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55	ENTOMOLOGIE	8

A NEW GENUS OF CHIGGER (ACARI : TROMBICULIDAE) FROM AN ELEPHANT SHREW (MAMMALIA : INSECTIVORA) IN NAMIBIA, AFRICA (1)

BY

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(With 1 textfigure)

ABSTRACT

Mastalacarus namibiensis, n. gen. & n. sp., is described from specimens collected from an elephant shrew, *Elephantulus intufi* (A. SMITH, 1836) (Mamm. Insectivora Macroscelidae), taken in Namibia, Africa.

Examination of ectoparasites from small mammals collected in Namibia, Africa, has resulted in the recognition of a new monotypic genus of chiggers of the subfamily Leeuwenhoekiinae from a series collected from an elephant shrew, *Elephantulus intufi*. This genus exhibits a unique setation for legs III among species of Trombiculidae, especially with regard to the presence of mastigenualae III. The holotype is in the collection of the U.S. National Museum of Natural History/Smithsonian Institution (chigger collection currently housed at B.P. Bishop Museum, Honolulu) and paratypes there and in the B. P. Bishop Museum, Institut Royal des Sciences Naturelles de Belgique, Brussels, Katholieke Universiteit, Nijmegen, and South African Institute for Medical Research, Johannesburg. All

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measurements are given in micrometres. Terminology follows GOFF et al. (1982).

Mastalacarus GOFF & LUKOSCHUS, new genus

Type species. — *Mastalacarus namibiensis*, new species.

Diagnosis. — Leeuwenhoekiinae with palpal tarsus 5B; galeala B; cheliceral blade with dorsal subapical tooth and ventral teeth; palpal claw 2-pronged, axial prong internal; spiracles and tracheae absent; scutum with anteromedian nasus; sensillae flagelliform; tibia I 9B, tibia II 5B; genuala I, microgenuala II; 2 mastifemoralae III, genuala III, 2 mastigenualae III, tibiala III, 3 mastitibialae III, 5 mastitarsalae III.

Mastalacarus namibiensis GOFF & LUKOCHUS, new species (Fig. 1)

Description of species. — Larvae. *Idiosoma.* Measuring 370 × 280 in partially engorged specimen. Eyes 2/2, on ocular plate, anterior larger. 1 pair of humeral setae, measuring 33-40; 47-48 dorsal idiosomal setae, measuring 26-41, anterior rows shorter, arranged 12(11)-6-8-8 + 14; 1 pair of sternal setae between coxae III, 30-35; 2 pairs of ventrolateral setae between coxae II and III, 31-35; 24 preanal setae, 26-29; 20 postanal setae, 27-40; total idiosomal setae 99-100. *Gnathosoma.* Palpal setal formula B/B/BBB/5B; palpal claw 2-pronged, axial prong internal; galeala B; cheliceral blade (38-40) with 1 dorsal subapical tooth and 10-11 ventral teeth; gnathobase moderately punctate, bearing a pair of branched setae. *Scutum.* Moderately punctate with shallowly biconcave anterior margin; posterior margin acute; nasus present, measuring 14-18 × 8; AM bases slightly posterior to level of AL bases; SB in line with or slightly posterior to level of PL bases; PL > AL > AM; PW/SD = 1.25-1.54; sensillae flagelliform with barbs on proximal 2/3's, nude distally. Scutal measurements of holotype followed by means and ranges of 10 paratypes in parentheses: AW 55 (53, 50-57); AA 9 (9, 8-10); PW 72 (72, 70-75); SB 22 (23, 22-24); ASB 27 (29, 27-33); PSB 21 (22, 19-24); AP 24 (25, 21-29); AM 29 (30, 27-35); AL 40 (39, 36-40); PL 44 (41, 38-44); sens. missing from holotype (68, 62-73). *Legs.* All 6-segmented terminating in a pair of claws and a clawlike empodium. Onychotriches absent. IP 715-743. *Leg I.* 251-257; coxa with 2 branched setae (2B); trochanter 1B; femur 6B; genu 4B, genuala (δ), microgenuala (*k*); tibia 9B, 2 tibialae (Φ), microtibiala (*k*); tarsus (60 × 19) 23B, tarsala (ω) (14-15), microtarsala (*e*), subterminala (γ), parasubterminala, pretarsala (γ). *Leg II.* 206-227; coxa 1B; trochanter 1B; femur 5B; genu 4B, genuala (δ), microgenuala (*k*); tibia 5B, 2 tibialae (Φ); tarsus (46 × 18) 16B, tarsala (ω) (17), microtarsala (*e*), pretarsala (γ). *Leg III.* 249-260; coxa 1B; trochanter 1B; femur 3B, 2 mastifemoralae (58-60), each with a

basal barb; genu 2B, genuala (δ), 2 nude mastigenualae; (58); tibia 3B, tibiala (Φ), 3 nude mastitibialae (43-46); tarsus (65 × 16) 10B, 5 nude mastitarsalae (43-48).

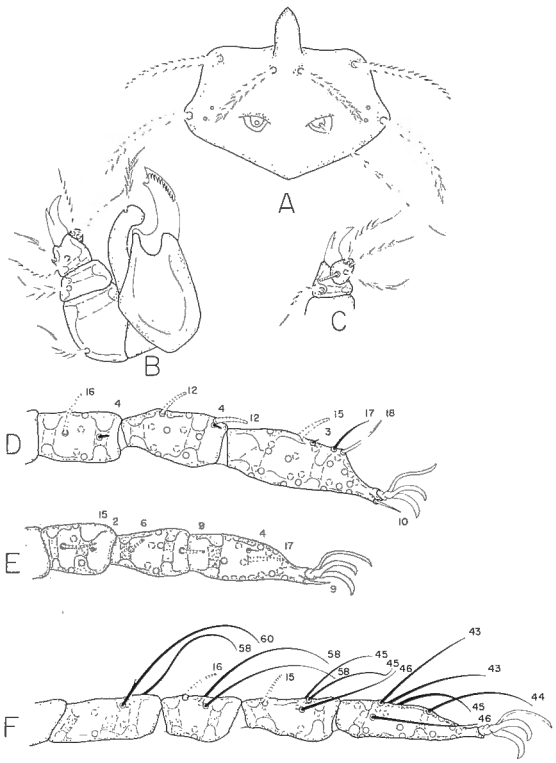

Fig. 1. — Larva of *Mastalacarus namibiensis* GOFF & LUKOSCHUS, n. gen.
A, scutum; B, dorsal aspect of gnathosoma; C, ventral aspect of palpal tibia and tarsus; D, leg I distal 3 segments showing specialized setae (measurements in micrometres) and bases of branched setae; E, leg II as above; F, leg III distal 4 segments as above.

Type data. — Holotype and 96 paratypes from AFRICA : Namibia, Aroab Dunes, ex *Elephantulus intufi*, taken 21.X.1980, X. Misonne, coll.

Remarks. — Among leeuwenhoekiine genera, *Mastalacarus* resembles *Odontacarus* EWING, 1929, *Acomatacarus* EWING, 1942, *Comatacarus* EWING, 1942, and *Morelacarus* VERCAMMEN-GRANDJEAN, 1973, in the shape of the scutum and gnathosoma. *Mastalacarus* may be separated from *Odontacarus*, as defined by GOFF & LOOMIS (1977) in having palpal tarsus 5B (7B in *Odontacarus* species) and lacking spiracles and tracheae (present in *Odontacarus* species). *Mastalacarus* differs from *Acomatacarus* in having palpal tarsus 5B (6B in *Acomatacarus* species), palpal claw 2-pronged (3-pronged in *Acomatacarus* species) and lacking spiracles and tracheae (present in *Acomatacarus* species).

Mastalacarus differs from *Comatacarus*, as defined by Reed (1973) in having palpal tarsus 5B (7B for *Comatacarus* species), palpal claw 2-pronged (3-pronged for *Comatacarus* species) and mastisetae present on legs III (absent in *Comatacarus* species). *Mastalacarus* may be separated from *Morelacarus* in having mastisetae present on legs III (absent in *Morelacarus* species) and lacking spiracles and tracheae (present in *Morelacarus* species). The unique combination of mastisetae present on legs III of *M. namibiensis* serves to separate this monotypic genus not only from the above genera, but also from all other genera of the Trombiculidae. Mastisetae have been previously reported for leeuwenhoekiine taxa from the tibiae and tarsi only. Some Trombiculinae taxa have been reported having mastifemoralae III and mastitibialae and mastitarsalae are commonly encountered (BRENNAN & GOFF, 1977). The presence of paired mastigenualae III is unique to this taxon. As noted by GOFF et al. (1982), these structures were previously unknown, although they could be accomodated in the synthetic identification formula of VERCAMMEN-GRANDJEAN (1960). The presence of 9 branched setae on tibia I is unusual, but has been previously noted for other leeuwenhoekiine taxa by GOFF & LOOMIS (1977) and trombiculine taxa by LOOMIS and MEGENS (1975). The reduction to 5 branched setae on tibia II for this species appears to be unique for the family Trombiculidae. GOFF et al. (1982) list 6 branched setae with no variation for tibia II in the Trombiculidae.

The generic name is derived from the presence of numerous mastisetae on legs III and in particular the presence of mastigenualae III, a character unique to this genus. The species name is based on the type locality.

LITERATURE CITED

BRENNAN, J. M. & GOFF, M. L.
1977. Keys to the genera of chiggers of the Western Hemisphere (Acarina : Trombiculidae). — *J. Parasitol.*, 63 : 554-66.

GOFF, M. L. & LOOMIS, R. B.
1977. The genus *Odontacarus* (Acari : Trombiculidae) in North America. — *J. med. Entomol.*, 14 : 370-73.

GOFF, M. L., LOOMIS, R. B., WELBOURN, W. C. & WRENN, W. J.
1982. A glossary of chigger terminology (Acari : Trombiculidae. — *J. med. Entomol.*, 19 : 221-38.

LOOMIS, R. B. & MEGENS, H.
1975. A new species of *Neotrombicula* (Acarina : Trombiculidae) from Southern California. — *Bull. So. Cal. Acad. Sci.*, 74 : 161-63.

REED, J. T.
1973. *Comatacarus*, formerly subgenus of *Leeuwenhoekia*, restored to generic status, with description of a new species (Acarina : Trombiculidae). — *J. med. Entomol.*, 10 : 315-17.

VERCAMMEN-GRANDJEAN, P. H.
1960. Introduction à un essai de classification ratiionnelle des larves de Trombiculinae EWING 1944 (Acarina : Trombiculidae). — *Acarologia*, 2 : 469-71, unpaginated table.
1973. Brief note : *Morelacarus* nomen novum for *Cordisetoides* nomen nudum (Trombidiformes - Acarina). — *Aacarologia*, 15 : 323.