

A Revision of the Genus *Hermacha* Simon, 1889 (Mygalomorphae: Entypesidae), in southern Africa with Revalidation of *Hermachola* Hewitt, 1915, and *Brachytheliscus* Pocock, 1902

DUNIESKY RÍOS-TAMAYO,¹ IAN ENGELBRECHT,² AND PABLO A. GOLOBOFF³

ABSTRACT

The southern African species of the mygalomorph spider genus *Hermacha* Simon, 1889, are revised. Eight species are redescribed: *H. brevicauda* Purcell, 1903; *H. caudata* Simon, 1889; *H. evanescens* Purcell, 1903; *H. fulva* Tucker, 1917; *H. lanata* Purcell, 1902; *H. nigrispinosa* Tucker, 1917; *H. sericea* Purcell, 1902; and *H. tuckeri* Raven, 1985. The female of *H. sericea* and the male of *H. evanescens* are described for the first time. Three new species are described: *H. septemtrionalis*, sp. nov., *H. maraisae*, sp. nov., and *H. montana*, sp. nov. On the basis of their genital morphology *H. curvipes* Purcell, 1902, and *H. nigra* Tucker, 1917, are considered incertae sedis. *Pionothele capensis* Zonstein, 2016, was found to be conspecific with *H. brevicauda* and is synonymized. The genera *Brachytheliscus* Pocock, 1902, and *Hermachola* Hewitt, 1915, are revalidated and redescribed. *Hermacha capensis* (Ausserer, 1871) and *H. crudeni* Hewitt, 1913, are transferred to *Hermachola*. *Hermachola crudeni* (Hewitt, 1913), originally described from a female, and *Hermachola grahami* Hewitt, 1915, originally described from a male, were found to be conspecific and synonymized. A new species, *Hermachola lyleae*, sp. nov., is also described. New morphological characters for the diagnoses of these genera and a dichotomous key for all species considered here are provided. Known distributions are mapped and, where available, ecological data are included. With the exception of *H. caudata* and *H. mazoena* Hewitt, 1915, all species are endemic

¹ Unidad Ejecutora Lillo (CONICET–Fundación Miguel Lillo), San Miguel de Tucumán, Argentina.

² South African National Biodiversity Institute, Brummeria, Pretoria, South Africa; South Africa Department of Zoology and Entomology, University of Pretoria, Hatfield, South Africa.

³ Unidad Ejecutora Lillo (CONICET–Fundación Miguel Lillo), San Miguel de Tucumán, Argentina.

to South Africa, but further survey work in neighboring countries is needed. This work substantially improves the taxonomy of this group of spiders and provides a foundation for further investigation of the diversity and relationships of species within the region.

INTRODUCTION

The mygalomorph spider genus *Hermacha* (family Entypesidae) is currently represented in southern Africa by 14 species (World Spider Catalog, 2021). As currently circumscribed, it has been something of a catchall taxon, including a diverse range of species that show significantly differing morphologies, a wide range of body sizes, occupy different habitats and demonstrate varying behaviors (fig. 1). The genus *Hermacha* was originally created for a single species, *H. caudata* Simon, 1889, based on a male specimen from Delagoa Bay, Portuguese East Africa (now Maputo, Mozambique). Simon (1889) included the genus in the family Ctenizidae, which at that time represented a large proportion of mygalomorph spiders outside of the Theraphosidae and Atypidae. Prior to that, Ausserer had described *Brachythele capensis* Ausserer, 1871, from a female specimen from “Cap der guten Hoffnung” (Cape of Good Hope), collected during the Novara Expedition of 1857–1859. Several species were described in these genera and others by various authors over the following decades, including Pocock (1897), Purcell (1902, 1903), Simon (1903a, 1903b), Strand (1907), Hewitt (1913, 1915), and Tucker (1917). Pocock (1902) created *Brachytheliscus* Pocock, 1902, and transferred his earlier described species *Brachythele bicolor* Pocock, 1897, from Durban, into this genus after discovery of the mature male, citing the lack of the tibial spur on leg I as justification. He had assigned this species to the family Dipluridae. Simon (1903a) created the genus *Damarchodes* Simon, 1903, for a single species, *D. purcelli* Simon, 1903, that Tucker (1917) later suggested was likely synonymous with *Hermacha*. Simon (1903b) transferred *Brachythele capensis* Ausserer, 1871, to *Hermacha*. Hewitt (1915) created a new genus, *Hermachola* Hewitt, 1915, for *Hermachola grahami* Hewitt, 1915, on the basis of the bizarre coiled embolus of the male. He also stated *Hermacha* as the senior synonym of Pocock’s *Brachytheliscus*, indicating that the form of the rastellum and cheliceral setae indicated the species’ correct placement in the Ctenizidae (Hewitt, 1915). No further work was conducted after Tucker (1917) for almost 70 years until Raven (1985) presented the first formal cladistic analysis for the Mygalomorphae, synonymized *Damarchodes* and *Hermachola* with *Hermacha*, and transferred *Hermacha* to the Nemesiidae. He cited the presence of strong scopulae on tarsi I–III and the lack of a cuticular spur on the tibia I of males as diagnostic for the genus. Most recently, in a substantive molecular phylogenetic study of the Mygalomorphae, Opatova et al. (2020) found the Nemesiidae to be polyphyletic and transferred the genera *Hermacha*, *Entypesa* Simon, 1902, and *Lepthercus* Purcell, 1902, to a new family, Entypesidae Bond et al., 2020 (Opatova et al., 2020). Notably though, their analysis did not include examples of *Hermacha* or its junior synonyms *Brachytheliscus* and *Hermachola*, and *Hermacha* was included in Entypesidae on the basis of described morphology. More detailed analysis of these relationships is ongoing (Jason Bond, personal commun.).

Some species of the genus *Hermacha* are burrowers, constructing distinctive vertical or Y-shaped burrows with an open, circular burrow entrance. Others make messy silken retreats under rocks. Some species are recorded from the arid Nama Karoo and Succulent Karoo biomes, while others

are limited to the subtropical Ocean Coastal Belt of the east coast. The genus has never been revised and species level relationships have never been assessed. In some mygalomorph communities these spiders can be among the most abundant species, with large numbers of males being recorded from pitfall trap studies of general arthropod diversity (Foord and Dippenaar-Schoeman, 2016), but they can also be rare (Midgely, 2012). A recent conservation assessment based on the IUCN Red List criteria highlighted the shortcomings of our current knowledge of the group with most species qualifying for Data Deficient status (Tilla Raimondo, personal commun., Foord et al., 2020).

The study presented here is the first formal revision of the genus *Hermacha* in southern Africa since the original species descriptions of the late 19th and early 20th centuries. The goals were to: (1) determine the validity of currently described species through morphological analysis of all available type specimens and extensive new material from South African and international institutions; (2) describe any new species discovered; and (3) reevaluate the synonymies of *Brachytheliscus* and *Hermachola* on morphological grounds. Several South American species currently included in the genus *Hermacha* were excluded from this study as they fall outside the study region and their inclusion in the genus is uncertain. *Hermacha mazoena* Hewitt, 1915, and *H. purcelli* (Simon, 1903a) were also excluded as the type material was unavailable for examination. Here the species included in *Hermacha* are *H. caudata*, *H. brevicauda* Purcell, 1903, *H. evanescens* Purcell, 1903, *H. fulva* Tucker, 1917, *H. lanata* Purcell, 1902, *H. nigrispinosa* Tucker, 1917, *H. sericea* Purcell, 1902, *H. tuckeri* Raven, 1985, and three new species, *H. septemtrionalis*, sp. nov., *H. maraisae*, sp. nov., and *H. montana*, sp. nov. *Hermacha curvipes* Purcell, 1902, and *H. nigra* Tucker, 1917, are considered incertae sedis as their genital morphology differs significantly from other *Hermacha* and will be treated in a separate paper. *Pionothele capensis* Zonstein, 2016, was found to be conspecific with *Hermacha brevicauda* Purcell, 1903, and is synonymized. Nentwig et al. (2020) classified *H. nigromarginata* Strand, 1907, as a nomen dubium as the type material was presumably destroyed during World War II and the original description is insufficient to resolve its identity. Lastly, we propose the revalidation of the genera *Brachytheliscus*, with the species *B. bicolor*, and *Hermachola* with three species: *Hermachola crudeni* (Hewitt, 1913), comb. nov., *H. capensis* (Ausserer, 1871), comb. nov., and *H. lyleae*, sp. nov.

Interest in mygalomorph studies in various parts of the world is growing, and large-scale taxonomic reviews using sophisticated methods and substantive new material are becoming the norm (e.g. Opatova et al., 2020; Rix et al., 2018a; 2018b; 2019; Godwin, et al. 2018; Hedin et al., 2019; Ortiz et al., 2018; Campbell and Engelbrecht, 2018; Hamilton et al., 2016; Bond 2012). This study makes a valuable contribution to the systematics of southern African mygalomorph spiders as a whole and compliments other work on the Entypesidae and Mygalomorphae more broadly in the region (Ríos-Tamayo in prep.; Mitchell et al. in prep.; Zonstein and Ríos-Tamayo in press; Ríos-Tamayo and Lyle, 2020; Campbell and Engelbrecht, 2018; Engelbrecht and Prendini, 2012). Due to limits on time and resources this study did not include collection of new material in the field, detailed documentation of species distributions and ecology, or molecular analysis of species limits or relationships. However, the contributions made here present a significant improvement to the current state of the taxonomy of the group under investigation and forms a sound foundation for further investigation and analysis.

MATERIAL AND METHODS

Material examined included all specimens from the original species descriptions that could be located, as well as substantive new museum material. Specimens were loaned from the following institutions:

MNHN	Muséum National d'Histoire Naturelle, Paris, France
MRAC	Royal Museum for Central Africa, Tervuren, Belgium
NCA	National Collection of Arachnida, ARC-Plant Health Protection, Pretoria, South Africa
NMBA	National Museum, Bloemfontein, Free State, South Africa
SAM	Iziko South African Museum, Cape Town, South Africa
ZMB	Museum für Naturkunde, Berlin, Germany

Photographs were taken using a high-resolution microscopy camera AxioCam MRc5 mounted on a Zeiss Axio Zoom V16 microscope. Extended focal range images were stacked using the ZEN module Z-stack software, and with a Leica M60 stereomicroscope with a high-resolution imaging Leica EC3 camera of 3.1 megapixels. Dextral appendages were used for imaging when available (sinistral otherwise). Measurements were taken from the prepared images and are given in millimeters (see supplementary table S1, available online: <https://doi.org/10.5531/sd.sp.51>). Total length was measured including the chelicerae and excluding spinnerets. Lengths of leg articles are always given in the same order: femur, patella, tibia, metatarsus, tarsus, and total. The male copulatory bulb and female genitalia were separated using a microscalpel. The bulbs were illustrated from photographs taken following the approach of Goloboff (1995) and Ríos-Tamayo and Goloboff (2018). Spermathecae were clarified by immersion in clove oil, making the opaque glandular tissues that cover the structure transparent.

Abbreviations and notation for leg spines follow Goloboff and Platnick (1987) and Ríos-Tamayo and Goloboff (2018) and are presented below. Legs are listed from I to IV, and then segments from proximal to distal. Spines are listed with the sequence prolateral-dorsal-retrolateral-ventral (P-D-R-V), using lowercase letters (p-d-r-v) when referring to spiniform setae. The filiform trichobotria present on the metatarsi follow a pattern of alternating long and shorter trichobothria; the numbers of shorter trichobothria are given in parentheses, describing from proximal to distal, e.g. (3)1(2)1 refers to three short, one long, two short, and one long trichobothria. The shorter trichobothria increase in size distally and therefore are not necessarily of the same size. Variation on different sides of a specimen (number of spines, cuspules, teeth, etc.) is indicated as two numbers separated by a slash.

Where geographic coordinates for localities are provided on the original specimen labels these are indicated with parentheses in the material examined. For specimens whose coordinates were provided in degrees and minutes by the museum it was assumed that these were georeferenced after the specimens were collected and are indicated in square brackets. Specimen localities without coordinates were georeferenced by searching for the locality names in Google Earth and verified against 1:250 000 topocadastral maps for South Africa. These are also indicated within square brackets (see supplementary table S2, available online: <https://doi.org/10.5531/sd.sp.51>).

org/10.5531/sd.sp.51). The map datum used is WGS84. Distribution maps were prepared in QGIS V3.10 (QGIS Development Team, 2019).

ABBREVIATIONS: **ALE**, anterior lateral eyes; **AME**, anterior median eyes; **B**, basal; **D**, dorsal; **DA**, dorsal apical; **DB**, dorsal basal; **D POST**, dorsal posterior; **DM**, dorsal medial; **imm**, immature; **P**, prolateral; **PA**, prolateral apical; **PLE**, posterior lateral eyes; **PLS**, posterior lateral spinnerets; **PM**, prolateral medial; **PME**, posterior median eyes; **PMS**, posterior median spinnerets; **P SUP**, prolateral superior; **PV**, prolateral ventral; **OQ**, ocular quadrangle; **R**, retrolateral; **RA**, retrolateral apical; **RIw**, ratio bulb length/width; **V**, ventral; **VA**, ventral apical; **VB**, ventral basal; **VPOST**, ventral posterior. In the notation of leg spines, expressions like **D-R** or **D-P** indicates that the spines occupy the dorsal-posterior superior surfaces, or the dorsal-prolateral superior surfaces. 1:2 A or 3:4 B indicate that the spines or scopula referred to are in the apical half or basal three-fourths.

SYSTEMATICS

Family Entypesidae Bond, Opatova and Hedin, 2020

Genus *Hermacha* Simon, 1889

Hermacha Simon, 1889: 407.

Damarchodes Simon, 1903a: 43. Tucker, 1917:112. Synonymized by Raven (1985: 85).

TYPE SPECIES: *Hermacha caudata* Simon 1889, by monotypy.

DIAGNOSIS (modified from Raven, 1985, and Dippenaar-Schoeman, 2002): *Hermacha* can be distinguished from all other entypesid genera by the absence of a serrula and metatarsal preening combs, and by the presence of a pallid (almost indistinct) intercheliceraral tumescence in males (fig. 11C; very visible in other genera, figs. 36E, 39E, 42E). Tarsus with a wide and long band of 20–35 trichobotria (fig. 3A–D), fewer in other entypesid genera: 10–16 in *Hermachola* (fig. 3E–H), 10–17 in *Entypesa*, 10–16 in *Lepthercus*, 12–16 in *Brachytheliscus*, and 10–15 in *Afropesa* Zonstein and Ríos-Tamayo, 2021, chelicerae with an irregular line of teeth on the promargin and few proximal denticles (a regular line with many denticles in other genera) and presence of a weak rastellum comprising numerous short and stout bristles. Males can be distinguished by possessing a retroventral distal megaspine on tibia I (similar to that of *Entypesa*; and *Afropesa*; absent in *Hermachola* and *Brachytheliscus*; on raised cuticular spur in *Lepthercus* Purcell, 1902) and by the sinuous proximal half of metatarsus I when viewed dorsally (fig. 2A–I; with exception of *H. septemtrionalis* and *H. caudata*). Differs from *Entypesa* by the dense scopula on tarsi I–II.

DESCRIPTION: Medium-sized (10–25 mm) spiders (fig. 1 A–F). Cephalothorax and legs covered with short bristles; cephalothorax with golden pubescence and dispersed setae, and dark setae on the margin, more abundant on the posterior part. Labium without cuspules, and palpal endites with strong cuspules on the posterior inner surface; postlabial sigilla well defined, almost meeting in the center (figs. 8B, 10B, 14B, 16B, 19B, 22B, 26B). Sternum lon-

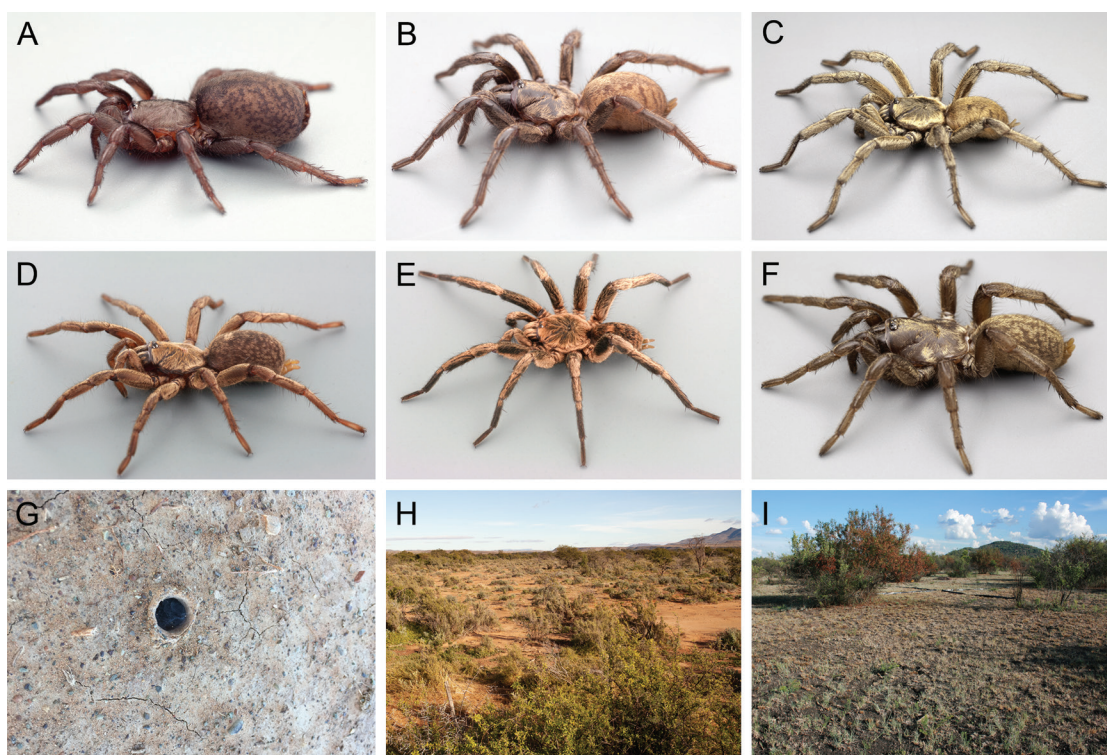


FIGURE 1. Live habitus images, burrow and habitat of *Hermachola* and *Hermacha* spp. **A**, *Hermachola lyleae*, female from Osplaat; **B–C**, *Hermacha evanescens*, **B**, female from Beaufort West; **C**, male from Osplaat. **D–E**, *Hermacha septemtrionalis*, sp. nov. **D**, female; **E**, male, both sexes from Onderstepoort, Gauteng Province. **F**, *Hermacha tuckeri*, female from Bonnievale, Western Cape Province. **G**, Burrow entrance of *Hermacha evanescens* on Farm Waterkloof, near Murraysburg, Western Cape Province. **H–I**, Habitats. **H**, Karoooid riverine vegetation on silty alluvial deposits along drainage line on Farm Waterkloof, near Murraysburg, Western Cape Province, habitat of *Hermacha evanescens*; **I**, Marikana Thornveld on black vertic clay at Onderstepoort, Gauteng Province, habitat of *Hermacha septemtrionalis*.

ger than wide, covered with sparse black hairs, with posterior sigilla marginal, small, and well defined (figs. 8B, 10B, 11B, 13B, 16B, 19B, 24B, 29B, 32B). Abdomen covered with short black hairs, with pale spots, in some species forming bands or a diffuse chevron (figs. 8C, 10C, 11C, 16C, 17C, 24C, 29C, 30C, 32C, 34C). Ocular tubercle raised, well defined, wider than long. Fovea short and procurved (slightly procurved in males; recurved in *Brachytheliscus* and with a short backwardly directed median extension in *Hermachola*). Clypeus very short, almost absent. Rastellum formed by short and stout bristles; chelicerae with bristles on dorsal and retrolateral surfaces. Serrula absent (present in *Hermachola*, *Entypesa*, *Afropesa*, and *Lepthercus* absent in *Brachytheliscus*). Cheliceral dentition: basal teeth more separated, apical teeth closer together (in some species teeth are at the same distance each other); with a few basal denticles (in other genera the line is equidistant, with many basal denticles). The cheliceral dentition generally forms an irregular line with one of the basal teeth reaching the middle of the cheliceral furrow, being offset from the remainder of the teeth that are situated

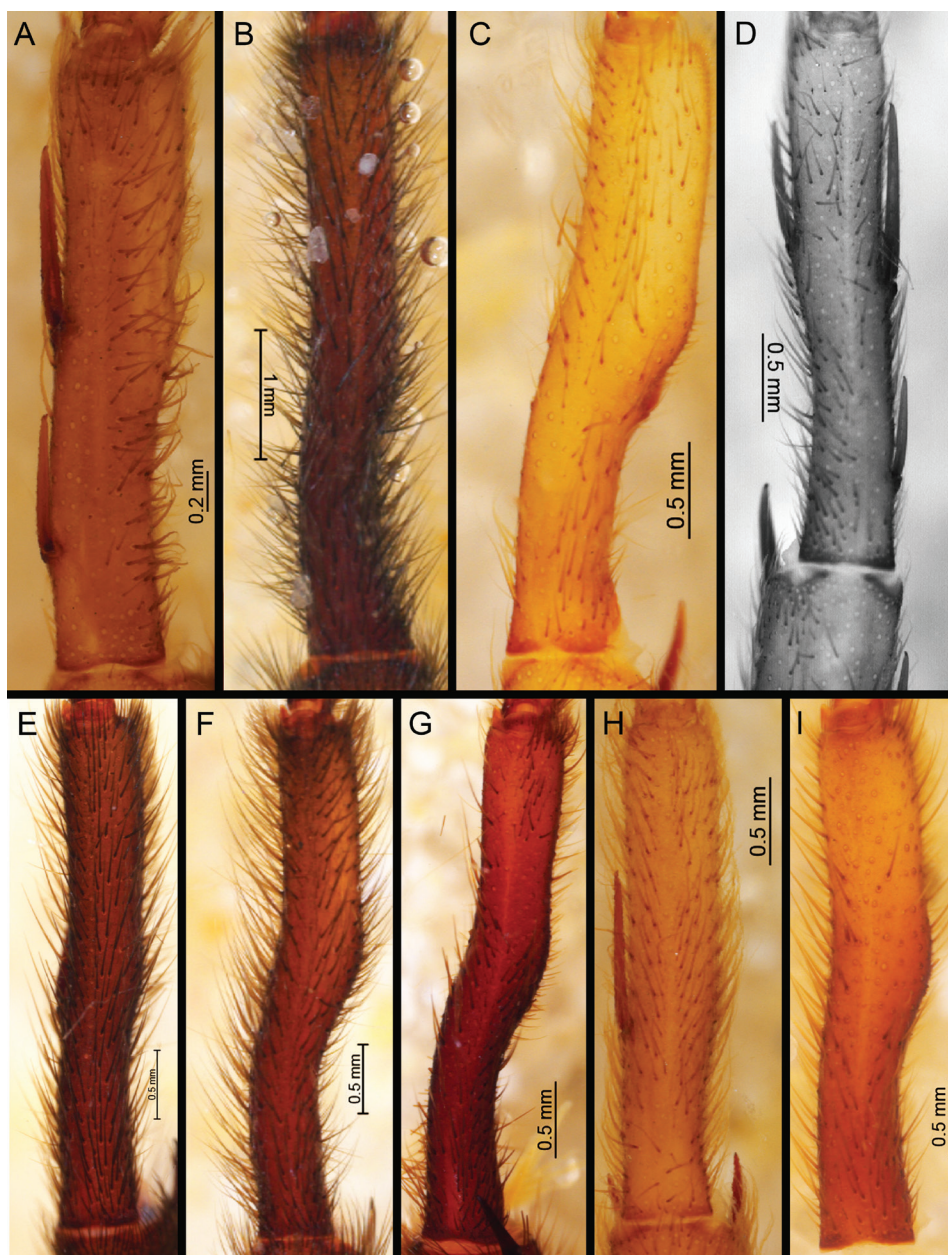


FIGURE 2. Genus *Hermacha*. Metatarsus I, dorsal view. A, *H. brevicauda* Purcell, 1903. B, *H. evanescens* Purcell, 1903. C, *H. fulva* Tucker, 1917. D, *H. lanata* Purcell, 1902. E, *H. maraisae*, sp. nov. F, *H. montana*, sp. nov. G, *H. nigrispinosa* Tucker, 1917. H, *H. sericea* Purcell, 1902. I, *H. tuckeri* Raven, 1985.

along the retrolateral margin of the cheliceral furrow (figs. 6D, 10D, 14D, 16D, 17D, 19D, 24D, 26D, 32D, 34D). Pallid (almost indistinct) intercheliceral tumescence (similar to *Afropesa*; clearly visible in other genera, *Hermachola* figs. 36E, 39E; *Brachytheliscus* fig. 42E), small and with setae.

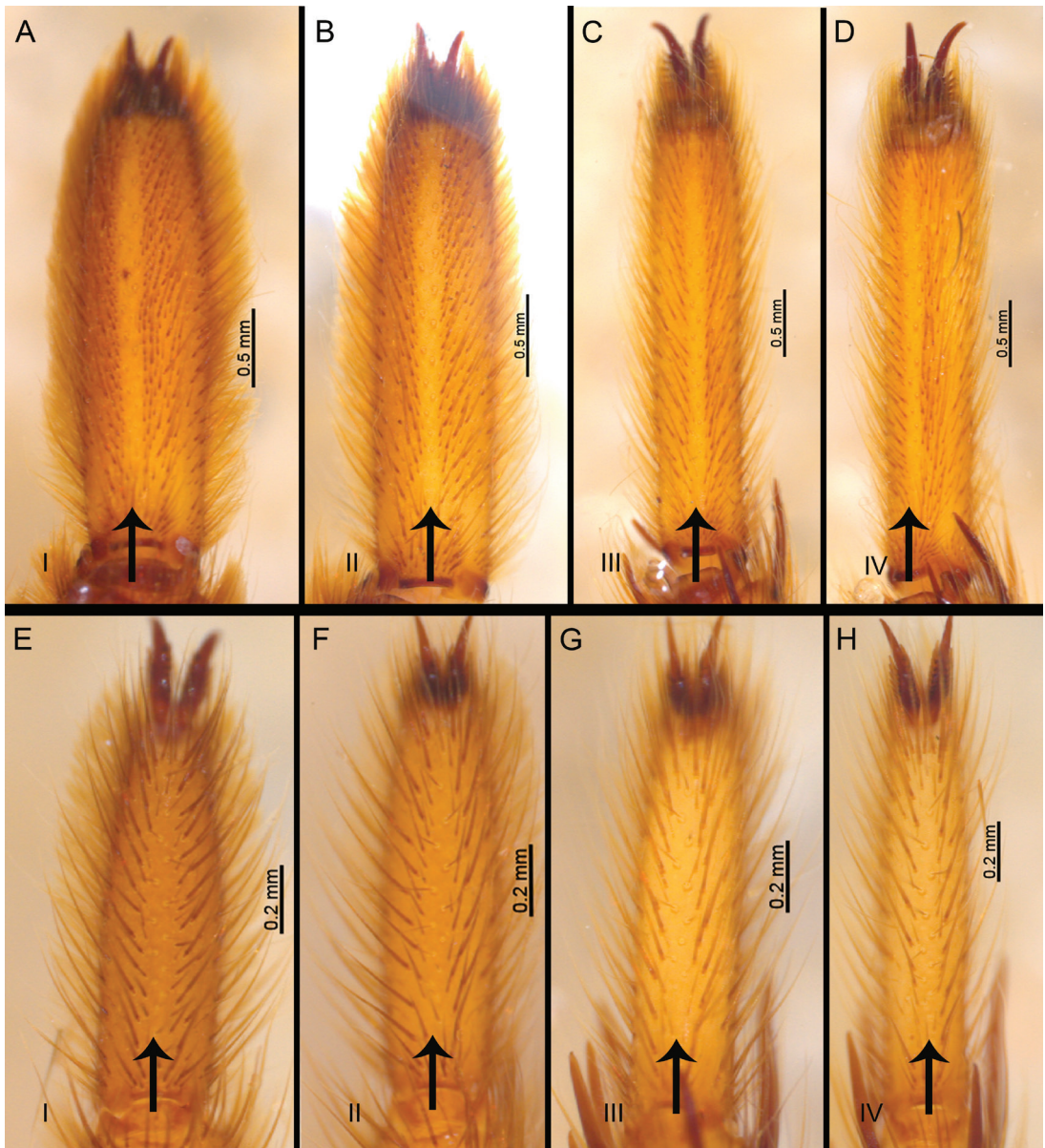


FIGURE 3. Female, trichobotria pattern, legs I-IV. A-D, *Hermacha evanescences* Purcell, 1903, arrows indicate the long row. E-H, *Hermachola crudeni* (Hewitt, 1913), arrows indicate the small row.

Leg formula 4123; all legs sparsely covered with hairs. Tibia I of male without spur, with an apical retrolateral megaspine (figs. 4D, H, L, P, T; 5D, H, L, P, T, X). Metatarsi I with the proximal half of the segment sinuous in dorsal view (fig. 2A-I), straight in *H. septentrionalis* and *H. caudata*. Cymbium short, with short apical and rigid setae and short spines present (figs. 4C, G, K, O, S, 7C, 9C, 12D, 15C, H, 18C) or absent (fig. 5C, G, K, O, S, W). Copulatory bulb with a long, straight embolus (figs. 4A, B, E, F, I, J, M, N, Q, R; 5A, B, E, F, I, J, M,

N, Q, R, U, V) usually with small apical flanges (figs. 7D, 12D, 15I, 18E, 23D, 25D, 28D). Palpal tibia thin and elongated, with robust prolateral, retrolateral, and ventral spines and rigid setae on the ventral face (figs. 7A, B, 9A, B, 12A, B, 15A, B, F, G, 18A, B, 21A, B, 23A, B, 25A, B, 28A, B, 31A, B, 33A, B). Scopulae: Metatarsi I–II sparse in males (dense in females, distributed throughout ventral surface, sometimes divided by bristles); III–IV sparse and apical in both sexes; tarsi I–II dense, evenly distributed (very dense in some females); III–IV sparse, evenly distributed and divided by bristles. Trichobothria filiform: tibia with two rows; metatarsi with one straight line, tarsi with a long and wide zigzag band along the length of the segment (fig. 3A–D). Metatarsal preening combs absent (present in other genera). Spermathecae: two, separated and elongated.

SPECIES INCLUDED: *Hermacha brevicauda* Purcell, 1903; *Hermacha caudata* Simon, 1889; *Hermacha evanescens* Purcell, 1903; *Hermacha fulva* Tucker, 1917; *Hermacha lanata* Purcell, 1902; *Hermacha maraisae*, sp. nov.; *Hermacha montana*, sp. nov.; *Hermacha nigrispinosa* Tucker, 1917; *Hermacha purcelli* (Simon, 1903a, not examined); *Hermacha septemtrionalis*, sp. nov.; *Hermacha sericea* Purcell, 1902; *Hermacha tuckeri* Raven, 1985.

DISTRIBUTION: South Africa, Zimbabwe and Mozambique (fig. 46). Also, South America (Brazil and Colombia), but see comments in introduction.

KEY TO THE IDENTIFICATION OF SOUTHERN AFRICAN *HERMACHA*

Males

1. Cymbium with short apical spines (fig. 4C, G, K, O, S)2
- Cymbium without apical spines (fig. 5C, G, K, O, S, W)6
2. Embolus with small flanges (figs. 7D, 12D, 15I, 18E)3
- Embolus without flanges (figs. 4G, 9C) *H. montana*, sp. nov.
3. Embolus with only one flange (fig. 7D, 12D, 15I)4
- Embolus with two flanges (a small dorsal and a long posterior one) (fig. 18E)
H. tuckeri Raven, 1985
4. Palpal bulb long (Rlw >2.5) with a small apical flange (fig. 15I) *H. sericea* Purcell, 1902
- Palpal bulb short (Rlw, <2.4) (figs. 7D, E, 12D, E)5
5. Embolus with a small posterior flange (fig. 7D) *H. fulva* Tucker, 1917
- Embolus with a large posterior flange (fig. 12D) *H. nigrispinosa* Tucker, 1917
6. Embolus without flanges (figs. 21D, E, 31D, E, 33D, E)7
- Embolus with flanges (figs. 23D, 25D, 28D)9
7. Palpal tibia with abundant prolateral spines (fig. 31A) *H. maraisae*, sp. nov.
- Palpal tibia with few prolateral spines (figs. 21B, 33A)8
8. Palpal endites with more than 120 cuspules (fig. 20B) *H. brevicauda* Purcell, 1903
- Palpal endites with fewer than 70 cuspules (fig. 32B) *H. septemtrionalis*, sp. nov.
9. Embolus with two small apical flanges (fig. 23D) *H. caudata* Simon 1889
- Embolus with only one apical flange (fig. 28D, 25D)10
10. Palpal bulb long (Rlw ~2.8) (fig. 28D,E); palpal endites with more than 90 cuspules (fig. 27B) *H. lanata* Purcell, 1902
- Palpal bulb short (Rlw ~2.3) (fig. 25D, E); palpal endites with fewer than 30 cuspules (fig. 24B) .
H. evanescens Purcell, 1903

Females

Note: Females of *H. caudata*, *H. fulva* Tucker, 1917, and *H. maraisae*, sp. nov., are unknown. Female of *H. brevicauda* was included in the key from the description of *Pionothele capensis* Zonstein, 2016.

1. Spermathecal base wide (figs. 10E, 13E, 19E, 34F)2
- Spermathecal base narrow (figs. 16E, 26E, 29E).....6
2. Spermathecae with an acuminate apex with a small lobule (fig. 22D).....
- H. septemtrionalis*, sp. nov.
- Spermathecae with rounded apex without lobule (see Zonstein 2016: fig. 20).....3
3. Palpal endites with more than 70 cuspule (see Zonstein, 2016: fig. 19) . *H. brevicauda* Purcell, 1903
- Palpal endites with fewer than 50 cuspules (fig. 10B, 13B, 19B)4
4. Spermathecae short (fig. 10E); more than 5 cheliceral denticles (fig. 10D).....
- H. montana*, sp. nov.
- Spermathecae long (Fig. 13E, 19E); fewer than 4 cheliceral denticles (fig. 19D)5
5. Sternum wide (fig. 13B), of similar width at coxae II and III; spermathecae with acuminate apex (fig. 13E)*H. nigrispinosa* Tucker, 1917
- Sternum narrow (fig. 19B), gradually widening toward posterior coxae; spermathecae with rounded apex (fig. 19E)*H. tuckeri* Raven, 1985
6. Spermathecae curved (fig. 29E); many maxillary cuspules (over 150) (fig. 29B).....
- H. lanata* Purcell, 1902
- Spermathecae straight (fig. 26E, 16E); relatively few maxillary cuspules (fewer than 50) (fig. 16B, 26B)7
7. Spermathecae with an expanded fundus (fig. 26E); chelicerae with 11 teeth (fig. 26D); dorsal abdomen mottled with pallid spots without apparent organization (fig. 26C)*H. evanescens* Purcell, 1903
- Spermathecae with a less developed fundus (fig. 16E); chelicerae with 8 teeth (fig. 16D); dorsal abdomen mottled with dark spots and posterior bands (fig. 16C) *H. sericea* Purcell, 1902

SPECIES DESCRIPTIONS

Species are separated here into two groups based on the presence or absence of apical spines on the cymbium, with species ordered alphabetically within each group. This separation was made with the sole purpose of facilitating description and avoiding repetition of characters. These groups do not necessarily constitute monophyletic groups and are not intended as taxonomic units.

SPECIES WITH APICAL SPINES ON THE CYMBIUM

Figure 4

Five species have this character: *Hermacha fulva* Tucker, 1917; *Hermacha montana*, sp. nov.; *Hermacha nigrispinosa* Tucker, 1917; *Hermacha sericea* Purcell, 1902; *Hermacha tuckeri* Raven, 1985.

Hermacha fulva Tucker, 1917

Figures 2C, 4A–D, 6A–F, 7A–E

Hermacha fulva Tucker, 1917: 109, fig. 6.

MATERIAL EXAMINED: HOLOTYPE: South Africa: Western Cape Province: Caledon [32°12'S 19°24'E], July 1910, Purcell W. F, 1 ♂ (SAM-ENW-X150406, examined).

DIAGNOSIS: Males can be separated from *H. sericea* and *H. nigrispinosa* by the very short copulatory bulb (Rlw <2.2, figs. 4A, B, 7D, E). Differs from *H. tuckeri* and *H. montana* by the presence of only one small apical flange (fig. 7D) (two flanges in *H. tuckeri* [fig. 18E] and *H. montana* without flanges [fig. 9D, E]). Female unknown.

DESCRIPTION. MALE HOLOTYPE (SAM-ENW-X150406, figs. 6A–F, 7A–E): *Total length*: 12.34. *Carapace* (fig. 6A): length 5.42, width 4.29, with lateral dark marginal bristles, with sparse pubescence. *Cephalic region*: length 3.39; clypeus almost absent, with 4 bristles on the edge, some bristles in front and back of the OQ. *Fovea*: width 0.38, short, procurved. *Ocular measurements*: AME 0.14, ALE 0.34, PME 0.20, PLE 0.23, OQ length 0.61, 0.96 width; AME-ALE 0.11, PME-PLA 0.00, AME-PME 0.11, ALE-PLA 0.08, AME-AME 0.17, PME-PME 0.43. *Chelicerae*: length 3.22, width 1.73, with dark retrodorsal bristles, rastellum formed by many strong setae; intercheliceral tumescence small, well marked with setae. Cheliceral furrow with an irregular line of 6 (3-1-2) promarginal teeth and 2 mesobasal denticles (fig. 6D). *Labium*: length 0.36, width 0.86. *Palpal endites*: length 1.85, width 0.92, with 42 cuspules on inner corner, prolateral face straight, soft area long, with long uniformly distributed hairs. *Sternum* (fig. 6B): length 2.59, maximum width 2.11. *Abdomen* (fig. 6C): length 4.96, covered with small hairs and bristles. PMS: length 0.58; PLS: length of basal:medial:apical segments 0.93:0.85:1.01; total length 2.78. *Lengths of legs and palp*: I: 4.65, 2.65, 3.43, 3.23, 2.21, 16.17. II: 4.56, 2.48, 2.96, 3.13, 2.14, 15.26. III: 3.99, 1.95, 2.50, 3.71, 2.60, 14.75. IV: 5.02, 2.11, 3.88, 4.91, 2.41, 18.33. *Palp*: 2.73, 1.46, 1.99, —, 1.18, 7.36. *Chaetotaxy*: Leg I: femur, 1-1 P, 1-1-1 D, 1-1 R; patella, 1 P; tibia, 1-2 P (1:2 B), 1-1-2 V, and a strong apical spine (ventral posterior, figs. 4D, 6E, F); metatarsus, 1 V (1:2 B), wide and curved (fig. 2C), the curved part of the metatarsus swollen; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1 D; patella, 1 P; tibia, 1-1 P, 1-2-3 V; metatarsus, 1 V (1:2 B); tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1 D, 1-1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D, 1-1 R, 2-3 V; metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 1-1-1 D-R, 2-1-1-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1 D, 1-1 R; patella, 1 R; tibia, 1-1 P, 1-1 R, 1-2-3 V; metatarsus, 1-1-1-2 P, 1-1-1 D-P, 1-1-2 D-R, 1-2-2-3 V; tarsus, 0. *Palp* (fig. 5A–C): femur, 1 PA; patella, 1 P; tibia, 2-2 P, 2-1 R, 2 V; tarsus, 4 A (fig. 4C, with numerous small rigid bristles). *Copulatory bulb*: slightly curved (length 1.68, width 0.78, Rlw 2.2; figs. 4A, B, 7D,E). *Scopulae*: Metatarsi: I, dense (1:2 A); II, dense, distributed throughout the segment (more abundant in the anterior part); III, sparse (1:2 A, prolateral); IV, sparse, apical. Tarsi: I–II, dense, uniformly distributed throughout the segment; III, dense, uniformly distributed and divided by a narrow band of setae. IV, sparse, uniformly distributed and divided by a very wide band of setae (line of setae on both sides of the band of setae). *Trichobothria*: Tibiae: I 12-11; II 11-10; III–IV 12-11. Metatarsi: I 1(3)1(2)1(3)1(4); II 1(3)1(4)1(2)1(5); III 1(2)1(2)1(4)1(1)1(5); IV

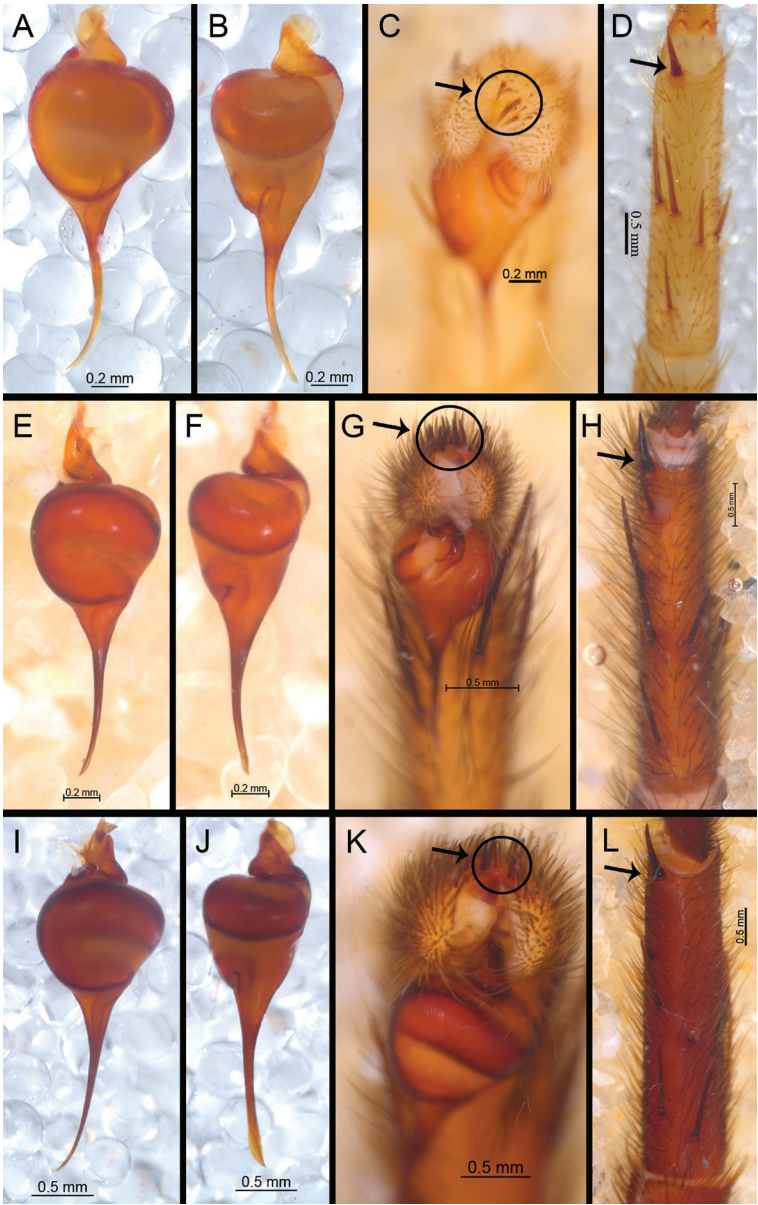
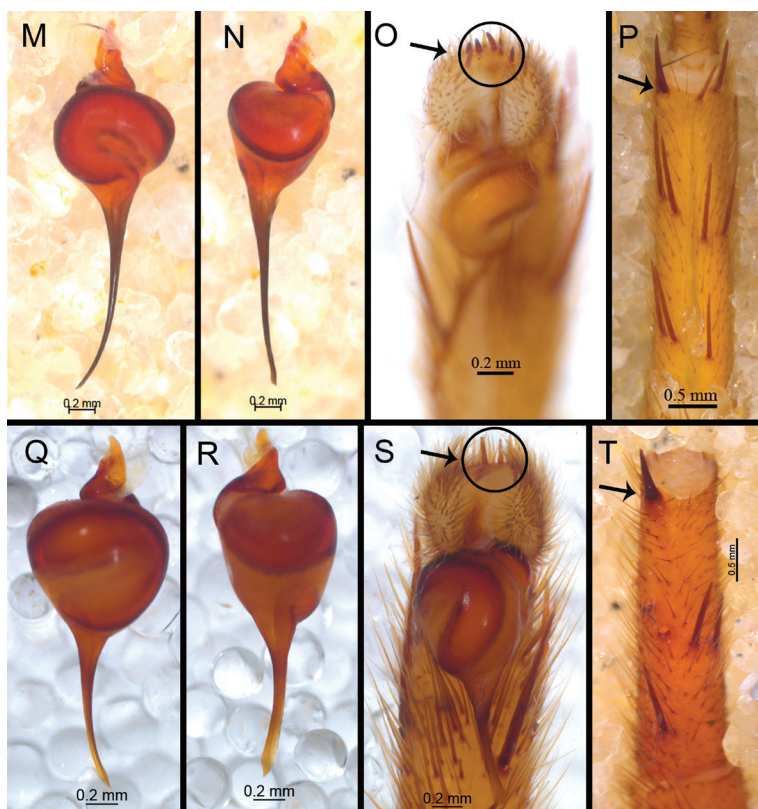


FIGURE 4. Males specimens with apical spines on the cymbium (*above and opposite page*). Copulatory bulb, prolateral (A, E, I, M, Q) and retrolateral (B, F, J, N, R) views; cymbium (C, G, K, O, S), arrows indicate the apical spines; tibia I (D, H, L, P, T), ventral view: A–D, *Hermacha fulva* Tucker, 1917. E–H, *Hermacha montana*, sp. nov. I–L, *Hermacha nigrispinosa* Tucker, 1917. M–P, *Hermacha sericea* Purcell, 1902. Q–T, *Hermacha tuckeri* Raven, 1985.



1(4)1(1)1(4)1(3)1(5). Tarsi: I 25; II 26; III 25; IV 24. *Color in alcohol*: Overall reddish yellow, legs like cephalothorax with metatarsi-tarsi lighter. Abdomen yellowish (could be mottled); spinnerets very pallid.

DISTRIBUTION: South Africa: Western Cape Province: Known only from the type locality.

***Hermacha montana*, sp. nov.**

Figures 2F, 4E–H, 8A–F, 9A–E, 10A–E

MATERIAL EXAMINED: HOLOTYPE: South Africa: Western Cape Province: Sneekop, Cedarberg, CWA (32°21.22'S 19°09.17'E, 1615 m), October 7, 2007, E. Nortle, S. Kritzinger-Klopper, 1 ♂, (NCA 2012/2264). PARATYPE: same locality as for holotype (32°21.33'S 19°09.92'E, 1843 m), March 6, 2006, same collectors as holotype, 1 ♀ (NCA 2012/2237).

ETYMOLOGY: The species name refers to the Cedarberg mountains, where this species was collected.

DIAGNOSIS: Male embolus without flanges (figs. 4E, F; 9D, E). It can also be separated from *H. fulva* and *H. tuckeri* by the lower number of maxillary cusps (32 [fig. 8B] vs. 42 [fig. 6B] and 40 [fig. 17B] respectively). Females can be distinguished by their spermathecae, which are short and widely separated (fig. 10E).

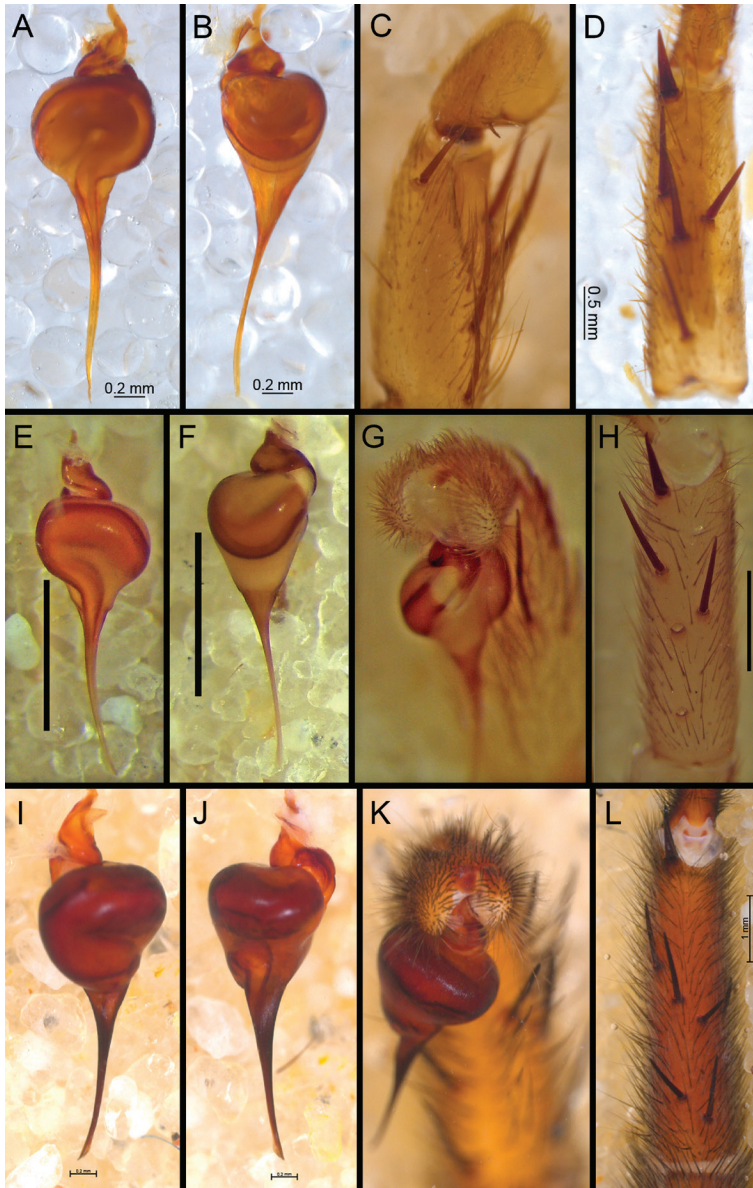
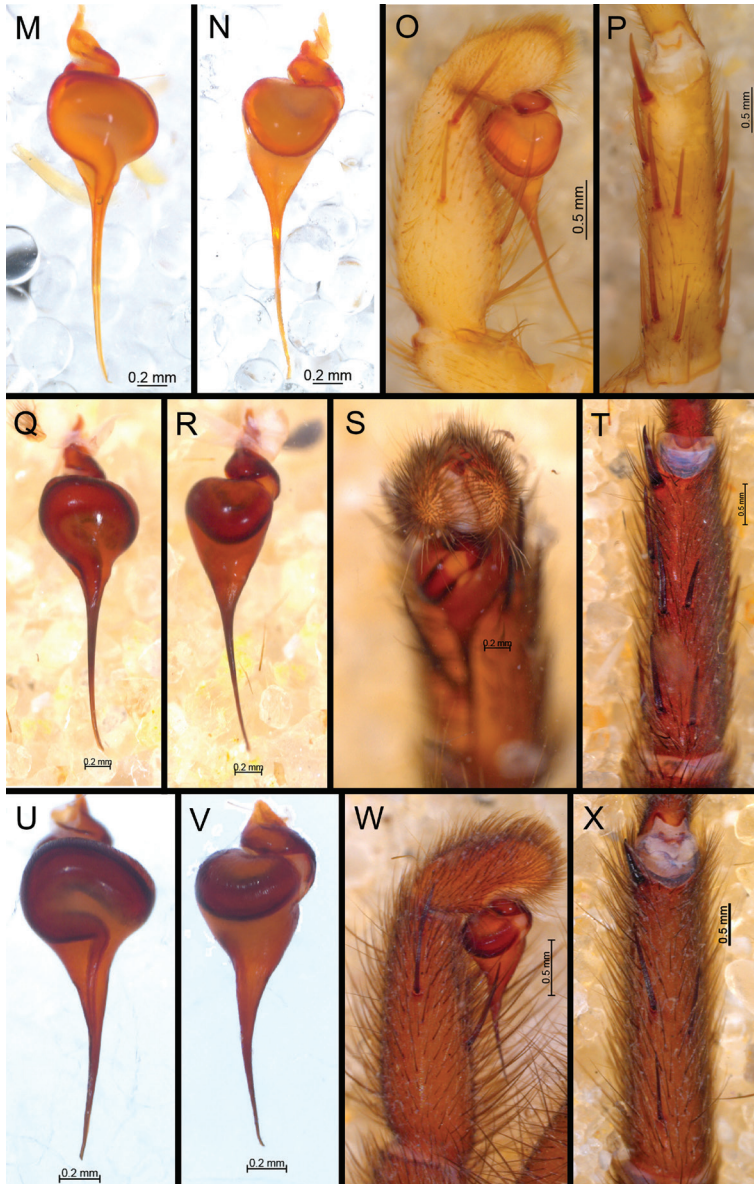


FIGURE 5. Male specimens without apical spines on the cymbium (*above and opposite page*). Copulatory bulb, prolateral (A, E, I, M, Q, U) and retrolateral (B, F, J, N, R, V) views; cymbium (C, G, K, O, S, W); tibia I (D, H, L, P, T, X), ventral view: A–D, *Hermacha brevicauda* Purcell, 1903. E–H, *Hermacha caudata* Simon, 1889. I–L, *Hermacha evanescens* Purcell, 1903. M–P, *Hermacha lanata* Purcell, 1902. Q–T, *Hermacha maraisae*, sp. nov. U–X, *Hermacha septemtrionalis*, sp. nov.



DESCRIPTION: MALE HOLOTYPE (NCA 2012/2264, figs. 3E–H, 8A–F, 9A–E): *Total length*: 12.91. *Carapace* (fig. 8A): length 6.38, width 4.83, with gold pubescence and emergent setae and dark marginal bristles. *Cephalic region*: length 3.81; clypeus almost absent with 7 bristles; 3 bristles in front of the OQ and 5 between PME. *Fovea*: procurved, width 0.68. *Ocular measurements*: AME 0.16, ALE 0.27, PME 0.21, PLE 0.22, OQ length 0.56, 1.01 width; AME–ALE 0.12, PME–PLE 0.03, AME–PME 0.08, ALE–PLE 0.13, AME–AME 0.15, PME–PME 0.47. *Chelicerae*: length 3.38, width 1.90, with dark retrodorsal bristles, rastellum formed by strong setae; intercheliceral tumescence pallid, small, with setae. Cheliceral furrow with an irregular line of 9 promarginal teeth (6-1-2), and 1 mesobasal denticle. *Labium*: length 0.42, width 0.86. *Palpal*

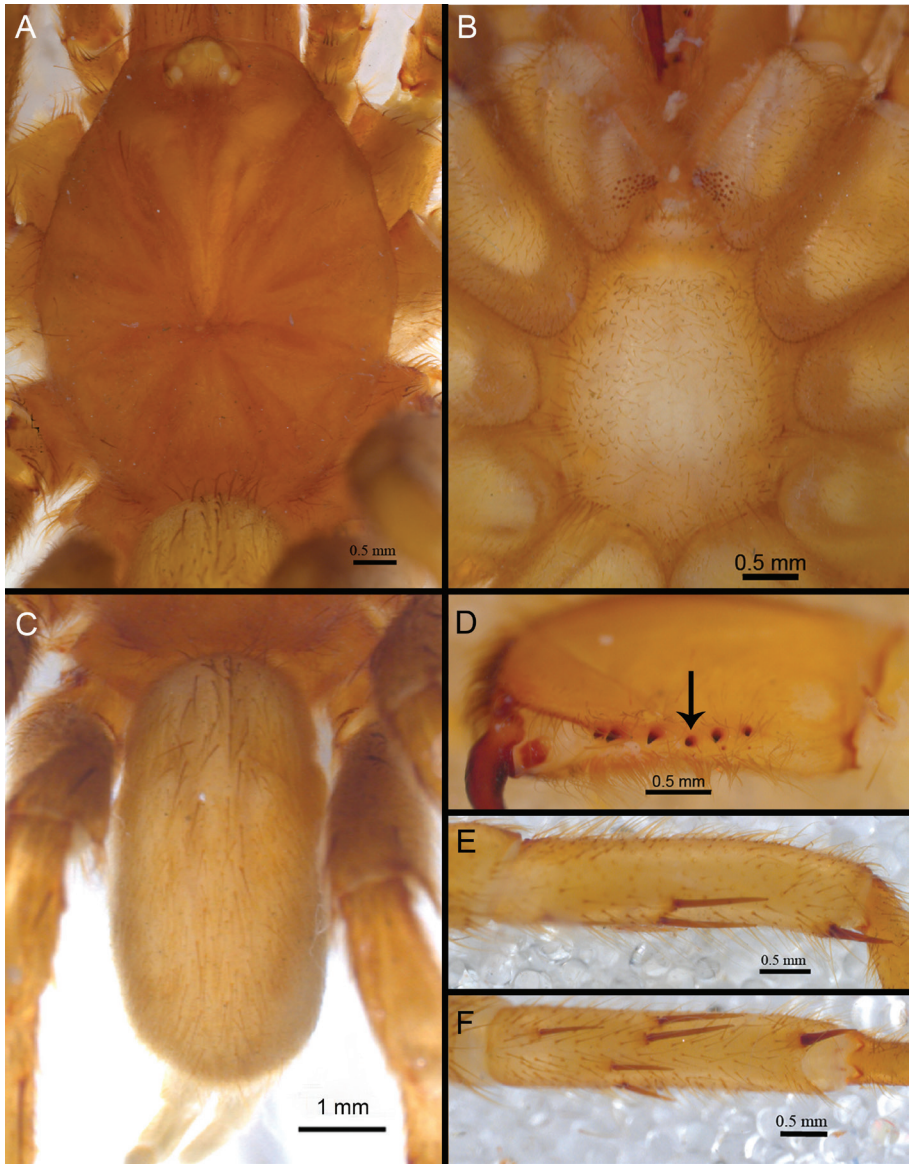


FIGURE 6. *Hermacha fulva* Tucker, 1917, male holotype (SAM-ENW-X150406): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, arrow indicate the irregular pattern of teeth and distribution of denticles, ventral view. **E–F**, tibia I: **E**, retrolateral view; **F**, ventral view.

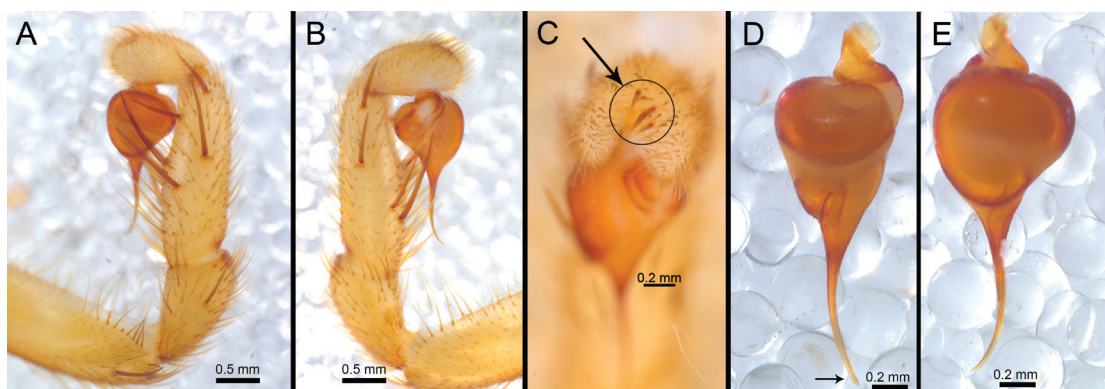


FIGURE 7. *Hermacha fulva* Tucker, 1917, male holotype (SAM-ENW-X150406): A–C, right pedipalp: A, prolateral view; B, prolateral view; C, cymbium, arrow indicates the apex with apical spines. D–E, copulatory bulb, two different views; arrow indicates the small apical flange.

endites: length 2.01, width 0.94, with 32 cuspules on inner corner, prolateral face slightly curved, soft area little developed, with long uniformly distributed hairs. *Sternum* (fig. 8B): length 2.98, maximum width 2.53. *Abdomen* (fig. 8C): length 5.27, covered with small hair and dark bristles. PMS: length 0.57; PLS: length of basal:medial:apical segments 0.94:0.53:0.63; total length 2.10. *Lengths of legs and palp*: I: 5.08, 2.81, 4.02, 3.60, 2.23, 17.74. II: 5.10, 2.81, 3.74, 3.69, 2.19, 17.53. III: 4.53, 2.23, 2.87, 4.28, 2.28, 16.19. IV: 5.60, 2.57, 4.08, 5.53, 2.32, 20.10. *Palp*: 2.98, 1.49, 2.17, —, 1.33, 7.76. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 D, 1-1 R; patella, 1-1 P; tibia, 1-2 P, 1-2-1-1 V, and a strong apical spine (ventral posterior, figs. 4H, 8E, F); metatarsus, 0, medially curved, the curved part of the metatarsus slightly swollen (fig. 2F); tarsus, 0. Leg II: femur, 1-1 P, 1-1-1-1 d, 1-1-1 R; patella, 1-1 P; tibia, 1-1 P, 1-2-1-3 V; metatarsus, 1-1 P, 1-1 V (1:2 B); tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1-1 d, 1-1 R; patella, 1-1 P, 1 R; tibia, 1-1-1 P, 1 D (1:2 A), 1-1 R, 2-1-3 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1 R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1 P, 1-1-1-1 d, 1-1-1 R; patella, 1 R; tibia, 1-1-2 P, 1-1 R, 2-2-1-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 R, 1-2-2-3 V; tarsus, 0. *Palp* (fig. 4G, 9A–C): femur, 1-1 P, 1 RA; patella, 1-1 P; tibia, 2-1-1 P, 2-1 R, 1-1 V with long rigid ventral bristles; tarsus, 12 A, with small rigid bristles. *Copulatory bulb*: straight (length 1.62, width 0.73, Rlw 2.2, figs. 4E,F; 9D, E). *Scopulae*: Metatarsi: I, sparse (1:2A); II, sparse, uniformly distributed throughout the segment; III, sparse (3:4 A, more abundant P); IV, sparse (1:4 A, only P). Tarsi: I–II, dense, uniformly distributed throughout the segment; III–IV, sparse, uniformly distributed throughout the segment, divided (III by a narrow band of setae; IV, by a wide band of setae). *Trichobothria*: Tibiae: I–II 10-9; III 10-10; IV 12-11. Metatarsi: I (4)1(1)1(0)1(1)1(3)1(3)1; II (3)1(0)1(2)1(1)1(1)1(2)1; III (5)1(2)1(1)1(0)1(1)1(3)1; IV (4)1(1)1(1)1(1)1(2)1(3)1. Tarsi: I–II 22; III 21; IV 22. *Color in alcohol*: Overall dark reddish yellow (chelicerae darker); legs like carapace with femur darker, all tarsi with pallid areas; abdomen light brown with many pallid spots. Sternum yellowish red; spinnerets yellowish.

FEMALE PARATYPE (NCA 2012/2237, fig. 10A–E): *Total length*: 15.22. *Carapace* (fig. 10A): length 6.18, width 4.56. *Cephalic region*: length 3.95, clypeus small with 7 marginal bristles; 5

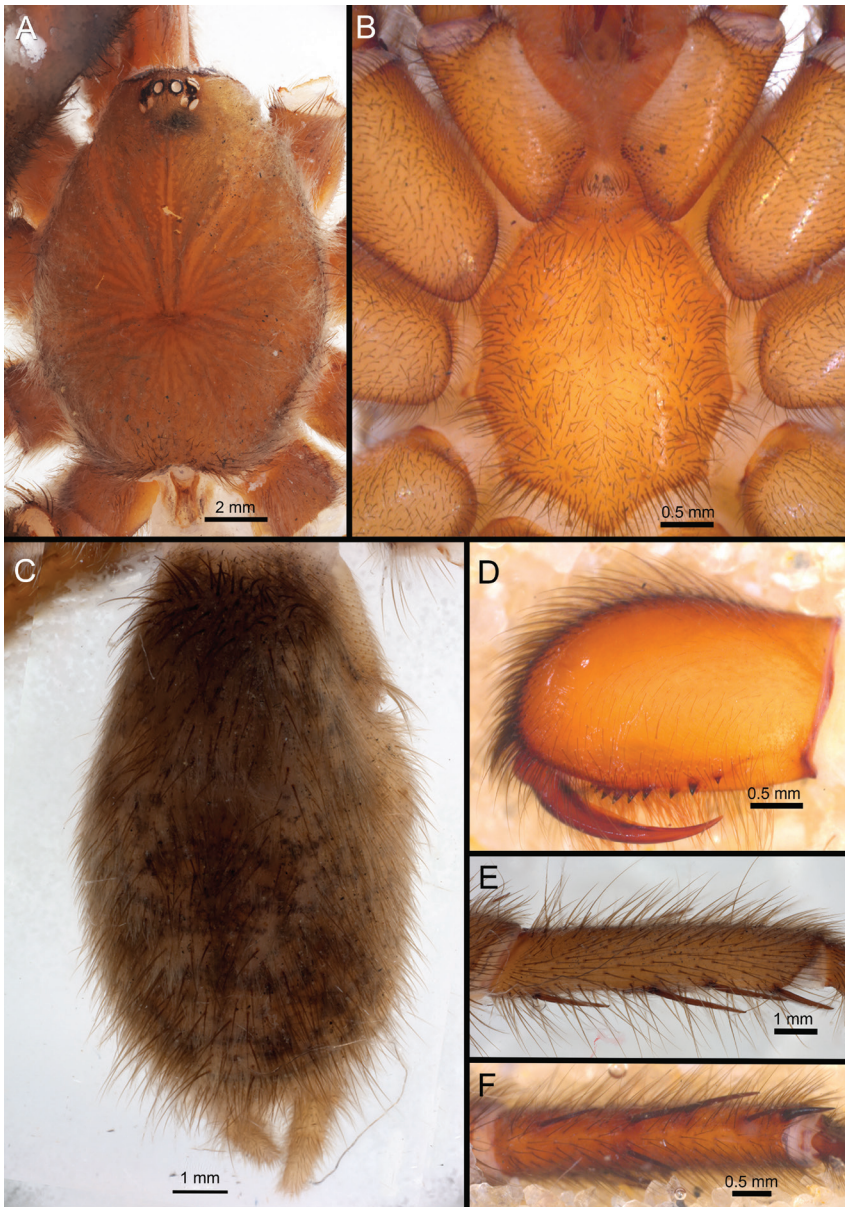


FIGURE 8. *Hermacha montana*, sp. nov., male holotype (NCA 2012/2264): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, ventral view. **E–F**, tibia I: **E**, retrolateral view; **F**, ventral view.

bristles in front of the OQ and 8 posteriors (between PME). *Fovea*: width 0.61, procurved. *Ocular measurements*: AME 0.13, ALE 0.28, PME 0.16, PLE 0.20, OQ length 0.58, width 0.97; AME-ALE 0.09, PME-PL 0.06, AME-PME 0.13, ALE-PL 0.15, AME-AME 0.19, PME-PME 0.45. *Chelicerae*: length 3.98, width 2.48; with dark retrodorsal bristles, rastellum with numerous rough bristles. Cheliceral furrow with an irregular line of 8 (5-1-2) promarginal teeth and

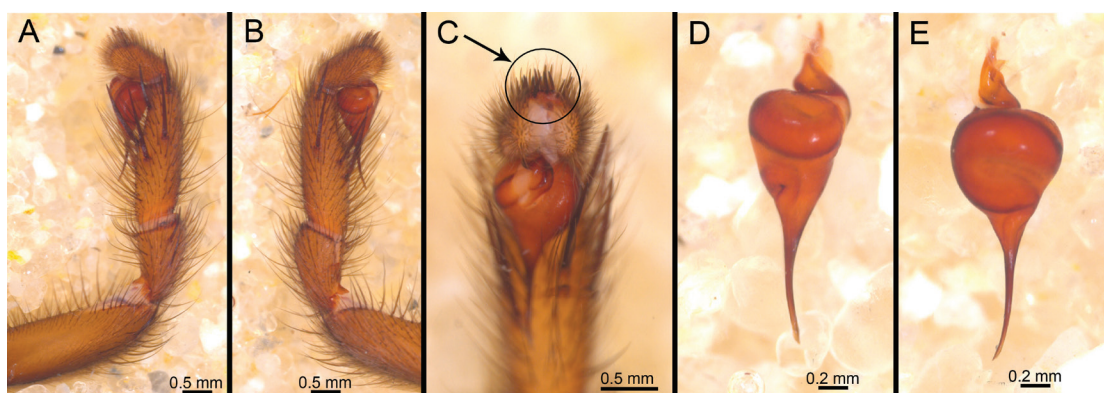


FIGURE 9. *Hermacha montana*, sp. nov., male holotype (NCA 2012/2264): A–C, right pedipalp: A, prolateral view; B, prolateral view; C, cymbium, arrow indicates the apical spines. D–E, copulatory bulb, two different views.

6 mesobasal denticles (fig. 10D). *Labium*: length 0.41, width 1.11. *Palpal endites*: length 2.36, width 1.01, with 38 cuspules on inner corner, prolateral face curved, soft area large, with long uniformly distributed hairs. *Sternum* (fig. 10B): length 3.14, maximum width 2.47. *Abdomen* (fig. 10C): length 6.77, with small hairs and bristles covering. PMS: length 0.61; PLS: length of basal:medial:apical segments 0.83:0.46:0.59; total length 1.87. *Lengths of legs and palp*: I: 4.27, 2.73, 2.82, 2.56, 1.88, 14.26. II: 3.95, 2.59, 2.52, 2.47, 1.89, 13.42. III: 3.41, 2.05, 1.90, 3.10, 2.05, 12.49. IV: 4.40, 2.25, 3.25, 4.05, 2.20 16.15. Palp: 3.06, 1.72, 1.89, —, 1.87, 8.54. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1 P, 1-1 V; metatarsus, 1-0-1-2-0-1 V; tarsus, 0. Leg II: femur, 1 PA; patella, 1 PA; tibia, 1-1 P, 1-2 V (1:2 A); metatarsus, 1-2-0-2 V; tarsus, 0. Leg III: femur, 1-1-1-1 d, 1 R A; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D, 1 R, 1-3 V (1:2 A); metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1-1 d; patella, 0; tibia, 1-1 R, 1-2-2 V; metatarsus, 1-1 P, 1 D-P (A), 1-1-1 D-R, 2-1-2-3 V; tarsus, 0. Palp: femur, 1 P A; patella, 1 P; tibia, 2-2 P, 1-1-4 V; tarsus, 2 VB. *Spermathecae*: short and separated (fig. 10E). *Scopulae*: Metatarsi: I–II, dense, uniformly distributed; III, sparse 3/4 A (only P), segment with a band of ventral thick bristles; IV, sparse A (only P). Tarsi: I–II, dense, uniformly distributed; III, sparse, uniformly distributed and divided by a narrow band of bristles; IV sparse, uniformly distributed and divided by a very wide band of setae and a line of bristles posterior to the central band. *Trichobothria*: Tibiae: palp 9-10; I 9-9; II 8-9; III 10-9; IV 11-10. Metatarsi: I (5)1(1)1(0)1(2)2(3)1; II (5)1(1)1(1)1(2)1(4)1; III (4)1(0)1(2)1(2)1(4)1; IV (4)1(0)1(1)1(2)1(3)1(3)1. Tarsi: palp 18; I 25; II 24; III 22; IV 24. *Color in alcohol*: Overall yellowish (chelicerae darker). Abdomen dark brown (fig. 10C), mottled by pallid spots (ventrally lighter), spinnerets like abdomen.

ADDITIONAL MATERIAL EXAMINED: South Africa: Western Cape Province: Cederberg, CWA, Sneekop (CIB 13.3) (32°20.83'S 19°10.31'E, 1531 m), October 1, 2009, E. Nortle and S. Kritzing-Klopper, 1♂ (NCA 2012/2281); (32°20.93'S 19°10.14'E, 1597 m), 1♂ (NCA 2012/2269); October, 2004, 1♂ (NCA 2012/2283); October, 2008, 1♂ (NCA 2011/2763); October, 2005, 1♂ (NCA 2012/5074); October 10, 2006, 1♂ (NCA 2012/2266); (32°20.94'S 19°10.24'E, 1570 m), October, 2005, 1♂ (NCA 2012/5081); October 10, 2009, 1♂ (NCA 2012/2279); October, 2004, 1♂ (NCA 2012/2282);

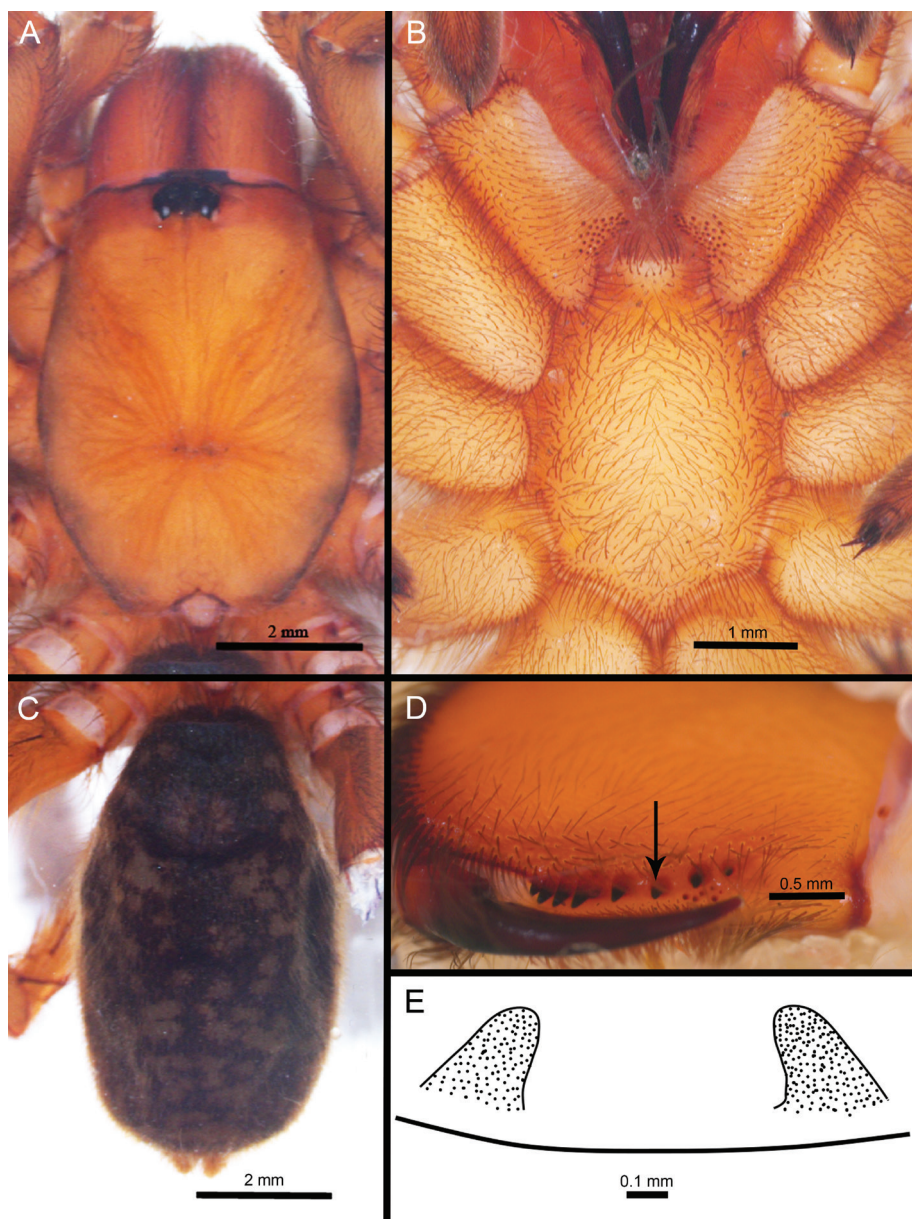


FIGURE 10. *Hermacha montana*, sp. nov., female paratype (NCA 2012/2237): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, showing the pattern of teeth and distribution of denticles, ventral view. **E**, spermathecae.

1♂ (NCA 2012/2278); 1♂ (NCA 2012/2271); October, 2007, 1♂ (NCA 2012/2270); 1♂ (NCA 2012/2267); October 1, 2009, 1♂ (NCA 2012/2277); (32°21'S 19°09'E, 1843 m), 1♀ (NCA 2012/5083); (1597 m) October 10, 2006, 1♂ (NCA 2011/1034) and 1♂ (NCA 2012/2268); (32°21'S 19°0'E, 1527 m), October 10, 2004, 1♂ (NCA 2012/1029); October 10, 2006, 1♂ (NCA 2011/1028); (32°21'S 19°10'E, 1597 m), October 1, 2006, 1♂ (NCA 2011/1032); (1830 m), October 1, 2008, 1♂ (NCA

2011/1035) and 1 ♂ (NCA 2011/1037); (1605 m), March 1, 2010, 1 ♂ (NCA 2012/5075); October 1, 2007, 1 ♂ (NCA 2011/1033); (32°21'0.33"S 19°10'11.90"E, 1570 m), March 1, 2006, 1 ♀ (NCA 2011/1039); (32°21'16.00"S 19°9'39.00"E, 1597 m), March 1, 2009, 1 ♀ (NCA 2012/2280); March 1, 2008, 1 ♀ (NCA 2001/1038); (32°21.22'S 19°10.06'E, 1669 m), March 1, 2009, 1 ♂ (NCA 2012/2292); (1615 m), October, 2005, 1 ♂ (NCA 2012/5080); March 1, 2009, 1 ♂ (NCA 2012/2293) and 1 ♂ (NCA 2012/2291); (32°21.22'S 19°09.77'E, 1881 m), March 1, 2010, 1 ♂ (NCA 2012/5084); March, 2007, 1 ♂ (NCA 2012/2239); (32°21.30'S 19°09.69'E, 1919 m), March, 2006, 1 ♂ (NCA 2012/2284); October 1, 2010, 1 ♂ (NCA 2012/5086); (32°21.32'S 19°09.14'E, 1605 m), October, 2006, 1 ♂ (NCA 2012/2249); (32°21.33'S 19°09.92'E, 1843 m), March 1, 2010, 1 ♂ (NCA 2012/5082); October 1, 2010, 1 ♂ (NCA 2012/5073, CCDB-18966); March, 2007, 1 ♂ (NCA 2012/2240); (32°21.37'S 19°09.86'E, 1830 m), October 1, 2010, 1 ♂ (NCA 2012/5072); March, 2004, 1 ♂ (NCA 2012/2241); October 1, 2010, 1 ♂ (NCA 2012/5085); March, 2006, 1 ♂ (NCA 2012/2697); March, 2004, 1 ♂ (NCA 2012/2236); March, 2007, 1 ♂ (NCA 2012/22825); March 1, 2010, 1 ♂ (NCA 2012/5087, CCDB-18966); March, 2006, 1 ♂ (NCA 2012/2235); March, 07, 1 ♂ (NCA 2012/2287) and 1 ♂ (NCA 2012/2289); March, 2004, 1 ♂ (NCA 2012/2238); March, 2007, 1 ♂ (NCA 2012/2290); March, 2008, 1 ♂ (NCA 2012/2288) and 1 ♂ (NCA 2012/2286); (32°23.33'S 19°08.96'E, 1562 m), March, 2008, 1 ♂ (NCA 2012/2244); (32°25'S 19°9'E, 930 m), October 10, 2006, 1 ♂ (NCA 2011/1031); (32°27.64'S 19°14.37'E, 1152 m), October, 2006, 1 ♂ (NCA 2012/2250); Nieuwoudt's Pass (32°20.96'S 19°00.42'E, 527 m), October, 2007, 1 ♂ (NCA 2012/2246) and 1 ♂ (NCA 2012/2247). Sneeuwkop, Crystal Pools-Wupperthal (32°20.75'S 19°08.33'E, 1286 m), March, 1, 2009, 1 ♀ (NCA 2012/5078); (32°19.95'S 19°08.54'E, 1135 m), October, 2004, 1 ♂ (NCA 2012/2272) and 1 ♂ (NCA 2012/2265); October 2005, 1 ♂ (NCA 2012/5077) and 1 ♂ (NCA 2012/5076); October, 2006, 1 ♂ (NCA 2012/2274); iii.2004, 1 ♂ (NCA 2012/2275); October 1, 2009, 1 ♂ (NCA 2012/2273); (32°19.84'S 19°08.53'E, 1125 m), march, 2004, 1 ♂ (NCA 2012/2276); October, 1 ♂ (NCA 2011/1103); (32°19.93'S 19°08.46'E, 1133 m), October, 2005, 1 ♂ (NCA 2012/5079); Driehoek (32°25.38'S 19°09.69'E, 924 m), October, 2008, E. Nortle and S. Kritzinger-Klopper, 1 ♂ (NCA 2012/2255) and 1 ♂ (NCA 2012/2253); October, 2007, 1 ♂ (NCA 2012/2254); (32°25.31'S 19°09.66'E, 930 m), October, 2007, 1 ♂ (NCA 2012/2252) and 1 ♂ (NCA 2012/2251).

DISTRIBUTION: South Africa: Western Cape Province: Currently known only from the central Cederberg mountains.

Hermacha nigrispinosa Tucker, 1917

Figures 2G, 4I–L, 11A–F, 12A–E, 13A–E

Hermacha nigrispinosus Tucker, 1917: 112, fig. 7; Roewer, 1942: 178.

MATERIAL EXAMINED: HOLOTYPE: South Africa: Western Cape Province: Around Sneeuwgat Valley; 4000–4800 ft; Gt. Winterhoek Mountains, Tulbagh [33°07'S 19°10'E], April, 1916, Tucker, R.W, 1 ♂ (SAM-ENW-B002583). **PARATYPES:** Same data as for holotype, 2 ♀ ♀ (SAM-ENW-B002583); 17 ♀, 4 imm (SAM-ENW-B002583, in two different vials).

DIAGNOSIS: Males can be diagnosed by the thin embolus with a large apical flange (figs. 4J, 12D). Differs from *H. sericea* by the short palpal bulb (Rlw <2.3, fig. 12A, B) and from *H. tuckeri* by the presence of only one apical flange (two in *H. tuckeri*, fig. 18E). Females can be distinguished by their spermathecae, having a wide base, similar to *H. brevicauda*, *H. tuckeri*,

H. septemtrionalis, and *H. montana*, but differing in having a sharp apex (fig. 13E). Differs from *H. septemtrionalis* by the absence of an apical lobe on the spermathecae (fig. 13E).

DESCRIPTION: MALE HOLOTYPE (SAM-ENW-B002583, figs. 2G, 4I–L, 11A–F, 12A–E): *Total length*: 11.66. *Carapace* (fig. 11A): length 2.61, width 2.19, with lateral dark marginal bristles, and sparse pubescence. *Cephalic region*: length 1.70; clypeus almost absent, without bristles on the edge, some bristles in front and back of the OQ. *Fovea*: width 0.21, short, almost straight (slightly procurved). *Ocular measurements*: AME 0.27, ALE 0.42, PME 0.28, PLE 0.48, OQ length 0.94, 1.59 width; AME-ALE 0.17, PME-PLA 0.07, AME-PME 0.17, ALE-PLA 0.14, AME-AME 0.23, PME-PME 0.76. *Chelicerae*: length 3.14, width 1.86, with dark retrodorsal bristles, rastellum formed by many strong setae; intercheliceral tumescence small, pallid with setae (fig. 11D). Cheliceral furrow with a regular line of 9 (5-1-3) promarginal teeth and 2 mesobasal denticles. *Labium*: length 0.26, width 0.52. *Palpal endites*: length 1.11, width 0.56, with 32 cuspules on inner corner, prolateral face almost straight, soft area small, with long uniformly distributed hairs. *Sternum* (fig. 11B): length 1.59, maximum width 1.41. *Abdomen* (fig. 11C): length 5.92, covered with small hair and dark bristles. PMS: length 0.67; PLS: length of basal:medial:apical segments 1.05:0.71:0.84; total length 2.06. *Lengths of legs and palp*: I: 5.59, 3.03, 4.27, 4.27, 2.49, 19.65. II: 5.36, 2.65, 3.88, 3.85, 2.37, 18.11. III: 4.70, 2.41, 2.94, 4.31, 2.69, 17.05. IV: 5.87, 2.74, 4.25, 5.50, 2.76, 21.13. Palp: 3.20, 1.68, 2.45, —, 1.21, 8.55. *Chaetotaxy*: Leg I: femur, 1-1 P (1:2 A), 1-1 R (1:2 A); patella, 1-1 P; tibia, 1-1 P, 3-3-1 V, and a strong apical spine (ventral posterior, figs. 4L, 11E, F); metatarsus, 0, curved (fig. 2G); tarsus, 0. Leg II: femur, 1 PA; patella, 1-2 P; tibia, 1-1 P, 2-1-2-3 V; metatarsus, 1-1 P, 1 V (1:2 B); tarsus, 0. Leg III: femur, 1 PA, 1-1 RA; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D (1:2 A), 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1-1 D-P, 1-1-1 D-R, 1-1-1-1-3 V; tarsus, 0. Leg IV: femur, 1-1 PA, 1 D B, 1-1 RA; patella, 1 R; tibia, 1-2 P, 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1-1-2-3 V; tarsus, 0. Palp (figs. 4K, 12A–C): femur, 1 P A, 1 R A; patella, 1 P; tibia, 1-2-2 P, 1-1 R, 2 V; tarsus, 1 A (figs. 4K, 12C, with numerous small rigid bristles). *Copulatory bulb*: straight (length 2.36, width 1.04, Rlw 2.3; slightly curved in the apex), with a posterior flange at the apex (fig. 4I, J; 12D, E). *Scopulae*: Metatarsi: I, sparse (1:2 A); II, sparse, distributed throughout the segment (more abundant in the anterior part); III, sparse (1:2 A); IV, sparse, only prolateral (1:4 A). Tarsi: I–III, dense, uniformly distributed throughout the segment; IV, dense, uniformly distributed and divided by a wide band of setae. *Trichobothria*: Tibiae: I 10-11; II 9-10; III 12-11; IV 13-11. Metatarsi: I 1(4)1(3)1(4)1(5); II 1(2)2(4)2(3)1(0)1(5); III 1(5)2(3)1(2)1(5); IV 1(4)1(1)1(2)1(5). Tarsi: I 26; II 25; III–IV 27. *Color in alcohol*: Overall reddish brown, first leg and palps darker. All tarsi with pale laterals. Abdomen brown, mottled with light spots (fig. 11C); spinnerets light yellowish.

FEMALE PARATYPE (SAM-ENW-B002583, fig. 13A–E): *Total length*: 24.97. *Carapace* (fig. 13A): length 8.71, width 6.80. *Cephalic region*: length 5.92, clypeus small with 5 marginal bristles; numerous bristles in front and posterior of the OQ. *Fovea*: width 0.90, procurved. *Ocular measurements*: AME 0.21, ALE 0.39, PME 0.24, PLE 0.43, OQ length 0.75, width 1.42; AME-ALE 0.14, PME-PLA 0.03, AME-PME 0.12, ALE-PLA 0.11, AME-AME 0.24, PME-PME 0.65. *Chelicerae* (fig. 9D): length 6.11, width 3.98; with dark retrodorsal bristles, rastellum with numerous rough bristles. Cheliceral furrow with a regular line of 11/9 (6+5/6+3) promarginal

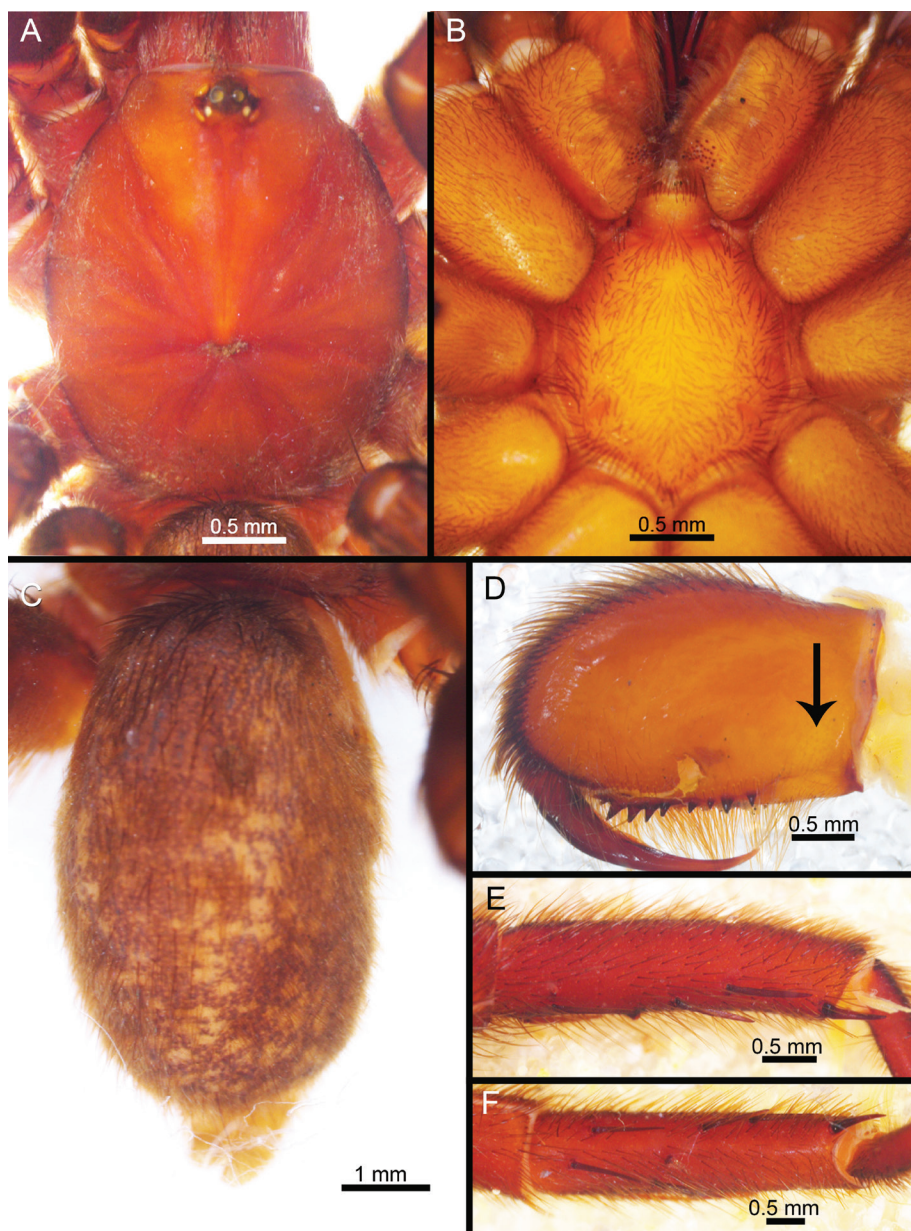


FIGURE 11. *Hermacha nigrispinosa* Tucker, 1917, male holotype (SAM-ENW-B002583): A, cephalothorax, dorsal view. B, sternum, labium, palpal endites, ventral view. C, dorsal view. D, chelicerae, showing the pattern of teeth, arrow indicates the intercheliceral tumescence pallid, prolateral view. E–F, tibia I: E, retrolateral view; F, ventral view.

teeth and 3 mesobasal denticles. *Labium*: length 0.86, width 1.55, with 1 cusp. *Palpal endites*: length 3.13, width 1.62, with 43 cuspules on inner corner, prolateral face straight, soft area small, with long uniformly distributed hairs, no serrula. *Sternum* (fig. 13B): almost circular, length 4.13, maximum width 3.83. *Abdomen* (fig. 13C): length 10.14, with small hair covering.

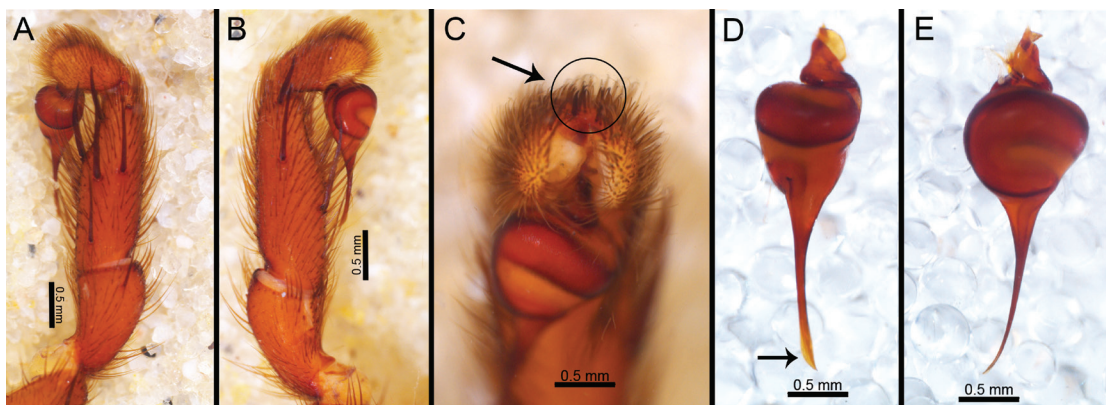


FIGURE 12. *Hermacha nigrispinosa* Tucker, 1917, male holotype (SAM-ENW-B002583): A–C, right pedipalp: A, prolateral view; B, retrolateral view; C, cymbium, arrow indicates the apical spines. D–E, copulatory bulb, two different views, arrow indicates the long flange.

PMS: length 1.14; PLS: length of basal:medial:apical segments 1.43:0.84:1.12; total length 3.39. *Lengths of legs and palp*: I: 6.34, 4.07, 4.25, 3.87, 2.72, 21.24. II: 5.74, 3.62, 3.73, 3.40, 2.86, 19.35. III: 5.02, 3.08, 2.71, 3.85, 2.87, 17.54. IV: 6.21, 3.53, 4.53, 5.52, 3.10, 22.89. Palp: 4.22, 2.57, 2.64, —, 2.94, 12.38. *Chaetotaxy*: Leg I: femur, 1 pa; patella, 0; tibia, 1p, 1-3 v; metatarsus, 1 VB; tarsus, 0. Leg II: femur, 0; patella, 0; tibia, 1-1 P, 1-1-2 V; metatarsus, 2-1-1 V; tarsus, 0. Leg III: femur, 0; patella, 1-1 P; tibia, 1-1 P, 1-1-1-3 V, 1-1 R; metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 0; patella, 0; tibia, 2-2-2 v, 2-2 R; metatarsus, 1-1 P, 1 D-P (A), 1-1-1 D-R, 1-2-1-3-3 V; tarsus, 0. Palp: femur, 1 PA; patella, 1-1 p; tibia, 1-2 P, 1-1-4 V; tarsus, 2 VB. *Spermathecae*: wide base and acuminate apex (fig. 13E). *Scopulae*: Metatarsi: I–II, very dense, uniformly distributed; III, sparse (3:4 A, prolateral more abundant); IV, very small, sparse A (prolateral). Tarsi: I–II, very dense, uniformly distributed; III–IV, very dense, uniformly distributed (III divided by a narrow band and IV by a wide band of setae). *Trichobothria*: Tibiae: palp 10-11; I–II 11-12; III 10-11; IV 11-11. Metatarsi: I 1(2)1(4)1(2)1(1)1(4); II 1(7)1(4)1(7); III 1(3)1(3)1(3)1(1)1(5); IV 1(6)1(5)1(2)1(1)1(6). Tarsi: palp 22; I 26; II 35; III 27; IV 30. *Color in alcohol*: Overall yellowish orange (chelicerae darker). Abdomen (fig. 13C) mottled with light spots, covered by fine hair; spinnerets like abdomen.

ADDITIONAL MATERIAL EXAMINED: South Africa: Western Cape Province: Gt Winterhoek, 4000 ft [33°07'S 19°10'E], November 18, 1916, R.W. Tucker, 1 ♀ (SAM-ENW-B002957); same data, November 25, 1916, R.W. Tucker, 1 ♀ (SAM-ENW-B002723); same locality, 7000 ft, November 15, 1916, R.W. Tucker, 1 ♀ (SAM-ENW-B002807).

DISTRIBUTION: South Africa: Western Cape Province: The species has only been recorded from the Groot Winterhoek Mountains.

Hermacha sericea Purcell, 1902

Figures 2H, 4M–P, 14A–F, 15A–J, 16A–E

Hermacha sericea Purcell, 1902: 375.

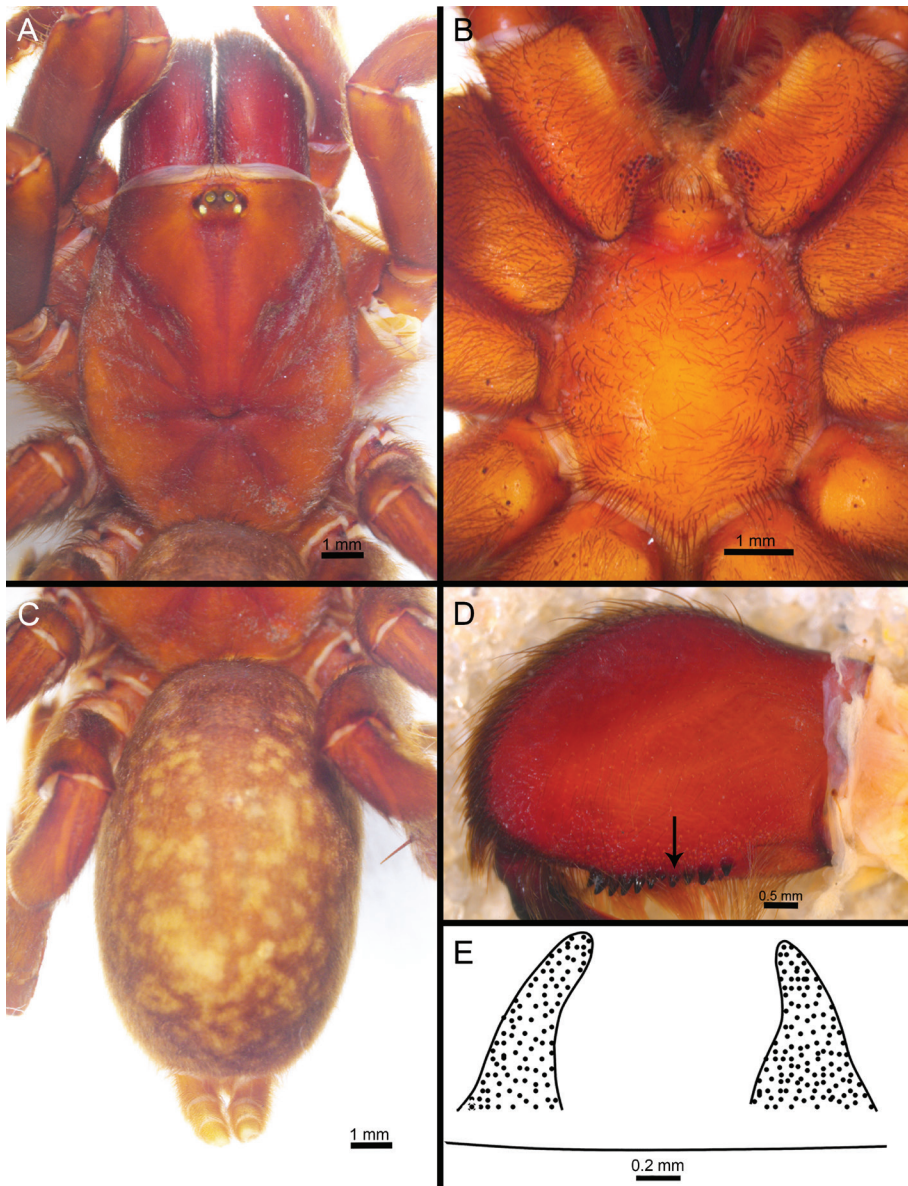


FIGURE 13. *Hermacha nigrispinosa* Tucker, 1917, female paratype (SAM-ENW-B002583): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, arrow shows the irregular line of promarginal teeth, prolateral view. **E**, spermathecae.

MATERIAL EXAMINED: HOLOTYPE: South Africa: Northern Cape Province: Van Rhyns Dorp Div. and the western part of the Calvinia Div., August, 1897, M. Mally, 1 ♂ (SAM-ENW-X003666). PARATYPES: South Africa: Northern Cape Province: Williston, 44 km WNW, Loskop, 3.9 km WNW; near BioGaps site 3110_2030 (31°13'27.14"S 20°28'36.52"E), April, 2017, I. Engelbrecht, S. Mitchell, C. Sole, T. Majelantle, 1 ♀ (NCA 2017/1868); Same data, 1 ♀ (NCA 2017/1869).

REMARKS: Copulatory bulbs of the male holotype (SAM-ENW-X003666) are broken (fig. 15D, E); copulatory bulb measurements are taken from the male SAM-ENW-C008684 (figs. 4M, N, 15I, J).

DIAGNOSIS: Males of *H. sericea* can be distinguished by the long copulatory bulb (Rlw ~2.5, figs. 15D, E, I, J). Differs from *H. nigrispinosa*, *H. montana*, and *H. tuckeri* by having a small apical flange on the embolus (figs. 4N, 15I) (long flange in *H. nigrispinosa* [fig. 12D], without flanges in *H. montana* [fig. 9D, E], and with two flanges in *H. tuckeri* [fig. 18E]). Females can be distinguished by the spermathecae (fig. 16E), which differ from *H. evanescens* and *H. lanata* in the smaller apical receptacle.

DESCRIPTION: MALE HOLOTYPE (SAM-ENW-X003666, figs. 2H, 4M-P, 14A-F, 15A-J): *Total length*: 10.93. *Carapace* (fig. 14A): length 5.22, width 3.91, with lateral dark marginal bristles, and dorsal pubescence. *Cephalic region*: length 3.15; clypeus almost absent, with 5 bristles on the edge, some bristles in front and back of the OQ. *Fovea*: width 0.33, short, pro-curved. *Ocular measurements*: AME 0.13, ALE 0.31, PME 0.19, PLE 0.21, OQ length 0.54, 0.91 width; AME-ALE 0.08, PME-PLE 0.00, AME-PME 0.06, ALE-PLE 0.10, AME-AME 0.17, PME-PME 0.40. *Chelicerae* (fig. 14D): length 2.83, width 1.60, with dark retrodorsal bristles, rastellum formed by many strong setae; intercheliceral tumescence small, pallid with setae. Cheliceral furrow with an irregular line of 8 (5-1-2) promarginal teeth and 3 mesobasal denticles. *Labium*: length 0.27, width 0.77. *Palpal endites*: length 1.75, width 0.85, with 22 cuspsules on inner corner, prolateral face straight, soft area long, with long uniformly distributed hairs. *Sternum* (fig. 14B): length 2.56, maximum width 2.14. *Abdomen* (fig. 14C): length 5.45, covered with small hair and bristles. PMS: length 0.57; PLS: length of basal:medial:apical segments 1.04:0.79:0.82; total length 2.65. *Lengths of legs and palp*: I: 4.24, 2.48, 3.27, 2.92, 2.02, 14.93. II: 4.05, 2.15, 2.80, 2.95, 2.15, 14.10. III: 3.60, 1.82, 2.26, 3.56, 2.18, 13.42. IV: 4.55, 2.11, 3.54, 4.48, 2.37, 17.05. *Palp*: 2.50, 1.35, 1.89, —, 1.06, 6.80. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1 D, 1 RA; patella, 1-1 P; tibia, 1-1 P, 3-4-2 V, and a strong apical spine (ventral posterior, figs. 4P, 14E, F); metatarsus, 1 P (1:2 B), 2-0-1 V, slightly curved (1:3 B, fig. 2H); tarsus, 0. Leg II: femur, 1-1 P, 1-1-1 D, 1-1-1 R; patella, 1-1 P; tibia, 1-1 P, 1-2-1-2 V; metatarsus, 1 P, 2-0-2 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1 D (1:2 B), 1-1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D, 1-1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1 P, 1-1-1 D, 1-1-1 R; patella, 1 R; tibia, 1-1 P, 1-1 R, 2-2-1-2 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 2-1-2-3 V; tarsus, 0. *Palp* (figs. 4O; 15A-C, F-H): femur, 1 P A; patella, 0; tibia, 2-2 P, 1-1 R, 1-2 V; tarsus, 6 A (fig. 4O, 15C, H), with numerous small rigid bristles. *Copulatory bulb*: Embolus of both copulatory bulbs of the type specimen are broken (figs. 4M, N, 15D, E, I, J). The measurements taken are from the male SAM-ENW-C008684, length 2.35, width 0.94, Rlw 2.5; (fig. 15I, J). *Scopulae*: Metatarsi: I-II, dense (3:4 A); III-IV, sparse apical (prolateral, IV escarce setae). Tarsi: I-II, dense, uniformly distributed throughout the segment; III-IV, sparse, uniformly distributed (III divided by a narrow band of setae; IV, divided very wide band of setae with a line of setae on both sides of the band of setae). *Trichobothria*: Tibiae: I 10-10; II 11-10; III 11-10; IV 12-11. Metatarsi: I 1(5)1(3)1(2)1(1)1(6); II 1(4)1(3)1(2)1(1)1(5); III 1(5)2(4)1(2)1(6); IV 1(4)1(2)1(2)1(1)1(5). Tarsi: I 25; II 23; III 25; IV 26. *Color in alcohol*:

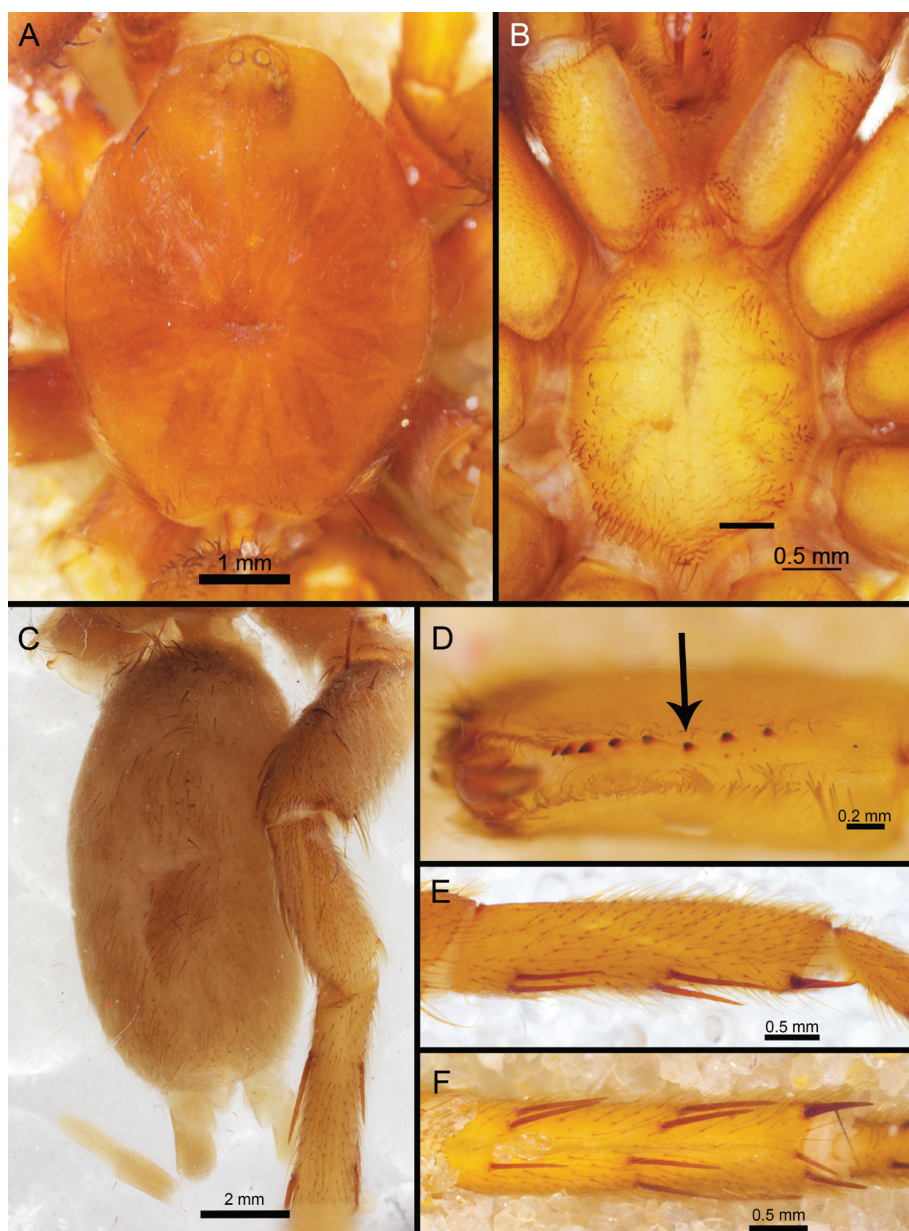


FIGURE 14. *Hermacha sericea* Purcell, 1902, male holotype (SAM-ENW-B002583): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, arrow indicates the irregular pattern of teeth and distribution of denticles, ventral view. **E–F**, tibia I: **E**, retrolateral view; **F**, ventral view.

Overall reddish yellow, legs like carapace (tarsi pallid ventrally), chelicerae darker. Abdomen yellowish with pallid mottling; spinnerets pallid yellowish.

FEMALE (NCA 2017/1868, fig. 16A–E): *Total length*: 13.42. *Carapace* (fig. 16A): length 5.02, width 3.81. *Cephalic region*: length 3.23, clypeus small with 6 marginal bristles; 9 bristles in front of

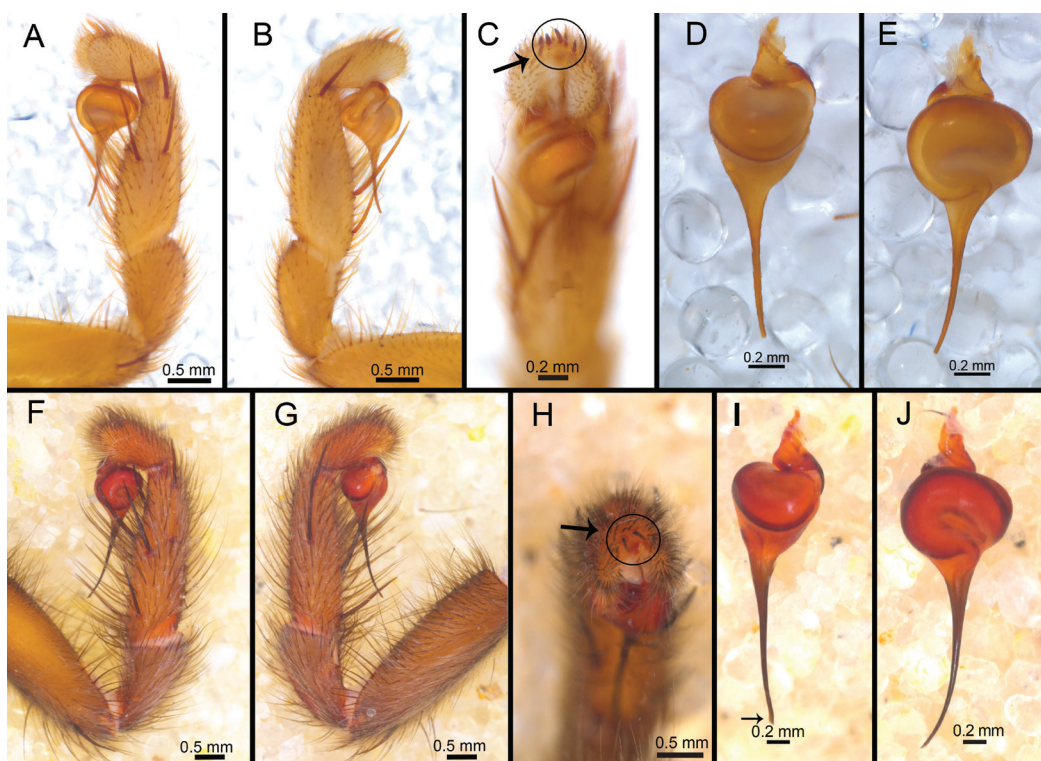


FIGURE 15. *Hermacha sericea* Purcell, 1902, male holotype (SAM-ENW-B002583): A–C, right pedipalp; A, prolateral view; B, retrolateral view; C, cymbium, arrow indicates the apical spines. D–E, male holotype, copulatory bulbs; both embolus are broken. F–J, male (SAM-ENW-C008684), right pedipalp; F, prolateral view; G, retrolateral view; H, cymbium, arrow indicate the apical spines. I–J, copulatory bulbs, showing the bulbs with complete embolus, arrow indicate the small apical flange.

the OQ and 5 posterior (between PME-PME). *Fovea*: width 0.51, procurved. *Ocular measurements*: AME 0.13, ALE 0.34, PME 0.23, PLE 0.30, OQ length 0.61, width 0.99; AME-ALE 0.08, PME-PLE 0.03, AME-PME 0.11, ALE-PLE 0.09, AME-AME 0.18, PME-PME 0.43. *Chelicerae* (fig. 16D): length 3.49, width 2.18; with retrodorsal dark bristles, rastellum numerous strong bristles. Cheliceral furrow with an irregular line of 8 (4-4) promarginal teeth and 4 mesobasal denticles. *Labium*: length 0.39, width 0.97. *Palpal endites*: length 1.87, width 0.97, with 36 cuspules on inner corner, prolateral face slightly curved, soft area large, with long uniformly distributed hairs. *Sternum* (fig. 16B): length 2.55, maximum width 2.15. *Abdomen* (fig. 16C): length 6.06, with small hair and bristles covering. PMS: length 0.70; PLS: length of basal:medial:apical segments 1.10:0.85:0.81; total length 2.76. *Lengths of legs and palp*: I: 3.70, 2.37, 2.34, 2.14, 1.69, 12.24. II: 3.38, 2.17, 2.10, 2.06, 1.68, 11.39. III: 2.98, 1.74, 1.63, 2.50, 1.87, 10.72. IV: 3.82, 2.10, 2.87, 3.54, 1.78, 14.11. Palp: 2.62, 1.48, 1.53, —, 1.66, 7.29. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1 P, 1-2 V; metatarsus, 2-2 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1-1 P, 2-2 V; metatarsus, 1 P, 2-2 V; tarsus, 0. Leg III: femur, 1 ra, 1-1-1-1 d; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D, 1-1 R, 2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1-1 d with PA patch of small rigid setae; patella, 0, with D-P patch of small rigid setae; tibia, 1-1 R, 2-2 V; metatarsus, 1-1 P (1:2 A), 1 D-P

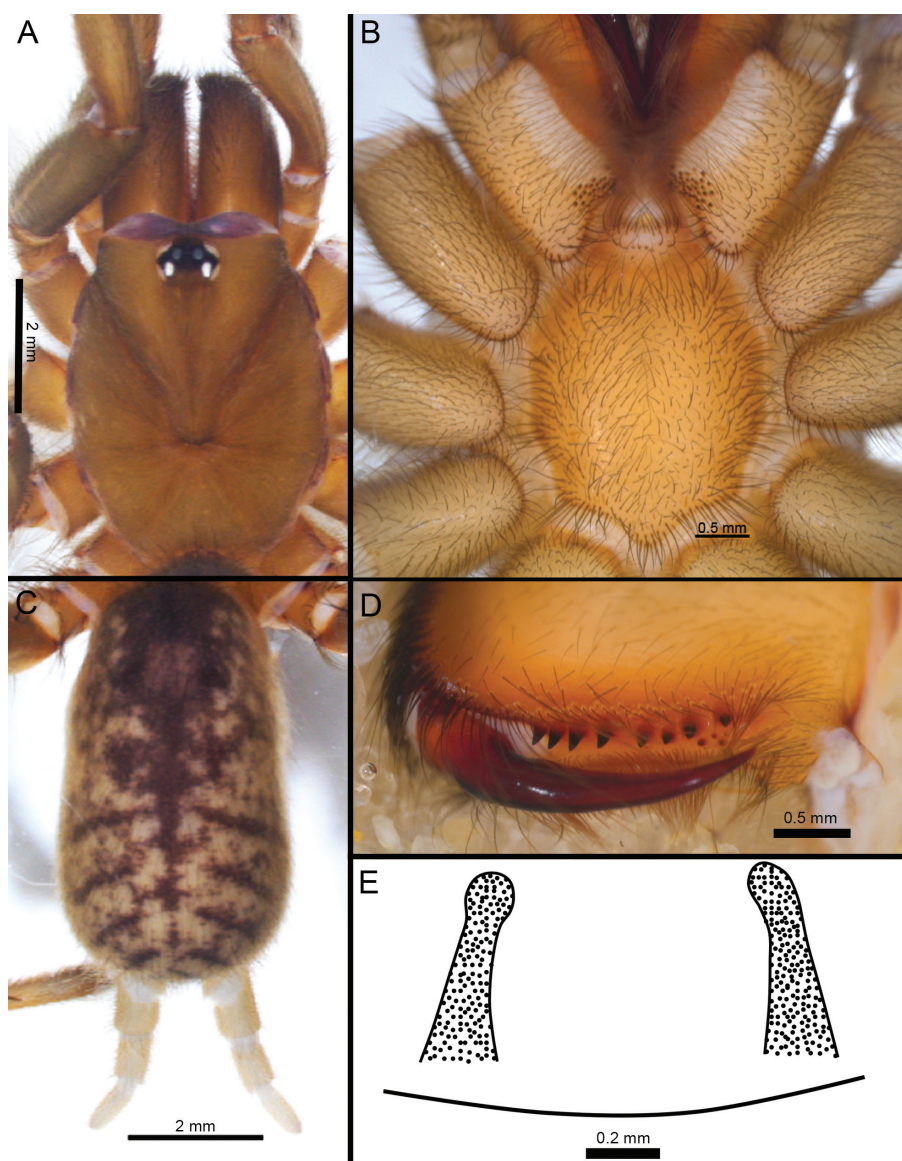


FIGURE 16. *Hermacha sericea* Purcell, 1902, female (NCA 2017/1868): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, showing the irregular pattern of teeth and distribution of denticles, ventral view. **E**, spermathecae.

(A), 1-1-1 D-R, 2-1-1-1-3 V; tarsus, 0. Palp: femur, 1 P A; patella, 0; tibia, 2 P, 4 V; tarsus, 2 VB. *Spermathecae*: narrow base and a slightly rounded apical receptacle (fig. 16E). *Scopulae*: Metatarsi: I-II, dense, uniformly distributed; III, sparse, asymmetric (1:2 A, only P); IV, sparse A (only P). Tarsi: I-II, dense, uniformly distributed; III-IV, sparse, uniformly distributed (III divided by a narrow band and IV by a wide band of setae, and presence of a line of setae on both sides of the central band). *Trichobothria*: Tibiae: palp 9-9; I 11-11; II 10-10; III 12-11; IV 13-12. Metatarsi: I (4)1(0)2(1)1(1)1(2)1; II (5)1(2)1(0)1(2)1(3)1; III (4)1(0)1(1)1(0)1(2)1; IV (5)1(0)1(1)1(0)1(1)1(2)1.

Tarsi: palp 21; I 27; II 25; III 26; IV 28. *Color in alcohol*: Overall yellowish brown, legs like carapace. Abdomen brown, with large dark anterior spot and posterior dark bands (fig. 16C); ventral surface light; spinnerets like ventral surface.

ECOLOGY: The specimens collected on the farm Loskop near Williston were found in the Western Upper Karoo vegetation type of the Nama Karoo Biome. The soil was relatively compact, typical yellow clayey loam derived from shale, with a loose covering of fine grey gravel. One of the specimens was located in a closed burrow while soil scraping for trapdoor spiders. The top of the burrow was located in a small depression in the soil surface, and when opened the burrow walls contained a very thick, papery silk lining. The second specimen was found with an open burrow with a distinctive round entrance, as in *H. evanescens*.

ADDITIONAL MATERIAL EXAMINED: South Africa: Northern Cape Province: Tankwa National Park, Renoster River (32°14.70'S 20°05.82'E, 490 m), July 10–August 17, 2014, S. van Noort, 1 ♂ (SAM-ENW-C008801); same data, 1 ♂ (SAM-ENW-C008684).

DISTRIBUTION: The type locality is imprecise and spans the northern part of the Western Cape Province and the adjacent part of the Northern Cape. The other localities are in the Northern Cape Province of South Africa. It appears that this species occurs in the western parts of the Karoo, and possibly the adjacent parts of Namaqualand.

Hermacha tuckeri Raven, 1985

Figures 1F, 2I, 4Q–T, 17A–F, 18A–E, 19A–E

Hermacha purcelli Tucker, 1917: 114, fig. 8.

Hermacha tuckeri Raven, 1985: 161 (replacement name for *H. purcelli* Tucker, 1917, preoccupied by *Damarchodes purcelli* Simon, 1903a).

MATERIAL EXAMINED: **HOLOTYPE**: South Africa: Western Cape Province: Ashton, Robertson Div. [33°50'S 20°3'E], July, 1914, Walter and Purcell, W. F, 2 ♂ (SAM-ENW-B002670, examined). **PARATYPE**: Same data as for holotype, November, 1902, Purcell, W. F, 1 ♀ (SAM-ENW-B0012395).

DIAGNOSIS: Males can be diagnosed by the embolus with two apical flanges (dorsal and ventral, figs. 4R, 18E) and by the low number of spines on the palp tibia (fig. 18A, B). They differ from *H. sericea* by the shorter copulatory bulb (Rlw ~2.4; figs. 4Q, R; 18D, E). Females can be distinguished by the spermathecae (fig. 19E), which are longer than *H. montana* and with a more rounded apex than *H. nigrispinosa*. Females also differ from those of *H. sericea* by their curved spermathecae with a wide base (fig. 19E).

DESCRIPTION: **MALE HOLOTYPE** (SAM-ENW-B002670, figs. 2I, 4Q–T, 18A–F, 19A–E): *Total length*: 14.96. *Carapace* (fig. 17A): length 7.05, width 4.77, with lateral dark marginal bristles, and sparse pubescence. *Cephalic region*: length 4.28; clypeus almost absent, without bristles marginally, some bristles anterior and posterior of the OQ. *Fovea*: width 0.54, procurved. *Ocular measurements*: AME 0.19, ALE 0.32, PME 0.20, PLE 0.29, OQ length 0.64, 1.17 width; AME-ALE 0.13, PME-PL 0.04, AME-PME 0.13, ALE-PL 0.11, AME-AME 0.13, PME-PME 0.49. *Chelicerae* (fig. 17D): length 3.63, width 2.13, with dark retrodorsal bristles, rastellum formed by many

strong setae; intercheliceral tumescence small, pallid with setae. Cheliceral furrow with an irregular line of 7 (4-1-2) promarginal teeth and 1 mesobasal denticle. *Labium*: length 0.38, width 0.96. *Palpal endites*: length 2.16, width 0.96, with 40 cuspules on inner corner, prolateral face almost straight, soft area long, with long uniformly distributed hairs. *Sternum* (fig. 17B): length 3.70, maximum width 2.63. *Abdomen* (fig. 17C): length 6.35, covered with small hairs and dark bristles. PMS: length 0.69; PLS: length of basal:medial:apical segments 1.12:0.57:0.90; total length 2.59. *Lengths of legs and palp*: I: 5.06, 3.10, 3.52, 3.64, 2.08, 17.39. II: 4.84, 2.74, 3.38, 3.57, 2.31, 16.84. III: 4.28, 2.27, 2.65, 4.16, 2.43, 15.79. IV: 5.41, 2.69, 4.07, 5.42, 2.54, 20.13. Palp: 2.92, 1.77, 2.14, —, 1.33, 8.16. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1 D, 1-1 RA; patella, 1-1 P; tibia, 1-1 P, 1-4 V, and a strong apical spine (ventral posterior, figs. 4T, 17E, F); metatarsus, 1 V (1:2 B), curved (figs. 2I); tarsus, 0. Leg II: femur, 1-1 P A, 1-1 D B, 1-1-1 R; patella, 1-1 P; tibia, 1-1 P, 1-2-3 V; metatarsus, 1-1 P (1:2 B), 1-2-0-2 V; tarsus, 0. Leg III: femur, 1-1 P A, 1 D B, 1-1 R A; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D A, 1-1 R, 1-1-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1-1-1-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1 D, 1-1 RA; patella, 1 R; tibia, 1-1-1 P, 1-1 R, 2-2-2 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 2-1-2-3 V; tarsus, 1 P A/0. Palp (figs. 4S, 18A–C): femur, 1 PA, 1 RA; patella, 1-1 P; tibia, 2-2 P, 1-2 R, 1 V; tarsus (figs. 4S, 18C), 2 A (with numerous small rigid bristles). *Copulatory bulb*: slightly curved (length 2.13, width 0.90, Rlw 2.4), with a little dorsal and ventral flanges on the apex (figs. 4Q, R, 18D, E). *Scopulae*: Metatarsi: I, dense (1:2 A); II, dense (3:4 A); III, sparse apical (prolateral); IV, only some apical bristles. Tarsi: I–II, dense, uniformly distributed throughout the segment; III–IV, sparse, uniformly distributed (III, divided by a narrow band and IV divided by a wide band of setae). *Trichobothria*: Tibiae: I 11-10; II–IV 11-11. Metatarsi: I 1(6)1(4)2(3)1(1)1(3)1(4); II 1(4)1(5)2(4)1(1)1(6); III 1(5)1(4)1(2)1(1)1(6); IV 1(6)1(2)1(1)1(4). Tarsi: I 28; II 30; III 27; IV 26. *Color in alcohol*: Overall reddish brown (chelicerae darker). All tarsi pallid ventrally. Abdomen brown, mottled with light spots (fig. 17C); spinnerets like abdomen.

FEMALE PARATYPE (SAM-ENW-B002583, figs. 1F, 19A–E): *Total length*: 19.73. *Cara-pace* (fig. 19A): length 6.25, width 4.67. *Cephalic region*: length 3.99, clypeus small (almost absent) with 6 marginal bristles; numerous bristles in front and posterior of the OQ. *Fovea*: width 0.63, slightly procurved. *Ocular measurements*: AME 0.15, ALE 0.36, PME 0.20, PLE 0.28, OQ length 0.71, width 1.17; AME-ALE 0.14, PME-PLA 0.05, AME-PME 0.14, ALE-PLA 0.14, AME-AME 0.22, PME-PME 0.49. *Chelicerae* (fig. 19D): length 4.10, width 2.61; with rerodorsal dark bristles, rastellum with numerous rough bristles. Cheliceral furrow with an irregular line of 8 (5-1-2) promarginal teeth and 1 mesobasal denticle. *Labium*: length 0.54, width 1.11. *Palpal endites*: length 2.16, width 1.17, with 35 cuspules on inner corner, prolateral face curved, soft area long, with long uniformly distributed hairs. *Sternum* (fig. 19B): length 3.65, maximum width 2.98, last posterior sigilla small, separated from the edge. *Abdomen* (fig. 19C): length 8.53, covered by small setae. PMS: length 0.89; PLS: length of basal:medial:apical segments 1.40:0.92:0.93; total length 3.25. *Lengths of legs and palp*: I: 4.33, 2.74, 2.74, 2.52, 1.78, 14.11. II: 3.59, 2.66, 2.51, 2.38, 1.87, 13.37. III: 3.56, 2.12, 1.77, 2.81, 2.04, 12.30. IV: 4.57, 2.57, 3.21, 4.04, 2.10, 16.59. Palp: 3.22, 1.78, 1.73, —, 1.98, 8.71. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1 d; patella, 0; tibia, 1-1 P, 1-2 V (1:2 A); metatarsus, 2-1-0-2 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1 d; patella, 1 PA; tibia, 1-1

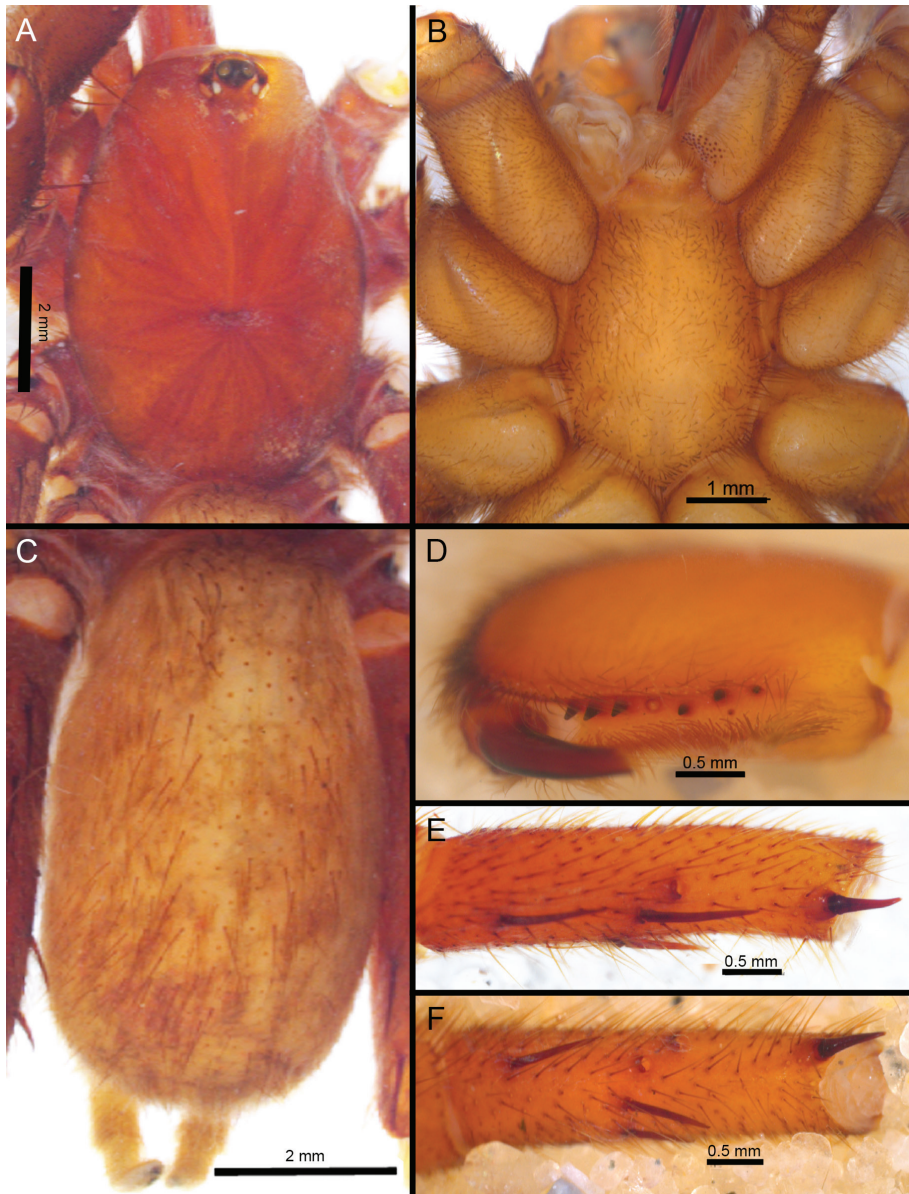


FIGURE 17. *Hermacha tuckeri* Raven, 1985, male holotype (SAM-ENW-B002670): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, arrow indicate the irregular pattern of teeth and distribution of denticles, ventral view. **E–F**, tibia I: **E**, prolateral view; **F**, ventral view.

P, 1-2 V; metatarsus, 1-2-2 V; tarsus, 0. Leg III: femur, 1 PA, 1-1-1-1 d, 1-1 RA, and a PA patch of small setae; patella, 1-1 P, 1 R, with D-P patch of small setae; tibia, 1-1 P, 1 D (1:2 A), 1-1 R, 2 V A; metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1-1 d, with a PA patch of small setae; patella, 0, with D-P patch of small setae; tibia, 1-1 R, 1-1 V POST; metatarsus, 1-1 P (1:2 A), 1 D-P (A), 1-1-1 D-R, 2-1-1-2-3

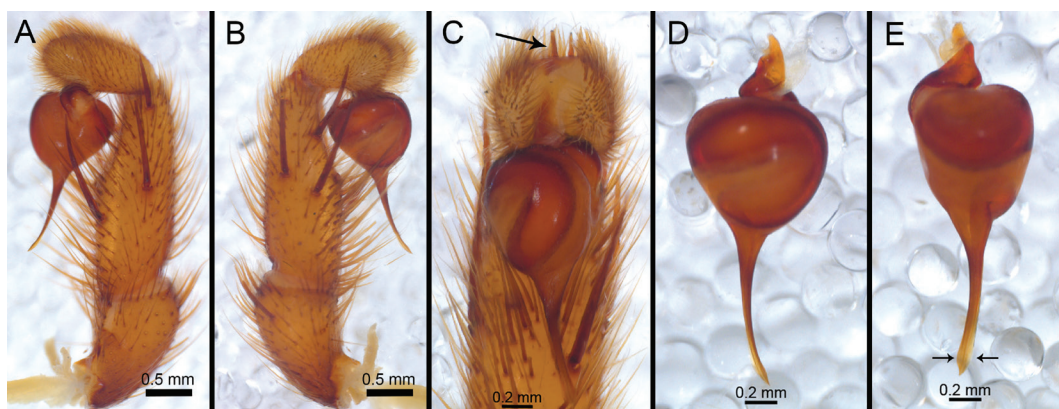


FIGURE 18. *Hermacha tuckeri* Raven, 1985, male holotype (SAM-ENW-B002670): **A–B**, left pedipalp: **A**, retrolateral view; **B**, prolateral view; **C**, cymbium, arrow indicates the apical spines. **D–E**, copulatory bulb, two different views, arrows indicate the two apical flanges.

V; tarsus, 0. Palp: femur, 1 PA; patella, 1-1 P; tibia, 2 P, 1-1-4 V; tarsus, 2 VB. *Spermathecae*: curved inward, wide base and rounded apex (fig. 19D). *Scopulae*: Metatarsi: I, dense and uniformly distributed; II, dense, uniformly distributed and divided by setae; III, sparse (1:4 A, prolateral); IV, only some prolateral apical setae. Tarsi: I, dense, uniformly distributed; II, dense, uniformly distributed, divided (1:2 B) by setae; III–IV, sparse, uniformly distributed; III divided by a wide band and IV by a wider band of setae, presence of line of setae on both sides of the central wide band. *Trichobothria*: Tibiae: palp 10-10; I 12-12; II 11-11; III 10-10; IV 11-11. Metatarsi: I 1(3)2(1)1(3)1(1)1(4); II 1(1)2(3)2(3)1(7); III 1(1)2(5)1(0)1(1)1(1)1(4); IV 1(3)1(1)2(2)1(2)1(0)1(6). Tarsi: palp 23; I 30; II 26; III 28; IV 28. *Color in alcohol*: Overall reddish yellow (chelicerae darker), legs with metatarsi-tarsi lighter. Abdomen mottled with light spots (fig. 19C); spinnerets yellowish.

ECOLOGY: Specimens from Bonnievale were collected from Y shaped burrows on a flat, partially vegetated area with sandy clay soil. One of the arms of the Y opens to the surface, while the other ends just below the soil surface. When the spiders are disturbed in the burrow, in this case by inserting a piece of grass into it, they retreat to the blind arm of the Y. This made collecting them quite easy, as the blind arm could be opened by scraping away the soil above it before inserting grass into the burrow. Thus, when the grass was inserted, the spiders rapidly exited that arm onto the soil surface. Burrows were relatively common at this site.

ADDITIONAL MATERIAL EXAMINED: South Africa: Western Cape Province: About 15 km NW Worcester [33°34'S 19°16'E], October 12, 1975, M. Stiller, 1 ♀ (NCA 83/218); same locality, 1 ♀ (NCA 83/230); Witteberg Nature Reserve (33°21.52'S 20°30.07'E, 890 m), September 11–October 19, 2015, Z. Mbo, 3 ♂ (NCA 2016/2597). Anysberg Nature Reserve (33°27.23'S 20°34.76'E, 745 m), September 8–October 8, 2015), Z. Mbo, 1 ♂ (NCA 2016/2480). Swellendam District; ca. 1 km N of Bonnievale, W side of tar road (33°54'58.32"S 20° 6'10.33"E), September 12, 2012, I. Engelbrecht, 3 ♀ (NCA 2018/338).

DISTRIBUTION: South Africa: Western Cape Province: It appears that this species occurs in the western parts of the Little Karoo.

SPECIES WITHOUT APICAL SPINES ON THE CYMBIUM

Figure 5

Six species have this character: *Hermacha breviceauda* Purcell, 1903; *Hermacha caudata* Simon, 1889; *Hermacha evanescens* Purcell, 1903; *Hermacha lanata* Purcell, 1902; *Hermacha maraisae*, sp. nov.; *Hermacha septemtrionalis*, sp. nov.

Hermacha breviceauda Purcell, 1903

Figures 2A, 5A–D, 20A–F, 21A–E

Hermacha breviceauda Purcell, 1903: 98.

Pionothele capensis Zonstein, 2016: 36, figs. 9–16, 17–19. Male holotype and female paratype in MRAC (not examined). New synonymy.

MATERIAL EXAMINED: HOLOTYPE: South Africa: Western Cape Province: Slopes on the outskirts of Cape Town at the foot of Devils Mountain [33°57'S 18°26'E], July, 1901, Treleaven, F. and W.F. Purcell, 2♂ (SAM-ENW-B004453 and 8898).

SYNONYMY: Zonstein (2016) described the species *Pionothele capensis* Zonstein, 2016, from near Cape Town, Western Cape Province. The type specimen of *P. capensis* was not sent for examination, but other specimens collected with the type were loaned from MRAC for examination. The type material of *Pionothele straminea* (holotype ♂ from Rondegat, Cederberg Mts.; SAM-ENW-X003586) was examined for this study. From examining the MRAC specimens of *P. capensis* it is clear that they belong to the genus *Hermacha*. The two genera differ in the sternum shape, position of the posterior sternal sigillae, length of the distal segment of PLS, shape of palp tibia and palp spination pattern, cheliceral dentition and number of cheliceral denticles. Further comparison of the type of *H. breviceauda* and specimens of *P. capensis* showed that these two species are conspecific, having the shape of the copulatory bulb and of the PLS identical. The type locality of *P. capensis* is also 16 km from the type locality of *H. breviceauda*. Therefore, we synonymize *Pionothele capensis* with *Hermacha breviceauda*.

DIAGNOSIS: Males of *H. breviceauda* can be separated from *H. caudata*, *H. evanescens*, and *H. lanata* by their copulatory bulb without flanges (figs. 5A, B, 21D, E). Differs from *H. maraisae* by the palpal tibia with few prolateral spines (fig. 21B) and from *H. septemtrionalis* by the palpal endites with more than 120 cusps (fig. 20B). Females can be distinguished by their spermathecae having a domed apex (see Zonstein, 2016: fig. 20), which is similar to *H. montana* (fig. 10E) and *H. tuckeri* (fig. 19E). They differ from *H. montana* in having longer spermathecae which are closer to each other, and from *H. tuckeri* by the higher number of maxillary cusps (more than 70 [see Zonstein, 2016: fig. 19] vs. fewer than 40 [fig. 19B]).

DESCRIPTION: MALE HOLOTYPE (SAM-ENW-B004453, figs. 2A, 4A–D, 20A–F, 21A–E): *Total length*: 13.22. *Carapace* (fig. 20A): length 6.28, width 4.66, with a gold pubescence. *Cephalic region*: length 4.08; clypeus almost absent, some bristles anteriorly and posteriorly of the OQ. *Fovea*: procurved, width 0.60. *Ocular measurements*: AME 0.18, ALE 0.30, PME 0.23, PLE 0.22,

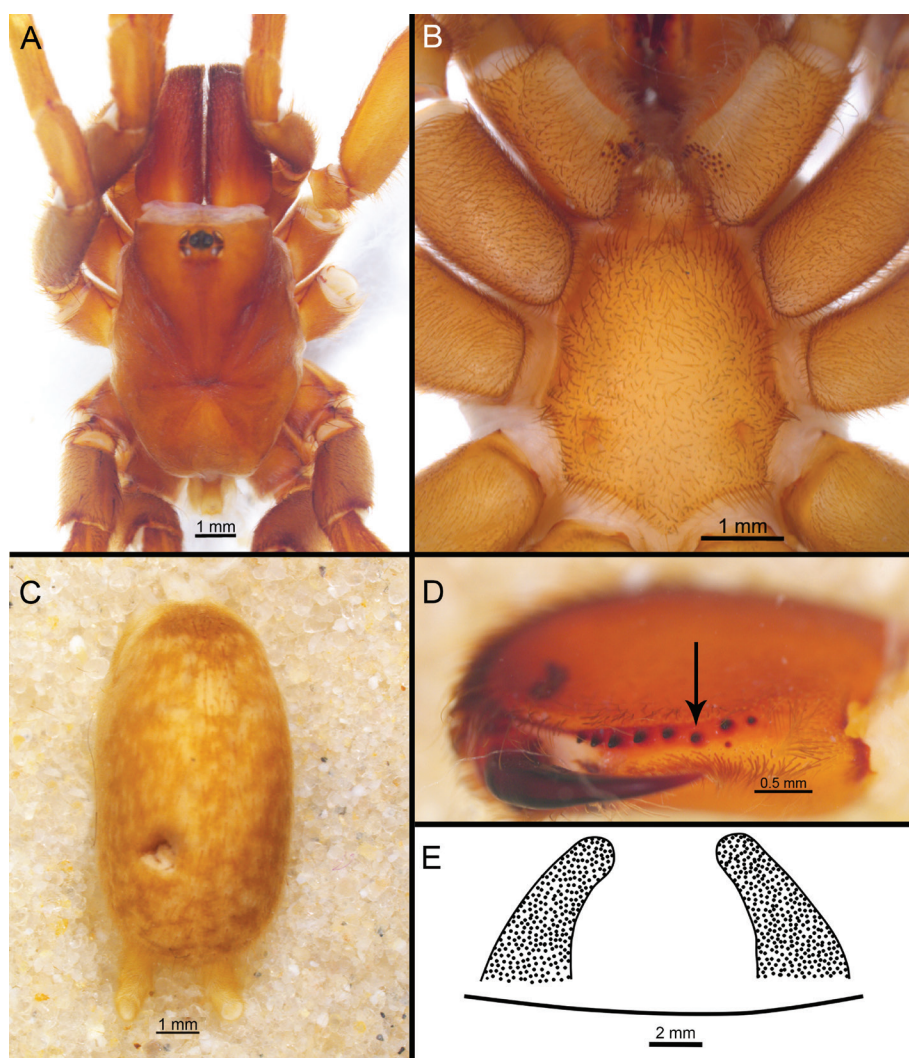


FIGURE 19. *Hermacha tuckeri* Raven, 1985, female paratype (SAM-ENW-B0012395): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, arrow shows the irregular pattern of teeth and distribution of denticles, ventral view. **E**, spermathecae.

OQ length 0.58, 1.01 width; AME-ALE 0.11, PME-PLA 0.02, AME-PME 0.10, ALE-PLA 0.09, AME-AME 0.14, PME-PME 0.48. *Chelicerae* (fig. 20D): length 3.86, width 2.27, with dark retro-dorsal bristles, rastellum formed by strong setae; intercheliceral tumescence pallid, small, with setae. Cheliceral furrow with a regular line of 6 promarginal teeth (4-1-1) and 0/3 mesobasal denticles. *Labium*: length 0.32, width 0.90. *Palpal endites*: length 2.14, width 1.16, with 134 cus-pules on inner corner, prolateral face straight, soft area little developed, with long uniformly distributed hairs. *Sternum* (fig. 20B): length 2.89, maximum width 2.27. *Abdomen* (fig. 20C): length 4.99, covered with small setae and dark bristles. PMS: length 0.44; PLS: length of basal:medial:apical segments 0.74:0.32:0.40; total length 1.47. *Lengths of legs and palp*: I: 4.61, 2.82,

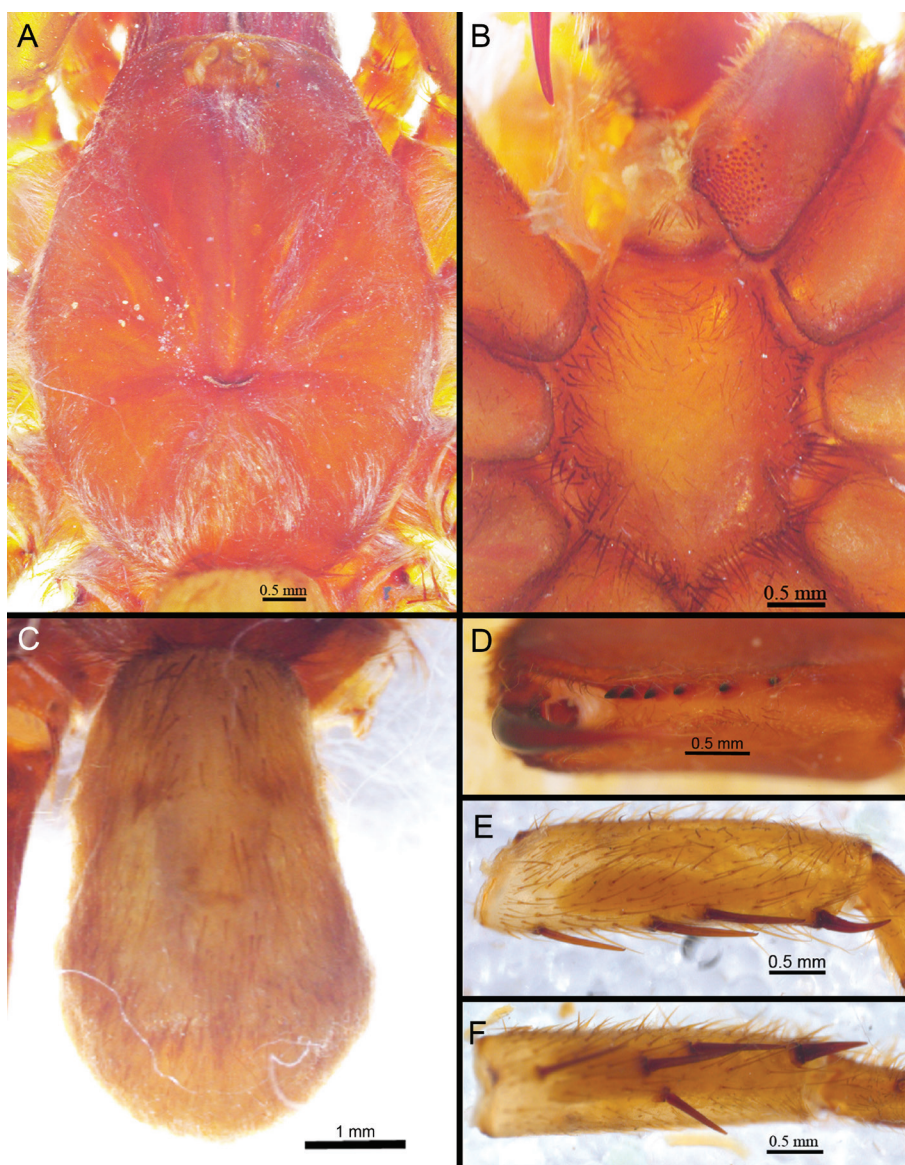


FIGURE 20. *Hermacha brevicauda* Purcell, 1903, male holotype (SAM-ENW-B004453): A, cephalothorax, dorsal view. B, sternum, labium, palpal endites, ventral view. C, abdomen, dorsal view. D, chelicerae, showing the pattern of teeth, ventral view. E–F, tibia I: E, retrolateral view; F, ventral view.

3.11, 3.11, 2.00, 15.65. II: 4.36, 2.60, 2.82, 3.14, 2.09, 15.01. III: 4.00, 2.23, 2.28, 3.62, 2.09, 14.21. IV: 4.88, 2.54, 3.51, 4.55, 2.10, 17.58. Palp: 2.93, 1.63, 2.14, —, 1.14, 7.84. *Chaetotaxy*: Leg I: femur, 1 P, 1-1-1-1 D, 1 RA; patella, 1-1 P; tibia, 1-1 P (1:2 B), 1-2-1 V, and a strong apical spine (ventral posterior, figs. 5D, 20E, F); metatarsus, 1-1 P, 1-0-2 V, slightly curved (fig. 2A); tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1 D; patella, 1-1 P; tibia, 1-1 P, 1-1-2 V; metatarsus, 1-1 P, 1-0-2 V; tarsus, 0. Leg III: femur, 1 PA, 1-1-2 RA; patella, 1-1-1 P, 1 R; tibia, 1-1 P, 1 DM, 1-1 R, 1-1-3 V; metatarsus,

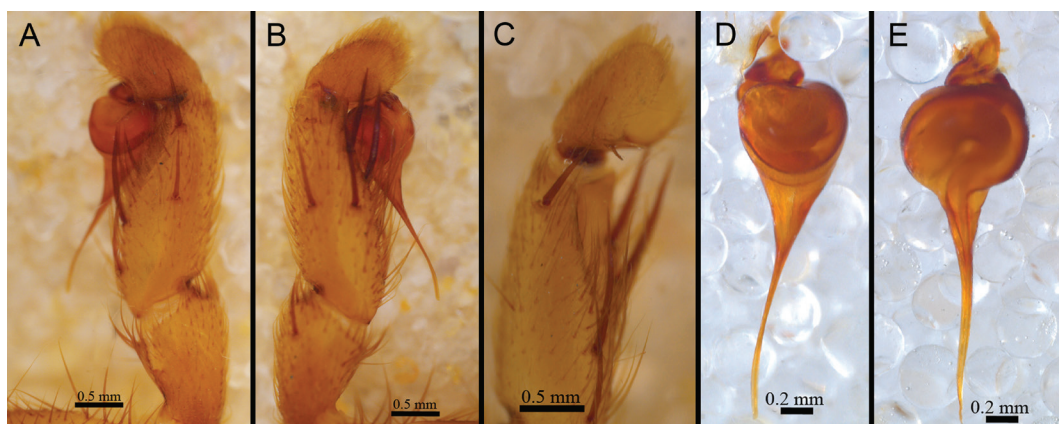


FIGURE 21. *Hermacha brevicauda* Purcell, 1903, male holotype (SAM-ENW-B004453): A–C, right pedipalp: A, retrolateral view; B, prolateral view; C, cymbium without apical spines. D–E, copulatory bulb, two different views.

1-1-1 P, 1-1-1 D-P, 2-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1 D, 1-1 RA; patella, 1 R; tibia, 1-1 P, 1-1 R, 2-2-2 V; metatarsus, 1-1-1 P, 1-1-1-1 D-P, 1-1-1-1 D-R, 2-2-3 V; tarsus, 0. Palp (figs. 5C, 21A–C): femur, 1 PA, 1 RA; patella, 1 P; tibia, 2-2 P, 1 R, 1-2 V; tarsus, 0. *Copulatory bulb* (figs. 5A, B, 21D, E): straight (length 2.12, width 0.80, Rlw 2.6; slightly curved in the apex). *Scopulae*: Metatarsi: I–II, dense (3:4 A); III, sparse (1:2 A); IV, absent. Tarsi: I–II, dense, uniformly distributed throughout the segment; III, sparse, uniformly distributed throughout the segment and divided by a band of setae; IV, sparse, uniformly distributed and divided by a wide band of setae. *Trichobothria*: Tibiae: I 9-10; II 10-11; III 9-10; IV 12-11. Metatarsi: I 1(4)1(3)1(2)1(5); II 1(3)1(2)1(4); III 1(4)1(2)2(3)1(4); IV 1(4)1(3)1(1)1(5). Tarsi: I 23; II–III 20; IV 22. *Color in alcohol*: Overall dark reddish brown, chelicerae darker. Abdomen brown, pallid as a result of preservation and deterioration over time; spinnerets like abdomen.

ADDITIONAL MATERIAL EXAMINED: South Africa: Western Cape Province: Mamre [33°31'S 18°28'E], September, 1999, T. van der Berdt, 1♂ (NCA 99/318); Cape Flats Nature Reserve–UWC [33°56'S 18°37'E], March, 1993, 1♂ (SAM-ENW-C003215); Hout Bay [34°1'S 18°22'E], April 24, 1985; J. Visser, 1♂ (NM 16642). Muizenberg, dunes to the North [34°06'S 18°27'E], April 7–21, 1991, R. Legg, 1♂ (MRAC 173684); Same locality, June 30–July 14, 1991, R. Legg, 4♂ (MRAC 173793); Same locality, July 28–August 11, 1991, R. Legg, 2♂ (MRAC 173802).

FEMALE: See Zonstein, 2016: 38.

DISTRIBUTION: South Africa: Western Cape Province: This species appears to be limited to the Cape peninsula and adjacent areas of the Cape Flats and southern part of the Swartland.

Hermacha caudata Simon, 1889

Figures 5E–H, 22A–E, 23A–E

Hermacha caudata Simon, 1889: 408; Raven 1985: 85; Goloboff 1995: 31.

MATERIAL EXAMINED: HOLOTYPE: Mozambique: Maputo: Delagoa Bay [Maputo, 26°3'S 32°34'E]; 1♂ (MNHN 9917).

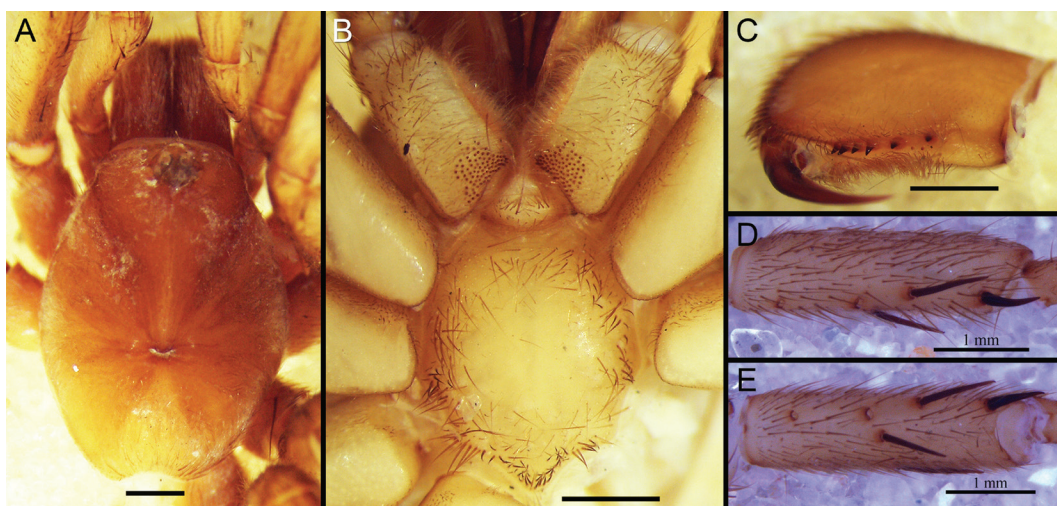


FIGURE 22. *Hermacha caudata* Simon, 1889, male holotype (MNHN 9917): A, cephalothorax, dorsal view. B, sternum, labium, palpal endites, ventral view. C, chelicerae, showing the pattern of teeth and distribution of denticles, ventral view. D–E, tibia I: D, retrolateral view; E, ventral view.

REMARKS: The specimen is very old and in poor condition. Total length could not be measured as the abdomen is destroyed.

DIAGNOSIS: Males of *Hermacha caudata* can be diagnosed by the embolus with the presence of small apical flanges (fig. 23D, absent in *H. septemtrionalis*, *H. maraisae*, and *H. brevicauda*). They also differ from *H. brevicauda*, *H. maraisae*, and *H. lanata* by their short copulatory bulb (Rlw ~2.4, figs. 5E, F, 23D, E) and from *H. septemtrionalis* and *H. evanescens* by the embolus with the presence of two apical flanges (fig. 23D). They also can be separated from *H. brevicauda* and *H. maraisae* by the lower number of maxillary cuspules (fewer than 90 [fig. 22B] vs. more than 110 (figs. 20B, 30B)). Female unknown.

DESCRIPTION. MALE HOLOTYPE (MNHN 9917, figs. 5E–H, 22A–E, 23A–E): *Carapace* (fig. 22A): length 5.18, width 3.97, with sparse pubescence. *Cephalic region*: length 3.28; clypeus almost absent, some bristles in anterior and posterior of the OQ. *Fovea*: procurved, width 0.40. *Ocular measurements*: AME 0.10, ALE 0.30, PME 0.17, PLE 0.21, OQ length 0.56, 0.96 width; AME–ALE 0.15, PME–PLE 0.02, AME–PME 0.11, ALE–PLE 0.09, AME–AME 0.21, PME–PME 0.46. *Chelicerae* (fig. 22C): length 3.26, width 1.86, with dark retrodorsal bristles, rastellum formed by strong setae; intercheliceral tumescence pallid, small, with setae. Cheliceral furrow with a regular line of 6 promarginal teeth (4-1-1) and 3 mesobasal denticles (fig. 15I). *Labium*: length 0.25, width 0.79. *Palpal endites*: length 1.80, width 0.82, with 87 cuspules on inner corner, prolateral face straight, soft area little developed, with long uniformly distributed hairs. *Sternum* (fig. 22B): length 2.48, maximum width 2.05. *Abdomen*: destroyed. PMS: length 0.52; PLS: length of basal:medial:apical segments 0.92:0.50:0.60; total length 2.02. *Lengths of legs and palp*: I: 3.98, 2.31, 2.83, 2.72, 1.93, 13.77. II: 3.92, 2.11, 2.51, 2.61, 2.09, 13.24. III: 3.40, 1.80, 2.14, 3.11, 1.93, 12.38. IV: 4.14, 2.04, 3.20, 4.10, 1.92, 15.41. Palp: 2.56, 1.35, 1.96, —, 1.00, 6.87. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1 D, 1-1 RA; patella, 1-1-1 P; tibia, 1-1 P, 1-2-1 V, and a strong apical spine (ventral posterior, figs. 5H, 22D, E);

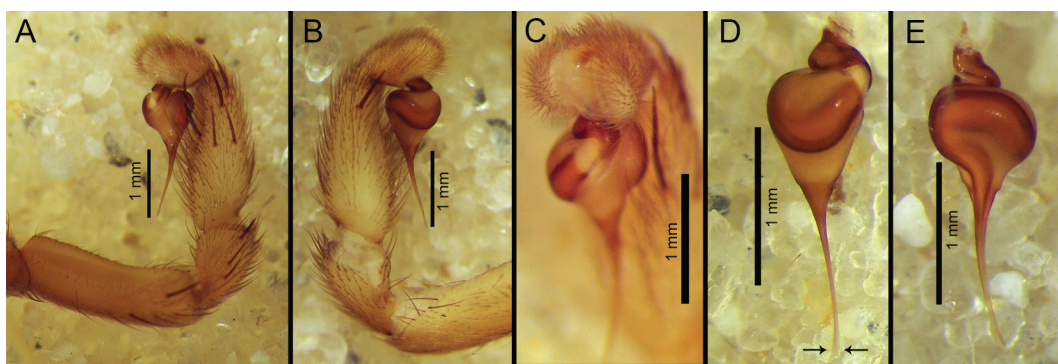


FIGURE 23. *Hermacha caudata* Simon, 1889, male holotype (MNHN 9917): A–C, right pedipalp: A, prolateral view; B, retrolateral view; C, cymbium without apical spines. D–E, copulatory bulb, two different views, arrows indicate the two small apical flanges.

metatarsus, 1-1 P, 2 V (1:2 B), straight; tarsus, 0. Leg II: femur, 1-1 P (1:2 A), 1-1-1-1 D, 1-1-1 R (1:2 A); patella, 1-1-1 P; tibia, 1-1 P, 1-2-1-2 V; metatarsus, 1-1 P, 1-1 R, 1 VB; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1 R; patella, 1-1-1 P, 1-1 R; tibia, 1-1 P, 1 D (1:2 A), 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1-1 D-P, 2-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1 D, 1-1 R; patella, 1 R; tibia, 1-2-1 P, 1-1-1 R, 3-1-2-1-3 V; metatarsus, 1-1-1-1 P, 1-1-1-1-1 D-P, 1-1-1-1-1 D-R, 2-1-2-1-3 V; tarsus, 0. Palp (figs. 5G, 23A–C): femur, 1 PA, 1-1-1 d, 1 RA; patella, 1-1-1 P; tibia, 2-3 P, 1 DB, 1 RA, 1 VM; tarsus, 0. *Copulatory bulb*: straight (length 1.71, width 0.71, Rlw 2.4), with a little dorsal and posterior flange on the apex (figs. 5E, F, 23D, E). *Scopulae*: Metatarsi: I, dense (3:4 A); II, dense (1:2 A); III, sparse (1:2 A in the prolateral side); IV, absent. Tarsi: I–II, dense, uniformly distributed throughout the segment; III, sparse, uniformly distributed throughout the segment and divided by a band of setae; IV, sparse, uniformly distributed and divided by a wide band of setae. *Trichobothria*: Tibiae: I 10-10; II 11-10; III 10-10; IV 11-11. Metatarsi: I (4)1(2)1(3)1(3)1; II (3)1(1)1(1)1(2)1; III (3)1(4)1(2)1(0)1(3)1; IV (4)1(3)1(2)1(2)1(3)1. Tarsi: I 20; II 21; III–IV 20. *Color in alcohol*: Cephalothorax and legs reddish yellow; spinnerets pallid.

DISTRIBUTION: Known only from the type locality in Mozambique.

Hermacha evanescens Purcell, 1903

Figures 1B, C, G, H, 2B, 3A–D, 5I–L, 24A–F, 25A–E, 26A–E

Hermacha evanescens Purcell, 1903: 99.

MATERIAL EXAMINED: LECTOTYPE (here designated): South Africa: Northern Cape Province: Hanover [30°54'S 24°37'E], October, 1901, 1 ♀ (SAM-ENW-C011624); PARALECTOTYPES (here designated): Northern Cape Province: Hanover, November, 1901, 1 ♀ (SAM-ENW-X009512); 9 ♀, 11 imm (SAM-ENW-X009529); March, 1902, 1 ♀, 2 imm (SAM-ENW-X010060); January, 1902, 2 ♀ (SAM-ENW-X011794); December, 1901, 2 ♀ (SAM-ENW-X011811); 1902, 1 ♀, 1 imm (SAM-ENW-X013787); October, 1901, 4 ♀, 5 imm (SAM-ENW-X009450); Eierfontein, 8–9 miles west of Hanover (31°4'S 24°17'E), December, 1901, 1 ♀ (SAM-ENW-X011958).

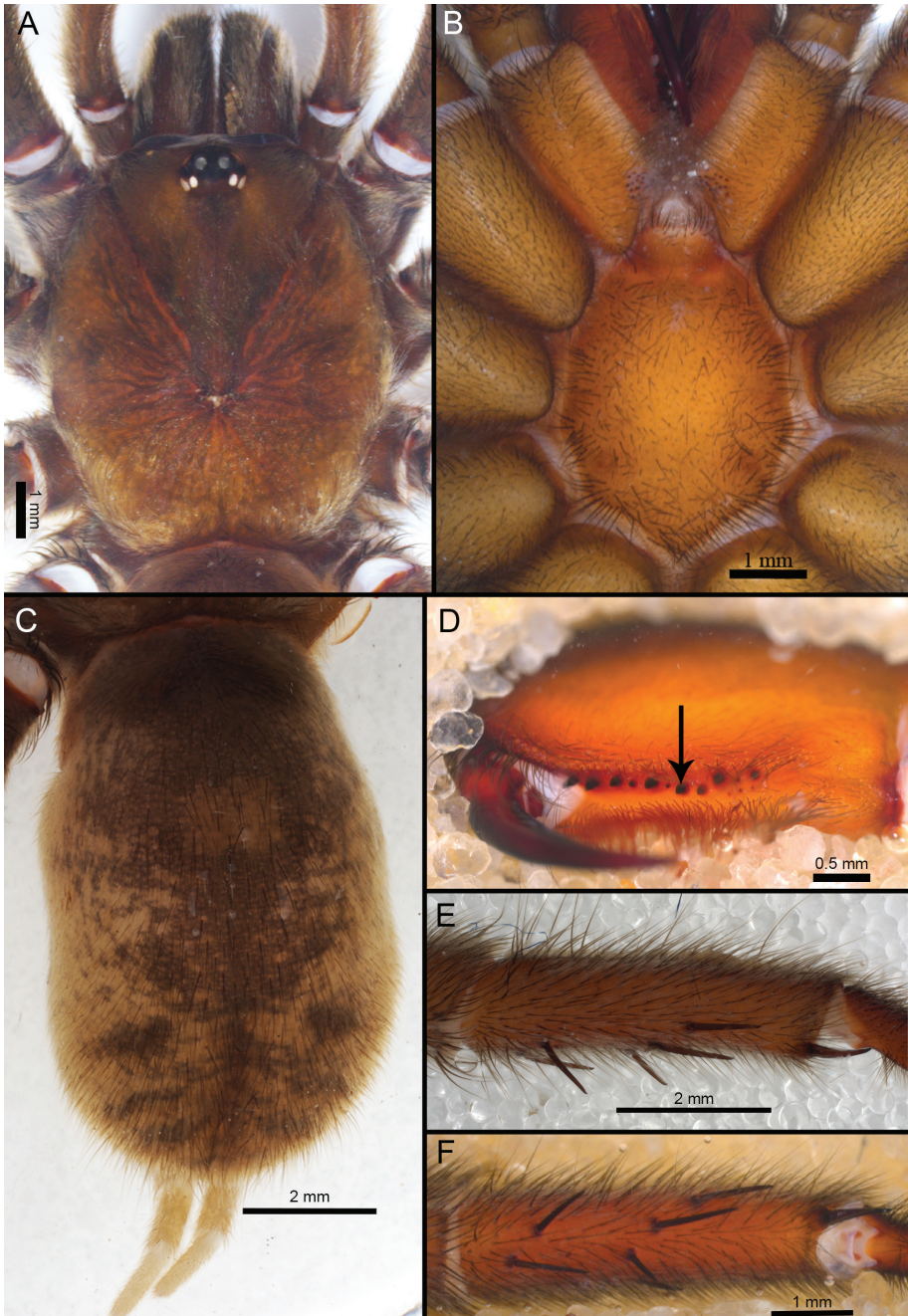


FIGURE 24. *Hermacha evanescens* Purcell, 1903, male (NCA 2018/324): A, cephalothorax, dorsal view. B, sternum, labium, palpal endites, ventral view. C, abdomen, dorsal view. D, chelicerae, showing the pattern of teeth and distribution of denticles, arrow indicate the irregular pattern teeth, ventral view. E–F, tibia I: E, prolateral view; F, ventral view.

REMARKS: Our designation of the lectotype and paralectotypes is based on the fact that Purcell (1903: 99) designated more than 40 females and young specimens (catalog number 11833) from Hanover as syntypes. Upon examination of the collection the vial with the number 11833 was not found. However, specimens from the locality indicated by Purcell on an old label, and a newer label indicating these specimens are syntypes, were found. We conclude it is part of the original syntype series.

DIAGNOSIS: Males of *H. evanescens* can be recognized by their short copulatory bulb (Rlw ~2.3, figs. 5I, J, 25D, E) with a stout embolus with a small apical flange (absent in *H. brevicauda*, *H. maraisae*, and *H. septemtrionalis*). They can also be differentiated by the presence of fewer than 30 maxillary cuspules (fig. 24B), the smallest number found in this group. They also differ from *H. caudata* by the embolus with only one apical flange (fig. 25D). Females can be distinguished by the spermathecae (fig. 26E) having a straight stalk with a rounded apical receptacle (similar to *H. sericea* and *H. lanata*). They differ from *H. sericea* by having the apical receptacle more developed and from *H. lanata* by the smaller spermathecae (fig. 26E).

DESCRIPTION: MALE (NCA 2018/324, figs. 1C, G, H; 2B, 5I–L, 24A–F, 25A–E): *Total length*: 19.05. *Carapace* (fig. 24A): length 7.89, width 6.73, with a gold pubescence and emergent setae and dark marginal bristles. *Cephalic region*: length 4.97; clypeus almost absent with 4 bristles; 5 bristles anterior and posterior of the OQ. *Fovea*: procurved, width 0.79. *Ocular measurements*: AME 0.20, ALE 0.39, PME 0.22, PLE 0.29, OQ length 0.73, 1.29 width; AME–ALE 0.12, PME–PLE 0.04, AME–PME 0.18, ALE–PLE 0.19, AME–AME 0.25, PME–PME 0.61. *Chelicerae* (fig. 24D): length 4.68, width 2.48, with dark retrodorsal bristles, rastellum formed by strong setae; intercheliceral tumescence pallid, small, with setae. Cheliceral furrow with an irregular line of 8 promarginal teeth (4-2-2) with a small one between 3rd and 4th, 4th and 5th, and 7th and 8th, and 3 mesobasal denticles. *Labium*: length 0.61, width 1.18. *Palpal endites*: length 2.80, width 1.40, with 24 cuspules on inner corner, prolateral face straight, soft area not strongly developed, with long uniformly distributed hairs. *Sternum* (fig. 24B): length 3.76, maximum width 3.07. *Abdomen* (fig. 24C): length 9.06, covered with small hair and dark bristles. PMS: length 0.91; PLS: length of basal:medial:apical segments 1.44:1.13:1.25; total length 3.52. *Lengths of legs and palp*: I: 6.54, 3.43, 4.76, 4.87, 2.59, 22.19. II: 6.54, 3.48, 4.38, 4.84, 2.90, 22.14. III: 5.73, 2.92, 3.51, 5.31, 3.13, 20.60. IV: 7.15, 3.46, 5.18, 6.93, 3.37, 26.09. Palp: 3.93, 2.02, 3.04, —, 1.43, 10.42. *Chaetotaxy*: Leg I: femur, 1-1-1 P, 1-1 R; patella, 1-1 P; tibia, 1-1-1 P, 1 R, 2-3 V, and a strong apical spine (ventral posterior, figs. 5L, 24E, F); metatarsus, 0, curved (fig. 2B); tarsus, 0. Leg II: femur, 1-1-1 P, 1-1-1 R; patella, 1-1 P; tibia, 1-1 P, 1-2-3 V; metatarsus, 1 PM, 1-1 V (1:2 B); tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1-1 d, 1-1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 DA, 1-1 R, 2-1-2--3 V; metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 1-1-1 D-R, 1-1-2-3 V; tarsus, 0. Leg IV: femur, 1-2 PA, 1-1-1-1 d, 1-1-1 R; patella, 1 R; tibia, 1-1 R, 2-2-2 V; metatarsus, 1-1 P (1:2 A), 1 D-P (apical), 1-1-1 D-R, 1-1-2-3 V; tarsus, 0. Palp (fig. 16E, F): femur, 1-1 PA, 1-1-1-1 d (1:2 A), 1 RA; patella, 1-1 P; tibia, 1-2-2 P, 1-1 R, 1-2 V with long rigid ventral bristles; tarsus, 0, with small rigid bristles. *Copulatory bulb* (figs. 5I, J, 25D, E): straight (length 2.27, width 0.97, Rlw 2.3), with a posterior flange on the apex. *Scopulae*: Metatarsi: I–II, sparse,

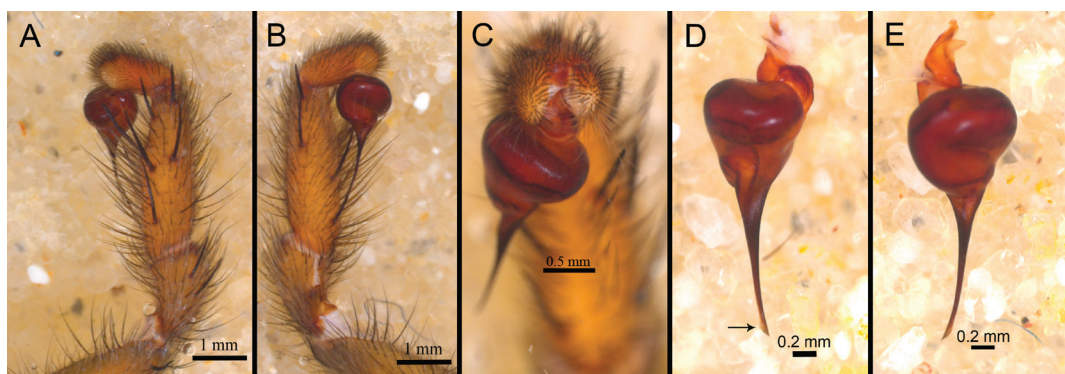


FIGURE 25. *Hermacha evanescens* Purcell, 1903, male (NCA 2018/324): A–C, right pedipalp: A, prolateral view; B, retrolateral view; C, cymbium without apical spines. D–E, copulatory bulb, two different views, arrow indicates the apical flange.

uniformly distributed throughout the segment; III–IV, sparse (1:3 A), divided by thick bristles (more abundant P). Tarsi: I–II, dense, uniformly distributed throughout the segment; III, sparse, uniformly distributed throughout the segment and divided by a narrow band of setae; IV, sparse, uniformly distributed and divided by a wide band of setae and a line of fine bristles on both sides of the band. *Trichobothria*: Tibiae: I–II 9–10; III 9–9; IV 11–10. Metatarsi: I (5)1(2)1(1)1(0)1(3)1; II (4)1(2)1(2)1(0)1(3)1; III (4)1(0)1(2)1(2)1(3)1; IV (5)1(1)1(1)1(2)1(3)1. Tarsi: I 23; II 26; III–IV 25. *Color in alcohol*: Overall dark reddish brown (femur and chelicerae darker). Abdomen brown with many posterior dark spots forming bands, and a large sproximal spot; spinnerets yellowish.

FEMALE LECTOTYPE (SAM-ENW-X009450, figs. 1B, 3A–D, 26A–E): *Total length*: 28.95. *Cara-pace* (fig. 26A): length 9.16, width 7.78. *Cephalic region*: length 6.36, clypeus small (almost absent) with 3 marginal bristles; numerous bristles in front and posterior of the OQ. *Fovea*: width 1.22, procurved. *Ocular measurements*: AME 0.19, ALE 0.43, PME 0.24, PLE 0.45, OQ length 0.85, width 1.56; AME–ALE 0.18, PME–PLE 0.02, AME–PME 0.20, ALE–PLE 0.15, AME–AME 0.28, PME–PME 0.71. *Chelicerae* (fig. 26D): length 6.55, width 4.53; with retrodorsal dark bristles, rastellum numerous rough bristles. Cheliceral furrow with an irregular line of 11 (5–4–2) promarginal teeth and 3 mesobasal denticles. *Labium*: length 0.83, width 1.63, no cuspules. *Palpal endites*: length 3.50, width 1.84, with 34 cuspules on inner corner, prolateral face straight, soft area long, with long uniformly distributed hairs, no serrula. *Sternum* (fig. 26B): longest, length 4.63, maximum width 3.85. *Abdomen* (fig. 26C): length 13.51, with small setae. PMS: length 1.11; PLS: length of basal:medial:apical segments 1.56:1.14:1.23; total length. *Lengths of legs and palp*: I: 7.00, 4.10, 4.59, 4.23, 2.77, 22.69. II: 6.53, 4.01, 4.11, 4.25, 2.88, 21.79. III: 5.76, 3.34, 3.09, 4.84, 3.12, 20.15. IV: 7.24, 3.84, 5.09, 6.27, 2.99, 25.44. Palp: 4.94, 2.41, 3.09, —, 3.13, 13.58. *Chaetotaxy*: Leg I: femur, 1 PA; patella, 1 P; tibia, 1–2 v; metatarsus, 1 V (1:2 B); tarsus, 0. Leg II: femur, 1 PA; patella, 1–1 P; tibia, 1–1 P, 1–2–3 V; metatarsus, 1 P, 1–2–1 V; tarsus, 0. Leg III: femur, 1 P (1:2 B), 1–1–1–1 D, with a prolateral–dorsal apical patch of small and rigid setae; patella, 1–1 P, 1 R, with a dorsal–prolateral patch of small and rigid setae; tibia, 1–1 P, 1 D, 1–1–1 R, 2–1–2–3 V; metatarsus,

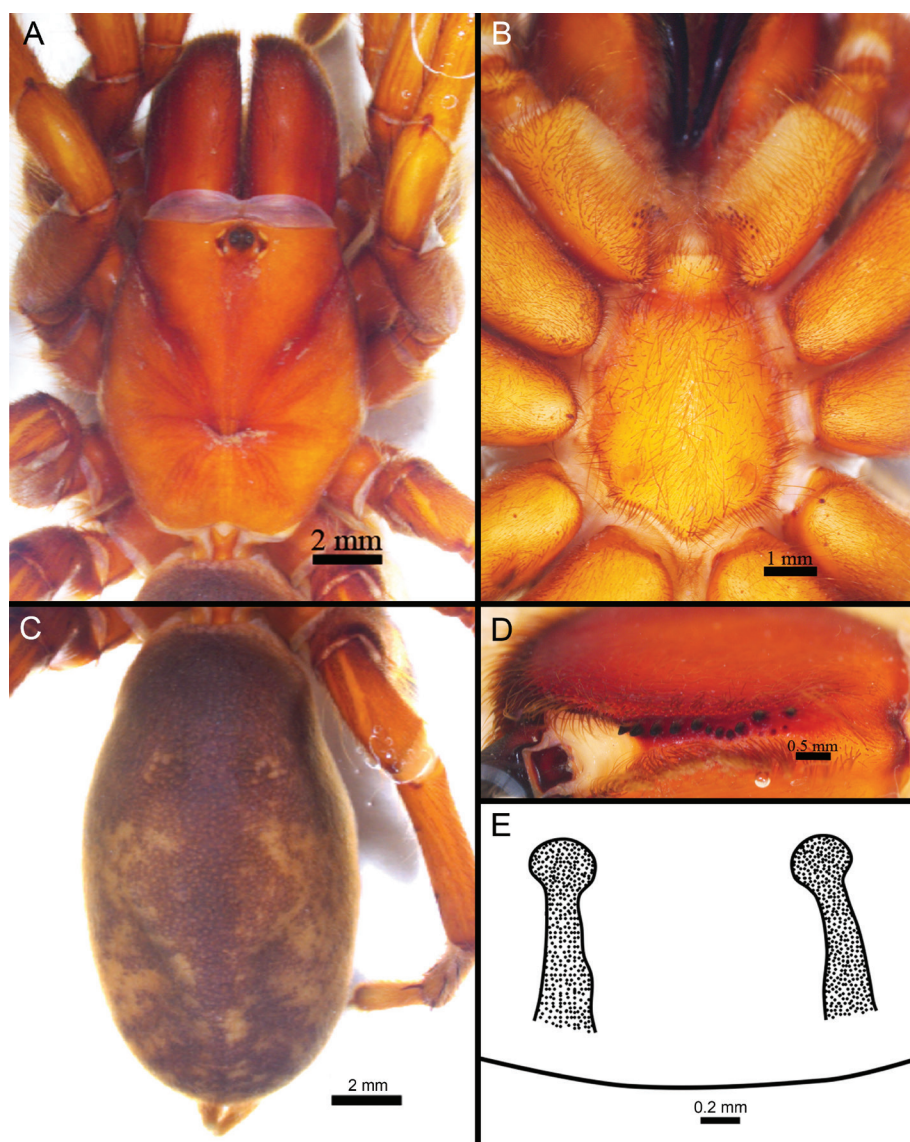


FIGURE 26. *Hermacha evanescens* Purcell, 1903, female syntype (SAM-ENW-X009450): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, showing the pattern of teeth and distribution of denticles, ventral view. **E**, spermathecae.

1-1-1 P, 1-1 D-P (1:2 ANT), 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1 RA, with a prolateral-dorsal apical patch of small and rigid setae; patella, 0, with a dorsal-prolateral patch of small and rigid setae; tibia, 1-1 R, 2-2-2 V; metatarsus, 1-1 P (1:2 A), 1-1-1 D-R, 2-1-2-3 V; tarsus, 0. Palp: femur, 1 PA; patella, 1-1 P; tibia, 1-2 P, 1-1-4 V; tarsus, 1-2 V. *Spermathecae*: long and straight, apex truncated with an apical circular receptacle (fig. 26E). *Scopulae*: Metatarsi: I–II, dense, uniformly distributed; III, sparse (1:2 A, prolateral more abundant); IV, very small, sparse A (prolateral). Tarsi: I–II, very dense, uniformly distributed; III–IV, sparse, uniformly distributed, III

divided by a wide band and IV by a wider band of setae, presence of line of setae on both sides of the central wide band. *Trichobothria* (fig. 2A–D): Tibiae: palp 9–9; I–II 12–12; III 12–11; IV 12–12. Metatarsi: I 1(3)1(2)1(3)1(1)1(5); II 1(3)1(1)1(1)1(6); III 1(3)1(2)1(2)1(1)1(4); IV 1(3)1(2)1(1)1(1)1(5). Tarsi: palp 30; I–II 30; III 33; IV 34. *Color in alcohol*: Overall reddish brown (chelicerae darker). Abdomen brown (fig. 26C), with medial pale triangular marking, with both sides mottled with light spots; spinnerets yellowish.

ECOLOGY: *Hermacha evanescens* lives in tubular, silk-lined burrows in the soil with a round entrance that has a low, silken lip. It is often found syntopically with *Harpactirella* species (Theraphosidae) and their respective burrow entrances are nearly indistinguishable from each other. The *Hermacha* entrance often has a fine sheet of silk across it, just below the lip, identical to that seen in many theraphosids. The upper part of the burrow is angled approximately 30° from vertical, and the rest of the burrow is vertical with an enlarged chamber at the bottom. The species can be relatively abundant where it occurs.

BEHAVIOR: It appears that this species closes its burrows during dry or hot times of the year. The site north of Cradock had been visited by I.E. on two occasions prior to the visit in 2017 and burrows had not been seen. Similar behavior has been observed in *H. septemtrionalis*.

ADDITIONAL MATERIAL EXAMINED: South Africa: Northern Cape Province: Hanover, Karoo [31.06°S 24.45°E], October, 1905, 2 ♀, 1 imm (SAM-ENW-B001493); Same data, October, 1905, 2 ♀ (SAM-ENW-B001494). Eastern Cape Province: Mountain Zebra National Park [32°11'S 25°37'E], March 21, 1989, A. Leroy, 1 ♀ (NCA 91/863); 2.7 km SSE Kambrokop, between Middelburg and Steynsburg (31°19'58.80"S 25°24'45.36"E), June 2018, Engelbrecht, I; Brand, E; Mitchell, S; Sole, C, 1 ♀ (NCA 2019/682); Cradock, 10.5 km NW, Farm De Rietfontyn, 2.1 km W (32°5'43.80"S 25°32'31.89"E), April, 2017, Engelbrecht, I; Mitchell, S; Sole, C; Majelantle, T, 1 ♀ (NCA 2017/1922); Osplaats, Jansenville (32°52'S 24°29'E), July 17, 2015, I. Engelbrecht and D. Kambas, 3 ♂ (NCA 2018/324); Jansenville, 28 km ESE, Farm Welbevonde, BioGaps site 3300_2455 (33°3'10.32"S 24°56'43.47"E), April, 2017, Engelbrecht, I; Mitchell, S; Sole, C; Majelantle, T, 1 ♀ (NCA 2017/1902). Western Cape Province: Waterkloof, ca. 25 km due SSW Murrayburg, west side of road, near Biogaps site 3210_2345 (32°11'14.28"S 23°40'7.68"E), June, 2018, Engelbrecht, I; Brand, E; Mitchell, S; Sole, C, 1 ♂ (NCA 2019/618), 1 ♀ (NCA 2019/641). Beaufort West, 49 km ENE, Bruinrug, 4.3 km WSW; BioGaps site 3215_2305 (32°15'13.89"S 23°5'38.54"E), April, 2017, Engelbrecht, I; Mitchell, S; Sole, C; Majelantle, T, 1 ♀ (NCA 2017/1847).

DISTRIBUTION: South Africa: Northern, Eastern, and Western Cape provinces. This species appears to be limited to the southeastern parts of the Nama Karoo.

Hermacha lanata Purcell, 1902

Figures 2D, 5M–P, 27A–F, 28A–E, 29A–E

Hermacha lanata Purcell, 1902: 373.

MATERIAL EXAMINED: HOLOTYPE: South Africa: Western Cape Province: Bokkeveld, east of Pakhuisberg, Clanwilliam Div. [32°10'S, 19°0'E], 14.viii.1987, Schlechter, M, 1 ♂ (SAM-ENW-X003639). PARATYPES: Western Cape Province: Niewoudt's Pass (32°20.89'S 19°00.28'E,

565 m), x.2007, E. Nortje and S. Kritzinger-Klopper, 1 ♂ (NCA 2012/2242); Aan Het Berg, Cederberg (32°16.628'S 18°31.792'E, 258 m), 1.v.2010, E. Nortje and S. Kritzinger-Klopper, 1 ♀ (NCA 2012/5088).

DIAGNOSIS: Males with an embolus with a very small apical flange (figs. 5N, 28D), similar to *H. evanescens* (fig. 25D). They also differ from *H. caudata* by the presence of only one flange and from *H. evanescens* by a longer copulatory bulb (Rlw ~2.8, fig. 28D, E). They are distinguished from *H. septemtrionalis*, *H. maraisae*, and *H. brevicauda* by the embolus with an apical flange (fig. 28D; absent in these species). Females can be distinguished by their spermathecae (fig. 29E), which are long and curved, and can also be distinguished from *H. evanescens* and *H. sericea* by the higher number of maxillary cuspules (>150 [fig. 29B] vs. <50 [figs. 16B, 26B] respectively).

DESCRIPTION: MALE HOLOTYPE (SAM-ENW-X003639, figs. 2D, 5M-P, 27A-F, 28A-E): *Total length*: 12.09. *Carapace* (fig. 27A): length 5.95, width 4.38, with lateral dark marginal bristles, with sparse pubescence. *Cephalic region*: length 3.69; clypeus almost absent, without bristles on the edge, some bristles anterior and posterior to the OQ. *Fovea*: width 0.54, short, procurved. *Ocular measurements*: AME 0.15, ALE 0.26, PME 0.19, PLE 0.18, OQ length 0.52, 0.93 width; AME-ALE 0.08, PME-PLA 0.02, AME-PME 0.08, ALE-PLA 0.13, AME-AME 0.18, PME-PME 0.47. *Chelicerae* (fig. 27D): length 3.34, width 1.88, with dark retrodorsal bristles, rastellum formed by many strong setae; intercheliceral tumescence small, pallid with setae. Cheliceral furrow with a regular line of 6 (3-1-2) promarginal teeth and 2 mesobasal denticles. *Labium*: length 0.43, width 0.86. *Palpal endites*: length 1.78, width 0.79, with 94 cuspules on inner corner, prolateral face slightly curved, soft area small, with long uniformly distributed setae. *Sternum* (fig. 27B): length 2.77, maximum width 2.28. *Abdomen* (fig. 27C): length 4.15, covered with small setae and bristles. PMS: length 0.53; PLS: length of basal:medial:apical segments 0.82:0.50:0.39; total length 1.71. *Lengths of legs and palp*: I: 4.25, 2.76, 3.36, 3.04, 1.92, 15.33. II: 4.25, 2.28, 2.94, 3.18, 1.94, 14.60. III: 3.76, 2.05, 2.40, 3.91, 2.00, 14.11. IV: 4.54, 2.52, 3.75, 4.57, 2.13, 17.51. Palp: 2.70, 1.41, 2.17, —, 1.04, 7.32. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 D, 1-1 RA; patella, 1-1 P, 1 R; tibia, 1-1-1 P, 1-1-1 R, 2-2-1 V, and a strong apical spine (ventral posterior, figs. 5P, 27E, F); metatarsus, 1-1 P, 1 R, 2-2 V (1:2 A), slightly curved (fig. 2D); tarsus, 0. Leg II: femur, 1-1 P A, 1-1-1-1 D, 1-1-1 RA; patella, 1-1 P; tibia, 1-1-1 P, 1-1-2 V; metatarsus, 1-1-1 P, 1-1 D-P, 1 R, 2-2 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1 d, 1-1-1 R; patella, 1-1-1 P, 1-1 R; tibia, 1-1 P, 1 D, 1-1 R, 2-1-3 V; metatarsus, 1-2-1 P, 1-1-1 D-P, 2-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1 PA, 1-1-1-1 D, 1 R; patella, 1-1 P, 1 R; tibia, 1-1-2 P, 1-1-1 R, 2-2-3 V; metatarsus, 1-2-1 P, 1-1-1-1 D-P, 2-1-1 D-R, 2-2-3 V; tarsus, 0. Palp (figs. 5O, 28A-C): femur, 1 PA, 1-1 D (1:2 A), 1 RA; patella, 1-1 P; tibia, 2-2 P, 1-1 R, 1-1-1 V; tarsus, 0, with numerous small rigid bristles. *Copulatory bulb*: straight, apex slightly curved with a very small apical flange (length 2.09, width 0.74, Rlw 2.8; figs. 5M, N, 28D, E). *Scopulae*: Metatarsi: I, dense (1:2 A); II, dense (3:4 A, more abundant on the anterior part); III, sparse apical; IV, 0. Tarsi: I-II, dense, uniformly distributed throughout the segment; III-IV, sparse, uniformly distributed (III divided by a narrow band of setae; IV, divided very wide band of setae with a line of setae on both sides of the band of setae). *Trichobothria*: Tibiae: I 11-10; II 10-19; III 10-10; IV 11-10. Metatarsi: I 1(5)1(2)1(2)1(1)1(5); II 1(5)1(2)1(1)1(4); III

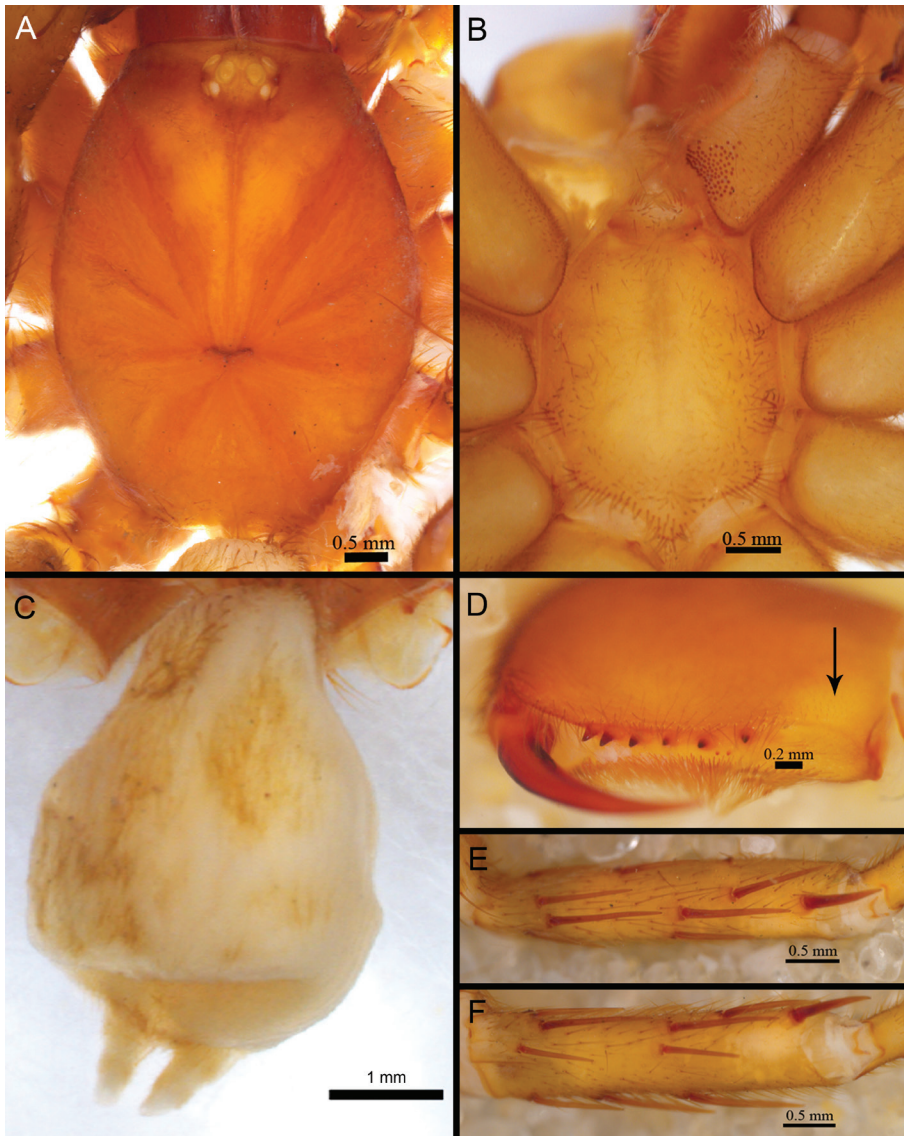


FIGURE 27. *Hermacha lanata* Purcell, 1902, male holotype (SAM-ENW-X003639): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, showing the pattern of teeth and distribution of denticles, arrow indicate the pallid intercheliceral tumescence, ventral view. **E–F**, tibia I: **E**, retrolateral view; **F**, ventral view.

1(6)2(3)1(2)1(5); IV 1(6)1(4)1(5)1(4). Tarsi: I 26; II 23; III 21; IV 25. *Color in alcohol*: Overall reddish yellow, legs with metatarsi-tarsi lighter, chelicerae darker. Abdomen yellowish (fig. 28C, could be mottled); spinnerets yellowish.

FEMALE (NCA 2012/5088, fig. 29A–E): *Total length*: 16.80. *Carapace* (fig. 29A): length 16.80, width 4.81. *Cephalic region*: length 4.21, clypeus small with 8 marginal bristles; 10 bristles in front of the OQ and 9 posterior (between PME–PME). *Fovea*: width 0.57, procurved.

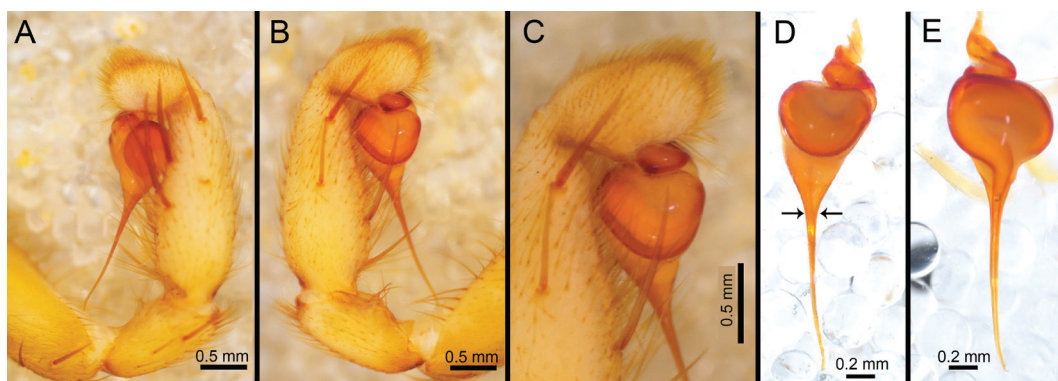


FIGURE 28. *Hermacha lanata* Purcell, 1902, male holotype (SAM-ENW-X003639): A–C, right pedipalp: A, prolateral view; B, retrolateral view; C, cymbium without apical spines. D–E, copulatory bulb, two different views, arrows indicate the subtegulum joined abruptly to the embolus and the small apical flange.

Ocular measurements: AME 0.17, ALE 0.33, PME 0.17, PLE 0.31, OQ length 0.67, width 1.09; AME–ALE 0.12, PME–PLE 0.02, AME–PME 0.10, ALE–PLE 0.12, AME–AME 0.18, PME–PME 0.51. *Chelicerae* (fig. 29D): length 4.30, width 2.72; with dorsal-retrolateral dark bristles, rastellum numerous rough bristles. Cheliceral furrow with a regular line of 6 (3-1-2) promarginal teeth and 2 mesobasal denticles. *Labium*: length 0.56, width 0.94. *Palpal endites*: length 2.61, width 1.18, with 168 cuspules on inner corner, prolateral face slightly curved, soft area big, with long uniformly distributed hairs. *Sternum* (fig. 29B): length 3.02, maximum width 2.70. *Abdomen* (fig. 29C): length 6.80, with small hair and bristles covering. PMS: length 0.64; PLS: length of basal:medial:apical segments 0.88:0.36:0.58; total length 1.82. *Lengths of legs and palp*: I: 4.42, 2.95, 2.92, 2.62, 1.97, 14.88. II: 4.02, 2.68, 2.58, 2.65, 1.96, 13.89. III: 3.68, 2.11, 2.06, 3.29, 2.02, 13.16. IV: 4.65, 2.69, 3.55, 4.43, 2.35, 17.67. Palp: 3.19, 1.86, 1.89, —, 2.12, 9.06. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1-1 d; patella, 1-1 p; tibia, 1-1 P, 1-1-2 V; metatarsus, 2-2 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1-1 d; patella, 1-1 P; tibia, 1-1 P, 1-1-2 V; metatarsus, 2-2 V; tarsus, 0. Leg III: femur, 1-1-1-1-1 d, 1 RA; patella, 1-1 P, 1 R; tibia, 1-1 P, 1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1-1 D-P, 2-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1-1-1-1 d, 1 r a; patella, 1 R; tibia, 1-1 R, 2-2-2 V; metatarsus, 1-1-1 P, 1-1 D-P (1:2 A), 2-1-1 D-R, 2-2-3 V; tarsus, 0. Palp: femur, 1 PA; patella, 1 PB; tibia, 2 P, 1-1-4 V; tarsus, 2 VB. *Spermathecae*: tubular and curved, base narrow with a rounded apical receptacle (fig. 29E). *Scopulae*: Metatarsi: I–II, dense, uniformly distributed; III, sparse, asymmetric (more abundant P), distributed throughout the segment, and divided by thick bristles; IV, sparse, 1:4 A (more abundant P), divided by thick bristles. Tarsi: I–II, dense, uniformly distributed; III–IV, dense, uniformly distributed (III divided by a narrow band and IV by a wide band of setae, and presence of a line of setae on both sides of the central band). *Trichobothria*: Tibiae: palp 9-10; I 9-9; II 10-11; III 11-10; IV 12-12. Metatarsi: I (4)1(0)1(0)1(3)1(2)1; II (4)1(1)1(1)1(4)1; III (4)1(1)1(2)1(0)1(3)1; IV (5)1(1)1(2)1(1)1(1)1(4)1. Tarsi: palp 22; I 26; II 24; III 23; IV 26. *Color in alcohol*: Overall reddish brown (chelicerae darker), legs like carapace. Abdomen brown, mottled with light spots, spinnerets like abdomen.

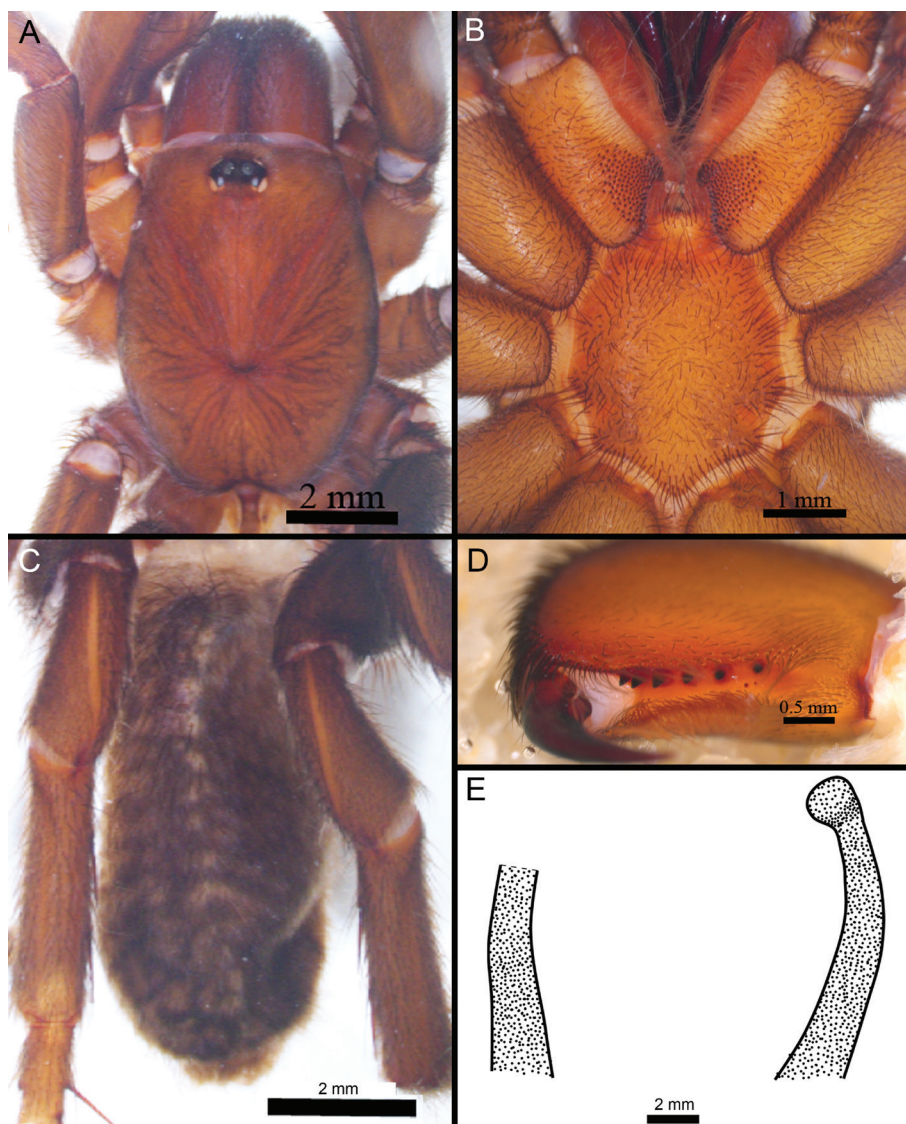


FIGURE 29. *Hermacha lanata* Purcell, 1902, female (NCA 2012/5088): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, showing the pattern of teeth and distribution of denticles, ventral view. **E**, spermathecae, left spermatheca is broken.

ADDITIONAL MATERIAL EXAMINED. South Africa: Western Cape Province: Cederberg Clanwilliam Dist., July, 1958, 1♂ (MRAC 125882); Cederberge, Wilderness Area, Niewoudt's Pass (32°21'S 19°01'E), October 1, 2005, E. Nortje and S. Kritzing-Klopper, 1♂ (NCA 2011/1030); Same locality (32°20.96'S 19°00.42'E, 527 m), October, 2006, E. Nortje and S. Kritzing-Klopper, 1♂ (NCA 2012/2245); Sawadee (32°20.237'S 18°59.468'E, 385 m), October, 2006, E. Nortje and S. Kritzing-Klopper, 1♂ (NCA 2012/2248).

DISTRIBUTION: South Africa: Western Cape Province: It has been recorded only in southern Namaqualand and the western side of the Cederberg.

Hermacha maraisae, sp. nov.

Figures 2E, 5Q–T, 30A–F, 31A–E, 32A–F

MATERIAL EXAMINED: HOLOTYPE: South Africa: Northern Cape Province: Koingnaas [30°12'S 17°17'E], July 8, 2001, Lyons, C. and Mingo, J, 1 ♂ (NCA 2008/2989). PARATYPE: Northern Cape Province: Same data as for holotype, July 13, 2007, 1 ♂ (NCA 2008/2623).

ETYMOLOGY: The specific epithet is a patronym in honor of Petro Marais, incumbent Collection Manager for the National Collection of Arachnida at the Agricultural Research Council, Pretoria.

DIAGNOSIS: Males can be distinguished from all other species, except *H. septemtrionalis*, by the high number of cheliceral denticles (>4, fig. 30D). They can be separated from *H. septemtrionalis* by the large number of maxillary cuspules (>100, fig. 30B) and low number of cheliceral teeth (<8, fig. 30D). Females unknown.

DESCRIPTION. MALE HOLOTYPE (NCA 2008/2989, figs. 2E, 5Q–T, 30A–F, 31A–E): *Total length*: 15.17. *Carapace* (fig. 30A): length 6.50, width 4.93, with fine pubescence and emergent setae and with dark marginal bristles (more abundant posteriorly). *Cephalic region*: length 4.13; clypeus almost absent with 4 bristles; 8 bristles in front of the OQ and 7 between PME. *Fovea*: procurved, width 0.54. *Ocular measurements*: AME 0.19, ALE 0.32, PME 0.20, PLE 0.23, OQ length 0.58, 0.97 width; AME-ALE 0.09, PME-PL 0.02, AME-PME 0.09, ALE-PL 0.13, AME-AME 0.16, PME-PME 0.52. *Chelicerae* (fig. 30D): length 3.78, width 2.189 with dark dorsal-anterior bristles, rastellum formed by strong setae; intercheliceral tumescence pallid, small, with setae. Cheliceral furrow with a regular line of 6 promarginal teeth (3-1-2), and 6 mesobasal denticles. *Labium*: length 0.39, width 0.95. *Palpal endites*: length 2.08, width 1.03, with 116 cuspules on inner corner; prolateral face straight, soft area little developed, with long uniformly distributed hairs. *Sternum* (fig. 30B): length 3.25, maximum width 2.64. *Abdomen* (fig. 30C): length 6.36, covered with small hair and dark bristles. PMS: length 0.66; PLS: length of basal:medial:apical segments 1.05:0.60:0.57; total length 2.22. *Lengths of legs and palp*: I: 4.96, 3.03, 3.74, 3.81, 2.12, 17.66. II: 4.61, 2.94, 3.38, 3.69, 2.31, 16.93. III: 4.33, 2.41, 2.69, 3.97, 2.16, 15.56. IV: 5.12, 2.95, 4.17, 5.04, 2.51, 19.79. *Palp*: 3.16, 1.88, 2.34, —, 1.21, 8.58. *Chaetotaxy*: Leg I: femur, 1-1 PA, 1-1-1-1 D, 1 RA; patella, 1-1-1 P; tibia, 1-1-1 P, 3-2-1 V, and a strong apical spine (ventral posterior, figs. 5T, 30E–F); metatarsus, 1 P, 2-0-2 V, slightly curved (fig. 2E); tarsus, 0. Leg II: femur, 1-1 P, 1-1-1-1 D, 1-1 R; patella, 1-1 P; tibia, 1-1-1 P, 2-2-1-2 V; metatarsus, 1-1 P, 1-1 D-P, 1 R, 2-0-2 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1 D, 1-1-1-1 R; patella, 1-1-1 P, 1 R; tibia, 1-2 P, 1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 2-1-1-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1 D, 1 RA; patella, 1 P, 1 R; tibia, 2-1-3 P, 1-1-1 R, 2-2-2 V; metatarsus, 1-1-2-1-1 P, 1-1-1 D-P, 1-1-1-1 D-R, 2-1-1-3 V; tarsus, 0. *Palp* (figs. 5S, 31A–C): femur, 1 PA, 1 RA; patella, 1-1 P; tibia, 1-2-1-1-1 P, 2-1-1 R, 1-1-1 V with long rigid ventral bristles; tarsus, 0, with small rigid bristles (fig. 5S, 31C). *Copulatory bulb*: straight (length 2.19, width 0.81, Rlw 2.70, figs. 5Q, R, 31D, E), with a small apical retrolateral flange. *Scopulae*: Metatarsi: I–II, sparse (3:4 A); III, sparse (1:3 A, only P); IV, 0. Tarsi: I–II, dense, uniformly distributed throughout the segment; III–IV, sparse, uniformly distributed throughout the segment, divided (III by a narrow band of

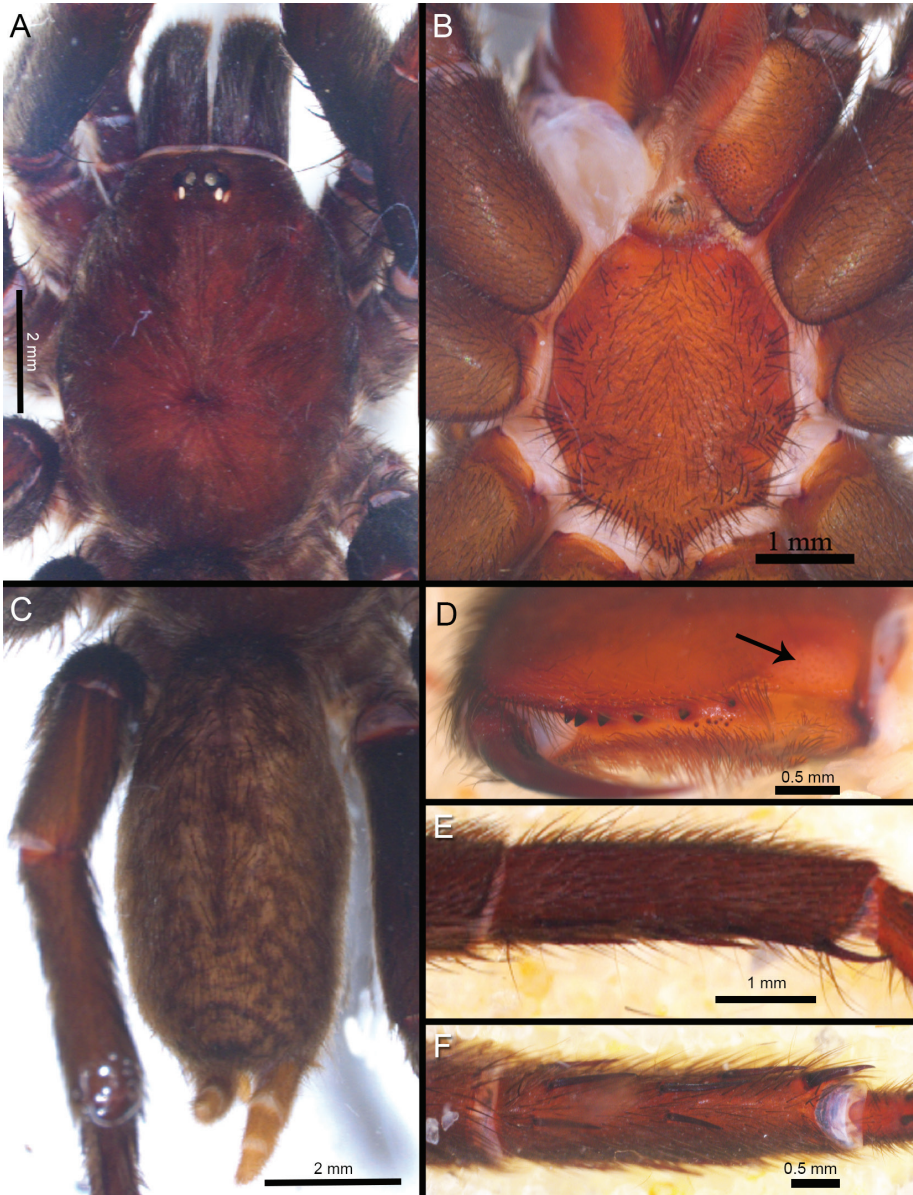


FIGURE 30. *Hermacha maraisae*, sp. nov., male holotype (NCA 2008/2989): A, cephalothorax, dorsal view. B, sternum, labium, palpal endites, ventral view. C, abdomen, dorsal view. D, chelicerae, showing the pattern of teeth and distribution of denticles, arrow indicates the pallid intercheliceral tumescence, ventral view. E–F, tibia I: E, retrolateral view; F, ventral view.

setae; IV, by a wide band of setae). *Trichobothria*: Tibiae: I 10-11; II 12-10; III 10-10; IV 11-11. Metatarsi: I (3)1(2)1(3)1(4)1; II (4)1(1)1(0)1(3)1; III (5)1(1)1(1)1(3)1; IV (6)1(1)1(0)1(3)1. Tarsi: I 27; II 21; III–IV 22. *Color in alcohol*: Overall dark reddish brown (chelicerae darker); legs like carapace with femur darker; abdomen light brown with many pallid spots. Sternum yellowish red; spinnerets yellowish.

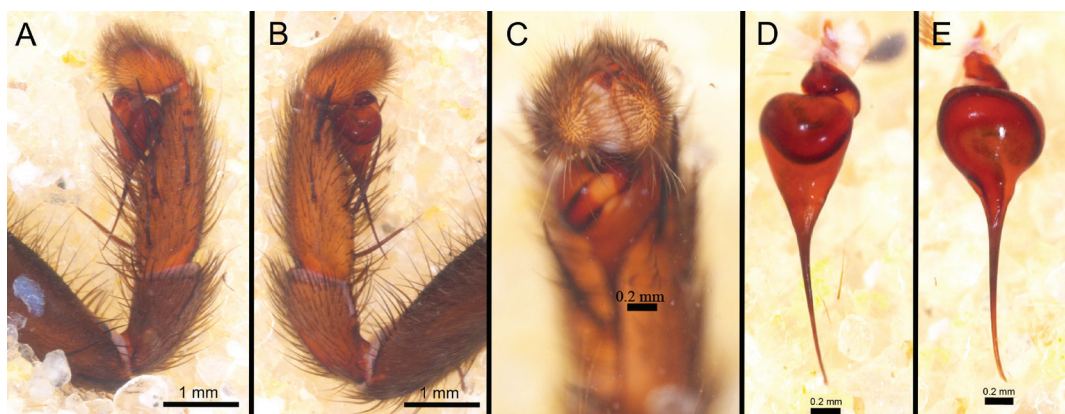


FIGURE 31. *Hermacha maraisae*, sp. nov., male holotype (NCA 2008/2989): A–C, right pedipalp: A, prolateral view; B, retrolateral view; C, cymbium without apical spines. D–E, copulatory bulb, two different views.

FEMALES. Unknown.

DISTRIBUTION: South Africa, Northern Cape. Known only from the type locality in northern Namaqualand.

***Hermacha septemtrionalis*, sp. nov.**

Figures 1D, E, I, 5U–X, 32A–F, 33A–E, 34A–F

MATERIAL EXAMINED: HOLOTYPE: South Africa: Limpopo Province: Polokwane Game Reserve (23°58'S 29°28'E), May 2, 2005, T.T. Khoza and M.A. Modiba, 1 ♂ (NCA 2008/1273). PARATYPES: Limpopo Province: Warmbad District, Farm Wolfhuiskraal 43; ca. 13 km W of Pienaarssrivier, Flats north of guest lodge (25°08'41.2"S 28°10'45.7"E, 1039 m), October 28, 2006, Spider Club Members, 3 ♀ (NCA 2018/341).

ETYMOLOGY: The specific epithet *septemtrionalis* ("from the north") is a Latin adjective in reference to where the species occurs (northern South Africa, Limpopo, North West, and Gauteng provinces).

DIAGNOSIS: Males of *H. septemtrionalis* can be differentiated by a tapering copulatory bulb with a strongly curved duct (figs. 5U, 33E). Differs from *H. caudata*, *H. evanescens*, and *H. lanata* by the absence of flanges on the embolus (fig. 33D, E). Males can also be distinguished from *H. maraisae* and *H. brevicauda* by the high number of cheliceral teeth (>8, fig. 32D). Females can be distinguished from other species by the spermathecae with a small apical lobule (fig. 34F).

DESCRIPTION. MALE HOLOTYPE (NCA 2008/1273, figs. 1E, I, 5U–X, 32A–F, 33A–E): *Total length*: 16.20. *Carapace* (fig. 32A): length 6.20, width 4.89, with gold pubescence and emergent setae and with dark marginal bristles. *Cephalic region*: length 3.94; clypeus almost absent with 6 bristles; 8 bristles in front of the OQ and 7 posterior (between PME). *Fovea*: procurved, width 0.74. *Ocular measurements*: AME 0.18, ALE 0.33, PME 0.25, PLE 0.21, OQ length 0.65, 1.02 width; AME-ALE 0.08, PME-PLA 0.03, AME-PME 0.10, ALE-PLA 0.18, AME-AME 0.17,

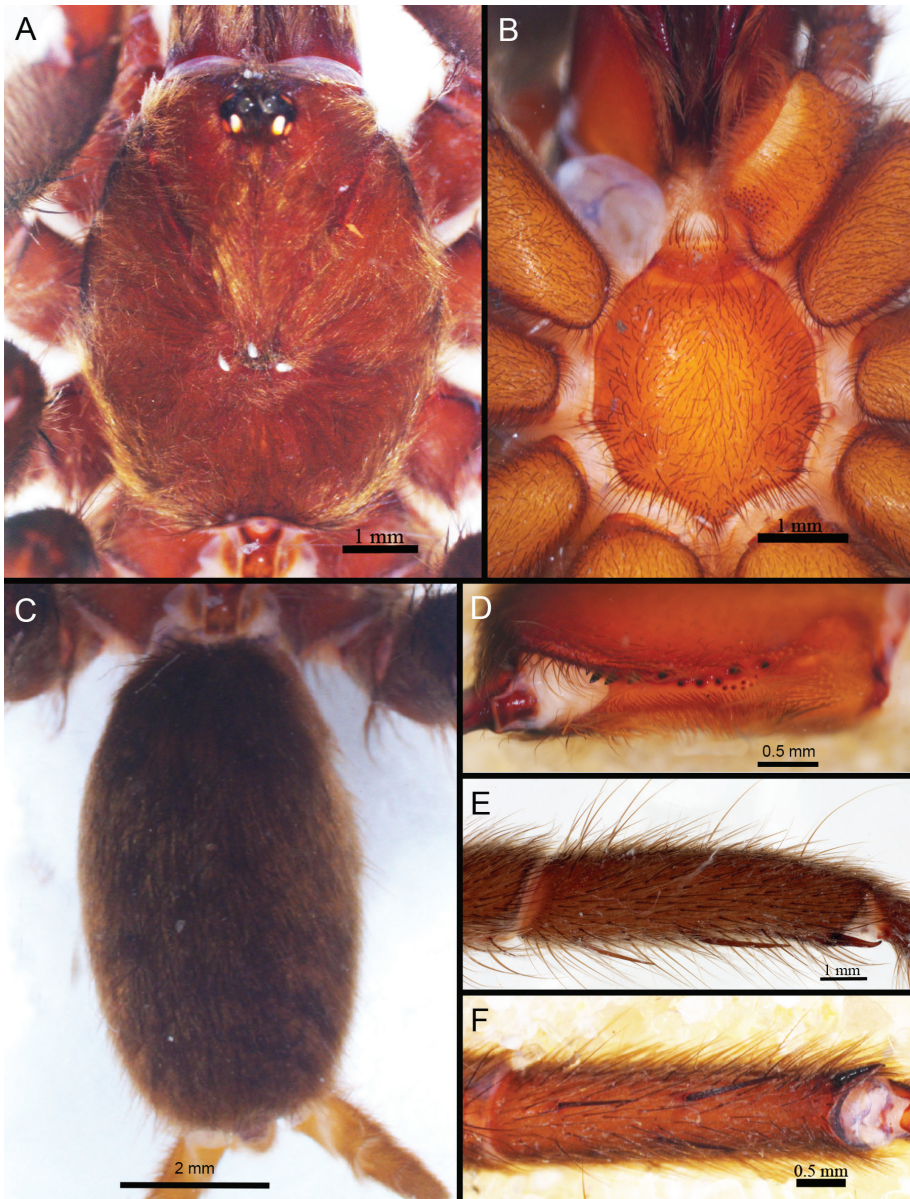


FIGURE 32. *Hermacha septemtrionalis*, sp. nov., male holotype (NCA 2008/1273): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, ventral view. **E–F**, tibia I: **E**, retrolateral view; **F**, ventral view.

PME-PME 0.45. *Chelicerae* (fig. 32D): length 3.86, width 2.18, with dark dorsal-anterior bristles, rastellum formed by strong setae; intercheliceral tumescence pallid, small, with setae. Cheliceral furrow with an irregular line of 10 promarginal teeth (5-3-2), and 6 mesobasal denticles. *Labium*: length 0.55, width 1.08. *Palpal endites*: length 2.14, width 1.01, with 50 cuspules on inner corner, prolateral face slightly curved, soft area little developed, with long uniformly distributed hairs. *Sternum* (fig. 32B): length 2.79, maximum width 2.63. *Abdomen* (fig. 32C): length 6.75, covered with small hair and dark bristles. PMS: length 0.64; PLS: length of basal:medial:apical segments 1.09:0.73:1.02; total length 2.84. *Lengths of legs and palp*: I: 5.16, 2.98, 3.61, 3.44, 2.39, 17.59. II: 4.90, 2.83, 3.27, 3.24, 2.50, 16.74. III: 4.17, 2.28, 2.57, 4.20, 2.64, 15.86. IV: 5.61, 2.80, 3.90, 5.73, 3.01, 21.05. Palp: 3.05, 1.66, 2.52, —, 1.33, 8.56. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 d, 1 RA; patella, 1 P; tibia, 1 P, 1-2 V, and a strong apical spine (ventral posterior, figs. 5X, 32E, F); metatarsus, straight, 1 P, 1-1 VPOST; tarsus, 0. Leg II: femur, 1-1-1 P, 1-1-1-1-1 d; patella, 1 P; tibia, 1-1 P, 1-1-3 V; metatarsus, 1 P, 2-0-2 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1-1-1 d, 1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1-1 D, 1-1 R, 1-2-3 V; metatarsus, 1-1-1 P, 1-1-1-1 D-P, 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1-1 d, an apical patch of short thick bristles D-P; patella, 1 P, 1 R, an basal patch of short thick bristles D-P; tibia, 1-2 P, 1 DA, 1-1-1 R, 2-2-3 V; metatarsus, 1-1 P, 1-1-1-1 D-P, 1-2-1-1 D-R, 2-1-2-3 V; tarsus, 0. Palp (figs. 5W, 33A–C): femur, 1 PA, 1-1-1-1-1 d, 1 RA; patella, 0; tibia, 2-2 P (1:2 A), 1-1 R (1:2 A), 1-1 V with long rigid ventral bristles; tarsus, 0, with small rigid bristles. *Copulatory bulb* (figs. 5U–V, 33D–E): straight, embolus without flanges (length 1.64, width 0.68, Rlw 2.4). *Scopulae*: Metatarsi: I–II, dense, uniformly distributed throughout the segment; III, sparse (3:4 A), divided by thick bristles (more abundant P); IV, sparse (1:4 A, only P). Tarsi: I–II, dense, uniformly distributed throughout the segment; III–IV, sparse, uniformly distributed throughout the segment, divided (III by a narrow band of setae; IV, by a wide band of setae), both tarsi with a fine line of bristles on both sides of the central band of bristles. *Trichobothria*: Tibiae: I 12-12; II–III 11-10; IV 13-12. Metatarsi: I (4)1(2)1(2)1(3)1(2)1; II (4)1(2)1(1)1(2)1(1)1(3)1; III (5)1(0)1(1)1(1)1(2)1(3)1; IV (6)1(1)1(1)1(2)1(0)1(4)1. Tarsi: I 27; II–III 25; IV 27. *Color in alcohol*: Overall dark reddish brown (chelicerae darker). Legs like carapace; abdomen dark brown with many pallid spots and a long dark anterior spot. Sternum reddish brown; spinnerets yellowish.

FEMALE PARATYPE (NCA 2018/341, figs. 1D, I, 34A–F): *Total length*: 22.96. *Carapace* (fig. 34A): length 9.53, width 7.49. *Cephalic region*: length 5.93, clypeus small with 8 marginal bristles; 4 bristles in front of the OQ and 5 posterior (between PME) and a line of bristles extending to the fovea. *Fovea*: width 1.10, procurved. *Ocular measurements*: AME 0.22, ALE 0.49, PME 0.33, PLE 0.40, OQ length 0.95, width 1.43; AME-ALE 0.17, PME-PLA 0.05, AME-PME 0.13, ALE-PLA 0.13, AME-AME 0.27, PME-PME 0.62. *Chelicerae* (fig. 34D): length 6.35, width 4.12; with dark dorsal-retrolateral bristles, rastellum with numerous rough bristles. Cheliceral furrow with an irregular line of 10 (6-2-2) promarginal teeth, one small between 5th and 6th, 6th and 7th, and 7th and 8th and 5 mesobasal denticles. *Labium*: length 0.88, width 1.56. *Palpal endites*: length 3.85, width 1.68, with 57 cuspules on inner corner, prolateral face straight, soft area long, with long uniformly distributed setae, no serrula. *Sternum* (fig. 34B): length 4.24, maximum width 3.98. *Abdomen* (fig. 34C): length

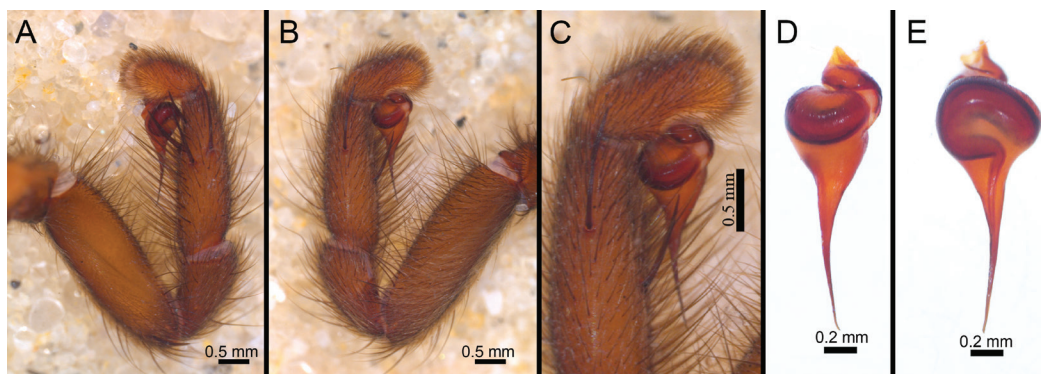


FIGURE 33. *Hermacha septemtrionalis*, sp. nov., male holotype (NCA 2008/1273): A–C, right pedipalp: A, retrolateral view; B, prolateral view; C, cymbium without spines. D–E, copulatory bulb, two different views.

9.27, covered in short setae. PMS: length 1.25; PLS: length of basal:medial:apical segments 1.49:0.89:1.36; total length 3.74. *Lengths of legs and palp*: I: 5.81, 3.94, 3.71, 3.86, 2.78, 20.10. II: 6.46, 4.23, 4.26, 3.93, 2.68, 21.56. III: 5.31, 3.33, 2.93, 5.00, 3.08, 19.65. IV: 6.54, 3.76, 4.80, 6.27, 3.76, 25.13. Palp: 4.65, 2.60, 2.83, —, 2.80, 12.88. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1-1 d; patella, 0; tibia, 1 P (1:2 A), 1-2 v; metatarsus, 2-0-1 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1-1 d; patella, 1 P; tibia, 1-1 P, 1-2-2 V; metatarsus, 2-0-2 V; tarsus, 0. Leg III: femur, 1 RA, an apical patch of short thick bristles D-P; patella, 1-1 P, a basal patch of short thick bristles D-P; tibia, 1-1 P, 1 D (1:2 A), 1 R (1:2 A), 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 0, with a D-P apical patch of small and rigid setae; patella, 0, with a dorsal-prolateral patch of small and rigid setae (fig. 22E); tibia, 1-1 R, 2-2-2 V; metatarsus, 1-1 P (1:2 A), 1 D-R (apical), 1-1-1 D-R, 2-1-2-3 V; tarsus, 0. Palp: femur, 1 PA, 1-1-1-1 d; patella, 1-1 P; tibia, 2 P (1:2 A), 2-1-4 V; tarsus, 2 V B. *Spermathecae*: long and curved, wide base with a small anterior lobe (fig. 34F). *Scopulae*: Metatarsi: I, dense, uniformly distributed; II, dense, uniformly distributed, divided by bristles; III, sparse (1:2 A, prolateral more abundant, divided by thick bristles); IV, 0. Tarsi: I–II, dense, uniformly distributed; III–IV, sparse, uniformly distributed (III by a wide band of setae; IV, by a wider band of setae), both tarsus with a fine line of bristles on both sides of the central band. *Trichobothria*: Tibiae: palp 10-12; I 10-11; II 12-12; III 11-13; IV 13-12. Metatarsi: I (5)1(0)1(1)1(2)1(3)1(3)1; II (6)1(1)1(2)1(2)1(1)1(2)1; III (6)1(1)1(1)1(2)1(1)1(3)1; IV (6)1(0)1(1)1(2)1(2)1(1)1(3)1. Tarsi: palp 25; I–III 30; IV 32. *Color in alcohol*: Overall dark reddish brown (chelicerae darker). Legs like carapace; abdomen dark brown with many dark spots like bands (fig. 34C). Sternum reddish brown; spinnerets yellowish.

ECOLOGY: *Hermacha septemtrionalis* prefers flat areas with harder, clay loam or clay soils. It often occurs on black, vertic clays. It constructs an open, silk lined burrow, with the upper portion descending at an angle for a short period, and the majority of the burrow descending vertically. The entrance is often at an angle to the soil surface, and not flush with the soil surface as in *H. evanescens* or *H. tuckeri*. It can be very abundant at some locations, with hundreds of males collected in pitfall traps around Onderstepoort. Males are active in autumn. As in *H. evanescens*, the species closes the burrow entrance during drier times of the year.

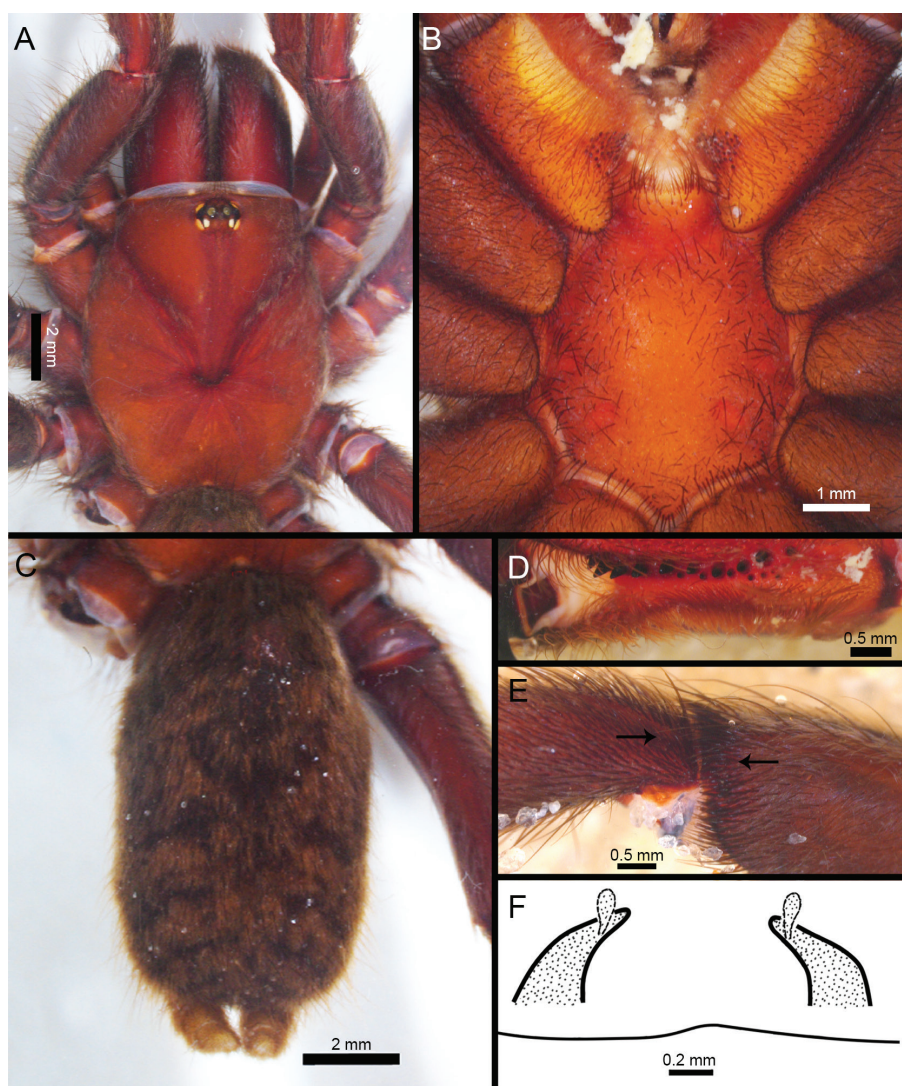


FIGURE 34. *Hermacha septemtrionalis*, sp. nov., female paratype (NCA 2018/341): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, chelicerae, showing the pattern of teeth and distribution of, ventral view. **E**, femur (apical)–patella (basal) IV, arrows indicate apical-basal patch of small and rigid setae, dorsal-prolateral view. **F**, spermathecae.

ADDITIONAL MATERIAL EXAMINED: South Africa: Limpopo Province: Tuinplaas, Springbokvlakte Settlers (Roedtan) [24°54'S 28°44'E], November 7, 2001, M. v Jaarsveld, 1 ♀ (NCA 2003/872); Same locality and collector, May 7, 2002, 3 ♂ (NCA 2003/873), (NCA 2003/871), (NCA 2003/876); Farm Gretha, Settlers, Transvaal (24°56'S 28°31'E), April 25, 1978, M. Grobler, 1 ♂ (NCA 87/696); Farm Vischpan; Boikarabelo Coal Mine, ca. 15 km NW of Steenbokpan (23°38'S 27°08'E), April 18–19, 2014, I. Engelbrecht, D. Jacobs and R. Lyle, 1 ♂ (NCA 2018/322); Potgietersrus District, Farm Verweg 540, 40 km due SSW of Mokopane (Potgietersrus), area S of junction of Platdoorn and Verweg roads (24°31'36.7"S 28°54'02.7"E), December 29, 2007, I. Engelbrecht and R. Lambrechts, 3 ♀ (NCA 2018/340); Vivo, Koedoesvlei (Western Soutpansberg) (23°3'50.40"S 29°29'24.00"E), March 27, 2009, S.H. Foord, 1 ♀ (NCA 2014/3139); Settlers

(24°57'10.42"S 28°31'9.92"E), April 9, 1979, D. Uys, 1 ♂ (NCA 86/310); Leeudorings, Warmbad, Transvaal (24°50'1.20"S 28°18'0.15"E), March 10, 1980, D. Uys, 2 ♂ (NCA 82/247); Polokwane Game Reserve [23°58'S 29°28'E], April 4, 2005, T.T. Khoza and M.A. Modiba, 2 ♂ (NCA 2008/1113), (NCA 2008/1405); Assen Police Station, Farm Beestekraal (25°10'0.73"S 27°35'48.48"E), October 15, 2002, A. Leroy, 1 ♀ (NCA 2010/402); Same locality, Buffelspoort [25°05'59.35"S 27°37'39.68"E], October 29, 2002, A. Leroy, 4 ♀ (NCA 2010/401). North West Province: Kroondal (Rustenburg) [25°44'S 27°19'E], August 6, 1979, D. Uys, 1 ♂ (NCA 2000/166). Gauteng Province: Wonderboom District; Onderstepoort Nature Reserve, ca. 10 km N of Pretoria, northwestern part of reserve, N of Koppies and railway line (25°36'33.5"S 28°07'11.37"E, 1244 m), November 2, 2010–March 17, 2011, I. Engelbrecht, M. Baloyi, R. Koko, A. Mputhi and S. Ndlovu, 49 ♂, 2 imm (NCA 2018/342); Onderstepoort Natural Reserve [25°37'S 28°9'E], 19.iii.2003, H. Roux, 1 ♀ (NCA 2010/403). Rust de Winter Natural Reserve [25°13'S 28°30'E], December 1, 1998, M. Paulsen, 1 ♀ (NCA 2004/401); Wonderboom District, Onderstepoort Nature Reserve; ca. 10 km N of Pretoria, central part of reserve, S of Koppies (25°37'41.8"S 28°08'47.4"E, 1252 m), April 29, 2010, I. Engelbrecht, M. Baloyi, R. Koko, A. Mputhi and S. Ndlovu, 2 imm (NCA 2018/339); same locality, Pyramid Koppies [25°44'S 28°11'E], March 15, 2003, M. Forsyth, 1 ♂ (NCA 2007/2380).

DISTRIBUTION: Limpopo, North West, and Gauteng provinces, South Africa. It occurs north of the Magaliesberg and west of the Drakensberg. It has not been recorded north of the Soutpansberg.

Genus *Hermachola* Hewitt, 1915, stat. rev.

Hermachola Hewitt, 1915: 314. Here removed from synonymy of *Hermacha* Simon, 1889 (contra Raven, 1985: 85).

TYPE SPECIES: *Hermachola grahami* Hewitt, 1915: 314 (by monotypy).

DIAGNOSIS: *Hermachola* can be distinguished from all other Entypesidae by their coiled embolus (figs. 37A–D; 40A–D), and an interchelicer al tumescence in a deep cavity (figs. 36E, 40E). Males can be differentiated by their tibia I without mating clasper, only with spines; medial spines larger than others (figs. 36D, 40D; a megaspine is present in *Hermacha*, *Afropesa*, and *Entypesa*, and a spur in *Lepthercus*; similar to *Brachytheliscus* but differs by the larger medial spine). Females can be differentiated by their coiled spermathecae (figs. 35E, 38E, 41D) corresponding to the shape of the male copulatory bulb.

DESCRIPTION. Small (7–15 mm) spiders. Cephalothorax and legs covered with short bristles; cephalothorax with golden or dark pubescence, and dark setae on the margin, more abundant posteriorly. Labium without cuspules, and palpal endites with strong cuspules on the posterior inner surface; postlabial sigilla consisting of a pair of well-marked sigilla, almost meeting in the center. Sternum longer than wide (figs. 35B, 36B, 38B, 39B, 41B), covered with black setae, with posterior sigilla marginal, small, and well defined. Abdomen covered with short black setae, spotted (figs. 35C, D, 36C, 39C, 41C). Ocular tubercle well defined, wider than long, in almost all the species the PME are adjacent to the PLE (except females of *Hr. lyleae*, sp. nov.). Fovea short, recurved or straight, with a short backwardly directed median extension (procurved and without the posterior extension in *Hermacha*). Clypeus very short, almost absent.

Rastellum absent, chelicerae with retrodorsal bristles. Serrula present on the anterior inner surface of the palpal endites (both sexes, absent in *Hermacha*). Cheliceral dentition a continuous line of equidistant teeth with many basal denticles (no equidistant line with a few basal denticles in *Hermacha*). Intercheliceral tumescence in a deep cavity, small and glabrous in males (absent in females) (figs. 36E, 39E). Leg formula 4123; all legs covered with sparse setae. Tibia I of male without spur, only with spines (medial bigger, figs. 36E, 39D). Cymbium short, without spines. Copulatory bulb with the embolus coiled (two loops) in a spiral like a corkscrew, with numerous long flanges along the entire surface (figs. 37A–D, 40A–D). Palp tibia thin and elongated, without spines or sometimes with spiniform setae (figs. 37A, B, 40A, B), ventrally with some rigid setae on the ventral-prolateral surface. Scopulae: Metatarsi I–II sparse, apical in males; III–IV absent, very sparse and divided in male of *Hr. crudeni*. In female metatarsi I dense, distributed in the entire segment; II sparse 3/4 or 1/3 A, sometimes divided by long setae. Tarsi I–II sparse, throughout the segment, dense in females; III–IV absent. Trichobothria: filiform, in two rows from basal to anterior; metatarsi with one straight line, tarsi with a narrow and short zigzag row along length (fig. 3E–H). Metatarsal preening combs present in legs II to IV (both sexes). Spermathecae: two separated, entire, small, and coiled into a spiral form with 2–3 loops (figs. 35E, 38E, 41D).

SPECIES COMPOSITION: *Hermachola capensis* (Ausserer, 1871), comb. nov., *Hermachola crudeni* (Hewitt, 1913), comb. nov., and *Hermachola lyleae*, sp. nov.

DISTRIBUTION: South Africa: Western and Eastern Cape provinces (fig. 46).

REMARKS: The original description of *Hermachola* was based on a single male from Grahamstown, Eastern Cape Province. Raven (1985:85) considered the diagnostic characters for the genus to be autapomorphic and synonymised it with *Hermacha*. The examination of additional material for this study revealed additional characters that make this genus different from others, such as a remarkable copulatory bulb with a coiled embolus (37A–D, 40A–D) and (concomitantly) the coiled shape of the spermathecae (figs. 35E, 38E, 41D); an intercheliceral tumescence without setae and in a deep cavity (figs. 36E, 39E); and tibia I of males without mating clasper, only with spines (medial spines larger than others, figs. 36D, 39D). All these characters are sufficient to justify the proposal of the reinstatement of *Hermachola*.

KEY FOR IDENTIFICATION OF *HERMACHOLA*

Males

Note: Males of *Hermachola capensis* (Ausserer, 1871) are unknown.

1. Tibia I with a short retrolateral apical spine (fig. 36D), copulatory bulb stout; tegulum with a bulb duct with one turn (fig. 37C).....*Hermachola crudeni* (Hewitt, 1913)
- Tibia I with a long retrolateral apical spine (fig. 39D), copulatory bulb gracile; tegulum with a bulb duct with two turns (fig. 40C).....*Hermachola lyleae*, sp. nov.

Females

1. Epigastric plate with a medial extension, reaching the middle of the second pair of book lungs (fig. 35C, D), abundant cheliceral denticles (>20) *Hermachola capensis* (Ausserer, 1871)

- Epigastric plate without a medial extension, ending before the second pair of book lungs (fig. 38D), few cheliceral denticles (<15)2
- 2. Metatarsus I with 2-2-3 ventral spination pattern *Hermachola lyleae*, sp. nov.
- Metatarsus I with 2-1-2 ventral spination pattern *Hermachola crudeni* (Hewitt, 1913)

Hermachola capensis (Ausserer, 1871), comb. nov.

Figures 3E–H, 35A–F

Brachythele capensis Ausserer, 1871: 175.

Hermacha capensis (Ausserer): Benoit, 1964: 417 (after Simon, 1903: 906).

MATERIAL EXAMINED: HOLOTYPE: South Africa: Western Cape Province: Cap der guten Hoffnung [Cape of Good Hope, 34°02'S 18°25'E], 1857, 1 ♀, 2 imm (ZMB 49057).

REMARKS: The true provenance of the type specimen is uncertain as extensive collection of mygalomorphs on the Cape Peninsula by Purcell and Tucker at the turn of the 19th century, as well as more recent general arthropod surveys there using pitfall trapping, have failed to yield new material. Targeted surveys of mygalomorphs on the peninsula should be a priority to determine whether this species occurs there, as well as to collect fresh material of several other species previously recorded.

DIAGNOSIS: Females of *Hr. capensis* can be distinguished from all other *Hermachola* species by their epigastric plate with a medial extension reaching the middle of the second pair of book lungs (fig. 35C, D) and a greater number of cheliceral denticles (>20, fig. 35F; fewer than 15 in *Hr. crudeni* and *Hr. lyleae*). The spermathecae are more elongated than in *Hr. crudeni* (fig. 35E, similar to *Hr. lyleae*).

DESCRIPTION: FEMALE HOLOTYPE (ZMB 49057, figs. 3E–H, 35A–F): *Total length:* 14.24. *Carapace* (fig. 35A): length 5.47, width 4.05. *Cephalic region:* length 3.51, clypeus small with 4 marginal bristles; 3 bristles in front of the OQ. *Fovea:* small, width 0.49, straight. *Ocular measurements:* AME 0.13, ALE 0.28, PME 0.20, PLE 0.22, OQ length 0.45, width 0.95; AME-ALE 0.09, PME-PLA 0.00, AME-PME 0.07, ALE-PLA 0.04, AME-AME 0.09, PME-PME 0.42. *Chelicerae* (fig. 35F): length 3.45, width 2.06; with retrodorsal bristles, no rastellum. Cheliceral furrow with 11 promarginal teeth and 24 mesobasal denticles. *Labium:* length 0.40, width 0.93. *Palpal endites:* length 1.96, width 0.88, with 25 cuspules on inner corner, prolateral face straight, soft area small, with long uniformly distributed setae. *Sternum* (fig. 35B): length 2.55, maximum width 2.32. *Abdomen* (fig. 35C, D): length 6.02, with a covering of fine setae and longer emergent setae. *PMS:* length 0.65; *PLS:* length of basal:medial:apical segments 1.00:0.84:0.85; total length 2.69. *Lengths of legs and palp:* I: 3.89, 2.30, 2.90, 2.72, 1.66, 13.47. II: 3.50, 2.09, 2.54, 2.48, 1.57, 12.18. III: 3.07, 1.70, 1.91, 2.71, 1.42, 10.81. IV: 3.98, 2.10, 2.96, 3.89, 1.56, 14.49. *Palp:* 2.79, 1.60, 1.78, —, 2.02, 8.19. *Chaetotaxy:* Leg I: femur, 1 PA; patella, 0; tibia, 1-1 p, 1-1-2 v; metatarsus, 2-1-0-2 V; tarsus, 0. Leg II: femur, 1 PA; patella, 0; tibia, 1-1 P, 1-1-3 V; metatarsus, 1 P, 2-2-0-2 V; tarsus, 0. Leg III: femur, 1-1 PA, 1 RA; patella, 1 P, 1-1 R; tibia, 1 P, 1-1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-R, 1-1-1 R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1 d; patella, 1 p; tibia, 1-1-1-1 P, 2-2-3 V; metatarsus, 1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1-1 R, 2-2-3 V; tarsus, 0. *Palp:* femur, 1 P A; patella, 0;

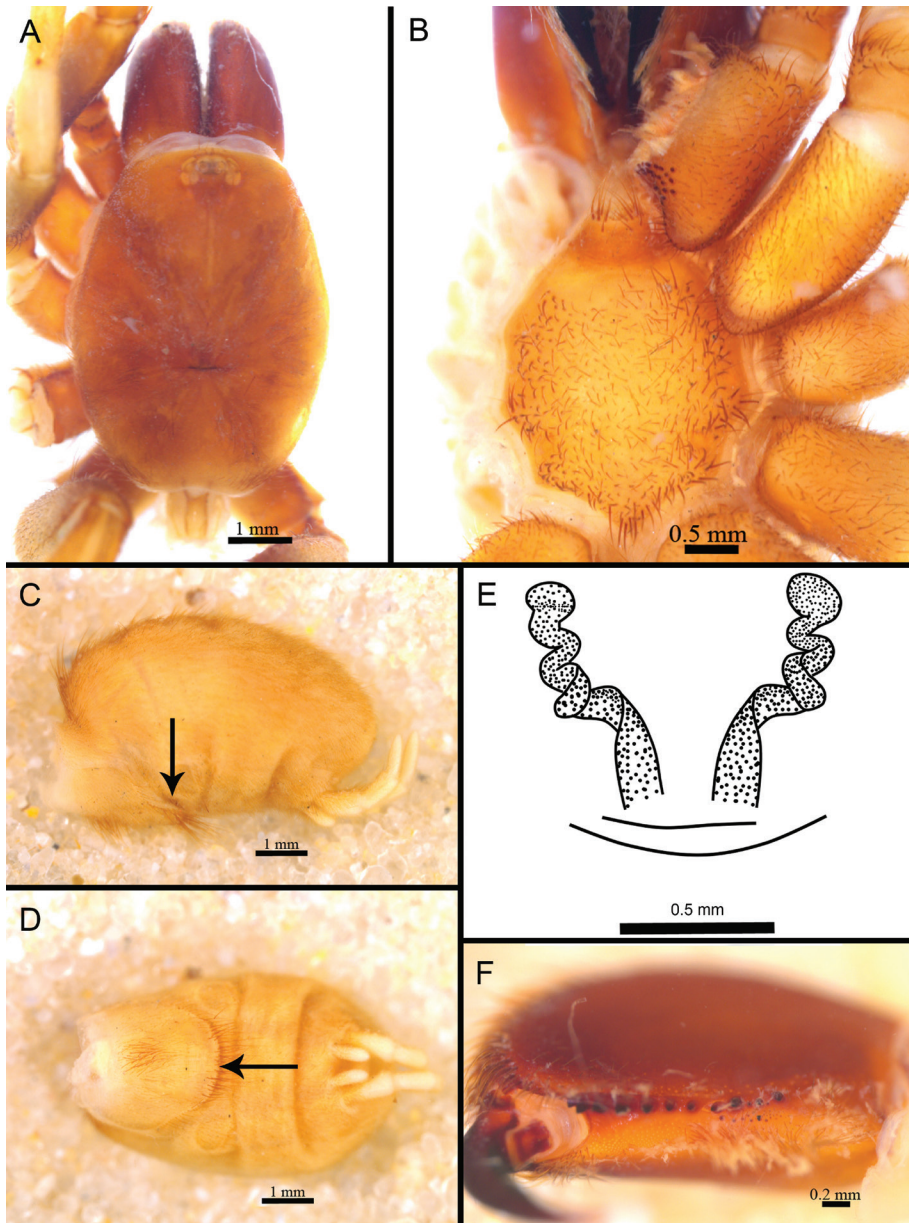


FIGURE 35. *Hermachola capensis* (Ausserer, 1871), female holotype (ZMB 49057): **A**, cephalothorax, dorsal view. **B**, labium, palpal endites, ventral view. **C–D**, abdomen, arrows indicate epigastric plate with a medial extension, reaching up the middle of the second pair of book lungs: **C**, lateral view; **D**, ventral view. **E**, spermathecae. **F**, chelicerae, showing the pattern of teeth and distribution of denticles, ventral view.

tibia, 1-1 P, 2-2-4 V; tarsus, 1 PB. *Spermathecae*: coiled with 3 loops, terminal receptacle oriented inward (fig. 35E). *Scopulae*: Metatarsi: I, dense, uniformly distributed; II, sparse 2:3A; III-IV, 0. Tarsi: I-II, dense, uniformly distributed (II divided by band of bristles); III-IV, 0, with ventral bristles uniformly distributed. *Trichobothria*: Tibiae: palp 9-9; I 10-10; II 10-8; III 8-10; IV 10-9. Metatarsi: I (3)1(2)1(4)1; II (4)1(1)1(2)1(4)1; III (5)1(2)1(2)1(4)1; IV (4)1(2)1(3)1(4)1. Tarsi: palp 12; I-II 14; III-IV 13. *Preening combs*: III 2 PV-3 RV; IV 3 PV-3 RV. *Color in alcohol*: Overall yellowish red (chelicerae darker); legs like carapace. Abdomen light yellowish (likely a result of long term preservation); spinnerets yellowish.

MALES: Unknown.

DISTRIBUTION: South Africa: Western Cape Province: Known only from the type locality, but see Remarks above. The original description indicated "Cap der guten Hoffnung," which corresponds to the history of the Novara Expedition that visited the port of Cape Town (Organ, 2007).

Hermachola crudeni (Hewitt, 1913), comb. nov.

Figures 36A-E, 37A-D, 38A-F

Hermacha crudeni Hewitt, 1913: 466.

Hermachola grahami Hewitt, 1915: 314. New synonymy.

MATERIAL EXAMINED: The female and male type specimens described by Hewitt (1913, 1915) from Alicedale and Grahamstown, could not be located for this study. The descriptions made here are based on males and females collected near the type locality as follows: South Africa: Eastern Cape Province. Resolution Halt, near Grahamstown [33°9'57.60"S 26°36'57.60"E], May 1928, 2♂, 3♀ (SAM-ENW-B007214).

SYNONYMY: Hewitt (1913) described *Hermacha crudeni* based on a single female specimen from Alicedale, 41 km west of Grahamstown. In 1915, Hewitt described the new genus *Hermachola* based on a single male from Grahamstown. Hewitt (1913: 467) cited the shape of the fovea, diameter and disposition of the posterior eyes, the length of the apical segment of the posterior spinnerets and the absence of scopulae on the third and fourth metatarsi as important differences between *Hermacha crudeni* and the other *Hermacha* species known to him at the time. These characters agree with those of male specimens of *Hr. grahami* Hewitt 1915, and differ from those of *Hermacha*. These similarities, as well as examination of male and female specimens (NCA 2008/2013) collected together at other localities, support our conclusion that the female of *Hermacha crudeni* and the male of *Hermachola grahami* are conspecific, with *Hr. grahami* a junior synonym.

DIAGNOSIS: Males of *Hermachola crudeni* can be distinguished by the presence of a short retrolateral apical spine on tibia I (fig. 36D) and the seminiferous duct with one turn in the tegulum (fig. 37C). It can further be separated from *Hr. lyleae*, sp. nov., by the presence of a robust copulatory bulb (fig. 37A-D). Females can be recognized by the more coiled spermathecae (fig. 38E, elongated in *Hr. capensis* and *Hr. lyleae*, sp. nov.); and metatarsus I with 2-1-2 ventral spination pattern.

DESCRIPTION: MALE (SAM-ENW-B007214, figs. 36A–E, 37A–D): *Total length*: 12.47. *Carapace* (fig. 36A): length 4.51, width 3.48, with a gold pubescence and thin setae and with dark marginal bristles. *Cephalic region*: length 2.77; clypeus almost absent with 5 bristles; 4 bristles in front of the OQ and 3 between PME. *Fovea*: small, recurved, width 0.36. *Ocular measurements*: AME 0.15, ALE 0.28, PME 0.21, PLE 0.22, OQ length 0.45, 0.79 width; AME-ALE 0.05, PME-PLP 0.00, AME-PME 0.05, ALE-PLP 0.05, AME-AME 0.08, PME-PME 0.29. *Chelicerae* (fig. 36E): length 2.23, width 1.33, with retrodorsal bristles, no rastellum; intercheliceral tumescence pallid, in a deep cavity, and without setae. Cheliceral furrow with 8 promarginal teeth, and 11 mesobasal denticles. *Labium*: length 0.24, width 0.65. *Palpal endites*: length 1.57, width 0.68, with 43 cuspules on inner corner, prolateral face slightly curved, soft area developed, with long uniformly distributed setae. *Sternum* (fig. 36B): length 2.23, maximum width 1.80. *Abdomen* (fig. 36C): length 5.52, covered with small setae and bristles. PMS: length 0.63; PLS: length of basal:medial:apical segments 1.08:0.73:1.06; total length 2.87. *Lengths of legs and palp*: I: 3.24, 1.90, 2.28, 2.22, 1.38, 11.01. II: 2.91, 1.76, 1.82, 1.94, 1.35, 9.78. III: 2.62, 1.50, 1.60, 2.31, 1.41, 9.44. IV: 3.24, 1.82, 2.36, 3.22, 1.52, 12.16. *Palp*: 2.09, 1.24, 1.84, —, 1.07, 6.24. *Chaetotaxy*: Leg I: femur, 1-1 P, 1-1-1-1-1 d; patella, 1 PA; tibia, 1-1-2 P, 2-3-1-3 V, the apical one small (fig. 36D); metatarsus, 1-2 V (1:2 A); tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1 D; patella, 1-1 P; tibia, 1-1 P, 2-2-3 V; metatarsus, 1 P, 2-3-3 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1-1 D, 1-1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1-1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1 P (1:2 B), 1-1-1 D-P, 1-1-1 D-R, 1 R, 2-3-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1 D, 1 RA; patella, 1 R; tibia, 1-1 P, 1-1 D (1:2 B), 1-1 R, 2-2-3 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1-1 D-R, 1-1 R, 3-3-3 V; tarsus, 0. *Palp* (fig. 37A, B): femur, 1 P, 1-1-1-1 d; patella, 1 P; tibia, 1 P, 1-1 R with long rigid ventral bristles; tarsus, 0. *Copulatory bulb*: strong and the seminiferous duct with one turn in the tegulum (fig. 37C, length 1.10, width 0.34). *Scopulae*: Metatarsi: I, sparse (1:3A); II, sparse (3:4A) divided by band of bristles; III–IV, 0. Tarsi: I–II, sparse, uniformly distributed throughout the segment and divided by a band of bristles; III–IV, sparse, uniformly distributed throughout the segment, divided (III by a narrow band of setae; IV, by a wide band of setae). *Trichobothria*: Tibiae: I–II 10-9; III–V 9-10. Metatarsi: I (4)1(1)1(3)1(3)1; II (4)1(1)1(2)1(5)1; III (4)1(1)1(2)1(5)1; IV (4)1(1)1(1)1(4)1(5)1. Tarsi: I–II 12; III 11; IV 13. *Preening combs*: III–IV 3 RV-3 PV. *Color in alcohol*: Overall yellowish red (chelicerae darker); legs like carapace. Abdomen light yellowish red; spinnerets yellowish.

FEMALE (SAM-ENW-B007214, figs. 3E–H, 38A–F): *Total length*: 14.93. *Carapace* (fig. 38A): length 4.51, width 3.36. *Cephalic region*: length 2.79, clypeus small with 4 marginal bristles; 6 bristles in front of the OQ and 2 posterior (between PME). *Fovea*: small, width 0.29, procurved. *Ocular measurements*: AME 0.12, ALE 0.26, PME 0.20, PLE 0.20, OQ length 0.44, width 0.77; AME-ALE 0.06, PME-PLP 0.00, AME-PME 0.04, ALE-PLP 0.04, AME-AME 0.09, PME-PME 0.29. *Chelicerae* (fig. 38F): length 2.50, width 1.53; with retrodorsal bristles, no rastellum. Cheliceral furrow with a line of 7 promarginal teeth and 12 mesobasal denticles. *Labium*: length 0.32, width 0.68. *Palpal endites*: length 2.14, width 1.84, with 50 cuspules on inner corner, prolateral face curved, soft area big, with long uniformly distributed hairs. *Sternum* (fig. 38B): length 2.14, maximum width 1.84. *Abdomen* (fig. 38C, D): length 7.92, covered with small hairs

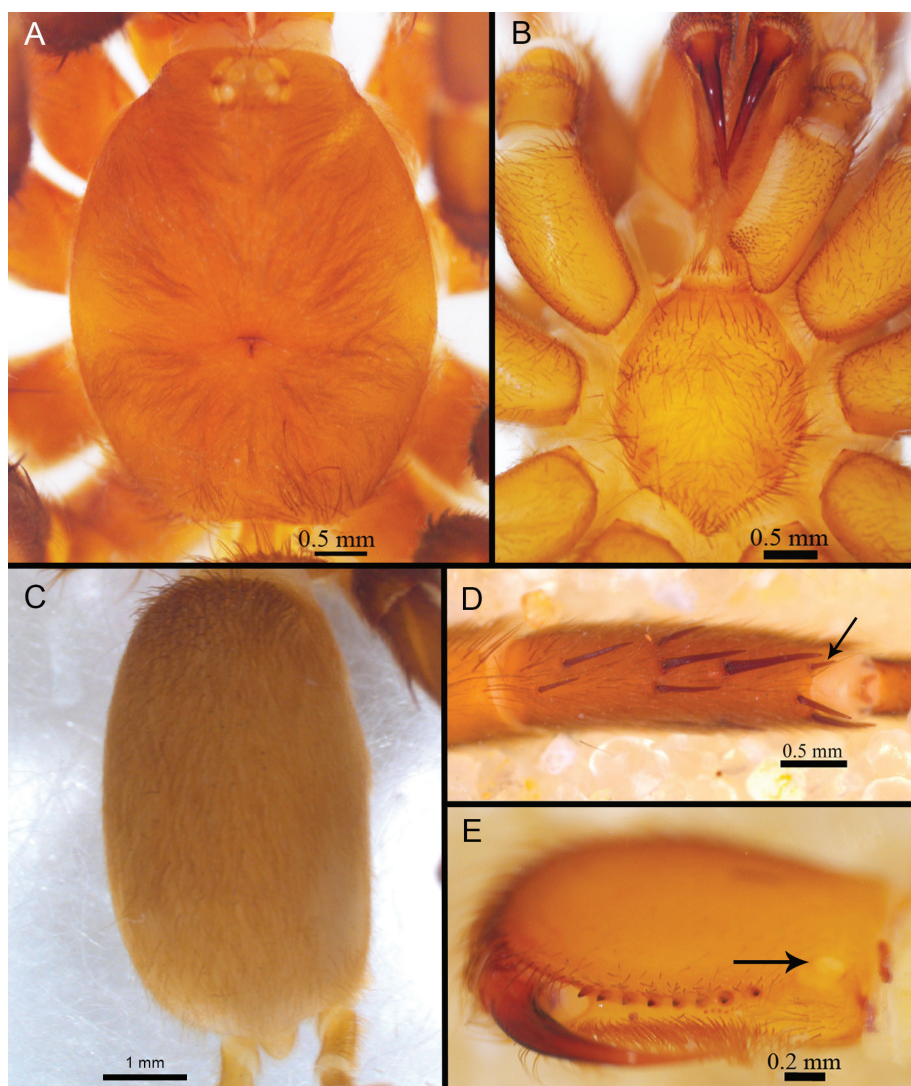


FIGURE 36. *Hermachola crudeni* (Hewitt, 1913), male (SAM-ENW-B007214): **A**, cephalotorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, tibia I, arrow indicates the short retrolateral apical spine, ventral view. **E**, chelicerae, showing the pattern of teeth and distribution of denticles, arrow indicates the deep intercheliceral tumescence.

and bristles. PMS: length 0.70; PLS: length of basal:medial:apical segments 1.09:0.65:1.06; total length 2.80. *Lengths of legs and palp*: I: 2.53, 1.54, 1.44, 1.36, 1.00, 7.87. II: 2.91, 1.87, 1.79, 1.40, 1.00, 8.97. III: 2.19, 1.40, 1.25, 1.73, 1.05, 7.62. IV: 2.89, 1.75, 1.95, 2.38, 1.18, 10.15. Palp: 2.10, 1.30, 1.26, —, 1.25, 5.91. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1 p, 1-1-3 v; metatarsus, 2-1-2 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1-1 d; patella, 0; tibia, 1-1 P, 1-1-1 V; metatarsus, 2-2-3 V; tarsus, 0. Leg III: femur, 1-1 PA, 1-1-1-1-1-1 d, 1 RA; patella, 1 P, 1-1 R; tibia, 1-1 P, 1-1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1-1 R, 2-3-3 V; tarsus, 0. Leg IV: femur, 1 PA, 1-1-1-1-1-1 d; patella, 1 R; tibia, 1-1 P, 1-1 R, 2-2-3 V; meta-

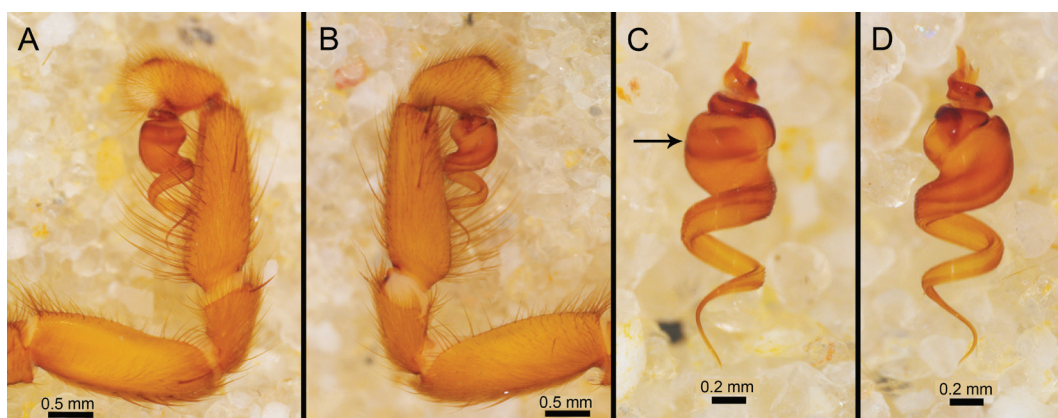


FIGURE 37. *Hermachola crudeni* (Hewitt, 1923), male (SAM-ENW-B007214): **A–B**, left pedipalp; **A**, prolateral view, **B**, retrolateral view. **C–D**, copulatory bulb, two different views, arrow indicates the bulb duct with one turn.

tarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1 R, 2-3-3 V; tarsus, 0. Palp: femur, 1 PA, 1-1-1-1 d; patella, 0; tibia, 1 p, 2-3 V (1:2A); tarsus, 0. *Spermathecae*: coiled with 3–4 loops, terminal receptacle oriented outward (fig. 38E). *Scopulae*: Metatarsi: I, dense, uniformly distributed, divided by bristles; II, sparse 1/3A (only P), segment divided by thick bristles; III–IV, 0. Tarsi: I–II, dense, uniformly distributed, divided by band of bristles; III–IV, 0, with bristles uniformly distributed. *Trichobothria* (fig. 2E–H): Tibiae: palp 9-9; I 10-10; II 9-8; III 9-9; IV 10-11. Metatarsi: I (3)1(1)1(2)1(5)1; II (4)1(2)1(5)1; III (3)1(0)1(2)1(5)1; IV (4)1(1)1(3)1(4)1. Tarsi: palp 10; I 12; II 11; III–IV 12. *Preening combs*: II 4 PV; III–IV 3 RV-3 PV. *Color in alcohol*: Overall yellowish red (chelicerae darker); legs like carapace. Abdomen light yellowish red; spinnerets yellowish.

ADDITIONAL MATERIAL EXAMINED: South Africa: Eastern Cape Province: Alstonfield Farm, along river bed (32°53.56'S 26°01.10'E, 717 m), November 17, 2016, R. Lyle and T. le Roux, 1 ♂ (NCA 2018/56); Adelaide District (32°34'S 26°16'S, 771 m), September 24, 2017, P. Van Niekerk, J. Mooka and E. Sgudhla, 1 ♂ (NCA 2017/1973); Shamwari Game Reserve (33°28'S 26°3'E), July 13, 2005, C. Haddad and R. Lyle, 1 ♂, 1 ♀ (NCA 2008/2013); Mountain Zebra National Park [32°11'S 25°37'E], August–October, 1985, Mus-Staff, 2 ♂ (NMBA 01080); 1 ♂ (NMBA 01097); Grahamstown [33°19'S 26°31'E], October 8, 1905, 1 ♂ (SAM-ENW-B002379).

DISTRIBUTION: South Africa: Eastern Cape Province: It appears to occur in the central parts of the province, from the Mountain Zebra National Park near Cradock to the Boesmans River valley at the eastern end of the Zuurberg. It has not been recorded east of the Great Fish River.

Hermachola lyleae, sp. nov.

Figures 39A–E, 41A–E

MATERIAL EXAMINED: **HOLOTYPE**: South Africa: Eastern Cape Province: Asante Sana Private Game Reserve, Waterkloof (32°14.750'S 24°56.471'E, 1802 m), November 25, 2009, J. Midgley, 1 ♂ (NCA 2012/3223). **PARATYPES**: Eastern Cape Province: Osplaats, Jansenville

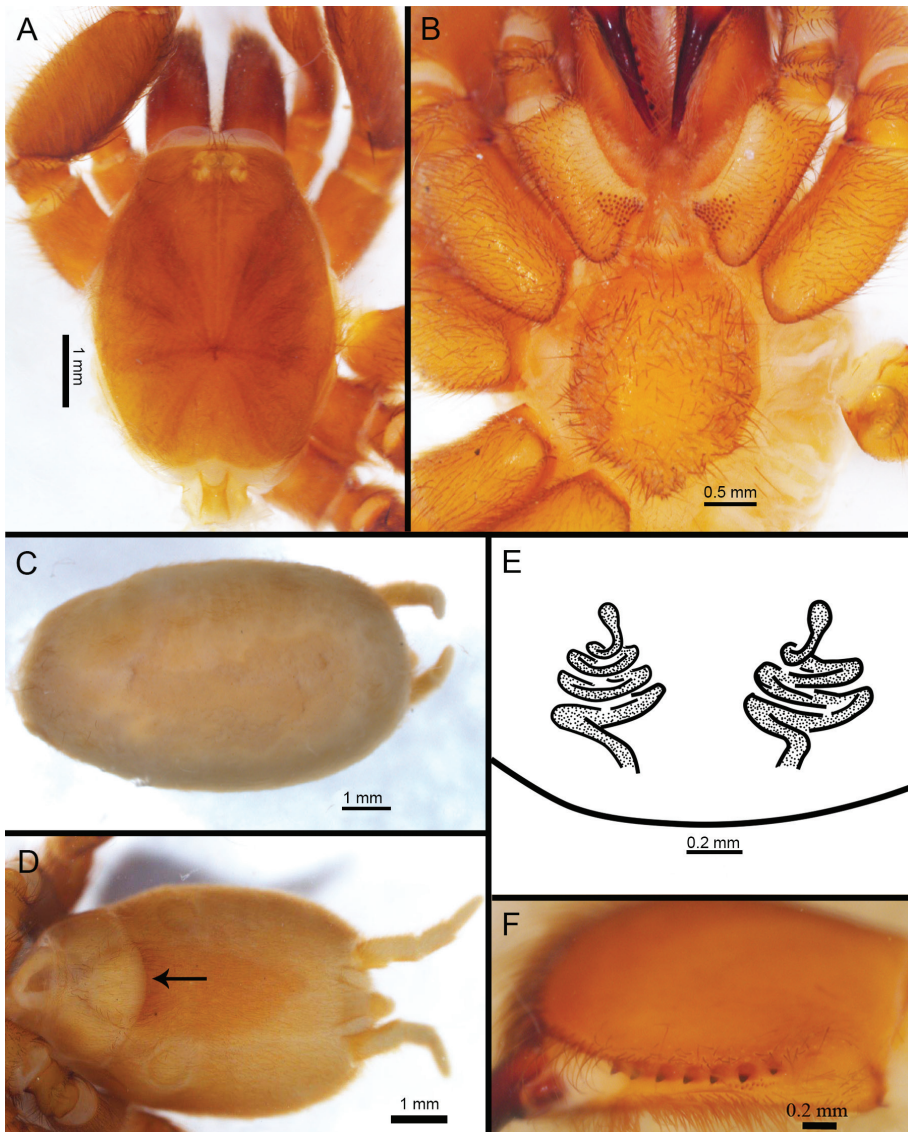


FIGURE 38. *Hermachola crudeni* (Hewitt, 1923), female (SAM-ENW-B007214): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, **E**, abdomen: **C**, dorsal view, **E**, ventral view, arrow indicates the epigastric plate without a medial extension, reaching before the second pair of book lungs. **D**, spermathecae. **F**, chelicerae, showing the pattern of teeth and distribution of denticles, ventral view.

(32°52'37.92"S 24°29'42.72"E), July 17, 2017, I. Engelbrecht and D. Kambas, 1 ♀ (NCA 2018/323); Asante Sana Private Game Reserve, Waterkloof (32°15.019'S 24°57.004'E, 1608 m), November 25, 2009, J. Midgley, 1 ♂ (NCA 2012/2348); (32°14.558'S 24°56.189'E, 2001 m), 1 ♂ (NCA 2012/3234); (32°15.022'S 24°57.011'E, 1620 m), 1 ♂ (NCA 2012/3236); (32°14.547'S 24°56.187'E, 2007 m), October 23, 2010, J. Midgley, 1 ♂ (NCA 2012/3232); (32°14.551'S 24°56.188'E, 2005 m), 1 ♂ (NCA 2012/3235); (32°14.558'S 24°56.189'E, 2001 m), 1 ♂ (NCA

2012/2349); (32°15.022'S 24°57.011'E, 1620 m), 1♂ (NCA 2012/2337); (32°15.027'S 24°57.015'E, 1614 m), 1♂ (NCA 2012/3219); (32°15.023'S 24°57.012'E, 1628 m), 1♂ (NCA 2012/3233); (32°15.031'S 24°57.015'E, 1613 m), 1♂ (NCA 2012/3238).

ETYMOLOGY: The specific epithet is a patronym in honor of Robin Lyle for her contributions to arachnology in South Africa.

DIAGNOSIS: Males of *Hermachola lyleae*, can be distinguished by the presence of a long retrolateral apical spine on tibia I (fig. 39D), a gracile copulatory bulb, and the seminiferous duct with two turns in the tegulum (fig. 40C). Females can be recognized by the elongated spermathecae (fig. 41D, compressed in *Hr. crudeni* and similar to *Hr. capensis*). Differ also from *Hr. crudeni* by the metatarsus I with 2-2-3 ventral spination pattern. Females can be distinguished from *Hr. capensis* by the epigastric plate without a medial extension.

DESCRIPTION: MALE HOLOTYPE (NCA 2012/3223, figs. 39A–E, 40A–D): *Total length:* 7.73. *Carapace* (fig. 39A): length 3.52, width 2.55, with a dark pubescence fine emergent setae and with dark marginal bristles. *Cephalic region:* length 2.18; clypeus almost absent with 3 bristles; 4 bristles in front of the OQ and 4 between PME. *Fovea:* small, recurved, width 0.44. *Ocular measurements:* AME 0.09, ALE 0.21, PME 0.14, PLE 0.16, OQ length 0.33, 0.57 width; AME-ALE 0.02, PME-PLE 0.00, AME-PME 0.05, ALE-PLE 0.02, AME-AME 0.07, PME-PME 0.17. *Chelicerae* (fig. 39E): length 1.59, width 0.96, with retrodorsal bristles, no rastellum; intercheliceral tumescence pallid, in a deep cavity, without setae (fig. 39E). Cheliceral furrow with 7 promarginal teeth, and 12 mesobasal denticles. *Labium:* length 0.20, width 0.45. *Palpal endites:* length 1.14, width 0.43, with 36 cuspules on inner corner, prolateral face slightly curved, soft area small, with long uniformly distributed hairs. *Sternum* (fig. 39B): length 1.77, maximum width 1.38. *Abdomen* (fig. 39C): length 3.24, covered with small hair and bristles. PMS: length 0.40; PLS: length of basal:medial:apical segments 0.69:0.43:0.61; total length 1.73. *Lengths of legs and palp:* I: 2.30, 1.57, 1.80, 1.53, 1.00, 8.20. II: 2.05, 1.34, 1.35, 1.34, 0.89, 6.97. III: 1.87, 1.18, 1.16, 1.72, 0.90, 6.83. IV: 2.35, 1.46, 1.69, 2.35, 1.16, 9.01. *Palp:* 1.42, 0.76, 1.34, —, 0.66, 4.18. *Chaetotaxy:* Leg I: femur, 1 PA, 1-1-1-1-1-1 d; patella, 1 pa; tibia, 1-1-1 P, 2-2-2-3 V, the apical ones strong (fig. 39D); metatarsus, curved, 3 VA; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1 d; patella, 1 p; tibia, 1-1-1 P, 2-2-3 V; metatarsus, 1-1-1 P, 2-2-3 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1-1 D, 1-1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1-1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1 R (1:2 A), 2-3-3 V; tarsus, 0. Leg IV: femur, 1-1-1 P, 1-1-1 D, 1-1 R; patella, 1 P, 1 R; tibia, 1-1-1 P, 1 DM, 1-1 R, 2-1-2-3 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1 R, 3-1-2-3 V; tarsus, 0. *Palp* (fig. 40A, B): femur, 1 P, 1-1-1-1-1 d; patella, 1 PA; tibia, 1 RA, with long rigid ventral bristles; tarsus, 0. *Copulatory bulb:* gracile, the seminiferous duct with two turns in the tegulum (fig. 40C, length 1.53, width 0.54). *Scopulae:* Metatarsi: I, sparse (1:2 A); II, sparse (1:3 A) divided by band of bristles; III–IV, 0. Tarsi: I–II, sparse, uniformly distributed throughout the segment and divided by a band of bristles; III–IV, 0, with thick bristles uniformly distributed. *Trichobothria:* Tibiae: I–II 8-8; III 7-7; V 8-9. Metatarsi: I (3)1(1)1(2)1(4)1; II (3)1(1)1(0)1(4)1; III (4)1(2)1(6)1; IV (5)1(0)1(1)1(5)1. Tarsi: I 12; II 10; III 10; IV 12. *Preening combs:* II 3PV; III 3RV-3PV; IV 3RV. *Color in alcohol:* Overall yellowish red (chelicerae darker); legs like

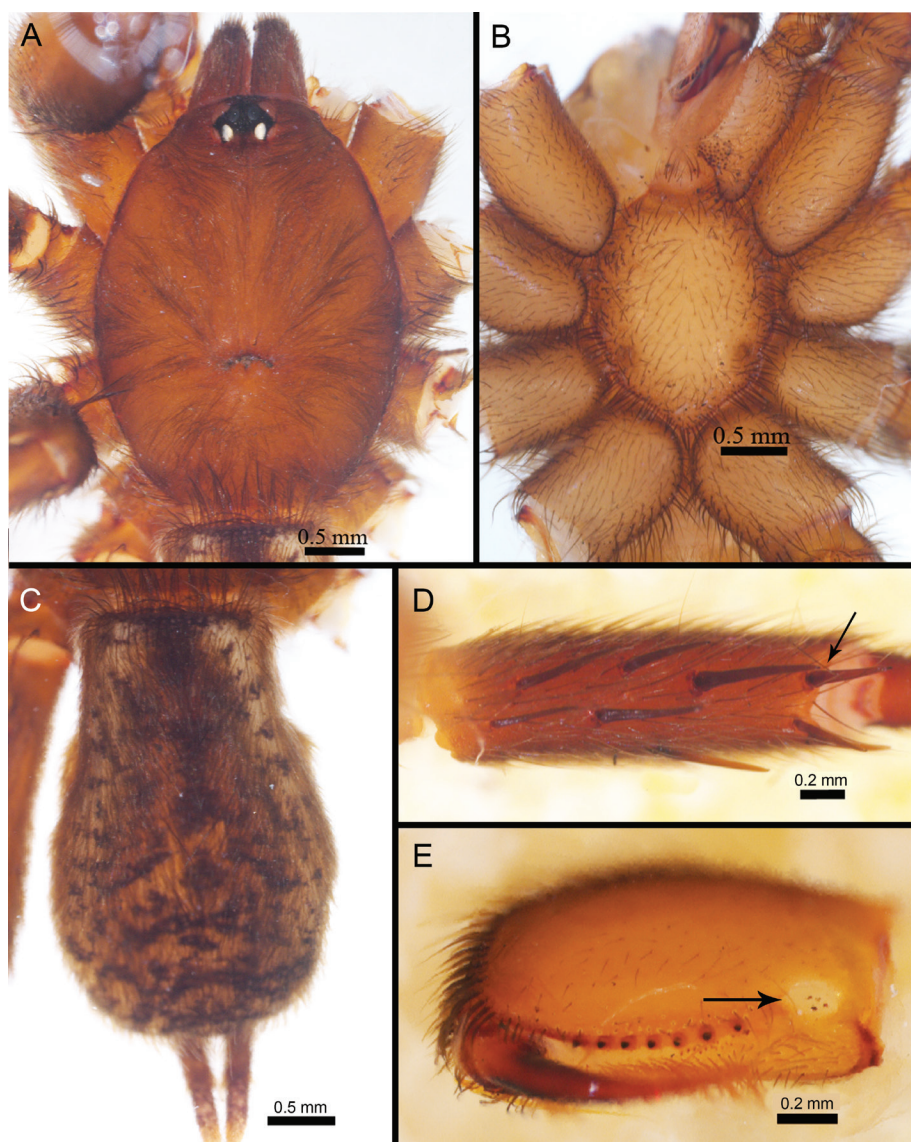


FIGURE 39. *Hermachola lyleae*, sp. nov., male holotype (NCA 2012/3223): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, addomen, dorsal view. **D**, tibia I, arrow indicate the long retrolateral apical spine, ventral view. **E**, chelicerae, showing the pattern of teeth and distribution of denticles, arrows indicate the deep intercheliceral tumescence.

carapace. Abdomen light brown (lighter ventrally), with posterior pallid spots forming bands; spinnerets like abdomen.

FEMALE PARATYPE (NCA 2018/323, fig. 41A–E): *Total length*: 13.03. *Carapace* (fig. 41A): length 5.88, width 4.41. *Cephalic region*: length 3.81, clypeus small with 3 marginal bristles; 7 bristles in front of the OQ and 3 posterior (between PME). *Fovea*: small, width 0.68, procurved. *Ocular measurements*: AME 0.12, ALE 0.30, PME 0.22, PLE 0.23, OQ length 0.47, width 0.89;

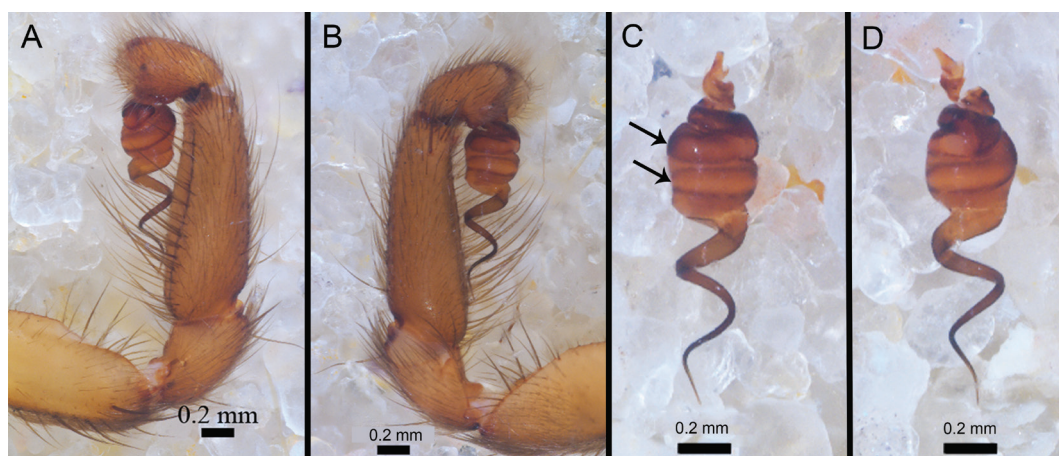


FIGURE 40. *Hermachola lyleae*, sp. nov., male holotype (NCA 2012/3223): **A–B**, left pedipalp: **A**, prolateral view, **B**, retrolateral view. **C–D**, copulatory bulb, two different views, arrows indicate the bulb duct with two turns.

AME-ALE 0.05, PME-PLA 0.03, AME-PME 0.08, ALE-PLA 0.04, AME-AME 0.16, PME-PME 0.29. *Chelicerae* (fig. 41E): length 3.39, width 2.16; with retrodorsal bristles, no rastellum. Cheliceral furrow with 8 promarginal teeth and 13 mesobasal denticles. *Labium*: length 0.47, width 0.98. *Palpal endites*: length 2.16, width 0.93, with 75 cuspules on inner corner, prolateral face slightly curved, soft area large, with long uniformly distributed setae. *Sternum* (fig. 41B): length 2.84, maximum width 2.52. *Abdomen* (fig. 41C): length 6.96, covered by short and fine emergent setae. PMS: length 0.97; PLS: length of basal:medial:apical segments 1.48:0.75:1.00; total length 3.23. *Lengths of legs and palp*: I: 3.70, 2.66, 2.60, 2.11, 1.30, 12.35. II: 3.27, 2.34, 1.99, 1.99, 1.27, 10.86. III: 2.93, 1.95, 1.76, 2.47, 1.30, 10.41. IV: 3.55, 2.45, 2.59, 3.46, 1.43, 13.48. *Palp*: 2.70, 1.76, 1.74, —, 1.67, 7.87. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1-1-3 v; metatarsus, 2-2-3 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1 P M, 1-1-3 V; metatarsus, 1 PM, 2-2-1-3 V; tarsus, 0. Leg III: femur, 1 PA, 1-1-1-1-1-1 d, 1 RA; patella, 1-1 P, 1 R; tibia, 1-1 P, 1-1 D, 2-2-3 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1 R, 2-1-3-3 V; tarsus, 0. Leg IV: femur, 1 RA; patella, 1 RA; tibia, 1-1 P, 1 DB, 1-1 R, 2-2-3 V; metatarsus, 1-1-1-1-1 P, 1-1-1 D-P, 1-1-1-1 D-R, 1-1 R, 2-1-2-3 V; tarsus, 0. *Palp*: femur, 1 PA, 1-1-1-1-1 d; patella, 0; tibia, 1 P, 2-3 V (1:2 A); tarsus, 2 VB. *Spermathecae*: a coiled with 2 loops, terminal receptacle oriented outward (fig. 41D). *Scopulae*: Metatarsi: I, dense, uniformly distributed, divided by bristles; II, sparse 1:3A (only P), segment divided by thick bristles; III–IV, 0. Tarsi: I–II, dense, uniformly distributed, divided by band of bristles; III–IV, 0, with bristles uniformly distributed. *Trichobothria*: Tibiae: palp 9-9; I 10-10; II 10-10; III 10-11; IV 12-13. Metatarsi: I (4)1(1)1(2)1(5)1; II (3)1(0)1(2)1(6)1; III (4)1(0)1(2)1(5)1; IV (5)1(0)1(1)1(3)1(6)1. Tarsi: palp 12; I 12; II 11; III 12; IV 14. *Preening combs*: II 4 PV; III 4 RV-4 PV; IV 2PV-3RV. *Color in alcohol*: Overall yellowish brown (chelicerae darker); legs like carapace. Abdomen dark brown (lighter ventrally), with posterior pallid spots like stripes (fig. 41C); spinnerets like abdomen.

ECOLOGY: The female from Osplaat (NCA 2018/323) was collected from a tubular silk retreat under a rock.

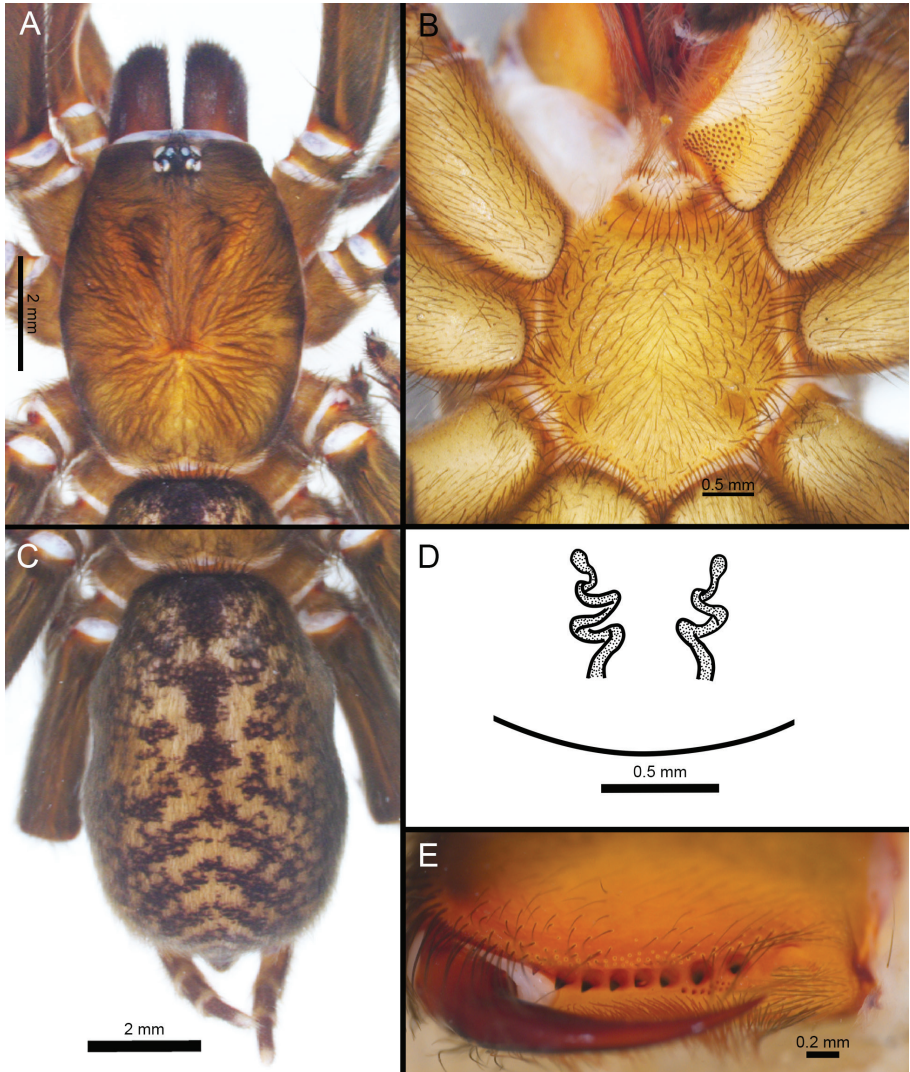


FIGURE 41. *Hermachola lyleae*, sp. nov., female paratype (NCA 2018/323): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, spermathecae. **E**, chelicerae, showing the pattern of teeth and distribution of denticles.

DISTRIBUTION: South Africa: Eastern Cape Province: It has been recorded from the southern end of the Sneeu Berg Mountains and low hills west of Jansenville. It appears to occur further west of *H. crudeni*. Further survey work is required to assess whether the two species are allopatric or parapatric.

Genus *Brachytheliscus* Pocock, 1902, stat. rev.

Brachytheliscus Pocock, 1902: 317. Here removed from synonymy of *Hermacha* Simon, 1889 (contra Hewitt [1915: 125] and Raven [1985: 85]).

TYPE SPECIES: *Brachythele bicolor* Pocock, 1897 (by monotypy, female description).

DIAGNOSIS: The genus can be distinguished from all South African genera of Entypesidae, except *Hermachola*, by the absence of a mating clasper or a megaspine on tibia I of males (fig. 42D). It can be distinguished from *Hermachola* by the shape of the male embolus (fig. 43C–F) or female spermathecae (fig. 44D), and by the series of spines on tibia I (fig. 42D, medial-distal spines similar, whereas the medial spines are enlarged in *Hermachola*). The legs are distinctly elongated and slender in this genus in comparison with other South African genera. Serrula absent in both sexes (similar to *Hermacha*). Males can be further differentiated from all other genera by the very small maxillary cuspules (fig. 42B, similar to some *Lepthercus* spp). Females differ from all other genera by the presence of basal spines on the palpal tarsus and the greater number of cheliceral denticles (30 or more; fig. 44F).

DESCRIPTION: Small spiders (10–16 mm). Cephalothorax and legs covered with short bristles; cephalothorax with dark setae on the margin, more abundant posteriorly. Labium with cuspules (only in females, fig. 44B), and palpal endites with strong cuspules on the posterior inner surface (fig. 44B, very small in males). Post labial sigilla distinct. Sternum oval, covered with black setae, with posterior sigilla separated from the margin, well defined (fig. 44B). Abdomen covered with short setae. Ocular tubercle well defined, wider than long. Fovea short, recurved (fig. 44A). Clypeus very short, almost absent. Chelicerae with retrodorsal bristles, rastellum weak (fig. 44E). Serrula absent in both sexes. Cheliceral dentition: a continuous line of equidistant teeth with many basal denticles. Intercheliceral tumescence well-marked in males (fig. 42E), long setae present in males. Leg formula 4123; all legs covered with sparse setae. Legs of males slender and long. Tibia I of male without spur or apical megaspine, only with a series of similar spines on the distal half of the tibia I (fig. 42D; similar to *Hermachola*). Cymbium short, without spines (fig. 43A, B). Copulatory bulb piriform; embolus short, slightly curved, with a small basal flange (fig. 43C–F). Palp tibiae thin and elongated, with some prolateral spines (fig. 43A), ventrally with some rigid setae. Scopulae: Metatarsi I–II sparse, distributed over the entire segment; III sparse apical; IV absent. Tarsi I–II sparse, throughout the segment, dense in females, III–IV sparse. Trichobothria: filiform; tibia in two rows; metatarsi with one straight line, tarsi with a narrow zigzag row along length. Metatarsal preening combs present in females on legs II–IV, absent in males. Spermathecae (fig. 44D): paired, separated, entire, with a narrow, twisted stalk and expanded apical receptacle.

SPECIES COMPOSITION: *Brachytheliscus bicolor* Pocock, 1902.

DISTRIBUTION: South Africa, Kwazulu–Natal Province (fig. 46).

REMARKS: Hewitt (1915) provided little justification for the synonymy of *Brachytheliscus* with *Hermacha*, only comparing *B. bicolor* with the female of *H. crudeni* and the male of *H. caudata*. At that time only the female of *H. crudeni* was known from Alicedale (Eastern Cape Province), and even though he noted differences in the ocular area and metatarsal scopulae, he maintained his position about the similarity with *H. crudeni*. Hewitt argued too, without substantiation, that males of this species would be similar to *H. caudata* from Delagoa Bay (Mozambique), based on their geographic proximity. This paper shows that females of *H. crudeni* are in fact representatives of the genus *Hermachola*, and the two genera are clearly distinct. The examination of male specimens of *Brachytheliscus* revealed the following characters that differ from *Hermacha*: males with

tibia I armed with a series of strong spines, all of them almost the same size (fig. 42A), legs long and slender, and copulatory bulb small (fig. 43C–F). Females with basal spines on the palp tarsus and labial cuspules present. Both sexes with a weak rastellum and females with preening combs. These characters support the revalidation of the genus *Brachytheliscus*.

Brachytheliscus bicolor (Pocock, 1897)

Figures 42A–E, 43A–F, 44A–F

Brachythele bicolor Pocock, 1897: 735.

Brachytheliscus bicolor: Pocock, 1902: 317.

Hermacha bicolor: Hewitt, 1915: 125; Tucker, 1917: 107, fig. 5.

REMARKS: Pocock (1897) described *Brachythele bicolor* based on a single damaged female specimen. After discovery of the male in 1902, he separated the species into a new genus, *Brachytheliscus* (Pocock, 1902). The type specimens described by Pocock are deposited in the British Museum and could not be obtained for this study, however, the original description provides sufficient detail for identification. Hewitt (1915), believing that the justification for the separation of the Dipluridae from Ctenizidae was poorly founded, synonymized the genus *Brachytheliscus* (placed in the family Dipluridae) with *Hermacha* (placed in the family Ctenizidae). Tucker (1917) redescribed *Brachytheliscus bicolor* based on specimens from Durban (Kwazulu-Natal) and included an illustration of the copulatory bulb. Given that the type specimen as well as the material of Hewitt from the Albany Museum were unavailable, the present analysis is based on the specimens described by Tucker (1917, males: SAM-ENW-X150710, SAM-ENW-B000888 and female: SAM-ENW-B000889) from the South African Museum. These specimens agree with the characters mentioned by Pocock (1897, 1902). An extensive examination of all other nemesiid material in South African institutions from Kwazulu-Natal Province confirmed the uniqueness of this species.

DIAGNOSIS: See the genus diagnosis.

DESCRIPTION: MALE (SAM-ENW-B000888, figs. 42A–E, 43A–F): *Total length*: 11.11. *Carapace* (fig. 42A): length 5.05, width 4.08 with bristles at the edge. *Cephalic region*: length 3.17; clypeus almost absent with 5 bristles; numerous bristles in front of the OQ and between PME. *Fovea*: small, recurved, width 0.67. *Ocular measurements*: AME 0.16, ALE 0.21, PME 0.20, PLE 0.20, OQ length 0.38, 0.79 width; AME-ALE 0.05, PME-PLA 0.02, AME-PME 0.06, ALE-PLA 0.04, AME-AME 0.10, PME-PME 0.33. *Chelicerae* (fig. 42E): length 2.46, width 1.36, with retrodorsal bristles, rastellum weak; intercheliceral tumescence well marked, long with setae. Cheliceral furrow with 8 promarginal teeth, and 30 mesobasal denticles. *Labium*: length 0.28, width 0.79. *Palpal endites*: length 1.40, width 0.70, with 83 small cuspules on inner corner, prolateral face slightly curved, soft area developed, with long uniformly distributed setae. *Sternum* (fig. 42B): length 2.52, maximum width 2.26. *Abdomen* (fig. 42C): length 4.93, covered with small setae and bristles more abundant in the anterior part. PMS: length 0.65; PLS: length of basal:medial:apical segments 0.66:0.69:1.04; total length 2.39. *Lengths of legs and palp*: I: 4.42, 2.45, 3.57, 3.57,

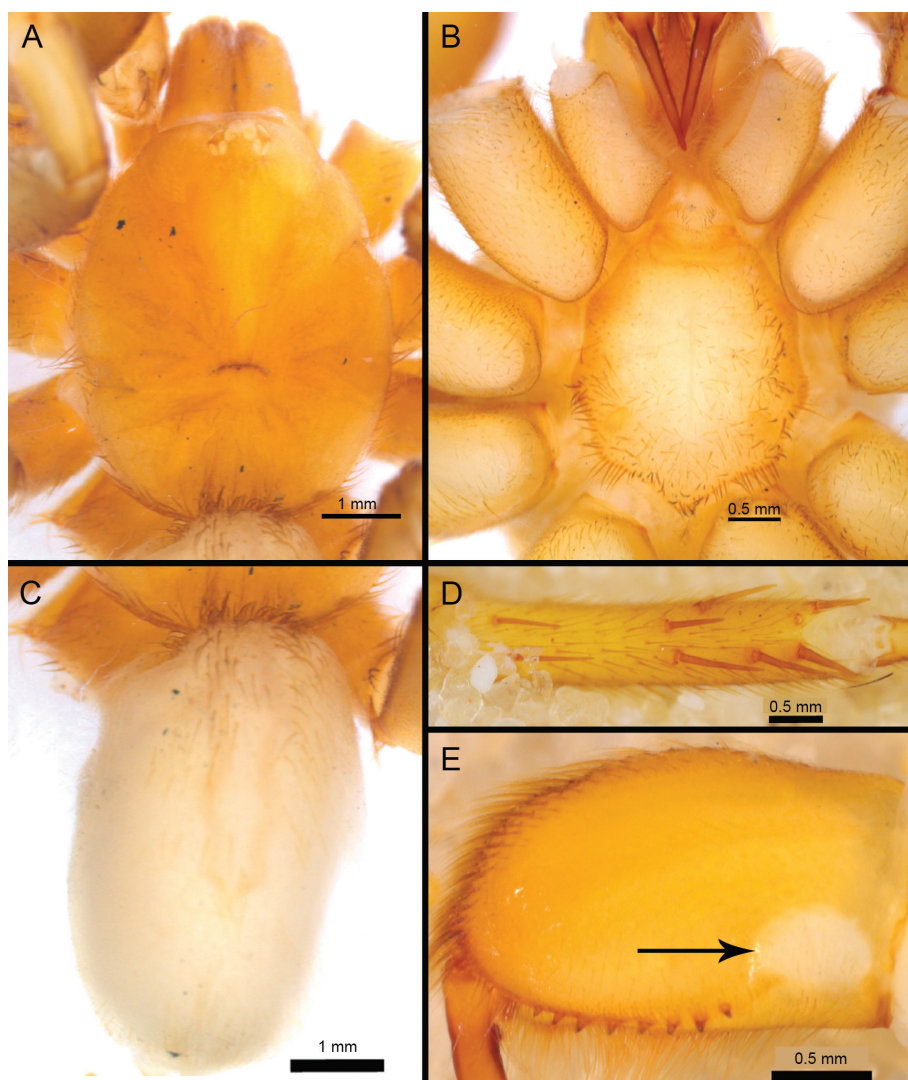


FIGURE 42. *Brachytheliscus bicolor* Pocock, 1987, male (SAM-ENW-B000888): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, dorsal view. **D**, tibia I showing the ventral spines row. **E**, chelicerae, showing the teeth pattern, arrow indicates the intercheliceral tumescence, prolateral view.

2.49, 16.50. II: 4.50, 2.28, 3.15, 3.47, 2.51, 15.61. III: 3.73, 1.92, 2.49, 3.78, 2.54, 14.46. IV: 4.96, 2.03, 4.01, 5.36, 2.80, 19.16. Palp: 2.12, 1.20, 1.29, —, 0.67, 5.27. *Chaetotaxy*: Leg I: femur, 1-1 P, 1-1-1-1-1 d, 1 R; patella, 1 PA; tibia, 1-2 P, 2-2-1-3 V, all of them strong, about the same size (fig. 42D); metatarsus, 1 VA; tarsus, 0. Leg II: femur, 1-1 PA, 1-1-1-1 D, 1-1 R; patella, 1 P; tibia, 1-1 P, 2-2-3 V; metatarsus, 1-1 PSUP, 2-1-2 V; tarsus, 0. Leg III: femur, 1-1-1 P, 1-1-1-1 D, 1-1-1 R; patella, 1-1 P, 1 R; tibia, 1-1 P, 1-1-1 D, 1-1 R, 2-2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1 R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1 P, 1-1-1-1 D, 1-1 R; patella, 1 R; tibia, 1-1 P, 1-1-1 R, 2-1-2-2 V; metatarsus, 1-1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 1-1 R, 2-1-1-1-3 V; tarsus, 0. Palp (fig. 43A, B): femur, 1-1 P, 1-1-1-1 d; patella,

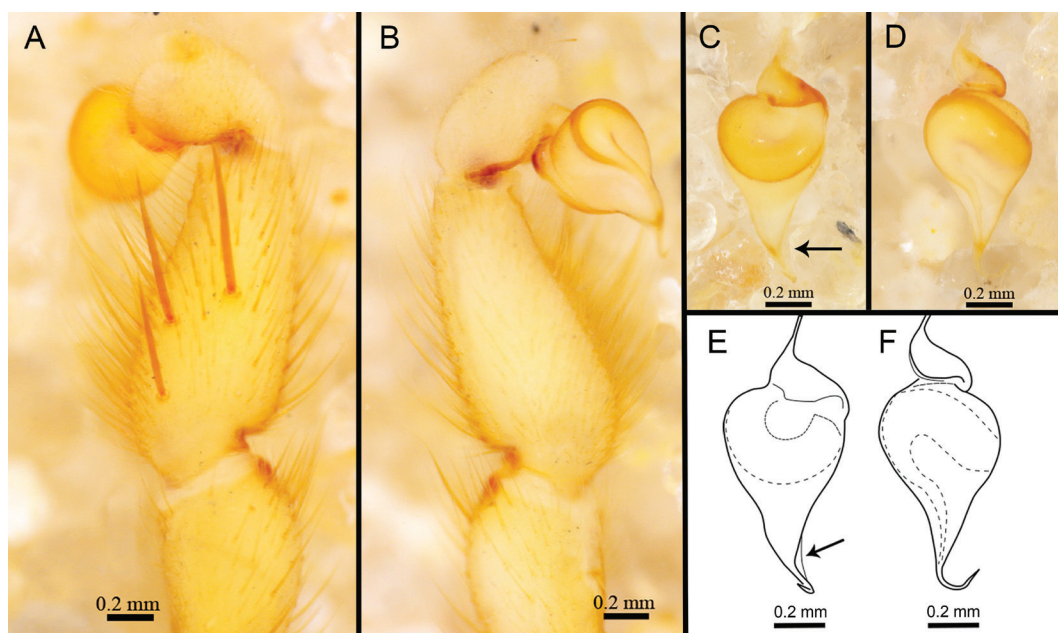


FIGURE 43. *Brachytheliscus bicolor* Pocock, 1987, male (SAM-ENW-B000888): **A–B**, left pedipalp: **A**, prolateral view; **B**, retrolateral view. **C–F**, copulatory bulb, two different views; arrows indicate the small flange.

1 PA; tibia, 1-2 P with rigid ventral bristles; tarsus, 0. Copulatory bulb: piriform with a small lateral flange at the base of the embolus, embolus moderately to strongly curved (fig. 43C–F). *Scopulae*: Metatarsi: I, sparse, along entire segment; II, sparse (3:4 A) divided by band of bristles; III, only a few scopular setae distally; IV, absent. Tarsi: I–II, sparse, uniformly distributed throughout the segment; III–IV, sparse, uniformly distributed throughout the segment, divided by a band of setae. *Trichobothria*: Tibiae: I–II 11-11; III 8-8; V 10-10. Metatarsi: I (4)1(2)1(2)1(3)1; II (5)1(4)1(4)1; III (4)1(3)1(2)1(5)1; IV (5)1(4)1(6)1(8)1. Tarsi: I–II 13; III 14; IV 16. *Preening combs*: absent. *Color in alcohol*: Overall yellowish red, pallid. Legs like carapace, some tarsi with a pallid color ventrally. Abdomen light yellowish red; spinnerets pallid.

FEMALE (SAM-ENW-B000889, fig. 44A–F): *Total length*: 15.58. *Carapace* (fig. 44A): length 4.93, width 3.65 with fine pubescence and marginal bristles. *Cephalic region*: length 3.12, clypeus almost absent with 4 marginal bristles; 8 bristles in front of the OQ and numerous in the posterior parte (between PME); posterior line of bristles reaching the fovea. *Fovea*: small, width 0.55, slightly recurved. *Ocular measurements*: AME 0.16, ALE 0.24, PME 0.20, PLE 0.22, OQ length 0.46, width 0.82; AME-ALE 0.07, PME-PL 0.01, AME-PME 0.06, ALE-PL 0.05, AME-AME 0.09, PME-PME 0.34. *Chelicerae* (fig. 44E, F): length 3.18, width 1.99; with dorsal-retrolateral bristles, rastellum weak (fig. 44E). Cheliceral furrow with 9 promarginal teeth and about 32 small mesobasal denticles (fig. 44F). *Labium*: length 0.38, width 0.91, with one cusp. *Palpal endites*: length 1.81, width 0.95, with 84 cuspules on inner corner, prolateral face slightly curved, soft area large, with long uni-

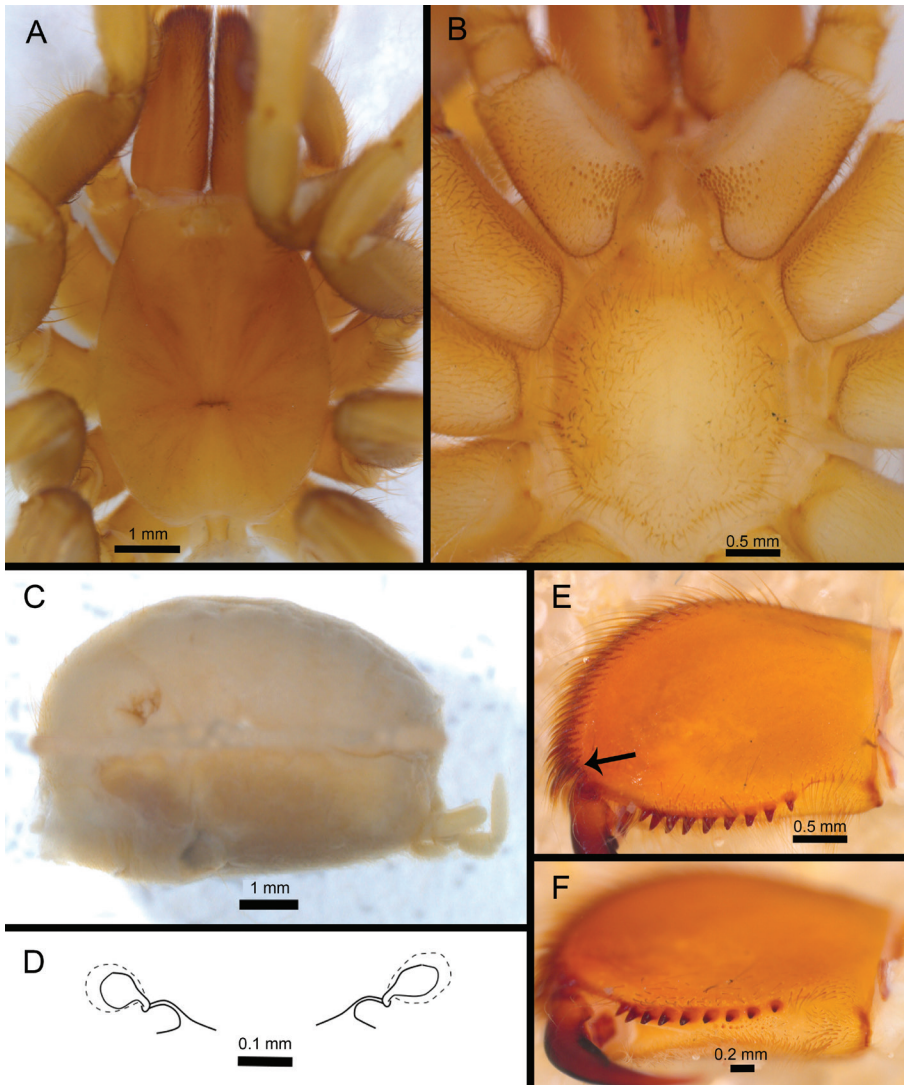


FIGURE 44. *Brachytheliscus bicolor* Pocock, 1987, female (SAM-ENW-B000889): **A**, cephalothorax, dorsal view. **B**, sternum, labium, palpal endites, ventral view. **C**, abdomen, lateral view. **D**, spermathecae. **E–F**, chelicerae: **E**, showing pattern of teeth and distribution of denticles, ventral view. **F**, prolateral view, arrow indicates the weak rastellum.

formly distributed setae. *Sternum* (fig. 44B): length 2.63, maximum width 2.21. *Abdomen* (fig. 44C): length 6.98, with a covering of short emergent setae. PMS: length 0.64; PLS: length of basal:medial:apical segments 1.10:0.78:1.23; total length 3.11. *Lengths of legs and palp*: I: 3.61, 2.28, 2.27, 2.09, 1.48, 11.73. II: 3.16, 2.02, 1.85, 1.85, 1.38, 10.26. III: 2.70, 1.63, 1.47, 2.09, 1.31, 9.20. IV: 3.69, 1.88, 2.68, 3.22, 1.45, 12.92. Palp: 2.49, 1.53 1.47, —, 1.47, 6.96. *Chaetotaxy*: Leg I: femur, 1 PA, 1-1-1-1-1-1-1 d; patella, 1 d; tibia, 1 p, 1-1-3 v; metatarsus, 1-1-1 V; tarsus, 0. Leg II: femur, 1 PA, 1-1-1-1 d; patella, 1 PA; tibia, 1 P, 1-1-1-3 V; metatarsus, 2-1-2 V; tarsus, 0. Leg III: femur, 1-1-1-1 d, 1 RA; patella, 1-1 P, 1

R; tibia, 1-1 P, 1-1 D, 1 R, 2-1-2-3 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 1-1-1 D-R, 2-2-3 V; tarsus, 0. Leg IV: femur, 1-1-1-1-1 d and with a prolateral-dorsal apical patch of small and rigid setae; patella, 1 R and with a dorsal-prolateral basal patch of small and rigid setae; tibia, 1-1 R, 2-2-2 V; metatarsus, 1-1-1 P, 1-1-1 D-P, 2-1-1-2 D-R, 2-2-1-1-3 V; tarsus, 0. Palp: femur, 1 PA, 1-1-1-1 d (1:2 A); patella, 0; tibia, 1-1 P, 1-2-3 V; tarsus, 1 PB, 1 RB. *Spermathecae*: low base with a curved and twisted stalk, oval receptacle (fig. 44D). *Scopulae*: Metatarsi: I, dense, uniformly distributed; II, sparse, uniformly distributed, divided by a band of bristles; III, only a few scattered scopular setae distally; IV, 0. Tarsi: I–II, dense, uniformly distributed, II divided by band of bristles; III–IV, sparse, uniformly distributed and divided by a band of bristles. *Trichobothria*: Tibiae: palp 9-9; I 9-9; II 10-10; III 8-8; IV 10-10. Metatarsi: I (4)1(1)1(2)1(4)1; II (4)1(0)1(3)1(5)1; III (4)1(2)1(2)1(5)1; IV (5)1(2)1(4)1(7)1. Tarsi: palp 10; I 14; II–III 12; IV 14. *Preening combs*: II 3 PV; III–IV 4 RV-4 PV. *Color in alcohol*: Overall yellowish red; legs like carapace. Abdomen and spinnerets pallid (fig. 44C, likely a result of long-term preservation).

MATERIAL EXAMINED: South Africa: KwaZulu-Natal Province: Stella Bush, Natal [29°46'S 31°2'E], January, 1915, 1 ♂ (SAM-ENW-B000888); Same data, 1 ♀ (SAM-ENW-B000889); Marble quarries, Umzimkulu River, near Port Shepstone [30°45'S 30°26'E], 1 ♂ (SAM-ENW-X150710).

DISTRIBUTION: South Africa: Kwazulu Natal Province: The species appears to be limited to the coastal zone and may be limited to one of the nine recognized biomes of South African (Mucina and Rutherford 2006): the Indian Ocean Coastal Belt Vegetation.

TAXA WITH UNKNOWN OR UNRESOLVED RELATIONSHIPS: INCERTAE SEDIS

The following two species are proposed here as *Hermacha* incertae sedis. They share several similarities but also differ from other *Hermacha* species in several important diagnostic characters. They are included here for the purpose of completeness.

Hermacha curvipes Purcell, 1902

Figure 45A–D

Hermacha curvipes Purcell, 1902: 377; Tucker, 1917: 106.

Purcell (1902) described *Hermacha curvipes* Purcell, 1902, based on two males from Simonstown, Cape Peninsula. No diagnosis for the species was provided, but the description is relatively detailed. The type male (SAM-ENW-X006011) was examined for this study. The female allotype could not be found. The examination revealed the presence of a recurved fovea, tibia I armed with strong spines but without a megaspine (fig. 45D), a continuous line of cheliceral teeth with several denticles, pedipalp tibia with an apophysis on the posterior side of the ventral excavation (fig. 45A, B), and a distinct copulatory bulb shape (fig. 45C). All these characters differ from *Hermacha* as well as all other currently described genera.

Hermacha nigra Tucker, 1917

Figure 45E

Hermacha nigra Tucker, 1917: 110; Hewitt, 1919: 109.

Tucker (1917) described *Hermacha nigra* based on a large series of females from Bergvlei Flats, Cape Peninsula. No diagnosis for the species was provided, but the description is sufficiently detailed to confirm the identity of these specimens as this species.

The holotype female (SAM-ENW-X013899) was examined and revealed the presence of a slightly recurved fovea, a continuous line of cheliceral teeth with several denticles, presence of preening combs and distinctive morphology of the spermathecae (fig. 45E). All these characters differ from *Hermacha* and are inconsistent with any other currently described entypesid genera from South Africa.

FINAL COMMENTS

This contribution is the first revision of the genus *Hermacha* as a whole, with a redefinition of their principal characters, a taxonomic redefinition and redescription of many of its previous species, descriptions of new taxa, and an update of their geographic distribution. In South Africa, the genus currently comprises 10 valid species and their known distributional range was extended with the new species *H. maraisae* on the west coast of the Northern Cape Province and *H. septemtrionalis* in Gauteng, North West, and Limpopo provinces.

Regarding the morphological characters previously defined as diagnostic for the genus (Raven, 1985), several were corroborated: the straight copulatory bulb, an apical megaspine on a low mound on tibia I of males, and a small, pale intercheliceral tumescence. Species of *Hermacha* lack a serrula and metatarsal preening combs in both sexes (contrary to Raven, 1985) and, as observed by Purcell (1902), have a weak rastellum composed of strong setae (instead of spines, as indicated by Raven 1985). In addition to these characters, the cheliceral dentition was found to be an important diagnostic character for the genus: the basal teeth are more separated and the apical teeth are closer together (except in *H. septemtrionalis*, where the teeth are equidistant). This line of teeth can be regular or irregular, with some of the basal teeth reaching the center of the cheliceral furrow, being offset from the remainder of the teeth, which are situated along the retrolateral margin of the cheliceral furrow (figs. 6D, 10D, 14D, 16D, 17D, 19D, 24D, 26D, 32D, 34D).

The number of basal denticles is also significant, with very few as in *Hermacha tuckeri* and *H. sericea* (3 or fewer), and up to six in *H. maraisae*, *H. montana*, and *H. septemtrionalis*. In other African entypesid genera the cheliceral teeth are equidistant and in a straight line, and the number of basal denticles is significantly higher (between 10 and 20 in *Hermachola*, *H. curvipes*, and *H. nigra* and over 30 in *Brachytheliscus*). *Hermacha* also possesses a short and procurved fovea, which is straight to slightly recurved in other southern African entypesid genera (*Lepthercus*, *Entypesa*, *Afropesa*, *Hermachola*, and *Brachytheliscus*). As indicated by Goloboff (1995), the tarsal trichobothria are arranged in a wide, long zigzag line in *Hermacha*

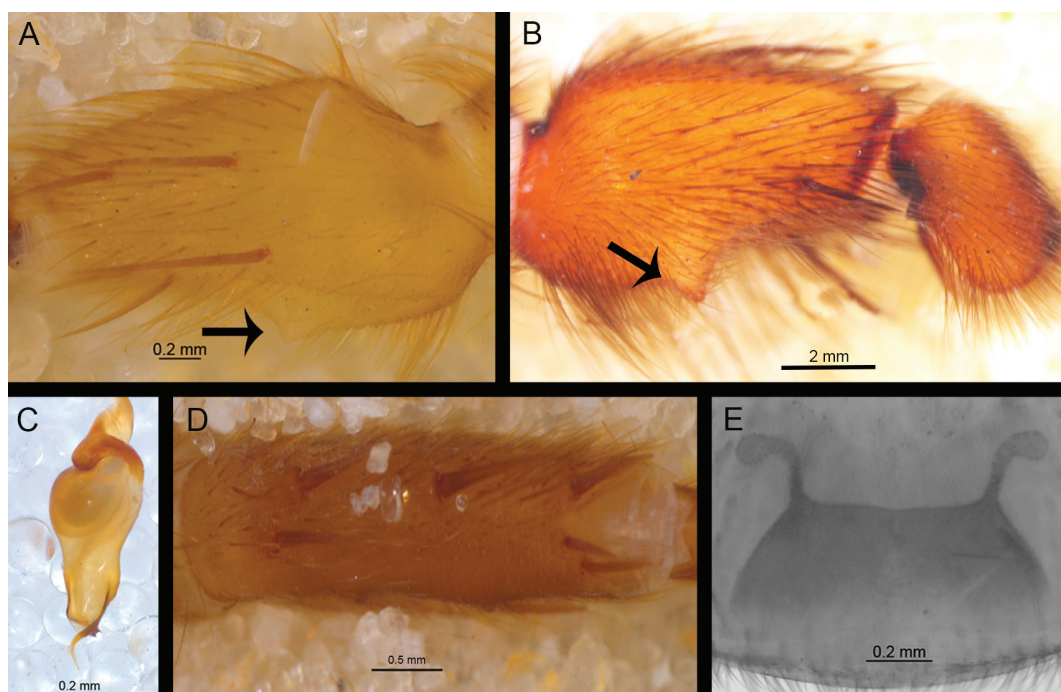


FIGURE 45. Incertae sedis species: **A–D**, *Hermacha curvipes* Purcell, 1902. **A**, male holotype (SAM-ENW-X006011), right pedipalp, arrow indicate a projection in the posterior side of the ventral excavation, prolateral view. **B**, male (NCA 2008/770) from Cape Town, 25 km from the type locality, right pedipalp, arrow indicates the apophysis in the posterior side of the ventral excavation, retrolateral view. **C**, copulatory bulb, male holotype. **D**, right tibia I, ventral view, male holotype. **E**, *Hermacha nigra* Tucker, 1917, female holotype (SAM-ENW-X013899), spermathecae.

(20–35 trichobothria, fig. 3A–D), and a narrow, short zigzag line in other genera (10–16 *Hermachola* fig. 3E–H, 10–17 *Entypesa*, 10–15 *Afropesa*, 10–16 *Lepthercus*, and 12–16 *Brachytheliscus*). Male palpal tibia spination is prolateral-retrolateral-ventral sides in *Hermacha* (similar to *Entypesa*), prolateral in *Afropesa* and *Brachytheliscus*, prolateral and dorsal in *Lepthercus*, and absent (or reduced to only thick setae) in *Hermachola*.

The revalidation of *Hermachola* and *Brachytheliscus* expands the generic composition and diversity of South African mygalomorph spiders. The distinctive corkscrew shape of the embolus of *Hermachola* males and the correlated coiled spermathecae of females, along with the distinctive spination of the tibia I of males, and the presence of an asetose intercheliceral tumescence in a deep cavity (figs. 36E, 39E), amply justify resurrection of this genus from synonymy with *Hermacha*. This intercheliceral tumescence in a deep cavity is reported for the first time in the group (a similar intercheliceral tumescence has been reported in males of the Western Asian species of *Raveniola*; Zonstein et al., 2018: figs. 59–61). In the case of *Brachytheliscus*, a series of spines on tibia I (the medials and distals spines similar), their distinctly elongated and slender legs, both sexes without serrula, presence of a weak rastellum and the presence of basal spines on the female palpal tarsus, support the reinstatement

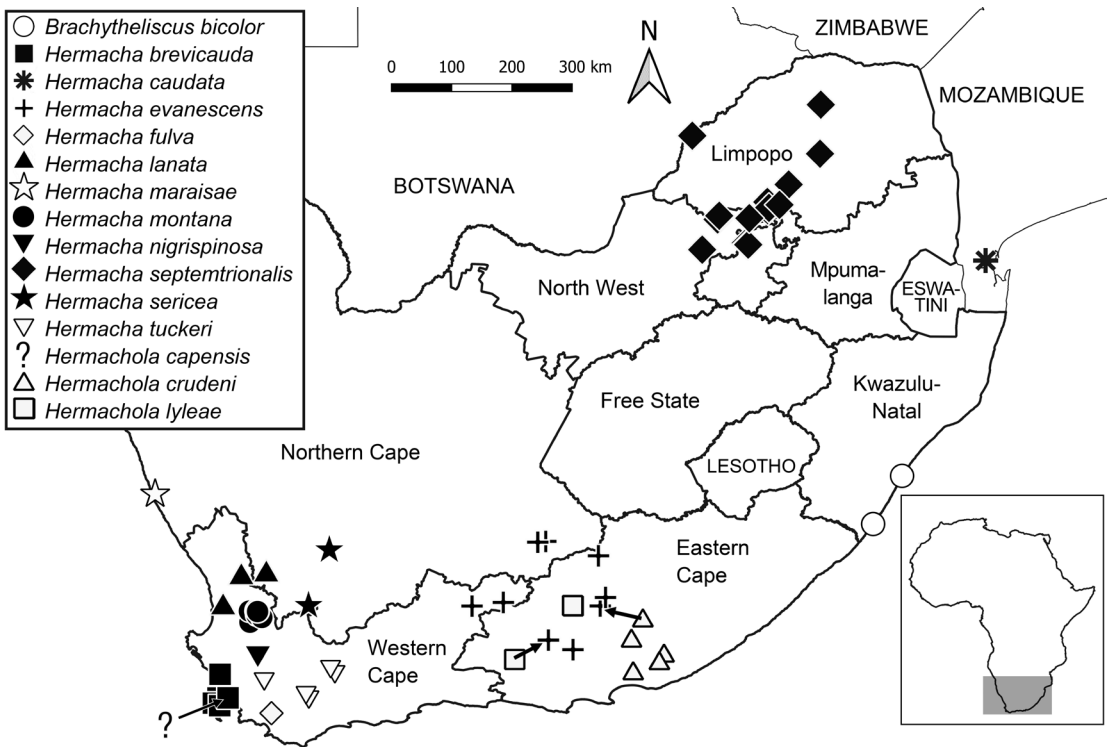


FIGURE 46. Distribution map of *Brachytheliscus*, *Hermacha*, and *Hermachola* spp. Arrows indicate species overlapped.

of this genus. While *Hermacha* and *Hermachola* have overlapping geographic distributions in the Eastern and Western Cape provinces, *Brachytheliscus* seems to be restricted to Kwa-zulu-Natal Province.

ACKNOWLEDGMENTS

This research was made possible through scholarships awarded to the senior author: CONICET, Partial financial support for short stays of research (Res D N° 4367, 28 dic. 2017). Thanks to all the ARC staff (Pretoria, South Africa), especially to Robin Lyle, for their hospitality. Thanks to Cristina Scioscia for help with the nomenclatural acts. We also thank all the curators who provided specimens on loan: Petro Marais, National Collection of Arachnida, Pretoria; Christine Rollard, Muséum national d'Histoire naturelle, Paris, France; (Christophe Allard and Arnaud Henrard), Royal Museum for Central Africa, Tervuren, Belgium; Jan-Andries Neethling, National Museum, Bloemfontein, South Africa; Aisha Mayekiso, Iziko South African Museum, Cape Town, South Africa, and Jason A. Dunlop, Museum für Naturkunde, Berlin, Germany. Thanks to the reviewers Jason Bond, Michael Rix, Claudia Szumik, and Robert S. Voss for their comments and suggestions that greatly improved the quality of the manuscript.

REFERENCES

- Ausserer, A. 1871. Beiträge zur Kenntniss der Arachniden-Familie der Territelariae Thorell (Mygalidae Autor). Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien 21: 117–224.
- Benoit, P.L.G. 1964. Dipluridae de l'Afrique Centrale.–I. (Araneae-Orthognatha). Genres *Evagrus* Ausserer et *Thelechoris* Karsch. Revue de Zoologie et de Botanique Africaines 70: 417–426.
- Bond, J.E. 2012. Phylogenetic treatment and taxonomic revision of the trapdoor spider genus *Aptostichus* Simon (Araneae, Mygalomorphae, Euctenizidae). ZooKeys 252: 1–209.
- Campbell, H., and I. Engelbrecht. 2018. The baboon spider atlas—using citizen science and the ‘fear factor’ to map baboon spider (Araneae: Theraphosidae) diversity and distributions in Southern Africa. Insect Conservation and Diversity 11 (2): 143–151.
- Dippenaar-Schoeman, A.S. 2002. Baboon and trapdoor spiders of southern Africa: an identification manual. Plant Protection Research Institute handbook 13. Pretoria: Agricultural Research Council.
- Engelbrecht, I., and L. Prendini. 2012. Cryptic diversity of South African trapdoor spiders: three new species of *Stasimopus* Simon, 1892 (Mygalomorphae, Ctenizidae), and redescription of *Stasimopus robertsi* Hewitt, 1910. American Museum Novitates 3732: 1–42.
- Foord, S.H., and A.S. Dippenaar-Schoeman. 2016. The effect of elevation and time on mountain spider diversity: a view of two aspects in the Cederberg mountains of South Africa. Journal of Biogeography 43 (12): 2354–2365.
- Foord, S.H., et al. 2020. The South African National Red List of spiders: patterns, threats, and conservation. Journal of Arachnology 48 (2): 110–118.
- Godwin, R.L., V. Opatova, N.L. Garrison, C.A. Hamilton, and J.E. Bond. 2018. Phylogeny of a cosmopolitan family of morphologically conserved trapdoor spiders (Mygalomorphae, Ctenizidae) using anchored hybrid enrichment, with a description of the family, Halonoproctidae Pocock 1901. Molecular Phylogenetics and Evolution 126: 303–313.
- Goloboff, P.A. 1995. A revision of the South American spiders of the family Nemesiidae (Araneae, Mygalomorphae). Part I: species from Peru, Chile, Argentina, and Uruguay. Bulletin of the American Museum of Natural History 224: 1–189.
- Goloboff, P.A., and N.I. Platnick. 1987. A review of the Chilean spiders of the superfamily Migoidea (Araneae, Mygalomorphae). American Museum Novitates 2888: 1–15.
- Hamilton, C.A., B.E. Hendrixson, and J.E. Bond. 2016. Taxonomic revision of the tarantula genus *Aphonopelma* Pocock, 1901 (Araneae, Mygalomorphae, Theraphosidae) within the United States. ZooKeys 560: 1–340.
- Hedin, M., S. Derkarabetian, A. Alfaro, M.J. Ramírez, and J.E. Bond. 2019. Phylogenomic analysis and revised classification of atypoid mygalomorph spiders (Araneae, Mygalomorphae), with notes on arachnid ultraconserved element loci. PeerJ 7 (e6864): 1–24.
- Hewitt, J. 1913. Descriptions of new species of Arachnida from Cape Colony. Records of the Albany Museum Grahamstown 2: 462–481.
- Hewitt, J. 1915. New South African Arachnida. Annals of the Natal Museum 3: 289–327.
- Hewitt, J. 1919. Descriptions of new South African Araneae and Solifugae. Annals of the Transvaal Museum 6: 63–111.
- Midgely, J.M. 2012. Quantifying the structure of epigaeic invertebrate communities along an altitudinal gradient on the Great Escarpment, South Africa. Ph.D. dissertation, Department of Zoology and Etomology, Rhodes University, Grahamstown, South Africa.

- Mucina, L. and M.C. Rutherford (Eds.). 2006. The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. Pretoria: South African National Biodiversity Institute, 801 pp.
- Nentwig, W., T. Blick, D. Gloor, P. Jäger, and C. Kropf. 2020. How to deal with destroyed type material? The case of Embrik Strand (Arachnida: Araneae). *Arachnologische Mitteilungen* 59: 22–29.
- Opatova, V., et al. 2020. Phylogenetic systematics and evolution of the spider infraorder Mygalomorphae using genomic scale data. *Systematic Biology* 69 (4): 671–707.
- Organ, M. 2007. The Austrian imperial frigate SMS *Novara*. Online resource (<https://documents.uow.edu.au/~morgan/novara1.htm>), accessed 26 July 2019.
- Ortiz, D., O.F. Francke, and J.E. Bond. 2018. A tangle of forms and phylogeny: extensive morphological homoplasy and molecular clock heterogeneity in *Bonnetina* and related tarantulas. *Molecular Phylogenetics and Evolution* 127: 55–73.
- Pocock, R.I. 1897. On the spiders of the suborder Mygalomorphae from the Ethiopian region, contained in the collection of the British Museum. *Proceedings of the Zoological Society of London* 65 (3): 724–774, pls. xli–xliii.
- Pocock, R.I. 1902. Some new African spiders. *Annals and Magazine of Natural History* (7) 10: 315–330.
- Purcell, W.F. 1902. New South African trap-door spiders of the family Ctenizidae in the collection of the South African Museum. *Transactions of the South African Philosophical Society* 11: 348–382.
- Purcell, W.F. 1903. New South African spiders of the families Migidae, Ctenizidae, Barychelidae, Dipluridae, and Lycosidae. *Annals of the South African Museum* 3: 69–142.
- QGIS Development Team. 2019. QGIS Geographic Information System. Open Source Geospatial Foundation Project. Online resource (<http://qgis.osgeo.org>).
- Raven, R.J. 1985. The spider infraorder Mygalomorphae (Araneae): cladistics and systematics. *Bulletin of the American Museum of Natural History* 182 (1): 1–180.
- Ríos-Tamayo, D., and P.A. Goloboff. 2018. Taxonomic revision and morphology of the trapdoor spider genus *Actinopus* (Mygalomorphae: Actinopodidae) in Argentina. *Bulletin of the American Museum of Natural History* 419: 1–83.
- Ríos-Tamayo, D., and R. Lyle. 2020. The South African genus *Lepthercus* Purcell, 1902 (Araneae: Mygalomorphae): phylogeny and taxonomy. *Zootaxa* 4766 (2): 261–305.
- Rix, M.G., R.J. Raven, and M.S. Harvey. 2018a. Systematics of the giant spiny trapdoor spiders of the genus *Gaius* Rainbow (Mygalomorphae: Idiopidae: Aganippini): documenting an iconic lineage of the Western Australian inland arid zone. *Journal of Arachnology* 46 (3): 438–472.
- Rix, M.G., R.J. Raven, A.D. Austin, S.J.B. Cooper, and M.S. Harvey. 2018b. Systematics of the spiny trapdoor spider genus *Bungulla* (Mygalomorphae: Idiopidae): revealing a remarkable radiation of mygalomorph spiders from the Western Australian arid zone. *Journal of Arachnology* 46 (2): 249–344.
- Rix, M.G., J.D. Wilson, and M.S. Harvey. 2019. A revision of the white-headed spiny trapdoor spiders of the genus *Euoplos* (Mygalomorphae: Idiopidae: Arbanitinae): a remarkable lineage of rare mygalomorph spiders from the south-western Australian biodiversity hotspot. *Journal of Arachnology* 47 (1): 63–76.
- Simon, E. 1889. Descriptions d'espèces africaines nouvelles de la famille des Aviculariidae. *Actes de la Société Linnéenne de Bordeaux* 42: 405–415.
- Simon, E. 1902. Description d'arachnides nouveaux de la famille des Aviculariides faisant partie de collections du Muséum. *Bulletin du Muséum d'Histoire Naturelle* 8: 595–599.
- Simon, E. 1903a. Descriptions de quelques genres nouveaux de la famille Aviculariides. *Bulletin de la Société Entomologique de France* 1903: 42–44.

- Simon, E. 1903b. Histoire naturelle des araignées, vol. 2: 669–1080. Paris: Roret.
- Strand, E. 1907. Vorläufige Diagnosen afrikanischer und südamerikanischer Spinnen. Zoologischer Anzeiger 31: 525–558.
- Tucker, R.W.E. 1917. On some South African Aviculariidae (Arachnida). Families Migidae, Ctenizidae, Diplotheleae and Dipluridae. Annals of the South African Museum 17: 79–138.
- World Spider Catalog. 2021. World spider catalog. Version 22.5. Natural History Museum Bern. Online resource (<http://wsc.nmbe.ch>), accessed 29 May 2021.
- Zonstein, S. 2016. New data on the spider genus *Pionothele* (Araneae: Nemesiidae), with description of a new species from South Africa. Israel Journal of Entomology 46: 31–42.
- Zonstein, S.L., and D. Ríos-Tamayo. 2021. *Afropesa*, a new spider genus from South Africa (Araneae: Entypesidae). Israel Journal of Entomology 51: 7–34.
- Zonstein, S., K.B. Kunt, and E.A. Yağmur. 2018. A revision of the spider genus *Raveniola* (Araneae, Nemesiidae). I. Species from Western Asia. European Journal of Taxonomy 399: 1–93.

All issues of *Novitates* and *Bulletin* are available on the web (<http://digitallibrary.amnh.org/dspace>). Order printed copies on the web from:

<http://shop.amnh.org/a701/shop-by-category/books/scientific-publications.html>

or via standard mail from:

American Museum of Natural History—Scientific Publications
Central Park West at 79th Street
New York, NY 10024

Ⓒ This paper meets the requirements of ANSI/NISO Z39.48-1992 (permanence of paper).