THE PIED SHAG.

Phalacrocorax varius. (Maori name: Karuhiruhi).

(By R. A. Falla.)

It is a comparatively easy matter to subdivide the Shags or Cormorants of New Zealand into two groups of species which frequent respectively inland waterways and sea coasts. The marine species may be further subdivided into those that are oceanic, generally nesting on outlying islands and feeding in deep water, and those that are coastal, inhabiting bays and estuaries. The Pied Shag is typical of the last-mentioned group.

It is a conspicuous bird in its greenish-black plumage relieved by the dazzling white of its under parts. Its habit of roosting in trees overhanging water makes it a familiar sight in many parts of New Zealand, especially on stretches of indented coastlines washed by warm water. North Auckland and the Bay of Plenty, the Marlborough Sounds and Stewart Island are the regions in which it is most plentiful.

Its food consists mainly of fish of every marine species, but it is not one of the shags with which Acclimatisation Societies need be concerned in regard to the problem of shags and trout. Complaints have been made by sea fishermen, however, and in one case investigation has been made by the Marine Department regarding the effect of Pied Shag colonies on the flounders of the Kaipara Har-This investigation showed that small flounders formed a considerable portion of the food of the shags in that area. It did not, however, give any indication of the actual effect of the number of flounders taken on the total stock or the welfare of the flounder population. The conclusion reached by the Chief Inspector of Fisheries was that the flounder population of the Kaipara fishing grounds is probably no longer at its maximum, having been considerably depleted (by the fishing industry)* and that the depredations of a large shag population must therefore be a considerable drain on the supply of marketable fish. He took a reasonable view that "facts are required in the first place and slaughter only so far as is justified by the facts." Those interested in the welfare of native birds have a right to demand that full and satisfactory investigation should be made in every case before there There is no need at the present time to fear the extermination of Pied Shags, as these birds show a tendency to move from areas where their nests are in danger. In this respect they differ from the more primitive and relatively

stupid Spotted Shag.

There is also a fairly long nesting period, which enables the birds to build new nests and rear young after an early attempt has met with disaster. The nests are untidy but quite strong structures of sticks. Three or four eggs are laid and the young birds are hatched without any covering of down. The down eventually grows in a pattern of black and white, resembling that of the old birds. The young are fed on fish, partly digested and taken from the throat of the parent bird to the accompaniment of much squealing and excited vibration of the nestlings' bodies. When fully feathered the young leave the actual nest and perch about for some weeks on the neighbouring branches. At this stage they are sometimes still fed by the old birds, and their own attempts to fly down to the water and learn to fish are somewhat desultory. Indeed, if the impulse to do so is not strong, some young birds may sit about and become thin as a result of starvation when their parents cease to feed them. Probably, however, this occurs only when some accident has befallen the parent.

The first year plumage of the young bird is slightly mottled on the neck and under parts.

Pied Shags, Rurima, Bay of Plenty.

[Photo courtesy Bernard Sladden



is a decision to attempt the extermination of any native bird, and in this particular case might also reasonably demand that continuous effort should be made to restrict and alter the destructive methods of fishing which will ultimately reduce the flounder population irrespective of whether shags are present or not.

^{*} Parentheses inserted by the writer.