

Blackbirds (*T. mérule*).—Plentiful everywhere in this area, and to be found at all times of the year.

Yellowhammer (*Emberiza citrinella*).—Occasional birds are seen around the camps where horses are still used, feeding on the chaff, etc.; otherwise it is very rare.

Hedge Sparrow (*Prunella modularis*).—A few to be seen in Kaingaroa. A nest was found on November 15, 1947 in the hedge surrounding my house. The nest contained three young chicks.

Skylark (*Alauda arvensis*).—A number to be found in all the surrounding paddocks in Kaingaroa and around the outlying camps, etc.

FOOD OF A MOREPORK.

By J. M. Cunningham, Masterton.

On March 20, 1944, the shrubbery at 39 Renall Street, Masterton, echoed all day with the alarm notes of many kinds of birds, the most vociferous of which were, of course, blackbirds (*Turdus merula*). The cause of the disturbance was not long in doubt: a morepork (*Ninox novaeseelandiae*) had taken up residence in the lower fork of a cabbage tree (*Cordyline australis*) and from then on until June, 1945, could be seen from below without difficulty at any time of day. The situation was such that sunlight often fell on the roosting bird. During the winter months, the bird, which left the roost about 5 p.m. (dusk) settled again a few minutes before 7 a.m., and immediately the other birds, just stirring at that time, discovered its presence, they collected round, scolding constantly. They soon grew tired of this, however, and the bird was never seen to be actually mobbed as has been described, or driven away by the blackbirds, thrushes (*Turdus ericetorum*), greenfinches (*Chloris chloris*), chaffinches (*Fringilla coelebs*), fantails (*Rhipidura fuliginosa*), silvereyes (*Zosterops lateralis*), and warblers (*Pseudogerygone igata*) which appeared so disturbed. Later on, little notice was taken of it when roosting, though I have frequently seen a morepork being pursued by a blackbird after the roost was left at dusk. The bird did not seem to resent minor interference, peering down if the tree was touched, though it would fly to another part of the shrubbery if disturbed too much. It usually returned to the roost within a few minutes. Occasionally it roosted in an oak tree (*quercus*), and other roosts favoured by this and other birds were in pine trees (*Pinus insignis*), laurels (*Prunus laurocerasus*), Portugal laurels (*P. lustitanica*) and Lawsonianas (*Cupressus lawsoniana*). On some occasions two birds roosted together, their bodies touching.

The situation of the roost made it easy to catch the pellets which the bird ejected each day, and a number was collected in different months and sent to Professor B. J. Marples, who very kindly examined them. I am greatly indebted to him for the time he spent in identifying the constitution of these pellets.

Unfortunately the ejection of the pellet was never witnessed, but it usually took place some time between 12 and 5 p.m. (during the winter months), and as it was nearly always wet when found it seems likely that it was ejected about 3.30 to 4.30 p.m., or later, on most occasions. This time of ejection is in contrast to that for the little owl (*Athene noctua*) (Report of the Little Owl Food Inquiry, 1936-7, A. Hibbert-Ware, Brit. Birds, Vol. XXXI, Nos. 6, 7, 8) which appears to be after the night's feeding and before the bird becomes inert before daylight. The size of the pellet varied from the size of a pea to about 3 cm. long and 1 cm. thick, but the size did not seem to have any effect on the time of ejection.

Professor Marples states that a conspicuous feature was the presence in the pellets of a large number of coiled chitinous tubes often ending in an enlargement. Dr. J. T. Salmon, of the Dominion Museum, kindly confirmed that these were the remains of the vasa deferentia of moths.

In his opinion they belonged to one of the more primitive moths, probably *Hepialis virescens*. In the following, the number of tubes is halved and listed as so many moths. Most of the bird bones are clearly sparrow (*Passer domesticus*), only the very fragmentary ones being queried, though they are probably sparrow also. One fragment is very small and resembles the bones of a thrush more than those of a sparrow.

The contents of the pellets were:—

May 23, 1944.—Eleven moths; bird fragments. May 25: 3 moths; fragments of beetles and birds. May 27: 13 moths, 1 spider, bird fragments, beak (?) fantail. May 28: 13 moths, 1 spider, 1 small caterpillar. May 29: 3 moths, bird fragments (?) sparrow, 1 large caterpillar. May 30: 5 moths, insect or spider fragments.

June 2—10 moths; 1 spider; 1 sparrow. June 5: 15 (at least) moths; 2 spiders; 1 large, 1 small beetle; 2 sparrows; 1 mouse; a large pellet with feathers. June 27: 8 moths; 1 spider; insect fragments. May 28: 2 moths; 1 mouse.

July 10.—2 moths; 1 sparrow.

August 23.—8 moths. August 30: 5 moths; 1 spider; 1 beetle; 1 sparrow. August 31: 9 moths; 2 spiders; 1 beetle (*Odontria* spp.); 2 sparrows.

September 4.—22 moths; 1 sparrow; 8 white petals of a flower. Sept. 14: 3 moths; 2 spiders; 1 beetle; fragments (?) sparrow. Sept. 12: 23 moths; fragments (?) thrush. Sept. 24: 36 moths.

Late October and early November, fragments of at least three pellets: c. 50 moths; 1 spider 2 beetles (1 *Odontria* spp.); 3 sparrows.

February 8, 1945.—8 moths; 4 beetles (2 *Odontria* spp.); 1 sparrow.

March 6.—One moth; fragments (?) sparrow.

April 5.—Ten moths; 1 spider; 1 mouse. 8-9: 20 moths; 2 spiders. 16-17: 24 moths; 1 spider; fragments (?) sparrow.

May 20.—Ten moths; 1 spider; 1 beetle; 1 sparrow.

April and May.—Three (?) pellets: (a) 4 moths; 5 beetles (2 *Odontria* spp.); fragments bone. (b) 29 moths; 3 beetles (1 *Odontria* spp.). (c), 7 moths; 1 spider; 2 beetles; fragments of bird.

A perusal of the above will show that moths were a most important item in the diet of this morepork, some being recorded in every pellet. Spiders and beetles were of lesser importance. Other invertebrates, such as woodlice, slugs, earth worms, caterpillars, earwigs and millepedes (all but the last two being common in the locality) were almost non-existent, but it is of some interest to note the rather large number of bird remains in the pellets at all times of the year. Miss Hibbert-Ware, in England, and Professor Marples (*A Study of the Little Owl (Athene noctua)* in New Zealand, Trans. Royal Soc. of N.Z., Vol 72, pt. 3, 1942) in New Zealand, found that the little owl, the only other owl now commonly found in this country, ate birds chiefly in spring and summer. This morepork may have had a particular preference for birds, of course, but in any case there is no evidence to show that the presence of the moreporks affected the local bird population in any degree. Though the total population which includes a majority of such birds as blackbirds, thrushes and sparrows, certainly declined somewhat during the period; this is attributed to heavy clearance of the tangled growth of the shrubs destroying cover and nesting areas, and there has been no increase since the moreporks' departure. In a neighbouring district, where moreporks were also conspicuous, there appeared to be no diminution in the numbers of the bird population. Fantails, warblers and silvereyes nesting successfully in close proximity to the roost proved there is little disturbance of these species. I have, however, seen a morepork kill canaries through the wires of an aviary, and Mr. E. O. Welch informs me that a morepork, flying down, nearly snatched a silvereye out of his hands as he was placing a ring on its leg. A glance through available literature tends to

show that the morepork will apparently eat almost any small living creature, perhaps according to availability. The catching of insects on the wing is well known, and perhaps this may explain the smaller number of non-flying vertebrates in the pellets. This may possibly prove, on further investigation, to be a significant difference in the diet, and therefore the ecology, of the bird and the little owl (probably spreading in New Zealand), which Miss Hibbert-Ware and Professor Marples have shown to be mainly a ground feeder.

BIRDS IN THE TARARUA RANGES

By A. G. Bagnall, Eastbourne.

The following observations were made during a four-day trip through the Tararua Range from Otaki Forks to Kaitoke by the Main Range from January 1, 1948. The thorough nature of the trip prevented more detailed notes being made. From the Forks the route taken was the Waitatapia-Saddle Creek Track to the Otaki-Waitewaewae junction, Shoulder Knob and the main range south of Crawford to Maungahuka, the Hector River, Neill, Cone and the Tauherenikau Valley. The weather was fine and windless throughout and bird life seemed a little more plentiful than on other occasions.

Pigeons (*Hemiphaga novaeseelandiae*) were seen in the Waitatapia, Upper Otaki and Tauherenikau valleys (not more than three at one time). Grey warblers (*Pseudogerygone igata*) and shining cuckoos (*Chalcites lucidus*) were heard (former on bush line at 3,000 feet) but not common. Expected, but not seen or heard were the whitehead (*Mohoua o. albicilla*) and long-tailed cuckoo (*Eudynamis taitensis*). Birds especially noted were:—

Kaka (*Nestor meridionalis*).—Two at end of tramway, Waitatapia; two c. 3,000 feet on Cone and one half-way down Tauherenikau Valley.

Parrakeet (*Cyanoramphus* spp.).—Four in bush saddle north of Kahiwiroa, 3,300 feet; four on Cone, c. 3,000 feet.

Rifleman (*Acanthisitta chloris*).—Shoulder Knob, Maungahuka, Neill (six together at 3,600 feet). The most common bird seen or heard on trip.

Pied Tit (*Petroica macrocephala toitoi*).—One on Cone and one in Tauherenikau Valley. Not common by comparison with Wellington East Harbour bush.

Pipit (*Anthus novaeseelandiae*).—Several birds put up on open tops, 3,500 feet.

Fantail (*Rhipidura fuliginosa*).—Young bird seen on ascent of Neill and pair in Tauherenikau.

Bellbird (*Anthornis melanura*).—Occasional bird heard, one approaching to within 20 yards on Neill scrub line.

BIRDS ON A TWELVE-MILE WALK.—On July 22, 1947, Mrs. P. L. Moore and Miss A. S. Edmond, members of the Dunedin Naturalists' Field Club, walked about twelve miles from Port Chalmers via the western slopes of Mopanui to Waitati, and back to Dunedin by the Leith Valley Road. Most of the way led through or near bush or manuka. The following bird life was recorded:—Grey warbler (*Pseudogerygone igata*), 10; yellow-breasted tit (*Petroica m. macrocephala*), 15; brown creepers (*Finschia novaeseelandiae*), about 20 in little flocks near together about Orakanui Stream, Waitati; fantail (*Rhipidura fuliginosa*) 15 pied and five black; bellbird (*Anthornis melanura*), five; pigeon (*Hemiphaga novaeseelandiae*), two, Orakanui Stream, Waitati; harrier (*Circus approximans*), six; pipit (*Anthus novaeseelandiae*), three on road from Port Chalmers to Mopanui; goldfinch (*Carduelis carduelis*), about 100 on the slopes of Mopanui.—(Dunedin Naturalists' Field Club.)