

ATLANTIC SALMON.

The Fish Culturist, Mr. J. S. Main, reported a fairly successful trapping-season on the Upokororo River in the winter of 1935 in spite of three floods which submerged the rack and allowed numerous salmon to get upstream. One of these, the highest flood known in that river for eighteen years, brought the river level 3 ft. above the top of the rack on 25th March. For the solid construction of this contrivance, and for the early date at which it was available for fishing, the Department was indebted to the valuable help rendered by the staff of the Southland Acclimatization Society.

The numbers of salmon taken each month were as follows :—

—				Males.	Females.	Totals.
March	..	..	..	3	1	4
April	..	..	..	18	11	29
May	..	..	..	99	76	175
June	..	..	..	28	17	45
July	..	..	..	19	29	48
August	..	..	..	3	3	6
				170	137	307

One male salmon of 13½ lb. was taken, but there were comparatively few above 6 lb. The average size of the fish used was about 4 lb. Many small males, but sexually ripe, from ½ lb. to 1¼ lb. were taken and lifted over the rack, not being used for hatchery purposes. Eighty-nine females were used for stripping, from which 271,000 ova were hatched. One hundred and forty-one thousand of the fry were liberated in the Upokororo River and 130,000 in the Eglinton.

The Atlantic-salmon fishing in the Waiau River was better in the 1935-36 season than it had been for several years. The prevailing sizes are still small for the species, ranging from 3½ lb. to 5 lb. ; but the capture of one 11 lb. fish in the Waiau below the Monowai was reported. During the previous fishing-season it appeared that rainbow trout had multiplied so as to definitely outnumber the salmon : but this season a reversal in the proportion has taken place, and for every rainbow trout caught about three Atlantic salmon have been taken.

FRESH-WATER FISHERY RESEARCH.

The investigations carried on under the direction of the Fresh-water Research Committee of the New Zealand Acclimatization Societies' Association have made satisfactory progress along the general lines previously laid down. The Biologist, Mr. A. W. Parrott, has continued his examinations of trout-scale samples and other data for the determination of age, growth, and condition variation in different waters. Material from the following rivers and lakes has been studied :—

North Island.—Waikato, Tamaki, Pokaewhenua, Waimiha, Wanganni, Waipa, Manawatu, Rangitikei, Otaki, and Hutt Rivers, and Lake Taupo.

South Island.—Styx, Selwyn, and other tributary streams of Lake Ellesmere, Rangitata, Ashburton, Kakanui, Waikouaiti, Oreti, Aparima, and Waiau Rivers, Lake Sumner system, Lake Poerua system, Lake Coleridge, Lake Heron, Lake Alexandrina, Tomahawk Lagoon, and Waipori Dam.

In addition to simple age and growth analyses of samples of trout-stocks, the data have been studied with reference to such questions as local, seasonal, and annual fluctuations in age composition, sex variations, periods of maximum and declining growth, sexual and seasonal variations in condition, and age and size at which maturity is attained.

As an example of a simple age analysis, the following table shows the relation between age and length of brown trout in the Oreti River, Southland.

Length of Fish.		Age of Fish (in Completed Years).					Totals.
		Two Years.	Three Years.	Four Years.	Five Years.	Six Years.	
Inches.		No. of Fish.	No. of Fish.	No. of Fish.	No. of Fish.	No. of Fish.	No. of Fish.
8	..	23	..	..	..	..	23
9	..	31	4	..	..	..	35
10	..	41	30	..	..	..	71
11	..	2	55	1	..	..	58
12	..	1	61	2	..	..	64
13	..	..	37	14	..	..	51
14	..	..	19	10	1	..	30
15	..	..	2	15	..	..	17
16	..	..	..	6	1	..	7
17	..	..	..	2	1	..	3
18	..	..	..	1	1	1	3
19	..	..	..	..	1	..	1
20	..	..	..	..	..	1	1
21	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..
23	..	..	..	..	..	1	1
24	..	..	..	..	..	1	1
Totals ..		98	208	51	5	4	366