female has a completely black bill, However, it is doubtful whether these three sunbirds can be distinguished in the field except under the most favourable conditions.

The specimen of *Cyanomitra batesi* collected by Major Grimwood has been presented to the National Museum of Southern Rhodesia, Bulawayo.

Geographical Variation in the Knysna Woodpecker *Campthera notata* (Lichtenstein)

by MR. P. A. CLANCEY

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The Knysna Woodpecker *Campethera notata* (Lichtenstein), 1823: Terra Caffrorum, *i.e.*, eastern Cape Province, South Africa, a close ally of the wide-ranging Golden-tailed Woodpecker *Campethera abingoni* (Smith) of the Ethiopian Region, is confined to the southern and eastern Cape Province, eastwards through Pondoland and East Griqualand to parts of western Natal. It is an inhabitant of both coastal and interior climax forest, as well as dry, and often xerophilous, scrub-forest in the interior, having been taken as far north as Colesberg by Arnot (*vide* Sclater, *Birds of South Africa*, vol. iii, 1903, p. 129, but the species is seldom mentioned in the literature, and at no time has it been suggested that it is subject to geographical variation. The possibility of the existence of demonstrable subspecific variation was, however, brought to my notice when a pair collected at Committees Drift, in the Albany district of the eastern Cape Province, on 7th October, 1956, was compared with a long series in similar plumage obtained in the coastal Pondoland forests by the staff of the Durban Museum in August, 1954, and found to differ in many significant respects. Through the kindness of the Directors of the South African Museum, Cape Town (through Dr. J. M. Winterbottom), the East London Museum, and the Kaffrarian Museum, King William's Town, I have been able to assemble and study a good material of this woodpecker, and have confirmed my earlier impressions, concluding that *C. notata* is certainly divisible into two quite well-marked subspecies. The opportunity was also taken to study the relationship of *C. notata* to *C. abingoni*.

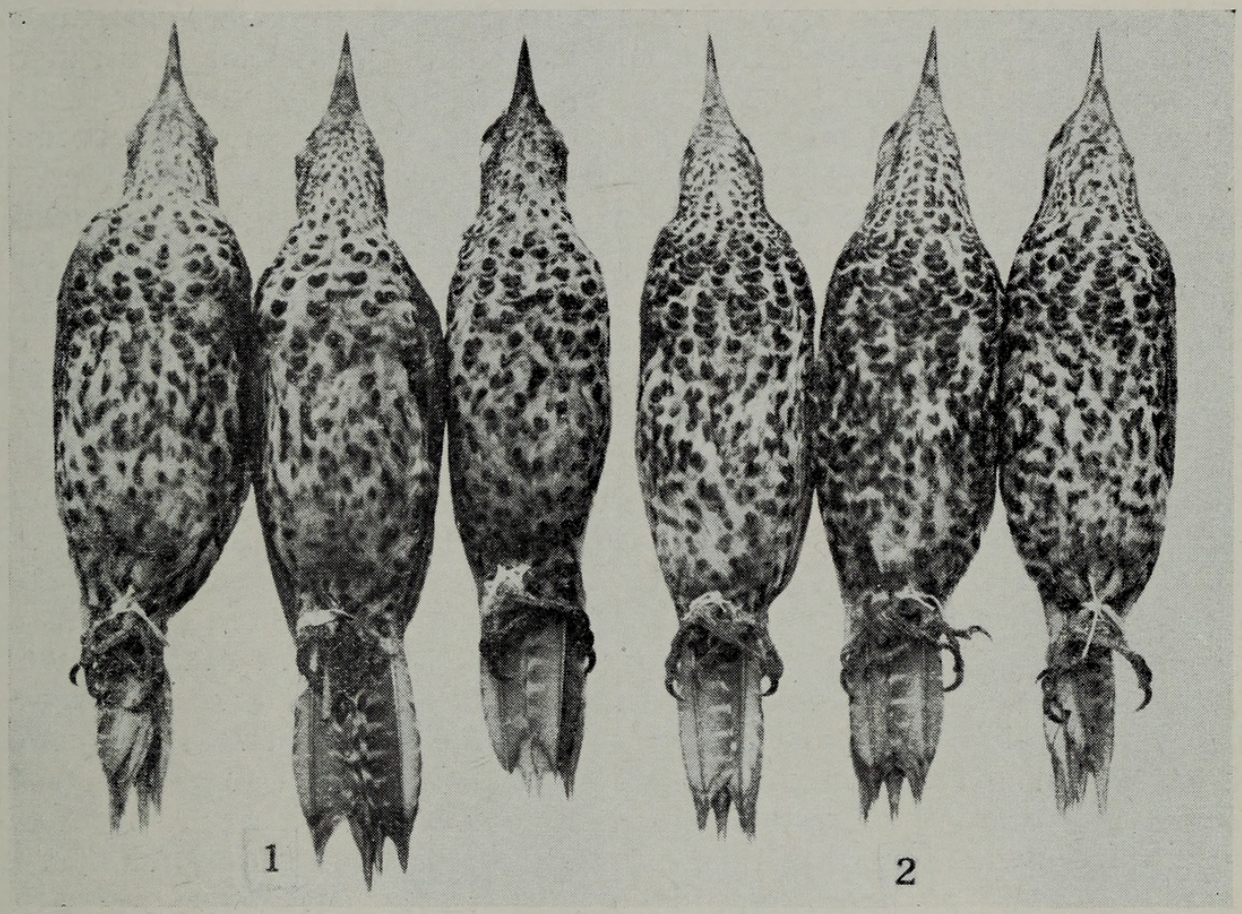
Levaillant, *Histoire Naturelle des Oiseaux d'Afrique*, vol. vi, 1808, pp. 19-21, records having found *Le Pic tigrè* in the Knysna Forest, *i.e.* forêsts d'Anteniquoi, and in the country lying between the valley of the Gamtoos River and Caffraria, but the species was not formally described to science until 1823, when H. Lichtenstein described is as *Picus notatus* in *Verzeichniss der Doubletten des Zoologischen Museums . . . Berlin*, 1823, p. 11, the type-locality: Terra Caffrorum. Of the topotypical populations I have a series of 15 specimens before me, the majority of which has been collected during the past four years (Committees Drift, 6 ; Pirie Forest, King William's Town district, 2; Peddie, 1; East London district, 5; Patensie, near Port Elizabeth, 1). On the basis of eleven specimens in the above series collected since 1953, it can be stated that there is little individual variation in the topotypical populations. There is slight variation in the size of the breast spots and in the mantle colouration, some specimens being particularly greyish, others more greenish, but the series taken as a whole is reasonably uniform.

A series of 16 skins of this woodpecker from the coastal forests of Pondoland exhibits interesting and significant differences when compared with the topotypical material. Viewed in series, Pondoland birds are extremely uniform on the upper-parts, being a darker and more golden mossy-green on the mantles than topotypes, and less conspicuously spotted on the upper back and banded with whitish on the rump, upper tail-coverts and tertials. Examined laterally, they display less spotting on the wing-coverts, but they differ most on the under-parts, being much more densely spotted on the lower throat and breast, the spots grouped and overlapped to form an incipient gorget. The intensification of the ventral spotting also extends over the abdomen and flanks, and the ground colour tends to be greener and less yellowish. This variation follows Gloger's Rule, and reflects the actual difference in the biotopes of the two groups of populations, the Pondoland birds, with much melanin in their plumage, being strictly resident in a heavily forested region with high rainfall and considerable humidity (rainfall at Port St. Johns, Pondoland, *c.*54.5 inches per annum), whereas those of the topotypical populations, with reduced melanin, inhabit as a whole more open, drier and rather less humid areas (rainfall over the entire Albany district ranges from 10 – 30 inches per annum).

The question of classification is not simply resolved by the recognition of two races. Two specimens from the Knysna Forest collected by J. van O. Marais in 1898/1899, and now in the collection of the South African Museum, are like the Pondoland birds in being heavily spotted below. On the upper-parts one of the Knysna specimens, dated 4th June, 1898, also resembles those from Pondoland, but the other specimen, dated 3rd June, 1899, is exactly like topotypical examples in being paler, rather greyer and more cryptically marked with white. It is difficult to visualize the precise situation obtaining in the populations of *C. notata* found in the Knysna Forest on the basis of two skins collected nearly sixty years ago. The limited data suggest that at some former date the heavily spotted forest form, as understood from the series from Pondoland before me, enjoyed a fairly continous distribution in the then almost continuous forest ranging from Natal and Pondoland to Knysna and beyond. Subsequent changes in the climate resulting in the reduction and continuity of high forest, culminated in the disruption of the range of the forest form and favoured the spread of the pale populations. With the investment of the Knysna populations by pale birds, and the formation of an austral enclave, the ultimate elimination of the characters of the forest form by genetic swamping by the more numerous surrounding populations was only a question of time. Such a process of racial extinction is suggested by the two Knysna specimens before me. The stability of the Pondoland populations lends support to such a theory, their range being in contact with the pale birds only on its western periphery, so that gene-flow is on a limited scale. An intermediate population seems to occur in the Manubie Forest, near the mouth of the Great Kei River and at the southern extremity of the coastal forests which range to the south of the main Pondoland block, because two specimens from that forest in the collection of the East London Museum combine the characters of both forms.

I believe that we should recognise by name the two following ecological groups of populations of the Knysna Woodpecker: a dark, heavily spotted form confined to the high forests of Pondoland, East Griqualand and

adjacent part of Natal, with an enclave of apparently unstable populations in the forests at Knysna; and a lighter and less heavily spotted one, conditioned to live in drier and often more open woodland, which ranges throughout most of the southern and eastern Cape. For the first form a name will be required, and *Campethera notata relicta* mihi, subsp.nov., is introduced below accordingly. The second form is, of course, the nomino typical one.



(*Photo: A. L. Bevis*)

Campethera notata (Lichtenstein)

1. *Campethera notata notata* (Lichtenstein)
2. *Campethera notata relicta* Clancey (*Type* on right)

Note the more densely spotted under-surface and incipient gorget in *C. n. relicta.*

Roberts, in the *Annals of the Transvaal Museum*, vol.viii, 4, 1922, p.222, placed the Knysna Woodpecker in a monotypic genus, *Notopicus* Roberts, which is "characterized by its *entirely different style of colouration* (italics mine), and has the tail longer in proportion to the wing than in the preceding *C. a. smithii* (Malherbe), *C. a. abingoni*, *C. b. bennetti* (Smith) and *C. b. capricorni* Strickland), the wing itself more rounded in shape." Our knowledge of the ranges of the races of *C. abingoni* and *C. notata* suggests that the two forms may actually be conspecific, and a careful study of assembled material of all the South African races of *C. abingoni* lends much support to this belief. When compared with *C. a. abingoni* of Natal and Zululand, both races of *C. notata* differ in being more uniformly greenish on the upper-parts, less spotted with buffy white, and the tertials are not so strongly barred (even in *C. n. notata*). On the underparts *C. notata* is spotted and not streaked, the tail is slightly longer and softer, and the shafts of the rectrices are usually brown and not golden

yellow. In parts of western Natal the ranges of *C. n. relicta* and *C. a. abingoni* are contiguous and mutually exclusive, and the two forms behave as good species. However, a study of the infraspecific variation of *C. abingoni* in South Africa shows that certain races have the under-parts largely spotted and almost unstreaked (*C. a. smithii* (Malherbe), 1845: South Africa ; *C. a. annectens* (Neumann), 1908: Sambo, Benguela, Angola). *C. a. annectens* shows a marked tendency for the throat and breast spots to coalesce to form a gorget patch, much as in *C. n. relicta*, a developmental trend which reaches its apogee in *C. n. anderssoni* (Roberts), 1936: Windhoek, South-West Africa. This latter race ranges south to about the Orange River, and occurs in juxtaposition to the north-eastern populations of the spotted *C. n. notata*, which has been recorded as far north as Colesberg. The reduction of the dorsal markings and tertial barring in *C. n. notata*, when compared with *C. a. anderssoni*, is really only one of subspecific import, because the majority of the more salient markings present in that race of the Golden tailed Woodpecker are likewise visible in *C. n. notata*, even though they be largely vestigial or evanescent. Another point of note is that some examples of *C. notata* subsp., have the shafts of the rectrices golden, as in *C. abingoni* subsp., not brownish, and the only morphological character which one can reliably employ to maintain the specific distinctness of *C. notata* is the slightly longer and rather softer tail. Even this character may be simply an adaptation to an existence on trees with smoother barks than the acacias and other coarse-barked species, so favoured by the races of *C. abingoni*. Two courses appear to be open to us in connection with the classification to be adopted — (a) to place *C. notata* and *C. abingoni* in a super-species (*C. notata*), or (b) to treat the races of the two forms of woodpeckers as belonging to a single polytypic species. While it is almost certain that the latter arrangement is the correct one, it would seem desirable to await the production of proof of the intergradation of *C. a. anderssoni* and *C. n. notata* before taking such a step. In the meantime, the Knysna and Golden-tailed Woodpeckers should be treated as component species of the *C. notata* super-species.

As recorded above, it is convenient to recognise two races of the Knysna Woodpecker, and the nomenclature, characters and ranges of these are as follows:

1. *Campethera notata notata* (Lichtenstein)

Picus notatus H. Lichtenstein, *Verzeichniss der Doubletten des Zoologischen Museums . . . Berlin*, 1823, p. 11 : Terra Caffrorum, *i.e.*, eastern Cape Province, South Africa.

Adult male: Top of head and nape dark olivaceous grey, the feathers fringed, especially posteriorly, with lustrous scarlet ; mantle dull golden green, with variable admixture of pure grey, and barred with broken, vestigial bars of dull white, or simply dotted with white and golden yellow; rump and upper tail-coverts similar, but more strongly barred with whitish on a paler ground ; tertials olivaceous with clearly visible, though vestigial, bars of white. On under-parts creamy white, washed with yellowish over the lower breast and abdomen, and the whole surface heavily spotted with black, the spots of the lower throat and breast being massed together, round and often heart-shaped.

Female adult: Similar to the adult male, but with the top of the head olivaceous brown dotted with white, and the red restricted to form an occipital crest. Bill consistently shorter.

Measurements: Wing (flattened) 8 ♂♂ 105 – 114 (108.9), 9 ♀♀ 102 – 108.5 (106.0), culmen ♂♂ 25.5 – 28 (26.8), ♀♀ 23 – 25 (24.6), tarsus ♂♂ 19 – 22.5 (21.5), ♀♀ 20.5 – 23 (21.2), tail ♂♂ 71.5 – 76.5 (73.3), ♀♀ 68.5 – 74 (71.7) mm.

Type: In the Zoological Museum, Berlin.

Range: Wooded country of the southern and eastern Cape Province, east to the Great Kei River and north to about Colesberg. Intergrades to the east of its stated range with the following subspecies. Replaced in the Knysna Forest by unstable populations of *C. n. relicta* (see discussion above).

2. *Campethera notata relicta*, subsp.nov.

Type: ♂ adult. Embotyi, Lusisiki district, Pondoland, eastern Cape Province, South Africa. Sea level. 10th August, 1954. Durban Museum Expedition. In the collection of the Durban Museum.

Diagnosis: Similar to *C. n. notata* but darker and more golden mossy-green on the mantle, the grey wash lacking, and with the markings suppressed ; Rump and upper tail-coverts with less conspicuous barring. Wings darker, the spotting on the coverts reduced, often absent, and the bars on the secondaries, particularly the tertials, usually merely indicated. On under-parts darker and more densely spotted throughout in series, the lower throat and breast spots larger and more concentrated and overlapped to form an incipient gorget. Averaging smaller in size.

Measurements: Wing 10 ♂♂ 103 – 107 (105.1), 6 ♀♀ 102 – 107 (104.2) culmen ♂♂ 26 – 28 (27.1), ♀♀ 24 – 25.5. (24.7), tarsus ♂♂ 21 – 23 (21.7), ♀♀ 20 – 21 (20.3), tail ♂♂ 68.5 – 72 (70.1), ♀♀ 69 – 72 (70.4) mm.

Range: The high forests of the eastern Cape Province lying to the east of the Great Kei River, in the Transkei, Pondoland and East Griqualand, in the adjacent parts of western Natal, and with an isolated, unstable group of populations in the Knysna Forest in the southern Cape.

Paratypical material: The Type and twelve paratypes (all in the Durban Museum). Other material: 3 topotypes in the South African Museum.

Measurements of the Type: Wing 106.5, culmen 26, tarsus 23, tail 70 mm.

Note: Five females of *C. n. relicta* differ from those of *C. n. notata* in having the head-top almost devoid of spotting, but a sixth example does not vary in this respect. The two females of the Knysna populations discussed above have the head-tops completely spotted. Their wings measure 100 and 104 mm.

The South African Races of the Bearded Woodpecker *Thripias namaquus* (Lichtenstein)

by Mr. P. A. Clancey

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The large Bearded Woodpecker *Thripias namaquus* (Lichtenstein) of the Ethiopian Region ranges in some four or five geographical races from French Equatorial Africa, the Sudan, Abyssinia and the Somalilands, south to Angola and South-West Africa in the west, and Natal and the