Myers and Atkinson, after quoting the published evidence of the above-mentioned authors, conclude that section of their article dealing with shags as follows :—

" To sum up the shag position, of the eight species of shags occurring on the mainland, two are too rare to need economic consideration ; four are almost exclusively coastal shags, feeding by no means entirely on fish, and even then doing no appreciable damage to fish interests ; and, finally, only two fish to any extent in fresh water, and of these only one has ever been proved to catch trout. Regarding this last one, the black shag, it is still by no means certain that it is not more of a friend of the angler than a foe. Its persecution should not be subsidized, but whether it should be positively protected, as should be indubitably all the other species, is another matter, to be decided by impartial scientific investigation."

These writers consider that the fresh-water-fishing black shag is the only species to be suspected of doing damage to fishing interests. They admit that there is a possibility of a case being made out against it, but urge that a decision should only be made after impartial scientific investigations have been carried out. I thoroughly agree with them as to the necessity of deciding by impartial scientific investigation ; but, while suspending final judgment until the evidence of scientific investigation is forthcoming, I am of the opinion that the statements which have been made from time to time by men who gave been close observers of the operations of shags on trout streams make a very strong case against the black shag. On numerous occasions mobs of these birds have been seen making concerted operations on pools in trout streams with eminently successful results to themselves and disaster to the trout. Shags which have been shot have been found to have trout, sometimes several, and much more rarely eels, in their stomachs. Unfortunately, acclimatization societies and other authorities, which have in the aggregate spent thousands of pounds on premiums for the destruction of shags, have never kept any systematic record of their stomach contents. If they had we should be in a very much better position to consider our final verdict. The best friends of the birds admit that they eat trout and considerable quantities of trout. But, they say, the shag eats a lot of eels also : and eels are devourers of trout and trout-ova. The question thus arises, What is the equivalent of each eel killed by a shag in terms of trout saved which would otherwise have been eaten by the eel ? Then we require to balance the sum total of eels helpfully killed against the number of trout devoured by shags. Obviously we need data systematically obtained and scientifically considered. It is by no means definitely proved that eels are altogether inimical to the well-being of trout, for big trout feed on small eels just as big eels feed on small trout ; and Mr. Edgar Stead's statement quoted by Myers and Atkinson that " a 2 lb. eel could easily eat all the spawn of a 5 lb. trout, and is just the right fish to find it," is surmise and not evidence. The facts remain to be ascertained and to be considered in their proper perspective by the unbiased scientific investigator. If a stream is overstocked with young trout a certain amount of thinning-out is doubtless beneficial, and this is one of the grounds upon which Mr. Edgar Stead's case for the shag is based. Certain of the Canterbury streams, on which his observations were made, possibly fall into this category ; but the question as to whether these streams are overstocked with yearling trout or not is also one which requires to be determined by scientific investigation. There are present indications that very many of the trout streams in the Dominion are understocked ; and the trout abstracted from such streams by shags can ill be spared. However, I am at one with the ornithologists in urging that the question should be decided by scientific investigation. The responsibility devolves upon fishery authorities not merely to be convinced of the pestilential character of the black shag, but to prove it, if only to justify the expenses incurred by its destruction. They will certainly not be satisfied by the evidence brought forward by its friends in favour of the black shag which, since only the most occasional observations are on record, is extremely exiguous so far as our own conditions are concerned. It is also supported with too many references to the opinions of ornithologists of other countries, where conditions are quite different, to be accepted as cogent by the unbiased scientific mind.

I now come to the species which is the main subject of this section of my report—namely, the large pied shag, which, although its protection has been advocated by the ornithologists referred to above, has for long been regarded as a serious enemy by several sections of the sea-fishing community.

Last winter representations were again made to the Marine Department by the Kaipara Fishermen's Association for financial assistance to enable them to deal with the shag colonies of the Kaipara Harbour which they maintain have had a great deal to do with the deterioration of the flounder fisheries in those waters. As already mentioned, the former attitude of the Department had been to accept the fishermen's contention that the shags were inimical, but to regard any adequate project for their destruction as impracticable on the score of expense. On this occasion the view was taken that here was an opportunity to co-operate with the fishermen not merely to destroy a number of shags, but to make some much-needed observations as to their distribution and feeding-habits as a contribution to the scientific investigations which had been demanded by the shag advocates, and which had never previously been made.

Arrangements were accordingly made with the Helensville fishermen, and on the 14th September, 1929, shooting parties were organized to visit the shag haunts in some of the many tidal estuaries and creeks of Kaipara Harbour. In order that as many observations as possible might be made, I was accompanied by the Marine Biologist, Mr. Young, and Captain L. Hayes, and each of us went out with a different launch party. It is hoped to publish the detailed report when further data on the subject have been obtained. The following is a summary of our operations on this occasion.

Seven fishermen's launches were taken out but, in the case of two, shag-shooting was made subsidiary to flounder-fishing operations.