

Statistics.

The tabulation of returns of the Auckland fish landings and the Foveaux Strait oyster-catches has been continued and a commencement made with similar records relating to Wellington fishery operations. Further extensions of the collection of fishery statistics on a uniform plan is impeded by lack of the necessary assistance.

Whitebait Investigations.

Captain Hayes continued his observations on this species, making a visit to Westland and Canterbury in April, where spawning-grounds were discovered on the following rivers and streams: Hokitika River and Mahinapua Creek, Grey River (Punt Lagoon), Arahura River, Ashley River (Saltwater Creek and Taranaki Creek), Rakaia River.

Lack of funds prevented further tours to distant parts of the Dominion. In May spawning-places were located on the Makara Stream, near Wellington. Periodical visits were paid to the Manawatu where a continuous record of observations of spawning occurrences and attendant circumstances was kept by Mr. Harry McGregor, Mr. A. McGregor, and Mr. A. Taylor. An interesting case of the desertion of an area formerly used for spawning was noted, the cause being the diversion of a drain from its original course. More effective drainage provision involved loss of provision for whitebait propagation, and doubtless such cases have occurred very frequently in the course of land-settlement and agricultural development in many parts of the Dominion. A further case of how potential whitebait supplies may be unwittingly destroyed was exemplified by the discovery that the eggs on a whole spawning-ground had been killed by pollution caused by the use of a chemical weed-killer in drain-cleaning operations.

Spawning-grounds additional to those mentioned in last year's statement were discovered as follows: Mahinapua Creek (Hokitika), a fourth and fifth area (Mr. T. Spoor); Porangahau River (Hawke's Bay), a second area (by Mrs. Ropiha, per Mr. H. McGregor); Rakaia River (Canterbury), a third area (Mr. E. H. Knight); Rangiuru Stream (Otaki), (Mr. P. Phillips); Avon River, two areas (Mr. E. H. Knight); Mongone River (Waikanae), (Captain L. Hayes).

Evidence has been obtained showing that the species has a much more extended spawning period than was at first suspected. Spawn has been observed in October (Ashley River), November (Ashley River and Manawatu), December (Ashley River and Manawatu), January (Waimea Creek, Waikanae, and Ashley River), and February (Ashley River). The species may thus spawn in any month from October to May inclusive.

With a view primarily to ascertaining the rate of growth and the age at first maturity a number of whitebait caught in the Manawatu were introduced into an artificial pond at Foxton in October, 1931. Samples were taken out at monthly intervals, measured and weighed, and their stomach contents examined. Growth and development were found to take place very rapidly. From an average length of 2½ in. at the whitebait stage the inanga averaged 3½ in. after three months, and the male fish were found to be sexually mature after four months at a size of 3·6 in. At the same age the females had fully developed ovaries, though it was found that in the pond the ova did not ripen so as to be capable of impregnation.

Examination of stomach contents showed that the food was very varied, consisting principally of ostracoda, cladocera, and copepoda (minute crustaceans called "water-fleas").

Fresh-water Research.

The work of the Freshwater Research Committee of the New Zealand Acclimatization Societies' Association has made steady progress during the year. Its biologist, Mr. A. W. Parrott, working at Canterbury College, Christchurch, under the direction of Professor E. Percival, has continued his study of the scales of brown trout from various rivers and lakes in both Islands, and has also extended his attention to both Atlantic and quinnat salmon, and to the rainbow trout of Lake Taupo. His first paper on "The Age and Growth of Trout in New Zealand" has been published by the Marine Department as Fisheries Bulletin No. 4. Professor Percival has embodied the results of his faunistic studies in various rivers and his analysis of an angler's record of catches made through forty-three successive years on the same portion of the Oreti River in a report published by the Marine Department as Fisheries Bulletin No. 5, "On the Depreciation of Trout-fishing in the Oreti (or New River), Southland; with Remarks on Conditions in other Parts of New Zealand."

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Marine Department, 27th August, 1932.

A. E. HEFFORD,
Chief Inspector of Fisheries.

MARINE FISHERIES INVESTIGATION STATION.

SIR,—

I have the honour to forward herewith the Report of the Portobello Marine Fisheries Investigation Station for the year ended 31st March, 1932.

From various causes the work carried out has not been as satisfactory as the Board had hoped; yet good results have been attained in several departments.

At the time of drawing up the last annual report, Mr. Graham, the biologist, had re-entered hospital to undergo a further operation on his injured knee. This proved a serious and prolonged matter, and he was not able to resume work till the 6th August. Owing to the uncertainty as to his permanent recovery, and the pressure of the Department to reduce expenditure, the Board decided