area named on any map was the "Petianga" which Lynes entered on the type specimen's label. But we had passed that small rail halt when still in the forest, shortly before reaching that unexpected area of open ground, for which the correct map coordinates are now supplied.

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Geographical contacts between the taxa of *Centropus* in Zaïre, with the description of a new race

by M. Louette

Received 31 January 1986

Examination of the distribution ranges of *Centropus* spp. on the 'atlas' maps 253 and 254 of Clancey *in* Snow (ed.) (1978) shows that contacts exist, or may be supposed, between the ranges of the following vicariant taxa in Zaïre: (1)

C. leucogaster and C. anselli; (2) C. monachus and C. cupreicaudus.

Basing myself mainly on the rich collection from Zaïre in KMMA, I have re-examined these contacts in order to evaluate the taxonomic relationships in these superspecies, and conclude that neumanni deserves specific rank and that the formation of a new subspecies in monachus is needed. This study became necessary because Irwin (1985) suggested recently a new phylogeny in Centropus, dismissing data on geographical contact, but using mainly one morphological character, namely either barring or its absence on the rump feathers and uppertail-coverts. In particular, he concluded that leucogaster and anselli are "not considered closely related (and) . . . clearly cannot be treated as members of a superspecies" and "the barred rump and uppertail coverts of C. cupreicaudus immediately set it apart (from monachus)".

In addition, I have examined specimens of *C. senegalensis* and *C. superciliosus* to appreciate subspecies delimitations in Zaïre (see sections C

and D below).

A. C. "leucogaster" neumanni and C. anselli

The 'atlas' map (253) for the superspecies *C. leucogaster* can be accepted as accurate, though with some additions for *anselli* to be made in Congo-Brazzaville (Malbrant & Maclatchy 1949) and one in Kwango (Lippens & Wille 1976). The KBIN, however, has 2 specimens of *neumanni* from Yangambi (0°47'N, 24°28'E), only c. 30 km east from the easternmost *anselli* record (Isangi (0°47'N, 24°11'E): Chapin 1939, specimen 159162 in AMNH). It follows, therefore, from the 'atlas' map and current taxonomy (White 1965) that from west to east this superspecies is composed of the following parapatric taxa, separable into general plumage characteristics:

Colour: white belly, black breast:-

l. leucogaster: from Guinea-Bissau to easternmost Nigeria.

l. efulenensis: western Cameroon, possibly western Gabon (mentioned by Bannerman 1933, but unrecorded by Malbrant & Maclatchy 1949). The situation in Cameroon is given in more detail in Louette (1981).

Colour: brown belly and breast:-

anselli: from western Cameroon towards the Sangha River; Gabon, Congo and the left bank of the Zaïre River; an outlier in Angola.

Colour: white belly, black breast:-

"l." neumanni: the right bank of the Zaïre River in Zaïre Republic, virtually restricted to the area north of the Equator; this superspecies is apparently absent in the forest on the right bank of the Zaïre River, south of the Equator (see especially Prigogine (1971) for the well-explored Itombwe, where the only coucal is *C. monachus*).

Because of the existence of a brown-bellied form, squeezed between 2 whitebellied ones, some authors (see also Clancey in Snow (ed.) 1978) suggest that leucogaster is of Upper Guinea origin, and later displaced anselli from the northern part of its range. Furthermore, the resemblance in colour was considered enough evidence to unite the eastern and the western white-bellied populations into one species, different from anselli. In fact, the western and eastern white-bellied populations are most probably not in contact, because anselli occurs in eastern Cameroon; but the area of possible contact in northern Congo is virtually unexplored. White (1965) united the birds from Zaïre (formerly C.l. neumanni) with those from Cameroon under the latter's subspecific name, C.l. efulenensis, merely stating "averages smaller in east of range". I have re-examined specimens from the different populations and give measurements of adults in Table 1. Males and females were intermixed since many specimens were unsexed or apparently wrongly sexed, although it is generally known that females average larger than males. The tail in Centropus is often much worn or composed of growing feathers - only reasonably fresh plumaged specimens were used for Table 1.

TABLE 1
Measurements (mm) of Centropus leucogaster, C. anselli and C. neumanni: mean (range).

Taxon	Region	n	Wing	Tail	Total Culmen	Tarsus	Source
leucogaster leucogaster	Liberia to Nigeria	7	193.5 (183.5–210)	286.8 (5) (270–306)	40.8 (38–44)	49.1 (6) (47.5–51)	BMNH, NRMS
leucogaster efulenensis	Cameroon	13	193.5 (177–206)	275.2 (11) (251–311)	41.3 (39.5–44)	47.3 (12) (46–51)	MNHN, BMNH
anselli	Cameroon	12	187.8 (172–210)	283.7 (252–318)	38.7 (11) (35.5–41)	46.0 (43.5–49)	NRMS, MNHN, BMNH
anselli	Zaïre	25	187.0 (173–213)	285.0 (258–315)	38.3 (34–42)	46.0 (42.5–49.5)	KMMA, KBIN
neumanni	Zaïre	36	179.9 (165–198.5)	255.6 (234–299)	38.0 (35–41)	43.9 (38.5–48)	KMMA, KBIN

Note. Number in brackets after the mean indicates number of specimens measured if different from n.

It becomes clear that Upper Guinea *l. leucogaster* and *l. efulenensis* are noticeably similar in measurements and since they are also close in plumage characteristics, they are certainly conspecific and possibly will prove consubspecific after a more detailed study.

A second conclusion is that *anselli* is very uniform over the whole of its range from Cameroon through Zaïre. For completeness, my measurements (mm) for 3 Angola specimens were: wing: 166.5, 176.5, 188 (av. 177); tail: 263, 269.5, 283 (av. 271.8); total culmen: 36.5, 35.5, 38.5 (av. 36.8);

tarsus: 45.5, 47, 46 (av. 46.2).

Two of these specimens (224381 and 224380 in FMNH) are an adult male and female from Canzele (8°17'S, 15°11'E). The third specimen

(1910.5.6.306 in BMNH) is a of from Ndala Tando (9°18′S, 14°54′E), not completely adult, since some barring remains on primaries and flanks. It is unusual in that the head is not completely black above, as is normal in the species, but is buffish, interspersed with some black feathers, each with a pale central line. No other immature (at least from Zaïre) has these characteristics. In measurements it falls within the ranges of the other populations (Table 1). The 2 adult specimens are decidedly small, but are within the range in Table 1, except for the short wing in the first specimen. It may be that new material from Angola would warrant the separation of the Angolan population subspecificially.

The third conclusion is that anselli is decidedly smaller than western leucogaster in wing, culmen and tarsus measurements, though not in taillength. The eastern "leucogaster" neumanni, which White included in efulenensis is in fact smaller again than anselli, except in having about the same culmen-length. It belongs decidedly in a third size group. In plumage, whereas adults of anselli and neumanni are quite distinct, juveniles are very similar and difficult to differentiate from one another, so much so that the above mentioned specimen of Chapin's from Isangi could conceivably belong to either, but in the measurements (186–334–40–48.5), of course, it agrees well with anselli, and

it has a very long tail.

Not a few adult specimens, on the other hand, show some particularities in plumage, indicating an approach to the other taxa. Among neumanni, in KMMA Nos 94483 (Bogazelema – 3°33′N, 20°34′E)), 19269, 19702, 26122, 26560, 34345 (Buta – 2°47′N, 24°50′E) and 36114 (Angumu – 0°10'S, 27°42'E), and in KBIN No 18526 (Yangambi) all have one, or a few, pale feathers on the throat. KMMA specimens 64608 (Tungudu – 0°45'N. $29^{\circ}40'E$) and 89437 (Boyeka – $3^{\circ}03'N$, $20^{\circ}23'E$) have many white feathers among the black on the throat. Among anselli, KMMA specimens 74744 (Bolima II - 0°59'N, 19°54'E), 80802 and 80948 (Yalokele - 0°46'S, 22°49'E) and 81434 (Bokela - 0°41'N, 19°57'E) show some black feathers among the buff chin, but especially 69007 (Yalokele); and also KBIN Nos 18156 and 18525 (Bomondja – 0°48'S, 23°10'E), and Yokolo Moma – 0°38'S, 22°57'E) all show black feathers on the throat, while the black of the sides of the neck descends more than usual towards the ventral side, and 2 of them (numbers 69007 and 18525) also have traces of a black breast band. These specimens indicate that there is some introgression from neumanni genes in anselli and vice versa. However, as far as their measurements are concerned, these specimens are each specifically distinct. Some of them are far removed from possible contact with the other taxon, and there is certainly no belt with intermediates which would indicate widespread hybridization, making necessary a hypothesis of conspecificity. Taking these factors into account I consider anselli and neumanni closely related paraspecies in one superspecies.

In Cameroon, on the western contact of anselli with leucogaster efulenensis, there are no such plumage particularities (Louette 1981), except that one specimen from Sakbayeme (4°02′N, 10°34′E) (1938/397 in MNHN) does

have a few black feathers with white bases on the throat.

Probably the relationship of these 2 taxa is less close and this is corraborated by an analysis of their vocalisations by Chappuis (1974)—he places leucogaster and anselli in different sound groups. Nevertheless, leucogaster is the

geographical counterpart of anselli in the west; and the differences in size as well as the mutual relationship with anselli of leucogaster and neumanni, convince me that the 3 are best treated as separate species. In my opinion belly colour is less important a character than size in Centropus and it may be that a white belly is a primitive character and that anselli has acquired the derived character of a brownish ventral colour in the same way as "epomidis", a brown-bellied phase of C. senegalensis.

The hypothesis based on the distribution history of the group becomes now unnecessary, and one has from the west to the east 3 isolates which have acquired specific status:

- 1. Centropus leucogaster (with its rather poorly defined race efulenensis)
- 2. C. anselli
- 3. C. neumanni

B. C. monachus and C. cupreicaudus

The 'atlas' map (254) has some omissions and I have brought all relevant date together on Map 1. C. monachus is present in Lower Zaïre (see map and localities in Schouteden 1950) and in Angola, where it occurs at Canhoca (9°15'S, 14°41'E) (Neumann 1908), at Ndala Tando (Traylor 1960) and at 42 km N of Duque de Braganza (8° 20'S, 16° 10'E) (Pinto 1983). In the Shaba district of Zaïre, Dowsett & Prigogine (1974) reject the occurrence of monachus in the Marungu. Schouteden (1971) shows monachus at the locality Kasaji (10°21'S, 23°29'E), but it should be cupreicaudus, and to my knowledge cupreicaudus has only once been found in Kasai, at Mutombo Mukulu (8°00'S, 24°00'E), very close to Shaba (see Schouteden 1964). In Kasai, the only localities for monachus are Kasansa (6°33'S, 23°44'E) and Lusambo (4°58'S, 23°27'E); the others, Luluabourg (5°54'S, 22°25'E) and Gandajika (6°45'S, 23°57'E), mentioned in Schouteden (1964) and reproduced in the 'atlas', pertain to senegalensis. However, since monachus occurs in the vicinity of cupreicaudus in the Upemba (in fact only the first 6 specimens from Mabwe (c. 8°39'S, 26°30'E) in Verheyen (1953: 323) are monachus, the others being superciliosus and senegalensis), there could conceivably exist a region of overlap in northwest Shaba. Verheyen gives information on their ecological exclusion in Upemba and considers the appreciable size difference as sufficient to prevent hybridization. Pinto (1983) delimits the distribution in Angola; but here also monachus and cupreicaudus may come in contact, as supposed already by Stresemann & Grote (1929).

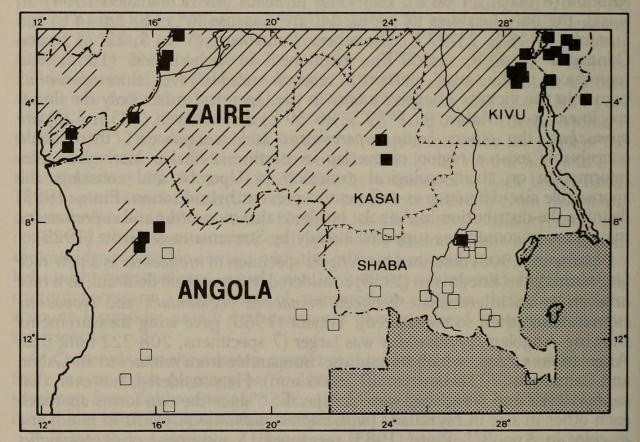
Neumann (1908) described his Angola specimen of monachus as a new race (angolensis), but Friedmann (1930) considered its separation doubtful, as a race or even as an intermediate between monachus occidentalis and monachus cupreicaudus (then so considered). Traylor (1960) gave wing measurements showing Angolan cupreicaudus was larger (7 specimens, 208-222 mm) than Angolan monachus, which he said was inseparable from monachus in Gabon and Cameroon (20 specimens, 177–204 mm). He considered, however, that cupreicaudus and monachus were conspecific "since the two forms approach each other in size in Nyasaland [with cupreicaudus songweensis in mind] and in color in Angola". Pinto (1983) measured 15 specimens of cupreicaudus from Angola (mm): wings or 212–224, 99 210–230; tails or 225–246, 99 225–270.

TABLE 2
Measurements (mm) of Centropus monachus and C. cupreicaudus: mean (range).

Taxon C. monachus	Region S.W. Zaïre	n 9	Wing 175.8 (168.5–196.5)	Tail 203.9 (194-233)	Total Culmen 35.9 (7) (33.5–40)	Tarsus 43.4 (39.5–46.5)	Source KMMA
	Kasai	12	182.7 (10) (170–199.5)	210.5 (10) (200.5–226)	38.4 (36–41.5)	44.4 (42 - 49.5)	KMMA
	S. Kivu + Rwanda	20	193.1 (178–207.5)	224.0 (19) (202–247.5)	38.8 (35–42.5)	44.5 (41.5–47.5)	KMMA
	Mabwe (Upemba)	5	169.8 (160–177)	199.5 (185–210)	35.2 (34 -3 7.5)	41.1 (40–42)	KBIN
C. cupreicaudus	Shaba (+1 Kasai +1 Ndola, Zambia)	19	215.8 (205–228)	239.4 (218–262)	41.1 (16) (37–47)	50.3 (44.5–57)	KMMA, KBIN
	S.W. Tanzania	4	221.8 (215.5–230)	243.8 (233–255)	39.8 (36.5–41)	53.9 (51.5–55)	ZMB

Note. Number in brackets after the mean indicates number of specimens measured if different from n.

I find that the same abrupt change that Traylor found in measurements between monachus and cupreicaudus occurs as well in Zaïre (see Table 2). Verheyen (1953) remarked that Kivu monachus is rather large but nevertheless considered monachus and cupreicaudus conspecific, notwithstanding the fact that he had recognised both taxa as virtually sympatric in Upemba. The series mentioned by him from Mabwe, Upemba, is separated by c. 400 km from the Kasai and c. 700 km from the Kivu records. This apparently isolated 'pocket' of monachus is definitely situated in 'cupreicaudus country', whereas the other populations are seemingly far away from that species' range (see Map 1). Conceivably monachus has a continuous circum-forest distribution.



Map 1. Specimen and acceptable relevant literature localities for Centropus monachus ■ and C. cupreicaudus □. Data for Zambia, where C. cupreicaudus is widespread (see Benson et al. 1971) are excluded. The equatorial forest is in oblique shading.

Plumage characters, especially the amount of barring on the rump, are quite variable in both species and do not show the uniformity that Irwin (1985) implies. Among the 12 monachus from Kasansa, Kasai, only 9 have greenish rectrices, the 3 others having them bronze, a characteristic of *cupreicaudus*. But a specimen from Rwanda (Ruyenzi - 2°26'S, 29°50'E) also appears to have a bronze, not greenish, wash and in some Kivu specimens the rectrices are dark, without gloss, probably due to wear; these are far from a possible cupreicaudus contact.

The barring on the uppertail coverts is also variable; among the same 12 specimens from Kasai, 10 are definitely barred, 2 others are not. This variation in barring is also true in Kivu and Lower Zaïre monachus. Similarly among the 19 cupreicaudus from Shaba, 11 have well banded uppertail-coverts, while the 8 others vary from almost unbanded to only faint indications. This individual variation in both taxa is not related to age (only adults are mentioned here) or

to sexual dimorphism.

Therefore, in southern Zaïre the actual colour of the tail feathers is useful only in fresh specimens, when the bronze colour in *cupreicaudus* is generally most apparent. The amount of barring of the uppertail-coverts is decidedly not a good specific character. Size is the best criterion to separate monachus from cupreicaudus. (Cf. Traylor 1960 (and see above) for Angola.) I do not find definite intermediates in Kasai or Shaba and conclude that C. monachus and C. cupreicaudus are allospecies in the same superspecies, as indeed Clancey in Snow (ed.) (1978) advocates, contra most earlier authors; but they are certainly more closely related than Irwin (1985) surmised. Table 2 also shows my measurements for 4 specimens of cupreicaudus from Tanzania, which according to Britton (1980), belong to nominate cupreicaudus. Indeed, they are at least as large as the specimens from Shaba, whereas the localized race c. songweensis appears to be smaller (Benson 1948).

The very small Upemba monachus must be included in that taxon. It lives in the swamps of Upemba, apparently isolated in the woodland savanna district, whereas the other monachus populations are on the fringe of richer forest vegetation. As far as the Upemba population's biometry is concerned, it is not in the cline starting with the small southwest Zaïre and Angola coucal, through the larger Kasai bird towards the much larger Kivu-Rwanda individuals. All these populations are nowadays usually placed in the taxon C.m. fischeri Reichenow (type from Kavirondo), of which C.m. occidentalis Neumann (type from Gabon) and C.m. angolensis Neumann (type from Angola, as mentioned above) are considered synonyms by White (1965). There may be evidence enough to use occidentalis for the population west of Uganda, as e.g. advocated by Friedmann (1930), but the Upemba bird deserves

a new name:

Centropus monachus verheyeni subsp. nov.

Description. Differs from other races and populations examined (monachus monachus; m. fischeri; m. "occidentalis") in smaller size (see Table 2). The uppertail coverts are faintly barred or unbarred and fresh rectrices are greenish, a few old used ones dark, but not bronzy.

Distribution. Only known from Mabwe, Upemba, Shaba Province, Zaïre. Holotype. No 4368 of the Parc National de l'Upemba - Institut des Parcs Nationaux du Congo Belge collection, temporarily housed in KBIN, where it is registered as No 23862. From Mabwe, alt. 585 m, 9 February 1949, c. (See

Verheyen 1953: 323.)

Measurements of holotype. Wing (chord) 170.5 mm (Verheyen gave 172 mm); tail 210 mm; exposed culmen 37.5 mm; tarsus 41.5 mm; weight

173 g.

Material examined. Besides the holotype, 4 other adult specimens of *C. monachus* were examined: Nos 1129, 1238, 4319 and 4562, all from Mabwe. These are mentioned in Table 2 (only one female is included, however). One additional specimen from Mabwe (No 4399) is not in completely adult dress (measurements: 166, 193, 32.5, 40.5 mm).

Etymology. The species is named after Prof. Dr R. K. Verheyen, the well known Belgian ornithologist, who contributed much to Zaïrean ornithology,

before his untimely death in 1961, aged 54.

C. C.s. senegalensis and C.s. flecki

The 'atlas' map (255) shows clearly 2 disjunct populations in *C. senegalensis*. The southeast population from the Upemba to the south has been named *C.s. flecki* (not on the 'atlas') and the remainder and major part of the population is the nominate from Kasai northwards. Verheyen (1953) collected *flecki* at Kilwezi (9°06'S, 26°46'E) (2 specimens) and also at Kabenga (8°21'S, 26°04'E) (his specimen No 5051, is mentioned under

monachus).

The KMMA has a specimen from Katofio (11°03′S, 28°02′E) and another from Kasapa (11°34′S, 27°25′E) (see Schouteden 1971). Contrary to Verheyen's (1953) and White's (1965) opinions all 5 Shaba specimens are clearly *flecki*, although the difference in colour from the nominate race is slight. In fact, there is an apparent gap of at least 350 km between the Upemba and the area in Kasai (Kabinda) where the nominate race begins to appear, but the intervening country is not well prospected. It is possible that their ranges are in fact contiguous.

D. C. superciliosus superciliosus and C.s. loandae

Chapin (1939) found the boundary between the nominate and *loandae* hard to fix and "probably somewhere near Rutshuru, Kivu, Zaïre, 1°11'S, 29°27'E...", adding "specimens from Lake Albert do seem a little dark but eight skins in the Congo Museum from Mahagi Port to the Rutshuru Plain may be referable to the typical race". This may be so, but the differences between these 2 races are slight and I cannot separate birds from northeast Zaïre.

List of abbreviations:

AMNH: American Museum of Natural History, New York.

BMNH: British Museum (Natural History), Tring. FMNH: Field Museum of Natural History, Chicago.

KBIN: Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels.

KMMA: Koninklijk Museum voor Midden-Afrika, Tervuren.

MNHN: Muséum National d'Histoire Naturelle, Paris. NRMS: Naturhistoriska Riksmuseet, Stockholm.

ZMB: Zoologisches Museum, Berlin.

Acknowledgements: The author would like to thank the following curators for loan of material: C. Edelstam, C. Erard, G. Mauersberger, A. Prigogine, L. L. Short, M. A. Traylor, M. P. Walters; and Dr D. W. Snow and Dr J. F. Monk for corrections and comments.

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Notes on Philippine Birds, 9. Reidentification of a unique stint specimen

by Kenneth C. Parkes

Received 31 January 1986

Steere (1890: 26) listed Temminck's Stint Calidris temminckii as having been taken on Negros Island by the 1887-1888 Steere Expedition to the Philippines, but as typically in this paper, gave no exact locality, date or number of specimens collected; the month of collection can be determined by his itinerary (p. 5), as Negros was visited only in February 1888. This record has been cited in all subsequent ornithological literature for the Philippines, and is, to the best of my knowledge, the only published Philippine specimen record for Temminck's Stint.

There were at least 2 specimens originally identified as *C. temminckii* in the Steere collection, as far as can be determined (the collection has been widely



1986. "Geographical contacts between the taxa of Centropus in Zaire, with the description of a new race." *Bulletin of the British Ornithologists' Club* 106, 126–133.

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