

A new species of *Caffrowithius* Beier (Chelonethida, Chernetidae) from a brush-furred rat in Nigeria

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Summary

Caffrowithius harperi, n. sp. is described from a female found on a brush-furred rat (*Lophuromys sikapusi* (Temminck)) at Ibadan, Nigeria. It differs from all other species of *Caffrowithius* by its larger size, denser setation and elongate legs – characters probably related to an association with murids.

Introduction

Associations between rodents and chernetid pseudoscorpions are well known and have been reviewed by Beier (1948). Of the African chernetid genera, three have been found on mammals or in their nests: *Lasiochernes* Beier, *Nudochernes* Beier and *Caffrowithius* Beier (synonyms *Plesiochernes* Vachon and *Anepsiochernes* Beier (= *Adelphochernes* Beier, 1944), Mahnert, 1983).

Through the kindness of Mr Paul Hillyard (British Museum (Natural History)), I have recently been able to examine a new species of *Caffrowithius* taken from a brush-furred rat (*Lophuromys sikapusi* (Temminck)) in Nigeria.

Measurements follow Chamberlin (1931), with ratios given in parentheses.

Caffrowithius harperi, n. sp. (Figs. 1-6)

Material examined

1 ♀ (holotype), Nigeria, Ibadan, host *Lophuromys sikapusi*, D. R. Rosevear, 220/48 (no date); British Museum (Natural History), reg. no. 1952.8.1.71; in alcohol.

Female holotype

Large species, normally sclerotized; carapace tan coloured, tergites lighter, palps reddish-brown.

Carapace without eyes; granulation low and dense; two distinct furrows present – posterior 0.19, anterior 0.45 length of carapace from posterior margin; setae short and denticulate, formula approximately 80 : 56 : 39 (total 175).

Tergites I-IX with 10-13, X with 8-9 setae on each half-tergite (laterals and discals present on IV-X), XI 8, XII 2.

Coxae of palps granulate, those of legs smooth; all coxae with numerous setae; 'microlyrifissures' abundant on I-IV; coxae IV separated by a small, membranous gap.

Anterior genital sternite with anterior band of darker sclerotization, 46 setae; posterior genital sternite with 19 acuminate setae; chaetotaxy of remaining sternites, 11+14 : 24+22 : 23+20 : 19+17 : 18+19 : 15+13 : 10+10 : 11 : 2, lateral and discal setae

becoming progressively more evident from middle segments onwards; XI with laterals elongated and acuminate (Fig. 2); anterior spiracle plates with 3, posterior plates with 1 seta; sternites IV-XI with numerous pores ('microlyrifissures'). Pleural membrane wrinkled, weakly stellate.

Genitalia (Fig. 6) typical of genus: spermathecae paired, mushroom-shaped; each with 8 small cribrate areas (each with 3-6 pores), mostly on 'arms' of mushroom; spermathecal duct with internal thickening about two-thirds from base, suggesting a valve; genital atrium with numerous, small pores on surface, though not cribrate; lateral apodemes well developed and strongly sclerotized; lateral cribriform plates large, lying under lateral apodemes.

Palps (Figs. 1, 4, 5) with numerous dentate setae and small pores on femur, tibia and hand; trochanter with a dorsal hump; pedicel of tibia with four lyrifissures; fixed finger with 55 teeth (distal displaced exteriorly) plus 8 external and 4 internal accessory teeth; moveable finger with 57 teeth plus 7 external and 2 internal accessory teeth; anterior teeth slightly retrorse, posterior teeth peg-like; fixed finger with a group of 32 glandular pores ('sense spots') between *esb* and *est*, another 5 above *est*, an internal group of 10 distad of *ib*, 2 proximad and 1 distad of *ist*; moveable finger with 21 pores between *sb* and *st*; fixed finger with single sensillum next to *et*; moveable finger with 2 sensilla distad of *t* and a diploid sensillum just behind *st*; elongated setae of moveable finger both distad of *t*; moveable finger with venom duct reaching past *t*; venedens of fixed finger apparently with a vestigial duct, though this could not be followed into finger; trichobothria *isb*, *ist* and *it* lying in a furrow which runs along dorsum of fixed finger; both fingers granulate almost to tips.

Chelicera normal; hand with 5 setae, *sb* denticulate, *b* thickened but acuminate; 6 rami on spinneret; flagellum 3-bladed, 8, 5 and 2 denticulations on anterior, median and posterior blades respectively; serrula exterior with 19-20 blades, basal blade long; lamina exterior well developed; fixed finger with 4 small, apical teeth and 7 basal teeth.

Legs (Fig. 3) with scattered pores and numerous, mainly denticulate, setae; subterminal setae acuminate and strongly curved; claws semi-retractile; seta T of tarsus IV denticulate, shorter than breadth of tarsus, TS 0.72; basal lyrifissure of tarsus 0.14 from base, only weakly raised*.

Measurements (mm): body length 4.2; carapace 1.21 long × 1.31 broad (b/l 1.1); palp – femur 0.98 × 0.41 (2.4), tibia 0.98 × 0.42 (2.3), hand (+ pedicel) 0.95 × 0.54 (1.75) (– pedicel 0.82 (1.5)), chela length 1.73 (3.2), moveable finger 0.92 (hand/mf 1.0); leg I – basifemur 0.33 × 0.22 (1.5), telofemur 0.54 × 0.18 (3.0), tibia 0.55 × 0.13 (4.1), tarsus 0.53 × 0.11 (4.8); leg IV – basifemur 0.38 × 0.23 (1.7), telofemur 0.73 × 0.23 (3.2), tibia 0.84 × 0.15 (5.6), tarsus 0.63 × 0.12 (5.1).

Diagnosis

The form of the spermathecae of *Caffrowithius*

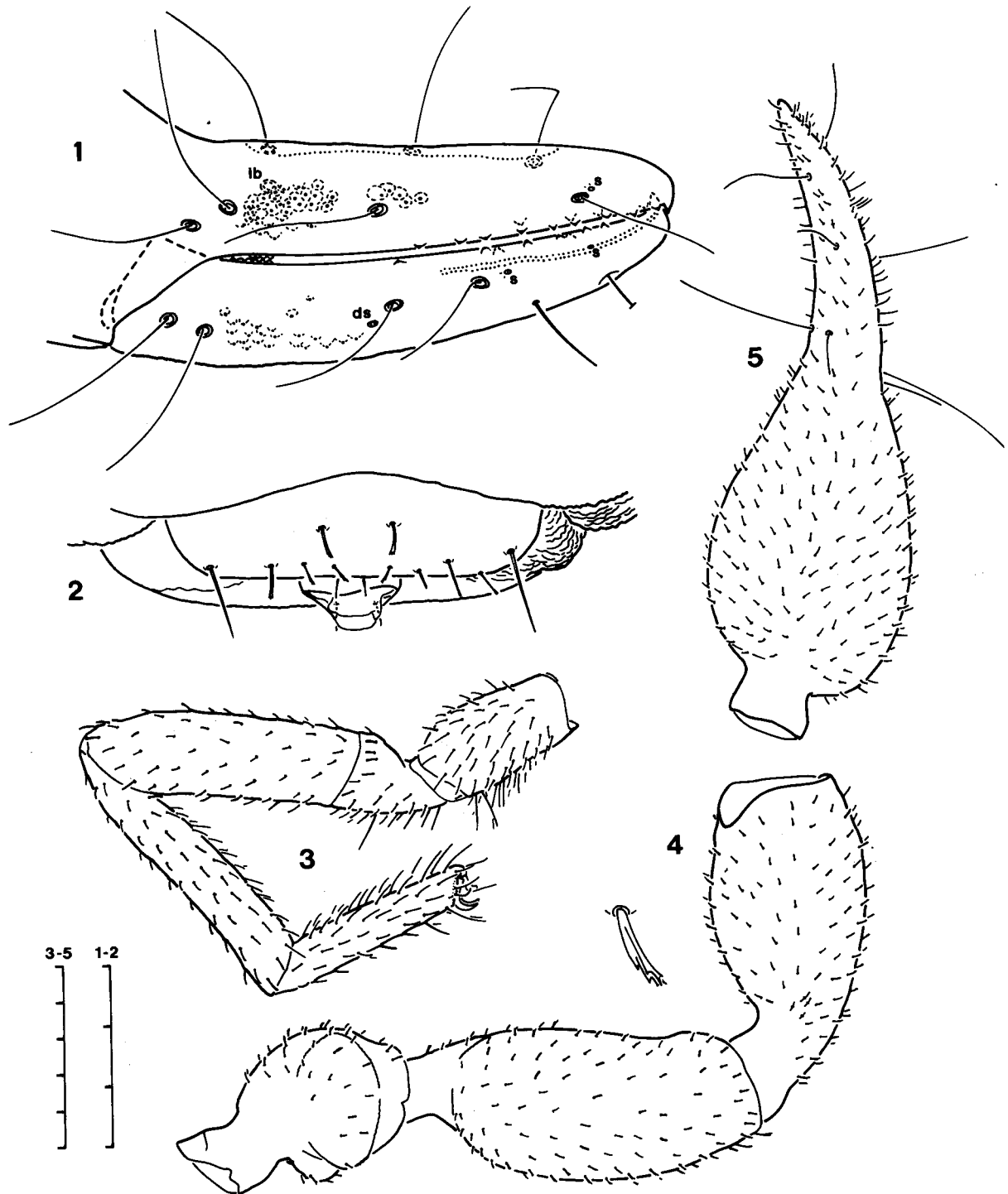
harperi is very similar to that of *C. planatus* Mahnert from Kenya. Mahnert (1982: fig. 27) does not illustrate any pores on the spermathecae of the latter (present in *harperi*), though they may have been ignored or overlooked. *C. harperi* can be separated from *planatus*, and all other species of the genus, by its larger size and denser setation.

Etymology

This new species is dedicated to my friend and former teacher, Dr Geoffrey H. Harper.

Remarks

Caffrowithius is the largest African genus of Chernetidae, containing 26 species and subspecies (including 3 doubtful species). Only a few of these have been collected in association with mammals. Beier (1956) described *C. natalicus* from three females collected on *Aethomys chrysophilus* (De Winton) in Natal. The holotype of *C. elgonensis* (Vachon) was found in the nest of a mole rat (*Tachyoryctes splendens* Ruppell), but subsequent records (Beier, 1955; Mahnert, 1982) of this species suggest that this is not its



Figs. 1-5: *Caffrowithius harperi*, n. sp., female. **1** Fingers of left chela, dotted line indicates furrow of fixed finger (ds = diploid sensillum, s = sensillum); **2** Posterior sternites; **3** Right leg IV; **4, 5** Right palp, with detail ($\times 6.7$) of seta from posterior margin of femur. Divisions of scale lines = 0.1mm.

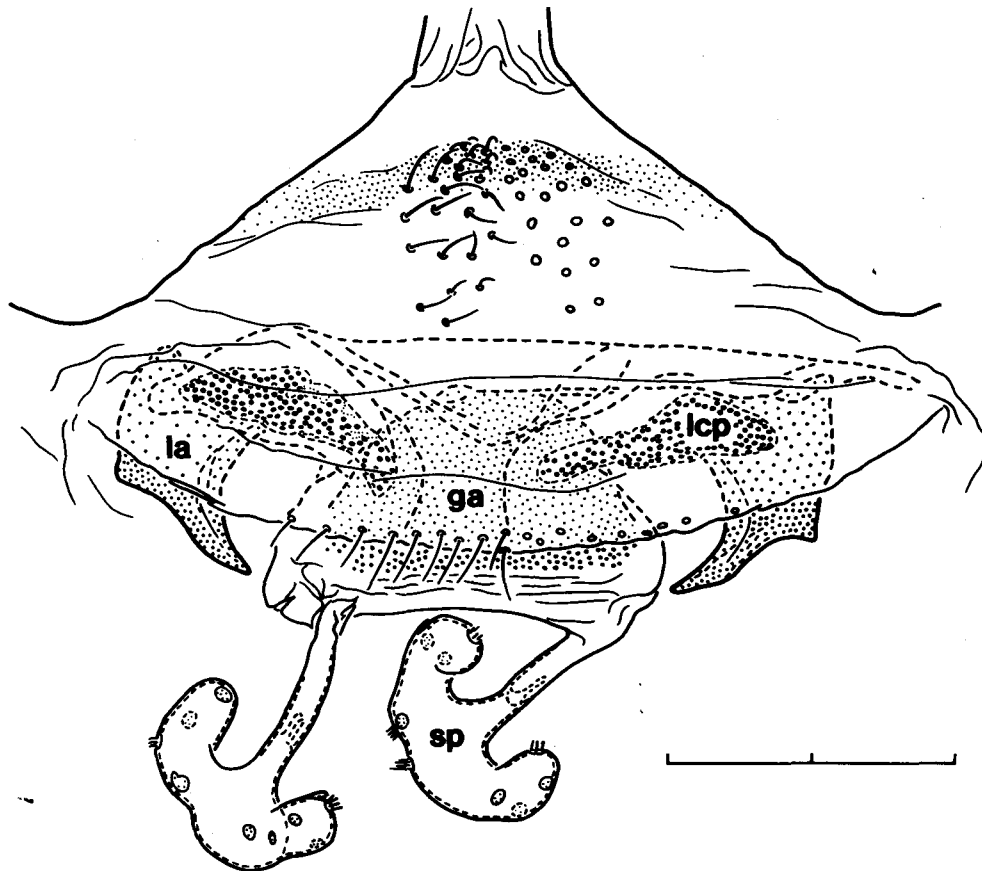


Fig. 6: *Caffrowithius harperi*, n. sp., female. Genital sternites and genitalia, ventral, drawn as if sternite IV were removed; genitalia slightly distorted by clearing (spermathecae and lateral apodemes have rotated posteroventrally) (ga = genital atrium, la = lateral apodeme, lcp = lateral cribriform plate, sp = spermatheca; stippled area of genital atrium denotes distribution of small pores). Divisions of scale line = 0.1mm.

normal habitat. Three species – *biseriatus* Mahnert, *lucifugus* (Beier) and *natalensis* (Beier) – have been collected from bat guano in caves. A female of *lucifugus* has been taken on a fruit bat (Beier, 1959) and it is likely that the other species have been carried to caves phoretically by bats.

An increase in size is a common feature of chernetids adapted to associations with rodents. The relatively elongate legs and increased density of setation in *C. harperi* are probably size-dependent characters (neotrichy and allometry, respectively).

The furrow along the dorsal surface of the fixed finger of the chela of *C. harperi* is also present in some other genera of the Chernetidae and Cheliferidae (pers. obs.). It is usually difficult to see using light microscopy unless the chela is rotated slightly; it is much more evident when scanning electron microscopy is used.

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