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SATANICOPTES ARMATUS, N. GEN., N. SP. (ASTIGMATA: SARCOPTIDAE), A NEW MITE PRODUCING MANGE IN THE TASMANIAN DEVIL (*SARCOPHILUS HARRISII* BOITARD)

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Abstract: *Satanicoptes armatus*, n. gen., n. sp. is described from the Tasmanian Devil, *Sarcophilus harrisii*. The new genus is related to the genus *Diabolicoptes* (Sarcoptidae, Diabolicoptinae) also described from Australian marsupials, but differs in the presence of a membranous tegmen, fusion of the epimera I into a long sternum (in the ♀), presence on trochanters II to IV of retrorse processes, elongation of tarsi I, the simple aspect of *d* and *l* setae and absence of *h* setae. *Diabolicoptes phascogale* Fain & Domrow, 1974 is transfered into the genus *Satanicoptes*.

Fain & Domrow (1974) described 2 new species of sarcoptid mites belonging to a new genus, *Diabolicoptes*, and parasitizing marsupials in Australia. This genus was placed in a new subfamily, Diabolicoptinae, family Sarcoptidae, due to its unusual combination of morphological characters compared with the existing subfamilies, Sarcoptinae and Notoedrinae (Fain 1968).

D. sarcophilus was found in the feces of a Tasmanian Devil, *Sarcophilus harrisii* Boitard, from Tasmania, but we surmized that the mite was a skin parasite. *D. phascogale* was collected on a marsupial mouse or Tuan, *Phascogale tapoatafa* Meyer, from Christmas Hills near Melbourne. No data were available concerning the exact location and pathogenic role of this parasite. The new species of mite described here produced sarcoptid mange in a Tasmanian Devil in the London Zoo. It resembles *D. sarcophilus*, type of the genus *Diabolicoptes*, in some important characters but differs in several features that justify the erection of a new genus. A reexamination of typical material of *D. phascogale* has shown that this species also belongs to the new genus. Its name will become, therefore, *Satanicoptes phascogale* (Fain & Domrow, 1974), **n. comb.**

SATANICOPTES, n. gen.

Definition: Body in both sexes more or less elongate. Dorsally with a membranous tegmen. Legs I longer than legs II. Tarsi I 2× as long as wide, tarsi II as wide as long. Trochanters II with a bifid retrorse process. Trochanters III–IV with a simple backwardly directed process. Epimera I in both sexes fused into a long sternum. Male aedeagus situated behind epimera IV. All *d* and *l* 2–5 setae hair-like. Setae *h* absent.

Type-species: *Satanicoptes armatus*, n. sp.

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Satanicoptes armatus, n. sp. FIG. 1–4

♀ (FIG. 1–2): Holotype 285 μ long, 195 μ wide; 3 paratypes, length × width 315 μ × 200 μ, 298 μ × 180 μ, and 260 μ × 165 μ, respectively. Some ♀♀ contain completely developed larva. Tegmen very large and membranous. At level of propodosomal spines, lateral surface of body sclerotized along narrow, slightly elevated band (FIG. 2). Epimera II long with apices recurved laterally. Gnathosoma small. Leg I narrow, longer than leg II, with tarsus 2× as long as wide; leg II thicker and shorter with short tarsus (FIG. 1). Trochanter II with a bifid retrorse process. Trochanters III and IV with a simple process. Femora I–II with strong bifid recurved processes. *Chaetotaxy: v i* ventral, *sc i* thin, *sc e* and *l 1* very strong, short spines (FIG. 2); *l 2*, *l 3*, *l 4* and *l 5* thin and long; *d 4* and *d 5* hair-like and short (FIG. 1, 2). *Ventrally: sh*, *cx III*, *g a*, *g m* and *g p* strong, short conical spines, *h* lacking (FIG. 1).

♂ (FIG. 3–4): Allotype 226 μ long, 159 μ wide; 2 paratypes, 228 μ × 165 μ and 215 μ × 164 μ. Dorsal surface and epimera as in ♀; recurved bifid processes on femora I–II and trochanters II, and simple processes on trochanters III–IV, as in ♀. Chaetotaxy of ventral surface as in ♀, except that *g m* and *g p* are short and thin, not spine-like (FIG. 4).

Tritonymph: 195 μ long, 150 μ wide. Structure of legs and chaetotaxy as in ♀; 3 pairs of genital setae in the form of short spines as in ♀. Vestiges of genital suckers absent.

Protonymph: 180 μ long, 126 μ wide. Differs from tritonymph in absence of setae on trochanters I–III, absence of solenidion *ω 3* on leg I and presence of only 1 pair of genital setae (short spines).

Larva: 135 μ long, 95 μ wide. With only 1 pair of genital setae (small spines).

Holotype ♀ and 10 ♀♀ paratypes, allotype ♂ and 12 ♂♂ paratypes, nymphal and larval paratypes. On a Tasmanian Devil, *Sarcophilus harrisii* (Dasyuridae), that died in the London Zoo, 15.V.1968. Holotype, allotype and paratypes in the British Museum (Natural History). Paratypes in Australian National Insect Collection, C.S.I.R.O., Canberra and in collections of authors.

Remarks: The genus *Satanicoptes* differs from *Diabolicoptes* in the presence of a membranous tegmen, fusion in both sexes of epimera I into a long sternum, presence on trochanters II of a bifid process and on trochanters III–IV of a simple process, greater development of legs I which are longer than legs II, elongation of tarsi I, simple hair-like aspect of *d* and *l* setae, and absence of *h* setae. In *Diabolicoptes* a membranous tegmen is absent, epimera I are separate in the female, there are no processes on trochanters or femora, legs I

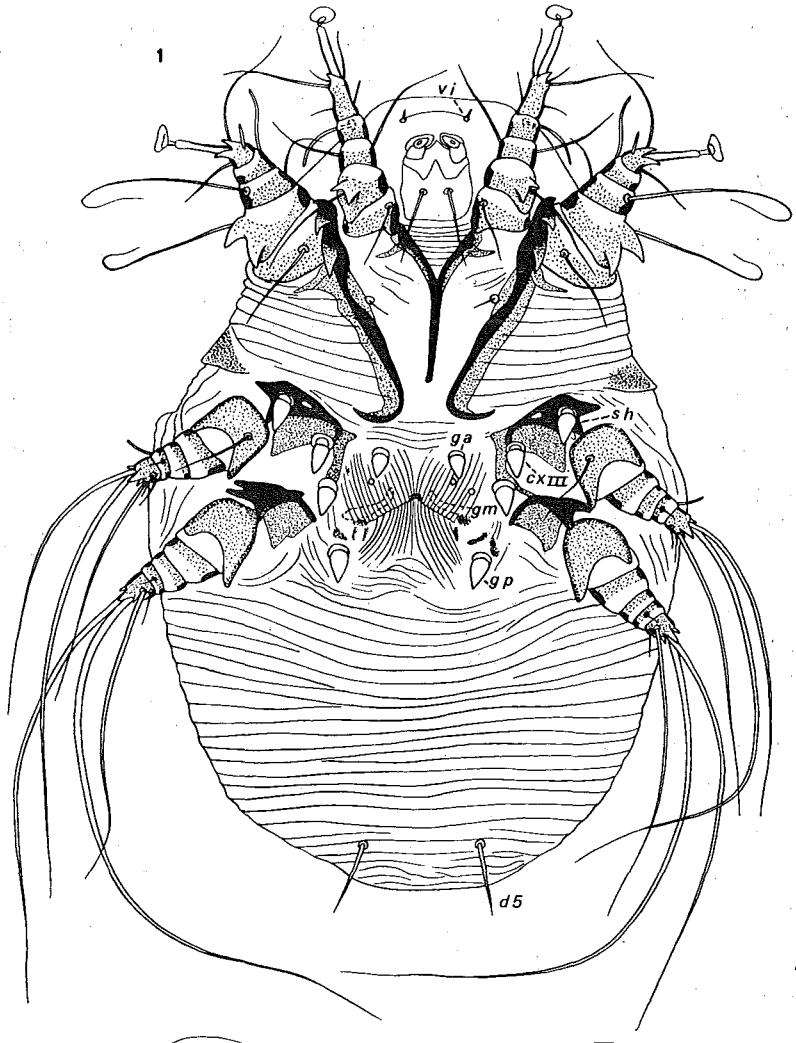

FIG. 1. *Satanicoptes armatus*, n. sp. Holotype ♀, ventral view.

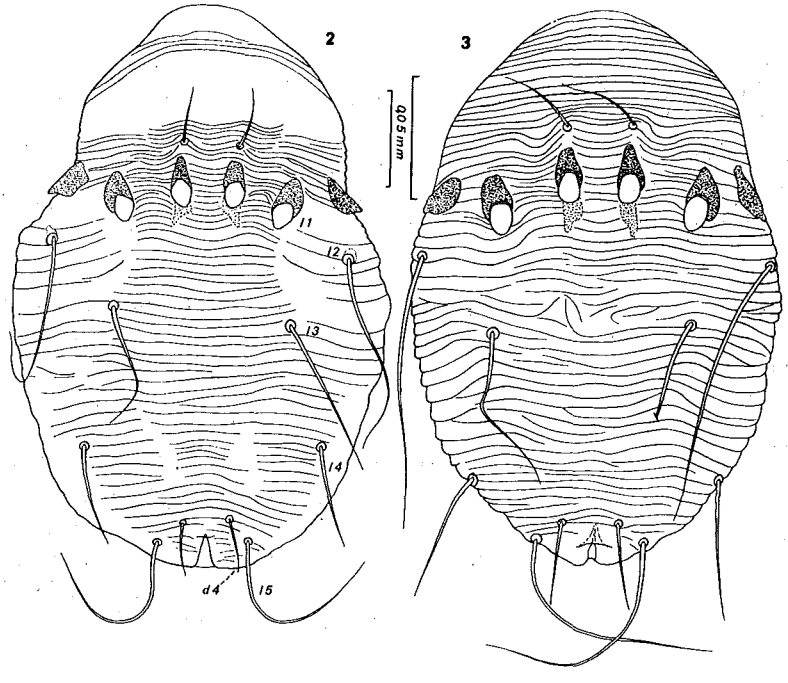

FIG. 2–3. *Satanicoptes armatus*, n. sp. (2) Holotype ♀, dorsal view. (3) Allotype ♂, dorsal view.

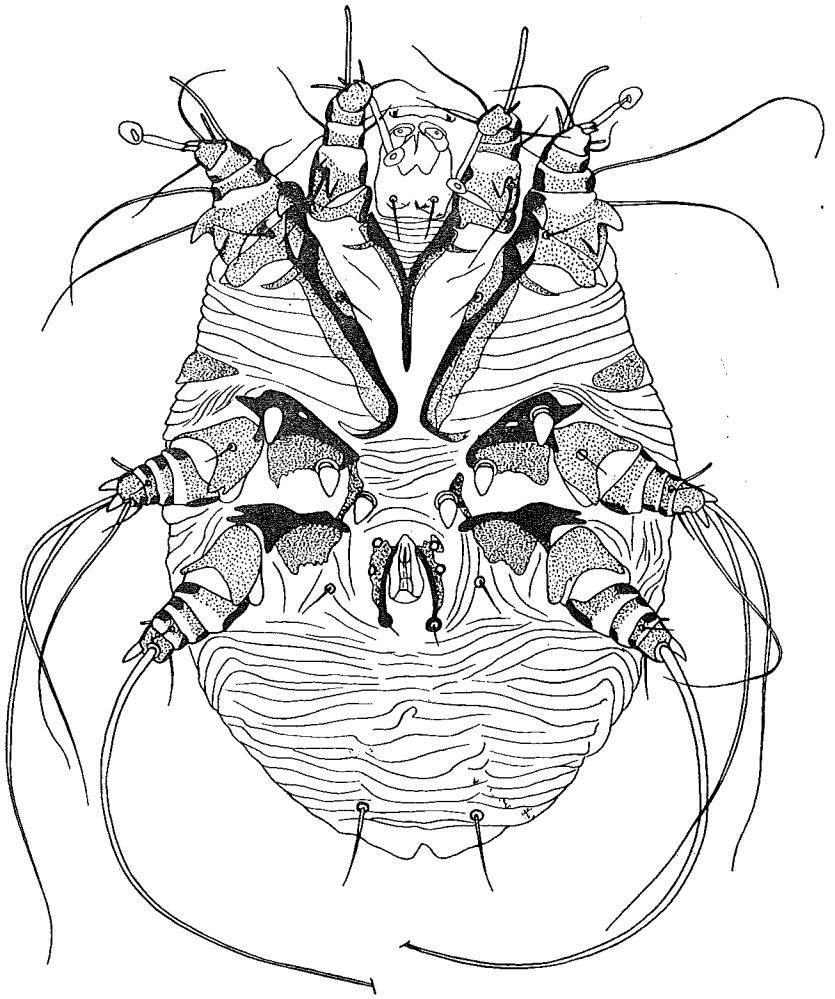

FIG. 4. *Satanicoptes armatus*, n. sp. Allotype ♂, ventral view.

are shorter than legs II, tarsi I are not elongate, all the *d* and *l* setae are spine-like, and setae *h* are present.

S. armatus differs from *S. phascogale* (Fain & Domrow, 1974), n. comb., in the female by the presence of a strong bifid retrorse process on femora I–II, absence of *d 3* and *a* setae, smaller size of the membranous tegmen, and the more elongated shape of the body. It is to be noted that trochanters III–IV of *S. phascogale* bear a retrograde process; this process was not mentioned in the original description of that species.

The new genus belongs to the subfamily Diabolicoptinae, Sarcoptidae as defined by Fain & Domrow (1974).

All stages of *S. armatus* were found in skin scrapings of *Sarcophilus harrisii* taken at places showing symptoms of sarcoptic mange. The fact that all 3 species of the subfamily Diabolicoptinae are parasites of dasyurid polyprotodont marsupials in Australia raises interesting problems regarding the ancestry and phylogeny of Sarcoptidae.

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