

APPENDIX II.—DETAILED ACCOUNTS OF BIRDS IN LESS KNOWN AREAS.

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(i) *Breeding.* As the visits were made towards the end of the breeding season, many juveniles were independent in all areas studied. At Lake Monk about 50% of Blackbirds, Hedge Sparrows, Chaffinches, Redpolls recorded were juveniles. Young Silvereyes and Redpolls fed in flocks (Lake McKerrow, Lake Monk) when some adults were still breeding. Seven Redpolls collected at Lake McKerrow all belonged to the subspecies *Carduelis flammea cabaret* in measurements; 5 were adults and in breeding condition. The plumage showed much variation, some adult males with large testes having very little red colour on crest and breast. In January all but the Shining Cuckoo were still singing (Lake McKerrow, 1959, and Lake Monk, 1960), but in February only one Blackbird and a few Chaffinches were heard early in the morning (Lake Manapouri, 1959). A chorus of Bellbirds was heard at 5 a.m. below the west saddle of Lake Monk in January 1960. Records of nesting in these periods are: Lesser Redpoll (4 eggs in 1 nest hatching on 25 January 1959, Lake McKerrow; 4 eggs (12.5 x 7mm) in 1 nest being incubated on 14 February 1959 at the timber line (2,750ft) of Mt Grey; 5 nestlings about 10 days old on 24 February 1959 at the Spey River Mouth (600ft); 1 nest at Lake Monk (2,200ft) and 1 nest at the Jeanie Burn (1,300ft) being constructed on 25 January 1960), Bellbird (2 nestlings in 1 nest about 10 days old on 16 February 1959, at Doubtful Sound), Grey Warbler (2 young leaving nest on 20 January 1960, at Lake Monk), and Kea (a nesting territory in *Nothofagus* forest at the West Arm of Lake Manapouri in January 1959). The following species fed fledglings: in northern Fiordland in January 1959, Song Thrush (3 young) and Bellbird (2 young); in central Fiordland in February 1959, Rifleman, Yellow-breasted Tit, Brown Creeper, Bellbird, and Western Weka (black cock and brown hen with 2 black and 1 brown chick about 4 weeks old at Wilmot Pass); in southern Fiordland, in January 1960, Yellow-breasted Tit and Grey Warbler. The following nests were examined: Western Weka, 2 nests at Wilmot Pass (in hollows at the base of *Nothofagus cliffortioides*; outer diameter 30cm, inner diameter 18cm, depth 8cm, made of moss, *Astelia nervosa* leaves, *Rumohra adiantiformis*, *Uncinia* and *Mecodium*); Pigeon, 2 nests at Lake McKerrow (6ft on *Coprosma rotundifolia*, 18ft on *Nothofagus menziesii*); Fantail, 1 successful nest at Doubtful Sound (20ft on *Weinmannia racemosa*, made of moss and scales of the tree fern *Cyathea smithii*); Grey Warbler, 1 successful nest at Lake Manapouri (6.5ft on *Myrsine divaricata*, made of moss and feathers of Blackbird, Song Thrush, Redpoll, Pigeon, Kea, Yellowhead); Song Thrush, 1 nest at Lake McKerrow (11ft on *Pennantia corymbosa*), 4 unsuccessful nests at Lake Manapouri (15ft on *Griselinia littoralis* and 15ft on *Phyllocladus alpinus*, in the secondary layer of the forest interior, 7ft on *Neomyrtus pedunculata* in forest edge, 8ft on *Neomyrtus pedunculata* in *Leptospermum* stand), 3 nests on *Myrsine divaricata* in the secondary layer of the forest at Lake Monk (5.5, 6, 6.5ft); Blackbird, 5 nests at Lake McKerrow (10ft on *Weinmannia racemosa*, 6ft on *Nothofagus menziesii*, 12ft on *Carpodetus serratus*, 20ft on *Pennantia corymbosa*, 8ft on dead shrub) 3 nests at the edge of *Leptospermum* stand at Lake Manapouri (9ft on *Pseudopanax crassifolium*, 6.5ft on *Myrsine divaricata*, 7ft on *Neomyrtus pedunculata*), 3 nests at Lake Monk (10ft on small stand, 12ft on *Griselinia littoralis*, 6ft on *Myrsine divaricata*); Bellbird, 1 successful nest at Doubtful Sound (11ft on *Weinmannia racemosa*, made of filmy fern and liverwort (outer layer), *Deyeuxia forsteri* and *Dacrydium cupressinum* leaves (middle layer), and the lining of feathers of Weka and Kea, Silvereye, 3 nests in the forest edge at Lake McKerrow (4.5ft on *Coprosma parviflora*, 10ft on *C. rotundifolia*, 10ft on *C. linariifolia*), 1 nest in forest edge at Doubtful Sound (5ft on *Neomyrtus pedunculata*); Redpolls, 2 nests at Lake McKerrow (6ft on *Coprosma parviflora*, 5ft on *C. linariifolia*), 2 nests at Lake Manapouri (10ft on *Leptospermum scoparium*, 5.5ft on stunted *Nothofagus cliffortioides*), 2 nests at Lake Monk (10ft on *Nothofagus menziesii*, 4.5ft on *Coprosma* sp.); Chaffinch, 1 nest at Lake McKerrow (11ft on *Coprosma linariifolia*), 2 nests in *Leptospermum* stand at Lake Manapouri (9ft on *Myrsine divaricata*, 5.5ft on *Neomyrtus pedunculata*). Nests of Blackbirds and Song Thrushes had much moss in place of litter, and one nest of Blackbird was made almost entirely of moss and lichen with only a little mud. Another nest of Blackbird had *Leptospermum* bark and dry leaves for the main bulk and contained sand instead of mud under the grass lining. A Song Thrush's nest contained twigs, dry grass and wood chips as lining besides a bulk of moss. One nest of Redpoll had dry grass, moss, filmy fern, small twigs, feathers, cobweb, and grass seeds (lining). Another nest had the outer layer of *Leptospermum* twigs, the middle layer of *Nothofagus* leaves and *Poa annua*, and the lining of thistle seeds, moss and rhizome. Nests of Chaffinches were made of moss, *Leptospermum* twigs, filmy fern, grass and lichen.

(ii) *Feeding.* The following observations were made on feeding habits and food of land birds in Fiordland. Pigeons fed on fruits of *Aristotelia serrata* (northern and central Fiordland) and of *Coprosma rotundifolia* (field observations and examination of droppings at Lake McKerrow). Kea frequented the area below the timber line as well as above at