

SHORT NOTES

SUB-FOSSIL AVIAN REMAINS FROM THE AWAKINO-MAHOENUI AREA

In *Notornis*, 1967, 14 (3): 158-160 I published a note dealing with recoveries of sub-fossil avian remains from caves in the Taumata-maire district. In the note referred to only 12 positively identified species and sub-species were dealt with. Since that time a very considerable amount of additional and most interesting material has been recovered.

It is intended in due course to write a comprehensive account dealing with such sub-fossil avian recoveries but in the meantime it seems desirable to place on record a list of the 41 positively identified species and sub-species so far recovered.

Once again I am grateful to Mr. R. J. Scarlett for identifying the bones recovered, nearly all of which have been deposited in the Canterbury Museum.

LIST OF SPECIES AND SUB-SPECIES RECOVERED

North Island Kiwi *Apteryx australis mantelli*
 Little Spotted Kiwi *Apteryx oweni*
 Cook's Petrel *Pterodroma cooki cooki*
 Black Petrel *Procellaria parkinsoni*
 Blue Duck *Hymenolaimus malacorhynchus*
 New Zealand Scaup *Aythya novaeseelandiae*
 North Island Weka *Gallirallus australis greyi*
 North Island Notornis *Notornis mantelli mantelli*
 New Zealand Pigeon *Hemiphaga novaeseelandiae novaeseelandiae*
 Kakapo *Strigops habroptilus*
 North Island Kaka *Nestor meridionalis septentrionalis*
 Red-crowned Parakeet *Cyanoramphus novaezealandiae novaezealandiae*
 Yellow-crowned Parakeet *Cyanoramphus auriceps auriceps*
 Morepork *Ninox novaeseelandiae novaeseelandiae*
 Whitehead *Mohoua albigilla*
 North Island Robin *Petroica australis longipes*
 Bellbird *Anthornis melanura melanura*
 Tui *Prosthemadera novaeseelandiae novaeseelandiae*
 North Island Saddleback *Philesturnus carunculatus rufusater*
 Huia *Heteralocha acutirostris*
 North Island Kokako *Callaeas cinerea wilsoni*
 North Island Thrush *Turnagra capensis tanagra*

MOAS

Anomalopteryx didiformis
Anomalopteryx oweni
Pachyornis elephantopus
Pachyornis mappini
Pachyornis septentrionalis
Euryapteryx curtus
Euryapteryx geranoides
Euryapteryx exilis
Dinornis novaezealandiae
Dinornis giganteus
Dinornis struthoides
Dinornis gazella

OTHER EXTINCT SPECIES

North Island Goose *Cnemiornis septentrionalis*
Finsch's Duck *Euryanas finschi*
Cave Rail *Capellirallus karamu*
Little Extinct Woodhen *Gallirallus minor*
Lesser Aptornis *Aptornis otidiformis*
Owlet-Nightjar *Megaegotheles novaezealandiae*
Snipe *Coenocorypha aucklandica medwayi*

— D. G. MEDWAY



THE COPULATION OF KAKAS

Saturday 24/10/70 in Sudden Stream was windy and cold. I was at the edge of a belt of north-west rain, actually in sunshine with frequent sunshowers, often of sleet. On a northerly face at the corner where the stream turns into its gorge, in one of the uppermost red beech, *Nothofagus fusca*, trees along the line with mountain beech *N. cliffortioides* the Kakas *Nestor meridionalis* have their nest. While watching other birds last year I became aware of the Kakas nearby, but it was not until 25/7/70 I searched and found their nest. I think they selected the nest but probably did not lay in it during 1969.

24/10/70 at 11.00 hours a few minutes after taking position to watch my other nest, I heard a Kaka return to its nest. Five minutes later I had covered the two hundred yards to the Kaka nest but they had gone. There was fresh biting inside the mouth of the nest-hole. I returned to my other nest. At 11.55 three Kakas were about, each separated by 100 yards and with one by the nest, all judged by sound. At 12.40 a Kaka by the nest called "kwoy" several times. At 13.05 the cock Kaka came flying back, calling as it crossed the valley, to be greeted by the hen "kwoy" as she rose from by the nest. They settled on a tree 25 yards uphill and 100 feet above me, 50 foot up the tree at the base of the forest canopy. I took no notice of them. They continued calling and 13.10 I decided to look at them. The cock was mounted on the hen. To improve my view I gradually moved around their tree so I was on the uphill side and level with them. They were facing out across the valley, so now I was behind them. The hen's tail was partly fanned. Her head was low and snaked well forward. Often it seemed she had been following my movements with her head twisted sideways. Sometimes she called "kwoy." She seemed wan and patient. The cock was mounted a little to the left, and was vigorously flapping his wings. His left wing especially curled well around her. With the flaps he was yawing his body across her backbone and his head usually high was working with his exertions. The exertions were transmitted, rather attenuated, through her body to the branch. At 13.19 after at least 10 minutes of this vigorous activity he dismounted and stood alongside her, quietly for 5 minutes. He called "key" quietly through his nose, pushed her with the side of his body three foot along the branch and soon another foot.

Then he dropped off the branch and flew 50 yards to another perch. The hen stretched, preened and looked at me. At 13.32 the cock glided back to the branch below, quickly climbed three feet on to her branch six inches away from her. He called "key-key-key"