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## NEW TRACHELODESMINE MILLIPEDS FROM NORTHERN SOUTH AMERICA, WITH A KEY TO TRIBAL GENERA (POLYDESMIDA: CHELODESMIDAE)

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### ABSTRACT

*Knowledge of the Trachelodesmini is updated with a key to tribal components, diagnosis of a new genus, Diarcuaria, from Colombia, and description of Phlyzakium mediale from Brazil, the first tribal record from this country.*

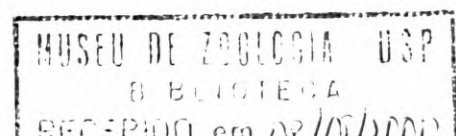
**KEYWORDS:** Trachelodesmini, *Diarcuaria*, *Phlyzakium*, Polydesmida, Chelodesmidae.

In his synopsis of the chelodesmid tribe Trachelodesmini, Hoffman (1975) noted that more taxa would come to light with continued exploration of the soil fauna of Colombia and Venezuela. One new genus, *Tuberodesmus* Shelley, was proposed for a form collected in southern Colombia along the Amazon River and in eastern Ecuador (Shelley 1981), and the present contribution admits the new genus *Diarcuaria* from Colombia. I also describe a new species of *Phlyzakium* Brölemann from Brazil, where the tribe is presently unknown. With two new genera, it is appropriate to update the key to tribal components published by Hoffman (1975).

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Key to Genera of the Trachelodesmini  
(adapted from that of Hoffman 1975)

1. Large species, length to 35 mm; stigmatal peritreme enlarged and curved mediad in front of anterior coxal bases; sterna without acute spines at bases of caudal leg pair.....*Pansararium* Hoffman  
Smaller species, length less than 25 mm; stigmata of normal size and shape; sterna with or without slender, incurved acute spines at bases of caudal leg pair.....2
2. Apex of epiproct modified, subterminal lateral tubercles enlarged and prolonged downward into divergent acute spines greatly exceeding the median tip.....3  
Apex of epiproct of normal polydesmoid form, the median apical tubercles sometimes elongated but no enlargement of subterminal lateral lobes.....4
3. Gonopodal prefemoral process with lobes and flanges but generally upright, extending directly ventrad, acropodite curving generally over latter; caudalmost sterna without long, slender spines subtending posterior leg coxae .....*Phlyzakium* Attems  
Gonopodal prefemoral process irregular but generally narrow, arching broadly and directly laterad, acropodite curving over latter imparting double arch arrangement to gonopod; caudalmost sterna with long, slender spines subtending posterior leg coxae .....*Diarcuaria*, new genus
4. Lateral edges of paranota distinctly incised and lobed.....  
.....*Trachelodesmus* Peters  
Lateral edges of paranota not incised, with variable tubercles.....5
5. Dorsum with four longitudinal rows of enlarged tubercles forming carinae.....*Tuberodesmus* Shelley  
Dorsum without carinal rows of tubercles.....6
6. Pore formula normal, ozopores present on segments 5, 7, 9, 10, 12, 13, 15-19; sternal spines subequal in size on all segments.....  
.....*Hypodesmus* Cook  
Pore formula abnormal, ozopores present on segments 5, 7, 9, 10, 13, 14, 16-19; sternal spines of segment 19 twice as large as those preceding.....*Alassodesmus* Chamberlin

**Diarcuaria**, new genus

*Type species.* *Diarcuaria schizocaudata*, new species.

*Diagnosis.* Characterized by dense covering of dorsal pustules and paxillachaetae; epiproct with corners produced into two claw-like structures giving bifurcate appearance; gonopods with prefemoral process and acropodite curving broadly laterad in double arch arrangement, prefemoral process longer and curving "inside" (caudal to) acropodite.

*Distribution.* Known only from Valle Dept., Colombia.

*Remarks.* The generic name refers to the double arch arrangement of the gonopodal telopodite.

**Diarcuaria schizocaudata**, new species

Figs. 1-6

*Type specimens.* Male holotype and one male and two female paratypes (VMNH) collected by E. Florez in June 1989 at Vereda El Janeiro, Municipio de Buga, Valle Dept., Colombia.

*Diagnosis.* With the characters of the genus.

*Holotype.* Body with head and 20 segments, essentially parallel-sided for most of length, segments 3-4 noticeably constricted; actual length unknown but less than 2 cm (body tightly coiled and extremely rigid and inflexible, fragments with handling), maximum width 2.8 mm. Color in life apparently subuniformly white on all surfaces; body lightly encrusted with soil, original living color unknown.

Head capsule of normal size and appearance for family. Epicranium lightly pustulate on both sides of midline forming shallow suture. Interantennal isthmus relatively narrow. Antennae without sphaerogranulae, reaching backwards to middle of 3rd tergite, becoming progressively more hirsute distad, relative lengths of antennomeres 2>3>4>5=6>1>7, 2-5 clavate, 6 subclavate, 1 subglobose, 7 short and truncate; distal margin of ultimate antennomere circular, not turned inward between cones, with four conical sensory cones apically and microsensilla on distal margin of penultimate antennomere. Frons relatively smooth, genae slightly granular to subpustulate because of continuation of pustules from epicranium, margined laterad, subequal in width to adjacent epicranial margin. Epicranial setae 2-2, supraantennal 1-1, interantennal 1-1, setae not apparent on frons and genae.

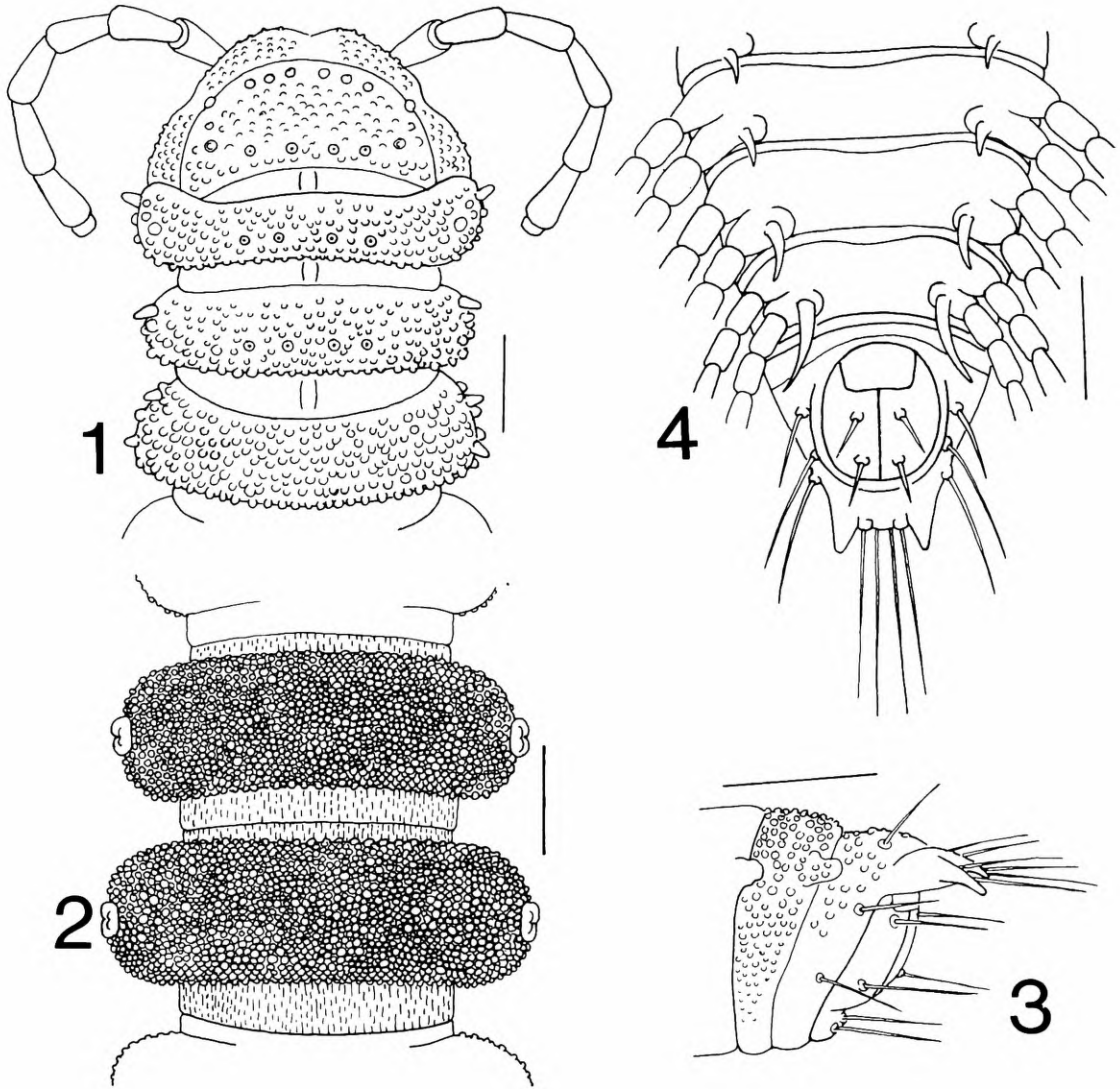
Proterga finely to coarsely granular; strictures costulate, generally broad. Collum reduced, not covering epicranium, with three tubercles along

anterior margin on either side of midline, one tubercle anteriolaterad and row of six tubercles, three on either side of midline, along caudal margin; center of collum lightly pustulate (Fig. 1). Segments 2-4 becoming progressively more densely pustulate dorsad, with enlarged, subconical tubercles anteriolaterad, sides of 2nd tergite angling anteriorly. Tergites 5-17 (Fig. 2) densely pustulate, all pustules giving rise to paxillachaeta forming dense setose covering, without noticeable paranota, ozopores opening in center of enlarged lateral tubercles, directed sublaterad. Epiproct broad and truncate, generally granular, with two distal tubercles, curved row of four tubercles near midlength, and two proximal marginal tubercles, midlength and proximal tubercles giving rise to moderately long hairs, with two claw-like structures on caudolateral corners, curved ventrad, subtending broad median area with four long hairs (Fig. 3).

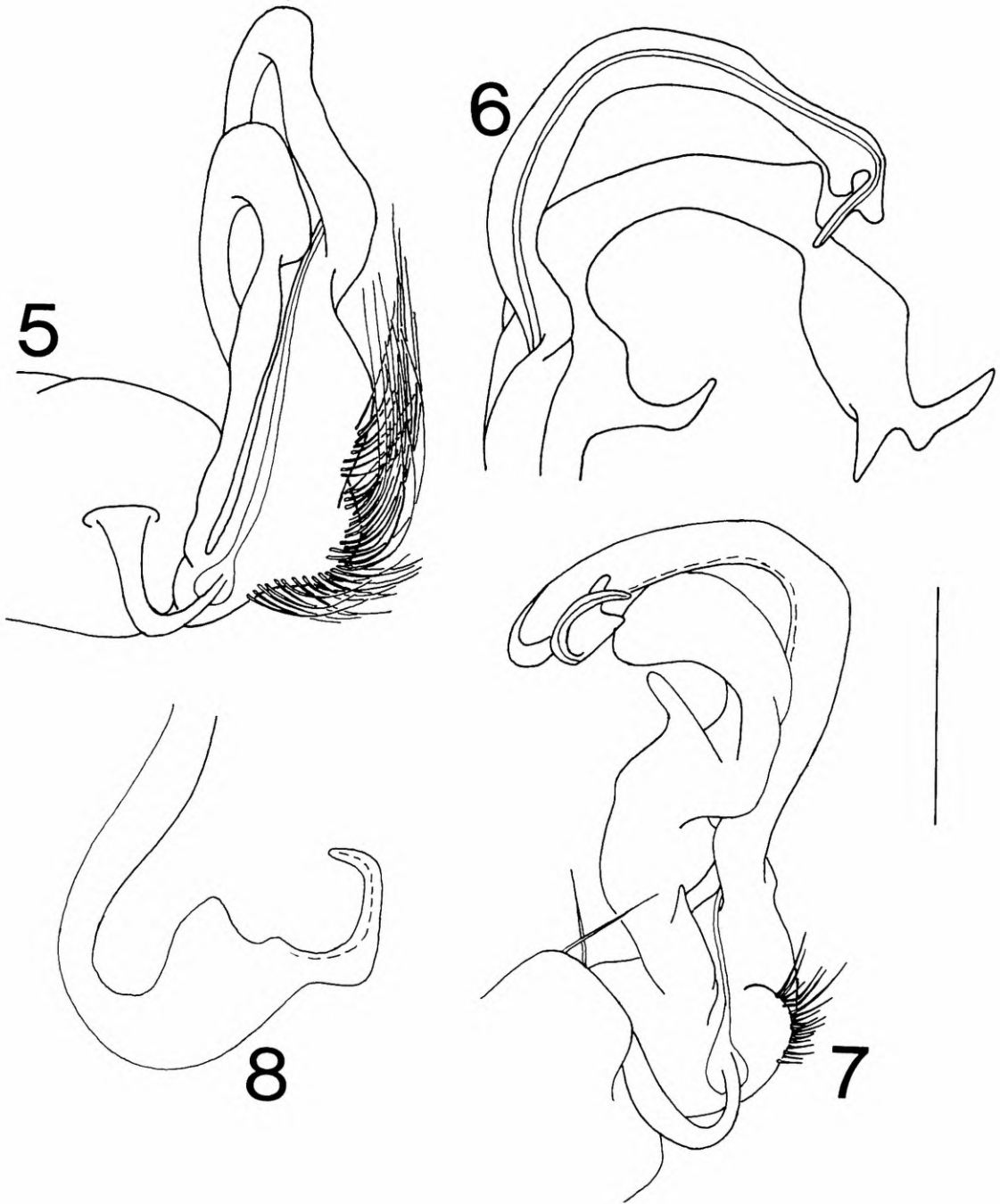
Sides of metazonites becoming progressively less pustulate ventrad, segments 2-4 with horizontal flange subtending leg coxae. Strictures distinct, faintly costulate in midbody region; sterna elevated above prozona. Sterna broad, finely granular, 15-18 with acuminate spines subtending caudal coxae, becoming progressively longer and curved laterad caudad, spines on segment 18 equivalent in length to 1<sub>st</sub> podomeres (Fig. 4). Legs with sphaerogranulae on coxae, prefemora, and femora, relatively short and crassate, becoming progressively more hirsute distad and terminating in several long hairs; claw present on legs 1-2 only. Hypoproct truncate, paraprocts with margins slightly thickened.

Gonopodal aperture subovoid, sides greatly elevated above metazonal surface, caudal margin depressed, at level of metazonum. Gonopods *in situ* with telopodites extending anteriorly over anterior margin of aperture and 6th sternum, diverging, curving broadly over lateral margins of aperture. Gonopod structure as follows (Figs. 5-6): coxae without apophyses, connected by sclerotized, triangular sternum. Telopodite comprised of long prefemoral process and acropodite curving broadly laterad in double arch arrangement. Prefemoral process curving "inside" (caudal to) acropodite, with basal projection directed laterad, curving anteriorly distad, process expanding into subtriangular lobe on outer (anterior) margin at midlength, narrowing then expanding slightly and narrowing again, apically with broad, spiniform projections on inner and outer corners, former directed caudad, latter directed anteriolaterad. Acropodite curving "above" (anterior to) prefemoral process, of subuniform width for most of length, narrowing slightly at 3/4 length then expanding into subquadrate lobe on inner (caudal) margin, stem bending abruptly caudad distal to lobe with additional lobe on outer margin, tip narrow and digitiform, overhanging narrowest part of prefemoral process, directed caudolaterad; prostatic groove opening apically.

*Ecology.* The type specimens were collected on/under the bark of a tree trunk in a subtropical humid forest at an elevation of 2,000 m.



Figs. 1-4. *Diarcuaria schizocaudata*, somatic features. 1, head and first four tergites, dorsal view. 2, midbody tergites, dorsal view. 3, epiproct lateral view. 4, last four sternite, hypoproct and paraprocts, ventral view. Scale lines = 1.00 mm for each fig.



Figs. 5-8. 5-6, *Diarcuaria schizocaudata*. 5, left gonopod of holotype, medial view. 6, prefemoral process and acropodite, anterior view. 7-8, *Phlyzakium mediale*. 7, left gonopod of holotype, medial view. 8, distal extremity of acropodite, anterior view. Scale line = 0.50 mm for figs. 5-7, 0.75 mm for fig. 8.

**Phlyzakium mediale**, new species

Figs. 7-8

*Type specimen.* Male holotype (Museu de Zoologia, Universidade de São Paulo) taken by unknown collector 1-11 February 1968, on Taperinha Ranch, Santarém, Pará Est., Brazil.

*Diagnosis.* Distinguished by distal configuration of acropodite, continuing mediad beyond level of prefemoral process into three/quarters of a loop, with broad lobe at midlength of loop (Figs. 7-8).

*Remarks.* The somatic features of this species are as shown by Hoffman (1975) for *P. attemsi* (Brölemann). The gonopod closely resembles that of *P. attemsi* except for the distal part of the acropodite, which curves dorsad in a simple loop in *P. attemsi* and curves mediad in somewhat of a coil in *P. mediale*. The specific name reflects this distinguishing feature.

This small difference contrasts with the great separation between these two species, over 2,000 km, and one wonders if they may represent part of a geographic continuum reflecting subspecific status. Material is needed from the intervening area to make such a determination.

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