

## SHORT COMMUNICATIONS

### SYMPATRY OF *AMBLYORNIS SUBALARIS* AND *A. MACGREGORIAE* IN NEW GUINEA

During the working-out of a small collection of New Guinean birds a breeding specimen of the Striped Bowerbird *Amblyornis subalaris* was found that had been collected approximately 160 km east of its known range, and above its usual altitude (Harrison and Frith 1970). On the label of this specimen the collector stated that another four nests, containing eggs, of this species were examined. This suggested that *A. subalaris* and MacGregor's Bowerbird *A. macgregoriae* may be locally sympatric because the range of the latter extends to the same mountains as *A. subalaris* in some places. In these circumstances the distinctly different bowers of the species might act as isolating mechanisms. An examination of *Amblyornis* skins in the British Museum did in fact bring to light some evidence of sympatry.

The two species of *Amblyornis* in south-eastern New Guinea are quite similar in plumage. Both are the size of thrushes (*Turdus* spp.), dark olive-brown above and ochraceous brown on the throat and under-parts. A splendid orange crest extends from the crown onto the back in adult males of *A. mac-*

*gregoriae*, but only onto the nape of *A. subalaris* (Fig. 1). *A. subalaris* is further distinctive in having pale-brown streaking on the throat and upper breast in both sexes, and dark-brown tips to the crest feathers of the male. Females lack the orange crest; they can, however, be easily distinguished at close quarters by the striated throat of *A. subalaris* and the lighter browner head of *A. macgregoriae*.

A far more striking difference between these two species is the type of bower constructed by the males (Marshall 1954; Gilliard 1969). The bower of *A. subalaris* is an extremely ornate structure of twigs forming a hut around the central sapling or maypole, and is decorated with blossoms, berries and other objects. The bower of *A. macgregoriae* is comparatively simple, consisting of a column of sticks placed against and round a central sapling and surrounded by a clear circular display area which is encircled by a rim of moss some millimetres high (Fig. 1).

*A. subalaris* and *A. macgregoriae* have previously been considered allopatric, separated altitudinally by a zone of some scores or hundreds of metres (Mayr 1941; Gilliard 1969). Gilliard gives the following altitudes: *A. subalaris*, 2,200 to 3,600 feet (660–1080 m) and *A. macgregoriae*, 3,800 to 9,000 feet (1,140–2,700 m) (Fig. 2).

There is a number of skins of *A. subalaris* in the British Museum that are labelled as having been collected within the altitudinal range of *A. macgregoriae*. These and their localities are listed with the sympatric specimens of *A. macgregoriae*. The number of skins from each locality is given in brackets.

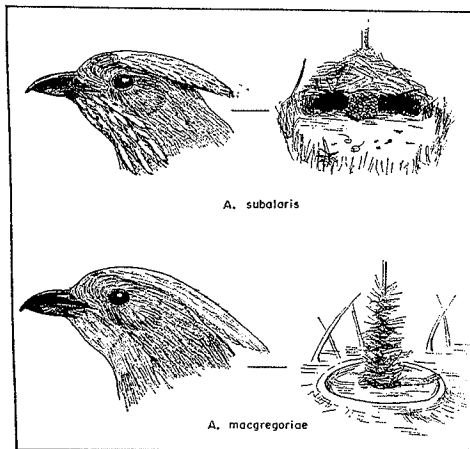


Figure 1. Heads and bowers of *Amblyornis subalaris* and *A. macgregoriae* to show display plumage and bower types.  
(Bowers after Marshall 1954)

		<i>A. subalaris</i>	<i>A. macgregoriae</i>
Head of Aroa R.	(1)	4,000–6,000 ft (1,200–1,800 m)	
Aroa River	(1)	?	(1) ?
Moroka Mts	(6)	4,000–4,500 ft (1,200–1,350 m)	
Boneron, 48 km	(1)	5,000 ft (1,500 m)	
NW Mt Simpson			
Owen Stanley Mts	(7)	5,000–7,000 ft (1,500–2,100 m)	(3) 5,000 ft (1,500 m)
Bagutana Camp.	(2)	8,000 ft	(1) 8,000 ft
Owen Stanley Mts		(2,400 m)	(2,400 m)

All specimens from the Owen Stanley Mountains, including Bagutana Camp, were collected by W. Goodfellow in April 1908, and in March and April

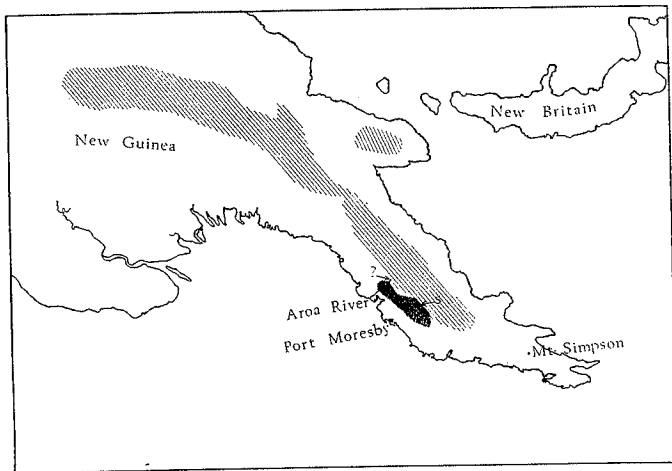


Figure 2. Range of *Amblyornis* in eastern New Guinea (adapted from Gilliard 1969). Lines = *A. macgregoriae*, stippling = *A. subalaris*. S = area of sympatry on Owen Stanley Mountains. ? = possible area of sympatry on Aroa River.

1909, except one specimen of *A. subalaris* from 7,000 feet, which has no collector's name or date.

Aroa River is a rather vague locality where these two species may meet. Of the three specimens from there two have no altitude, but were collected on the same day (20 May 1903) by A. S. Meek. These two birds are one of each species, a male of *A. subalaris* and a female of *A. macgregoriae*. The third specimen is from the 'Head of Aroa River', 19 April 1905 at 4,000–6,000 feet (1,200–1,800 m), and was also collected by Meek.

Gilliard (1969: 315) thought that differences in the bowers of these birds act as species-specific isolating mechanisms where their ranges 'front on each other'. If the two species are sympatric this might well be so. There has probably been greater selection pressure for differences in bower-building and the resultant product (and its specific recognition by the female) than for differences in coloration or display feathering. The more elaborate bower of *A. subalaris* may result from this rather than from its slight loss of display plumage as suggested by Gilliard (1956).

Sympatry of these birds may explain the peculiar bower found in the Owen Stanley Range, referred to and illustrated by Marshall (1954: 174).

He stated that this bower had features of both *A. subalaris* and *A. macgregoriae*. Possibly a bower of *A. macgregoriae* was added to by an *A. subalaris*, perhaps an immature or inexperienced male, resulting in this aberrant structure.

There is a need for much field work on the *Amblyornis* bowerbirds, particularly where sympatry may occur. More knowledge of their displays and behaviour will undoubtedly throw light upon the evolutionary trends that have brought about the divergence between their breeding systems.

I am grateful to Mr I. C. J. Galbraith and Mr D. Goodwin for reading and commenting on this paper.

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## THE RELATION OF THE PARROT GENUS *OPOPSITTA* TO *PSITTACULIROSTRIS*

Salvadori (1891) included the five species that are at present placed in the genera *Psittaculirostris* and *Opopsitta* in one genus, *Cyclopsittacus* of Reichenbach 1850. The name *Cyclopsittacus* was dismissed as invalid by Mathews (1912: 304-308) on the grounds that the bird illustrated (to which only the name '*Cyclopsittacus*' and an asterisk indicating that it was figured from a specimen were attached) was not definitely identifiable with *Opopsitta diophthalma*, the species which Salvadori and others had identified as the type.

After examining Reichenbach's drawing (Syst. Av. Nat., 1850, tab. lxxxiii) I am convinced that it can be identified, not with *Opopsitta diophthalma*, but with one of the subspecies of *Psittaculirostris desmarestii*, probably with *P. d. blythi* (Wallace) 1864. Fortunately, however, *Cyclopsittacus* does not appear to have been used in the 'primary zoological literature' in the last fifty years, so that it is now a *nomen oblitum* and will not disturb the stability of the current nomenclature.

Mathews (1927) separated two of the species that were formerly placed in *Cyclopsittacus* into separate genera. *Opopsitta* (*diophthalma* and subspecies), and *Suavipsitta* (*guliemi* III and subspecies; name here amended to *guliemiterti* following the Int. Code for zool. Nomen.) placing the remaining forms in a genus *Cruopsitta* (of Mathews 1916, a synonym of *Psittaculirostris* J. E. and G. R. Gray 1859). Peters (1937) merged *Suavipsitta* with *Opopsitta* and corrected Mathews's use of the name *Cruopsitta*.

After examining skins of all forms of these five species and anatomical material (or x-rays of the heads of study skins to show characters of the skull) of each species I consider it inadvisable to separate the genera *Opopsitta* and *Psittaculirostris*, unless the poorly differentiated monotypic genus *Suavipsitta* is also recognized, and this seems inadvisable also.

These five species stand apart from other parrots in having the entoglossum deeply grooved (*O. diophthalma* and *P. edwardsi* examined), in having the processes of the parahyoid bone only narrowly joined and not projecting forwards (resembling only *Nestor* spp. in this; same two species examined), and stand apart from all of the other genera placed in the Loriinae of Peters (1937) in having the lachrymal and postorbital processes joined to form a complete ring of bone below the orbit (skulls or x-rays of all species examined).

The three species placed in the genus *Psittaculi-*

*rostris* by Peters show marked similarities in plumage pattern and replace each other geographically, forming a well-defined superspecies. *Opopsitta diophthalma* and *O. guliemiterti* differ markedly from each other in both plumage pattern and coloration (descriptions of all forms are given either by Rand and Gilliard (1967) or Forshaw (1969)), resembling each other, and differing from *Psittaculirostris* only in their small size and in possessing yellow patches on the flanks, although the latter are indicated in some forms of *Psittaculirostris desmarestii*. *O. guliemiterti* resembles some forms of the genus *Psittaculirostris*, but differs from *O. diophthalma*, in having orange on the breast, and the head-pattern of this species is peculiar. *O. diophthalma* resembles *Psittaculirostris* spp. in its head pattern, which differs strikingly from that of *O. guliemiterti*.

Differences in size were also used in the original separation of these genera. Comparison of measurements of all subspecies from the three genera shows that the differences are small when all forms are considered, and quite insufficient to allow generic separation on these grounds alone (wing lengths of 38 *O. guliemiterti* 75-100 mm, 32 *O. diophthalma* 78-98 mm, 34 *Psittaculirostris* spp. 103-120 mm).

As these three genera appear to be closely related, and are all monotypic or nearly so, it is probably best to combine them. *Psittaculirostris* is the senior generic name, and no nomenclatural changes are necessary.

I am grateful to I. C. J. Galbraith, D. Goodwin and C. J. O. Harrison for help and guidance in the preparation of this note, although the views expressed are my own.

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## DISTRACTION DISPLAY IN THE BELL MINER

The Bell Miner *Manorina melanophrys* nests colonially, generally in the shrubby understorey of sclerophyll woodland. During a study at Bayswater, Vic., between April 1969 and February 1970 I made notes on twenty-six occasions of distraction displays which occurred when I visited nests containing young, or when fledglings were approached closely on their first day or two out of the nest.

In display, a bird crouches on its perch, depresses its tail a little and fans it out, at the same time lifting its wings above its back without extending the primaries, and slowly flutters them. Simultaneously it utters harsh mewing shrieks, and then drops down into the undergrowth where it repeats the display. There are occasional variations. After checking a nest on 9 December 1969 I watched an adult, perched in full view on a bare branch about 2.5 m high. It crouched, slowly fluttering its half-opened wings, then slowly keeled over on one side and fell off its perch uttering a cawing sound. Just above the ground it sharply stopped its fall and glided to the base of a shrub. At some nests the performance started with 'the falling stone' display described for the Blue Wren by Rowley (1965, *Emu* 64: 251-297). I heard a loud thump as the ground was struck; then the bird moved quickly into nearby undergrowth and displayed. This occurred once when I was about to band young from a nest 1.0 m above ground. It seemed as if the bird had started its fall from higher up.

Armstrong (1956, *Ibis* 98: 641-654) suggested that distraction displays evolved from many components of threat displays. When threatening, a Bell Miner crouches, points its head forward, and depresses and fans out its tail. In mobbing, the wings are also lifted and sometimes fluttered. The distraction display appears to be a modified form of mob-

bing, with the addition of injury-feigning and 'the falling stone' display.

More than two birds take part. My counts varied from three to twelve, but Lang (1928, *Emu* 27: 250-251) noted 'about 30 adult birds' round him when he caught a fledgling. Chisholm (1936, *Auk* 53: 251-253) stated that among various Australian chats and honeyeaters neighbouring birds also injury-feigned. Skutch (1954-55, *Ibis* 96: 544-564; 97: 118-142) classified this as sympathetic injury-simulation, and appears to have assumed that the species in question bred as unassisted pairs. The Bell Miner has helpers at the nest, and these birds take part in the displays. Colour-banding has shown that birds will also join a display at another group's nest. Perhaps in other honeyeaters, sympathetic injury-simulation may indicate social behaviour similar to that of the Bell Miner.

Of the fifty-four nests that I have found at Bayswater, only four were above the understorey, and only one of these was successful. Perhaps predation pressure has been too heavy on nests above the understorey. The species feeds its young at a high rate, and has helpers. The consequent large number of visits must expose the nest to risk. However the denser undergrowth helps to hide such activity, but brings the nest within reach of terrestrial predators. Presumably this has been the lesser of two evils; hence the distraction display.

Skutch (*op. cit.*) mentions that most species choose a cleared space on which to perform their particular type of ruse. The Bell Miner does the opposite. When I inspected a nest, 4.0 m high in an *Exocarpos* which stood in a small grassy clearing, a bird at the nest flew down and glided into some shrubs about 10 m away, where it then displayed. Perhaps the main predator responsible for the display has been a quick and agile animal, possibly one of the marsupial 'cats' and not a reptile.

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