

have fished in Rotoehu, Rotoma, and Rerewhakaite Lakes last season stated that the fish in these lakes has so far not deteriorated to anything like the extent of the Rotorua and Rotoiti fish, the fish caught in these lakes being of fair size and condition.

Regarding the fish I saw and handled in the streams flowing into Rotorua Lake and in the Ohau Channel, I have to say that, making every allowance for it being the spawning season, they are the poorest specimens of rainbow trout I have ever seen in this or any other country.

As will be seen by the measurements and weights given in the attached tables of the fish examined in the streams flowing into Rotorua Lake, the length in comparison to the weight of each fish is out of all proportion. As a matter of fact, there was not one fish, full or empty, whose weight was proportionate with its length. The average weight of the seventy-seven fish examined was slightly over $1\frac{3}{4}$ lb. Trout and salmon lose rather less than a third of their weight from the time they leave the feeding-grounds to the end of spawning, but even allowing a third to be added to the average weight of the fish examined their weight before spawning would only be about $2\frac{1}{2}$ lb. It will also be seen that the fish examined at Rotokakahi Lake and the Wairoa Creek (Tarawera) are in considerably better condition than the Rotorua fish, and that the percentage affected with the worm parasite is not so great. The reason of the better size and condition of the fish is, I consider, due to these lakes not being nearly so heavily stocked as Rotorua and Rotoiti, and this I think can be accounted for by the comparatively small number of young fish which can be hatched out and reared on the spawning-grounds. The available spawning-grounds at each lake are limited in extent in comparison to the extent of water to be stocked, and owing to the fish crowding on to this limited space the waste during spawning must necessarily be enormous, and the number of fry hatched and reared every year comparatively small.

A steady deterioration has taken place in the Lake Rotorua fishery during the last five years, and I can only characterize its present condition by saying that in my estimation it would scarcely be possible for a fishery to be in a worse condition than this one is at the present time. To have any effect in restoring it to a healthy condition drastic measures will have to be taken. No settled method of dealing with the fishery seems to have been decided upon, and the result is that it has continued to drift from a bad to a worse state.

Rotorua and Rotoiti Lakes are now practically full of weakly and diseased trout, a large percentage of them being, no doubt, the progeny of the thousands of ill-conditioned and diseased fish which have been allowed to propagate during the last few years. In order to effect a change for the better more drastic measures will have to be employed now than would have been necessary a few years ago—half measures will only mean disappointment and waste of money. A settled method of dealing with the fishery should be decided upon, and the work carried out systematically and skilfully as long as necessary. My opinion is that if the work is gone about in the right way a very great improvement in its condition can be effected in a comparatively short time.

The recommendations which I have to make with regard to the fisheries in the Rotorua Lake and district are as follows, viz. :—

- (1.) The systematic killing-off as far as possible of all ill-conditioned and diseased trout and the thinning-out of fish in all the lakes as may be necessary.
- (2.) The importation for several years in succession of rainbow-trout eggs from California.
- (3.) The systematic introduction of some new natural feed for trout, as recommended in connection with Taupo Lake.
- (4.) The continuation and extension of the investigations in connection with the worm-parasite disease, and a biological survey made of all the lakes in the Thermal District.
- (5.) Clearing out the shag-rookeries, &c., as recommended in connection with Taupo Lake.
- (6.) The collection of trout-eggs in large quantities from streams in the Thermal District where the best fish exist, and supplied to outlying districts throughout the Dominion free of cost and to all acclimatization societies at the lowest possible price.

The above recommendations are practically those which I made in 1910, and I still think that they embody all that is required not only to prevent further deterioration in any of the lakes, but also to restore these fisheries to and maintain them in a healthy condition.

With regard to the first, no skilful effort has ever been made to block the streams and prevent ill-conditioned and diseased fish having access to the spawning-grounds. The effort to "block" the streams with wire netting in 1910 was practically a failure as far as blocking them was concerned, for the spawning-grounds that season were just as crowded with fish as in any previous season. The result of such a large number of "slabs" being allowed to propagate must be that a considerable percentage of the trout in Rotorua and Rotoiti Lakes to-day are the progeny of these fish.

With regard to the second recommendation, clearing out the "slabs" and diseased fish from Rotorua and Rotoiti Lakes will mean that the bulk of the fish will be killed off, and it should be restocked with "fresh blood." The introduction of "fresh blood" into other lakes where "slabs" exist in any number is also advisable.

Very good work indeed has been done by the Chief Veterinarian and his officers in connection with the worm-parasite disease, but an extension of the work is necessary, and in this connection I would recommend an examination of trout from several rivers in the Thermal District, an examination of trout from lakes and rivers in other districts, and also an examination of shags and other fish-eating birds in various parts of the Dominion.

The value of the rainbow-trout fisheries of the Rotorua District demands that every effort should be made to restore them to a condition that will make them again one of the chief attractions to that district. In 1906 they were the finest sporting fishing in the Dominion, and probably unsurpassed as a rainbow-trout fishing in the world; to-day they provide little or no