

Ill-conditioned Fish taken from Fish netted for Market.

				Number.	Weight.			
					Tons.	cwt.	qr.	lb.
Rotorua (average 2lb. each)	..	..	..	5,074	4	10	2	12
Taupo (average 3lb. each)	..	..	..	2,943	3	18	3	9
Totals	..	..	..	8,017	8	9	1	21

TROUT-HATCHERY.

The season opened in July, when the first rainbow-trout ova was collected. Although the output of trout ova and fry is not as great as last season, on account of shortage of suitable help, sufficient ova and fry was collected to supply the demand. Ova was supplied to various local societies at practically cost price, and a free distribution was made for the purpose of stocking the North of Auckland rivers. A number of rainbow fry were liberated within the waters of the Rotorua Acclimatization District, also Tongariro National Park rivers, and a season's supply to the Auckland Acclimatization Society.

The following was the result of the season's liberations: Rainbow-trout ova, 435,000; rainbow-trout fry, 217,700.

SHAGS.

During the year 1,432 shags have been accounted for at a cost of £179.

F. MOORHOUSE,

Conservator of Fish and Game.

The Under-Secretary, Department of Internal Affairs, Wellington.

VIII. REPORT BY DR. REAKES ON THE WORM PARASITE IN TROUT.

Wellington, 3rd July, 1917.

I AM now in a position to advise as to the result of the experiments in connection with trout at Rotorua affected by internal parasites, concerning which I wrote you on the 14th December, 1915.

Experiment No. 1.—Eight trout were placed in a pond in which previously a number of small fish had been kept, two shags being placed in a cage above the pond and fed upon worm-infested trout. These shags had been kept in this cage for some months previously, and the small fish had also been in the pond beneath them for the same length of time. In making the examination at the conclusion of this experiment only four trout were found, the balance having either escaped or been surreptitiously caught and removed or else had died. A careful examination of these four trout proved that three out of four were affected by the same parasites as are found in the infested trout in the lake, their identity being proved by microscopical examination.

Experiment No. 2.—In this case two newly caught shags were placed in a cage above the pond and fed upon worm-infested trout. This pond had been previously utilized for an experiment initiated with a view to determining if possible whether trout became infested with the parasite as a result of feeding upon small fish (toi-toi) from the lake, it being thought by some observers that the toi-toi first became affected, and that the trout contracted the disease by feeding upon them. A number of trout had been placed in this pond, and were fed daily upon toi-toi caught in the lake; the result was absolutely negative, and this was not surprising, seeing that at frequent intervals a number of the toi-toi were examined and in no case were any found to be affected with the parasite. At the conclusion of this experiment twelve of the trout were killed and examined, every one being found absolutely free from parasites. Eight of the remaining trout were taken out of this pond and utilized for experiment No. 1 above, the remainder, about twelve in number, being left, and the two shags mentioned above placed in a cage over it. The trout were fed principally upon bread, and no food likely to be in any way contaminated by the trout-parasite was given them. At the conclusion of this experiment at the end of May of the present year all the trout remaining in the pond, nine in number, were killed and examined. Every one was affected, though in the case of one individual only one parasite was found. In all the others, however, from two to five worms were present. These in every case were located about the region of the stomach. The identity of the worm found in these trout with those found in the affected lake trout was proved by careful microscopical examination.

The shags were also destroyed, and were found to be badly affected with the shag-parasite, which is held to be the same as that found in the trout, the fish being the intermediate host, while the shag is the ultimate host. The result of this experiment, following on the long careful investigation carried out by Mr. Kerrigan, M.R.C.V.S., at Rotorua, in which he demonstrated microscopically the identity of the trout-parasite with that of the shag-parasite, is interesting and valuable. It will be remembered that corroborative evidence of the infection of aquatic birds from affected trout was gained by earlier experiments in which ducks specially reared under conditions calculated to preclude the possibility of outside parasitic affection were fed upon worm-infested trout and contracted parasitic affection identical with that shown by the shag, though in the case of the ducks, which evidently were not altogether suitable hosts, the parasites died after a time.

These experiments were carried out under the supervision of Mr. W. T. Collins, M.R.C.V.S., Government Veterinarian, Hamilton, in conjunction with your officers.

C. J. REAKES, D.V.Sc., M.R.C.V.S.

The Under-Secretary, Department of Internal Affairs, Wellington.

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