

Most of the fish in the aquarium tanks survived the winter, but as a matter of economy the heating-apparatus was not used very largely, and intense cold killed off a number of specimens. We have several species of fish which have been in captivity for years. One of these is the blind eel or sea-hag. It is generally reputed to be very destructive to other fish, but this particular specimen has been in various tanks with all sorts of fish and has never attacked any of them.

We secured a number of pilchards, and these were placed in the aquarium tank devoted to anemones. It was found that the pilchards were biting off the tentacles of the anemones. They were then shifted into a tank containing the blind eel and a small carpet-shark, and with them we held a number of cucumber smelt. Strangely enough, this odd assortment lived in harmony. Both pilchards and smelt became full of spawn and eventually succeeded in passing this and recovered. Considerable growth has followed their first introduction into the tank. All through the year we note that mullet, pilchards, and smelt occur in all sizes, and it is apparent that their breeding-season covers a considerable period. As late as March a cucumber smelt in the whitebait stage was netted at the light.

The list of fish held in the hatchery is quite a good one, about thirty species being represented, and all are in excellent healthy condition, this being due mainly to Mr. Adams's care and constant attention. The tanks are daily cleaned out, all waste matter and uneaten food is removed.

A large octopus (*Octopus maorum*) was secured in November, and proved to be a female. Shortly after capture it began to deposit eggs on the side of the tank. These were shaped like tiny Indian clubs and were attached in pairs to the glass by means of a flat green plate secreted by the animal. The octopus watched over them, directing constant streams of water over them from the exhalant tube and occasionally sweeping them with her tentacles; although the greater number were pulled or fell off, the balance hatched in eighty days. We understand this is the first record of the egg-laying of this giant species of octopus in captivity, and it is to be regretted that no continuous study could be made owing to the lack of a biologist on the staff, but we preserved batches each week for future reference.

Last year we successfully reared skate from eggs laid in the hatchery: one of these young skate is still alive and is growing rapidly. The large golden sea-slug (*Doris Wellingtonensis*) produced masses of brilliantly coloured egg ribbons, from which the young eventually hatched. A large sea-hare taken in the fish-trap has produced a complicated tangled gelatinous string of orange-coloured eggs, which are still unhatched.

Fishermen have brought a number of fish to the station to be identified, and one or two welcome living specimens have been also brought in, including a fine marble-fish (*Haplodactylus meandratius*) and a medium-sized toad-fish (*Neophrynichthys latus*).

Mr. Maxwell Young, of the Marine Department, has made a visit of inspection. Professor Percival, Professor of Biology, Canterbury College, also spent two weeks at the hatchery, and was greatly pleased with the facilities for collecting and studying. He has helped us considerably by explaining the latest methods of preserving specimens. He later wrote to the Board expressing great appreciation of the usefulness of the station.

We have sent a number of Doris to the Sydney Museum, and have followed these with several fish for identification. At the request of Mr. Hefford, Chief Inspector of Fisheries, Mr. Adams collected a supply of fish-livers for special research work that is being carried out by Mr. Shorland of the Agricultural Department, Wellington. The supply was needed urgently, and unfortunately the request came at a time when there was a scarcity of all fish, so that no great quantity could be secured. Mr. Adams arranged to go out with the trawlers, and we have been able to forward in sealed tins a supply of livers of red cod, common sole, flounders, brill, skate, dogfish, and gurnard. At the same time some interesting specimens, such as large Doris and large anemones, were secured for the aquarium, as well as a supply of fish for food for the fish in the hatchery.

The use of the seine net and the use of the launch on trips to the heads has been restricted by the fact that we have only one employee, but the honorary secretary, Mr. G. Howes, has given as much help as possible in this direction, and has also helped considerably in securing fish by line-fishing around the station, both as specimens and for fish-food.

During the year a large number of visitors have availed themselves of the opportunity to visit the station, and all appeared to be greatly impressed by the fine display in the tanks. English tourists who have found their way down were particularly interested, and expressed themselves as amazed that the attractiveness of the aquarium was not advertised. One gentleman stated that he had a keen interest in such matters and had visited a number of British aquaria, and he considered we had, despite the small size of the buildings, as good and varied a display as he had yet seen.

Mr. Adams is the only employee which finance enables the Board to have, and his time is fully occupied in the maintaining and care of the aquarium and the necessary work about the station, its buildings, and grounds. It has been impossible to do the scientific work we would like to see done and which could be carried out if we had a larger staff. Our funds are now exhausted, and we appeal for further subsidies sufficient to allow us to maintain a research station as it should be maintained with trained workers, not only doing scientific work, but also concentrating on the improvement of our New Zealand fisheries. The station could be made directly beneficial to the fish-export industry.

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W. B. BENHAM, F.R.S.,

Chairman of the Board.