

and in the grasshopper days I counted six young ones on the Middle Dome, near Lumsden. By the way, will the grasshopper ever come back? Perhaps the locusts in Australia may fly high some day with a fair wind, and be scattered over New Zealand again.

If a pair of wekas tried to rear four young ones in Dusky Sound they would probably all starve, at least when the rats were here, and those that were content with small families would be the most likely to survive. Even now I think the father often has a severe task to feed two big young ones, and start them with ability to live among all their persecutors, though he invariably denies himself and works his very hardest to do so.

WOODHENS AND BANTAMS.

As I have often heard stories of the weka and common fowl intercrossing, and have also read about it in the Transactions, I brought with me from Dunedin a bantam rooster and two little hens to see if they would interbreed. When I let them out of the box the weka, that was at my heels, set on them as he would one of his own sort that he wanted to frighten, but the fowls took no notice of him. With all the weka's reputation for fighting and bloodthirstiness, one of these little hens will hunt him away from the food, and, if he is in any way slow about going, will pull a mouthful of feathers out of him. I think the rooster got about one kick at each of them when he first came, but he can never get near enough now, though he has long legs. When the hens began to lay the wekas would steal every egg they could, and always tear up the nest, so that it would look more like a bundle of straw. This is important, because it shows that the weka's hereditary knowledge is more of duck-eggs than any others, for I think it is only the ducks that cover up their eggs; and if it were not for wekas and rats there might be great flocks of teal here.

By giving one of the hens a nest up on posts she brought out seven chickens, which I put in a wire-net enclosure, and it was very instructive to see the eagerness of the wekas to get at them when they first saw them. If it had not been for the netting the seven chickens would have all gone in about seven minutes; as it is they have taken four of them, and one of them while we were looking on. They are so swift and artful that there is no use chasing them.

The male and female wekas pair for life and hatch in turns, which would come awkward for fowls. However, the unexpected often happens, and if the eggs have a few brown spots on them, and the chickens turn out quite black, the male weka might not eat them at first sight, but otherwise I think he would.

A female weka cannot protect her chickens from other wekas for a single day if her mate is killed, because he has always done the fighting and kept his little domain free from intruders. If the mate failed in that his family would soon disappear.

Like the robins and tits, some of the male wekas will not allow their mates to come near our tent, evidently with a view to their safety, because when we stay in a place for a few days the male bird gets full confidence in our friendliness and allows his mate to come quite close.

KAKAPOS (*STRINGOPS*).

GENERAL.

The great ground parrot of New Zealand is called "kakapo" by the Maori. I think it is the largest and the only one out of the great family of parrots that cannot fly. Probably its ancestors could fly, and, like the rails, came here on the wing; but the absence of enemies on the ground, and the abundance of food, allowed the muscles of the wings to degenerate and those of the legs to develop, until now they are fairly good runners, and their wings are only for ornament, or at most to prevent them being hurt from a fall, for they love to climb about among rocks and trees in search of berries and seeds.

There is evidence that a great hawk once lived in New Zealand, and even now there is a fierce little hawk that delights in knocking down birds on the wing, so that the kakapo's forefathers may have been forced to give up flying, those alone surviving that took shelter in the undergrowth. Its breastbone has just the trace of a keel, so that it must have taken a long time to alter its shape to what it is—so long a time that kakapos may be truly said to be one of the heirs of the ages. And just now the "lords of creation" have imported ferrets and weasels that prey on all such things that sleep on the ground, and, as kakapos cannot be expected to learn in a day what their race had forgotten for thousands of years, the chapter of their history is in all likelihood coming to a close. Fortunately they have many friends, and the New Zealand Government takes a kindly interest in their affairs, and has appointed two reserves and men to put them out upon islands with some of their helpless neighbours, where, if fortune favours, they may long survive.

Kakapos may be called night birds and fruit-eaters, which is an unusual combination of characters, but they also eat grass, leaves, and some fungi when the fruit is over. They chew their food more effectually than any other birds that I am acquainted with. For this purpose there are diagonal grooves in the upper mandible, in contact with which the lower acts in the manner of a steel mill. On examining the food in their crop it is found to be so well masticated that it is impossible to tell what it is; yet by a wise provision some seeds are passed entire—such as tutu, which are poisonous, and mapou seeds, the berries of which are an important item of kakapo food. When they chew some of the fibrous grasses, reeds, or flax they leave the fibre in little pellets attached to the remainder of the leaf, so that they know how to use their simple milling-apparatus. There is a disc of feathers around the eyes like those of the owl, and like other creatures that go in holes they have hairs about the nose, or feathers produced into long pointlike hairs.

Some of them rest on the ground under ferns during the day, but the great majority prefer to take up their quarters in hollows and dens in the moss among the roots of trees, where