The Te Anau fishing season was probably the most successful which has yet been experienced for this species. The capture of between seven hundred and eight hundred fish has been reported for Lake Te Anau and the Upukororo River, the majority of fish, as usual, being taken in the lake near the outlet of the Waiau River. Several Atlantic salmon were reported to have been taken in the vicinity of the mouth of the Waiau by trout-fishermen belonging to Tuatapere.

During the year new regulations were gazetted with respect to the taking of Atlantic salmon in the Southland Acclimatization District.

With the steady yearly increase in the number of Atlantic salmon caught in Lake Te Anau and associated rivers, there can be no doubt as to the establishment of this species being the result of the Department's importation of ova some sixteen to eighteen years ago. It may be recalled that the fry originally planted out in the river Upukororo or in Lake Te Anau were derived from hatching of the ova obtained from the following sources: Canada (150,000 ova, imported in 1908); Scotland (500,000 ova); England and Wales, (175,000 ova); River Rhine (340,000 ova, imported in 1909); England and Wales (400,000 ova); Germany (Rhine) (600,000 ova, imported in 1911).

There are many problems not only of scientific interest but of practical importance to be solved regarding this species. One of them, and by no means the most difficult, is as to the characters by which the species may be most conveniently and unmistakably recognized. This question has assumed a special interest from two distinct aspects. In the first place, the introduction into the upper waters of the River Wanganui of the fry of Atlantic salmon hatched out at the Department's hatchery at Kakahi from ova obtained from the River Upukororo since the year 1923 is due to produce results in the form of adult salmon which should be returning to spawn at the age of three to four years. One fish suspected to be a salmon was forwarded from the Wanganui in October, 1926. Careful anatomical examination proved it to be not a salmon, but a sea-run trout (which would be termed in England a sea-trout). The difference between this species (*S. trutta*) and the closely related *Salmo salar* (the Atlantic salmon) is not always easily detected by the superficial examination of a single specimen, though if a number of both species were observed side by side there would be little difficulty in separating the one species from the other.

An increasing amount of interest is being taken in our Atlantic salmon by students of and writers on scientific or semiscientific salmon problems in Britain. They have been handicapped—as indeed, we have—by lack of reliable information. For several years all the material evidence they have had to go upon has been what could be obtained from the examination of odd samples of scales from New Zealand salmon. When subjected to a scientific investigation a collection of scale-samples can be utilized to throw considerable light upon the life-history of the fish from which they are derived. In Europe, for example, it has been convincingly demonstrated that the age, the duration of fresh-water life and of sea life, the rate of growth year by year, and the incidence of sexual maturity of a salmon can be deduced with a high degree of accuracy by examination of the markings on its scales. The "reading" of New Zealand salmon-scales has been a matter of peculiar difficulty and uncertainty for English salmon-scale experts. Their difficulties have been greatly increased by the fact that insufficient information as to the habits of the New Zealand salmon has accompanied the scale-sample. They have, in fact, been provided with inaccurate information. For example, scales from fish taken in Lake Te Anau at the River Waiau *outlet* have been described as coming from the "*mouth* of the Waiau." The English student would therefore naturally assume that the scale belonged to a sea-run fish, whereas the probability is that the salmon from which it was taken had remained and continuously fed in fresh water. The markings on a salmon's scale are simply a register of growth, or more strictly speaking, they indicate variations in rate of growth. The scale of a British salmon reveals well-marked zones of varying growth-rate which correspond to the, generally speaking, quite clearly distinct phases of accelerated and retarded growth which the fish undergoes with change of season. The most conspicuous demarcation is that between the slow growth which the young salmon makes while inhabiting its natal stream and the greatly augmented growth which takes place after it has migrated into salt water. The English scale-reader would naturally be confronted with a very unusual picture when looking at a New Zealand salmon-scale from a fish which had never entered the sea, and, moreover, had lived in the lake even in its parr stage.

The question arises as to whether any appreciable proportion of the New Zealand Atlantic salmon migrate to sea. It is understood that a certain number have been caught in the tidal waters near the mouth of the Waiau, in the Tuatapere neighbourhood, as well as in the River Wairaurahiri, which flows into the sea twenty miles or so from the Waiau mouth, which must have been to sea, in which case it is very probable that their scales would show markings of a different character from those of the fish which remain in fresh water. But hitherto no scales from these sea-run fish have been obtained. All that can be said at present is that there is a high degree of probability that the majority of the fish caught in Lake Te Anau have never left fresh water. Their habits, in fact, resemble those of lake trout, which is sufficient to account for the close resemblance of their scale-markings to those of trout. It has, indeed, been suggested, chiefly on the basis of evidence from scale-structure, that the Atlantic salmon of Te Anau may not be a pure species, but may have been hybridized with the brown trout. To clear up this question of specific identity a few Te Anau salmon have been examined with regard to certain structural characters, so that the points distinguishing them from trout may be elucidated.

Quite definite results have been obtained, which in my opinion prove the purity of the *S. salar* strain. The details cannot be given here, but when further data have been obtained the results will be embodied in a separate report. Specimens have also been sent, thanks to assistance rendered by the president and other officials of the Southland Acclimatization Society, to England for examination by the biologist of the Salmon and Trout Association, and the British Museum ichthyologists, and identified by these authorities as *Salmo salar*.