

GENERAL.

As in previous years, the station was worked single-handed from the date of the last report until the 6th August, on which date Mr. W. Adams was appointed assistant. Up to this date all my time was taken up with the ordinary routine duties, and the plant and buildings had fallen into a state of disrepair. Since that date—a period of eight months—the following improvements have been effected:—

All paths, a total length of over 300 ft., have been repaired and top-dressed.

The cottage and outbuildings, hatchery, shed and roof, engine-house, winch, piping, &c., have received two coats of paint.

An extension of 6 ft. outwards and 36 ft. in the shape of an L has been added to the jetty, with a low-tide landing-stage. This addition provides a depth of 10 ft. at low water, making it more convenient for the ferry-boat, and forming some little shelter for the launch and boat.

A new kauri foot-valve and screen have been fitted to the foot of the tank supply-pipe.

New and improved screens are being fitted to the wooden tanks, to prevent the tiny fry from being drawn into the overflow-pipe.

A third glass tank, of concrete and angle iron, measuring 5 ft. by 2 ft. 6 in., is under construction. This will be chiefly used for the hatching of the very minute crab larvæ, and for the rearing of young lobsters.

The pond-valves have been overhauled and painted, and new screens fitted to all ponds.

Sundry lockers, new mooring-post and mast, &c., have been built in the launch. The launch-engine has required various repairs from time to time, and is now in a fairly satisfactory condition.

A small jetty, for landing coal and stores, has been built from the pond-wall.

A cottage of two rooms, measuring 30 ft. by 15 ft., has been erected for the accommodation of the assistant, and a section of ground has been fenced and made rabbit-proof. Two hundred *macrocarpas* have been planted, paths formed, &c.

The boat and launch have been regularly pulled up on to the slip, and have been kept in good order, and are as good as new.

Numerous other matters have received attention, and the whole of the existing plant is now in a very satisfactory state indeed. The station was open to the public a fortnight before and after Easter. The glass tanks were decorated with weeds, &c., and such forms as sea-horses, crabs, and local fishes were exhibited. A large number of visitors took advantage of the only opportunity in the Dominion of seeing marine fishes in their native element.

LOBSTERS.

The report of the previous season's operations contains a very full account of the habits of the lobsters, and gives exact dates of casting, spawning, hatching, &c. The stock of egg-bearing adults has, however, increased from nine to twenty-three, and it is now much more difficult to observe each individual lobster. The facts as set forth in the previous reports have been, in the main, verified. It has been noted that the nine females that have been the longest time in the ponds retained their eggs better than those that have been spawned for the first time in confinement. All the females, twenty-three in number, had spawned a full batch of eggs by the middle of April, 1909. They were not examined again until the 14th October. Two were found to have hatched their brood, and one cast on the 19th October a few eggs, just on the point of hatching, still adhered to the swimmerets. Most of them had lost a few eggs, but the majority carried an almost full bunch of clean, well-eyed eggs. Those carrying the most advanced eggs were transferred to the indoor tanks for hatching. The backward ones were returned to the ponds, and brought indoors in rotation. Various-shaped tags attached to one of the large claws indicated the condition of the eggs.

The first larvæ appeared in the tanks on the 15th October, and the hatching of the various broods continued until the 4th January, 1910. In order to arrive at an estimate of the number of larvæ hatched, the numbers produced by three individuals were counted out before liberation. No. 1 produced 3,289; No. 2 produced 3,780; and No. 3, 5,920, the average production being 4,320. I think this would represent a fair average, and that the total number of lobster-larvæ produced would amount to 99,360 this season.

From the 1st December onwards large numbers of lobster-fry could be seen swimming at and near the surface of the wharf-pond, and, so as to avoid the loss by removing the adults to the tanks, they were allowed to remain in the pond, and the larvæ were allowed to flow through the discharge-pipe.

The average number hatched by each lobster is slightly larger than last year, and the total output is about three times greater, and, although this leaves much to be desired, it is a good record when the many difficulties are taken into consideration, and several letters of congratulation from interested scientists have been received upon the results of the previous season's work. The adults have not been examined since December last, but many of the females can easily be distinguished as egg-bearing again, and there is every prospect of another successful year. Only one—a male—has died during the year, and all are in the best of condition.

Almost all the larvæ were retained in the hatchery boxes or tanks for a few days, or until a day or so before their first moult. Several thousand were kept at various times until they had cast twice, and were liberated in various suitable spots about the harbour.

The one and almost the only drawback to the successful rearing of young lobsters is their cannibalism. Experiments on a very small scale were tried throughout the hatching season, and towards the end of the season a more determined effort was commenced. Between the 20th and 30th December 3,000 first-swimming-stage larvæ were placed in a glass tank measuring 5 ft. by