

In previous annual reports of the hatchery reference was made to the desirability of liberating marked fish in order to ascertain, if possible, their migratorial movements. It was proposed to confine the experiment at first to one species, the common sole (*Peltorhamphus novæ-zealandiæ*). The experiment was never carried out on account of the difficulty of getting suitable marking disks or tags. The same difficulty still exists, but it is hoped that the manufacture of such disks—formerly confined to Germany—may be taken up again.

Meanwhile a new departure has been made since the commencement of the year in liberating drift bottles in order to ascertain the direction of the ocean currents off Otago Heads. The bottles are loaded with concrete so as to float with as little surface as possible exposed above the water. In each is placed a slip of paper stating when and where the bottle was sent adrift, and the finder is asked to fill in the date when and the locality where the bottle was picked up, and to enclose the slip in the stamped envelope, which is addressed to the Honorary Secretary of the Board, and to post it. The top of the bottle is then dipped in hot pitch so as to make it water-tight and to protect the metal cap from the action of the sea-water. The experiment is yet in its infancy, but already about 21 per cent. of the bottles liberated have been recovered, mostly to the north of Blueskin Bay.

Mr. Broadley's duties as Inspector of Fisheries for Otago have taken up a good deal of time. The Dunedin Fish-market was inspected every week, and the outlying fishing-ports twice during the year. A record is kept of the quantity and prices of fish sold on the market.

Two underground concrete tanks, each with a capacity of 2,000 gallons, have been built, one at each cottage, to supplement the storage of fresh water. These tanks are connected by pipes to the overhead tanks, and the water is lifted by semi-rotary hand-pumps.

A handrail, 120 ft. long, has been fixed on the south side of the steamer-wharf.

The small jetty used for landing stores and coal became unsafe for the "Tarewai," or even smaller boats, to moor to. The old structure was pulled down, and has been rebuilt on a concrete base. The launch and dinghy have been regularly overhauled, and both are in good order.

During the summer months a large number of people visited the stations. Several of the tanks, containing altogether about twenty species of native fish, living, as far as possible, in their natural surroundings, proved a great attraction.

At the close of last session of Parliament the Minister of Marine notified the Chairman of the Board that a grant of £200 per annum had been passed to enable the Board to appoint a research student to the hatchery, payment to commence as soon as the appointment is made. So far no suitable student has been found, though the fact of the grant has been made public and communicated to the four University colleges. The Board is very desirous of getting regular scientific research undertaken at the station, as a great number of problems await solution. Up to the present only two applications have been received, but both candidates require further preliminary training before they possess the necessary qualifications. The engagement will probably have to be for three years, as at least a year will have to be spent in preparatory work at the station.

The Board has recently been strengthened by the addition to its ranks of Professor W. B. Benham, D.Sc., F.R.S., whose scientific knowledge is of great value.

I have, &c.,

GEO. M. THOMSON,

Chairman, Marine Fish-hatchery Board.

The Secretary, Marine Department, Wellington.

THE MARINE ENGINEER TO THE SECRETARY, MARINE DEPARTMENT.

SIR,—

Wellington, 3rd May, 1920.

I have the honour to report as follows upon the various works dealt with during the year ended 31st March, 1920:—

*Cape Maria van Dieman.*—A contract has been let for joinery repairs to the dwellings at this lighthouse, and tenders will shortly be invited for the erection of two new dwellings.

*Aorere River Improvement.*—A survey of this river has been carried out.

*Russell Harbour.*—In view of the erection of freezing-works in the vicinity of Opuā, Bay of Islands, it has become necessary to improve the channel between the deep water off Russell and the deep water off Opuā, a somewhat shallow bar existing between the two places. At the request of the County Council some soundings have been taken and a plan prepared indicating the position and extent of the improvement required. The details, together with an estimate of cost of carrying out the work, have been supplied to the County Council.

*Portland Wharf, Whangarei.*—Plans for the extension of this wharf have been prepared by the owners and passed.

*Helensville River.*—An order has been placed for an automatic oxy-acetylene light to replace the present oil-burning Wigham light at the entrance to the Helensville River from Kaipara Harbour.

*South Head, Kaipara.*—The present Wigham light at the entrance to the Helensville River will, when removed, be re-erected on the south head at the entrance to the Kaipara Harbour, to facilitate navigation by small vessels using the South Pass.