

SHORT NOTES



THE RELATIONSHIPS OF *FINSCHIA* AND *MOHOUA* (FAMILY MUSCICAPIDAE)

The New Zealand "tit-warblers" *Finschia* and *Mohoua* are placed in the Subfamily Malurinae (Australian Warblers) in the *Annotated Checklist of the Birds of New Zealand* (OSNZ 1970), following the arrangement of Mayr & Amadon (1951). In a recent paper the writer (Keast 1976) noted that they had no obvious relatives amongst the Australian warblers and that they were sufficiently distinct to warrant sub-family or tribal status.

Further consideration of the morphology of these three species indicates that their relationships actually lie with the pachycephalines and that they are descended from ancestral stocks of these. Thus —

- (1) The maxilla is distinctly arched or rounded (diagram in Keast 1976). A rounded maxilla is present in the pachycephalines whereas such is poorly developed in the acanthizines and in the meliphagids the maxilla is straight. The shortening of the bill in the mohouines (? secondary) exaggerates the feature here. In the short-billed *Aphelocephala* amongst the acanthizines, and in *Pachycephala* most of the thickening of the bill is achieved by swelling of the mandible.
- (2) The nostril is circular as in the pachycephalines. In the acanthizines it is slit-like.
- (3) The colour pattern is simple, lacking striations, spotting, scalloping, iridescence (as in *Dasyornis*), and is variously dominated by plain brown (*Finschia*), plain yellow (*Mohoua ochrocephala*), or white (*M. albicella*). This is also the colour range in *Pachycephala* but occurs in a few of the plainer plumaged robins, *Sericornis* and *Gerygone*.
- (4) The nest is cup-shaped, as in *Pachycephala* and flycatchers, and contrasts with the dome-shaped one of the Australian warblers.

Many of the characters of the Mohouinae are of a generalized type that might be expected to persist in forms with a long continued evolution under forest conditions. Moreover traces of a range of characters "basic" to the wider Australian warbler-flycatcher assemblage can be seen. Thus *Finschia* has an incomplete black subterminal tail band, a typical acanthizine character but that also crops up in the New Guinea pachycephaline *Pachycare*. The wing is very rounded, with primary 5 being longest, or p. 4, 5, and 6 being equally long, followed by p. 7 that exceeds p. 3, and the individual feathers are

relatively broad. Such a rounded wing is quite atypical amongst the open country and arboreal Australian warblers but has a counterpart in low thicket forms such as *Pycnoptilus* and *Crateroscelis*, and the "intermediate feeding zone" *Sericornis nouhousi* and *magnirostris*. Amongst the pachycephalines the New Guinea *Pachycephala sufuriventer* has a very rounded wing. The rounded tails of the mohouines (exaggerated in *Finschia*) contrasts generally with the square ones of pachycephalines. Generalized or "archaic" thicket-dwelling warblers like *Dasyornis*, *Pycnoptilus* and *Cichlornis* have very rounded tails. The tarsus/wing ratio is 34-35% and hence rather "average" despite the somewhat massive legs and strong hind claw of *Mohoua ochrocephala*. The hind to tarsus ratio (56-65%) is also in the middle of the Australian warbler-pachycephaline range. The poorly developed rectal bristles (well developed in many *Pachycephala* but poorly so in *P. simplex*) is of no immediate taxonomic importance and simply reflects the absence of aerial feeding.

The feeding zones of the mohouines are very wide. Whilst *Mohoua albicella* feeds extensively in the canopy it also does so from trunks, logs and, occasionally, on the forest floor (A. S. Wilkinson's note quoted by Falla *et al.*, 1966). The feeding of the other two species also combines foliage and branch-trunk feeding (see Oliver 1966, Falla *et al.* 1966). Whilst such generalized habits might be expected in depauperized insular faunas a combination of foliage, outer branch, and trunk feeding is highly characteristic of the pachycephalines (vide *Pachycephala pectoralis*, *P. rufiventris*, *Colluricincla harmonica*). The acanthizines do not have a branch and trunk feeding component, other than very incidentally (*Acanthiza reguloides*). On the other hand all three mohouines commonly feed hanging head downwards. This is absent in *Pachycephala* but occurs in *Gerygone*, *Acanthiza lineata*, *et. Falcunculus*, a close relative of *Pachycephala*, shows the habit strikingly.

Another "basic Australian" behavioral feature of the mohouines is that young in the nest may be fed by multiple adults (H. Guthrie-Smith, quoted by Oliver; and M. F. Soper quoted by Falla *et al.*). "Cooperative breeding" is unusually common in Australian birds and may characterize 30-40% of species (Hugh Ford, personal communication).

The sum total of characters of the Mohouines shows them to be members of an old Australian pachycephaline-warbler-flycatcher lineage. Within this they are apparently derived from an early generalized, forest-dwelling proto-pachycephaline stock. Such stocks presumably occurred in eastern Australia when forest (? temperate rain forests) were more widespread. It might be noted that the more simple and generalized genera in many groups occur today in the forests of New Guinea. Southeastern Australian forest and thicket birds provide examples of relictual (i.e. secondarily contracted) distributions, vide

the poorly dispersing *Dasyornis* and *Pycnoptilus* amongst the warbler, and the pachycephaline *Pachycephala olivacea*. The high level of seasonal mobility and exaggerated sexual dichromatism of the open forest dwelling *P. pectoralis* and *P. rufiventris* shows these to be later-evolved types adapted to contemporary Australian conditions.

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BRIEF OBSERVATIONS ON THE KAKAPO

During the period 12 February to 2 April 1974, a Wildlife Service Expedition in search of the Kakapo, *Strigops habroptilus*, in the Cleddau watershed, south-west Fiordland, located two birds c. 700 m apart in the Esperance Valley. Both Kakapo were transferred to Maud Island (Merton 1976, *Forest and Bird* 199: 2-10).

The first of these two birds was captured on 6 March 1974 and held in a large temporary aviary erected within the bird's presumed "territory." This Kakapo was watched over a period of 18 days while it was in the aviary. Due to the bird's nocturnal habit, observations were brief, lasting 15-90 minutes each evening, usually until dark.

Preening was observed once. The bird preened its facial disc, using its foot much like a cat would wash its face with a paw. The Kakapo balanced on its right foot and, with the left, proceeded to comb the hair-like feathers about the face and chin. The two front claws of the left foot were brought upwards, combing the chin feathers forwards. The upper surface of these two toes was then drawn down over the chin feathers, settling them back into place. This movement was repeated many times on both sides of the chin with the one foot.

Occasionally, the foot was moved in a circular motion around the face and bill. Thus the two front claws were brought up through the chin feathers to a point where the upper surface of these two toes brushed across the cheek and lores at the side of the bill and cere, before brushing across the feathers of the forehead, down the other side of the face and back under the chin. Sometimes the bird would