



THE NATIVE GREY DUCK

A MOST VALUABLE BIRD TO FARMERS



THE Forest and Bird Protection Society initiated the idea in the February, 1938, issue of this magazine that the best method to adopt in order to save the grey duck from being exterminated lay in the setting aside of a chain of sanctuaries throughout the Dominion. At the same time the necessity of administering these reservations in a modern manner was emphasised.

Therefore, the Society is now pleased to see that a number of land-owners have not waited for the Government to act, but have themselves taken the initiative and set apart and ring-fenced suitable waters. Some may have done this merely for the purpose of obtaining handy shooting, but others are alive to the great economic value of native waterfowl in holding down many insects and larvae which, if allowed to unduly increase, would spread disease and be otherwise detrimental to man's wellbeing—for example, mosquitoes or the small water-snail which acts as the host of that very virulent sheep disease, called fluke. Dr. W. Eichelbaum, Wellington, writes as follows with reference to the value of the duck in checking the spread of this sheep disease:—

"Arrived some months ago from Germany, where I had studied birds for many years as a hobby, I was highly interested to read from your last issue of 'Forest and Bird' the appeal for protection of ducks.

Apart from the reasons mentioned therein for saving a species from extermination, there is one among others of extreme practical importance. In a country whose wealth depends so largely upon sheep, special attention ought to be paid to the preservation and protection of all kinds of ducks.

Ducks are an invaluable aid to farmers against the depredation of fluke.

In England in 1879-80 three million sheep fell victim to the disastrous fluke epidemic. In some parts of Germany in 1900-5 and 1910, 50 per cent. of the flocks were lost. In Hungary the annual loss amounts to one million sheep. In German abattoirs in 1906-18, 5 per cent. on an average of all sheep livers and 2 per cent. of all livers of cattle had to be rejected and destroyed.

The disease originates in low lying ground, especially in such as is often subject to inundation.

Many remedies are known to science—both prophylactic and therapeutic—the best natural remedy 'being the acclimatisation of duck in the districts concerned.'

The development of fluke (common species in New Zealand: *Fasciola hepatica*) is rather complicated. It lays its eggs in the bile ducts of its host: sheep, cattle, goats, sometimes horses. The eggs are passed out through the intestines and, when reaching water, a larvae (*Miracidium*) is hatched out. This larvae penetrates into the body of a certain water snail (*Limnaea truncatula*). After three transformations, finally, in the liver of the snail a ciliated larvae (*cercaria*) is produced, which leaves the snail and swims in the water until it encysts on plant leaves. When drinking water or grazing on inundated meadows stock swallow the little snail or consume respectively the larvae encysted on the vegetation. In this way the fluke is enabled to complete its cycle of existence developing its final stage in the liver of the original host.

Thus the development of the fluke requires a second host in addition to stock, and the prevalence of fluke disease depends absolutely on the numerous existence of the before-mentioned water-snail. Since all kinds of small snails are a favoured repast for ducks, there is obviously a quite simple remedy to prevent the sheep from eating the snails, to encourage the breeding of ducks. Incidentally ducks consume enormous quantities of encysted larvae with the plants they eat. A dangerous infection of stock, especially an extensive epidemic resulting in heavy mortality, therefore, is highly improbable in districts sufficiently supplied with ducks. New Zealand, too, is a country that has suffered from fluke disease of sheep ('rot'). In 1920 an epidemic, seeming to be a form of dysentery, occurred amongst cattle, which were fed on watercress. This epidemic has to be considered fluke disease too: *post mortem* examination disclosed flukes, examination of the watercress disclosed water-snails. If up till now sheep in New Zealand have been spared