

A NEW GENUS AND TWO NEW SPECIES OF PYMEMOTID MITES
PHORETIC UPON INSECTS (ACARINA : TARSONEMOIDEA)

BY

EARLE A. CROSS

Department of Biology, The University of Alabama, Tuscaloosa, Alabama, 35486, USA.

The two forms described herein belong in my Subfamily Pygmephorinae (CROSS, 1965), a taxon raised to family status by MAHUNKA (1970a).

Propygmephorus, gen. nov., is included in my Tribe Pygmephorini, originally erected to contain the genera *Pygmephorus* Kramer, 1877, *Pediculaster* Vitzthum, 1914, and *Microdispodides* Vitzthum, 1914. *Pygmephorus* was noted (CROSS, 1965) to contain two distinct species groups. In 1969, MAHUNKA erected *Elattoma* (Type : *Pygmephorus karafiati* Krczal, 1959) to hold those species of *Pygmephorus* not belonging to the *spinosus* group and CROSS & MOSER (1971) independently described *Pygmephorellus* (Type : *Pygmephorus ceratophyi* Krczal, 1959) for the same purpose. Nearly simultaneously, MAHUNKA split *Elattoma* (*vide* MAHUNKA, 1970 a). His *Cerattoma* (Type : *P. ceratophyi* Krczal) is an unavailable name and is replaced by *Pygmephorellus*, which now is restricted to the narrower sense implied for *Cerattoma*. In his 1970 reclassification, MAHUNKA elevated my Tribe Pygmephorini to subfamily rank and described the new genus *Geotrupophorus*. Two other new genera, *Dudichiana* (1970 b) and *Xenaster* (1970 c) were described by the same author. RACK (1972) described *Mahunkania* and, in the same paper, provided a useful key to the genera (females) as they are now understood.

Due in part to the small number of characters available for unequivocal evaluation, this group is taxonomically difficult. Mosaic evolution is common, making a clear, unambiguous classification unlikely. Controversy concerning grouping of higher categories in such cases is probably inevitable. It appears to me, however, that given the mosaic nature of the material, it is a simple matter to split it excessively, a tendency which should be guarded against. The fact that nearly all of our present information is based only upon female morphology as interpreted through the light microscope reinforces this opinion. Accordingly, it seems quite possible that further evaluation of present characters, together with new ones drawn from non-morphological areas, will show *Propygmephorus*, as well as certain other extant genera, to more properly be considered in *Pygmephorellus*.

Terminology and measurements used herein follow that of CROSS (1965) with two exceptions : (1) dorsal setae are designated according to the system of van der HAMMEN (1970) and (2) body length is measured as described in CROSS & MOSER (1971).

Mr. William HALL of the University of Alabama drew and inked the drawings of *A. quadridens*. Dr. G. RACK of the University of Hamburg kindly supplied specimens of *Mahunkania* and information concerning synonymies.

Propygmephorus, n. gen.

Type : **Propygmephorus treati**, n. sp.

Diagnosis. Separable from all other genera in my Tribe Pygmephorini (CROSS, 1965) except *Mahunkania* Rack, 1972, in that setae *b* and *c* of leg I (= 1 d'F and 1 d''F of van der HAMMEN, 1970) are contiguous, short and bladelike, neither with a proflexed apex. Separable from *Mahunkania* in that claw I is apical and stout. (Fig. 3).

Description of non-gravid female. As given for the revised description of *Pygmephorus* (CROSS and MOSER, 1971) except for the following : *Propodosoma*. *Dorsum*. Posterior margin covering anterior margin of first hysterosomal segment ; peritremes ovoid. *Hysterosoma*. *Dorsum*. Fifth segment with 3 pairs of apicoventral setae. *Venter*. Posterior ventral plate with 6 pairs of setae, its hind margin entire.

Legs. Leg I as thin or slightly thinner than leg II ; tibiotarsus I elliptical ; short, indistinct pinnaculum present behind claw ; claw I moderate in size, apical, its inner margin not striate ; setae *b* and *c* of leg I short and bladelike, their apices not proflexed, their areolae contiguous ; coxa IV rectangulate.

Propygmephorus treati, n. sp.¹

(Figs. 2, 3, 5)

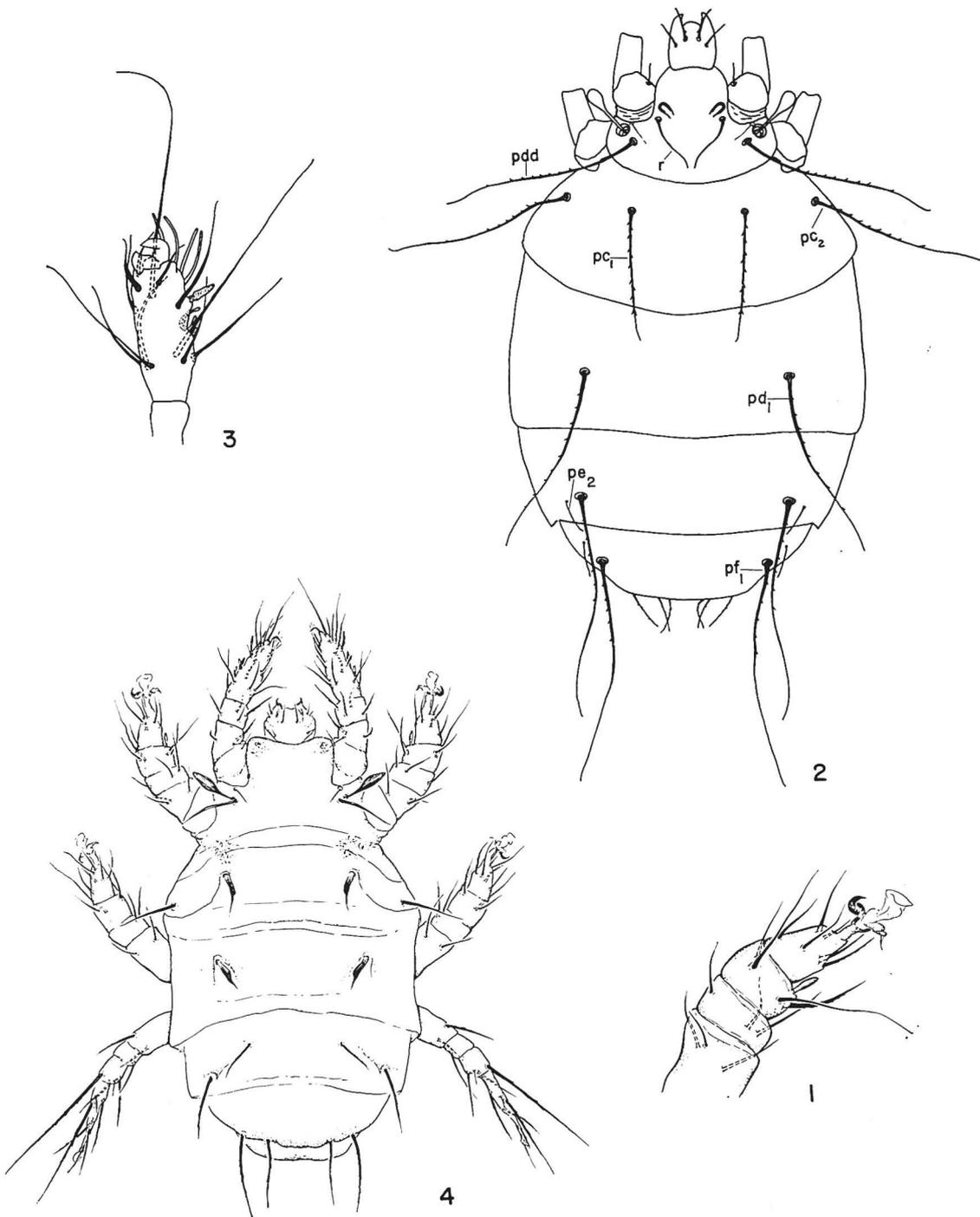
Description of non-gravid female. Length, 239 (239-289) ; elliptical ; mite tan in life ; integument well-sclerotized and with fine, faint punctae, these becoming closer along posterior margin of body ; other integumental markings absent.

Gnathosoma. Length (palps extended), 30 (30-35) ; width, 25 (25-30) ; dorsals well-developed, subequally long, a single pair of shorter postpalpal setae dorsally, internal dorsals arising distinctly anterior to externals ; gnathosomal ventrals much smaller than dorsals ; palpal solenidium 2 large, cylindrical, more than twice as long and twice as wide as solenidium 1, the latter clavate (to bullet-shaped) ; ventral, mesal margins of palps with membranous, rounded flaps of uncertain origin (or these flaps indistinct)².

Propodosoma. *Dorsum*. Subequally sclerotized throughout, peritremes dropshaped, we₁ separated, widely divergent ; posterior margin evenly arcuate, overlapping hysterosoma ; all setae thin, rostrals and posterior prodorsals flagellate and spiculate as well ; rostrals reaching nearly to (to slightly beyond) posterior margin ; mediolateral prodorsals short, fine, (about 8), posterior prodorsals very long, reaching beyond hind margin of first hysterosomal segment. *Venter*. Anterior ventral plate with 6 pairs (3+3) of thin, flagellate, spiculate setae, internal ventrals II and median ventrals I slightly longer than other pairs ; median ventrals I definitely lateral of a line drawn between internal ventrals I and internal ventrals II ; external ventrals I forked (this character very difficult to see).

1. Named in honor of Dr. Asher E. TREAT, American Museum of Natural History.

2. Flaps are not shown in the figures.



FIGS. 1 à 4 : 1) *Acinogaster quadridens*, right leg II, ventral aspect ; 2) *Propygmephorus treati*, dorsum. Seta-tion after van der Hammen, 1970. *r*, rostral seta ; *pdd*, posterior prodorsal seta ; 3) *P. treati*, right leg I, dorsal aspect ; 4) *A. quadridens*, dorsal aspect.

Hysterosoma. Dorsum. All setae thin, flagellate, spiculate; setae pc_1 and pc_2 arising on a transverse line; setae pc_2 and pd_1 subequal, longer than pc_1 but distinctly shorter than pe_1 and pf_1 ; setae pe_2 and pf_2 very short and thin, pf_2 16 (15-24), pe_2 slightly longer; pe_2 arising slightly behind pe_1 , pf_2 arising well in front of pf_1 ; setae pe_1 slightly farther apart than pd_1 , pf_1 slightly closer together than pd_1 ; 3 pairs of thin, flagellate, spiculate caudals; external caudals II slightly longer than other two pairs, 34 (25-37), external caudals I slightly shorter than other two pairs; distance between external caudals II and external caudals I subequal to that between internal caudals. *Venter.* All 6 pairs of setae of posterior ventral plate thin, spiculate, flagellate, 23-48, internal poststernals and axillaries 2 somewhat shorter than others; external poststernals extending slightly (to distinctly) beyond hind margin of PVP; distances between internal presternals and internal poststernals subequal, that between external presternals slightly less; external poststernals distinctly more widely separated than rest; posterior margin of PVP entire, transverse, barely excavated medially; hind margin of opisthosomal venter with shallow median excavation.

Legs. Leg I, 77 (76-93) long, slightly shorter than legs II and III, these latter two subequal; leg I, 16 (11-17), leg II, 17 (14-20) wide; tita I with solenidia in two groups of 2, bases of 1 and 2 contiguous, bases of 3 and 4 distinctly separated; tita I elongate-elliptical, a low, apical pinnaculum present dorsal to claw I; claw I moderate, thick, its apex not attenuate; areolae of setae b and c of femur I contiguous, these two setae short, spinelike, and not distinctly proflaxed; femur II with 3 setae, femur III with 2; solenidium of ta II short, thick, strobiloid; ta II and III each with 6 setae, none of which are short-spinose; trochanter IV rectangulate, barely constricted basally, 45 (44-56) long, 24 (20-25) wide; ta IV distinctly longer and thinner than ta II and III; seta p of ta IV elongate, whiplike, more than twice as long as other setae of segment.

Distribution. Known only from the type locality.

Type Material. Female holotype and 8 female paratypes, all with the following data: Tyringham, Massachusetts, October 2, 1969, Asher E. Treat, from *Amphipyra pyramidoides* Gn., female (Noctuidae).

Type Repositories. Holotype and Paratype 1 in the U.S. National Museum. Paratype 2 in the American Museum of Natural History. Paratype 3 in the Snow Collection, University of Kansas. Paratype 4 in the Zoological Museum, the University of Hamburg. Paratype 5 in the British Museum (Natural History). Paratype 6 in the Field Museum, Chicago. Paratype 7 in the Hungarian National Museum. Paratype 8 in the personal collection of the author.

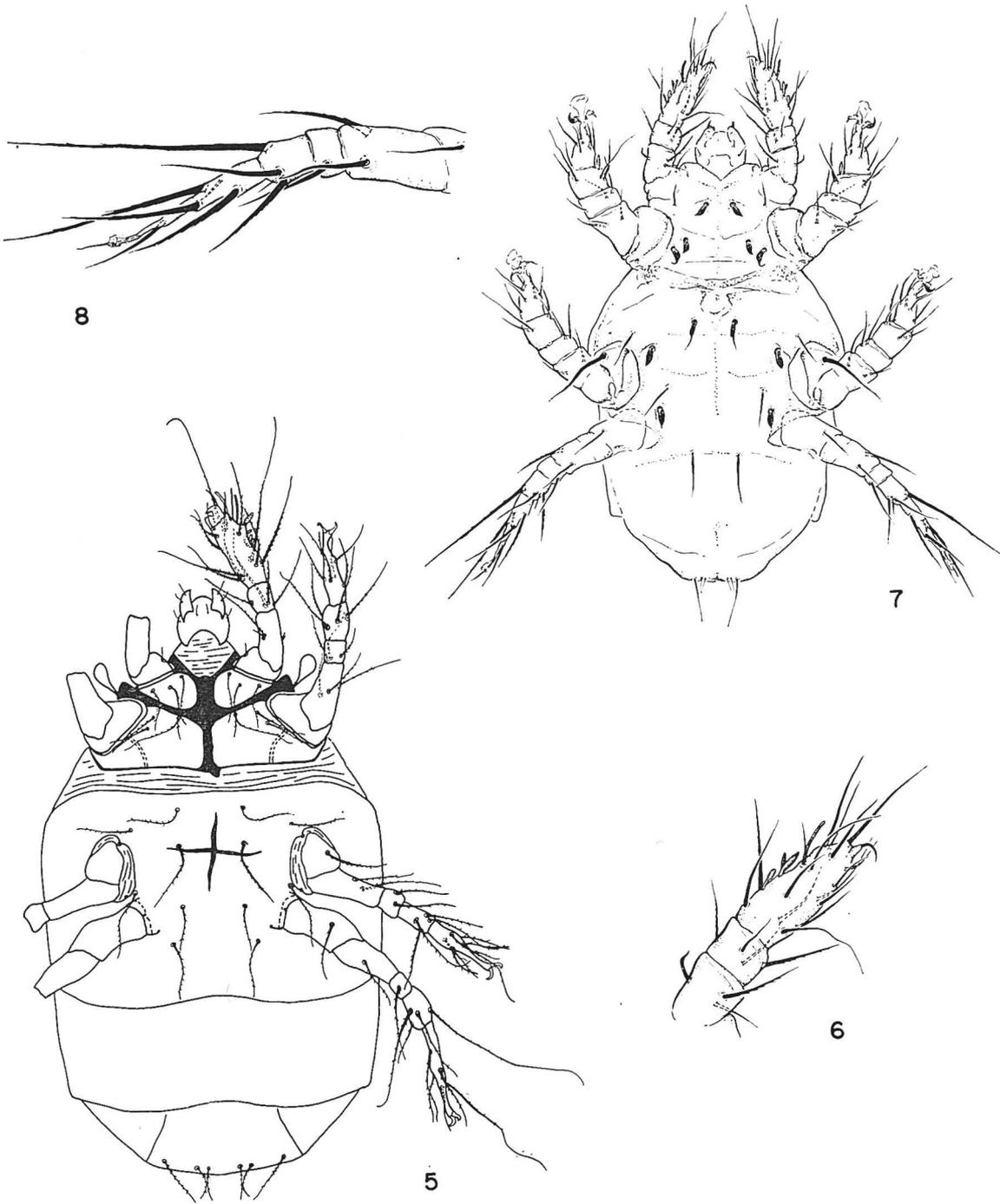
Acinogaster quadridens, n. sp.

(Figs. 1, 4, 6-8)

This is the second species to be described in the genus. Its occurrence on an African species of army ant indicates an interestingly small amount of divergence with its South American congeners, this presumably having occurred since the Cretaceous.

Diagnosis. Female easily separable from that of *A. marianae* Cross, 1965, in that setae pc_1 and pd_1 , as well as the internal presternals, are characteristically modified (Figs. 4, 7), because both pairs of setae of ventrites I are modified bladelike, by the arrangement (1-2-1) of the solenidia of tita I, and in various other characters.

Description of non-gravid female. Length, 207 (171-207); width between anterior sternocoxal condyles, 85 (63-85); body moderately sclerotized.



FIGS. 5-8 : 5) *P. treati*, ventral aspect ; 6-8) *A. quadridens*. 6) right leg I, ventral aspect ; 7) ventral aspect ; 8) right leg IV, ventral aspect.

Gnathosoma. Length, app. 18 (15-app.18); width, 24(19-24); apical palpal tooth elongate and slender.

Propodosoma. *Dorsum*. Distance between internal pseudostigmata sockets, 50(37-51); prodorsum with sclerotized tubercles at each anteriormost and at each posterolateral angle, a smaller tubercle present immediately anterior to each pseudostigmatal socket (or sclerotization of prodorsum variable according to specimen and/or mount). Stigmata in "shoulder", opening anteriorly. *Venter*. Internal ventrals I and both pairs of setae of ventrites II modified, flattened and asymmetrically clavate, external ventrals II setose apically in addition (Fig. 7); internal ventrals II arising well above externals, about on a line drawn between the latter and internal ventrals I; apodemes II and secondary transverse apodemes weak, linear, not meeting near center of plate.

Hysterosoma. *Dorsum*. Hind margins of segments I-III irregular; setae pc_1 and pd_1 modified characteristically (Fig. 4), all other setae setose and weakly to moderately plumose; setae pc_1 arising anteriorly to line drawn between pc_2 ; distance between setae pc_1 60 (47-60), that between setae pd_1 72(55-73), and that between setae pe_1 43(31-43); pe_1 smaller than and arising distinctly in front of pe_2 ; setae of segment IV subequal in size (or, usually, pf_1 slightly smaller than pf_2), arising in a transverse row; the 3 pairs of caudals small, close together, external caudals II about twice the size of the other two pairs. *Venter*. External presternals and (?second axillaries) modified, asymmetrically clavate, resembling internal ventrals I and II; internal presternals modified in same manner as pc_1 and pd_1 (Fig. 7), remaining 3 pairs of setae of posterior ventral plate setose; external presternals well anterior to apodemes IV and distinctly behind first axillaries; distance between anteriormost poststernals (usually) slightly more than twice distance between internal presternals; posterior pair of poststernals reaching nearly half way to hind margin of opisthosomal sternum.

Legs. *Length*. Leg I, 58 (48-59); leg II, 70 (58-70); leg IV, 113 (88-113). *Width*. Leg I, 15 (12-15); leg II, 20 (15-21); leg IV, 16 (13-16). *Segment Lengths*. Tita I, 33 (27-34); ta II, 26 (21-26); cx IV, 32 (23-32); tr IV, 28 (21-30); fege IV, 8 (6-9); ta IV, 47 (37-47). Mediolateral sclerotized plate of tita I indistinct; solenidia (?2) and 3 arising together, 3 thickly strobiloid, (?2) narrow, clavate; solenidium (?1) marginal, capitate, arising well basad of 1 and 3; solenidium 4 elongate and rodlike, also marginal and arising about same distance from (?2) and 3 as preceding but above them (Fig. 6); a single narrow apical pinnaculum; claw I small and sickle-like, arising from a thin, conical pedicel; solenidium of tarsus II large, strobiloid, lacking distinct apical prickle, displaced basad and arising from either conjunctiva between ti and ta or from apex of ti; coxa IV enlarged basally, ratio of length to width, 1.93 (1.65-2.13); ratio of femurogenu IV to tarsus IV, 5.7 (4.5-6.3); pulvillus of tarsus IV elongate (app. 11), claw IV tiny; solenidia of ti II-IV not visible.

Distribution. Known only from the type locality.

Type Material. Female holotype and 9 female paratypes from Angola: Nova Lisboa (Proveniência), August, 1958, V. de Portugal-Araujo. Ex: *Dorylus* (*Anomma*) sp. (C.W.R. Colony D-112).

Type Repositories. Holotype and Paratypes 1 and 2 in the U.S. National Museum. Paratype 3 in the Snow Entomological Collections, The University of Kansas. Paratype 4 in the Zoological Museum, The University of Hamburg. Paratype 5 in the British Museum (Natural History). Paratype 6 in the Field Museum, Chicago. Paratype 7 to Dr. C. W. Rettenmeyer, The University of Connecticut, and Paratype 8 in the personal collection of the author.

SUMMARY.

A new genus, *Propygmephorus*, is described to hold the new species *P. treati*, phoretic upon the noctuid moth *Amphipyra pyramidoides*. A new species of *Acinogaster* phoretic upon the army ant *Dorylus* (*Anomma*) sp. is also described.

ZUSAMMENFASSUNG.

Propygmephorus, gen. nov., auch zwei neue Arten, *P. treati* und *Acinogaster quadridens*, wird beschrieben. *P. treati* war bei einer Motte (*Amphipyra pyramidoides*, Noctuidae) gefunden. *A. quadridens* war bei der doryline Ameise *Dorylus* (*Anomma*) sp. gesammelt.

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