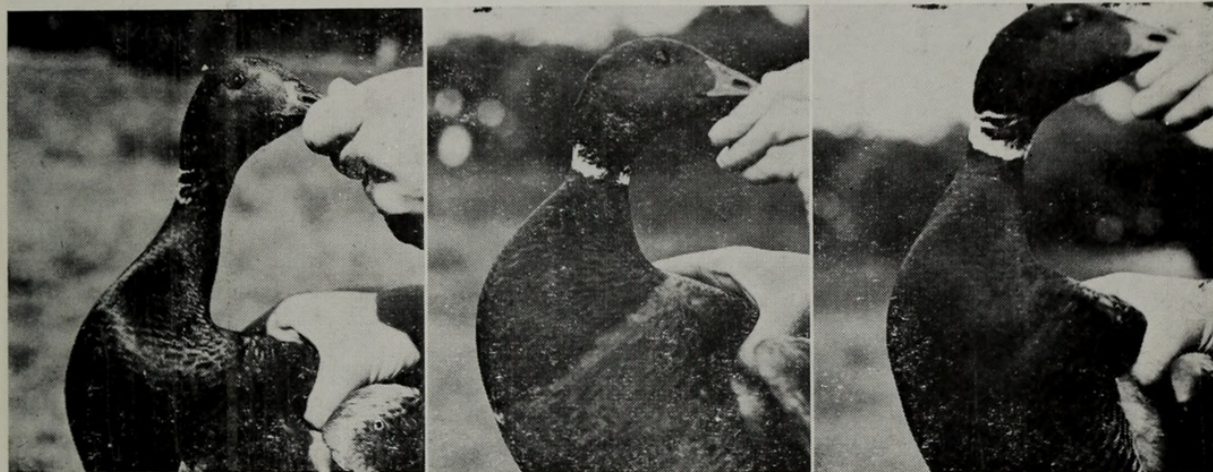


number of years, the bird originally being caught on the north Norfolk coast.

The three photographs illustrating this note show on the left, a typical adult Russian Brent; in the centre the bird in question, and on the right, an example of the Pacific Brent *B. b. orientalis* Tugarinov. All three birds are in Mr. Williams' collection.



Russian Brent

Variant Russian Brent

Pacific Brent

Photographs : Pamela Harrison

It will be seen that the degree of white collar illustrates a cline of increasing whiteness from left to right, or west to east. It is possible that the centre bird comes from a breeding area in the extreme eastern range of *B. b. bernicla*, for the white collar is considerably more extensive than usual, being broader and almost but not quite meeting anteriorly. It is also more extensive posteriorly.

However, if this was merely an example of clinal variation, it is strange that there is no indication of this in the flank markings, which are quite typical of *B. b. bernicla*. It is more likely that this is another variant character, similar to the black V marking found occasionally on the chins of European Eiders *Somateria mollissima mollissima* (Linnaeus) and constantly in the Pacific Eider *S. m. v-nigra* Gray.

In its characters, this Brent from north Norfolk might be mistaken for the mysterious Lawrence's Brent *B. b. nigricans* Lawrence, which according to Delacour (1954) is thought to nest in the north-east of Hudson Bay and is possibly nearing extinction.

We are very grateful to Mr. Williams; also to Dr. Pamela Harrison for the photographs.

Reference:

Delacour, J. (1954). *The Waterfowl of the World*, vol. 1, London.

## A new species of tinker-barbet from Northern Rhodesia

by C. W. BENSON and M. P. STUART IRWIN

Received 20th October, 1964

During a recent collecting trip to the North Western Province of Northern Rhodesia, made under the auspices of Mr. C. W. Benson of the

Rhodes-Livingstone Museum, M. P. Stuart Irwin, accompanied by Benson's African collector, Jali Makawa, obtained in *Cryptosepalum* woodland, a tinker-barbet of the genus *Pogoniulus* Lafresnaye, that appears to represent an undescribed species. That a new barbet remained to be discovered at this late stage in the ornithological exploration of Northern Rhodesia, indeed in Africa as a whole, has come as a very considerable surprise. Nevertheless, it appears to us so obviously distinct from any of its nearest relatives, that we have no hesitation in introducing it as a species new to science as:—

*Pogoniulus makawai* sp. nov.

*Description:* A small barbet of the genus *Pogoniulus*, apparently most closely related to *Pogoniulus bilineatus* (Sundevall), and when compared with *P. b. mfumbiri* (Ogilvie-Grant), alongside which it is found sympatrically, of generally somewhat heavier build, though this is not reflected in measurements, and further differing from it in both pattern and colour.

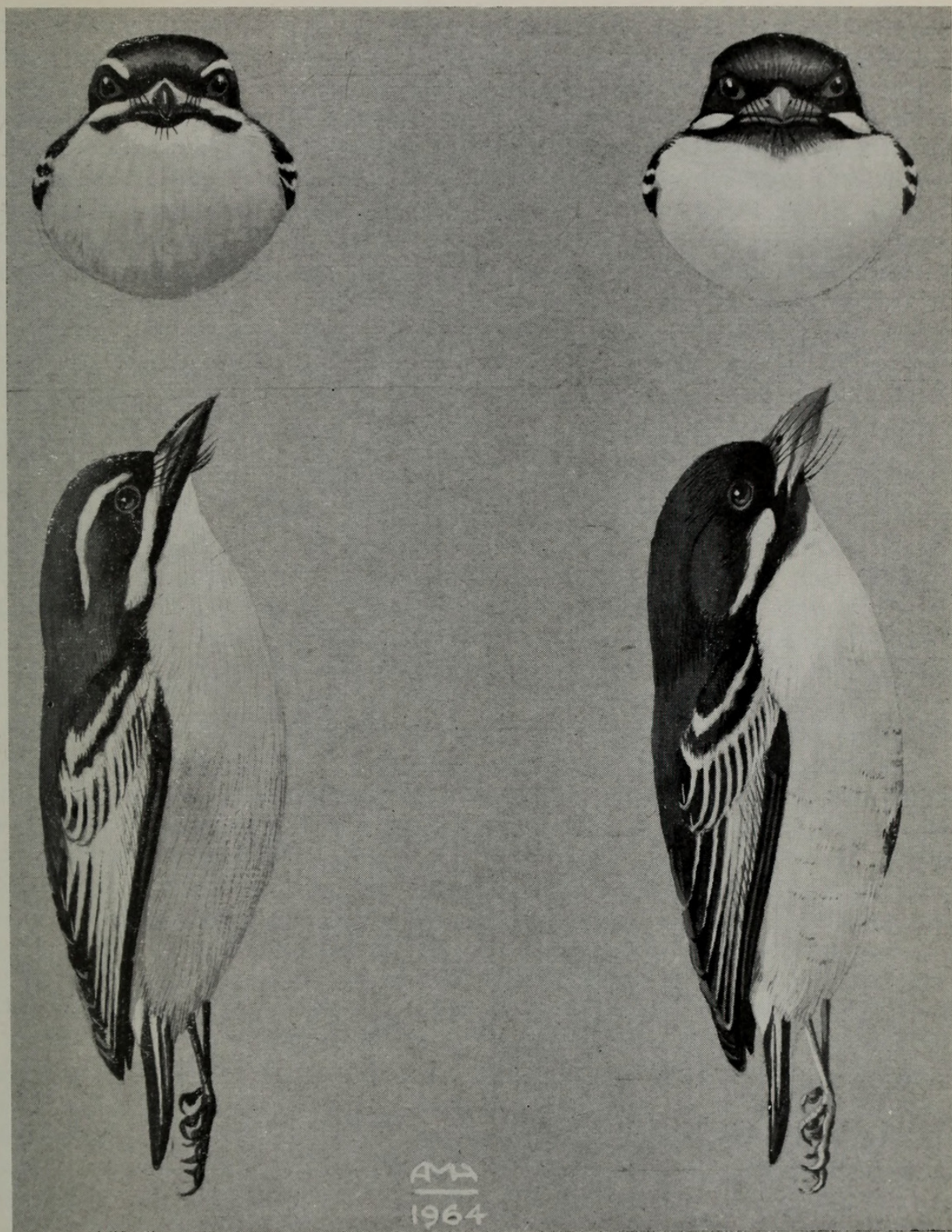
Plumage above: Forehead, crown, mantle and wings black, with a greenish gloss, similar to some specimens of *mfumbiri*, though this is variable. In the pattern of the head it differs in lacking a pale supra-orbital stripe or any white on the forehead but with pale cream-white line running from the gape to behind the black ear-coverts, joining with the pale under parts, from which it is separated by a black malar streak. Rump lemon yellow, rectrices narrowly bordered with yellow on the outer webs, thus essentially similar to *P. bilineatus*, but yellow edges to secondaries and wing-coverts paler, possibly slightly narrower.

Plumage below: Chin black, confluent with malar stripe and flecked with white in centre. Throat and upper chest cream-white with faint black shadow bars, fading into yellow on the lower chest. Lower chest and abdomen to flanks, pale lemon yellow, without the greenish tinge of *mfumbiri*, centre of abdomen with a conspicuous black patch and whole of under parts below the chest again with pale blackish shadow barring. Under side of the bend of the wing black, in contrast to the coverts, not white as in *mfumbiri*. The tibial feathering is more suffused with black. It should also be noted that the bases of the feathers on both the mantle and the under parts are light in *makawai* whereas, they are dark in *bilineatus*.

Bill relatively heavy with culmen more strongly arched, less conical than is usual in the genus. In comparison with the sympatric *mfumbiri* the bill appears notably broad and heavy with the cutting edges of the upper mandible flared around the gape and overlapping the lower mandible rather more, but equally broad bills are found in some other races of *bilineatus*. Rictal bristles well developed, comparable with the most heavily bristled individuals of *bilineatus*. Legs and feet markedly paler and slightly more robust with longer tarsus.

*Soft parts:* In life: eye dark brown; bill black, whitish basally and from below nostrils to half way along cutting edges; tarsus and feet whitish-flesh, toes with claws equally pallid.

*Measurements:* Wing 56; tail 32; tarsus 15; culmen from base of skull 13 mm.

*Pogoniulus bilineatus mfumbiri* (left)*Pogoniulus makawai* (right)

*Type:* Unique. An adult breeding male, testes 9 x 6.5 and 7 x 6mm. Collected 4 miles north of Mayau, Kabompo District, Northern Rhodesia, at approximately 12° 42' S., 24° 16' E. on 6th September, 1964, by Jali Makawa and M. P. Stuart Irwin, after the former of whom we have great pleasure in naming this new species. Deposited in the British Museum (Natural History). B.M. registration No. 1964. 33.1.

*Distribution:* So far known only from the type locality.

*Remarks:* This surprising new barbet would seem to be related to *P. bilineatus*, alongside which it occurs, two specimens of this latter species

having also been collected in the same locality, but nevertheless as shown above quite distinct both structurally and in colour pattern, though both being fully sympatric, they cannot be included within the same super-species, nor does it appear that *P. makawai* can readily be associated directly with any other members of the genus. It is remarkable enough, that within *Cryptosepalum* woodland, not only *P. makawai* and *P. bilineatus* appear to be able to live side by side, but the widespread *P. chrysoconus* was also found in the same habitat, though no larger species of barbet appeared to be present. Usually there is strict ecological separation in Northern Rhodesia, and elsewhere, between *P. bilineatus* (evergreen forest or rich dense scrub), and *P. chrysoconus* (savannah woodland generally). In this case three small and similar-sized congeneric barbets seem able to co-exist. The result, therefore, may be strong interspecific competition. *P. bilineatus* and *P. chrysoconus* appeared largely to live in the canopy of the taller *Cryptosepalum*, and *P. makawai* was likewise collected high up. Competition would, therefore, be expected to be intense under such presumed ecological stress. Though the precise ecological requirements of *P. makawai* remain to be determined, it is quite possible that its requirements are in some way met by the dense underlying thickets or "mavunda" that typify *Cryptosepalum*, comprising *Canthium malacocarpum*, *Diospyros undabunda*, etc. with such lianes as *Carpodinus*, *Combretum microphyllum*, *Uvaria* and *Artabotrys*. (see Trapnell *et al.* *The Soils, Vegetation and Agricultural Systems of North-Western Rhodesia*, Lusaka, 1957: 11) and Rattray and Wild, *Kirkia*, 2, 1961/62: 98).

It is therefore not unexpected that among three sympatric, ecologically competing species of *Pogoniulus*, at least one should have undergone some functional modification, and that some of the differences in the new species show strongly the possibility of somewhat different feeding habits, with the degree of adaptive differentiation reflecting in the bill. Increased competition is an important factor of evolutionary significance. This process may well have hastened speciation, though how or where this took place in essential isolation can only be speculated upon. More so if one assumes that *P. bilineatus* is indeed phylogenetically its closest relative, even though the colour pattern is not identical.

Goodwin, (*Ibis*, 106, 1964: 206–218), has recently discussed the African genera of barbets, in which there has been greater adaptive radiation than elsewhere, and has shown the presumed relationships within *Pogoniulus* in which the species *bilineatus*, *subsulphureus* and *atro-flavus* are closely linked, though none form superspecies, and to this group one must now add *P. makawai*. The question of the limits of the genus *Lybius*, closely related to the *Pogoniulus* group, depends on the validity of a notched bill as denoting actual phylogenetic relationship. In this respect it is significant that *P. makawai* has in the bill, though lacking notching, developed certain similarities to *Lybius*. The black chin, shadow-barring on the throat and abdomen, and the black patch on the abdomen, not found elsewhere in any other species of *Pogoniulus*, is in fact paralleled in *Lybius* and argues the question of polyphyletic relationships within the *Pogoniulus*-*Lybius* complex, as tentatively suggested by Goodwin, dependant upon the development or otherwise of notching and its ecological significance in the reduction of interspecific competition.

It may at this stage be assumed with some assurance, that *P. makawai*

is most probably endemic to *Cryptosepalum* woodland on Kalahari sand, with its associated understory of dense thicket. *Cryptosepalum* has remained the only vegetation type poorly known ornithologically and if *P. makawai* occurred in either evergreen forest or the widespread *Brachystegia* woodlands, all of which have been very thoroughly worked, its discovery would hardly have been so long delayed. The probability, therefore, is that *P. makawai* may qualify as a "rare bird" in the sense of Hall and Moreau [*Bull. B.M. (N.H.) Zoology*, 8(7): 1960, 316], with a total distributional range restricted to within a distance of 250 miles in any one direction.

That such distinctive forms as the red-necked race of crested guinea-fowl *Guttera edouardi kathleenae* White; *Batis margaritae kathleenae* White (= *Batis capensis kathleenae* in White, "Revised Check List of African Flycatchers, etc." 2, 1963: 25); *pace* Benson and White, *Check List of the Birds of Northern Rhodesia*, should appear largely to be confined to this vegetation type, to which one might add *Malaconotus viridis* (Vieillot) in this part of its range, points to its significance as an evolutionary centre.

It is suggested that a suitable trivial name for *P. makawai* is White-chested Tinker-barbet. In life it could be most easily distinguishable from the Golden-rumped Tinker-barbet by its creamy white, not grey throat and upper chest.

We have to thank Mrs. B. P. Hall who has examined the type, for reading through and commenting upon this description, Mr. Derek Goodwin who not only read through the description in draft, but whose valued comments are expressed in the note that follows, and Commander A. M. Hughes for the drawing.

### Some remarks on the new barbet

by DEREK GOODWIN

I have examined the type of *Pogoniulus makawai* and compared it with the series of *Pogoniulus* species in the British Museum (Natural History). As *P. makawai* and *P. bilineatus mfumbiri* are sympatric, their differences cannot be racial in character. I think the authors are correct in considering *makawai* to be a good species but that, until further specimens are identified, the possibility of its being an aberrant individual of *P. bilineatus* cannot be entirely excluded.

The colour differences between *makawai* and *mfumbiri* involve the former having more extensive black pigmentation on the head, underwing and centre of belly (lack of superciliary stripe, blackish throat and belly spot) combined with a lack of melanin suffusion on the breast and belly feathers so that these are white or yellowish-white, not grey as in *mfumbiri*. This latter seems responsible for the clearer white breast and yellow belly of *makawai*. These feathers do not entirely lack melanin as they show the narrow, dusky shadow bars mentioned in the description and which are not found in *P. b. fischeri* which is otherwise very close to *makawai* in colour of its under parts. *P. makawai* also lacks melanin on the bases of its back and mantle feathers which are yellowish-white at the base in striking contrast to the dark grey of *mfumbiri* and other forms of *bilineatus*. It



Benson, C. W. and Irwin, Michael P. Stuart. 1965. "A new species of tinker-barbet from Northern Rhodesia." *Bulletin of the British Ornithologists' Club* 85, 5–9.

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