

The male can swell up his air-sack (of which the female has no trace) nearly as big as his body, so that he must be a formidable-looking fellow on parade. I never saw one booming, however, for they never boom in captivity.

I took a special trip to Wet Jacket Arm to try and get better acquainted with these birds, and on the 21st January, 1898, climbed a high ridge south-west of Oke Island. It was very steep and rough, and all along its narrow top for half a mile were "dusting-holes," as I used to call them, but there was not a particle of dust in them, as there had been about an inch of rain every day for a month. So "dusting-hole" is, I think, therefore, a bad name; "bower" would be more suitable. They were about 18 in. in diameter, fairly level on the bottom, and 3 in. deep, with steep sides. In some the peaty earth was pressed down firmly as if by the naked hand, while in others it was freshly raked up and loose. They were all connected by fresh, well-beaten pathways, so that a good many birds must go up there of an evening at this season, though in the off-season these places are deserted. This suggests that they are used for dancing or parades in their courtships. The Australian lyre-birds also make those holes, or ones like them.

Some one has suggested that the booming may be a defiance or challenge between the males, as in the case of cocks crowing; but I think that, owing to the thin population of kakapos in this dense forest, and the poor means of travelling, it was necessary for either the male or female to have a loud call. The voice of the female kakapo is a hoarse cough, and can only be heard for a couple of hundred yards, while the male's booming can be heard for a couple of miles. Therefore I think it likely that the males take up their places in these "bowers," distend their air-sacks, and start their enchanting love-songs; and that the females, like others of the sex, love the music and parade, and come up to see the show—that is, if they can see the green and yellow in the dark; if not, they can tramp along the pathways, listen to the music, and have a gossip with the best performers. However, it is almost certain that they can see distinctly, because the plumage of the male bird is pretty, and always looks its best at this season, and he would not retain that distinction without a reason for it.

Though we can hear plenty of kakapos in the evenings, we can never tell within a mile where they are, and they do not keep the booming going long enough for us to hunt them up. They start with a couple of short grunts, and then five or six deep measured notes like the sound of a muffled drum, the loudest in the middle. This series will be repeated about three times in the daylight, and then there will be silence until some others take up the cry, perhaps miles away.

On this ridge we got quite close to one when drumming, and it was a powerful note. I could feel the tremble of it, and my boy who was holding the dog 30 yards away could also feel it. I thought the drumming was just at my feet, and we stood still for a long time in hopes that the bird would commence again, but he was silent, and when we brought up the dog we found him 40 yards away, where he had taken shelter under a log. We had come up with all caution, stopping when he stopped, and walking while he was drumming, yet he seemed to have taken alarm. This will show how hard it is to get right up to one when he will take alarm at that distance. It was about 4 p.m., and very few are drumming as early as that.

In our fortnight's ramble we saw very few ridges that had "bowers" on them. On many there were none at all, and on others only one or two, and we never found them under 500 ft. or 600 ft. above the sea.

The birds have peculiar valves in the nostrils, which are larger in the males, and may be a part of the apparatus for drumming.

"Kakapo" is from two Maori words—*kaka*, a parrot, and *po*, night—which is very becoming, because I think they are the only parrots that feed at night. They have small eyes for night birds, and often climb trees in the daytime to sit in the sun after a spell of wet weather, which shows that it is not the light they fear; but probably, like many other creatures, they have chosen the night to feed the better to avoid their enemies. The only enemies they have here are the sandflies, which do not come out at night, but collect very quickly about any game they find near the ground in the daylight. The kakapo's slow movements would allow them to be punished very severely if they walked about on the ground in the daytime, for I know to my cost that the flies are expert at getting in under cuffs and collars, and may do the same with the kakapo's loose feathers. Therefore, when the sandflies have gone to bed the kakapos come out and gather food in peace, and retire to their dark places in the morning where the sandflies will not enter.

When I am in a penguin's cave here I can always see near the door a cloud of sandflies that will not enter even into the gloom where I can see quite well. A good many of the wiser penguins seem to know how far the flies will come in, but some of them have their nests too near the door, where their young ones will be punished severely, if not killed outright. I had two captive roas killed by sandflies.

I was always puzzled to know what the kakapos got so fat on in summer-time, but now I find that they suck the honey out of the rata-blossoms, like all the other bush birds, and as this honey is plentiful in the Sounds in December, it is an important food to mix with their various other items. I went out on the 18th December and gathered a teaspoonful of this honey in ten minutes with a little glass syringe, so that the kakapos could get as much of it as they wanted. The little branches of the ratas are very strong and able to bear their weight.

ROAS (*APTERYX*).

In coming home on the 10th December we brought two roas, which I have been feeding since, and watching their manners in the evening. For a little while I kept some in my garden at Te Anau, and got the idea they were very slow creatures, but those here are