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Eupygopus, a new Genus with Descriptions of three Species of Hypopi from American Marsupials (Glycyphagidae : Sarcoptiformes : Acarina)

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(With 15 figures)

The present study continues investigations on phoretic hypopi from South American marsupials, where they live attached to the hairs of hosts or half hidden in the hair follicles (FAIN 1967,1969a,b; FAIN et al.1972; de COCK et al.1975). The mites were found by one of us (F.S.L.) on alcohol preserved hosts of the collection at the Zoological Museum, Hamburg. Contrary to expectation, hypopi do not fit in all characteristics to definition of *Marsupialichus* FAIN,1967 in the new definition of genus (de COCK et al.1975). They have free epimera III and IV, specializations of caudal part of opisthosoma in the shape of strong termino-lateral spurs or sclerotized striations and absence of posterior furrow. It seems impossible to enlarge the characteristics of *Marsupialichus* FAIN,1967 in order to include these species. We prefer to erect a new genus *Eupygopus*.

Eupygopus new genus

Definition (based only to hypopi): Hypopi of ovoid shape, sejugal furrow distinct, partly running to epimerites II, posterior furrow absent. Cuticle faintly sclerotized with the exception of caudal dorsal part, epimera and legs. No spurs are present on segments of hind legs, lateral sides of podosoma or on pilicolous voles. Epimera I fused in Y-shape, epimera II-IV free. Legs well developed. Tarsi I-III with subequal claws, tarsi IV with very small claws. Pilicolous organ well developed with large functional pilicolous voles

without terminal or lateral spurs, and two pairs of ridged claspers. Caudal end of opisthosoma strongly sclerotized, partly with latero-terminal spurs, curved ventrally and acting for anchoring organs. Palposoma not well marked with two pairs of serrated setae and short solenidia *alpha*. Chaetotaxy of idiosoma: *v i, v e, sc i, sc e*, dorsals 1-5, laterals 1-5, *h, sh, g a, g m, sc x*. All setae short, mostly setiform.

Chaetotaxy of legs: Tarsi 8-8-8-8, tibiae 2-2-1-1, genua 2-2-1-0, femora 1-1-0-1, trochanters 1-1-1-0. Coxal setae I may be present in form of rings.

Solenidiotaxy: Tarsi 2-1-0-0, tibiae 1-1-1-1, genua 1-1-0-0. *Omega* 3 situated closely to *omega* 1. Famulus present.

Type species: *Eupygopus proctoceros*.

Eupygopus proctoceros sp.nov. (Fig. 1,3,5-7)

Hypopus (holotype) with the characteristics of genus. Length 267 µm, in 10 paratypes measured average 242 µm (225-267), width 165 µm, in paratypes 165 µm (150-177). Venter (fig.1): Epimera I fused in Y-shape, epimera II-IV free; slight sclerotization of epimera III and IV. Palposoma not strongly marked with two pairs of serrated setae and tiny solenidia *alpha*. Coxal region I with rings of vestigial coxal setae. Pilicolous organ with voles not surpassing caudal border and two pairs of normal-shaped claspers. Genital split with genital median setae and two pairs of oval-shaped suckers in normal position. Anal split with two lateral rings in front of inner claspers. Caudal end broadly blunt. Dorsum (fig.3): Cuticle weakly sclerotized with the exception of caudal region. Sejugal furrow distinct, not running to epimerites II. Pectinated *v i* in front of *v e*. Scapular setae arranged on the same level. Typical transverse lines present in all paratypes as in figure. Dorsal glands between laterals 2 and 3, pores near humerals. Legs of strong normal shape, decreasing somewhat in size from I-IV, with five free segments. There are no strongly marked differences in size of segments, no spurs on leg segments and no strongly modified setae. Shape of segments and setae in fig. 5-7. Chaetotaxy and solenidiotaxy as in definition of genus. *Omega* 3 situated in basal part of tarsus near *omega* 1. Famulus present. Measurements in table I.

Host and locality: *Marmosa* sp., trapped 6.12.1898 by G.HÜBNER, Oberlauf Orinoco, Venezuela. Host in alcohol collection of Zoologisches Museum Hamburg. The mites were found half hidden in hair follicles near mouth-opening.

Deposition of types: Holotype in collection of Zoologisches Museum Hamburg. Paratype (11) in U.S. National Museum of Natural History, Washington, D.C.; The Acarology Laboratory, Ohio State University, Columbus, Ohio; Institut de Médecine Tropicale Prince Léopold, Antwerpen; Zoölogisch Laboratorium, K. Universiteit Nijmegen.

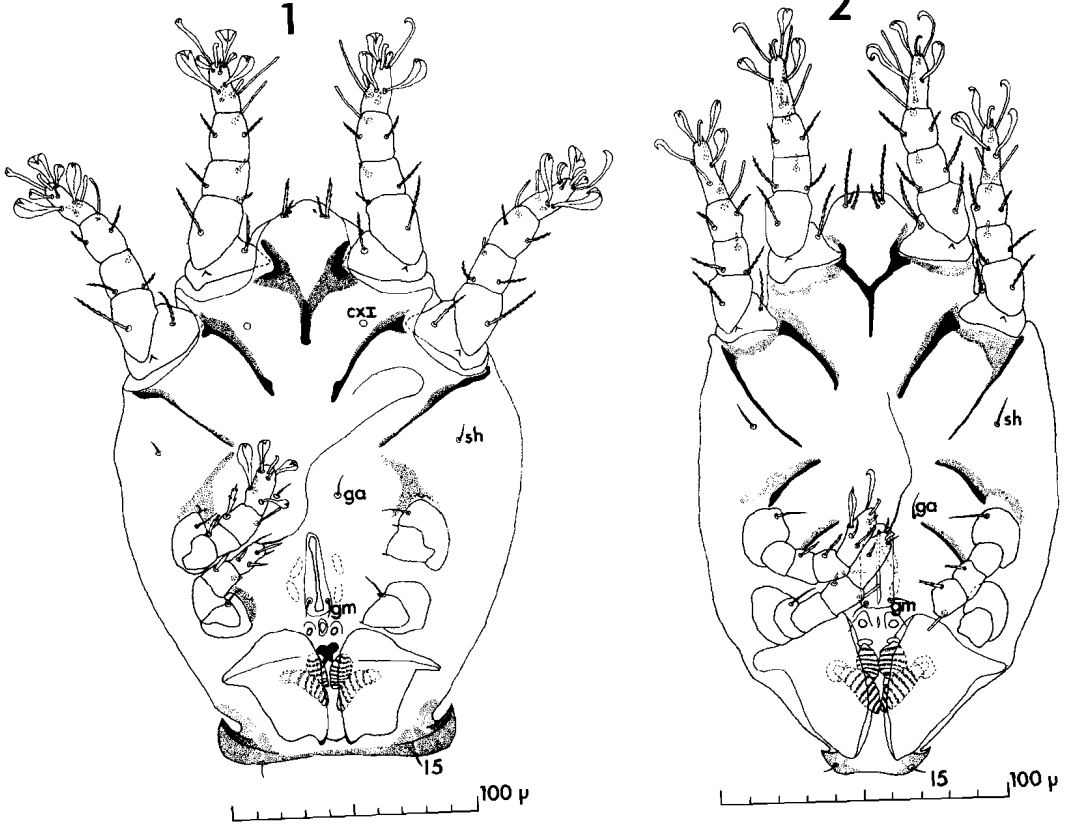

Fig. 1,2 Venter of *Eupygopus proctoceros* sp.n. holotype (1) and of *E.microceros* sp.n. holotype (2).

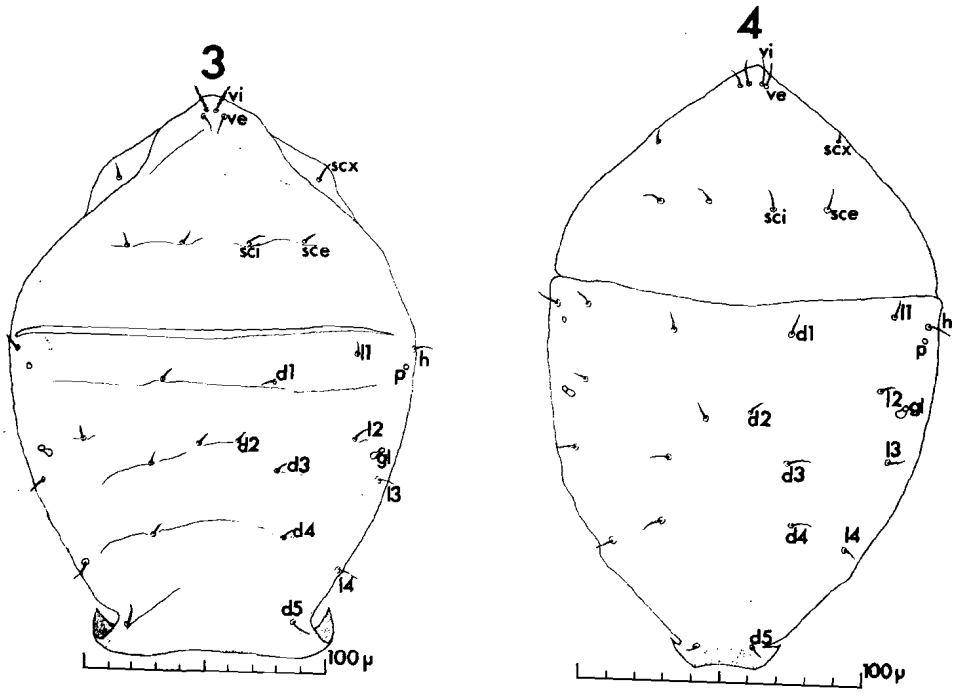

Fig. 3,4 Dorsum of *Eupygopus proctoceros* sp.n. holotype (3) and of *E.microceros* sp.n. holotype (4).

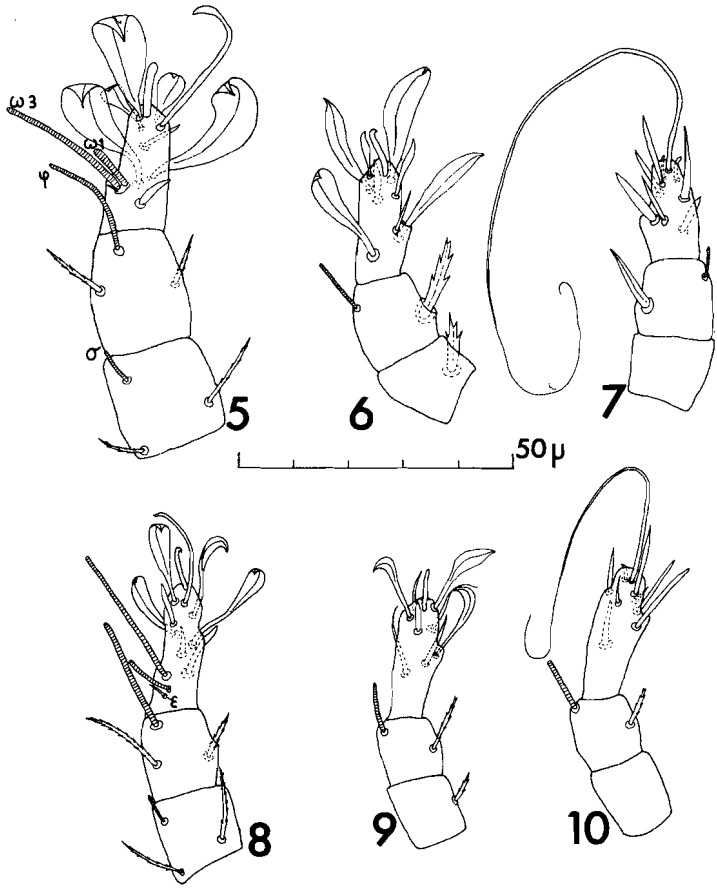

Fig. 5-10 Legs I, III and IV of *Eupygopus proctoceros* sp.n. (5-7) and of *E.microceros* sp.n. (8-10).

Eupygopus microceros sp.nov. (Fig. 2,4,8-10)

Hypopus (holotype) of long oval shape with the characteristics of genus. Length 233 μm, in two paratypes 221, 218, width 153 μm, in paratypes 148, 145. Venter (fig.2): Epimera I fused in Y-shape, II-IV free. Palposoma with two pairs of serrated setae of distinct different length and short solenidia *alpha*. Pilicolous organ with long voles and two pairs of claspers with 8-9 ridges. Genital region as in previous species. Anal split with two lateral rings in front of inner

claspers. Dorsum (fig.4): Cuticle weakly sclerotized with the exception of caudal part. Sejugal furrow distinct; vertical setae close together in transverse rank. All idiosomatal setae short and setiform. Dorsal glands between laterals 2 and 3, pores near humerals. Caudal end slightly concave with strongly sclerotized ventrally curved spurs. Distance of spurs distinctly shorter than in previous species. Legs of subequal size, all tarsi of subequal length. Chaetotaxy and solenidiotaxy as in *proctoceros* Shape of setae shown in fig. 8-10. Tibial and genual setae III thin. Measurements in table I.

Host and locality: *Marmosa pusilla,* trapped by W. EHRHARDT October 1910 near St.Catherina in Brasil. Host in alcohol collection of Zoologisches Museum Hamburg, coll.no. T 625.

Types: Holotype in Hamburg; paratypes (3) in Antwerpen and Nijmegen.

Eupygopus chironectes sp.nov. (Fig. 11-15)

Hypopus (holotype) of oval shape with the characteristics of genus. Length 345 µm, in 10 paratypes measured average 309 µm (288-348), width 216 µm, in paratypes 216 (185-234). Venter (fig.11): Cuticle poorly sclerotized with the exception of caudal part. Epimera I fused in Y-shape, II-IV free. Palposoma with two pairs of pectinated setae of subequal length and tiny solenidia *alpha*. Genital and anal regions as in previous species. Pilicolous organ with long, weakly sclerotized voles, surpassing posterior border, and two pairs of claspers with only 5-6 ridges. Dorsum (fig.12): Cuticle faintly sclerotized with the exception of caudal part. Sejugal furrow distinct, running to ventral side. *v e* behind *v i, sc i* slightly behind level of *sc e*. All idiosomatal setae short and setiform. Caudal end in region of laterals and dorsals 5 with almost longitudinal ridges. Small dorsal glands between laterals 2 and 3, pores near humerals. Legs more slender than in previous species. Tarsi IV longer than tarsi III. Chaetotaxy and solenidiotaxy as in the two species described above, however shape of setae (fig. 13-15) leaf-like, spine-like and setiform, never serrated or pectinated. Measurements in table I.

Host and locality: *Chironectes minimus,* trapped in September 1968 in Costa Rica. Host in alcohol collection of Zoologisches Museum Hamburg, coll.no. T 816. The hypopi were found half hidden in hair follicles of venter.

Types: Holotype in Hamburg; paratypes (62) in Hamburg, Washington, Columbus, Antwerpen, Nijmegen; Forschungsinstitut Senckenberg, Frankfurt; Rijksmuseum van Natuurlijke Historie, Leiden; Bernice P. Bishop Museum, Honolulu, Hawaii; Field Museum of Natural History, Chicago; Institute of Parasitology, Prague.

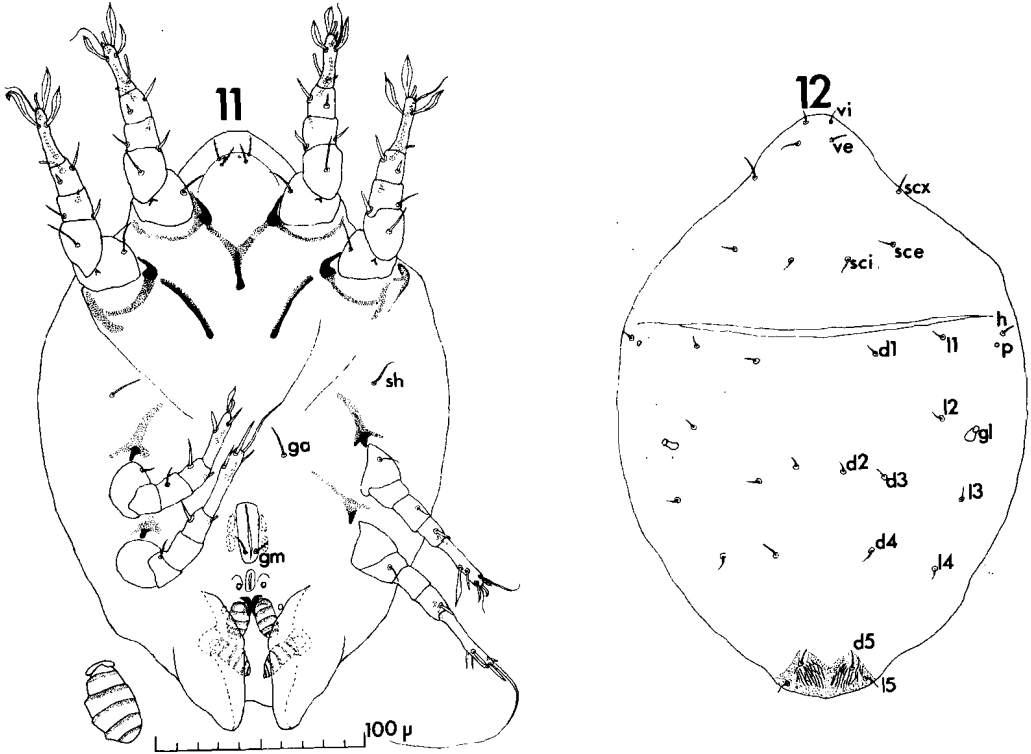

Fig. 11,12 *Eupygopus chironectes* sp.n. holotype, venter (11) and dorsum (12).

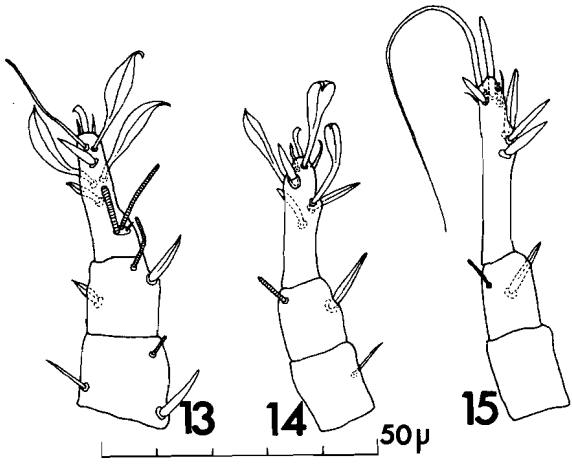

Fig. 13-15 Legs I (13), III (14) and IV (15) of *Eupygopus chironectes* sp.n.

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Zusammenfassung

Aus den Haarfollikeln von südamerikanischen Beuteltieren werden drei neue Arten von heteromorphen Deutonymphen (Hypopi) beschrieben. Für sie wird eine neben *Marsupialichus* FAIN, 1967 stehende neue Gattung *Eupygopus* aufgestellt. Es sind dies: *Eupygopus proctoceros* sp.n. von *Marmosa* sp. vom Oberlauf des Orinoco, *Eupygopus microceros* sp.n. von *Marmosa pusilla* von Brasilien und *E.chironectes* sp.n. von *Chironectes minimus* von Costa Rica.

Table I. Measurements of *Eupygopus* species in µm

	proctoceros	*microceros*	*chironectes*
length	242		309
min. max.	225,267	218,233	288,348
width	165		216
min. max.	150,177	148,153	185,234
v i, v e	12, 9	10, 5	6,10
sc i, sc e	5, 5	6, 6	6, 8
sc x	6	2	8
h, sh	8,11	6,11	5,15
d 1, 2, 3, 4, 5	4, 5, 5, 6, 7	6, 6, 6, 6, 6	6, 6, 6, 6, 7
l 1, 2, 3, 4, 5	5, 5, 7, 9, 6	6, 6, 6, 8, 6	6, 6, 5, 6, 7
g a, g m	14, 6	8, 5	15,10
inner clasper length/ width	14/ 8	16/ 10	18/ 10
outer clasper length/ width	22/ 7	23/ 9	24/ 10
length tarsi I-IV	21,21,21,18	24,23,23,25	25,26,29,33
claws I-IV	11,11, 8, 4	11,11,10, 3	10,10, 9, 3
palposoma setae	19,12	22,10	12,11
omega 1, 3	8,24	10,27	9,14
omega II	11	11	12
phi I-IV	18,16,11, 6	22,19,10,10	14,10,10,10
sigma I, II	6, 6	4, 5	7, 6
alpha	1	4	1-2
trochanter setae I,II	18,18	17,13	15,16
tibial setae III,IV	7, 5	9, 7	15,12
tarsal setae IV	138	85	92

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Anschrift der Verfasser

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