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The Milliped Genus *Tirodesmus* Cook (Polydesmida: Platyrrhacidae)

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ABSTRACT

Tirodesmus Cook comprises one species, *T. fimbriatus* (Peters); *Platyrrhacus biolleyi* Carl and *Nyssodesmus albomarginis* Chamberlin are junior subjective synonyms. It occurs from southern Nicaragua to west-central Panama. Generic and specific accounts are presented to fully characterize the taxa for the first time.

This contribution concerns the least speciose component of the Central American platyrrhacid milliped fauna, *Tirodesmus* Cook. Its single species, *T. fimbriatus* (Peters), has a distinctive "alate" appearance that diagnoses it upon sight. While monotypic status has long been recognized (Hoffman 1953, 1956, 1980), formal synonymies have not been proposed; furthermore, the taxa have not been fully diagnosed, nor have localities been compiled, all of which are done here. Acronyms of sources of preserved material are as follows:

CAS - California Academy of Sciences, San Francisco.

FSCA - Florida State Collection of Arthropods, Gainesville.

NCSM - North Carolina State Museum of Natural Sciences, Raleigh.

NMNH - National Museum of Natural History, Smithsonian Institution,
Washington, DC.

VMNH - Virginia Museum of Natural History, Martinsville.

ZMB - Zoological Museum of Humboldt University, Berlin, Germany.

Tiodesmus Cook

Tiodesmus Cook, 1896:53. Pocock, 1909:146. Chamberlin, 1922:36. Attems, 1938:229. Hoffman, 1956:46; 1999: 397. Jeekel, 1963:90-91. Loomis, 1968:35.

TYPE SPECIES. *Polydesmus fimbriatus* Peters, 1864, by original designation.

DIAGNOSIS. A genus of large-bodied, Neotropical Platyrrhacinae with strongly alate appearance, anterior margins of paranota 5-18 curving caudolaterad instead of laterad; telopodites linear, expanding distad into apically rounded shield around solenomere.

SPECIES. One

DISTRIBUTION. Southern Nicaragua to northern Panama (Fig. 7).

Tiodesmus fimbriatus (Peters)

(Figs. 1-7)

Polydesmus fimbriatus Peters, 1864:543.

Polydesmus (Stenonia) fimbriatus: Saussure & Humbert, 1872:28-29.

Tiodesmus fimbriatus: Cook, 1896:53. Chamberlin, 1922:36-37. Loomis, 1968:35. Hoffman, 1999: 397.

Platyrrhacus fimbriatus: Attems, 1899:347. Carl, 1914:975.

Platyrrhacus biolleyi Carl, 1902:658-661, pl. 11, figs. 67-68. Brölemann, 1905:341.

Tiodesmus biolleyi: Pocock, 1909:146-147, pl. 10, figs. 9, 9a-b. Loomis, 1968:35. Hoffman, 1999: 397.

Nyssodesmus albomarginis Chamberlin, 1933:16-18, fig. 5.

Platyrrhacus (Tiodesmus) fimbriatus: Attems, 1938:231-232, fig. 252.

TYPE SPECIMEN. Female holotype (ZMB type no. 11), labeled "Veragua, Warscewicz", assumed to be Veraguas Province, Panama.

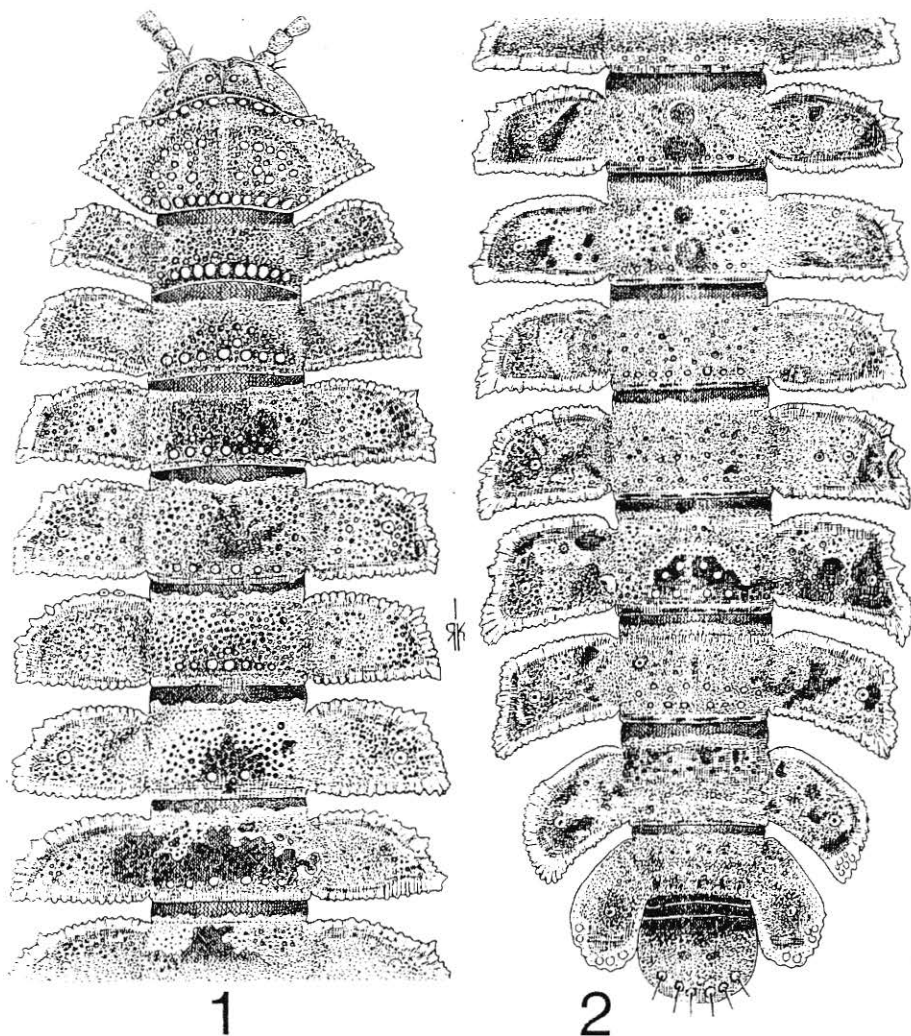
DIAGNOSIS. With the characters of the genus.

DESCRIPTION. Length ca. 87 mm, maximum width 17.3 mm caudal to midlength, W/L ratio 19.9%. Preserved coloration uniformly dark, peritremata light.

Head capsule lightly tuberculate, width across genal apices 6.8 mm, interantennal isthmus 1.2 mm. Epicranium slightly overlapped by anterior margin of collum, with strong median impression terminating in interantennal region. Antennae moderately long and slender, reaching back to caudal margin of 3rd tergite, moderately hirsute throughout length, first antennomere subglobose, 2-6 clavate, 7 short and truncate; relative lengths of antennomeres 2>3>4=5=6>1>7. Genae with broad elevation subtending antennal socket, ends narrowly rounded and projecting slightly beyond

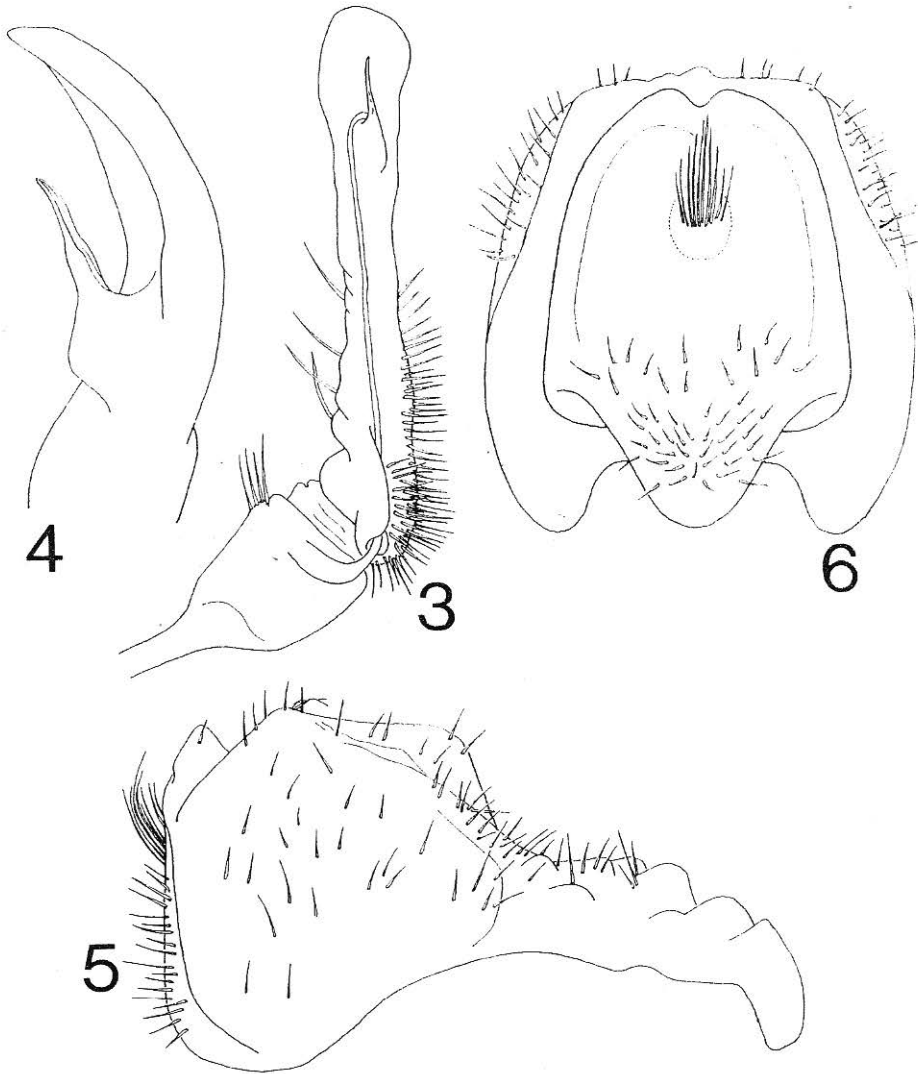
adjacent cranial margin. Facial setae as follows: epicranial 1-1, subantennal 1-1, frontal 2-2, supraclypeal 3-3, labral 6-6.

Terga densely papillate-tuberculate. Collum generally subovoid, narrower than adjacent tergite, anteriolateral margins extended, with row of moderate tubercles slightly back from anterior margin continuing onto paranota, papillae and tubercles of varying sizes on dorsal surface becoming stronger along caudal margin, paranotal margin lined with irregular tubercles. Paranota distinctly flattened, those of 2nd tergite angling anteriorad, anterior margins curving caudolaterad, more strongly so on tergites 5-18 (Figs. 1-2), lateral margins moderately jagged, anterior and caudal



Figs. 1-2. *Tirodesmus fimbriatus*, somatic features. 1, segments 1-8, dorsal view. 2, segments 12-20, dorsal view.

margins moderately serrate; 19th paranota directed caudad, apically rounded with lightly serrate margin. Ozopores located caudolaterad to center of paranota. Dorsum of metaterga appearing granulate to naked eye but covered with variable papillae and tubercles, strictures distinct, well defined. Epiproct broadly rounded with four apical and two subapical setae.



Figs. 3-6. *Tirodesmus fimbriatus*, genitalic features. 3, left gonopod of male from Heredia Prov., Costa Rica, medial view. 4, distal extremity of telopodite of the same, ventral view. 5, left cyphopod of female from Chiriqui Prov., Panama, lateral view. 6, the same, caudal view.

Sides of metazona granular. Pregonopodal sterna depressed, without modifications; postgonopodal sterna with low tubercles subtending coxae. All legs moderately hirsute with short, stiff setae; tarsal claws moderately long and straight.

Gonopodal aperture rounded, 2.0 mm wide and 1.6 mm long at midpoint, sides and caudal margin strongly elevated above metazonal surface, sides thickened. Gonopods *in situ* extending directly anteriorly in parallel arrangement, overhanging sternum between 6th legs. Telopodite (Figs. 3-4) long and slender, expanding distad into rounded lateral shield for solenomere; latter located medially, upright.

Cyphopods (Figs. 5-6) minute, buried deep in membrane caudolaterad to 2nd legs. Receptacle located caudad to valves, with narrow tuft of long, slender hairs arising from circular impression distal to midlength. Valves subequal, with narrow, lightly sclerotized, and folded anterior extension.

DISTRIBUTION. Same as that of the genus (Fig. 7); the record from Iberia, Louisiana, USA (Attems 1938), is deleted. Specimens were examined as follows:

NICARAGUA: Rio San Juan Prov., Machuca R., ♂, date unknown, L. Bransford (NMNH).



Fig. 7. Distributions of *Tirodesmus* and *T. fimbriatus*

COSTA RICA: Heredia Prov., 16 km N Vara Blanca, ♂, 24 June 1967, D. Westfall (NMNH); and Puerto Viejo, ♂, 18 July 1968, L. D. Gomez (VMNH). San José Prov., La Palma, 1,500', ♀, 15 January 1929, M. Valerio (NMNH). Limon Prov., 15 km NE Turrialba, ♂, 19 March 1963, K. Arnold (FSCA). Cartago Prov., Moravia, 110m, ♂, 31 May 1990, D. Curoe (CAS).

PANAMA: Chiriqui Prov., Reserva Fortuna along Continental Divide, 2♀, 1 June 1994, N. Smith, R. Kassabian (NCSM).

The following additional literature records are available:

NICARAGUA: San Juan del Norte, Rio San Juan Prov. (Chamberlin 1922).

COSTA RICA: La Delicias, Heredia Prov., and Cariblanco, Alajuela Prov. (Carl 1902, Pocock 1909).

PANAMA: Veraguas Prov. (Peters 1864; Attems 1899, 1938).

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LITERATURE CITED

- Attems, C. 1899. System der Polydesmiden II. Theil. Denkschr. Akad. Wiss., Wien, 68: 251-436.
- 1938. Myriapoda 3. Polydesmoidea II. Fam. Leptodesmidae, Platyrrhacidae, Oxydesmidae, Gomphodesmidae. Das Tierreich, 69: 1-487.
- Brölemann, H. W. 1905. Myriapodes de Costa Rica recueillis par M. le Professeur P. Biolley. Ann. Soc. Ent. France, 74: 337-380.
- Carl, J. 1902. Exotische Polydesmiden. Rev. Suisse Zool., 10: 563-679.
- 1914. Die Diplopoden von Columbien nebst Beiträgen zur Morphologie der Stemmatoiuuliden. Mém. Soc. Neuchâtel. Sci. Nat., 5: 821-993.
- Chamberlin, R. V. 1922. The millipeds of Central America. Proc. U. S. Natl. Mus., 60: 1-75.
- 1933. On a collection of centipeds and millipeds from Costa Rica. Pan-Pacific Ent., 9: 11-24.

- Cook, O. F. 1896. New American Platyrrhacidae. *Brandtia*, No.12: 51-54.
- Hoffman, R. L. 1953. A new Central American milliped of the genus *Platyrrhacus* (Polydesmida: Platyrrhacidae). *Proc. Ent. Soc. Wash.*, 55: 251-258.
- 1956. Generic names in the family Platyrrhacidae and their type species, with a consideration of the status of *Stenonia* Gray, 1842. *Proc. Biol. Soc. Wash.*, 69: 41-52.
- 1980 ("1979"). Classification of the Diplopoda. *Museum d'Histoire Naturelle, Geneva, Switzerland*, 237 pp.
- 1999. Checklist of the millipeds of North and Middle America. *Spec. Publ. Va. Mus. Nat. Hist.*, 8: 1-584.
- Jeekel, C. A. W. 1963. Diplopoda of Guiana, *In: Studies on the fauna of Suriname and other Guyanas*, 4: 1-157.
- Loomis, H. F. 1968. A checklist of the millipeds of Mexico and Central America. *U. S. Natl. Mus. Bull. No. 266*: 1-137.
- Peters, W. C. H. 1864. Übersicht der im Königl. zoologischen Museum befindlich Myriapoden aus der Familie der polydesmi, so wie beschreibungen einer neuen Gattung, *Trachyiulus*, der juli, und neuer Arten der Gattung *Siphonophora*. *Monatsb. Preuss. Akad. Wiss. Berlin für 1864*: 529-551, 617-627.
- Pocock, R. I. 1903-1910. Chilopoda and Diplopoda. *Biologia Centrali-Americana*, 217 pp. [Fascicle treating the Platyrrhacidae distributed in October 1909].
- DeSaussure, H., and A. Humbert. 1872. Études sur les myriapodes. *In: Mission scientifique au Mexique et dans l'Amérique Centrale, recherches zoologiques*, Imprimerie Nationale, Paris, pt. 6, sec. 2: 1-211.

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