

71.—FISH-CULTURE IN NEW ZEALAND.

By WILLIAM SEED,

Secretary of the Marine Department.

[From the Annual Report of the Marine Department.]

OYSTERS.—Owing to the reckless way in which the rock-oyster fisheries have been worked it has been found necessary, in order to prevent their absolute destruction, to close the beds at Whangarei, the Hauraki Gulf, and the coast and harbors between Bream Head and a point just north of the Bay of Islands, for a period of three years. It is hoped that by the end of that time the beds will have recovered. It was reported that one of the main causes of the beds having been so nearly destroyed was that the oysters were frequently stripped from the rocks with spades, which reckless operation cleared away the small with the marketable oysters. In order to prevent this an order in council has been made providing that no spade or apparatus for taking rock-oysters shall be used of which the edge or blade shall exceed 2 inches in width. An order in council was also made under the provisions of "The fisheries encouragement act, 1885," prohibiting the exportation of rock-oysters from the colony. The great importance of conserving our oyster-beds, both rock and mud, cannot be more forcibly illustrated than by quoting from the report of the royal commission on the fisheries of Tasmania in 1883, which shows that whereas, in one of the best years, the number of oysters dredged from the principal native beds amounted to 22,350,000 (the value of which, at the present current prices, would be £93,125 [about \$452,588], a sum which, it is stated, is more than the equivalent of the value of the exports of grain, hay, flour, and bran from Tasmania in the three years previous to the date of the report), the yield of the beds has been reduced by over fishing to not more than 100,000 per annum. The knowledge of this should be sufficient to induce the Government here so to regulate the taking of oysters as to prevent the productiveness of our beds from being arrested or destroyed from the same cause. The quantity of oysters exported from New Zealand, chiefly to Sydney and Melbourne, during the year ended the 31st of December last, amounted to 1,057,760 dozen rock-oysters, valued at £3,333 [\$16,198], and 170,455 dozen mud-oysters, valued at £2,196 [\$10,673].

SALT-WATER FISH.—The Department is at present collecting information on the habits, spawning season, &c., of the edible fish inhabiting New Zealand waters, with a view of adopting and enforcing a close season for some of the fish. I trust to be able by next year to report more fully hereon. A trawl has been ordered from England for use on board one of the Government steamers, for the purpose of ascertaining

what kinds of fish can be procured on the various parts of the coast, and the best seasons for taking them.

FRESH-WATER FISH.—A shipment of whitefish ova was received from America in February last, unfortunately in a putrid condition. These were forwarded through the courtesy of Prof. Spencer F. Baird, the U. S. Commissioner of Fish and Fisheries. A shipment of salmon ova was received by the steamer *Ionic* in March last, and was distributed among certain acclimatization societies. I am glad to say that this shipment turned out a success, in fact, the most successful, I believe, hitherto received in the Australian colonies. Some 200,000 eggs were shipped, but only eight of the nine boxes arrived in good condition, one having to be left out of the icehouse prepared for the ova, there being no room for it. Notwithstanding this, some healthy fry were hatched out. I note that in Tasmania their most successful shipment of salmon ova, received by the *Yeoman* in 1885, yielded 36,000 fry out of 150,000 ova shipped, or 24 per cent, while those by the *Ionic* yielded some 50 per cent of healthy fry. The importation of these eggs and the various steps that had to be taken in anticipation of, and after, their arrival in the colony were carried out under the immediate directions of the Hon. Sir Julius Vogel, the commissioner of trade and customs. The correspondence relating to the introduction of fish ova has been printed, and will be presented to Parliament as a separate paper.

I would submit, for consideration, whether the present practice of placing the young salmon fry in many different rivers is a judicious one. It would appear to be more desirable to put all the salmon fry hatched into one particular river, that river being selected, regardless of position and district, as being the best salmon river, on account of the temperature of water and other necessary conditions. When once salmon are established in one river it would be only a work of time to get them placed, at any rate, in most of the rivers in Middle Island [or South Island]. In support of this plan, I quote the following paragraph from the U. S. Commission of Fish and Fisheries Report for 1882, p. lviii, on the subject of the artificial propagation of fish: "Failures have resulted, in a large degree, from the limited scale on which the work has been carried out. If the expectancy of destruction in a given locality be estimated as representing one million young fish, and any number *less* than one million be introduced therein, it is easy to understand that there will be no result." This opinion appears to apply with singular force to New Zealand, where several of the acclimatization societies are eager to secure a share of the young salmon in order that they may be turned out in rivers in various parts of the colony, some of which are entirely unfit for the salmon to thrive, or, perhaps, even to live in.

Now that the Government has taken in hand the importation of fish ova, I submit for consideration whether it would not be desirable, in the public interest, to make some inquiry as to the operations of acclimatization societies, especially in relation to pisciculture. So far as I can

make out, there are no less than twenty-one such societies in the colony. All that appears to be requisite for the establishment of a society is that a copy of its rules, signed by the chairman and countersigned by three members thereof, shall be deposited in the office of the colonial secretary. There is thus nothing to prevent any half-dozen persons from forming themselves into an acclimatization society in any district where no organization of that kind has already been constituted. It has, therefore, been the practice, at the instance of any one of these societies, to make and gazette regulations under "the Salmon and Trout act, 1867," for fishing in specified waters within the district in which such society operates. These regulations prescribe a fee, usually £1, for every fishing license. There is no specific authority in the act for imposing the fee; this seems to have been done under the provisions in the act quoted, which authorize the governor to make such regulations for certain specified purposes as seem expedient, and also "as to any other matter or thing which in any manner relates to the management and protection of salmon or trout in this colony, or to the fishing for or taking salmon or trout." In some districts considerable amounts must be collected from the public for such licenses, and, as the license fees are of the nature of a tax, I think it would be only reasonable in future to require that the accounts of societies which receive these fees should be published. I think it would also be reasonable for the Government in future to require any society which submits regulations for approval and publication to furnish, along with such regulations, a copy of its rules and a list of its members.

HATCHERIES.—I understand that seven fish hatcheries belonging to acclimatization societies are now in existence, namely, one each at Auckland, Wairarapa, Nelson, Christchurch, Dunedin, Wallacetown (Invercargill), and Queenstown, and one, belonging to a private individual, at Opawa, near Christchurch. Now that communication between different parts of the country has been so greatly facilitated by the extension of the railways, it is worthy of consideration whether better results with less expenditure of money could not be obtained by having two well-equipped establishments, one in North and one in Middle Island, whence the young fry could be easily distributed.

In making the above remarks I have no desire whatever to detract in the slightest degree from the credit that is due to many of the acclimatization societies, for undoubtedly they have rendered lasting and most valuable service to the colony in introducing and stocking our rivers with trout. This good work has been accomplished by the zeal, energy, and public spirit of the members of those societies, who have not only contributed largely from their private purses, but have, year after year, sedulously watched over the hatching of the ova, and afterwards undertaken long and toilsome journeys to distant lakes and rivers to liberate the young fish. My object has been to exhibit the question

in a purely economic light, and to suggest a course of action in regard to these societies which I am inclined to think would tend to establish them on a satisfactory footing and promote their well-being, as it would operate in the direction of preventing the undue increase of small, weak societies, and thus strengthen and widen the sphere of usefulness of the larger and older ones.

WELLINGTON, NEW ZEALAND, June 1, 1886.

72.—AN ACT RELATING TO THE IMPORTING AND LANDING OF MACKEREL CAUGHT DURING THE SPAWNING SEASON.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the period of five years from and after the first day of March, eighteen hundred and eighty-seven, no mackerel other than what is known as Spanish mackerel, caught between the first day of March and the first day of June, inclusive, of each year, shall be imported into the United States or landed upon its shores: *Provided, however,* That nothing in this act shall be held to apply to mackerel caught off-shore with hook and line, from open row-boats of less than twenty feet keel,* and landed in said boats.

SEC. 2. That section forty-three hundred and twenty-one of the Revised Statutes is amended, for the period of five years aforesaid, so as to read before the last sentence as follows: "This license does not grant the right to fish for mackerel, other than for what is known as Spanish mackerel, between the first day of March and the first day of June, inclusive, of this year." Or in lieu of the foregoing there shall be inserted so much of said period of time as may remain unexpired under this act.

SEC. 3. That the penalty for the violation or attempted violation of this act shall be forfeiture of license on the part of the vessel engaged in said violation, if a vessel of this country, and the forfeiture to the United States, according to law, of the mackerel imported or landed, or sought to be imported or landed.

SEC. 4. That all laws in conflict with this law are hereby repealed.

Passed the House of Representatives May 21, 1886.

On July 29, 1886, Mr. Thomas W. Palmer, from the Committee on Fisheries, submitted to the Senate the following report:

This bill is designed to prevent the taking of mackerel by seines and purse-nets between the first days of March and June of the five years succeeding its enactment. It is urged with practical unanimity by the vessel-owners and fishermen engaged in this industry, and is opposed only by commission dealers in fresh fish.

* Here the Senate Committee on Fisheries struck out the words "open row-boats of less than twenty feet keel," and inserted the word "boats" instead.