

No netting license for the Waimakariri River was taken out until April, when this fishery is normally at its close. Only a few odd fish were caught. Preparations were made by the Ashburton Acclimatization Society, under license, to trap the run of salmon that usually comes into the Ashburton River. Detritus brought down by floods, which carried away the trap, rendered their enterprise a failure.

#### *Atlantic Salmon*

The Hatchery Manager, Mr. C. E. McIvor, conducted the trapping, stripping, and hatchery operations without assistance, except for the valuable collaboration of Mr. Ward Beer, the Curator of the Southland Acclimatization Society's hatchery at Te Anau. The completion of the trap in the Upukoro River was delayed by floods and no fish were taken till May, in which month 108 salmon were trapped, which were subsequently lost by a flood on 19th May which carried away part of the trap and made a breach in the holding pound. In June 25 males and 27 females were taken; in July, helped by several freshes, 27 males and 35 females were trapped; and in August 15 males and 27 females came into the trap. The total catch for the season was 265 salmon (151 males and 114 females). Approximately 210,000 ova were provided for the hatchery, from which about 180,000 fry were reared.

The 1942-43 fishing season has been better than average, though the number of visiting anglers has declined. The largest salmon taken was one of 10½ lb. caught in the Eglington River.

#### RESEARCH

Mr. Hobbs continued his investigation of the fresh-water eel stocks of Lake Ellesmere during the autumn of 1942, the main object being to get an idea of the quantities available for commercial fishery in view of the possibility that this fish might be utilized to provide an additional supply of the fish oils required for various purposes that were previously imported. At the same time determinations of the actual yield and quality of oil from different classes of eel were made, Dr. Shorland and Mr. Coop, of the Chemical Section of the Department of Agriculture, collaborating in this phase. Mr. Hobbs also continued his historical study and analysis of fish cultural and fishery management operations in New Zealand, and had put together a substantial amount of material for subsequent publication before he left to enter naval service.

#### MARINE INVESTIGATIONS

The work of Mr. A. M. Rapson, Marine Biologist, has been confined mainly to problems of present-day importance. He has continued his investigations on the spawning, food, and distribution of the sardine, which, besides being an almost essential bait-fish in the Cook Strait long-line fishery, is also now beginning to be utilized for canning. There are prospects for the extension of this industry when certain existing difficulties have been overcome. Another wartime industry that is now in being is the extraction of oil from fish livers. Formerly large quantities of cod-liver oil were imported on account of their content of vitamins A and D and were largely used in the preparation of foods for infants and invalids as well as for stock and poultry rearing. The oil from the livers of some of our New Zealand fish species has been found to be richer in these vitamins than the cod-liver oil from the European and North American fisheries. The increasing demand for these food factors, which have been proved to be essential for normal growth and health maintenance, is still not yet as high as is desirable. Since the livers of most species of shark are especially rich in vitamin A, fisheries for these varieties, hitherto generally regarded by most fishermen as pests, have been developed in every part of the world. Small-scale fisheries for the supply of raw material to an Auckland fish-liver-oil factory have been in operation during the year. Mr. Rapson has further paid some attention to the identification of the species occurring in our waters, collaborating with the Agricultural Chemist in this work, so that information may be available as to the yield and quality of oils obtainable from the various species. Observations on the condition and density of distribution of toheroas on various beaches and on the food, spawning, and migration of blue cod have also been continued.

A. E. HEFFORD,

Chief Inspector of Fisheries and Director of Fishery Research.

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