progress with the modest material equipment that is within the scope of reasonable financial resources so long as staff is available; for it is a specialist's job for which workers have to be qualified scientifically and for which special training is essential.

With the diversion of Mr. M. W. Young to more purely administrative duties, the investigational work of a biological nature has been carried on by Mr. A. M. Rapson, B.Sc., who has paid special attention to the stocks of flatfish in Tasman and Admiralty Bays. He has studied the effects of using nets of different-sized mesh on the size-distribution of the fishes in the catch and has obtained data on the age-composition of the fauna of dabs and lemon soles on some of the fishing-grounds. He has also collected and identified the pelagic eggs and larvæ of these and other species with a view to locating spawning-places and nursery grounds. Similar investigations have been made with regard to the blue cod, together with preliminary attempts at elucidating the spawning phenomena of butterfish and the growth-rate of hapuku. These observations have been carried out on commercial fishing-boats and require to be continued and, if possible, extended before definite conclusions can be drawn in relation to the control of fishing-operations. Mr. Rapson has also continued observations on the composition by size (and age) of toheroa stocks, combining with this work observations on the contents of the alimentary canal and on the sexual condition.

Fresh-water Research.

Reference has been made in previous reports to the work carried out under the auspices of the Fresh-water Research Committee of the Acclimatization Societies' Association and to the difficulties encountered in developing the work owing to uncertainty of finance under the system of voluntary contributions from member societies.

On 18th September, 1936, a Fisheries Amendment Act was passed which provided for the contribution by acclimatization societies, out of license fees received by them, towards the cost of research undertaken in relation to fresh-water fisheries; and subsequently, on 1st October, 1936, regulations were made pursuant to this Act by which one-tenth of the aggregate fees chargeable for fishing-licenses issued by acclimatization societies should be paid into the Consolidated Fund. At the same time the Government took over the responsibility for continuing research work and arranged that it should be administered by the Marine Department. Owing to the difficulty of obtaining premises to serve as a laboratory the transfer did not take place till the year now under review had terminated, the Marine Department meanwhile assuming financial responsibility for the continuance of the work at Canterbury College, Christchurch, and in the field.

During the final year of their service under the Committee the two biologists continued the collection and examination of material obtained for the purposes of the two main lines of investigation that were already in train.

Mr. Parrott examined and reported on a sample of rainbow-trout scales from Lake Pearson and a small sample of brown-trout scales collected in the Waipori River system (Otago) in 1932.

In continuing his investigation of trout-reproduction Mr. Hobbs aimed at studying redds in as many different types of environment as possible, sharing the available time between the rainbow-trout waters of the Auckland Acclimatization District and the brown-trout waters of Southland and the Kakanui River, North Otago. Studies of the food and other factors affecting the early growth of trout were also made.

Professor Percival, of Canterbury University College, continued his personal investigation of fresh-water plankton, reporting to the Committee on the preliminary sampling of thirty-seven lakes in the South Island, with special reference to the variation in the abundance of minute organisms in the water of different types of lake.

By way of historical record it is appropriate to quote Professor Percival's general *résumé* of the work of the New Zealand Fresh-water Research Committee which he gave at its winding-up meeting on 3rd June, 1937, in which he said:—

> "At this final meeting of the Committee it is worth while to look back at the activities of the body set up by the Acclimatization Societies' Conference of 1929. At that time there was a feeling that insufficient knowledge existed about the inland fisheries of this country to enable administrators and anglers to understand the situation which had arisen in various parts where the return in average weight was said to be declining. The conflicting explanations at that time offered were unsatisfactory, and the Committee was charged with the 'investigation of the well-being of trout and other acclimatized fish.'
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> "Two avenues of work offered themselves, one being an inquiry into possible causes of the alleged decline in fishing quality, the other being an attempt to determine the nature of stocks in age, length, and growth-rate with the object of providing a picture of present conditions and of accumulating facts which might be of comparative value in the future. The first of these inquiries resulted in the Fisheries Bulletin No. 5, the second in a preliminary paper in Fisheries Bulletin No. 4. Since then an examination of the fauna and environmental conditions of numerous fishing-waters throughout the Dominion has taken place, while large quantities of samples of scales from fish of known lengths and weights have been collected. Many of these have been read and many remain to be read.
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> "Five years ago Mr. Hobbs voluntarily offered to undertake the study of natural regeneration of brown and rainbow trout and quinnat salmon. This work is still in progress and has meanwhile given a large amount of information about the value of natural reproduction in maintaining stocks. It has led in various directions to the consideration of the relation between young salmonids and between them and other species, to the consideration of factors controlling growth-rate and migration, and to an examination of the absolute productivity