

Clause 12 of the Act specifies that "The Governor, by Order in Council gazetted, from time to time may declare that in any part or parts of the colony any species of fish, oysters, or seals shall be protected and come under the operation of such of the provisions of this Act as may be specified in such Order in Council, and may from time to time revoke, alter, and amend any such order." By an Order in Council gazetted on the 2nd May, 1895, it is provided that "Any person who takes, buys, sells, exposes for sale, or has in possession, any fish of any of the species enumerated in the Schedule hereto of a less weight or size than that set opposite the name of such fish in the said Schedule, is liable to a penalty not exceeding twenty pounds: Provided that for the purposes of this regulation, during a period of three months from the date hereof (but no longer), a person shall not be deemed to take or have in possession any fish if, having unintentionally caught the same in a net or seine of lawful mesh whilst lawfully fishing therewith, he returns all such fish to the water when sorting out the haul."

## Schedule.

Description of Fish.	Weight.	Description of Fish.	Weight.
Hapuku .. .. .	5 lb.	Kingfish .. .. .	3 lb.
Kahawai .. .. .	6 oz.	Warehou .. .. .	4 oz.
Schnapper .. .. .	1 lb.	Mackerel .. .. .	8 oz.
Tarakihi .. .. .	4 oz.	Blue-cod .. .. .	8 oz.
Trumpeter .. .. .	1 lb.	Rock-cod .. .. .	8 oz.
Moki .. .. .	8 oz.	Red-cod .. .. .	8 oz.
Barracouta .. .. .	8 oz.	Gurnard .. .. .	4 oz.
Horse-mackerel .. .. .	4 oz.	Mullet .. .. .	4 oz.
Trevally .. .. .	4 oz.	Butterfish .. .. .	4 oz.
	Length.		Length.
Flounder .. .. .	9 in.	Garfish .. .. .	9 in.
Soles .. .. .	9 in.	Herring .. .. .	5 in.

This seems to me a regulation of questionable value. No subject relating to sea-fisheries has been more debated than the possibility which may exist of exhausting the supply. The consensus of opinion to-day, gathered from the information now being rapidly accumulated in Europe and America, may be summarised as follows: (a.) It is possible very easily to exhaust all fisheries which are purely local, such as—(a) beds of oysters and other mollusca, and (b) flat-fish fisheries in inland waters, or in more or less enclosed areas. (b.) Fisheries confined to a limited zone, such as those of crayfish on the coast, are also capable of depletion, especially near centres of population. (c.) On the other hand, fisheries in the open sea cannot easily be effected, except within range of the fishing fleets of densely-peopled countries.

When one considers the enormous number of ova produced by most species of fish, it is difficult to believe that any amount of fishing can make the slightest appreciable difference in the available supply. We have absolutely no data regarding the number of ova produced by our New Zealand fishes, but trustworthy and accurate information has been collected regarding many of the European species. The following figures are taken from the Ninth Annual Report of the Fishery Board of Scotland, 1890 (p. 254, &c.). The number of ova taken from a single individual of the following species was: herring, 22,000 to 47,000; whiting, 109,000 to 131,000; haddock, 156,000 to 806,000; brill, 825,000; halibut, 1,490,000 to 4,451,000; cod, 2,963,000 to 6,652,000; turbot, 5,612,000 to 10,114,000; ling, 12,300,000 to 28,360,000. One large fish of the last-named species, 96 in. long, weighing 86 lb., had a roe weighing 14 lb., and estimated to contain 60,000,000 ova.

Dr. T. Wemyss Fulton, who is at the head of the scientific department of the Scotch Fishery Board, points out in the report just quoted that the Royal Commission of 1854 recommended that no restrictions whatever should be made in regard to the sea-fisheries, and, as the late Professor Huxley put it, every one should be free to fish "where you like, when you like, and as you like." The Royal Commission appointed in Belgium in 1865 made the same recommendations. The Scotch Commissioners of 1863-66 "went very exhaustively into the subject, and apparently found no trustworthy evidence of over-fishing; and they recommended 'that all Acts of Parliament which profess to regulate or restrict the mode of fishing pursued in the open sea be repealed, and that unrestricted freedom of fishing be permitted hereafter'"; and this was done by the Act of 1868. The Commission of 1878 stated "that there was no evidence that the supply of fish generally on the coasts of England and Wales is decreasing"; while the last great Commission stated that, as regards offshore waters, "no decrease, except in the case of soles, has been proved in the total takes of the North Sea." Since the publication of the report of this Commission several biological stations have entered on the investigation of the question, and Dr. Fulton points out (chap. i., p. 274) that "Within the last few years a certain amount of definite knowledge has come to the surface, particularly in relation to the North Sea fisheries, which leaves no room for doubt that over-fishing has occurred, and is going on to a serious extent." This over-fishing he attributes to the rapidly augmenting populations round the North Sea, and the vast increase in the extent and efficiency of the machinery of fishing.

It is difficult to give anything like a correct estimate of the great number of boats and men engaged in the fisheries of the North Sea and its neighbourhood. To take Scotland alone: In 1889, over forty-nine thousand men and boys were employed in the boats, besides fifty thousand who found occupation on shore; fifteen thousand boats, of a total tonnage of 125,000 tons, valued at £777,000, together with nets valued at £713,000, and lines at £125,000, were in use. In the same year thirty-eight steam-trawlers, of 4,369 tons burthen, valued at £110,000, were employed; but in 1891, two years later, the number of steamers had increased to sixty-one, of 5,929 tons, and valued at £208,000. The majority of these boats were employed in the North Sea. When we remember that in addition an immense number of boats are employed by England, France, Belgium, Holland, Germany, Denmark, Norway, and Sweden fishing in the same limited area, we need not be surprised that the total available number of certain kinds of fish in the North Sea has of late shown signs of diminishing. But no such possibilities occur in this colony. It is surrounded on all sides by an ocean of vast extent. The population of the coast-lines of the habitable lands in these southern seas is extremely sparse, and it is not likely to become very dense for a considerable length of time, so that there is no possibility of even perceptibly diminishing the fish-supply, as far as all offshore fish are concerned. This being so, it seems to me that while clause 12 of the Act of 1894, giving the Governor power to declare any special fish protected, should stand, the Order in Council of 2nd May last might, without any harm to the fisheries and with advantage to fishermen, be rescinded, and that a new order should be issued protecting only all flat-fish and grey-mullet (*Mugil perusii*) up to a certain size.

A second objection against the regulation of 2nd May, as gazetted, is the want of scientific accuracy in the schedule. The most of the fish named are well enough known by their popular appellation perhaps to stand, but several are obscure. If the regulation is to remain in force these ought to be more strictly defined. For instance, what is mullet? In Auckland the grey-mullet, or kanae (*Mugil perusii*), is meant; in Dunedin it is the sea mullet (*Agonostoma forsteri*), a totally different fish. The schedule limits the size of the blue-cod to 8 oz., and of the rock-cod to 8 oz. But these two names apply to one and the same fish (*Percis colias*), the first name being that by which it is known in the southern part of the colony. Lastly, what is meant by the herring? The so-called Picton herring is affirmed by some to be the sea-mullet (*Agonostoma*), while the fish which is so abundant round the southern and south-eastern coasts of this Island in the early part of the year is the sardine or pilchard (*Clupea sagax*).

The general conclusion I would arrive at is that there is very little need for fisheries legislation at the present time in this colony, particularly as such legislation is apt merely to harass those engaged in a struggling industry, without any compensating advantage to either the community at large or to the industry itself.

(3.) I now come to the third portion of my subject—viz., the possibility or advisability of introducing new and desirable species of fish into the New Zealand seas, and in this connection I would for the present confine my remarks to the following fishes: Cod, herring, and turbot; and to one crustacean, the edible crab, or partan, of Britain (*Cancer pagurus*).

I wrote to Dr. Fulton last year on this question, and he has favoured me at some length with his views on it. I quote the following extracts from his letter of 8th November, 1894: "It seems to me that two points should first of