

- JACKSON, S.W. 1919. Haunts of the Letter-winged Kite (*Elanus scriptus*, Gould) with an account of its breeding habits, and notes on some other species. *Emu* 18: 160-172.
- KLAPSTE, J. 1979. Field notes on the Letter winged Kite *Elanus scriptus* at Werribee Victoria, 1977. *Aust. Bird Watcher* 8: 19-26.
- PETTIGREW, J.D. 1978. A role for the avian pecten oculi in

- solar orientation? *In* Animal Migration, Navigation and Homing: 42-54. K. Schmidt-Koenig, (Ed.) Berlin: Springer-Verlag.
- PETTIGREW, J.D. 1979. Binocular visual processing in the telencephalon of the owl. *Proc. Roy. Soc. B* 204: 435-454.
- WALLS, G.L. 1963. The vertebrate eye and its adaptive radiation. New York & London: Hafner Pub. Co.

J.D. PETTIGREW, *National Vision Research Institute, 386 Cardigan Street, Carlton, Vic 3053.*

20 October 1981.

CAMPBELL'S FAIRY-WREN *MALURUS CAMPBELLI*, A NEW SPECIES FROM NEW GUINEA

Contributions to Papuan Ornithology no. 8.
The last paper in this series appeared in Emu 78 (1978) 1-6.

This paper reports the discovery of a hitherto unknown malurine wren, *Malurus campbelli*, from New Guinea. It is the first new bird from that great island since E. T. Gilliard discovered the honeyeater *Melidectes princeps* and the bower-bird *Archboldia (papuensis) sanfordi* in 1950. (*Sericornis nigroviridis*, described by A.H. Miller from Edie Creek in 1964, has been shown by Beehler (1976) to be a green-black morph of the Buff-faced Scrub-wren *Sericornis perspicillatus*). Robert Watt Campbell, a bander for the Australian Bird-Banding Scheme, found the wren at the remote outpost of Bosavi, on the rim of the great Papuan Plateau in western Papua New Guinea (6°24' S, 142°50' E). From three visits on 4-11 February 1980, 6 February 1981 and 6-8 November 1981 he netted and banded five individuals, but although measuring and photographing them, he did not take specimens. Other visits proved fruitless, underlining the uncertainty of collecting the species again in the near future. Not only is Bosavi one of the most remote and inaccessible localities in New Guinea but its wren is also particularly elusive, having evaded discovery on more times than it has been found there. In these circumstances we have preferred to describe the species forthwith, in accordance with Articles 11 and 13 of the International Code of Zoological Nomenclature (Stoll *et al.* 1961), despite the lack of a type specimen. Campbell's photograph of what we identify as the type - a putative male - has been printed to near life-size proportions in Cibachrome II and distributed to the American Museum of Natural History, New York, the Australian Museum, Sydney, the Australian National Wildlife Collection, Canberra, the Papua New Guinea Public Museum and Art Gallery, Port Moresby, the Rijksmuseum van Natuurlijke Museum, Leiden, and the Museum Zoologicum Bogoriense, Bogor. Cibachrome, produced by Ilford Ciba-Geigy Photochemie, uses azo dyes which are stable against light and moisture and can be expected to preserve the image against loss of colour for as long as any specimen.

Diagnosis - Closest in appearance to the Broad-billed Fairy-wren *Malurus (Chenorhamphus) grayi*, with which it forms a superspecies. Differs from the later, however, in its pure black, not blue-dusky crown; tawny-brown, not light blue mantle and scapulars; sky blue, not deep blue flanks in putative females; more attenuate ear-tufts; narrower bill (width/length ratio 0.43 vs 0.46 in *grayi*); and lighter body (10-11 g vs 13-14.5 g in *grayi*).

Description - *Putative adult males* are uniquely black-headed with light blue stripes on the brow and over the ears; the pattern resembles that of a melithreptine honeyeater (*Melithreptus*) or titmouse (*Parus*). Crown black, fringed with thick, pale turquoise-blue superciliaries that do not meet across the frons; mantle and scapulars mid tawny-brown, contrasting with a deep greyish-blue lower back and mid tawny-brown upper-tail coverts; flight feathers mid grey-brown edged tawnier, the upper-wing coverts plain tawny-brown, and the under-wing coverts pale grey; tail mid bluish grey-brown, the feathers edged tawnier and tipped narrowly buff-white; face black from lores to sides of neck, with long lance-shaped pale turquoise-blue ear-tufts arising from the lower eye rim and curving down towards the shoulders; entire ventral surface from chin to crissum delicate powdery sky-blue. Iris blackish brown; bill black; feet deep flesh-grey, grading to paler flesh on toes and claws. Measurements, in mm: wing 54-56, tail 49-50, exposed culmen 15-16 × 6.3-6.5 wide at nares, tarsus 21-22 (from two individuals in life).

Putative adult females are like males but have white lower breasts and bellies without any darkening of the sky-blue on the flanks (*cf.* Broad-billed Fairy-wren *Malurus grayi*). Their ear-tufts, too, are not so long and pointed, and their crissa pale tawny-rufous. Measurements, in mm: wing 49-51, tail 44-49, exposed culmen 14-16 × 6.3-6.5, tarsus 21-22 (from three individuals in life).



Plate 1. Campbell's Fairy-wren (*Maurus campbelli*). Top, putative female and bottom, putative male, from R.W. Campbell's photograph of the type.

Distribution - So far, Campbell's Fairy-wren is known only from Bosavi, Southern Highlands Province, PNG, in swampy secondary and primary hill-forest with sago palm (*Metroxylon*) at c. 800 m. The forest zone in which the bird occurs, one of the least explored in all New Guinea, extends far east and west along the southern footslopes of the central cordillera between 300 and 1000 m. Accordingly, we expect that the wren will be found east at least to Mt Faveng on the Purari River and west to the Snow Mountains in Irian Jaya. In that belt it replaces the Broad-billed Fairy-wren of north-western New Guinea (Schodde & Weatherly 1982). Other allopatric pairs of species with the same pattern of distribution are, the southern representative first: *Casuarinus casuarinus* - *C. unappendiculatus*, *Goura scheepmakeri* - *G. victoriae*, *Talegalla fuscirostris* - *T. jobiensis*, *Chalcopsitta scintillata* - *C. duivenbodei*, *Psittaculirostris desmarestii* - *P. edwardsii/salvadorii*, and *Lalage leucomela* - *L. atrovirens*.

Age and Sex - Questions of age and sex arise out of Campbell's released wrens: were they adult male and female or immatures at different stages of maturity? That they were in adult or near adult breeding plumage is suggested by several clues. First, all other New Guinean fairy-wrens attain a permanent coloured nuptial plumage in their first year, usually within several months of leaving the nest (Schodde & Weatherly 1982); all of Campbell's records, spanning twenty months, were of birds in similar colour. Secondly, immatures of the closely-related, vicariant Broad-billed Fairy-wren *Malurus grayi* are tawny-brown and do not reach full adult dress until the ventral blue or blue-and-white of the kind shown by Campbell's birds covers their own breasts and bellies. Thirdly, ear-tufts, erectile and used in agonistic display by males, do not fill out completely in any fairy-wrens until the moult into nuptial plumage is complete. These seem to be quite full grown in Campbell's putative males, judged by the fact that they are as long and attenuate as in adults of any other malurine wren.

The sexes are more difficult to judge, but here again circumstantial evidence points to Campbell capturing both. On the two occasions that he netted two wrens together, one was uniformly pale blue from chin to

crissum and the other white-bellied. These are the primary morphological differences between the sexes in the Broad-billed Fairy-wren, males being uniformly pale blue ventrally and females white on the abdomen (Schodde & Weatherly 1982; *pace* Rand & Gilliard 1967). It seems likely, then, that Campbell had caught a pair each time. The only plausible alternative is that his duos comprised adult and subadult males, the latter still in hen plumage in transition to full male dress.

Affinities - In its tawny back and scapulars and attenuate blue ear-tufts, Campbell's Fairy-wren links the New Guinean pale-blue wren *Chenorhamphus* with the Australian chestnut-shouldered and purple-crowned fairy-wrens *Malurus* subg. *Leggeornis* and *Rosina*. Partly because of this we group them all in one genus under the senior name, *Malurus*. By convention, Campbell's Fairy-wren would be included in the generic segregate *Chenorhamphus*, typified by *C. grayi* and characterized by a much broadened bill. The form of the bill, however, is particularly malleable and adaptable in the Maluridae and therefore an unreliable guide to affinity at generic level; its flattened, flycatcher-like form appears to have arisen independently at least twice: once in *campbelli* and *grayi* and once in the Orange-crowned Wren, *Clytomyias insignis* (Schodde & Weatherly 1982). Better clues to relationships come from colour patterns and the structure of the tail. Here Campbell's and Broad-billed Fairy-wrens have the basic traits of *Malurus*: blue tone, ear tufts of enamelled appearance, and ten-feathered tails in which the outermost pair of rectrices are vestigial (R.W. Campbell, in litt.).

REFERENCES

- BEEHLER, B. 1978. The status of *Sericornis nigroviridis*. *Condor* 80: 115-116.
 RAND, A.L. & E.T. GILLIARD. 1967. Handbook of New Guinea Birds. London: Weidenfeld and Nicolson.
 SCHODDE, R. & R.G. WEATHERLY. 1982. The Fairy-wrens, A Monograph of the Maluridae. Melbourne: Lansdowne Editions.
 STOLL, N.R., DOLLFUS, R. Ph., FOREST, J., RILEY, N.D., SABROSKY, C.W., WRIGHT, C.W., & MELVILLE, R.W. 1961. International Code of Zoological Nomenclature. London: International Trust for Zoological Nomenclature.

R. SCHODDE, *Division of Wildlife Research, CSIRO, P.O. Box 84, Lyneham, ACT 2602.*
 R.G. WEATHERLY, *'Connewarran', Mortlake, Victoria 3272.*

25 May 1982.