapuka (groper) ..	3½d., h. and g.	5d., h. and g.	9d. cutlets.
			8d., smoked fillets ..	..
	Snapper ..	2d. and 2½d., g.	4d., g.	5d. and 6d. whole; 9d. cutlets.
	Tarakihi ..	2d. and 2½d., g.	4d., g.	5d. and 6d. whole; 9d. and 10d. fillets.
			10d. smoked fillets ..	1s. 2d. smoked fillets.
	Moki	2d., g.	3½d. and 4d., g.	7d. cutlets.
	Hake	3½d., h. and g.	5d., h. and g.	9d. and 10d. cutlets.
			9d. smoked fillets	1s. and 1s. 2d. smoked fillets.
	Warehou ..	1s. 3d. each, g.	4d., g.	8d. cutlets.
			8d. smoked fillets	9d. and 10d. smoked fillets.
	Ling	3s. each, h. and g.	3d., h. and g.	7d. and 8d. cutlets.
			8d. smoked fillets	9d. and 10d. smoked fillets.
	Blue cod ..	3½d., g.; 6d., h. and g. ..	5d. and 6d., g.	7d. and 8d., g.
			8d. and 10d., h. and g. ..	1s. and 1s. 2d. filleted and skinned.
			10d. smoked, split ..	1s. smoked, split.
	Blue cod (Chatham Island)	1¼d., green, Chatham Island	8d., h. and g., frozen ..	..
			11d. smoked, split ..	1s. 2d. smoked, split.
	Bonita	3½d., g.	5d., g.	9d. cutlets.
	Kingfish ..	2s. 6d. each, h. and g. ..	3d., h. and g.	7d. cutlets.
	Butterfish ..	3½d. and 4d., g.	5d. and 6d., h. and g. ..	7d. and 8d. trimmed; 1s. and 1s. 2d. filleted and skinned.
	Red cod ..	..	8d. smoked fillets	10d. smoked fillets.
	Crayfish ..	25s. sack	30s. sack	5d. to 6d. pound.
	Oysters	..	24s. 6d. sack	7d. in shell; 10d. dozen opened in cartons; 1s. for fifteen in cartons.

* Somewhere between 15 per cent. and 20 per cent. of the value of the total fish handled in Wellington is sold at the auction-market of Messrs. Townsend and Paul, Ltd. Recently prices (all per fish except flats) have ranged as under for the main varieties: 2s. 6d. to 13s. 9d., groper, h. and g.; 2½d. to 1s. 9d., blue cod, h. and g.; 8d. to 4s., snapper, g.; 1s. 4d. to 7s., ling, h. and g.; 5d. to 10d. per pound flats, g.; 17s. 6d. to 37s. 6d., crayfish, sack.

APPENDIX F.

Description of Fish packed for Export, and Net Weights in Cases.

		Lb.
	Sanford Ltd. and Auckland generally.	
Nap	Snapper, large, gilled, heads on, not scaled	50
Pah	Snapper, large, heads off, scaled, tails off	60
Dru	Snapper, small, heads off, scaled, tails off	30
Rangi	Snapper, headed, shouldered, and scales on	30
Snaffle	Snapper, fillets, wings off, scales off	20
Kohi	Snapper, fillets, wings on, scales off	20
Wod	Snapper, large, fillets, wings on	20
Tiri	Tarakihi, headed, shouldered, and scaled	30
Tiki	Tarakihi, fillets, wings off, scaled	20
Kippers	Tarakihi, fillets, smoked	14
	Soles and flounders graded—	
	Small (In. 9 to 10)	20
	Medium (In. 10 to 11)	
	Large (In. 11 to 12)	
	Extra large (In. Over 12)	
	N.Z. Fisheries, Ltd.	
N 1	Blue cod, large, headless, scrubbed	68
N 2	Blue cod, small, headless, scrubbed	72
TK	Tarakihi, shouldered and scaled	30
TK	Tarakihi, heads on, gutted, not scaled—average	100
TK	Tarakihi, fillets, smoked (kippered)	14
—	Snapper, heads on, not scaled—average	100
B/C	Barracouta, fillets smoked (kippered)	14
	Moki, heads on, not scaled.	—
	Hapuka, heads on, not scaled.	—
	Ling, heads off.	—
	Fishermen's Co-operative, Ltd.	
	Groper, heads off, not scaled—average	110–112
	Ling, heads off, not scaled—average	120
	Snapper, heads off, scaled—average	50
	Ling, fillets, smoked	14
	Warehou, fillets, smoked	14
	P. Feron and Sons, Ltd.	
	Tarakihi, shouldered and scaled	30
	Tarakihi, shouldered and scaled	50
	Tarakihi, fillets, wings off (cutlets)	20
	Tarakihi, fillets, smoked	14
	Blue cod, headed, scrubbed, not scaled	60
	Groper, headed, scrubbed, not scaled	90
	Ling, headed and scrubbed	90
	Kingfish, headed and scrubbed	90
	Hake, headed and scrubbed	90
	Soles, Flounders } heads on, graded large, small, medium	20 and 48
	Red cod, fillets, smoked	14
	Red cod, smoked, whole	80
	National Mortgage and Agency Co. of N.Z., Ltd.	
	Barracouta, whole fish, smoked	45
	Barracouta, fillets, smoked	14
	Red cod, whole fish, smoked	14
	Red cod, fillets, smoked	14
	Brill, fillets	14
	Blue cod, heads off, not scaled	50
	Flounders, graded	20
	Groper, heads off, scaled	70
	Ling, whole, headed, gutted, and deslimed	80
	Ling, lugged, headed, gutted and deslimed, wings off	80
	Ling, split, headed, gutted, deslimed, wings off, backbone out	60
	Moki, headed, gutted, and scaled	50 to 60
	Soles, English, skinned, headed	20
	Soles, lemon, skinned, headed	20
	Soles, fillets, one skin off	14
	Soles, fillets, both skins off	14
	Soles, fillets, both skins off (in pound packets)	20
	Tarakihi, shouldered and scaled	30
	Tarakihi, fillets, block frozen	20
	Tarakihi, fillets, single frozen	25
	Trevally, headed and scaled	50
	Trevally, shouldered	50
	Rigs, fillets, fresh	14
	Rigs, fillets, smoked	14
	Warehou, whole	70
	Warehou, fillets, fresh	20
	Otago Fish-supply, Ltd. (Gibbs).	
	Groper, heads off and scaled	60
	Ling, heads off and scaled	60
	Blue cod, heads off, not scaled	60
	Red cod, split, smoked (haddock)	20, 25, and 50
	Red cod, fillets, smoked	14
	Barracouta, fillets, smoked	14
	Flounders, Soles } graded extra small, small, medium, large, and extra large	20
	Trevally, shouldered	25 and 50
	Trevally, headed	25 and 50

Note.—F.o.b. prices have been registered by exporters with the Department of Industries and Commerce.

APPENDIX G.

STATEMENT SHOWING F.O.B. PRICES AUCKLAND, UNDER SANFORD AGREEMENT, COSTS EX-STORE SYDNEY, AND REALIZATION, SYDNEY.

Species.	Sydney Selling-price prior Strike in October, 1936.	Price paid under Agreement f.o.b. Auckland.	Cost Price to Sell ex-Store Sydney.	Sydney Selling-price since November, 1936.	Margin per lb.	Advance in Selling-price over October, 1936.
	d. d.	d.	d.	d.	d.	Per Cent.
(Nap) Snapper, large, heads on, gilled, and gutted	5	4	$5\frac{5}{8}$	6	$\frac{3}{8}$	20
(Pah and Dru) Snapper, heads off, scaled ..	5 to $5\frac{1}{2}$	5	$6\frac{5}{8}$	7	$\frac{3}{8}$	On 5d.: 40 On $5\frac{1}{2}$d.: 30
(Rangi) Snapper, headed and shouldered ..	6	$5\frac{3}{4}$	$7\frac{3}{8}$	$7\frac{3}{4}$	$\frac{3}{8}$	29
(Kohi) Snapper fillets, wings on	7 to $7\frac{1}{4}$	$6\frac{1}{4}$	$7\frac{7}{8}$	$8\frac{1}{4}$	$\frac{3}{8}$	On 7d.: 21 On $7\frac{1}{4}$d.: 19
(Snaffle) Snapper fillets, wings off ..	$8\frac{1}{2}$ to 9	$8\frac{1}{2}$	$10\frac{1}{8}$	$10\frac{1}{2}$	$\frac{3}{8}$	On $8\frac{1}{2}$d.: 24 On 9d.: 17
(Tiri) Tarakihi, headed and shouldered ..	$5\frac{1}{6}$	$5\frac{1}{2}$	$7\frac{1}{8}$	7	Losing	On $5\frac{1}{2}$d.: 35
(Tiki) Tarakihi fillets, wings off	$8\frac{1}{2}$ to 9	$8\frac{1}{2}$	$10\frac{1}{8}$	$10\frac{1}{2}$	$\frac{3}{8}$	On $8\frac{1}{2}$d.: 24 On 9d.: 17
Tarakihi, kippered fillets..	9 to $9\frac{3}{4}$	Sanfords only	$11\frac{7}{8}$	11	Losing	On 9d.: 22 On $9\frac{3}{4}$d.: 13
Flounders, graded, gutted, and gilled ..	$8\frac{1}{2}$ to $9\frac{1}{2}$	$8\frac{1}{4}$	$9\frac{7}{8}$	$10\frac{1}{2}$	$\frac{5}{8}$	On $8\frac{1}{2}$d.: 24 On $9\frac{1}{2}$d.: 11

Costs into store Sydney from f.o.b. Auckland equal $1\frac{5}{8}$d.—Freight, $\frac{3}{4}$d. gross weight, equals $\frac{7}{8}$d. on net; landing charges, cartage, storage, outward delivery, wages, rent, travellers, exchange, insurances, $\frac{3}{4}$d.: $1\frac{5}{8}$d.

APPENDIX H.

STATEMENT SHOWING COSTS OF HANDLING EXPORT FISH (AUCKLAND), AND MARGINS OF PROFIT.

Species of Fish and Firm handling.	Cost, Green Weight, 100 lb. at 2d.	Labour, Packing, Freezing, Cartage.	Overhead on Cost.	Cost to f.o.b.	Realization f.o.b.	Net Profit.	Profit Margin (Pence per Pound) on	
							Dressed Weight.	Green Weight.
(Nap) Snapper, heads on, gilled, and gutted (wastage 13 lb.)—	s. d.	s. d.	s. d.	s. d.	s. d. 4d.	s. d.	87 lb.	100 lb.
A	16 8	4 9	4 7	26 6	29 0	3 0	0·41	0·36
B	16 8	5 1	3 5	25 2	29 0	3 10	0·53	0·46
C	16 8	7 9	2 0	26 5	29 0	2 7	0·36	0·31
Average	16 8	5 10	3 4	25 10	29 0	3 2	0·43	0·38
(Pah and Dru) Snapper, heads off, scaled (wastage, 33 lb.)—					5d.		67 lb.	100 lb.
A	16 8	3 5	3 6	23 7	27 11	4 4	0·78	0·52
B	16 8	3 11	3 5	24 0	27 11	3 11	0·70	0·47
C	16 8	6 1	2 0	24 9	27 11	3 2	0·57	0·38
Average	16 8	4 6	2 11	24 1	27 11	3 10	0·68	0·46
(Rangi) Snapper, headed and shouldered (wastage, 47 lb.)—					$5\frac{3}{4}$d.		53 lb.	100 lb.
A	16 8	4 $7\frac{1}{2}$	2 9	24 $0\frac{1}{2}$	25 5	1 5	0·31	0·17
B	16 8	4 4	3 5	24 5	25 5	1 0	0·22	0·12
C	16 8	5 6	2 0	24 2	25 5	1 3	0·28	0·15
Average	16 8	4 10	2 9	24 3	25 5	1 2	0·27	0·15
(Kohi) Snapper fillets, wings on (wastage, 47 lb.)—					$6\frac{1}{4}$d.		53 lb.	100 lb.
A	16 8	4 5	2 9	23 10	27 7	3 9	0·85	0·45
B	16 8	3 7	3 5	23 8	27 7	3 11	0·89	0·47
C	16 8	5 0	2 0	23 8	27 7	3 11	0·89	0·47
Average	16 8	4 4	2 9	23 9	27 7	3 10	0·86	0·46
(Snaffle) Snapper fillets, wings off (wastage, 64 lb.)—					$8\frac{1}{2}$d.		36 lb.	100 lb.
A	16 8	3 3	2 1	22 0	25 6	3 6	1·17	0·42
B	16 8	3 7	3 5	23 8	25 6	1 10	0·61	0·22
C	16 8	3 10	2 0	22 6	25 6	3 0	1·00	0·36
Average	16 8	3 7	2 6	22 9	25 6	2 9	0·93	0·33
(Tiri) Tarakihi, headed and shouldered (wastage, 40 lb.)—					$5\frac{1}{2}$d.		60 lb.	100 lb.
A	16 8	4 $9\frac{1}{4}$	3 $1\frac{1}{2}$	24 7	27 6	2 11	0·59	0·35
B	16 8	4 3	3 5	24 4	27 6	3 2	0·64	0·38
C	16 8	5 10	2 0	24 6	27 6	3 0	0·60	0·36
Average	16 8	4 11	2 10	24 5	27 6	3 1	0·61	0·36

APPENDIX I.

AVERAGE FINANCIAL RESULTS OF REPRESENTATIVE RETAILERS OF FISH OVER MOST RECENT TWELVE-MONTHLY PERIODS.*

Summary.

——	Turnover.	Purchases and Expenses.	Net Profit.	Net Profit on Turnover
	£	£	£	Per Cent.
Dunedin (8 shops)	33,258	30,790	2,468	7·4
Christchurch (11 shops) ..	41,096	39,847	1,249	3·04
Auckland (11 shops)	40,390	37,666	2,724	6·7
Wellington (5 shops)	31,456	30,259	1,197	3·8
Other centres (22 shops) ..	83,834	73,117	10,717	12·8
Total (57 shops)	230,034	211,679	18,355	8·0
Average (57 shops) ..	4,035	3,713	322	8·0

* The majority of these retailers sell cooked as well as wet fish.

APPENDIX J.

TABLE SHOWING THE RANGE OF RETAIL PRICES IN CHRISTCHURCH OVER THE SIX MONTHS ENDED 19TH NOVEMBER, 1937.

——	Whole Fish, per Pound.	Piece, per Pound.	Filleted, per Pound.	Smoked, per Pound.
Hapuka (groper) ..	6d. to 10d. (headed and gutted)	9d. to 1s. 3d. ..	10d. to 1s. 6d.	None smoked.
Ling	3d. to 6d. (headed and sounded)	3d. to 9d. ..	6d. to 1s. ..	8d. to 1s.
Soles	6d. to 1s. 3d. (all sizes)	8d. to 1s. 4d. ..	1s. 3d. to 2s. 6d.	None smoked.
Gurnard	3d. to 6d. (heads on)	5d. to 8d. (trimmed, no head)	6d. to 1s. ..	8d. to 1s.
Red cod	3d. to 6d. (headed) ..	5d. to 8d. ..	6d. to 10d. ..	7d. to 10d.
Elephant fish ..	4d. to 6d.	4d. to 6d. ..	4d. to 1s. ..	8d.—only smoked when supply is plentiful.
Tarakihi	5d. to 7d. (heads on)	7d. to 10d. ..	10d. to 1s. 2d.	10d. to 1s. 4d.
Flounders	7d. to 1s. 3d. ..	10d. to 1s. 4d. ..	1s. to 2s. 6d. ..	None smoked.

APPENDIX K.

TABLE SHOWING COSTS OF DREDGING AND HANDLING OYSTERS TO FREE ON RAIL BLUFF.
(Costs per sack.)

Firm.	A.	B.	C.	D.	E.	F.	G.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Oyster-boat wages ..	4 5·50	4 5·50	4 5·50	5 11·82	4 5·50	5 8·43	4 4·9
Repairs and maintenance..	0 11·47	0 7·66	1 3·64	..	1 2·00	..	1 4·4
Sacks	0 7·50	0 7·50	0 7·50	0 7·50	0 7·50	..	0 6·3
Coal	..	0 10·25	0 9·55	0 10·48	1 2·90	..	1 3·2
Coal and other charges ..	1 10·37	..	..	..	..	2 2·68	..
Wages ashore	1 0·47	2 2·00	0 11·50	1 3·40	1 1·80	..	1 0·3
Salaries	0 1·82		0 3·18		..	..	0 8·0
Depreciation	..	0 2·73	0 2·43	0 1·25	0 6·10	0 5·07	0 4·8
Other charges	0 7·79	0 7·00	0 8·71	0 6·29	1 8·25	0 11·84	0 8·7
Total	9 8·92	9 6·64	9 4·01	9 4·74	10 10·05	9 4·02	10 4·6

APPENDIX L.

COMPARATIVE F.O.B. PRICES OF DIRECTLY COMPETITIVE LINES AS BETWEEN VARIOUS EXPORT PORTS.

	Auckland.		Wellington (A)		Wellington (B).		Christchurch.		Dunedin (A).		Dunedin (B).	
	Price.	Pack Weight.	Price.	Pack Weight.	Price.	Pack Weight.	Price.	Pack Weight.	Price.	Pack Weight.	Price.	Pack Weight.
	d.	Lb.	d.	Lb.	d.	Lb.	d.	Lb.	d.	Lb.	d.	Lb.
Snapper—												
(1) Headed, scaled, tailed (Pah and Dru)	5	P. 60 D 30	..	..	$5\frac{1}{2}$	50	..	..	..	..	..	..
(2) Larged, gilled, heads on, not scaled (Nap)	4	50	4	100	..	..	..	..	..	..	..	..
Tarakihi—												
(1) Headed, shouldered, scaled (Tiri)	$5\frac{1}{2}$	30	$5\frac{1}{2}$	30	..	..	5	30	5	30	..	..
(2) Fillets, wings off, scaled (Tiki)	$8\frac{1}{2}$	20	..	..	..	..	$7\frac{1}{2}$	20	$8\frac{1}{2}$ 8	(*a*) 25 20	..	..
(3) Heads on, gutted, not scaled	4	100	..	..	..	..	..	..	..	..	..	..
(4) Kippered	(*b*) 11	14	9	14	..	..	(*c*) $8\frac{2}{7}$	14	..	..	..	..
Flounders—												
(1) Graded	$8\frac{1}{4}$	20	..	..	..	..	8	$\frac{20}{48}$	8	20	(*d*) $7\frac{1}{2}$	20
Soles—												
(1) Graded	..	..	..	..	..	..	6	$\frac{20}{48}$	..	..	5	20
(2) Skinned and headed ..	..	..	..	..	..	..	..	..	7	20	..	..
(3) Fillets (one skin on) ..	..	..	..	..	..	..	..	..	13	20	..	..
(4) Fillets (skinned) ..	..	..	..	..	..	..	..	..	14	20	..	..
(5) Fillets (1 lb. packets) ..	..	..	..	..	..	..	..	..	15	20	..	..

(*a*) Individually frozen. (*b*) Ex-store, Sydney. (*c*) 10s. per box of 14 lb. (*d*) Extra small, small.

APPENDIX M.

WASTAGE TABLE.

Species.	Operation.	Wastage.
	Round Fish.	Per Cent.
Blue cod	Green to headed and gutted	33·3
	Headed and gutted to skinned and trimmed	23·8
	Headed and gutted to fillets	33 to 37·5
	Heads on, gutted, to fillets	50
	Green to fillets	55·6
Gurnard	Green to fillet	60
	Gutted to fillet	50
Hapuka (groper) ..	Headed and gutted to—	
	Scrubbed, scaled, fins off, flanks on	11
	Scrubbed, scaled, fins off, flanks off	25 to 28
	Headed and gutted and scrubbed to—	
	Piece	20 to 22
	Steaks	25
	Fillet	40
Ling	Headed and gutted to piece	25
	Headed and gutted to fillet	53
Snapper	Green to gilled and gutted	13·2
	Green to headed, gutted, and scaled	33·6
	Green to fillet (wings on)	46·8
	Green to fillet (wings off)	64
Tarakihi	Green to headed, gutted and shouldered	39·6
.. ..	Green to fillet (wings off)	63·6
	Flat Fish.	
Flounder	Green to gutted	10 to 12
	Gutted to fillet	28·4 to 31·5
Sole	Gutted to skinned and trimmed	30
	Gutted to fillet	33 to 36

APPENDIX M1.

SHOWING UPON VARIOUS PRICES PAID FOR FISH THE COST TO RETAILERS WHEN WASTAGE IS TAKEN ACCOUNT IN PREPARING FOR RETAIL TRADE.

Species.	State as Bought.	Processed to	Wastage.	Pence paid per Pound.								
				1d.	2d.	3d.	4d.	5d.	6d.	7d.	8d.	9d.
			Per Cent.									
Blue cod ..	H. and g. ..	Skinned and trimmed ..	24	1·3	2·6	3·9	5·2	6·6	7·9	9·2	10·5	11·8
	H. and g. ..	Fillets (Stewart Island)	33⅓	1·5	3·0	4·5	6·0	7·5	9·0	10·5	12·0	13·5
	H. and g. ..	Fillets (Christchurch) ..	37½	1·6	3·1	4·7	6·3	8·0	9·5	11·1	12·7	14·1
	Heads on, g.	Fillets	50	2·0	4·0	6·0	8·0	10·0	12·0	14·0	16·0	18·0
Hapuka (groper)	H. and g. ..	Piece	22	1·3	2·5	3·8	5·1	6·4	7·7	9·0	10·3	11·5
	H. and g. ..	Steaks	25	1·3	2·7	4·0	5·3	6·7	8·0	9·3	10·7	12·0
	H. and g. ..	Fillets	40	1·6	3·3	5·0	6·6	8·3	10·0	11·7	13·3	15·0
Ling ..	H. and g. ..	Piece	25	1·3	2·7	4·0	5·3	6·7	8·0	..	..	..
		Fillets	53	2·1	4·2	6·4	8·5	10·6	12·7	..	..	..
Gurnard ..	g., heads on	Fillets	50	2·0	4·0	6·0	8·0	10·0	12·0	..	..	..
	Green ..	Fillets	60	2·5	5·0	7·5	10·0	12·5	15·0	..	..	..
Tarakihi ..	G., heads on	Fillets	50	2·0	4·0	6·0	8·0	10·0	12·0	14·0	16·0	18·0
	Green ..	H. and g., shouldered ..	40	..	3·3	5·0	..	..	..	..	..	..
	Green ..	Fillets, wings off ..	64	..	5·5	8·3	..	..	..	..	..	..
Snapper ..	Green ..	Gilled and gutted ..	13	..	2·3	3·4	..	..	..	..	..	..
	Green ..	H. and g. and scaled ..	33⅓	..	3·0	4·5	..	..	..	..	..	..
	Green ..	Fillets, wings on ..	47	..	3·8	5·6	..	..	..	..	..	..
	Green ..	Fillets, wings off ..	64	..	5·5	8·3	..	..	..	..	..	..
Red cod ..	H. and g. ..	Fillets	33⅓	1·5	3·0	4·5	6·0	7·5	9·0	10·5	12·0	13·5
Flounders ..	Green ..	Gutted, heads on ..	10 to 12 (say 11)	1·1	2·2	3·4	4·5	5·6	6·7	7·9	9·0	10·1
	G., heads on	Fillets	28 to 31 (say 30)	1·4	2·8	4·2	5·7	7·1	8·5	10·0	11·4	12·8
Soles ..	G., heads on	Skinned and trimmed ..	30	1·4	2·8	4·2	5·7	7·1	8·5	10·0	11·4	12·8
	G., heads on	Fillets	33 to 36 (say 35)	1·5	3·0	4·6	6·1	7·7	9·2	10·7	12·3	13·8

NOTE.—h. = headed; g. = gutted. Range of prices are at auction; others—snapper and tarakihi—3d., green, Auckland.

APPENDIX N.

DETAILS OF FISH-REFRIGERATION SPACE (EXCLUDING RETAIL-SHOP PLANTS).

Southland.

Fish Freezers, Ltd. (Half-moon Bay) :—
Refrigeration unit: 12 ton, 2 cylinder, Lindé.
Power unit: 24 h.p. Bolinder, 1 cylinder full Diesel.
Chambers: One—approximate size, 9 ft. by 30 ft. by 8 ft.
Capacity: 1,000 cases, each 70 lb.
Insulation: 8 in. cork and plaster.
Piping: 27,000 running feet (double piping.)

Southland Cool Stores (Bluff) (Fish Storage) :—
Refrigeration units: (*a*) Lindé, 30 ton; (*b*) Lindé, 45 ton.
Power units: (*a*) Electric motor, 70 h.p.; (*b*) electric motor, 90 h.p.
Chambers (fish): Five. Sizes as under:—
(1) 13 ft. by 20 ft. by 12 ft.
(2) 13 ft. by 20 ft. by 12 ft.
(3) 13 ft. by 18 ft. by 12 ft.
(4) 13 ft. by 18 ft. by 12 ft.
(5) 13 ft. by 18 ft. by 12 ft.
Capacity: Total, 4,000 cases, each 70 lb.
Insulation: 8 in. pumice.
Piping: 1½ running feet per cubic foot of space. Treble on roof. Single on sides.
Temperature: Ranges from 7° F. to 13° F.—average, 10° F.
Freezing-time: Green fish to hard frozen—three days.
Remarks: 30 ton machine used for fish and butter. 45 ton machine for cheese; when cheese is off, both or either machine may be used on fish. All the chambers open into one another.

Johnston Bros., Ltd. (Bluff) :—
Refrigeration units: Vietner, 18 ton, 2 cylinder (main); Vietner, 18 ton, 2 cylinder (duplicate of above, not in use); Haslam, 25 ton, 2 cylinder (standby).
Power units: 65 h.p. Westinghouse suction-gas engine (main); 70 h.p. converted suction-gas engine (standby).
Chambers (fish): Three. Sizes as under:—
(1) 16 ft. 6 in. by 13 ft. 6 in. by 10 ft.
(2) 16 ft. 6 in. by 16 ft. 8 in. by 10 ft.
(3) 16 ft. 6 in. by 22 ft. by 10 in.
In addition, there is a large storage chamber used for rabbits, but which can be used for fish in the event of a shipping hold-up. Size of this chamber (No. 4): 28 ft. by 21 ft. by 10 ft.
Capacity—
(1) 600 cases
(2) 1,100 cases } Tight packed for storage—each case, 70 lb.
(3) 1,800 cases.
Insulation: 6 in. cork all over.
Piping: All chambers 1 running foot of piping for each 2 cubic feet of space. In chambers Nos. 1, 2, and 3 the pipes are exposed. In No. 4 the loft system is in use.
Temperature: Room kept as near 10° F. as possible. If green fish put in, rises to 14° F. Freezer, 8° F. Store, 15° F.
Freezing-time: Green fish to hard frozen—three days.
Remarks: Fish from west coast Sounds is already frozen hard when admitted. Stewart Island fish is green or at best only chilled. The plant can also turn out ½ ton of ice per twenty-four hours if required.

APPENDIX N—*continued.*

National Mortgage and Agency Co. of N.Z., Ltd. (Waikawa) :—
Refrigeration unit: Sterne, 5 ton, automatic.
Chambers: Three, as under :—
(1) Ice-making room.
(2) Chill-room for fish going to Port Chalmers.
(3) Small freezing-room.
Insulation: 4 in. cork.
Temperature: 15° F.
Remarks: This is a small but up-to-date plant, and its primary use is for chilling fish intended to be sent to Port Chalmers or held to supply orders from Invercargill. Recently the latter market has been absorbing the bulk of the supply, on which it has first call.

Johnston Bros. (Fiord Fisheries, Ltd.) "Stella" at Chalky Inlet :—
Refrigeration unit: Sterne, 4 ton.
Power unit: 12 h.p. Gardner—semi-Diesel.
Chambers: Three.
Capacity: 800 cases to 1,000 cases.
Insulation: 8 in. sawdust.
Piping: 5 running feet of piping to each 2 cubic feet of space.
Temperature: 10° F.
Freezing-time: Green fish to hard frozen—three days.
Remarks: The highest load so far has been ninety cases per day. Average load, fifty to sixty cases on any one day. About six fishing days per month.

Otago and South Canterbury.

Otago Fish-supply, Ltd. (Gibbs), Dunedin :—
Refrigeration unit: Lipman, 7½ ton.
Power unit: Electric motor, 15 h.p.
Chambers—
(1) Antichamber.
(2) 13 ft. by 12 ft. by 8 ft.—Store.
(3) 13 ft. by 7 ft. by 7 ft.—Quick freezer.
(4) 16 ft. by 16 ft. by 7 ft.—Store.
Piping—
Quick freezer—2 running feet per cubic foot of space.
Stores—1 running foot per cubic foot of space.
Temperature—
Quick freezer, 5° F.
Stores, 15° F.
Antichamber, 25° to 28° F.

Otago Dairy Producers' Cool Storage, Ltd., Dunedin :—
Refrigeration units: Two 30 ton compressors.
Power: Electric motors.
Chambers (fish)—
(1) 40 ft. by 30 ft. by 7 ft.
(2) 40 ft. by 30 ft. by 7 ft.
Piping: 1,800 ft. per room.
Temperature: 12° F. to 14° F.
Remarks: Mainly used as storage by retail trade.

National Mortgage and Agency Co. of N.Z., Ltd. (Port Chalmers) :—
Refrigeration unit: Liverpool-West, 25 ton.
Power unit: Electric motor, 50 h.p.
Chambers: Six—as under :—

No.	Use.	Capacity.
		Cubic Feet.
1	Hard freezer	943
2	Chill-room	943
3	Store	2,570
4	Hard freezer	2,570
5	Store	4,550
6	Store	4,550

Piping—
(1) Total, 661 running feet—double on roof; shelves on one side.
(2) Total, 230 running feet—single on roof only.
(3) Total, 510 running feet—single on roof only.
(4) Total, 2,520 running feet—double on roof; shelves on both sides.
(5) Total, 1,130 running feet—double on roof.
(6) Total, 1,130 running feet—double on roof.
Temperatures—
(1) 5° F. to 15° F.
(2) Varies.
(3) 8° F. to 13° F.
(4) 0° F. to 10° F.
(5) 9° F. to 13° F.
(6) 9° F. to 13° F.
Insulation: 8 in. cork throughout.
Freezing-capacity: Over 10 tons of fish per day.
Storage capacity: 170 tons.

A. Hull (Moeraki) :—
Refrigeration unit: Lindé, 4 ton.
Power unit: Electric motor, 15 h.p.
Chambers—
(1) 12 ft. by 16 ft. by 8 ft.
(2) 5 ft. by 18 ft. by 8 ft.
Piping: On sloping-loft principle, 100 ft.
Insulation: 12 in. pumice.
Temperature: 28° F.
Remarks: Plant used as a chiller only. Fish not held here long.

APPENDIX N—*continued.*

North Otago Cool Stores, Oamaru :—
Refrigeration unit: Haslam, 6 ton.
Power unit: Electric motor.
Chambers (fish): 18 ft. by 10 ft. by 8 ft.
Piping: 240 running feet.
Remarks: Only used for small quantities of fish. Main supply sent to the meat-freezing works. Particulars not available.

P. Feron and Sons Ltd. (Timaru) :—
Refrigeration unit: York, 10 ton.
Chamber: Size not available.
Capacity: 250 cases to 300 cases.
Piping: Very light.
Temperature: 25° F.
Remarks: Used as a pre-cooler only.

Christchurch.

P. Feron and Sons, Ltd. :—
Refrigeration unit: Haslam, 45 ton, 2 cylinder, single-acting enclosed-crank type.
Power unit: Electric motor, 80 h.p., direct-coupled. Standby—one complete unit as above.
Chambers—
(1) Freezing-room—capacity, 1,140 cubic feet.
(2) Ante-chamber (for daily use)—capacity, 1,160 cubic feet.
(3) Store
(4) Store
(5) Store
(6) Store
} Total capacity, 8,475 cubic feet.
Temperatures—
(1) Freezer, 10° F.
(2) Lobby, 20° F. to 30° F. Open frequently for daily use.
(3) to (6) Stores, 20° F.
Remarks: Freezing by brine circulation through a double pipe brine cooler, then through the rooms. On its way back to the brine cooler, the brine passes through the icemaking tank, thus maintaining a supply of ice.

P. Feron and Sons, Ltd. (Kaikoura) (Pre-cooler only) :—
Refrigeration unit: Hull, 3 ton.
Power unit: Tangye, suction gas, 40 h.p.
Chambers—(1) Fish-cooler—30 ft. by 8 ft. by 8 ft.
(2) Bait storage only—20 ft. by 8 ft. by 8 ft.
(3) Ice storage only—size not given.
Temperature: Fish-cooler, 26° F.
Remarks: The ice is made in Christchurch and is only held here for storage. Not used by fishermen; supplied to hotels. Plant requires to be completely remodelled.

Napier.

Napier Fisheries Co-operative, Ltd. (Port Ahuriri) :—
Refrigeration units: Frick automatic, 4½ ton, icemaking (ammonia); Sterne automatic, 1 ton (methyl chloride).
Power units: Electric motor, 17½ h.p.; electric motor, 2 h.p.
Chambers: Two—
(1) 18 ft. by 8 in. by 7 ft.—Ice store and ice-making.
(2) 5 ft. by 5 ft. by 7 ft.—Cooler for smoked fish.
Insulation: 8 in. cork.
Temperature—
(1) 26° F.
(2) 15° F.
Remarks: Both machines are coupled on to both chambers. The Frick machine carries as a normal load the larger chamber and the icemaking plant. The Sterne can be used for both chambers, but its normal load is the small chamber used as a cool store for the smoked fish. No fish is frozen or held for export in this plant.

Tauranga.

Moore Fisheries, Ltd., Tauranga :—
Refrigeration units: Hercules, 3 ton; Hull, ½ ton; Lipman, ¼ ton.
Power units: Electric motor, 10 h.p.; electric motor, 1½ h.p.; electric motor, 1 h.p.
Chambers: Two—
(1) 10 ft. by 8 ft. by 7 ft.
(2) 15 ft. by 12 ft. by 6 ft.
Piping—
(1) 300 ft. of ½ in.; 160 ft. of 1 in.
(2) 585 ft.
Remarks: The Hercules 3 ton plant is coupled to the large chamber and also runs the icemaking plant. The other two machines take care of the smaller room; either one or both may be used.

Union Fish and Ice Co., Ltd., Tauranga :—
Refrigeration unit: Worthington, ? tons.
Chambers: One—capacity, 8 tons of fish; ice-maker—capacity, 1,500 lb. in twenty-four hours.
Remarks: Further details unobtainable, as the plant was closed when the Committee visited it for the purpose of inspection.

Thames.

Thames Fisheries, Ltd., Thames :—
Refrigeration units: Lindé, 7 ton (ice); Lindé, 2 ton (ice).
Power units: Electric motor, 35 h.p.; electric motor, 20 h.p.
Chambers: Eight. Descriptions as under—

No.	Size.	Piping.	Purpose.
1	12 ft. by 18 ft. by 10 ft.	605 ft.	Chill-room.
2	10 ft. 6 in. by 18 ft. by 10 ft.	493 ft., plus brine-tank 3 ft. by 9 ft. by 6 in.	Cool-room.
3	10 ft. by 18 ft. by 9 ft.	810 ft.	Not in use.
3A	12 ft. by 18 ft. by 9 ft.	576 ft.	Not in use.
4	16 ft. 6 in. by 11 ft. 6 in. by 6 ft. 6 in.	1,596 ft.	Freezer.
5	16 ft. 6 in. by 11 ft. 6 in. by 6 ft. 6 in.	1,624, banked in racks	Freezer.
6	16 ft. 6 in. by 11 ft. 6 in. by 6 ft. 6 in.	1,596 ft.	Freezer.
7	24 ft. by 18 ft. by 10 ft.	880 ft., roof only	Store—not in use.

APPENDIX N—*continued.*

Temperatures—
(1) to (3A) Cool or not in use.
(4) to (6) 0° F. to 6° F.
(7) 6° F.

Remarks: These are the temperatures given by the firm. In the only room which had a thermometer available (No. 6) the temperature was 15° F., but the machines had only been operating a few hours. Icemaking equipment—No. 1 tank: 7 ton; No. 2 tank: 2 ton. Both refrigerating units are capable of being operated on any chamber, series of chambers, or either of the two icemaking tanks. Chambers 2 to 3A have wooden walls and Nos. 2 and 3 require renovation. No. 3A is not in use at all. Chambers 4 to 6 have concrete walls and are in good order. No. 7 has wooden walls, but is in good order. It was not in use as a refrigerated store at the time of our inspection, but was used as a general store for odd material and equipment.

Taylor Bros., Thames:—
Refrigeration units: Lindé, 4 ton; Humber, 2 ton.
Power unit: Water drive, 1½ in. nozzle, 65 lb. pressure.
Chambers: Two, as under:—

No.	Size.	Piping.	Use.
1	14 ft. by 12 ft. by 6 ft.	258 ft.	Chill only.
2	14 ft. by 12 ft. by 6 ft.	..	Not in use.

Icemaking plant: 1½ tons in twenty-four hours.
Remarks: These chambers were in a poor condition, wooden roofs, wooden walls, and the insulation (10 in. pumice) must have been full of water as water was dripping from holes in the roof lining. If the industry is licensed and it is a condition of the granting of such license that adequate plants be installed, this plant would have to be practically rebuilt to make it suitable for freezing fish for export.

Shortland Fish Co., Thames:—
Refrigeration unit: Lindé, 6 ton.
Power unit: Electric motor, 40 h.p.
Chambers: Three, as under—

No.	Size.	Piping.	Insulation.	Use.
1	36 ft. by 18 ft. by 9 ft. ..	1,008 ft.	9 in. pumice	Chill room.
2	36 ft. by 18 ft. by 9 ft. ..	1,008 ft.	9 in. pumice	Never used.
3	36 ft. by 18 ft. by 9 ft. ..	1,008 ft.	9 in. pumice	Never used.

Remarks: The chambers have wooden walls and roof, but concrete floors, and appear to be in fair order. In the only room in use a quantity of ice on the floor, probably frozen drippings, would tend to make it unsafe for workers.

Co-operative Fisheries (N.Z.), Ltd., Thames:—
Refrigeration unit: Sterne, 12 ton.
Power unit: Electric motor, 25 h.p.
Chambers: Two, as under—

No.	Size.	Piping.	Use.
1	16 ft. by 12 ft. by 7 ft.	256 ft., plus two large brine-tanks	Cool-room.
2	12 ft. by 12 ft. by 7 ft.	726 ft.	Cool-room.

Insulation: 4 in. cork throughout.
Remarks: This plant was in excellent condition. It is well kept, the chambers being concrete all over and the piping in good order. A standby refrigeration unit, a duplication of the present one, has been acquired, but is not yet installed.

Auckland.

Sanfords Ltd., Auckland:—
Refrigeration units: (*a*) 30 ton; (*b*) 30 ton; (*c*) 30 ton.
Power units: Electric motors—(*a*) 60 h.p.; (*b*) 60 h.p.; (*c*) 60 h.p.
Chambers: Seventeen and ice-room, as under:—

No.	Size.	Use.
1	7 ft. 6 in. by 11 ft. 9 in. by 17 ft. 8 in. ..	Sharp freezer.
2	8 ft. by 17 ft. 6 in. by 22 ft. 6 in.	Chill-room.
3	7 ft. 6 in. by 11 ft. 9 in. by 17 ft. 8 in. ..	Sharp freezer.
4	8 ft. by 17 ft. 6 in. by 26 ft.	Store.
5	8 ft. by 18 ft. by 26 ft.	Store.
6	12 ft. by 6 ft. by 8 ft. 6 in.	Chill-room.
7	12 ft. by 6 ft. by 8 ft. 6 in.	Chill-room.
8	12 ft. by 6 ft. by 8 ft. 6 in.	Chill-room.
9	12 ft. by 6 ft. by 8 ft. 6 in.	Chill-room.
10	12 ft. by 6 ft. by 8 ft. 6 in.	Chill-room.
11	8 ft. 6 in. by 11 ft. 9 in. by 11 ft. 9 in. ..	Chill-room.
12	8 ft. 6 in. by 12 ft. by 12 ft.	Chill-room.
13	8 ft. by 12 ft. by 12 ft.	Store.
14	8 ft. by 28 ft. by 12 ft. 6 in.	Store.
15	24 ft. by 17 ft. by 8 ft. 3 in.	Sharp freezer.
16	24 ft. by 16 ft. 6 in. by 8 ft. 3 in.	Storage.
17	8 ft. by 15 ft. by 18 ft. 9 in.	Storage.
Ice-room	44 ft. by 42 ft. by 9 ft.	..

APPENDIX N—*continued.*

Temperatures—
Sharp freezers, 5° F.
Stores, 10° F.
Chill-rooms, 23° F.

Waitemata Fisheries, Ltd., Auckland :—

Refrigeration units : (*a*) Brotherhood, 30 ton ; (*b*) Servel, 2 ton ; (*c*) Frigidaire, 1 ton.
Power units : All electric motors, power not given.
Chambers : As under—

No.	Size.	Use.
1	9 ft. by 12 ft. by 10 ft. 6 in.	Sharp freezer.
2	13 ft. by 23 ft. by 10 ft. 6 in.	Store.
3	9 ft. by 15 ft. by 19 ft. 6 in.	Ante room.
4	10 ft. 11 in. by 11 ft. 3 in. by 10 ft. 6 in. ..	Chill-room.
5	10 ft. 11 in. by 11 ft. 8 in. by 10 ft. 6 in. ..	Freezer.
6	10 ft. by 8 ft. by 8 ft.	Chill-room.

Insulation : All except 5 and 6 are 8 in. cork ; 5 and 6 are 6 in. cork.

Temperatures—
Freezers, 5° F.
Store and ante room, 10° F.
Chill-rooms, 28° F.

Auckland Fisheries, Ltd., Auckland :—

Refrigeration units : (*a*) Lindé, 25 ton (ice) ; (*b*) Lindé, 10 ton (ice).
Power units : (*a*) Electric motor, 35 h.p. ; (*b*) electric motor, 20 h.p.
Chambers : Two, as under :—

No.	Capacity.	Piping.	Use.
1	1,500 cases ..	3,500 ft.	Hard freezer.
2	2,000 cases ..	2,500 ft. ..	Store.

Insulation : 8 in. cork.

Temperatures—
Freezer , 5° F.
Store, 10° F.

Auckland Seine Boat Association, Ltd., Auckland :—

Refrigeration unit : Lightfoot (Lindé) ?, 14 ton.
Power unit : Electric motor, 25 h.p.
Chambers : Four, as under :—

No.	Size.	Use.
1	14 ft. by 7 ft. by 7 ft.	Store.
2	14 ft. by 10 ft. 6 in. by 7 ft.	Sharp freezer.
3	14 ft. by 10 ft. 6 in. by 7 ft.	Sharp freezer.
4	14 ft. by 7 ft. by 7 ft.	Store.

Piping : Stores, 600 ft. ; freezers, 1,600 ft.
Insulation : Outer sides and floor, 6 in. cork ; internal partitions, 4 in. cork ; roof, 2 in. cork and 8 in. pumice.

New Plymouth.

V. Siserich, New Plymouth :—

Refrigeration unit : Humble, 5 ton.
Power unit : Electric motor, 15 h.p.
Chambers : Three, as under :—

No.	Size.	Use.	Piping.
1	8 ft. by 6 ft. by 6 ft. ..	Chill-room ..	266 ft.
2	8 ft. by 6 ft. by 6 ft. ..	Chill-room ..	266 ft.
3	8 ft. by 6 ft. by 6 ft. ..	Chill-room ..	266 ft.

Wooden floors, roof, and sides.
Capacity : 5 tons fish.
Icemaker : ½ ton of ice daily in addition to above load.

APPENDIX N—*continued.*

Wellington.

Co-operative Dairy Producers' Freezing Co., Ltd., Wellington :—

Refrigeration units—

(1) Haslam, 75 ton .. ..
(2) Haslam, 75 ton .. .. } Available at any point over the many chambers.
(3) Hercules, 70 ton (standby)
(4) Hall, 10 ton (special type)—prime duty, ice-cream, but can be used as a booster on any portion of plant.

Power units : Electric motors on each compressor.

Fish-chambers : Two, as under :—

No.	Size.	Use.
1	91 ft. by 23 ft. 6 in. by 7 ft. 8 in.	Freezer.
2	91 ft. by 17 ft. 6 in. by 9 ft. 3 in.	Store.

Piping—

(1) 1 running foot of piping for each 2·2 cubic feet of space.
(2) 1 running foot of piping for each 4 cubic feet of space.

Temperatures : Fish-rooms range from 5° to 8°

NOTE.—The Hall 10 ton is a special type of machine and is capable of producing a temperature of —30° F., equal to over 60° of frost, a very useful unit as a booster for the main plant if required.

N.Z. Fisheries, Ltd., Wellington :—

Refrigeration units : (1) Hall, 25 ton ; (2) Hall, 25 ton.

Power units : Two electric motors, each 42 h.p.

Chambers : Four, as under :—

No.	Size.	Use.	Piping.
1	28 ft. by 20 ft. by 10 ft. ..	Ice-store ..	739 ft.
2	36 ft. by 44 ft. by 10 ft. ..	Freezer ..	4,140 ft.
3	36 ft. by 44 ft. by 10 ft. ..	Store ..	1,660 ft.
4	36 ft. by 44 ft. by 10 ft. ..	Store ..	1,782 ft.

Remarks : On No. 2 room, the freezer, the roof is double piped and the walls single piped. The stores are single piped on the roof.

Ice-tank : Capacity, 12 tons in twenty-four hours.

N.Z. Fisheries, Ltd., Kaingaroa, Chatham Islands :—

Refrigeration unit : Hercules, 6 ton.

Power unit : Semi-diesel, ? h.p.

Storage capacity : 1,200 cases to 1,500 cases. At 2,000, works are full. Daily load, 50 cases.

Temperature : 8° F. to 10° F.

APPENDIX O.

STATEMENT SHOWING AVERAGE NET EARNINGS OF REPRESENTATIVE FISHERMEN (OVER THE MOST RECENT TWELVE-MONTHLY PERIOD), TOGETHER WITH LANDINGS AND GROSS EARNINGS AND OPERATING-EXPENSES.

Port.	Number of Fishermen.	Fish landed.		Gross Earnings.		Operating-costs.		Net Returns.			Remarks.
		Total.	Per Man.	Total.	Per Pound.	Total.	Per Pound.	Total.	Per Pound.	Per Man.	
		Lb.	Lb.	£	d.	£	d.	£	d.	£	
Bluff ..	46	520,569	11,317	6,227	2·87	1,475	0·68	4,752	2·19	103	..
Port Chalmers	8	279,866	34,983	3,580	3·07	1,613	1·38	1,967	1·69	246	..
	11*	..	..	..	..	..	..	2,409	..	219	..
Moeraki ..	4	54,096	13,524	517	2·30	143	0·64	374	1·66	94	..
	6*	..	..	..	..	..	..	642	..	107	..
Timaru ..	5	225,929	45,186	2,242	2·39	1,106	1·18	1,136	1·21	227	2 men, Danish seine.
Akaroa ..	3	207,475	69,159	2,359	2·74	1,611	1·87	748	0·87	249	2 men, Danish seine.
	4*	..	..	..	..	..	..	867	..	217	2 men, Danish seine.
Lyttelton ..	6	311,355	51,893	3,365	2·60	1,896	1·46	1,469	1·14	245	4 men, Danish seine.
	8*	..	..	..	..	..	..	1,611	..	201	4 men, Danish seine.
Nelson ..	4	116,376	29,094	1,784	3·69	839	1·73	945	1·96	236	3 men, Danish seine.
Blenheim ..	3	142,127	47,376	1,494	2·53	815	1·38	679	1·15	226	..
Kaikoura ..	2	96,012	48,006	894	2·24	184	0·46	710	1·78	355	..
	4*	..	..	..	..	..	..	1,054	..	264	..
Napier ..	8	661,137	82,642	5,362	1·95	3,090	1·12	2,272	0·83	284	3 men, Danish seine.
Gisborne ..	5	78,276	15,655	769	2·37	261	0·80	508	1·57	102	..
	6*	..	..	..	..	..	..	652	..	109	..
Thames ..	21	916,634	43,649	7,610	2·00	2,421	0·64	5,189	1·36	247	1 man, Danish seine.
Auckland ..	16	1,144,981	71,561	8,499	1·79	3,843	0·81	4,656	0·98	291	16 men, Danish seine.
	29*	..	..	..	..	..	..	8,759	..	302	29 men, Danish seine.
Kaipara ..	7	79,284	11,326	1,541	4·68	553	1·68	988	3·00	141	..
Whangarei ..	3	59,386	19,795	845	3·43	337	1·37	508	2·06	169	..
New Plymouth	5	71,161	14,232	907	3·07	459	1·55	448	1·52	90	..
Wellington ..	15	612,476	40,832	7,246	2·85	3,314	1·30	3,932	1·55	262	..
Total ..	161	5,577,140	34,641	55,241	2·38	23,960	1·03	31,281	1·35	194	..
	185*	..	..	..	..	..	..	36,843	..	199	..

* Includes extra men from whom gross earnings and operating-costs were not procurable.

APPENDIX O (1).

Earnings of Representative Fishermen, 1936–37.

(Latest twelve-monthly period available.)

Fisherman.	Method of Fishing.	Fish landed.	Gross Earnings.		Operating-costs.		Net Returns.		Net Returns each Man.		
				Per lb.		Per lb.		Per lb.			Per lb.
		Lb.	£	d.	£	d.	£	d.		£	d.
Bluff.											
A and B	Line	28,271	334	2·84	72	0·61	262	2·23	A	131	1·12
									B	131	1·12
C, D, E	,,	39,769	445	2·69	94	0·56	351	2·13	C	117	0·71
									D	117	0·71
									E	117	0·71
F and G	,,	27,080	316	2·80	92	0·82	224	1·98	F	112	0·99
									G	112	0·99
H	,,	6,718	78	2·79	22	0·79	56	2·00	H	56	2·00
I and J	,,	10,239	119	2·79	28	0·65	91	2·14	I	45	1·07
									J	45	1·07
K and L	,,	25,316	288	2·73	72	0·68	216	2·05	K	108	1·03
									L	108	1·03
M and N	,,	31,500	386	2·94	115	0·88	271	2·06	M	135	1·03
									N	135	1·03
O and P	,,	26,358	307	2·79	59	0·54	248	2·25	O	124	1·12
									P	124	1·12
Q, R, S,	,,	35,167	467	3·19	88	0·60	379	2·59	Q	126	0·86
									R	126	0·86
									S	126	0·86
T, U, V,	,,	37,506	488	3·12	61	0·39	427	2·73	T	142	0·91
									U	142	0·91
									V	142	0·91
W	,,	9,447	122	3·10	13	0·33	109	2·77	W	109	2·77
X, Y, Z*	,,	35,449	423	2·86	83	0·94	340	1·92	X	113	0·64
									Y	113	0·64
									Z	113	0·64
A1, B1, C1	,,	38,119	535	3·37	160	1·01	375	2·36	A1	125	0·79
									B1	125	0·79
									C1	125	0·79
D1, E1	,,	23,597	277	2·82	70	0·71	207	2·11	D1	104	1·06
									E1	104	1·06
F1, G1	,,	20,670	239	2·77	52	0·60	187	2·17	F1	94	1·08
									G1	94	1·08
H1, I1	,,	40,273	425	2·53	118	0·70	307	1·83	H1	154	0·96
									I1	154	0·96
J1, K1	,,	24,738	272	2·64	90	0·88	182	1·76	J1	91	0·88
									K1	91	0·88
L1, M1	,,	21,119	239	2·71	66	0·75	173	1·96	L1	87	0·98
									M1	87	0·98
N1, O1, P1	,,	25,392	299	2·82	81	0·77	218	2·05	N1	73	0·68
									O1	73	0·68
									P1	73	0·68
Q1, R1	,,	8,468	103	2·92	23	0·65	80	2·27	Q1	40	1·14
									R1	40	1·14
S1, T1†	,,	5,373	65	2·90	16	0·72	49	2·18	S1	25	1·09
									T1	25	1·09
Waikawa.											
A	Line	25,259	189	1·80	109	1·04	80	0·76	A	80	0·76
B	,,	..	..	..	..	..	87	..	B	87	..
Port Chalmers.											
A and B	Trawl	82,466	1,018	2·96	282	0·82	736	2·14	A	368	1·07
									B	368	1·07
C, D, E	,,	67,740	815	2·89	111	0·39	704	2·50	C	234	0·83
									D	176	0·62
									‡E	224	0·79
F	,,	84,566	1,180	3·35	999	2·83	181	0·52	F	181	0·52
G and H	Line	45,094	567	3·02	221	1·17	346	1·85	G	173	0·93
									H	173	0·93
I	,,	..	..	..	..	..	113	..	I	113	..
J	Drag-net	..	..	..	..	..	54	..	J	54	..
K	Line	..	..	..	..	..	275	..	K	275	..
Moeraki.											
A and B	Line	37,927	389	2·46	115	0·73	274	1·73	A	137	0·87
									B	137	0·87
C and D	,,	16,169	128	1·89	28	0·41	100	1·48	C	50	0·74
									D	50	0·74
E	,,	..	..	..	..	..	118	..	E	118	..
F	,,	..	..	..	..	..	150	..	F	150	..
Oamaru.											
A	Line	30,686	351	2·74	200	1·56	151	1·18	A	151	1·18
B (4 months)	,,	9,285	151	3·92	70	1·81	81	2·11	B	81	2·11

* A to Z: 1st February to 31st August, 1937 (fishing season). † A1 to T1: Year ended 30th June, 1937. ‡ E is owner, and paid £70 for upkeep.

APPENDIX O (1)—*continued.*

Fisherman.	Method of Fishing.	Fish landed.	Gross Earnings.		Operating Costs.		Net Returns.		Net Returns each Man.		
				Per lb.		Per lb.		Per lb.			Per lb.
		Lb.	£	d.	£	d.	£	d.		£	d.
Timaru.											
A	Line	34,576	362	2·52	198	1·38	164	1·14	A	164	1·14
B	,, ...	58,235	594	2·45	427	1·76	167	0·69	B	167	0·69
C	,, ...	65,553	668	2·44	265	0·93	403	1·51	C	403	1·51
D (5 months) ..	Trawl	9,793	117	2·87	34	0·83	83	2·04	D	83	2·04
E and F (10 months)	Danish seine ..	67,565	618	2·20	216	0·77	402	1·43	E	201	0·74
									F	201	0·74
G	Line	..	..	..	..	..	162	..	G	162	..
Akaroa.											
A	Trawl	135,754	1,581	2·80	1,242	2·20	339	0·60	A	339	0·60
B	,, ...	..	710	..	557	..	153	..	B	153	..
C	Line	29,646	470	3·81	180	1·45	290	2·36	C	290	2·36
D	,, ...	42,075	308	1·76	189	1·08	119	0·68	D	119	0·68
Lyttelton.											
A and B	Line and set-net	12,710	113	2·13	25	0·48	88	1·65	A	44	0·82
									B	44	0·82
C (3 months) ..	Nets	5,761	40	1·66	25	1·00	15	0·66	C	15	0·66
D, E, F	Danish seine ..	156,404	1,270	1·96	262	0·40	1,008	1·56	D	348	0·53
									E	361	0·56
									F	299	0·47
G	,, ..	142,241	1,982	3·34	1,609	2·71	373	0·63	G	373	0·63
H	Drag-net ..	..	..	..	..	..	67	..	H	67	..
I	Line and set-net	..	..	..	..	..	75	..	I	75	..
Westport.											
A	Trawl	..	..	..	..	..	90 (loss)	..	A	90	Loss.
Nelson.											
A	Line	15,059	156	2·48	114	1·80	42	0·68	A	42	0·68
B, C, D	Danish seine ..	101,317	1,628	3·86	725	1·71	903	2·15	B	301	0·72
									C	301	0·72
									D	301	0·72
E (4 months) ..	,, ..	11,026	297	6·46	155	3·38	142	3·08	E	142	3·08
Blenheim.											
A	Trawl	22,922	224	2·39	137	1·38	87	1·01	A	87	1·01
B	,, ...	69,301	660	2·28	288	0·99	372	1·29	B	372	1·29
C	,, ...	49,904	610	2·93	390	1·87	220	1·06	C	220	1·06
D, E, F (4 months)	,, ...	64,076	594	2·23	170	0·64	424	1·59	D	141	0·53
									E	141	0·53
									F	141	0·53
Kaikoura.											
A	Line	76,680	714	2·24	124	0·39	590	1·85	A	590	1·85
B	,, ...	19,332	180	2·24	60	0·75	120	1·49	B	120	1·49
C	,, ...	..	..	..	..	..	165	..	C	165	..
D	,, ...	..	..	..	..	..	179	..	D	179	..
Picton.											
A	Line	74,378	867	2·79	387	1·25	480	1·54	A	480	1·54
B	,, ...	..	236	..	147	..	89	..	B	89	..
Napier.											
A and B	Trawl	139,379	1,182	2·04	1,159	2·00	23	0·04	A	241	0·41
									B	255	0·44
C, D, E	,, ...	311,775	2,282	1·76	2,535	1·95	253 (loss)*	0·19	C	341	0·26
									D	342	0·26
									E	254	0·20
F, G, H	Danish seine ..	209,983	1,898	2·17	1,835	2·11	63	0·06	F	298	0·34
									G	339	0·39
									H	202	0·23
I and J (10 months)	Danish seine and line	33,486	585	4·19	542	3·98	43	0·21	I	121	0·87
									J	121	0·87
Gisborne.											
A and B	Line	19,941	197	2·37	49	0·58	148	1·79	A	74	0·89
									B	74	0·89
C, D, E	,, ...	58,335	572	2·35	212	0·86	360	1·49	C	65	0·27
									D	193	0·80
									E	102	0·42
F	Trawl and line ..	..	..	..	..	..	144	..	F	144	..
Tauranga.											
A and B (6 months)	Danish seine ..	63,400	292	1·11	174	0·66	118	0·45	A	60	0·23
									B	58	0·22
C	Line	..	..	..	..	..	67	..	C	67	..

* Crew paid out of gross receipts.

APPENDIX O (1)—*continued.*

Fisherman.	Method of Fishing.	Fish landed.	Gross Earnings.		Operating Costs.		Net Returns.		Net Returns each Man.		
				Per lb.		Per lb.		Per lb.			Per lb.
		Lb.	£	d.	£	d.	£	d.		£	d.
Thames.											
A and B	Set-net	68,701	491	1·70	169	0·59	322	1·11	A	161	0·55
									B	161	0·55
C and D	,,	59,113	686	2·78	162	0·66	524	2·12	C	262	1·06
									D	262	1·06
E and F	,,	67,668	753	2·67	165	0·59	588	2·08	E	294	1·04
									F	294	1·04
G, H, I	Line	146,168	827	1·36	259	0·42	568	0·94	G	189	0·31
									H	189	0·31
									I	189	0·31
J and K	Set net	59,153	617	2·51	111	0·45	506	2·06	J	253	1·03
									K	253	1·03
L	,,	27,110	253	2·25	75	0·70	178	1·55	L	178	1·55
M, N, O, P	Line	196,378	1,451	1·77	245	0·30	1,206	1·47	M	301	0·39
									N	301	0·39
									O	301	0·39
									P	301	0·39
Q, R, S, T	Set-net	114,700	1,151	2·41	191	0·40	960	2·01	Q	240	0·50
									R	240	0·50
									S	240	0·50
									T	240	0·50
U	Danish seine	177,643	1,381	1·86	1,044	1·41	337	0·45	U	337	0·45
V and W (9 months)	Set-net	65,610	665	2·43	168	0·61	497	1·82	V	248	0·91
									W	248	0·91
Mercury Bay.											
A and B (9 months)	Line	84,374	647	1·84	124	0·35	523	1·49	A	262	0·75
									B	262	0·75
C (9 months)	,,	13,482	129	2·29	55	0·98	74	1·31	C	74	1·31
D (9 months)	,,	6,007	44	1·76	20	0·80	24	0·96	D	24	0·96
Auckland.											
A, B, C, D	Danish seine	413,416	2,897	1·68	2,192	1·28	705	0·40	A	705	0·40
									B	322	0·18
									C	322	0·18
									D	207	0·12
E, F, G	,,	260,510	1,961	1·81	1,533	1·41	428	0·40	E	428	0·40
									F	322	0·30
									G	322	0·30
H, I, J (18 months)	,,	160,345	1,180	1·76	881	1·31	299	0·45	H	299	0·45
									I	199	0·30
									J	199	0·30
K, L, M	,,	117,642	988	2·01	748	1·52	240	0·49	K	240	0·49
									L	164	0·34
									M	164	0·34
N, O, P (6 months	,,	110,630	861	1·87	489	1·06	372	0·81	N	372	0·81
									O	179	0·39
									P	179	0·39
Q, R, S (year ended 31/3/37)	,,	235,300	1,807	1·84	1,293	1·32	514	0·52	Q	514	0·52
									R	312	0·32
									S	260	0·27
Q, R, S (3 months ended 30/6/37)	,,	76,650	604	1·89	389	1·22	215	0·67	Q	215	0·67
									R	105	0·33
									S	95	0·30
T	,,	232,895	1,724	1·77	1,263	1·30	461	0·47	T	461	0·47
U, V, W, X	,,	424,096	2,786	1·58	2,505	1·42	281	0·16	U	430	0·24
									V	286	0·16
									W	272	0·15
									X	148	0·09
Y, Z, A1, B1	,,	373,444	2,403	1·55	2,418	1·56	15 (loss)*	0·01	Y	362	0·24
									Z	256	0·17
									A1	250	0·16
									B1	155	0·10
C1, D1, E1, F1	,,	541,215	3,438	1·52	2,809	1·24	629	0·28	C1	525	0·23
									D1	399	0·17
									E1	378	0·16
									F1	181	0·08
G1, H1, I1	,,	118,113	846	1·72	734	1·49	112	0·23	G1	112	0·23
									H1	131	0·27
									I1	131	0·27
J1, K1, L1, M1, N1 (40 weeks)	,,	440,640	3,400	1·85	3,696	2·01	296 (loss)*	0·16	J1	461	0·25
									K1	232	0·19
									L1	240	0·13
									M1	177	0·09
									N1	67	0·04
Helensville.											
A	Set-net	10,381	239	5·52	54	1·24	185	4·28	A	185	4·28
B	,,	10,973	228	4·98	77	1·66	151	3·32	B	151	3·32
C	,,	5,983	124	4·95	46	1·82	78	3·13	C	78	3·13
D	,,	..	350	..	98	..	252	..	D	252	..
E	,,	16,963	358	5·07	119	1·68	239	3·39	E	239	3·39

* Crew paid out of gross receipts.

APPENDIX O (1)—*continued.*

Fisherman.	Method of Fishing.	Fish landed.	Gross Earnings.		Operating Costs.		Net Returns.		Net Returns each Man.		
		Lb.	£	Per lb. d.	£	Per lb. d.	£	Per lb. d.		£	Per lb. d.
Russell.											
A (3 months) ..	Line	7,650	69	2·17	39	1·24	30	0·93	A	30	0·93
Mangonui.											
A	Line	..	43	..	42	..	1	..	A	1	..
Whangarei.											
A (12 months) ..	Line	32,676	425	3·13	185	1·36	240	1·77	A	240	1·77
A (6 months) ..	,, ...	15,979	216	3·25	78	1·17	138	2·08	A	138	2·08
B and C	,, ...	26,710	420	3·77	152	1·37	268	2·40	B	134	1·20
									C	134	1·20
Ruawai (Kaipara).											
A	Set-net ..	18,354	309	4·04	155	2·03	154	2·01	A	154	2·01
B and C	,, ..	16,630	283	4·09	102	1·47	181	2·62	B	90	1·31
									C	90	1·31
New Plymouth.											
A	Line	12,684	150	2·84	108	2·03	42	0·81	A	42	0·81
B	,, ...	7,338	106	3·48	15	0·49	91	2·99	B	91	2·99
C, D, E (7 months)	,, ...	41,765	438	2·52	136	0·78	302	1·74	C	113	0·65
									D	113	0·65
									E	76	0·44
F	,, ...	21,716	271	3·00	218	2·41	53	0·59	F	53	0·59
G and H	,, ...	29,423	380	3·10	118	0·97	262	2·13	G	131	1·06
									H	131	1·06
Wellington.											
A, B, C (6 months)	Line	62,284	644	2·48	224	0·86	420	1·62	A	140	0·54
									B	140	0·54
									C	140	0·54
D, E, F	,, ...	66,844	648	2·33	250	0·89	398	1·44	D	133	0·48
									E	133	0·48
									F	133	0·48
G, H, I, J ..	,, ...	132,055	1,616	2·93	360	0·65	1,256	2·28	G	314	0·57
									H	314	0·57
									I	314	0·57
									J	314	0·57
K, L, M, N ..	,, ...	147,011	1,599	2·61	551	0·90	1,048	1·71	K	262	0·43
									L	262	0·43
									M	262	0·43
									N	262	0·43
O, P, Q (8 months)	,, ...	74,324	929	3·00	499	1·61	430	1·39	O	143	0·46
									P	143	0·46
									Q	143	0·46
R and S*	,, ...	149,566	1,649	2·64	1,305	2·10	344	0·54	R	172	0·27
									S	172	0·27
T and U	,, ...	117,000	1,734	3·56	848	1·74	886	1·82	T	443	0·91
									U	443	0·91

* Expenses R and S, Wellington, include wages part-time men.

APPENDIX P.

TABLE SHOWING QUANTITIES OF FISH LANDED AT CHIEF FISHING PORTS AND QUANTITIES EXPORTED, BEING THE PRODUCE OF NEW ZEALAND.

Year.	Landings: Quantity.	Exports.						Total Value.
		Dried, Pickled, Salted, Smoked.		Frozen and Fresh.		Preserved, Potted, and Canned.		
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
	Cwt.	Cwt.	£	Cwt.	£	Lb.	£	£
1917	264,841	84	205	11,784	19,633	..	3,980	33,818
1918	216,531	28	122	7,843	12,658	..	5,422	19,202
1919	219,392	19	48	4,080	7,271	..	10,106	17,425
1920	241,072	282	599	6,375	14,032	..	12,891	27,522
1921	263,121	137	509	8,820	25,291	..	8,537	34,337
1922	270,674	186	422	12,612	36,267	..	6,667	43,356
1923	304,872	1,213	2,498	17,109	44,100	..	22,730	69,329
1924	286,289	*	*	17,589†	43,644†	..	14,773	58,417
1925	388,211	*	*	14,784†	38,424†	..	16,999	55,423
1926	331,390	*	*	17,436†	47,677†	..	15,332	63,009
1927	355,806	*	*	21,245†	56,757†	..	17,417	74,164
1928	286,957	351	1,095	21,481	62,433	..	21,355	84,883
1929–30	367,647	414	1,208	22,760	64,772	..	16,276	82,256
1930–31	369,346	1,128	3,744	17,678	47,047	..	9,881	60,672
1931–32	318,956	638	1,851	14,098	30,395	181,635	13,184	45,430
1932–33	287,979	521	1,216	19,894	39,662	154,806	10,443	51,321
1933–34	313,319	1,243	2,377	34,738	64,669	512,310	30,326	97,372
1934–35	331,415	1,968	4,064	46,714	97,469	280,418	18,475	120,008
1935–36	363,448	2,519	6,816	54,267	123,198	347,293	21,138	151,152
1936–37	363,128	3,724	12,069	50,727	132,401	492,741	29,205	173,675
6 months, April to September, 1937	..	678	1,915	24,996	80,001	156,475	9,001	90,917

* Included in frozen fish. † Including smoked and pickled.

NOTE.—All *landings* are for years ended 31st March commencing at 1917–18. All *exports* are for years ended 31st December until 1928; thence ended 31st March.

APPENDIX P1.

TABLE SHOWING QUANTITIES AND VALUE OF FISH AND SHELL-FISH EXPORTED FROM AND IMPORTED INTO NEW ZEALAND DURING THE YEARS ENDED 31ST MARCH, 1935-36-37, AND THE SIX MONTHS ENDED 31ST SEPTEMBER, 1937.

Description of Fish.	Exporting Ports.	1935.		1936.		1937.		1937. (Six Months ended 30th September, 1937).	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
				Fish and Shell-fish exported.					
			£		£		£		£
1. Oysters, fresh ..	Auckland .. dozen	676	15	756	22	1,190	37	438	18
	Wellington .. ,,	1,264	27	4,912	105	2,107	34	6,715	175
	Bluff .. ,,	204,720	1,853	196,114	2,043	132,236	1,376	55,480	689
	Total .. ,,	206,660	1,859	201,782	2,170	135,533	1,447	62,633	882
2. Blue cod, frozen ..	Auckland .. cwt.	..	..	2	14	4	11	7	35
	Wellington .. ,,	15,209	32,587	12,668	30,383	9,422	26,550	4,202	15,702
	Lyttelton .. ,,	45	87	72	168	56	170	23	63
	Dunedin .. ,,	88	179	69	171	211	596	190	599
	Bluff .. ,,	7,203	14,428	11,546	25,791	8,735	18,761	6,485	21,468
	Total .. ,,	22,545	47,281	24,357	56,527	18,428	46,088	10,907	37,867
3. Snapper, frozen ..	Auckland .. cwt.	7,191	12,943	11,133	23,670	15,185	44,384	6,278	19,823
	Wellington .. ,,	161	348	399	704	327	590	322	766
	Total .. ,,	7,352	13,291	11,532	24,374	15,512	44,974	6,600	20,589
4. Flounder, frozen ..	Auckland .. cwt.	2,189	5,797	2,682	7,431	1,510	5,388	238	944
	Wellington .. ,,	539	1,195	563	1,352	472	1,295	309	1,078
	Lyttelton .. ,,	872	1,730	413	882	91	305	267	871
	Dunedin .. ,,	411	923	448	1,188	462	1,443	182	536
	Timaru .. ,,	..	..	5	11	..	..	..	..
	Bluff .. ,,	298	749	394	993	294	887	193	632
	Total .. ,,	4,309	10,394	4,505	11,857	2,829	9,318	1,189	4,061
5. Other kinds, frozen * ..	Auckland .. cwt.	5,973	11,902	7,005	16,096	4,406	11,931	2,092	8,094
	Wellington .. ,,	1,644	2,966	2,190	3,868	2,923	5,520	1,251	2,627
	Lyttelton .. ,,	1,216	2,622	878	1,781	1,522	2,315	521	983
	Dunedin .. ,,	3,129	7,840	3,187	7,480	3,184	7,584	2,064	4,789
	Bluff .. ,,	546	1,173	613	1,215	691	1,762	372	991
	Total .. ,,	12,508	26,503	13,873	30,440	12,726	29,122	6,300	17,484
Total exports of frozen fish—Items 2, 3, 4, and 5	Auckland .. cwt.	15,353	30,642	20,822	47,211	21,105	61,714	8,615	28,896
	Wellington .. ,,	17,553	37,096	15,820	36,307	13,144	33,955	6,084	20,173
	Lyttelton .. ,,	2,133	4,439	1,363	2,831	1,669	2,790	811	1,917
	Dunedin .. ,,	3,628	8,942	3,704	8,839	3,857	9,623	2,436	5,924
	Timaru .. ,,	..	..	5	11	..	..	..	..
	Bluff .. ,,	8,047	16,350	12,553	27,999	9,720	21,410	7,050	23,091
	Total .. ,,	46,714	97,469	54,267	123,198	50,727	132,401	24,996	80,001
Smoked, dried, pickled, or salted	Total .. cwt.	1,968	4,064	2,519	6,816	3,724	12,069	678	1,915
Preserved in tins (all ports)	Crayfish .. lb.	54,561	3,229	63,901	4,349	23,783	1,697	7,984	681
	Oysters .. ,,	95,270	3,818	172,855	6,444	331,747	12,974	110,955	5,783
	Toheroas .. ,,	24,688	1,867	24,836	1,683	32,979	2,425	31,590	1,957
	Whitebait .. ,,	105,899	9,561	85,701	8,662	104,232	12,109	5,946	580
	Total .. ,,	280,418	18,475	347,293	21,138	492,741	29,205	156,475	9,001
* Frozen crayfish, included above in "Other kinds, frozen"	Auckland .. cwt.	117	245	336	1,026	355	1,214	92	396
	Wellington .. ,,	94	136	155	216	787	1,465	4	17
	Lyttelton .. ,,	243	799	184	660	25	89	3	14
	Dunedin .. ,,	961	3,060	294	740	37	73	137	458
	Bluff .. ,,	..	..	23	51	28	58	..	..
	Total .. ,,	1,415	4,240	992	2,693	1,232	2,899	236	885
				Fish and Shell-fish imported.					
Anchovies, salted, in containers of 28 lb. and over	.. cwt.	54	136	51	206	67	291	1	4
Other fish—frozen, smoked, pickled, dried, or salted	.. ,,	994	2,562	2,614	3,625	1,339	4,050	654	1,995
Other fish—potted and preserved in tins	.. lb.	3,208,256	96,990	3,997,112	156,559	4,626,482	174,105	2,273,734	86,434
	Total ..	..	99,688	..	160,390	..	178,446	..	88,433

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