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New records of a rare African shrew, *Crocidura butleri percivali* DOLLMAN, 1915 (Insectivora: Soricidae)

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(Mit 4 Abbildungen und 2 Tafeln)

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Zusammenfassung

Neue Nachweise von *Crocidura butleri percivali* werden mitgeteilt. Sie ergeben eine bedeutende Erweiterung des bekannten Areals dieser Art nach Zentral-Uganda und Südkenya. Die Koordinaten der terra typica ließen sich mit 00°20' N/37°56' E bestimmen. Körper- und Schädelmaße, sowie ökologische Ansprüche werden mitgeteilt und die taxonomischen Beziehungen dieser Spitzmaus werden diskutiert.

Summary

Significant new records of *Crocidura butleri percivali* are given. These provide a marked range extension of the species into both central Uganda and southern Kenya. The co-ordinates of the type locality of the taxon have been traced and are centred on 00.20' N 37.56' E. External and cranial measurements are listed and the ecology and taxonomic affinities of this shrew are discussed.

Introduction

Crocidura percivali was described by DOLLMAN (1915). The type locality given was Jombeni Range, Nyeri District, British East Africa, altitude 3500 feet. According to MOREAU, HOPKINS & HAYMAN (1945) this locality is North-East of Mount Kenya and the co-ordinates have now been traced to approximately 00.20' N 37.56' E (Bartholomew).

PERCIVAL's shrew is currently regarded as a subspecies of *Crocidura butleri* THOMAS, 1911 (Type locality between Chak Chak and Dem Zubeir, Bahr el Ghazal, Sudan), see HONACKI, KINMAN & KOEPL (1982).

C. b. percivali is known in the literature only from the holotype specimen. The purpose of this note is to record new specimens in the British Museum (Natural History) and Harrison Zoological Museum, which significantly increase our knowledge of the distribution and variation of this interesting shrew.

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Material

Holotype BM(NH) 12.7.1.61 male, skin & skull, Jombeni Range, Nyeri District, 3500 feet, Kenya, (centred on 00.20' N, 37.56' E.).

BM(NH) 31.3.14.1 female, skin & skull, Kampani, 4000 feet, Kenya (co-ordinates not traced).

HZM 1.14457 male, skin & skull, Aimi Ma Kilungu, Ulu, Machakos District, Kenya, 01.49' S 37.09' E.

HZM 2.14458 sex unknown, skin & skull, Aimi Ma Kilungu, Ulu, Machakos District, Kenya, 01.49' S 37.09' E.

HZM 3.14459 sex unknown, skin & skull, Aimi Ma Kilungu, Ulu, Machakos District, Kenya, 01.49' S 37.09' E.

BM(NH) 84.2103 male, skin & skull, Aimi Ma Kilungu, Ulu, Machakos District, Kenya, 01.49' S 37.09' E.

BM(NH) 46.723 female, skin, Ajeruk, Teso District, Uganda, 01.33' N 33.49' E.

BM(NH) 47.724 female, skin & skull, Ajeruk, Teso District, Uganda, 01.33' S 33.49' E.

No.	HBL	TL	HL	CBL	UTL	MW	BB	IB	MH
BM.(NH) 12.7.1.61	84.0	47.0	12.0	—	9.1	6.8	—	4.2	5.6
BM(NH) 31.3.14.1	80.0	34.0	11.0	—	9.1	6.7	—	—	5.4
HZM 1.14457	78.0	38.0	11.5	20.6	8.9	6.9	9.4	4.0	5.5
HZM 2.14458	65.0	34.0	11.1	20.4	9.2	6.9	9.0	4.1	5.5
HZM 3.14459	70.0	35.0	11.0	20.8	9.1	7.0	9.1	4.1	5.3
BM(NH) 84.2103	82.0	30.0	11.4	21.1	9.1	7.1	9.4	4.3	5.6
BM(NH) 46.724	—	—	—	c.20.3	9.1	6.7	9.1	4.0	5.7
mean	76.50	36.33	11.33	20.64	9.09	6.87	9.20	4.12	5.51
SD	6.78	5.31	0.35	0.29	0.08	0.15	0.17	0.12	0.13
n	6	6	6	5	7	7	5	6	7

Abbreviations above: HBL: head and body length, TL: tail length, CBL: condylobasal length, UTL: upper toothrow length, MW: maxilla width at level of m2, BB: braincase breadth, IB: interorbital breadth, MH: mandible height.

Comparisons

Crocidura butleri percivali is a medium sized shrew, in which the tail, often swollen with deposits of fat, is short relative to head and body length (See Plate 1).

This subspecies is distinguished from the two other subspecies, *C. butleri butleri* THOMAS, 1911 and *C. b. aridula* THOMAS and HINTON, 1923, by its smaller size: condylobasal length in *C. b. percivali* 20.3–21.1 mm (\bar{x} = 20.6; SD = 0.35; n = 5). In *C. b. butleri* and *C. b. aridula* condylobasal length exceeds 22.0 mm.

C. b. percivali is distinguished from the similar sized and coloured *C. sericea* (SUNDEVALL, 1843), by the shorter tail and more constricted interorbital region of the former (see Fig. 1).

The tail length of *C. b. percivali* has a range of 30–47 mm (\bar{x} = 36.3; SD = 5.31; n = 6). In this taxon, the ratio of the interorbital breadth to the width across the maxilla at the level of the second maxillary molar, expressed as a percentage, has a range of 58.0–61.8% (\bar{x} = 59.6; SD = 1.24; n = 6).

In *C. sericea* the tail length has a range of 48–65 mm (\bar{x} = 57.3; n = 14) and the ratio of the interorbital breadth to the width across the maxilla, expressed as a percentage, has a range of 61.3–72.4% (\bar{x} = 66.8; SD = 2.73; n = 30).

The new specimens show a degree of colour variation in comparison with specimens already in the BM(NH) collection. The holotype is brown dorsally, light grey ventrally with an irregular yellow wash and a fairly sharp demarcation along the flank between the dorsal and ventral colour. The lateral glands are small, white and distinct. Specimens from Kampani, Kenya and Ajeruk, Uganda are lighter brown dorsally than the holotype. Specimens from Machakos are greyer dorsally than the holotype.

It is interesting to note that the external appearance of this shrew, with its short thick tail and greyish white underparts sharply defined on the flanks from the brownish dorsal pelage, presents a remarkable resemblance to the European *Crocidura leucodon*, the external dimensions of which are also closely similar. *C. b. percivali* shares with *C. leucodon* the flat dorsal profile of the skull, but the skull is decidedly heavier in PERCIVAL's shrew and there are striking dental differences, particularly the large first upper unicuspid of *C. b. percivali*.

The general features of the skull (Fig. 2), maxillary and mandibular toothrows and upper unicuspid teeth (Fig. 3) are illustrated here. The known distribution of *Crocidura butleri* is shown in Fig. 4.

Ecological Notes

The specimens from Aimi Ma Kilungu, Kenya were obtained in the near vicinity of a waterhole surrounded by thorn scrub, with occasional termite hills and euphorbias. They were trapped in dry grass and herbs on banks and in thorn scrub near the waterhole. *Elephantulus rufescens*, *Aethomys hindei*, *Mus sorella* and *Praomys natalensis* were trapped in the same area. The habitat at Aimi Ma Kilungu is shown in Plate 2.

Acknowledgements

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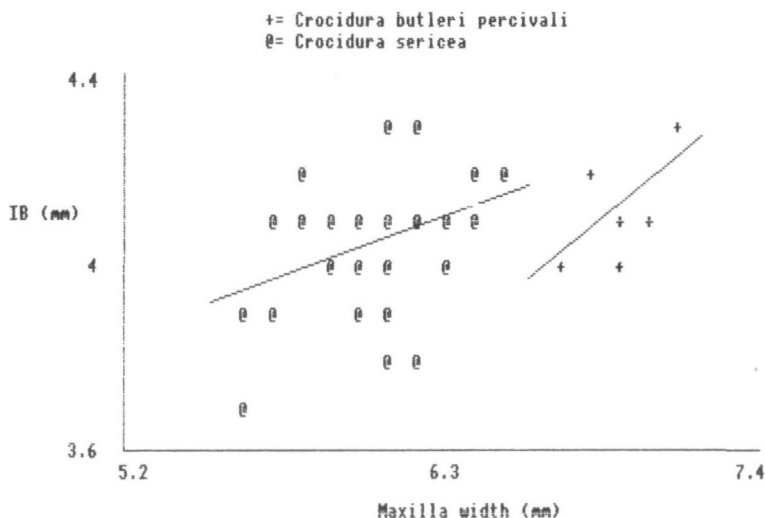


Fig. 1. Scatter diagram. Interorbital breadth plotted against maxilla width. All specimens from Kenya. Regression line for *C. butleri percivali* $y = 0.667 + 0.50x$; $r = 0.366$; $p < 0.001$. Regression line for *C. sericea* $y = 2.686 + 0.22x$; $r = 0.143$; $p < 0.001$.

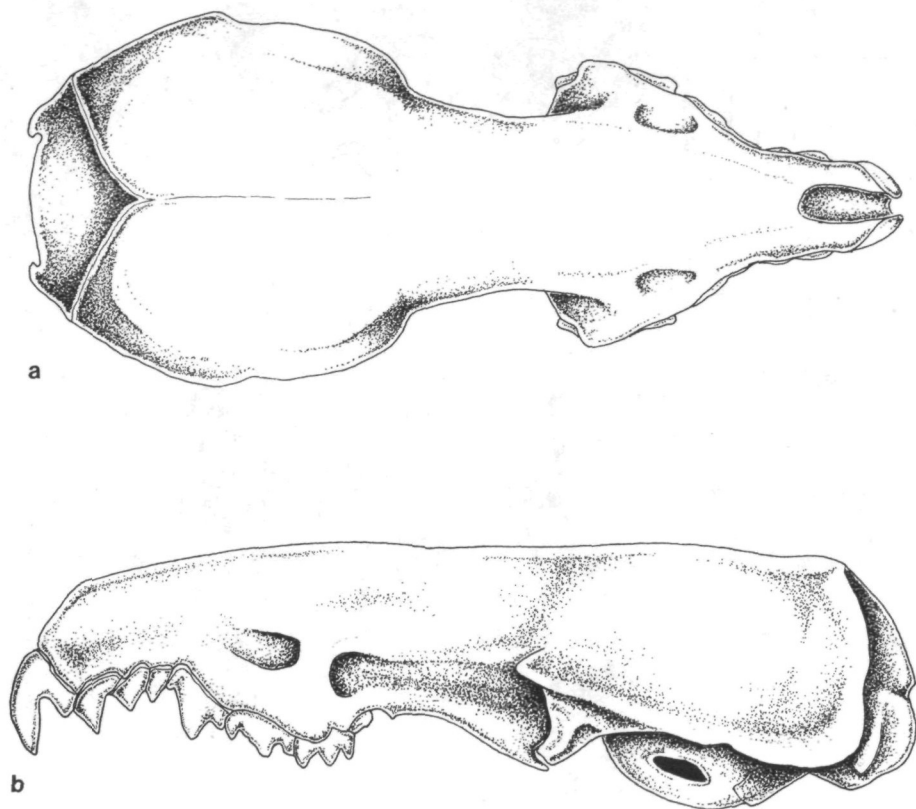


Fig. 2. Cranium of *Crocidura butleri percivali* HZM.1.14457, Male, Aimi Ma Kilungu, Machakos District, Kenya. a) Dorsal view, b) Lateral view
(Scale = 2mm) Stereomicroscope drawings by P. J. J. BATES

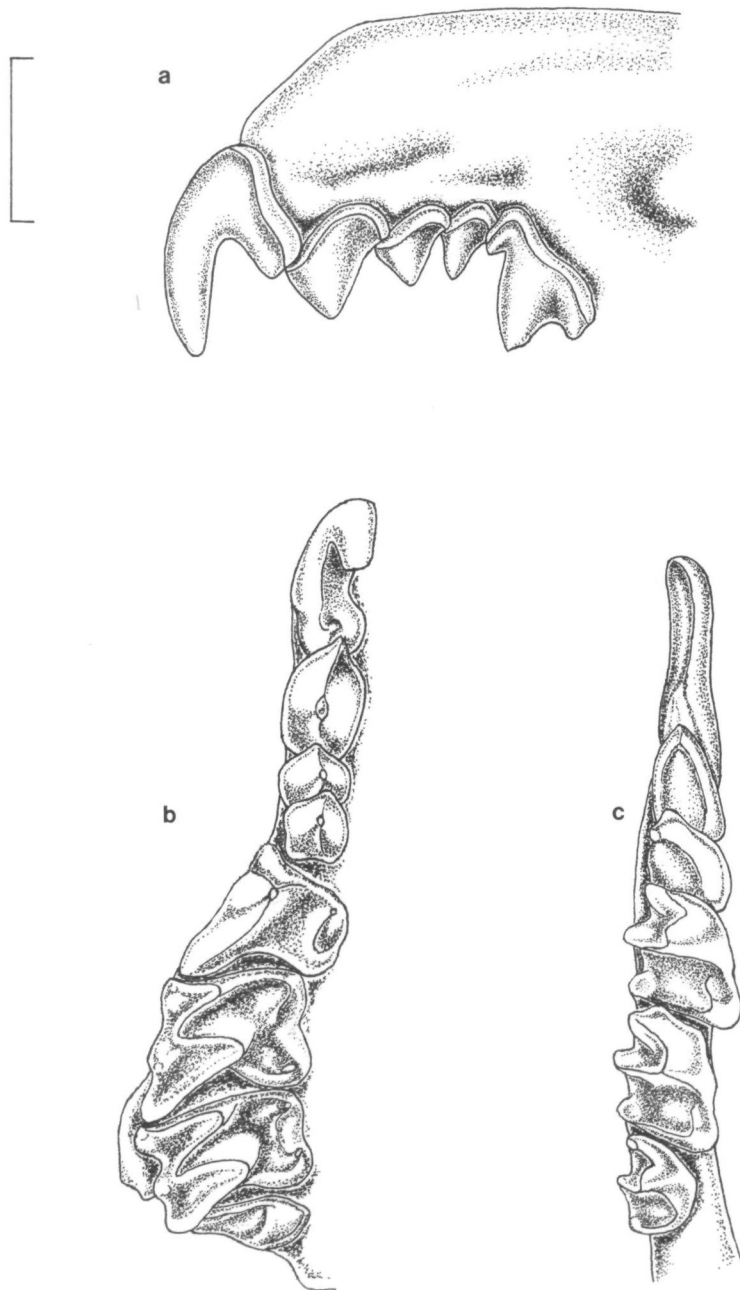


Fig. 3. Dentition of *Crocidura butleri percivali* HZM.1.14457, Male, Aimi Ma Kilungu, Machakos District, Kenya. a) Upper left unicuspid teeth (lateral view) b) Right Maxillary dentition (occlusal view) c) Right Mandibular dentition (occlusal view)

(Scale = 2mm) Stereomicroscope drawings by D. L. HARRISON

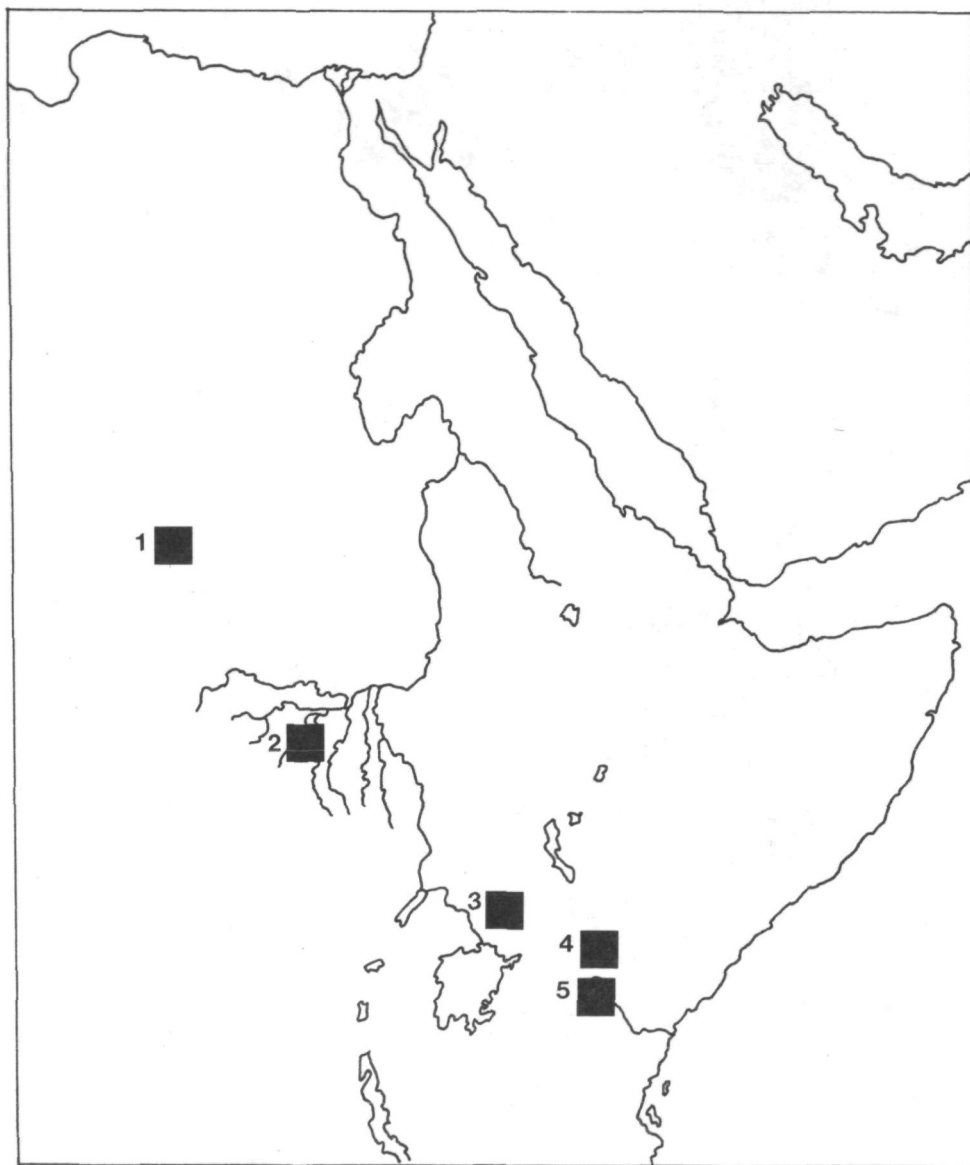


Fig. 4. Geographical distribution of *Crocidura butleri*

Localities:

Crocidura butleri aridula – 1: Kulme, Wadi Aribi, Darfur, Sudan. 12.35' N 23.37' E

Crocidura butleri butleri – 2: Between Chakchak & Dem Zubeir, Bahr-el-Ghazal, Sudan. c.o. 08.40' N 26.50' E

Crocidura butleri percivali – 3: Ajeruk, Teso District, Uganda. 01.33' N 33.49' E. 4: Jombeni Range, Nyeri District, Kenya. (centred on 00.20' N 37.56' E). 5: Aimi Ma Kilungu, Ulu, Machakos District, Kenya. 01.49' S 37.09' E

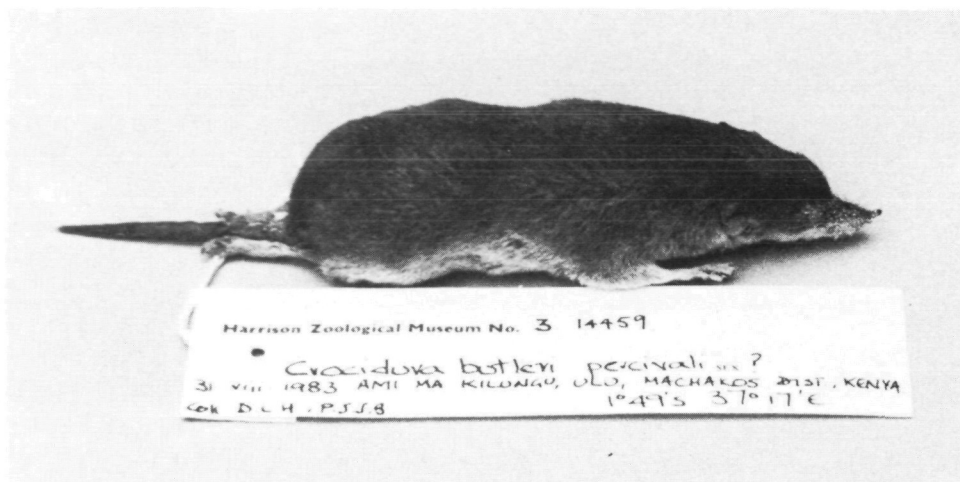


Plate 1:

Crocidura butleri percivali HZM.3.14459 Aimi Ma Kilungu, Ulu, Machakos District, Kenya. Lateral view of prepared skin. Photograph by D. L. HARRISON.



Plate 2:

Habitat of *Crocidura butleri percivali*. Waterhole near Aimi Ma Kilungu, Ulu, Machakos District, Kenya. Photograph by P. J. J. BATES.