

A revision of the spider genera *Holcolaetis* and *Sonoita* (Araneae: Salticidae)

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Introduction

This present paper revises two closely related genera, *Holcolaetis* Simon, comprised of five species and *Sonoita* Peckham and Peckham, which is monotypic. Their geographical distribution is African, with the exception of one species of *Holcolaetis* which also occurs in North Yemen. Species of *Holcolaetis* are usually large, flattened and hairy, they are well camouflaged in life and superficially resemble species of *Marpissa* C. L. Koch, a large genus with several well known European species. They seem to be well adapted for living in confined spaces and much of their time is probably spent on tree trunks, however, they have also been found on cacti in association with the webs of other spiders. The only known species of *Sonoita* is on the other hand small and not flattened. The biology is unknown. Both groups, unlike many salticid genera, can be easily recognised not only by their general habitus, but by the presence of large posterior median eyes and also rather distinctive genitalia.

The taxonomy of *Holcolaetis* has been unusually muddled, primarily because Simon (1907) appears to have misidentified the type species subsequent to his original description. Further difficulties have arisen, in *Holcolaetis* especially, from a shortage of specimens making it difficult to match males and females, details of which are referred to in the descriptions. Compounding these problems is the fact that the epigynes of *Holcolaetis* females are unusually variable and also often plugged, both in the region of the copulatory openings and on the posterior margins.

The presence of large posterior median eyes in species of both genera, palpal median apophyses and abdominal pustuliform organs suggests that they belong in one of the more primitive branches of the Salticidae.

The standard abbreviations and measurements are those used by Wanless (1978), but for the leg spination the system adopted is that used by Platnick and Shadab (1975).

Genus *HOLCOLAETIS* Simon

Holcolaetis Simon, 1886: 394. Type species *Holcolaetis xerampelina* Simon, by monotypy. Simon, 1901: 452–454. Waterhouse, 1902: 414. Petrunkevitch, 1928: 181. Dyal, 1935: 218, 222. Neave, 1939: II: 671.

Roewer, 1954: 937; 1965: 22. Bonnet, 1957: 2222. Prószyński, 1971: 417. Wanless, 1984: 136.

Holcolethis Simon 1909: 413. Neave, 1939: II: 671. [lapsus calami].

DEFINITION. Flattened hairy spiders; medium to large in size i.e. total length between 4.0 and 16.0 mm; sexes alike except males usually have longer more slender legs; colour patterns inter-specifically similar—the abdomen characteristically marked with a broad dorsal dentate band; anterior leg spines strong on femora, otherwise absent or few and minute; males, females and subadults with pustuliform field more or less anterior to the first pair of abdominal apodemes.

Carapace: low, longer than broad, widest at about level of coxae II–III with transverse depression between posterior lateral eyes and fovea; fovea moderately long, positioned well behind posterior lateral eyes. **Eyes:** with moderately pronounced lenses set on low tubercles; laterals with black surrounds; anteriors closely set, equally or subequally spaced with apices procurved in frontal view; anterior laterals equal to or greater than half diameter of anterior medians; posterior medians relatively large, closer to and just outside optical axis of anterior laterals; posterior laterals more or less as large as anterior laterals and positioned well inside

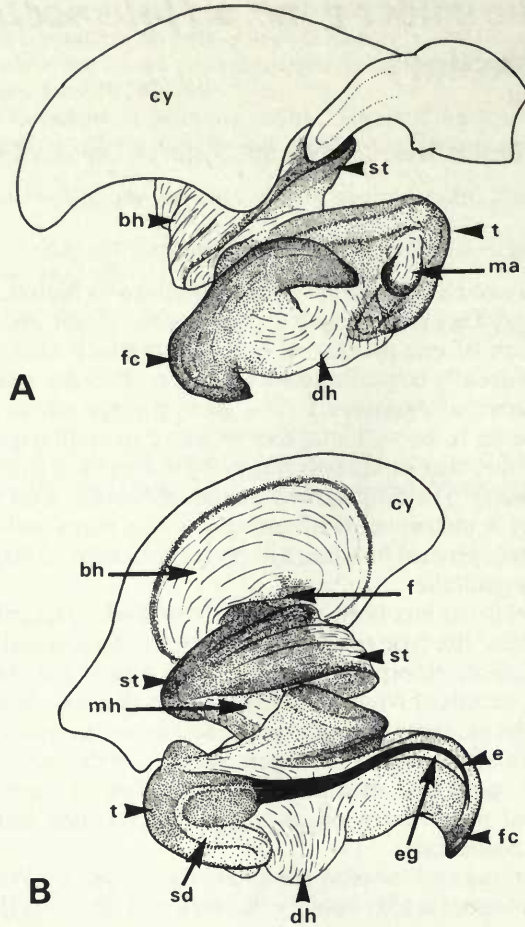


Fig. 1 *Holcolaetis vellerea* Simon, ♂, expanded palp: A, retrolateral view; B, prolateral view. Abbreviations: bh, basal haematodocha; cy, cymbium; dh, distal haematodocha; e, embolus; eg, embolic guide; f, fulcrum; fc, functional conductor; ma, median apophysis; mh, median haematodocha; sd, seminal duct; st, subtegulum; t, tegulum.

lateral margins of carapace when viewed from above; posterior ocular quadrangle broader than long and slightly wider behind; entire quadrangle occupying between 35 and 43% of carapace length. *Clypeus*: low, between 10–26% of diameter of anterior median eyes. *Chelicerae*: robust, usually more bulbous in female; inclined anteriorly, more or less parallel; promargin with 4–6 teeth, retromargin with 6–10. *Maxillae*: long and diverging. *Labium*: longer than broad, about half maxillar length. *Sternum*: elongate scutiform, more attenuate in females. *Pedichel*: short. *Abdomen*: elongate ovoid with dorsal dentate band and indistinct pustuliform field; spinnerets moderately long, anteriors and posteriors more or less equal in length, but unequally robust, medians shorter and more slender, spigots of anterior spinnerets compact except for a single pair of longer spigots on inner margin, present in both sexes, but evidently more pronounced in females; former position of colulus indicated by group of setae between tracheal slit and base of anterior spinnerets; tracheal system apparently simple (only examined in *H. vellerea* Simon), the opening an obscure slit, not usually evident, just in front of the anterior spinnerets. *Legs*: moderately long and robust, strongest in females; anteriors often with strong fringes; claws smooth or pectinate; scopulae absent; tufts present; spines moderately strong, most numerous on

posterior legs, on legs I usually lacking except on femora, basic pattern rather variable. *Female palps*: moderately long with an apical claw, distal segments sometimes darker than proximal ones.

Epigynes: Intergenerically and interspecifically fairly distinct, but intraspecifically sometimes variable and often plugged, both in area of copulatory openings and posterior margin. Generally characterised by delicate translucent posterior median flanges variable in development and occasionally damaged. Copulatory openings indistinct usually because of heavily sclerotised surrounds (Fig. 16); introductory ducts broad, moderately long, sometimes looped with separate or evidently fused glandular appendices (arrowed, Figs 4I; 16B,C) spermathecae rounded to avoid, relatively large and dark; fertilisation ducts leaf-like, obscured by dorsal membrane and apparently supported by apodemes.

Male palps: Intergenerically and interspecifically fairly distinct; complex and often rather dark; tibiae short to moderately long with robust prong-like retrolateral apophyses, some bearing pronounced flanges; cymbium with pronounced retrolateral lobe (arrowed, Fig. 3C), a small prolateral basal protuberance (arrowed, Fig. 3A) and distal scopula; embolus moderately long robust and curving sometimes partly hidden by embolic guide of functional conductor; distal haematodocha evident, in the unexpanded palp, as an oblong membraneous fold (arrowed, Fig. 3A) contiguous with the tegulum and functional conductor; tegulum broadly crescent-shaped (anterior portion obscured by functional conductor) containing a wide sinuous seminal duct and bearing occasionally a pronounced prolateral flange (arrowed, Fig. 8B–D); functional conductor large with an embolic guide and sometimes a massive prong; median apophysis bowl-like, but shallow and arising from membraneous region of the tegulum, in reality contiguous with the distal haematodocha; median haematodocha short and tube-like; subtegulum a ribbed ring-like sclerite, form of seminal reservoir indistinct; basal haematodocha large and bladder-like, i.e. in expanded palp.

REMARKS. There is no evidence as yet to support the hypothesis that pustuliform fields are pheromone dispersal sites. Furthermore, spheres found scattered over the organs and lodged in their pores (Wanless, 1984b) are probably contaminants (Humphreys, 1985) as they are consistent with the spheres covering the chorion of spiders eggs (Humphreys, 1983). The occurrence of *H. vellerea* in close proximity to alien egg-sacs (see below) and their egg guarding behaviour (Fig. 19) would undoubtedly expose them to such contamination.

The internal epigynal structures are usually very dark (Fig. 16) and deeply embedded in connective tissue which obscures detail even in lactic acid preparations. Although easily removed with fine entomological pins the process results in the destruction of the dorsal membrane, referred to above, which is consequently not shown in some of the vulvae illustrations, for example compare Figs 7D and 7E.

Hinge lines (Parry, 1957) are a common, but possibly overlooked feature of spider legs, they are in effect modifications of the cuticle indicating the site of muscle attachment. In *Holcolaetis* they are fairly conspicuous and usually evident, at low magnifications, as a pair of longitudinal bands on the dorsal surface of the tibiae, patellae and distal portion of the femora; on the last two segments they sometimes form patches rather than lines.

When examined by SEM, hinge lines are seen to be comprised of a series of triangular plates (Fig. 15) suggesting that they may provide for a degree of flexibility within the cuticle. The development and extent of hinge lines in other Salticidae is uncertain, casual observations with the optical microscope shows that they are not always evident and in general they are more conspicuous in dark robust legs than in pale slender ones. In other spider families, for example, the Thomisidae, they are sometimes well developed and clearly influence leg colour patterns, especially longitudinal markings. Similar cuticular structures have been noted in mites (Prof. G. O. Evans, pers. comm.) who also suggests that in areas where the cuticle is thin they may have a ventilatory function and allow for gaseous exchange at the site of muscle insertion.

DIAGNOSIS. *Holcolaetis* known only from Africa and N. Yemen may be distinguished from all other salticid genera by the large posterior median eyes and flattened body form.

AFFINITIES. *Holcolaetis* is undoubtedly close to *Sonoita*, the relationship being supported by four possible synapomorphies, namely the characteristic form of the tegulum, median apophysis and distal haematodocha in males and epigynal flanges in females. Furthermore, pustuliform fields are present in both genera, but in *Sonoita* they are obscured by setae and comprised of fewer, more scattered pustuliform organs (Figs 13, 14).

Wanless (1982, 1984a, 1984b) suggested that on the basis of certain palpal characters (i.e. the presence of a movable median apophysis and pronounced functional conductor, (reduced in *Alloccalodes* Wanless) that *Holcolaetis* and *Sonoita* were allied to *Cocalodes* Pocock and *Alloccalodes* and furthermore they formed a group, the *Cocalodes*-group, which probably merited subfamilial rank. The hypothesis although seemingly tenable is open to question since it cannot be supported by other characters and furthermore, both the median apophysis and functional

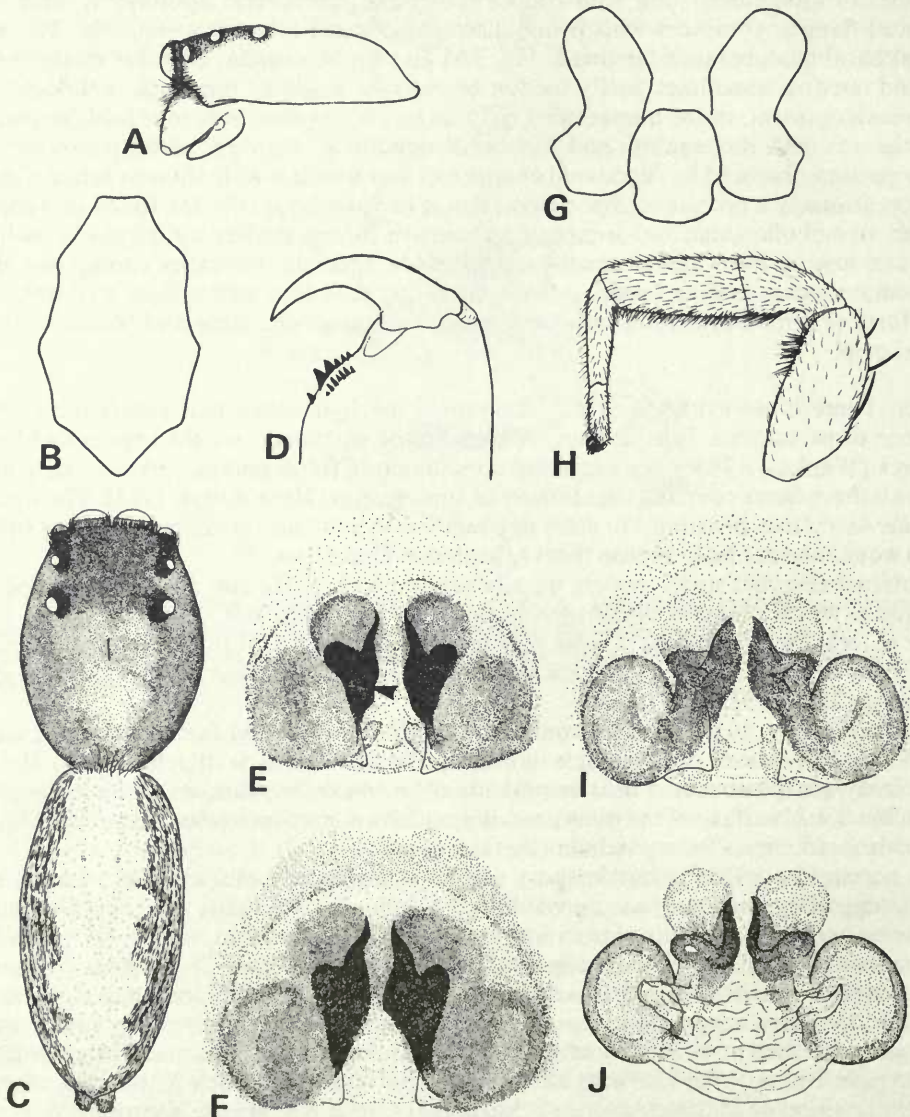


Fig. 2 *Holcolaetis xerampelina* Simon, lectotype ♀: B, sternum; C, dorsal; D, chelicera; F, epigyne. ♀ from Zambia: A, carapace, lateral view; E, epigyne; G, maxillae and labium; H, leg I; I, vulva, outer view; J, vulva, inner view.

conductor may have arisen several times within the Salticidae. An alternative grouping based on the assumption that the abdominal 'secretory' organs (see Wanless, 1984*b*) i.e. mytiliform and pustuliform fields, together with their specialized setae are homologous and synapomorphic for Spartaeninae and *Holcolaetis/Sonoita* is more acceptable. Unfortunately the incidence of abdominal 'secretory' fields in other spiders is largely unknown (see Wanless, 1984*b*) and since their presence can only be confirmed by SEM, they were initially overlooked in *Sonoita*, it is clear that earlier, possibly erroneous assumptions regarding their absence in *Cocalodes* and *Alloccalodes* will have to be reviewed.

BIOLOGY. Little is known of the biology of *Holcolaetis*, collectors notes suggest that most species probably live on tree trunks. R. R. Jackson (pers. comm.) found *Holcolaetis vellerea* Simon, in Kenya, on the trunks of *Euphorbia* and cacti. There were no nests and some females were seen sitting on egg-sacs (Fig. 19A, B). The plants were wrapped up in webs, especially araneid webs and the *Holcolaetis* were sitting with araneid silk over them, usually very close. Sometimes they were under the edges of the silk of araneid egg-sacs, but they were never seen actually standing on alien silk.

Check list and distribution of species in the genus *Holcolaetis*

Holcolaetis (* = type species)

H. albobarbata Simon

H. clarki sp. n.

H. vellerea Simon

**H. xerampelina* Simon

H. zuluensis Lawrence

Angola; Cameroon; Uganda.

Angola; Cameroon; Ghana; Zaire.

Angola; Cameroon; Ivory Coast; Kenya; N. Yemen; Rwanda; São Thomé; Zaire.

Malawi; Tanzania; Zambia.

South Africa; Tanzania.

Key to species of *Holcolaetis*

Males

- | | | |
|---|--|------------------------------------|
| 1 | Functional conductor with massive apophysis (arrowed, Figs 3A; 5A; 6A); tegular flange absent | 2 |
| — | Functional conductor without an apophysis; tegular flange present (arrowed, Figs 8B; 10A) | 4 |
| 2 | Tip of functional conductor sinuous; retrolateral tibial apophysis with pronounced flange (arrowed, Fig. 6A) (Kenya; South Africa; Tanzania) | <i>zuluensis</i> Lawrence (p. 259) |
| — | Tip of functional conductor hardly if at all sinuous; retrolateral tibial apophysis without well developed flange | 3 |
| 3 | Embolus relatively robust and not obscured; distal haematodocha narrow (arrowed, Fig. 3A) (Malawi; Tanzania; Zambia) | <i>xerampelina</i> Simon (p. 254) |
| — | Embolus relatively slender and partly obscured; distal haematodocha broad (arrowed, Fig. 5A) (East, Central and West Africa; N. Yemen) | <i>vellerea</i> Simon (p. 255) |
| 4 | Retrolateral tibial apophysis with pronounced flange (arrowed, Fig. 10A, D) (Angola; Cameroon; Ghana; Zaire) | <i>clarki</i> sp. n. (p. 263) |
| — | Retrolateral tibial apophysis lacking pronounced flanges (Fig. 8A, B) (Angola; Cameroon; Uganda) | <i>albobarbata</i> Simon (p. 262) |

Females

- | | | |
|---|---|------------------------------------|
| 1 | Epigyne with conspicuous black copulatory openings more or less heart-shaped in profile (Fig. 2E) (Malawi; Tanzania; Zambia) | <i>xerampelina</i> Simon (p. 254) |
| — | Epigyne otherwise | 2 |
| 2 | Copulatory openings arising within a dark more or less ovate depression (Fig. 7A; B) (Angola; Cameroon; Uganda) | <i>albobarbata</i> Simon (p. 260) |
| — | Epigyne otherwise | 3 |
| 3 | Copulatory openings arising within rounded depressions (Figs 6E–G; 9C, D) | 4 |
| — | Copulatory openings arising within a broad ill-defined depression—more evident in specimens than in Fig. 4D–F (East, Central and West Africa; N. Yemen) | <i>vellerea</i> Simon (p. 255) |
| 4 | Introductory ducts hardly if at all evident through uncleared integument (Fig. 9C, D) (Angola; Cameroon; Ghana; Zaire) | <i>clarki</i> sp. n. (p. 263) |
| — | Introductory ducts usually evident, especially black proximal regions (arrowed, Fig. 6G) Kenya; South Africa; Tanzania) | <i>zuluensis</i> Lawrence (p. 259) |

Holcolaetis xerampelina Simon

(Figs 2, 3, 16A)

Holcolaetis xerampelina Simon, 1886: 394. LECTOTYPE ♀ (here designated) Zanzibar, (MNHN, Paris). Simon, 1901: 453, 454; 1909 (1910): 413. Strand, 1909: 181. Petrunkevitch, 1928: 181. Roewer, 1954: 937. Bonnet, 1957: 2223. Prószyński, 1971: 417. Cutler, 1976: 132.

REMARKS. To judge from museum specimens and the literature there appears to have been some confusion over the identity of this species, primarily because Simon consistently identified *H. zuluensis* Lawrence as *H. xerampelina* Simon. Lessert (1925a) also misidentified *H. xerampelina* since the specimens he used for his illustrations are without doubt *H. zuluensis*. His identification was based on an earlier description by Strand 'Les pattes-machoières correspondent bien à la description de Strand (1909, p. 181)'. Strand's description is fairly detailed, but in the absence of figures and specimens the species cannot be identified with certainty.

Roewer (1965) merely perpetuated the problem by producing crude copies of Lessert's figures, a feature noted by Clark (1974). From correspondence and notebooks of the late Mr Clark (BMNH) it is clear that he had correctly identified the majority of *Holcolaetis* species. Unfortunately, he misidentified the type specimen of *H. xerampelina*, selecting instead a specimen of *H. zuluensis* from Gabon that Simon had incorrectly identified as *H. xerampelina*. He therefore quite naturally assumed that *H. zuluensis* was a junior synonym. He did not, however, make a definite proposal (see Clark, 1974) and the synonymy was never accepted.

DIAGNOSIS. Similar to *H. vellerea* and *H. zuluensis*, but separated by the narrow element of the distal haematodocha in males (arrowed, Fig. 3A), and the black somewhat heart-shaped profile of the introductory ducts in females (arrowed, Fig. 2E).

FEMALE LECTOTYPE, in fair condition. *Carapace* (Fig. 2C) dark reddish ringed black in eye region with broad pale orange band on thoracic part; clothed in grey/pale golden pubescent hairs with whitish ones on thoracic band; eye region rubbed, probably white haired; also, on margins and submargins indistinct narrow bands of short white hairs. *Eyes*: laterals with black surrounds; fringed by white hairs with dull pale amber ones around lower rims of anteriors. *Clypeus*: covered in pale greyish hairs. *Chelicerae*: dark red with scattered long amber hairs; promargin with six

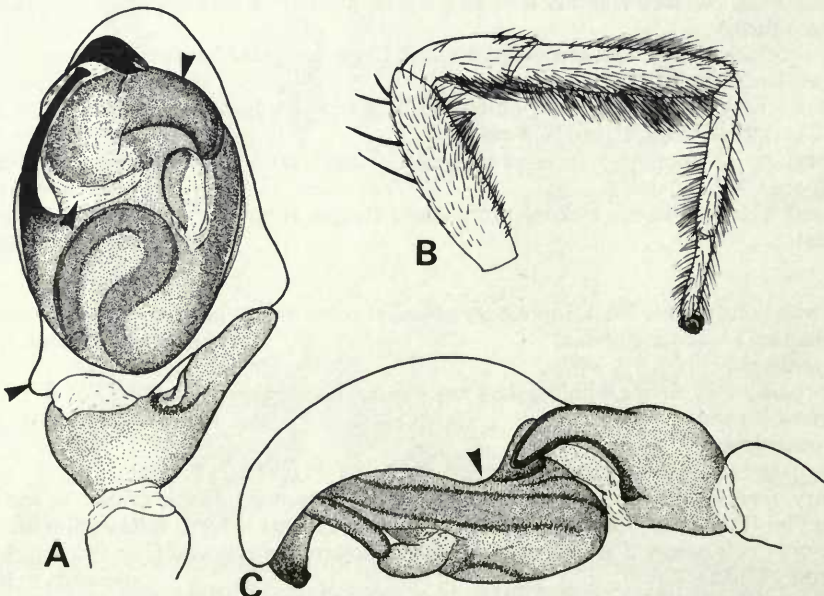


Fig. 3 *Holcolaetis xerampelina* Simon, ♂, A, palp, ventral view; B, leg I; C, palp, retrolateral view.

teeth, retromargin with seven. *Maxillae*: reddish with inner distal margins whitish yellow. *Labium*: dark reddish tipped whitish yellow. *Sternum* (Fig. 2B): yellowish orange with darker margins; shiny; thinly clothed in fine pale amber hairs with stronger whitish and amber hairs on margins. *Abdomen*: dorsum amber mottled black, clothed in amber hairs with broad central pale yellow dentate band clothed in pale creamy and scattered pale amber hairs; pustuliform field obscure; venter dirty pale yellow mottled black with three central black bands converging towards spinnerets; spinnerets amber tinged black. *Legs*: legs I (Fig. 2H): amber to dark amber lightly tinged black on tibiae; fringed with amber hairs on underside of tibiae, patellae and distal retrolateral side of femora; other legs generally amber with vague sooty annuli, dark on legs IV; also, on all legs scattered semirecumbent fringes of fine white hairs. Spines of legs I: femora p 0-3-0, d 0-2-2. *Palps*: pale yellow becoming amber distally and on basal part of femora. *Epigyne* (Fig. 2F): clothed in fine hairs.

Dimensions (mm): total length 12.5; carapace length 5.36, breadth 4.0, height 1.88; abdomen length 7.12; eyes, anterior row 2.76, middle row 2.78, posterior row 2.92; quadrangle length 1.92 (35% of carapace length). *Ratios*. AM : AL : PM : PL :: 18 : 9.5 : 7.1 : 10.5; AL-PM-PL :: 13-17; AM : CL :: 18 : 4.

MALE from Malawi, in fair condition formerly undescribed. *Carapace*: dark orange brown tinged black especially on sides and in eye region; irregularly clothed in whitish and dull amber hairs (rubbed) with scattered brown-black ones on sides; also, on lower sides a narrow submarginal band of short white hairs. *Eyes*: laterals with black surrounds; fringed by pale amber hairs with conspicuous white ones on inner and outer parts of upper rims of anterior medians and on inner part of upper rims of anterior laterals. *Clypeus*: clothed in amber and long black hairs. *Chelicerae*: orange-brown lightly tinged black; thinly clothed in brown-black hairs; promargin with five teeth, retromargin with seven. *Maxillae and labium*: orange-brown lightly tinged black with inner distal margins of maxillae whitish. *Sternum*: orange-brown tinged black; shiny; clothed in scattered white and brown-black hairs. *Coxae*: yellow-brown, first pair lightly tinged black. *Abdomen*: with dorsal greyish white dentate band containing vague blackish markings and chevrons; sides blackish with scattered long amber hairs; venter grey tinged black, clothed in vague whitish hairs laterally and short amber ones medially—the latter forming a vague longitudinal band; spinnerets yellow-brown tinged black. *Legs*: first and to a lesser extent second pairs densely fringed in black hairs (Fig. 3B); generally yellow-brown tinged black except for light yellow-brown tarsi and metatarsi. Spination of legs I: femora p 0-2-1, d 0-3-2. Palp (Fig. 3A,C).

Dimensions (mm): total length 7.92; carapace length 3.44; breadth 2.44, height 1.24; abdomen length 4.6; eyes, anterior row 1.94, middle row 1.88, posterior row 1.92; quadrangle length 1.4 (40% of carapace length). *Ratios*: AM : AL : PM : PL :: 15 : 8.2 : 6 : 7; AL-PM-PL :: 9-11; AM : CL :: 15 : ca. 2.5.

VARIATION. Another female measures 11.0 mm total length, 4.88 mm carapace length.

DISTRIBUTION. Malawi; Tanzania; Zambia.

MATERIAL EXAMINED. **Malawi**: Chinthche, 1♂, I-II.1976, *R. Jocque*, MT. 147.920. (MRAC, Tervuren). **Tanzania**: Zanzibar, lectotype ♀, + juvenile, *Raffray*, (MNHN, Paris, 987). **Zambia**: Lake Mweru, Wantipa, from tree, 1♀, ix.1944, *P. D. L. Ghilbride*, S.34, (BMNH. 1946.12.31.107).

Holcolaetis vellerea Simon
(Figs 1, 4, 5, 12, 15, 16B, 17-18)

Holcolethis vellerea Simon, 1909 (1910): 78. LECTOTYPE ♀, (here designated) São Thomé, (MNHN, Paris) [examined]; [*Holcolethis lapsus* for *Holcolaetis*].

Holcolaetis vellerea: Roewer, 1954: 937; 1965: 26. Bonnet, 1957: 2222. Prószyński, 1971: 417. Clark, 1974: 16.

Holcolaetis vidua Lessert, 1927: 426. Holotype ♂, Zaire, (AMNH, New York) [examined]. Dyal, 1935: 222 [misidentification]. Roewer, 1954, 937: 1965: 27. Bonnet, 1957: 2223. Prószyński, 1971: 417. Clark, 1974: 16 [= *vellerea*].

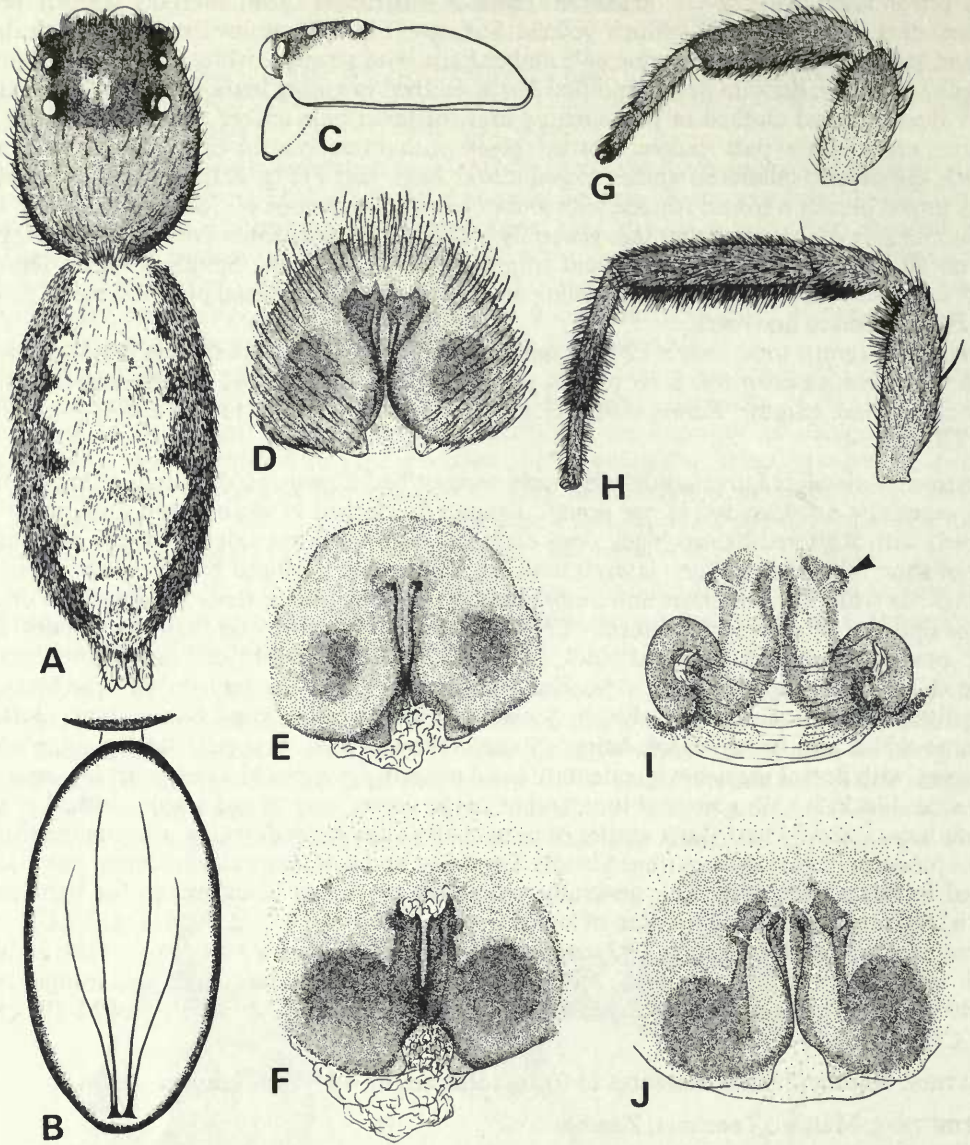


Fig. 4 *Holcolaetis vellerea* Simon, ♀ from Rwanda: A, dorsal view; B, tracheal system—schematic; C, carapace, lateral view; D, epigyne; E, epigyne, another specimen; F, epigyne, another specimen; G, leg I; I, vulva, inner view; J, vulva, outer view. ♀ from Kenya: E, epigyne. ♂ from Rwanda: H, leg I.

Holcolaetis camerunensis Roewer, 1965: 26. Holotype ♂ Cameroon, (FS, Frankfurt am Main) [examined]. Prószyński, 1971: 417. Brignoli, 1983: 640. Syn. n.

DIAGNOSIS. Similar to *H. zuluensis*, but separated by the relatively short tip of the functional conductor and absence of a pronounced flange on the retrolateral tibial apophysis in males (Fig. 5A). Females are distinguished, in spite of considerable epigynal variation and plugging, by the absence of rounded depressions surrounding the copulatory openings and also dark patches anterior to them. In reality the introductory ducts of *H. zuluensis* loop anteriorly and are visible through the integument as dark patches (arrowed, Fig. 6G). Whereas there are no such loops in *H. vellerea* and consequently no dark patches.

MALE from Rwanda, in good condition. *Carapace*: reddish orange with blackish eye region, marginal and submarginal bands; thickly clothed in whitish and pale amber hairs with scattered bristles and pattern of marginal bands comprised of white hairs bordered above by a band of black hairs and below by dark bare cuticle edged in white hairs. *Eyes*: laterals with black surrounds; fringed by dull amber and white hairs with scattered bristles behind anterior row. *Clypeus*: clothed in dull amber hairs with marginal fringe of long black ones. *Chelicerae*: dark reddish; thinly clothed in black hairs; promargin with five teeth, retromargin with eight. *Maxillae and labium*: dark reddish, the former with yellow inner distal margins. *Sternum*: dark brownish orange lightly tinged black; thinly covered in black hairs—fine in centre, coarse on margins. *Coxae*: first pair dark reddish, others orange-brown. *Abdomen*: with dorsal greyish yellow dentate band clothed in fine whitish hairs and scattered bristles; sides mottled black with fine brown-black hairs and bristles; venter similar to sides, but with four inconspicuous greyish stripes containing lines of amber spots; spinnerets dark brown tinged black; clothed in black hairs with whitish ones on posterior pair. *Legs*: legs I dark brownish orange lightly tinged black with inside of femora, basal half of metatarsi and tarsi paler, densely fringed in brown-black hairs with long whitish ones on inside of femora and patellae; also semirecumbent tufts of white hairs on inside face of basal half of metatarsi; legs II similar, but paler markings in greater contrast; legs III dark orange-brown faintly tinged black with yellow-brown metatarsi and tarsi—the former with blackish apices, clothed in long whitish and grey-black hairs with scattered semirecumbent tufts of white ones; legs IV similar to III except metatarsi darker. Spination of legs I: metatarsi v 2-0-0; tibiae v 1-0-0; femora d 0-3-3, p 0-0-1. *Palp*: as in Fig. 5A-B, but darker.

Dimensions (mm): total length 10.2; carapace length 4.64, breadth 3.52, height 1.72; abdomen length 5.6; eyes, anterior row 2.38, middle row 2.32, posterior row 2.36; quadrangle length 1.8 (38% of carapace length). *Ratios*: AM : AL : PM : PL :: 18 : 9 : 6.6 : 9; AL-PM-PL :: 6.6-9; AM : CL :: 18 : ca. 4.

FEMALE from Rwanda, in good condition. Similar to male. *Carapace* (Fig. 4A, C). *Eyes*: fringed by white hairs with some amber ones. *Clypeus*: clothed in long white hairs below median eyes

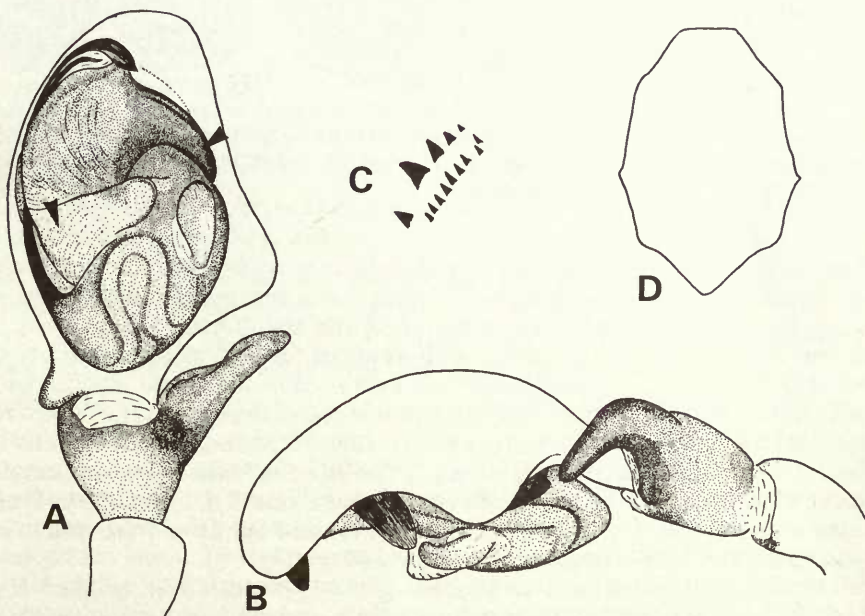


Fig. 5 *Holcolaetis vellerea* Simon, ♂ from Uganda: A, palp, ventral view; B, palp, retrolateral view; C, cheliceral teeth; D, sternum.

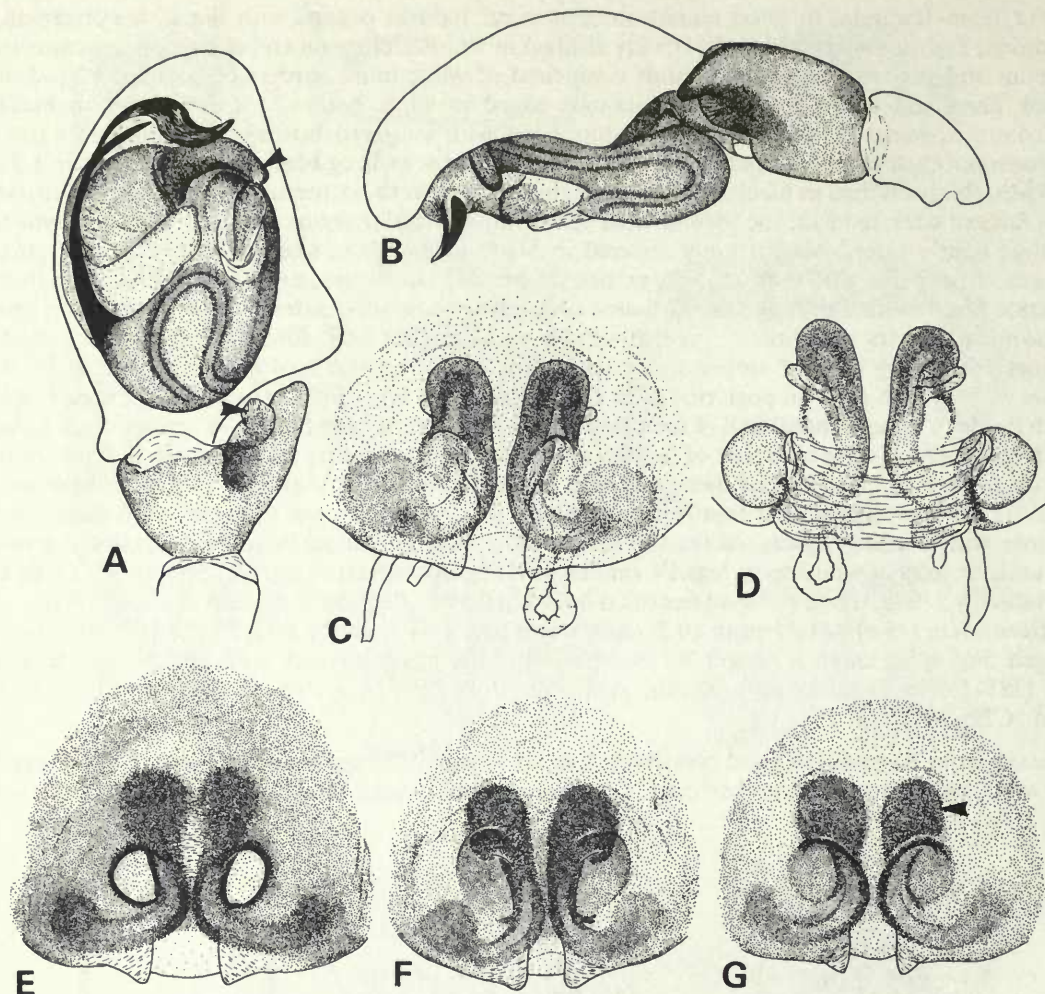


Fig. 6 *Holcolaetis zuluensis* Lawrence, ♂ from Pietermaritzburg. A, palp, ventral view; B, palp, retrolateral view. ♀ from Parfuri: C, vulva, outer view; D, vulva, inner view. ♀ type series: E-F, paralectotype, epigynes; G, lectotype, epigyne.

with amber and white ones below laterals—the white hairs in reality the start of the submarginal white haired bands. *Chelicerae*: promargin with four teeth, retromargin with eight. *Abdomen*: similar to male but with flecks and vague chevrons comprised of brown-black hairs in dentate band. *Legs*: legs I–II deep brownish orange with inside of femora, metatarsi and tarsi orange-brown; clothed in black hairs, especially dense on underside of tibiae and patellae with whitish hairs on inside of femora; also, on patellae, tibiae and inside of femora II tufts of semirecumbent white hairs; other legs light to dark brownish orange except for yellow-brown tarsi and metatarsi, the latter darker at either end particularly on legs IV; clothed in black hairs with usual scattered semirecumbent white tufts most numerous on femora and tibiae. Spination of legs I: metatarsi v 2–0–0; femora d 0–3–3, p 0–0–1. *Palps*: with base of femora lightly mottled black; clothed in white hairs and scattered light brown bristles. *Epigyne* (Fig. 4D; 16B).

Dimensions (mm): total length 11.5; carapace length 4.6, breadth 3.54, height 1.6; abdomen length 7.2; eyes, anterior row 2.4, middle row 2.38, posterior row 2.48; quadrangle length 1.8 (39% of carapace length). *Ratios*: AM:AL:PM:PL::18:9:7:9; AL-PM-P-L::9-13; AM:CL::18:ca. 3.

VARIATION. Male total length varies from 6.6 to 10.2 mm, carapace length 3.4–4.6 mm, 10 specimens; female total length 9.4–13.0 mm, carapace length 4.0–5.5 mm, 10 specimens.

In males the eye region and carapace margins are sometimes heavily tinged black, the development of the retrolateral tibial apophysis also varies, but not to the extent of raising doubts in respect of identification. In females the epigynes show wide differences in appearance and are often plugged; figure 4D shows the kind of epigyne most frequently encountered, other forms are not uncommon.

DISTRIBUTION. Angola; Cameroon; Ivory Coast; Kenya; North Yemen; Rwanda; São Thomé; Uganda; Zaire.

MATERIAL EXAMINED. **Angola:** Cuito, Luimbale, under eucalyptus bark, 1♀, 9.ix.1949, *A. de Barros Machado*, Ang. 1820.3. **Cameroon:** River Ja, 1♀, *G. L. Bates*, purchased off Rosenburg, (BMNH); Edea, 1♂, [holotype of *H. camerunensis*] Roewer coll., II/9742/819 (FS, Frankfurt am Main). **Ivory Coast:** environs of Kotiessou, R. Bandama, 1♂, 1♀, 19–20.iv.1952, *J. Jezequel*, RR.28, (MNHN, Paris). **Kenya:** *J. & F. Murphy*: Kakamega Forest, 1♀, 12.viii.1972; Nairobi, Muthaiga golf course, on gum trees, 3♀♀, ix.1972; Kitale, on banana plant, 1♂, 22.vii.1974; Lake Hannington, southern end, from tree, 1♀, 2.viii.1974, (Murphy, private coll.). **North Yemen:** Wadi Suque, under peeling bark of banana tree, 1400 m, 1♀, v.1978, *H. Haig-Thomas*, (BMNH). **Rwanda:** Butare, P. Nyaluqaka: 1♂, 1♀, vi–vii.1971, MT. 140.713. 140.689; 2♂♂, II–III.1971, MT. 139.090; 1♀, vi. 1971, MT. 139.162; Butare, R. Kiss, vi.1971, 1♀, MT. 141.196. 1♀, MT. 141.191; Environs Lake Ihema, R. Kiss, 14–18.vii.1969, 2♀♀, MT. 136.316, 1♂, MT. 136.299. (MRAC, Tervuren). **São Thomé:** Ribeira Palma, lectotype ♀, *L. Fea*, (MNHN, Paris, 23125). **Uganda:** Entebbe, 2♂♂, *E. Degen*, (BMNH. 1906.3.28.58–360, part). **Zaire:** Poko, [holotype ♂ of *H. vidua*, (AMNH, New York)]; Kivu, Irangi, 2♀♀, vi.1969, *S. Orts*, MT. 136.166; Tshuapa, Boende, 1♀, x.1969, *J. Hauwaerts*, MT. 136.145; Flandria, 1♀, *R. P. Hulstaert*, MT. 12056; Kutshuuree, iii.1938, 1♀, *J. Ghesquière*, MT. 1346, (MRAC, Tervuren).

NOTE. Dyals description of *H. vidua* (Dyal, 1935) does not appear to fit this species, in particular 'First pair of legs are thick, and reddish brown, patellae are longer than is usually the case in spiders, tibiae are short and swollen and tarsi are short and slender'. The record from Pakistan has therefore not been included in the distribution list.

Holcolaetis zuluensis Lawrence

(Figs 6, 16C)

Holcolaetis zuluensis Lawrence, 1937: 255. ♀ LECTOTYPE, 2♀♀ PARALECTOTYPES (here designated)

South Africa (NM. Pietermaritzburg) [examined]. Roewer, 1954: 937; 1965: 28. Bonnet, 1957: 2223.

Prószyński, 1971: 418. Clark, 1974: 16. Cutler, 1976: 132.

[*H. xerampelina*: Lessert, 1925a: 432, 433; 1925b: 342; 1927: 427. Roewer, 1965: 24. Misidentification].

REMARKS. The majority of references to *H. xerampelina* Simon almost certainly refer to *H. zuluensis* Lawrence, see remarks p. 254.

DIAGNOSIS. Close to *H. vellerea*, but easily separated by the sinuous tip of the functional conductor and presence of flanges on the palpal retrolateral tibial apophyses in males (Fig. 6A). Females are distinguished by the presence of dark patches anterior to the rounded depressions surrounding the copulatory openings (Figs 6E–G).

FEMALE LECTOTYPE, in good condition. *Carapace*: profile typical of genus; dark reddish brown with blackened iridescent eye region and a broad pale orange-brown thoracic band tapering towards posterior margin; generally clothed in greyish hairs with whitish ones in eye region and thoracic band; also, on margins and submargins thin bands of white hairs, the latter contiguous with and becoming broader towards clypeus. *Eyes*: laterals with black surrounds; fringed by whitish and golden hairs. *Clypeus*: densely clothed in long buff hairs. *Chelicerae*: dark reddish orange, basal part of facies clothed in buff hairs overlaid by clypeal setae; promargin with four teeth, retromargin with eight (six to nine in other specimens). *Maxillae*: dark reddish orange with pale yellow inner distal margins. *Labium*: dark reddish orange. *Sternum*: orange-brown with darker margins that are wider and slightly more conspicuous opposite anterior coxae; clothed in

scattered fine brown hairs with whitish ones on margins. *Coxae*: first pair dark reddish orange, rest orange-brown. *Abdomen*: dorsum yellow-brown lightly tinged black, clothed in dark amber hairs with broad yellow-brown dentate band thinly clothed in pale amber hairs and scattered bristles; pustuliform field obscure; venter pale yellowish with vague longitudinal grey bands and four rows of minute spots; spinnerets pale orange-brown lightly tinged black. *Legs*: legs I dark orange-brown suffused black with paler tarsi and metatarsi, fringed ventrally with brownish hairs; legs II as I, but paler with sparser fringes; other legs orange-brown with vague blackish annuli; also, on all legs scattered transversely set patches of white hairs. Spination of legs I: femora d 0-1-9, p 0-1-1. *Palps*: yellow-brown to orange-brown distally with sooty annuli on tarsi. *Epigyne* (Fig. 6G): note inner lining of the introductory ducts appears to be displaced in lactic acid preparations (Figs 6C, D; 16C).

Dimensions (mm): total length 12.5; carapace length 4.96, breadth 3.92, height 1.84; abdomen length 7.36; eyes, anterior row 2.76, middle row 2.68, posterior row 2.76; quadrangle length 1.96 (39% of carapace length). *Ratios*: AM : AL : PM : PL :: 20 : 11 : 7 : 10.5; AL-PM-PL :: 12-15; AM : CL :: 20 : ca.3.

MALE from Pietermaritzburg, in good condition. *Carapace*: similar to female, but darker—brownish black with broad dark reddish thoracic band; clothed in black and grey hairs with golden ones in and around eye region and whitish ones on thoracic band; marginal bands as in female. *Eyes*: fringed by golden and brown hairs. *Clypeus*: black haired. *Chelicerae*: blackish red with scattered fine black hairs; promargin with five teeth, retromargin with seven. *Maxillae and labium*: reddish black the former with light yellowish inner distal margins. *Sternum*: dark orange-brown with darker margins; clothed in scattered black and marginal white hairs. *Coxae*: orange-brown first pair darkest. *Abdomen*: densely clothed in black hairs with broad central band comprised of creamy yellow hairs; pustuliform field relatively conspicuous; venter brownish black, clothed in short black hairs with vague longitudinal whitish bands laterally. *Legs*: long and slender in respect of female and also generally hirsute; legs I brown-black with dense black fringes and patches of recumbent white hairs on prolateral surface of patellae and basal prolateral face of metatarsi; legs II with orange-brown tarsi, other segments brown-black with vague paler markings, generally clothed in long black hairs forming dense fringes on lower retrolateral face of femora and patellae and venter of tibiae; also present usual scattered patches of recumbent white hairs especially on patellae and femora; other legs similar, but with less conspicuous fringes and pale metatarsi becoming blackish distally. Spination of legs I: femora d 0-6-2. *Palp*: (Fig. 6A, B).

Dimensions (mm): total length 11.2; carapace length 5.68, breadth 4.16, height 2.16; abdomen length 5.68; eyes, anterior row 3.02, middle row 2.88, posterior row 2.92; quadrangle length 2.24 (39% of carapace length). *Ratios*: AM : AL : PM : PL :: 21.5 : 12 : 8 : 11; AL-PM-PL :: 13-17; AM : CL :: 21.5 : ca. 5.

VARIATION. Male total length varies from 8.7 to 11.2 mm, carapace length 4.22-5.68 mm, five specimens; female total length 9.36-15.2 mm, carapace length 4.04-6.16 mm, 10 specimens.

Variation in the appearance of the epigyne is clearly evident from the type series (Fig. 6E-G).

DISTRIBUTION. South Africa; Tanzania.

MATERIAL EXAMINED. **South Africa**: Natal, no other data: 5♀♀, 2 juveniles, *Ch. Martin*, (MNHN, Paris. 20189); 3♀♀, (MCZ, Harvard); 1♀, (Milwaukee Museum, Milwaukee); Natal: Durban, 2♂♂, *G. P. Staunton*, (BMNH); 3♀♀, *J. F. Quekett*, (MCZ, Harvard); 1♂, 1♀, *J. F. Quekett*, (MCZ, Harvard); Otobotini, 1♀, vii.1938, (NM, Pietermaritzburg); Pietermaritzburg, 1♂, 1917, *C. Akerman*, (NM, Pietermaritzburg, 2430); Zululand, Kosi Bay, lectotype ♀, paralectotypes 2♀♀, vii.1936 (NM, Pietermaritzburg, 140); Willow Fountain, Pietermaritzburg, iv.1958, 1♂, (NM, Pietermaritzburg, 6987); Transvaal, Kruger N. P., Parfuri, 2♀♀, *H. Braak*, (BMNH). **Tanzania**: Ngare Nanyuki 1♂, 1♀, *Y. Siosted*, (NR, Stockholm).

Holcolaetis albobarbata Simon

(Figs 7, 8, 16D)

Holcolaetis albobarbata Simon, 1909 (1910): 79. LECTOTYPE ♀, PARALECTOTYPE ♀ (here designated) Angola, (MNHN, Paris) [examined]; [*Holcolaetis*, lapsus for *Holcolaetis*].

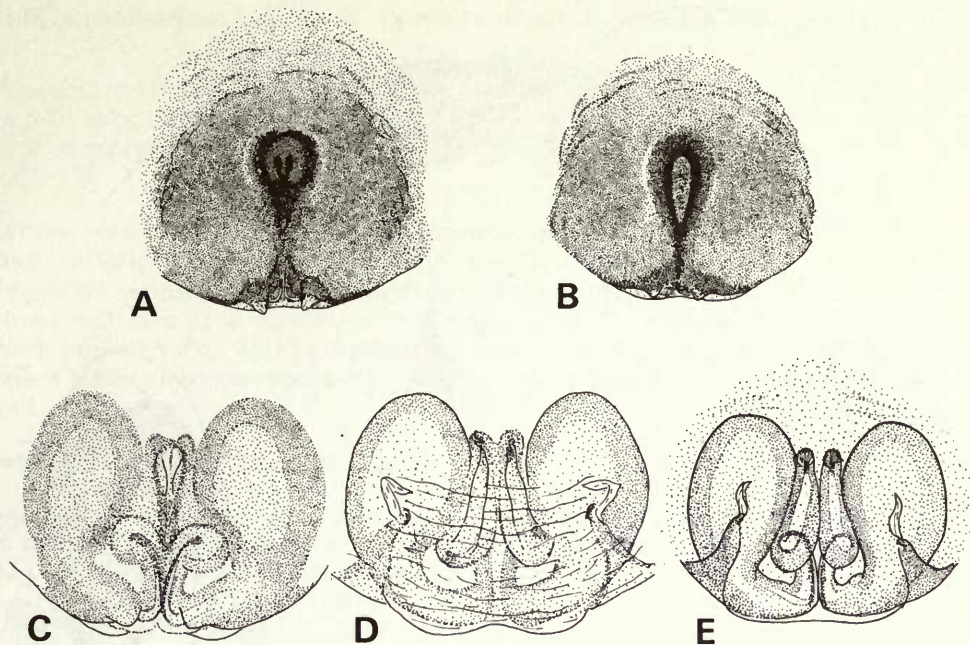


Fig. 7 *Holcolaetis albobarbata* Simon, ♀: A, lectotype epigyne; B, paralectotype epigyne; C-E, paralectotype vulva: C, outer view, connective tissue *in situ*; D, inner view, connective tissue *in situ*; E, inner view, connective tissue removed.

Holcolaetis albobarbata: Lessert, 1925a: 434. Roewer, 1954: 937; 1965: 25. Bonnet, 1957: 2222. Prószyński, 1971: 417. Clark, 1974: 16.

[*Holcolaethis strandi*: Caporiacco, 1941: 135, misidentification].

REMARKS. The original description of *H. strandi* Caporiacco was based on a juvenile and as a consequence it is treated here as a species *incertae sedis*. A subsequent description (Caporiacco, 1941) based on an adult female, which has been re-examined, is clearly conspecific with *H. albobarbata*.

Roewer (1965) figured the epigyne of both *H. strandi* and *H. albobarbata*, of these, his figure of *strandii* is a poor copy of Caporiacco's original, whereas the *albarbata* [*sic*] figure does not agree with any known species of *Holcolaetis*. Clark, in correspondence, reached the same conclusion as the present author, namely that Roewer's salticid studies are crude and unreliable.

DIAGNOSIS. Similar to *H. clarki*, but separated by the absence of well developed flanges on the palpal retrolateral tibial apophysis in males (Fig. 8B,F) and by the more or less ovate depression surrounding the copulatory openings in females (Fig. 7A,B).

FEMALE LECTOTYPE, in poor condition. *Carapace*: profile typical of genus; dark reddish with vague broad dull orange band on thoracic part; irregularly clothed in whitish pubescence (rubbed). *Eyes*: laterals with black surrounds; fringed by whitish hairs. *Clypeus*: densely white haired. *Chelicerae*: dark reddish with short white hairs basally and scattered long pale golden ones elsewhere; promargin with six teeth, retromargin with seven. *Maxillae and labium*: reddish orange with inner distal margins of maxillae and labial tip whitish yellow. *Sternum*: pale yellowish orange with darker margins; thinly clothed in fine pale yellowish hairs. *Coxae*: first pair light reddish orange, others yellowish orange. *Abdomen*: damaged and badly rubbed; greyish white with patches of whitish and amber mottling clothed in amber and light golden hairs, basic markings characteristic of genus. *Legs*: legs I dark reddish orange with fringe of amber hairs on venter of tibiae and patellae; other legs generally pale yellowish with dark orange markings forming vague annuli on tibiae III-IV and metatarsi IV. Spination of legs I: femora d 0-2-2, p 0-1-2.

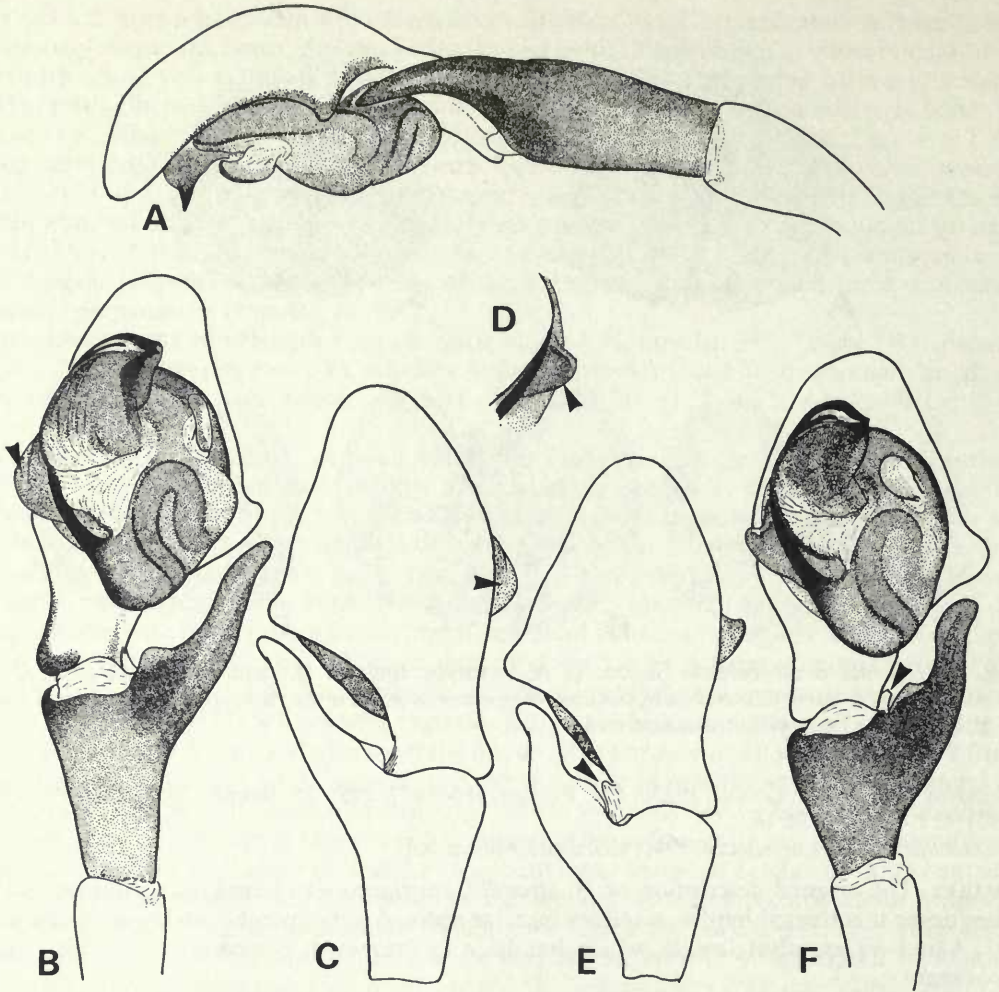


Fig. 8 *Holcolaetis albobarbata* Simon, ♂: A-C, left palp of Cameroon specimen; A, retrolateral view; B, ventral view; C, dorsal view—cymbial spur lacking. D-F, palps of Ugandan specimen: D, tegular flange of right palp, ventral view; E, left palp, dorsal view—cymbial spur present, arrowed; F, left palp, ventral view, cymbial spur, arrowed.

Palp: femora and patellae pale yellowish orange, remaining segments dark reddish; clothed in white and golden hairs. *Epigyne* (Fig. 7A).

Dimensions (mm): total length ca. 14.0; carapace length 5.28, breadth 3.84, height 2.0; abdomen length ca. 8.8; eyes, anterior row 2.9, middle row 2.88, posterior row 2.96; quadrangle length 2.08 (39% of carapace length). *Ratios*: AM : AL : PM : PL :: 21.5 : 12 : 8 : 12; AL-PM-PL :: 14-18; AM : CI :: 21.5 : ca.4.5.

MALE from Cameroon, in fair condition. *Carapace*: profile typical of genus; dark orange-brown tinged black especially in eye region; rubbed. *Eyes*: laterals with black surrounds. *Clypeus*: clothed in pale grey/brown hairs. *Chelicerae*: orange-brown faintly tinged black; rubbed; pro-marginal with six teeth, retromarginal with nine. *Maxillae*: orange-brown with whitish yellow inner margins. *Labium*: dark orange-brown. *Sternum*: yellow-brown with darker margins. *Coxae*: first pair orange-brown, rest paler. *Abdomen*: rubbed; pale yellow lightly mottled black on sides, basic markings typical of genus; spinnerets yellow-brown tinged black. *Legs*: with pale golden fringes on venter of patellae and tibiae of legs I; generally yellow-brown with apices of metatarsi

blackish, particularly on legs III–IV. Spination of legs I: femora d 0–2–3, p 0–2–2. *Palp* (Fig. 8A–C).

Dimensions (mm): total length 10.24; carapace length 4.44, breadth 3.12, height 1.68; abdomen length 5.76; eyes, anterior row 2.52, middle row 2.44, posterior row 2.48; quadrangle length 1.9 (42% of carapace length). *Ratios*: AM : AL : PM : PL :: 20 : 10 : 7 : 10; AL–PM–PL :: 11–14.5; AM : CL :: 20 : 2.

VARIATION. Males vary from 9.84 to 10.8 mm total length, 4.16–4.56 mm carapace length, three specimens; female total length 12.5–14.0 mm, carapace length 4.88–5.02 mm, three specimens.

In males the tegular flange is sometimes damaged (Fig. 8F) the profile of the retrolateral tibial apophysis and functional conductor is variable; also, the peg-like spur on the base of the cymbium (arrowed, Fig. 8E,F) is apparently lacking in some palps. In females the margins of the orifice leading into the copulatory openings may be ill-defined and obscured by detritus or plugged.

DISTRIBUTION. Angola; Cameroon; Uganda; Zaire.

MATERIAL EXAMINED. **Angola**: Landana, lectotype ♀, paralectotype ♀, (MNHN, Paris. 20206). **Cameroon**: Benito River, 1♂, *G. L. Bates*, (BMNH. 1898.5.5.126–137 part); Kribi, *G. L. Bates*, (BMNH. 1907.6.27.1–82 part). **Uganda**: *G. O. Evans*, Ruwenzori Expedition, 1♂, beating vegetation, chiefly grassland on margin of dense forest, 10 miles NNE Bundibugyo, 26.viii.1952, (BMNH). **Zaire**: Kisantu, 1♀, *P. Vanderyst*, 1927, MT. 12059 (MRAC, Tervuren).

NOTE. The male described above probably belongs here, but this should be confirmed since there is little to choose between the male specimens listed above and the males assigned to *H. clarki* sp.n. There is an overlap in their distribution and they may have been mismatched.

Holcolaetis clarki sp. n.

(Figs 9, 10, 16E)

DIAGNOSIS. Close to *H. albobarbata*, but separated by the presence of well-developed flanges on the retrolateral tibial apophysis in males (Fig. 10A, D) and by rounded depressions surrounding the copulatory openings in females (Fig. 9C, D).

FEMALE HOLOTYPE, in good condition. *Carapace* (Fig. 9A, B): chestnut brown tinged black in eye region with irregular light orange-brown margins and central band on thoracic part; eye region clothed in greyish and dull amber hairs with whitish grey ones on thoracic band and dark brownish ones thinly interspersed with white hairs on the sides, the brown hairs grading to black adjacent to marginal bands which are clothed in white hairs. *Eyes*: laterals with black surrounds; fringed in light brownish and dull amber hairs with white ones between anterior medians and on lower rims of anterior laterals. *Clypeus*: clothed in some black and amber hairs with white ones in lower space between anterior median eyes and below anterior laterals—the origin of the white marginal bands; also, a few long white scattered hairs on lower margin. *Chelicerae*: orange-brown lightly tinged black; shiny; clothed in short white and black hairs basally with long fine brownish ones distally; teeth not examined. *Maxillae and labium*: orange-brown with inner distal margins of maxillae and labial tip whitish yellow. *Sternum* (Fig. 10E): light yellow-brown with darker margins; shiny; thinly clothed in whitish and pale brown hairs. *Coxae*: pale yellow-brown. *Abdomen*: generally pale yellow with broad dorsal dentate band clothed in pale brownish lanceolate hairs with dark brownish and black hairs laterally, the latter forming flecks on upper sides; venter flecked and spotted with brown-black hairs; also, from epigyne to spinnerets two vague and rather scanty bands of greyish lanceolate hairs; spinnerets dark yellow-brown tinged with some black. *Palps*: femora and patellae whitish yellow, tibiae and tarsi light to dark orange-brown; clothed in long white hairs. *Legs*: legs I femora yellow-brown with sooty markings, patellae and tibiae brown with lighter patches, metatarsi and tarsi light orange-brown with

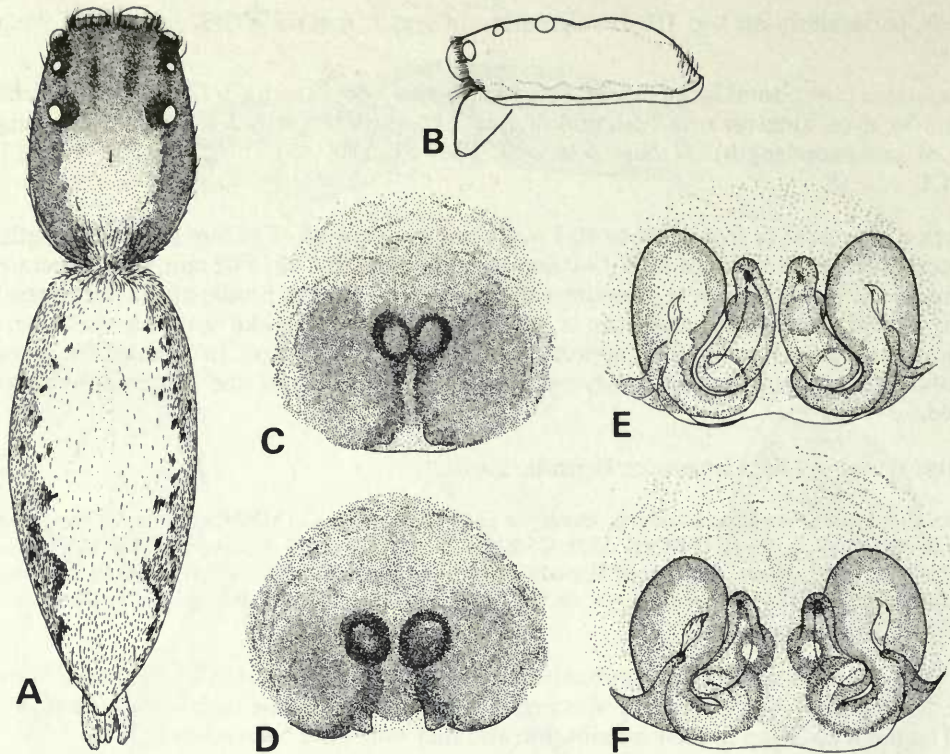


Fig. 9 *Holcolaetis clarki* sp. n., holotype ♀: A, dorsal view; B, carapace, lateral view; C, epigyne. D, epigyne, paratype from Cameroon; E, vulva, inner view—Cameroon paratype; F, vulva, inner view—Ghanain paratype.

apices of former segment sooty; generally clothed in blackish hairs forming scanty ventral fringes on tibiae and patellae; also, scattered white hairs especially on femora forming sparse recumbent tufts; other legs generally light yellow-brown with blackish markings. Spination of legs I: femora d 0-2-3, p 0-1-1. *Epigyne* (Fig. 9C).

Dimensions (mm): total length 12.3; carapace length 4.4, breadth 3.08, height 1.64; abdomen length 7.84; eyes, anterior row 2.44, middle row 2.4, posterior row 2.48; quadrangle length 1.92 (43% of carapace length). *Ratios*: AM : AL : PM : PL :: 19 : 10 : 7 : 11; AL-PM-PL :: 11-14; AM : CL :: 19 : 5.

MALE PARATYPE, in poor condition. *Carapace*: profile typical of genus; dark orange-brown tinged black in eye region with vague paler band on thoracic part and indistinct light marginal bands; largely rubbed, otherwise clothed in grey/pale amber hairs with white ones on margins. *Eyes*: laterals with black surrounds; fringed by whitish hairs with dull amber ones around lower rims of anterior row. *Chelicerae*: dark brownish orange lightly tinged black with scattering of dark amber hairs basally; otherwise rubbed; promargin with seven teeth, retromargin with eight. *Clypeus*: clothed in amber hairs. *Maxillae*: orange-brown with paler distal margins. *Labium*: orange-brown tinged black. *Sternum* (Fig. 10F): pale yellow-brown with darker margins; shiny. *Coxae*: pale yellow-brown; shiny. *Abdomen*: rubbed; a broad pale yellow dentate band dorsally with blackish mottling on sides; ventrally a vague broad longitudinal grey band containing two darker lines. *Legs*: legs I-II orange-brown tinged black, first pair with remnants of ventral amber fringes; other legs yellow-brown with blackish markings. Spination of legs I: femora p 0-1-1; d 0-2-2. *Palp* (Fig. 10A-C).

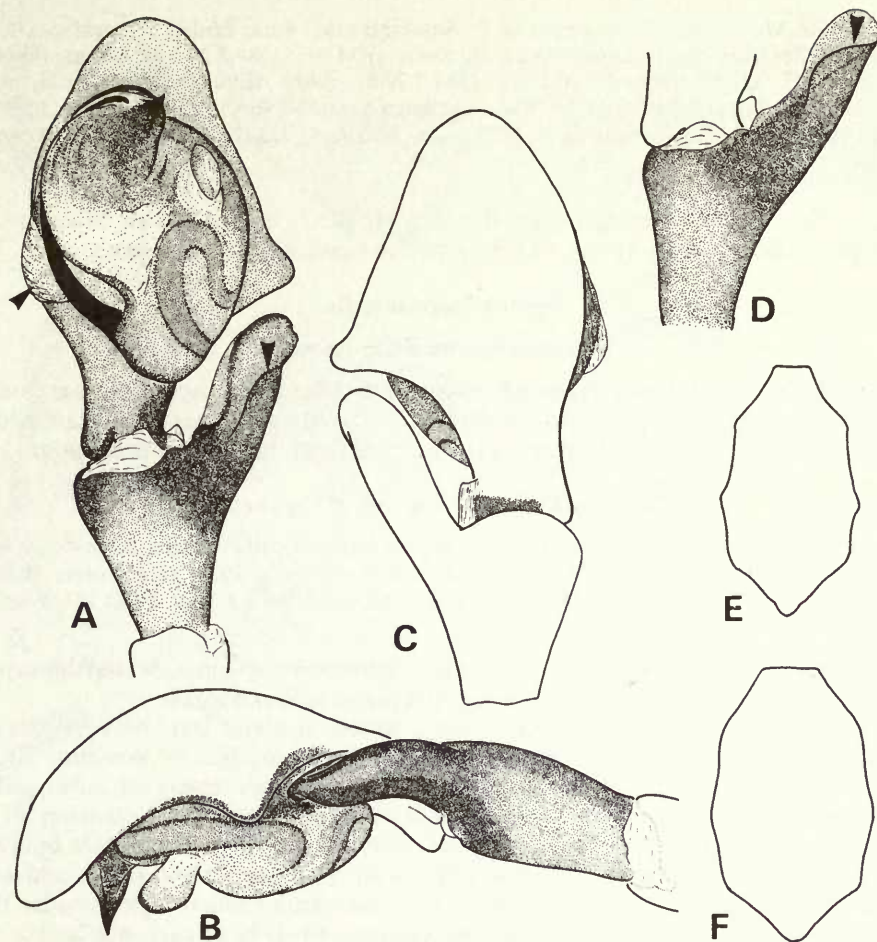


Fig. 10. *Holcolaetis clarki* sp. n., paratype ♂ from Cameroon 'no other data': A, palp, ventral view; B, palp, retrolateral view; C, palp, dorsal view; F, sternum. D, ♂ from Cameroon, Kribi River, palpal tibia ventral view. E, holotype ♀, sternum.

Dimensions (mm); total length 7.44; carapace length 3.24, breadth 2.24, height 1.24; abdomen length 4.24; eyes, anterior row 1.9, middle row 1.88, posterior row 1.94; quadrangle length 1.4 (43% of carapace length). *Ratios*: AM : AL : PM : PL :: 15.5 : 8.5 : 5 : 8; AL-PM-PL :: 9-11; AM : CL :: 15.5 : 3.

VARIATION. Another male measures 8.8 mm total length, 4.32 mm carapace length; females vary from 11.3-13.6 mm total length, 3.9-5.36 mm carapace length, seven specimens.

Females that have been preserved for longer periods than the specimen described above are somewhat redder in colour and the patterns are less distinctive. The vulvae also vary in appearance, due probably to differences in the size and disposition of the introductory ducts. In one female from Angola the clypeus is clothed in white hairs. In males the palp of a relatively large specimen has more pronounced flanges on the retrolateral tibial apophysis (Fig. 10D), possibly an allometric growth character.

DISTRIBUTION. Angola; Cameroon; Ghana; Zaire.

MATERIAL EXAMINED. **Angola:** environs of Dundo, forest zone, R. Luachimo, under bark, ♀ paratype, 6.vii.1948, *A. de Barros Machado*, Ang. 829.3. **Cameroon:** Edea, ♀ paratype, Roewer Coll. RII/9270/591,

(FS, Frankfurt am Main); 1♂, 1♀, paratypes *G. L. Bates*, no other data; Efulen, ♀, paratype, *G. L. Bates*, Kribi River, 25 miles from coast, ♂, paratype, *G. L. Bates*, (BMNH. 1984.2.24.1.4). **Ghana:** Bibianaba, 1♀, paratype, 29.x.1911, *H. G. Spurrell*, (BMNH. 1984.2.24.5). **Zaire:** Kivu, forêt de Visiki, holotype ♀, 27.xii.1971, *R. P. M. Lejeune*, MT. 140905; Kivu, confluent Semliki-Djuma, ♀ paratype, *R. P. M. Lejeune*, MT. 135.625; Mongbwalu, 2♀♀ paratypes, vii.1973, *Mme Scheitz*, MT. 1575–1578, (MRAC, Tervuren).

REMARK. See note. p. 260.

ETYMOLOGY. This species is named after the late Mr D. J. Clark, British Museum (Natural History) who had clearly solved many of the problems associated with this genus.

Species incertae sedis

Holcolaetis strandi Caporiacco

This species was described from a juvenile female and to judge from Caporiacco's measurements, the specimen was several moults from adulthood. The holotype has not been examined and the species cannot at the present time be positively identified from the original description.

Genus *SONOITA* Peckham & Peckham

Sonoita Peckham & Peckham, 1903: 183. Type species *Sonoita lightfootii* Peckham & Peckham, by original designation and monotypy. Waterhouse, 1912: 277. Petrunkevitch, 1928: 182. Neave, 1940, iv: 224. Roewer, 1954: 937; 1965: 19. Bonnet, 1958: 4019. Prószyński, 1971: 475. Cutler, 1976: 134. Wanless, 1982: 264; 1984a: 138.

DEFINITION. Spiders of medium size, i.e. total length between 4.0–8.0 mm. Sexual dimorphism not marked, only known species with strong ventral fringes on tibiae of legs I.

Carapace: moderately high, longer than broad, widest at about level between coxae II–III; fovea moderately long, sulciform, apex at level of posterior margins of posterior lateral eyes. *Eyes:* with moderately strong lenses set on low tubercles; anteriors closely set, subequally spaced with apices procurved in frontal view; anterior laterals more than half diameter of anterior medians; posterior medians relatively large, positioned closer to and just outside optical axis of anterior laterals; posterior laterals almost as large as anterior laterals and positioned well inside of carapace margins when viewed from above; posterior ocular quadrangle broader than long and wider behind; entire quadrangle occupying between 46–49% of carapace length. *Clypeus:* low. *Chelicerae:* moderately robust; facies more bulbous in females; fang moderately strong and curved; promargin with three to five teeth, retromargin with five or six. *Maxillae:* long and parallel with rounded outer distal margins. *Labium:* slightly longer than broad and about half maxillae length. *Sternum:* elongate scutiform in female, evidently similar in males, but partly obscured by coxae in available specimens. *Coxae:* fourth pair noticeably larger than I–III. *Abdomen:* elongate ovoid, sometimes marked with subcutaneous quanin (?) artifact of preservation; basic pattern, of only unrubbed specimen, comprised of paler longitudinal dorsal band containing chevrons posteriorly and flanked by flecks on either side; pustuliform field comprised of scattered pustuliform organs obscured by setae; spinnerets moderately long, posteriors and anteriors unequally robust, medians shorter and more slender; tracheal system not examined, insufficient material, spiracle presumably an indistinct slit near base of anterior spinnerets; former position of colulus represented by scanty group of setae. *Legs:* moderately long and slender with strong ventral fringes on tibiae and retroventral surface of femoral apices; spines moderately strong and numerous: in male present on metatarsi, tibiae, patellae and femora of all legs, in females similar, but legs I–II with femoral spines only; claws smooth or pectinate; tufts present; scopulae absent.

Epigyne: small and structurally similar to *Holcolaetis*; posterior margin with delicate flanges; copulatory openings somewhat disc-like, but indistinct; introductory ducts broad and looped; glandular appendices not evident; spermathecae apparently subovoid, but precise form uncertain as they blend and appear to fuse with the introductory ducts (Figs 11K, L); fertilisation ducts slender, leaf-like and apparently supported as in *Holcolaetis*.

Male palps: essentially as in *Holcolaetis* except retrolateral tibial apophysis broad and fan-like; expanded palps not examined—insufficient material.

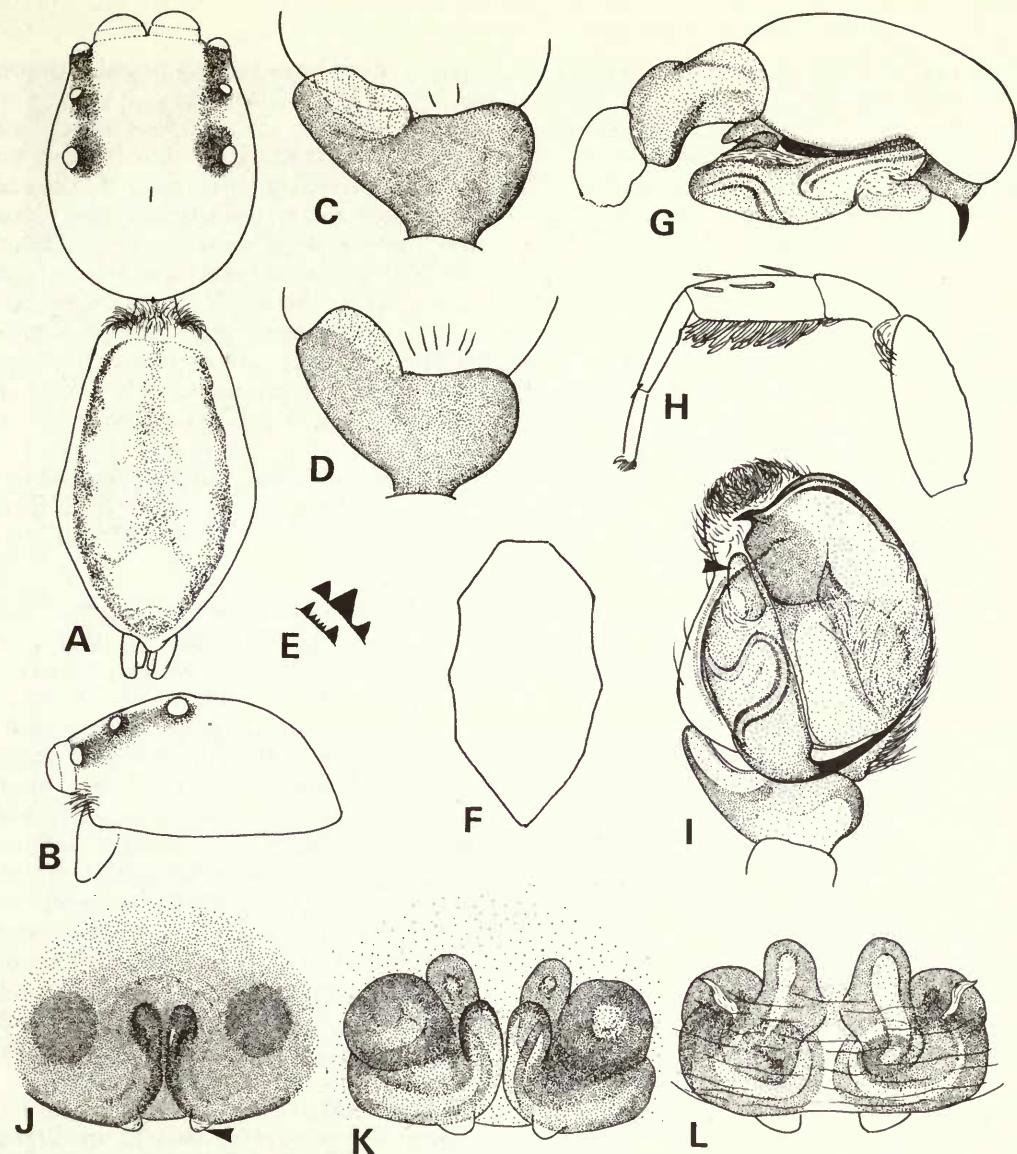


Fig. 11 *Sonoita lightfooti* Peckham & Peckham, holotype ♂: A, dorsal; B, carapace, lateral view; C, palp, dorsal view; D, palp, retrolateral view; E, cheliceral teeth; G, palp, retrolateral view; H, leg I; I, palp, ventral view. ♀ from Ivory Coast: F, sternum; J, epigyne; K, vulva, outer view; L, vulva, inner view.

DIAGNOSIS. From *Holcolaetis* by the moderately high carapace and from all other salticids by the combination of large posterior median eyes, bowl-like median apophysis in males (arrowed, Fig. 11I) and translucent epigynal flanges in females (arrowed, Fig. 11J).

AFFINITIES. See discussion on *Holcolaetis*.

Sonoita lightfooti Peckham & Peckham
(Figs 11, 13, 14, 16F)

Sonoita lightfootii Peckham & Peckham, 1903: 184. Holotype ♂, Cape Colony, (MCZ, Harvard) [examined].
Roewer, 1954: 937; 1965: 20. Cutler, 1976: 134.
S. lightfooti: Bonnet, 1958: 4091. Prószyński, 1971: 75.

DIAGNOSIS. As generic diagnosis.

MALE HOLOTYPE, in poor condition. *Carapace* (Fig. 11A, B): dark brown lightly tinged with some black in eye region; rubbed, except for scattered fine whitish/pale amber hairs on sides. *Eyes*: laterals with black surrounds; fringed by whitish hairs. *Clypeus*: clothed in dirty white hairs. *Chelicerae*: brownish with paler inner distal margins; basally clothed in whitish hairs with scattered amber hairs elsewhere; promargin with three teeth, retromargin with two. *Maxillae and labium*: brownish tinged black with paler tips. *Sternum*: brownish tinged black; shiny. *Coxae*: brownish. *Abdomen*: contents shrunken, original pattern indistinct generally blackish with light brown markings and tuft of amber and whitish hairs anteriorly; spinnerets light brown tinged with some black. *Legs*: moderately long and slender; legs I (Fig. 11H) dark amber tinged black except for tarsi and metatarsi which are yellow-brown; tibiae I with dense ventral fringe of amber spatulate setae; other legs, excluding missing second pair, generally yellow-brown with vague blackish mottling and indistinct annuli on apices of metatarsi; spines moderately strong and numerous. Spination of legs I: metatarsi v 2-0-1, d 1-0-2; tibiae d 3-1-2; patellae p 0-1-0, r 0-1-0; femora d 0-2-3, d 0-2-3, p 0-0-1. *Palp* (Fig. 11C, G).

Dimensions (mm): total length 4.5; carapace length 2.08, breadth 1.56, height 1.08; abdomen length 2.44; eyes, anterior row 1.2, middle row 1.22, posterior row 1.32; quadrangle length 0.96 (46% of carapace length). *Ratios*: AM : AL : PM : PL :: 9 : 5 : 3.5 : 5; AL-PM-PL :: 6-9; AM : CL :: 9 : ??.

FEMALE from Ivory Coast, in fair condition, formerly undescribed. *Carapace*: profile as in male; orange-brown lightly tinged with some black especially in eye region; clothed in rather coarse white hairs with pale golden ones forming vague longitudinal bands in eye area. *Eyes*: laterals with black surrounds; fringed by white hairs with pale golden ones on upper rims of anterior medians. *Clypeus*: covered in long white hairs. *Chelicerae*: orange-brown; shiny; thinly clothed in white and fine pale brown hairs; pro- and retromargin with five teeth. *Maxillae*: pale yellow-brown with whitish inner distal margins. *Labium*: yellow-brown lightly tinged black with whitish tip. *Sternum* (Fig. 11F): light orange-brown suffused black; shiny thinly clothed in coarse white hairs with fine pale hairs centrally. *Coxae*: IV clearly largest; pale yellow-brown; shiny. *Abdomen*: greyish yellow with yellow subcutaneous quanin dorsally; clothed above in white and scattered dark amber hairs forming flecks on sides—basic pattern rather as in *Holcolaetis*; venter pale yellow with broad blackish band containing four rows of pale spots. *Legs*: legs I with strong fringes of grey/black lanceolate hairs on underside of tibiae and retroventral surface of femoral apices; general colouration of tarsi and metatarsi yellow-brown, tibiae, patellae and femora orange-brown tinged black; other legs yellow-brown with blackish markings forming irregular annuli; clothed in scattered white hairs. Spination of legs I: femora p 0-0-1, d 0-2-2. *Palps*: light yellow-brown with sooty markings. *Epigyne* (Figs 11J-L; 16F).

Dimensions (mm); total length ca. 5.6 (bent); carapace length 2.16, breadth 1.64, height 1.12, abdomen length 3.4; eyes, anterior row 1.24, middle row, 1.2, posterior row 1.32; quadrangle length 1.06 (49% of carapace length). *Ratios*: AM : AL : PM : PL :: 9.5 : 5 : 3 : 5; AL-PM-PL :: 7-9; AM : CL :: 9.5 : 3.

VARIATION. Another male measures ca. 4.05 mm total length 1.96 mm carapace length; whereas a damaged female measures ca. 5.5 mm total length, 2.28 mm carapace length.

The abdominal pattern of a second Ivory Coast female differs from that described above in that it lacks conspicuous yellow quanin and as such resembles the holotype male. In males there are differences in the shape of the retrolateral tibial apophyses (Fig. 11C, D) which are not considered to be significant in view of overall similarities in other characters.

DISTRIBUTION. Ivory Coast; South Africa.

MATERIAL EXAMINED. **Ivory Coast**: River Bandama, environs Kotiessou, from a tree *Pilostigma thonningii*, Lamotte coll., PNB 179, 1♂; PNB 146, 2♀♀, PNB 174, 1 juv. (MNHN, Paris). **South Africa**: Cape Colony, holotype ♂, Peckham coll., (MCZ, Harvard).

REMARKS. The pustuliform fields could not be examined properly because of damage and

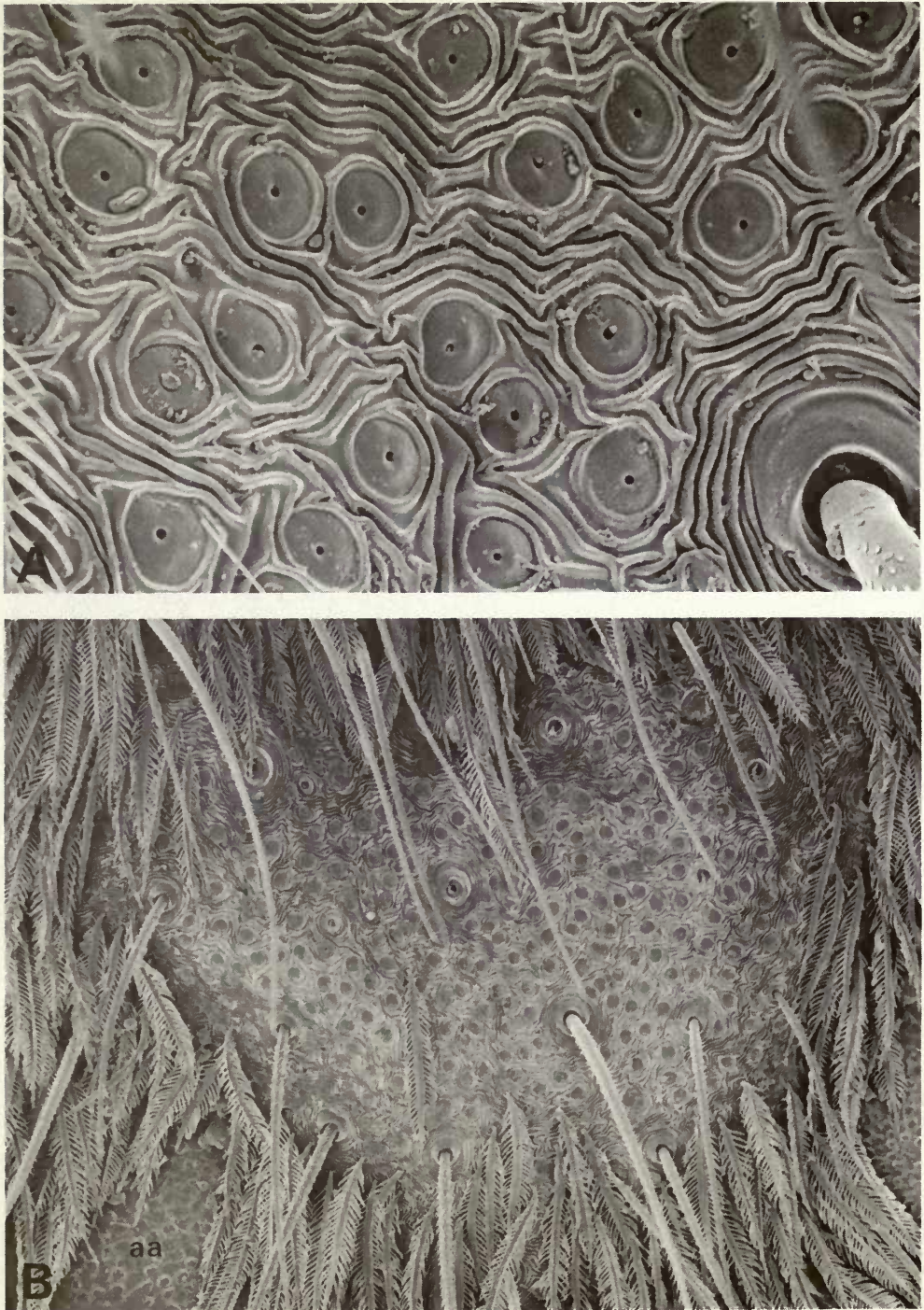


Fig. 12 *Holcolaetis vellerea* Simon, ♀: dorsal surface of abdomen showing pustuliform field: A, $\times 900$;
B, $\times 168$.

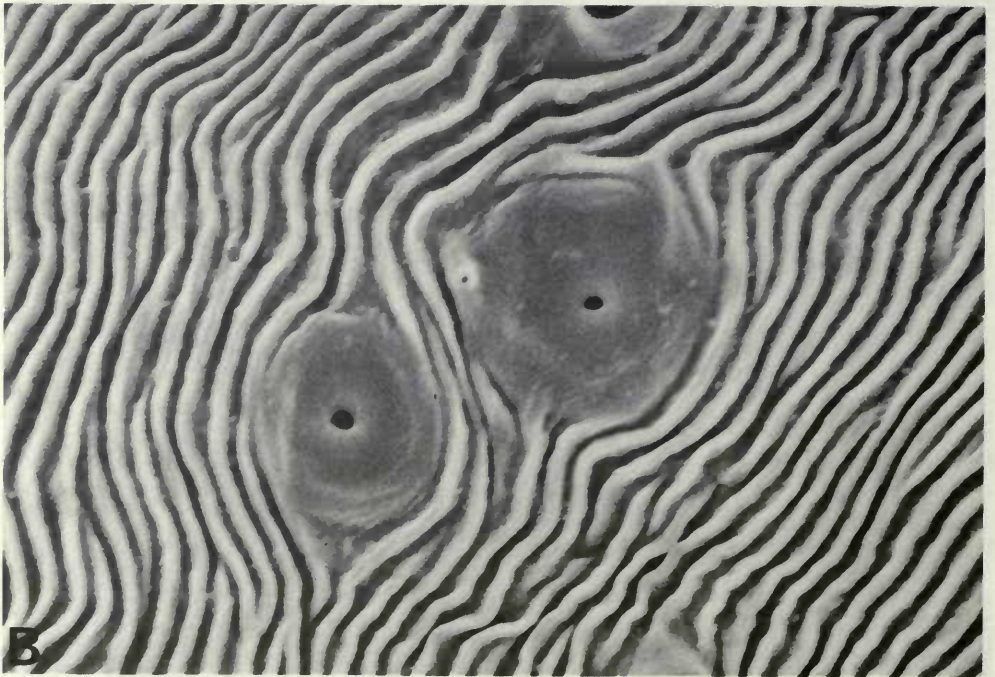
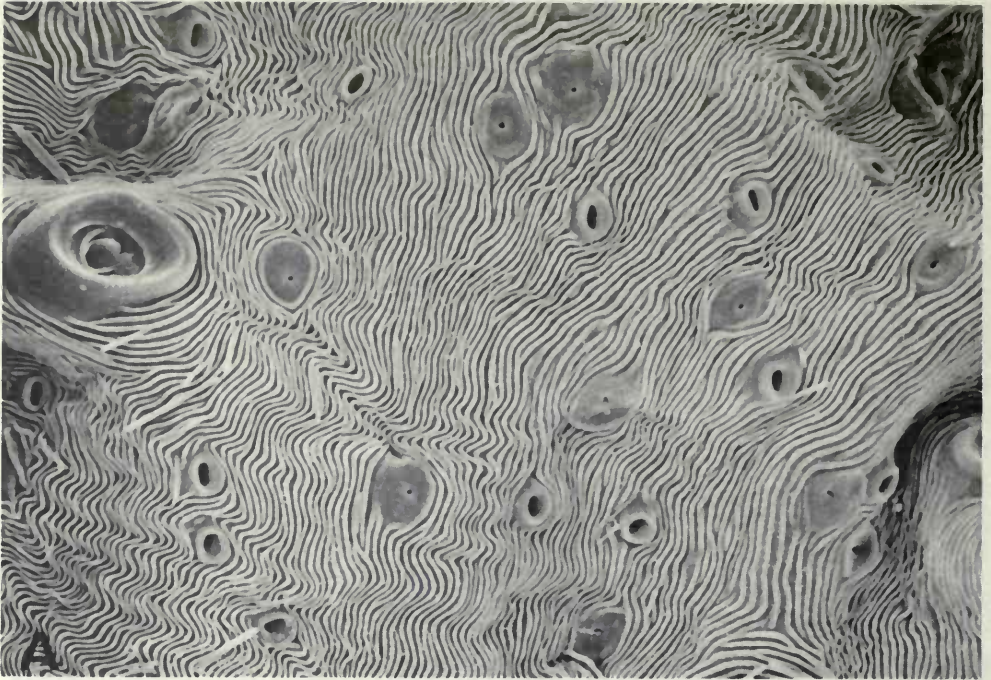


Fig. 13 *Sonoita lightfooti* Peckham & Peckham, subadult ♀ pustuliform organs: A, $\times 1300$; B, $\times 4500$.

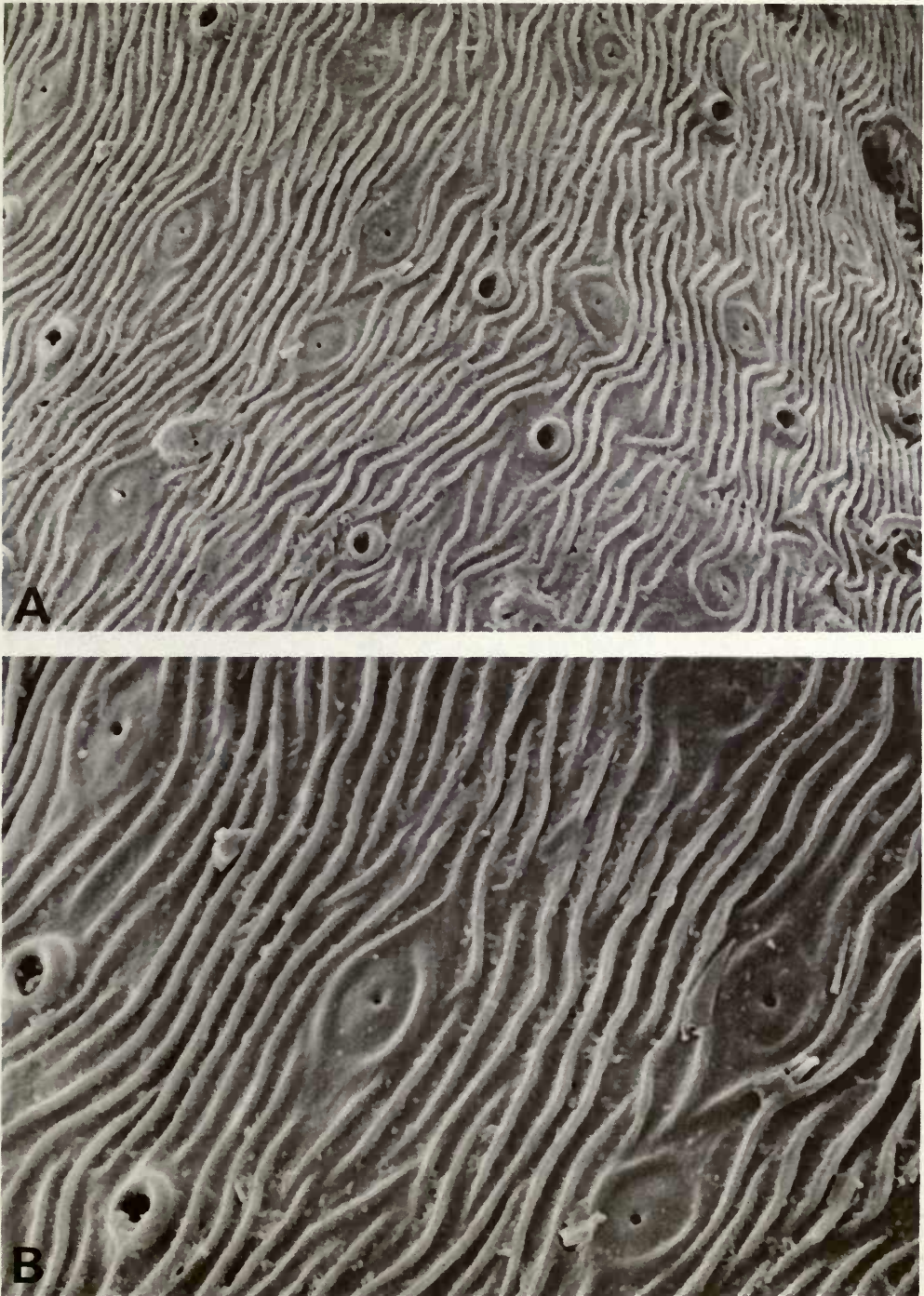


Fig. 14 *Sonoita lightfooti* Peckham & Peckham, ♀ pustuliform organs: A, $\times 1400$; B, $\times 3000$.

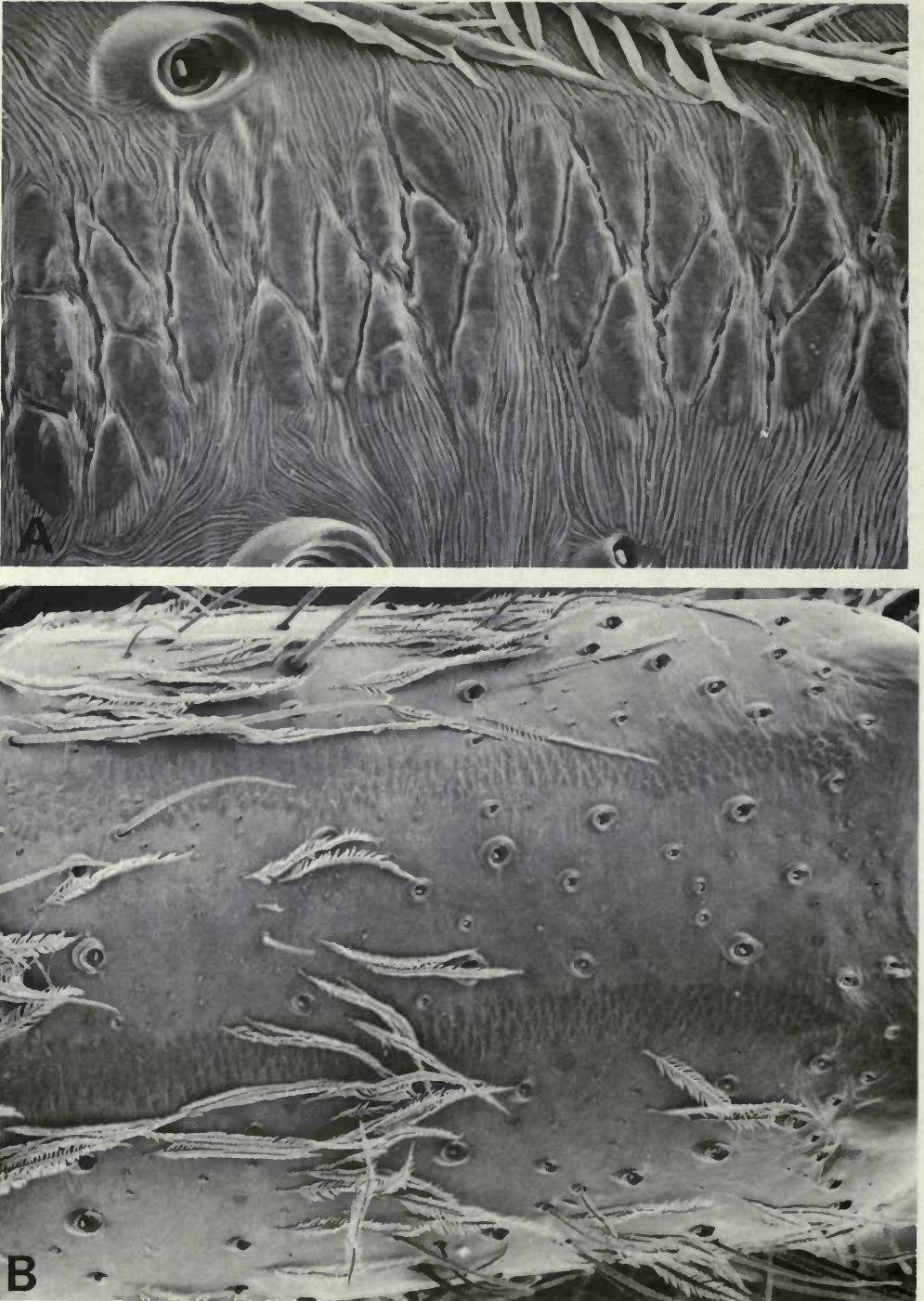


Fig. 15 *Holcolaetis vellerea* Simon, ♀: dorsal surface of tibia I showing hinge lines: A, $\times 1300$; B, $\times 168$.

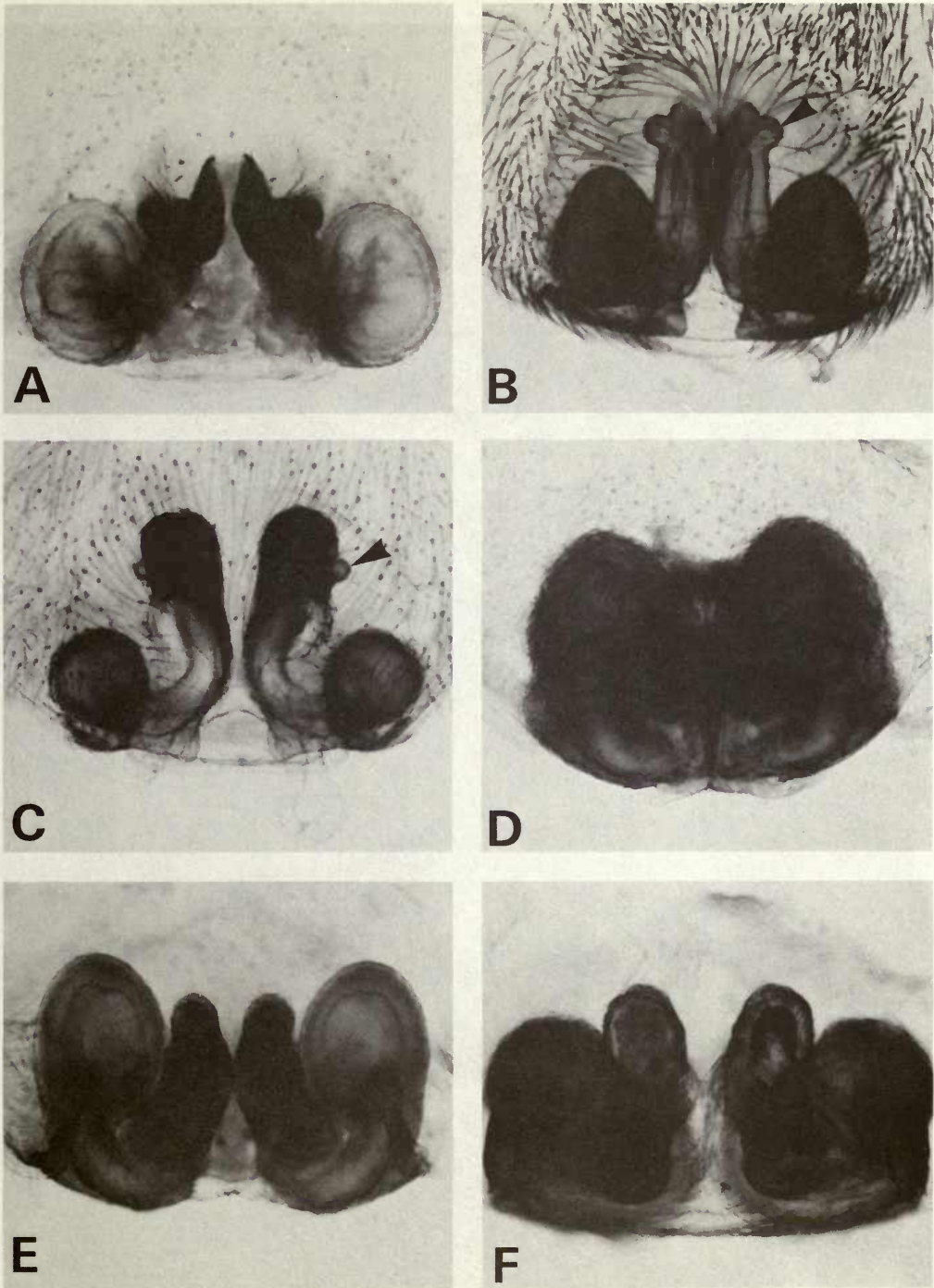


Fig. 16 A, *Holcolaetis xerampelina* Simon, vulva, outer view. B, *H. vellerea* Simon, vulva, outer view; C, *H. zuluensis* Lawrence, vulva, outer view. D, *H. albobarbata* Simon, vulva, outer view. E, *H. clarki* sp. n., vulva, inner view. F, *Sonoita lightfooti* Peckham & Peckham, vulva, inner view.



Fig. 17 *Holcolaetis vellerea* Simon, ♀ from Kenya, notice semirecumbent tufts of white hairs on legs and position of pustuliform field indicated, by an arrow.

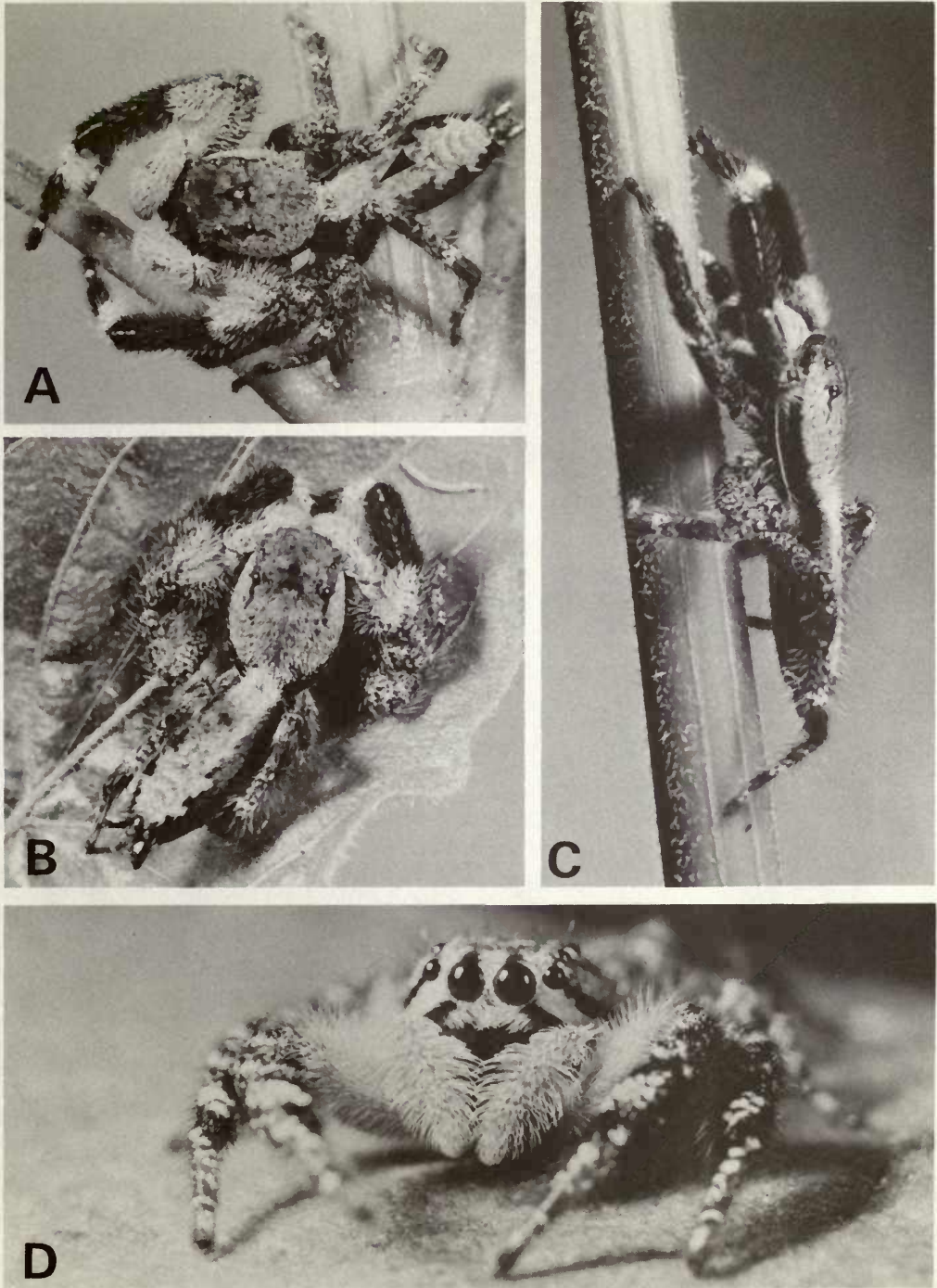


Fig. 18 *Holcolaetis vellerea* Simon, from Kenya: A–C, ♂, pustuliform field indicated by an arrow; D, ♀.

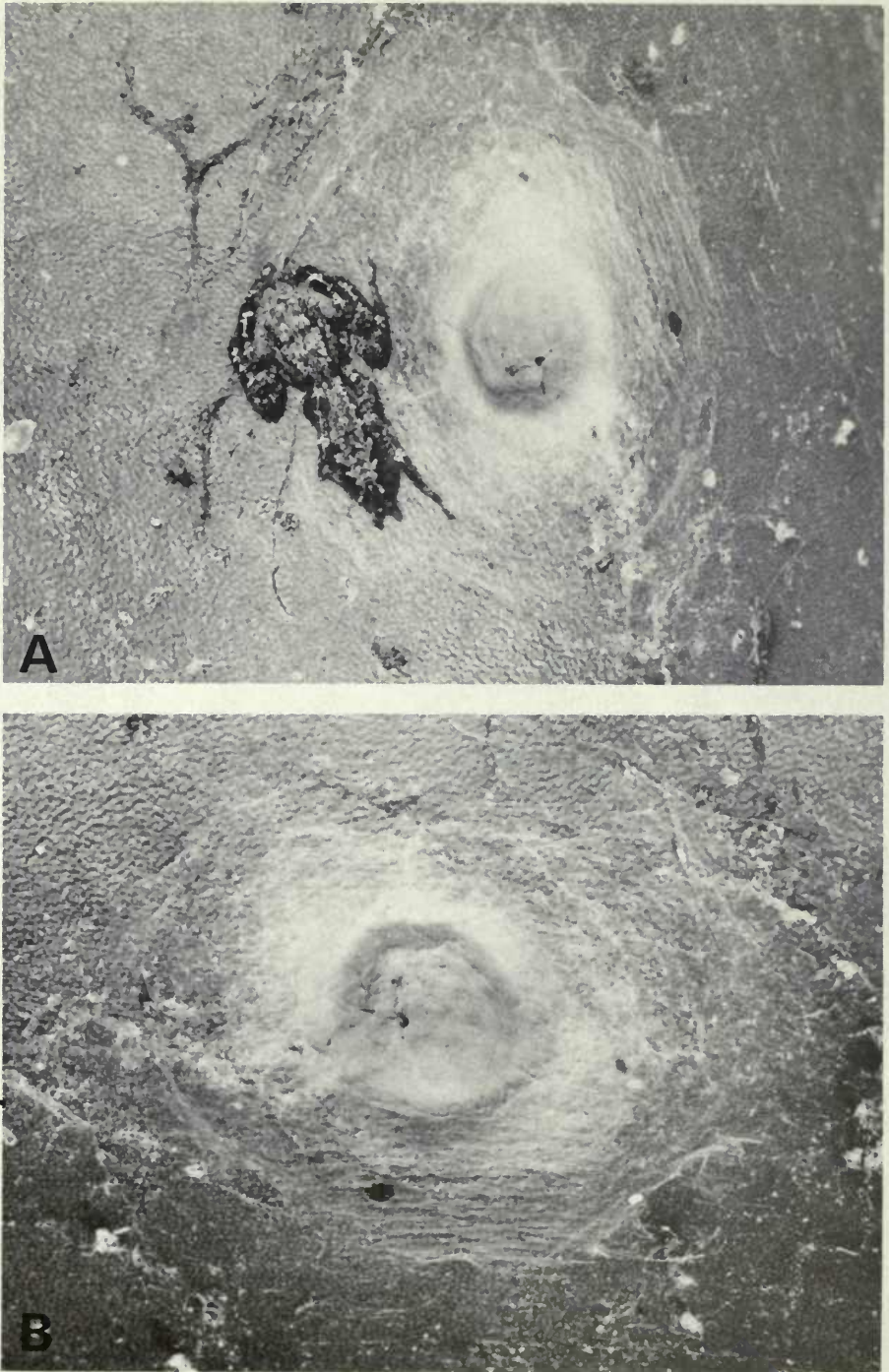


Fig. 19 *Holcolaetis vellerea* Simon, A, ♀ with gnaphosid-like egg-sac; B, egg-sac.

shrinkage in the only available specimens. Provisional observations indicate that the fields are comprised of fewer and more scattered pustuliform organs (Figs 13, 14) and when compared with those of *Holcolaetis*, they are possibly less well developed.

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