

If cornered in their paddock here their behaviour is quite courageous, especially that of the female, for she will come towards my hand and stamp and kick with such energy that I take care to keep it out of the way. I think she could easily defend herself against a ferret out in the open, but not in a hole. So whoever essays to keep them should provide a den with a small entrance and a chamber inside without corners, so that poor roa would have room to use its legs.

The female's beak is about 1 in. longer than the male's, and has the slight curve near the point, while the male's has the curve more in the middle, and is about 5 in. long.

It is almost the rule to get a pair in a hole; and they may have last year's young one with them, nearly as big as themselves, but darker in colour. Whenever we do find single ones they are always females, as if they were in excess. I have noticed this more particularly since I came to Dusky Sound, because we are always wanting males to make up pairs, and I am certain that we never got enough to do so, on the whole. They have curious ways. The males always stay at home to "mind the baby," and do it well; the females are the biggest, the most courageous, and the most numerous; and I would not wonder if they do the most of the courting and fighting. The males in nearly all other birds are specially armed for fighting—our common fowl, for instance. The barn-door hen is inclined to fight sometimes, and if each one of them wanted a mate for herself she would fight a great deal more. Perhaps a slight scarcity of mates long ago started the female roa's fighting-impulse, and that would account for her superior size as it does with the fighting males. No doubt she has that impulse stronger than her mate, for when I am taking her out of a box she is always the most fierce and ready to kick, and I always take more care of her.

On one occasion I found a little male *A. oweni* hatching an *A. australis* egg. He could not have driven away his big cousin, so there may be hybrids which would be somewhat like *A. haastii*. Every item is worth recording, because we know so little about them. The egg had a chicken in it.

When a roa passes by our tent at night and becomes conscious of intruders it instantly alters its creeping step and tramps along with such a heavy footfall that I could not believe it to be a roa until I proved it several times by letting loose my dog. As their hearing is the keenest, perhaps that heavy tramp is "putting on style" from their point of view, where sight is not of much account.

KIWIS (*APTERYX*).

The grey kiwi is a shy, gentle little thing, that seems to depend wholly for his existence on his ability to hide away in lonely places. Kiwis are not half the weight of roas, but are the same in skeleton and form with the exception of the beak, which is straight. Their feathers are not so long and hairy, and instead of being brown are more the colour of a guinea-fowl's, but much softer in texture; and their stout little legs are white, as also the beak.

They are more fastidious about food and less hardy than roas, so that I never can keep them in good health for any length of time, and can hardly get a sight of them in their paddock out of the box, they are so shy and keen of hearing.

They live nearly in the same place as the roas, but the kiwis prefer the light, while the roas like the dark forest and the shade. Yet they must often hunt over the same ground; and their departure from each other in size, feathers, and shape of beak is probably due to their taste, or to the taste of their ancestors, and their ability for procuring widely different food in the aggregate. Kiwis generally have white grubs in their stomachs, with things like big maggots, wireworms, and all that class, while the roas depend more on earthworms, water-insects, and berries.

Food is the most important thing in the world, and, with the work required to obtain it, may be the origin of all the changes in animals. For instance, one animal may eat something that will invigorate its liver and enable it to eat more of it, and then away it goes fit to eat anything and live anywhere; while another may be too fastidious for that, eat something else, get bilious, and vary in the opposite direction. Yet our classification experts, in forming new species in the books, never consider the food or the liver, though they are of more importance than anything else, and would offer fine fields for scientific investigation.

I once had a dog that would not eat a scrap of raw meat, and he never got either mange or tapeworm, though such ailments were common among his associates. The greatest treat I could give him was bread and sugar, or porridge and preserved milk. He was the most sensible and energetic dog I ever had, otherwise he might have had to eat what he did not approve of.

Many creatures exhibit a taste for special food which may be dictated by some sense that we do not understand, and when there are opportunities to gratify those tastes they may be the starting-points of new species.

The kiwis are not so constantly in pairs as the roas, for it is just as exceptional to find a pair of kiwis as it is to find a single roa in a hole when they are not breeding.

The kiwi's egg is just as big in proportion as the roa's, and I think the male does all the hatching, for his breast is generally very bare at this time, while all the females are well feathered; and I have often got my dog to hunt in wider and wider circles around a nest, but never found her if the egg was partly hatched, as if she had gone away altogether. Perhaps she does this purposely, so that a little food may be left for him near the nest that he can get in mild weather; but I think she takes care to be there when the chicken is hatched, or at least the roas do so. It may be a fact that he starves there for thirty days—his vitality being greatly suspended,—as is the case during hibernation; because whenever I have seen him he was very dozy.

The chickens are beautiful little things, but it is impossible to feed them satisfactorily, and if you let them go for a moment they are so independent and active that you will never see them again, and as they are quite silent it is difficult to find them.