

but with a minimum of real knowledge and understanding of facts. In connection with this research, systematic observations are being made periodically on the fishes and other forms of life in a selected stream. The work involves determination of the age and manner of growth of individual trout, estimates of the numbers of trout of different year-groups in the population and the seasonal movements of immature and mature fish, quantitative determination of the available food organisms, their seasonal variation in abundance, their distribution according to the character of the water and stream-bed, and the kind and quantity of the food organisms eaten by trout at different times of the year. Special apparatus for collecting and sorting the material has been devised. The netting and marking of trout will form an important part of the scheme for affording material from which growth, migration, and population data will be worked out.

At the request of the Westland Acclimatization Society a preliminary survey was made by Mr. Hobbs and Mr. Allen in March, 1939, of Lakes Mapourika, Wahapo, and Ianthe. It is desired to develop the sport-fisheries in these waters as the lakes lie alongside the main South Westland tourist route, but attempts to establish trout have so far met with negligible success and fishing of a quality to attract the attention of visiting anglers is not available at present. Only a few days were spent in the district, so that a comprehensive biological examination was not possible. So far as could be ascertained, the conditions did not provide evidence that would be regarded as offering a promising prospect for the establishment of good trout-fishing. The principal limitation is the non-availability of adequate spawning-ground in tributary streams for the maintenance of a good stock of trout. Supplies of food for trout, as is commonly the case in glacial lakes with a relatively small area of shallow water, are very limited in Mapourika and Wahapo. They are better in Ianthe, and appear to be equal to those of other glacial lakes which provide moderate trout-fishing. The development of a sport-fishery in these lakes, as in some other troutless waters in New Zealand, would appear to depend upon the introduction of a species whose habits would render it capable of reproducing new generations in the particular environment and of finding continuous nourishment at successive growth stages. These are problems for the future which cannot be undertaken until more progress has been made in our study of the physical and biological factors of the habitats; nor should anything be done in the absence of very complete understanding of the habits of exotic species the introduction of which may be contemplated. A precaution that must be observed more particularly in connection with Westland waters is the possible effect of an acclimatized species on existing whitebait stocks.

In conclusion, I would like to record appreciation of the always zealous and often strenuous way in which the staff of the Fisheries Branch have worked during the year in the office, in the laboratory, and in the "field." The past year has been one in which working-conditions were rendered difficult by a removal to new quarters, preceded and followed by prolonged disturbances caused by structural changes being made to the building in which the office staff was working. At the same time, there has been a considerable increase in the volume and complexity of the tasks that need to be done to serve the requirements of present-day fisheries administration.

A. E. HEFFORD,
Chief Inspector of Fisheries and Director
of Fishery Research.
