

It is difficult to say why this experiment, carried on for so many years, should have failed, but the sea is very vast, and even if many of the larvæ survived on the coast and grew to maturity, the chances of males and females coming together are but small. It is possible, but not very probable, that mature lobsters may yet be met with.

HISTORY OF THE NEW ZEALAND CRUSTACEA.

The Chairman of the Board has himself been engaged for the past two or three years in drawing up a natural history of the Crustacea of these southern seas. The work was undertaken by him after the death of the late Dr. Charles Chilton, who had done so much to add to the existing knowledge of this group of animals. An attempt was made to collect and edit a number of his papers on the subject, which he had hoped to complete and publish, but it was found impossible to do this in a satisfactory manner. The larger task of drawing up a descriptive catalogue of all recorded New Zealand Crustacea was therefore undertaken. In this list, as far as possible, every species will be illustrated by one or more line drawings. The valuable collection of pamphlets in the station library has proved of immense assistance. The only previously existing catalogue of New Zealand species was that prepared by E. J. Miers of the British Museum in 1876. In this 139 species, many of them of very doubtful authenticity, were described. All of these were of the larger forms, crabs, crayfish, prawns, isopods, and amphipods. Since then collectors and systematists have added greatly to the knowledge of the group, so that up to the present time about 750 species have been recorded. But these records and descriptions are scattered over numerous publications in various parts of the world, and are therefore inaccessible to most workers. The publication of an illustrated catalogue should therefore prove a boon to all zoology students. The number of species already known is evidently small compared with those which have not yet been met with or worked out. The study of this group of organisms, especially the Copepoda and the larval forms of nearly all Crustacea, their life-histories and their distribution, has an enormous and an increasing value in connection with the scientific development of New Zealand fisheries.

HYDROGRAPHIC WORK.

Records of the temperature of the air, the ponds, and the harbour were taken daily throughout the year, those of the ocean outside Otago Heads on every possible occasion. Water-samples for salinity testing were taken on every trip of the launch made by Mr. Adams outside the Heads. These, together with the samples received from Mr. Schofield, light-keeper at Puysegur Point, are sent direct to the Government Analyst's Office in Dunedin, and the results are duly recorded. Throughout the year Mr. Schofield has sent these water-samples and records of surface temperatures from Puysegur Point. Mr. Schofield has now been transferred to Stephens Island. Unless arrangements can be made with his successor no further samples for salinity tests will be received from Puysegur Point. In response to a request from Dr. Speight, of the Canterbury Museum, a copy of the water-sample records taken at Puysegur was sent to him. He desired to obtain these figures to incorporate them in a paper on the West Coast Sounds which he is preparing for the Pan-Pacific Congress. A copy of the surface temperatures and of the ocean-current records was sent to Mr. A. W. Parrott, Biologist, Canterbury College, in connection with his researches on salmon in New Zealand. Mr. Adams has been asked to furnish to the Fishery Department a full report of the hydrographic work carried out by him. It is hoped to forward this in the course of a few days.

Mr. Adams in his annual report states that "during April small-sized pilchards were inside the harbour in very large quantities. The sprat-nets were set, but the meshes were too large to allow these small fish to be caught. A number taken in hand-nets were preserved. Throughout the winter months pilchards were found in the stomachs of barracouta and red cod taken outside the harbour."

The outside ponds, not being used for lobsters, were stocked with kelp-fish by Mr. Graham. With the exception of cleaning the walls by scraping, no other removal of marine growth was done. The green slimy weed that accumulated on the bottom does not appeal as a food to the kelp-fish. Quantities of large kelp, placed in the ponds, though quickly devoured by these fish, appear not to satisfy them. Chopped-up fish was given to them every other day and they are now keen on this food, though in their natural haunts it is not possible to hook kelp-fish when using a fish bait. Although the set-net was in use more frequently than during past seasons, the catches of kelp-fish and moki were the poorest on record. "Whale-feed" were again late in making their appearance in the harbour, and it was not till early in January that they were seen on the surface in quantity. The scarcity of this important fish-food early in the year, and the continued spell of unsettled weather right through the summer months, were doubtless the main causes of the small number of fish taken in the set-nets. During January and February whale-feed were more abundant in the harbour than for the past four years. They are still (March) to be seen, but only in scattered numbers.

A fairly mild winter was experienced to the end of May. The temperature of the harbour water on the 4th June was 7.6° C. Two days later the heater was started, the temperature being down to 5.5° C. During the month very low temperatures prevailed. On the 30th June that of the ponds fell to 2.8° C. The blue cod in the ponds were placed in the observation tanks, which were kept above 6° C., blue cod in the open die when the temperature falls to 5° C. On the other hand, red cod and pigfish, which are required for feeding the lobsters and tank-fish, do not seem in any way affected by the very cold water. July was an extremely cold month, and owing to the large quantity of water used in the aquarium, it was seldom possible to keep the temperature above 6° C. The lowest figure recorded for the outside pond water was 1.4° C.