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CHELODESMID STUDIES. XX.
REVALIDATION OF THE NAME *PELTOEURYDESMUS* SCHUBART, 1956,
AND THE DESCRIPTION OF A NEW SPECIES
(DIPLOPODA: POLYDESMIDA)¹

RICHARD L. HOFFMAN ²

ABSTRACT

Peltoeurydesmus, proposed as a subgenus of *Eurydesmus* by Schubart in 1956, is elevated to generic rank on the basis of a lateral projection from the gonopod prefemur, unique in the family Chelodesmidae, rather than the character upon which Schubart originally based his subgenus. A second species of this genus, *P. sanctus*, is described from Espírito Santo.

The diplopod fauna of southeastern Brasil contains a number of chelodesmid species somewhat variable in body form but nonetheless united by singular features of the male genitalia such as the profusely laciniate-spinulose form of the solenomerite. The great majority of these forms were described in, or subsequently referred to, the genus *Eurydesmus*.

Until 1945, this genus was monotypic. In that year, Otto Schubart described six new species from the vicinity of Rio de Janeiro, and in several later papers he increased the number to 15 (some of them, however, were described under synonymous generic names). This many species encompassed a substantial range of diversity in gonopod structure, and in 1956 Dr. Schubart proposed to divide *Eurydesmus* into three subgenera. These taxa appear to have been well-founded, although Schubart did set up some related new genera for species which although "eurydesmoid" gonopodally differed slightly and only in the distribution of ozopores.

Having had some personal knowledge of several of the older names based on eurydesmines I ventured in 1971 to present a brief summary of the genus in which Schubart's three subgenera as well as his nominal genera *Pseudoeurydesmus* and *Pseudoeurydesmella* were denied recognition. Subsequent reflection convinced me that such zealous "lumping" was too facile, and served only to obscure the actual extent of evolutionary diversification exemplified by the species themselves, the more so since unquestionably a large number of species remains to be collected and added to the list.

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2. Radford University, Radford, Virginia, USA 24142.

The recent discovery of one such animal amongst the unidentified Diplopoda of the Museu de Zoologia, Universidade de São Paulo, has reinforced the above-stated opinion, and provides the opportunity for reconsideration of the status of one of Schubart's subgeneric names: *Peltoeurydesmus*. So long as only one form was assigned to that taxon, one could not readily separate specific from generic level characters. Knowledge of a second species that is generally similar to the type of *Peltoeurydesmus* permits a more confident assessment, and I here propose to reinstate this name as that of a genus equivalent to *Eurydesmus*, but on the basis of a shared character not utilized in the original diagnosis.

The cooperation of Dr. P. E. Vanzolini and Dr. Licia Maria Neme in granting access to the diplopod collection of the Museu de Zoologia, and later sending selected specimens to me for study, is acknowledged with appreciation.

Family Chelodesmidae

Tribe Chelodesmini

Genus *Peltoeurydesmus* Schubart, new status

Peltoeurydesmus Schubart, 1956, Rev. Brasil. Biol., v. 16, p. 456, as subgenus of *Eurydesmus* DeSaussure, 1859. Type species: *Eurydesmus allipioi* Schubart, 1945, by monotypy and original designation.

Eurydesmus "biconicus Group" Hoffman, 1971, Arq. Zool. São Paulo, v. 20, p. 259.

Diagnosis: A genus of the tribe Chelodesmini in which the prefemur of the gonopod is strongly produced on the lateral side into a large and conspicuous projection densely beset with numerous long macrosetae. Both of the known species are large (males to 44 mm long) and broad (W/L ratio 18-22%).

Distribution: Littoral region of southeastern Brasil from central Espírito Santo to Rio de Janeiro.

Remarks: Schubart's original diagnosis of *Peltoeurydesmus* emphasized primarily the presence of a shield-like disk on the median side of the gonopod femur, and made no allusion to the striking dorsolateral projection of the prefemur. As is now known, this latter modification occurs in both *P. biconicus* and *P. sanctus*, while the femoral shield occurs only in the first-named. Since the secondary prefemoral projection does not occur in any other known Brazilian chelodesmids, it seems to be an apomorphy of sufficient importance to use in generic definition.

As a result of benign neglect, the tribe Chelodesmini was set up in 1980 to contain the single genus *Eurydesmus* but without a word about diagnostic features. So long as the tribe was monobasic, its characters could be assumed to be the same as those of *Eurydesmus*, but by what details of structure was this taxon set off from other chelodesmids?

Eurydesmids in general appears to be highly specialized in many character systems, including reduction in head size, pronounced convexity of metazona, continuous ozopore formula, spination of sterna, strong development of tibial pads, modifications of anterior sterna of males, and particularly, the tendency for the gonopods to develop numerous, often bizarre, fringes, ciliations, and complex multiramose processes. Perhaps the most singular of the latter, and offering the best single apomorphy, is the branched, lacinate, form of the solenomerite (cf. fig. 8) which is not approximated anywhere else within the Chelodesmidae. This character will serve to unite a complex of "eurydesmine"

genera, of which probably four or five can be defined from the species that I (1971) uncritically combined under *Eurydesmus*.

A survey of other regional chelodesmids so far gives no good insight regarding the possible affinities of this tribe. A presently undescribed genus from Bahia shows a number of similarities in peripheral characters (including the four closely appressed digitiform processes of the 5th sternum), but not in terms of gonopod structure.

Still there is every reason to assume that continued exploration of the coastal mountains of southeastern Brasil will eventually produce one or more taxa of interest in shedding some light on this question.

Species: Two, distinguishable by characters cited in the respective specific diagnoses.

***Peltoeurydesmus biconicus* (Attems)**

Leptodesmus biconicus Attems, 1898, Denks. Akad. Wien, v. 68, p. 379. Female holotype (Naturh. Mus. Wien) from Corcovado, Rio de Janeiro, Brasil.

Eurydesmus allipioi Schubart, 1945, Arq. Mus. Nac., v. 28, p. 65, figs. 55-57. Male holotype (MZUSP) from Jacarepaguá, Rio de Janeiro, Brasil.

Eurydesmus (Peltoeurydesmus) allipioi: Schubart, 1956, Rev. Brasil. Biol., v. 16, p. 456.

Eurydesmus biconicus: Hoffman, 1971, Arq. Zool. S. Paulo, v. 20, p. 257.

Diagnosis: Differing from *P. sanctus* chiefly in gonopod structure, such as the development of a flattened shield-like lobe on the femoral region, the presence of a small basal spinulose projection on the prefemoral process, and much simpler form of the solenomerite.

Remarks: The reader is reminded of the curious nomenclatorial mix-up involving the misuse of *Leptodesmus biconicus*, but, not in the original sense as based on a eurydesmine, for a common large chelodesmid now known as *Henrisaussurea corcovadis* (Brölemann). The confused history of these names has been discussed in my 1971 paper, pp. 257 and 268.

***Peltoeurydesmus sanctus*, sp. n.**

(Figs. 1-8)

Material: Male holotype (MZUSP 590) labeled "Chaves Sta Leopoldina / E. Santo / 26 VIII 42 / Soares col." (ca. 20°06'S, 40°37'W).

Diagnosis: Generally similar to *P. biconicus* (Attems) in body form and peripheral characters, differing in numerous details of gonopod structure such as much larger lateral prefemoral process, absence of a median peltate femoral lobe, absence of dorsal spinose projection from prefemoral process, and appreciably more complex solenomerite.

Holotype: Adult male, length ca. 44 mm (specimen broken), widths of selected segments across paranota as follows:

segment 1 - 5.9 mm	segment 10 - 9.4 mm
2 - 7.6	12 - 9.3
4 - 8.7	14 - 9.1
6 - 9.1	16 - 7.5
8 - 9.3	18 - 4.6

Width/length ratio about 21.5%, body distinctly limaciform with anterior end notably attenuated, head and collum relatively smaller than in most chelo-

desmids of comparable size, anterior segments distinctly convex dorsally with paranota directed ventrad, those of segment 2 even slightly incurved.

Metaterga at present dilute reddish brown, in life probably deep maroon; all other parts of body yellowish testaceous, probably bright yellow in life.

Head small, genal width 4.2 mm, surface smooth and polished; facial setae mostly missing (?abraded); interantennal space unusually broad (1.7 mm), 41% of head width. Antennae moderately long, articles 3-6 similar in size and shape, very slightly clavate, article 2 somewhat longer.

Paranota of segments 2-5 unusually broad and overlapping, those of mid-body segments more separated; all paranota with rounded anterior and acute posterior corners, the latter becoming more spiniform (fig. 2) back to about 16th segment, after which becoming abruptly smaller, virtually absent from 19th (fig. 3); epiproct broadly conical and unmodified; paraprocts and hypoproct of normal chelodesmid form.

Metaterga smooth and polished; stricture shallow but with sharp anterior edge entirely around segments. Ozopores small, opening laterally and generally invisible in dorsal aspect, peritreme scarcely broadened around pore. Sides of metazona smooth, oblique pleurosternal carinae prominent on anterior segments, smaller but visible posteriad to 17th segment. Anterior stigmata small, narrow, slits, located in stricture in front of dorsal coxal condyle. Sterna broad, flat, glabrous, produced into acute subcoxal spines, those of posterior coxae much larger than anterior. Legs of moderate size, but podomeres beyond femur smaller and shorter than normal for the family (fig. 4), only tibiae and tarsi sparsely setose; tibial pads largest on anterior legs, becoming gradually smaller posteriad and absent beyond legs of 14th segment.

Sternum of 5th segment with four closely-appressed slender, digitiform median processes; sternum of 6th segment with two flattened-conic paramedian processes between anterior legs. Gonopod aperture very large, reducing pronotum to narrow transverse strip, caudolateral edges, slightly elevated; a long acute spiniform projection at base of each leg of the 8th pair.

Gonopods large and robust, prefemora broadly in contact, acropodite elements subparallel as seen in situ (fig. 5). Coxae subglobose, with moderate acute apophysis and about 12 macrosetae on dorsal side. Prefemora relatively large, densely setose on ventral and lateral surfaces, dorsolaterally produced into a prominent blunt projection set with numerous long robust macrosetae (fig. 7). Prefemoral process slightly longer than acropodite, apically recurved proximad with ciliate-laciniate edge; a prominent triangular ventrally-directed lobe on median side at about midlength (fig. 6). Tibiotarsal region slender, flattened, abruptly recurved proximad, with laciniate edges, subtended on ventromedian edge by a thin, laminate process with denticulate edge. Solenomerite only partly visible in mesal aspect, typically concealed between acropodite and edge of prefemoral process, when mechanically extracted having the appearance as shown in fig. 8; the prostatic groove runs out on a finely ciliate lobe, above which is a complexly ornate cluster of acute blades.

Name: Latinized form of part of the state containing the type locality (Espírito Santo); *sanctus* = sacred, holy.

Remarks: In terms of gonopod structure, especially form of the solenomerite and dorsolateral prefemoral projection, this species is clearly even more specialized than *P. biconicus*. Since the known localities for these two species are over 300 km apart, one is justified to suspect that still other related forms will be discovered in northeastern Rio de Janeiro and adjoining parts of Minas Gerais.

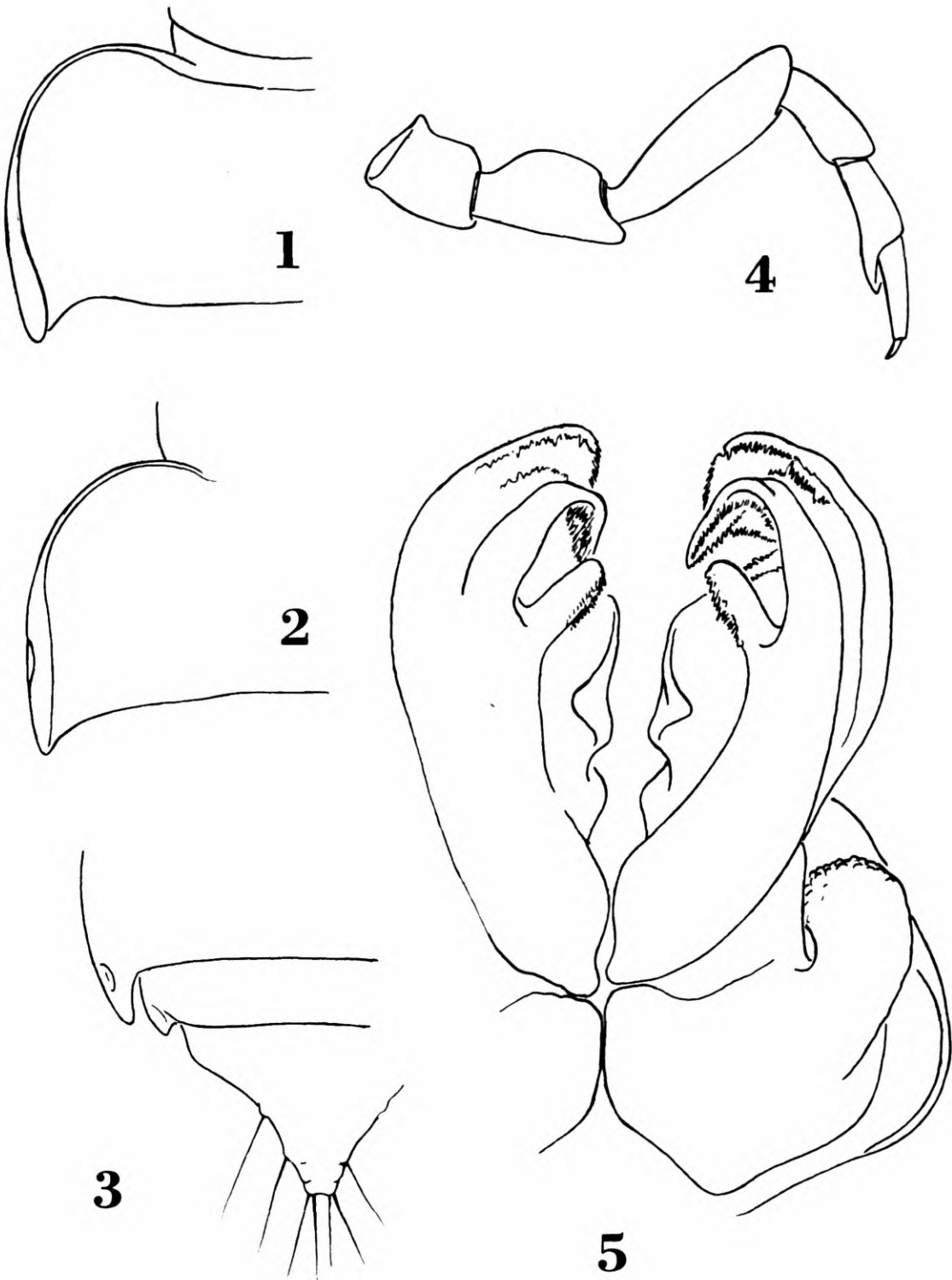


Fig. 1-5. *Peltoeurydesmus sanctus*, sp. n.; fig. 1, left paranotum of 8th body segment, dorsal aspect; fig. 2, left paranotum of 13th segment; fig. 3, epiproct and parts of segments 18 and 19, dorsal aspect; fig. 4, leg from segment 10; fig. 5, gonopods, in situ, all setae omitted, showing lateral prefemoral process. Figs. 1-4 drawn X 15, fig. 5, X 30.

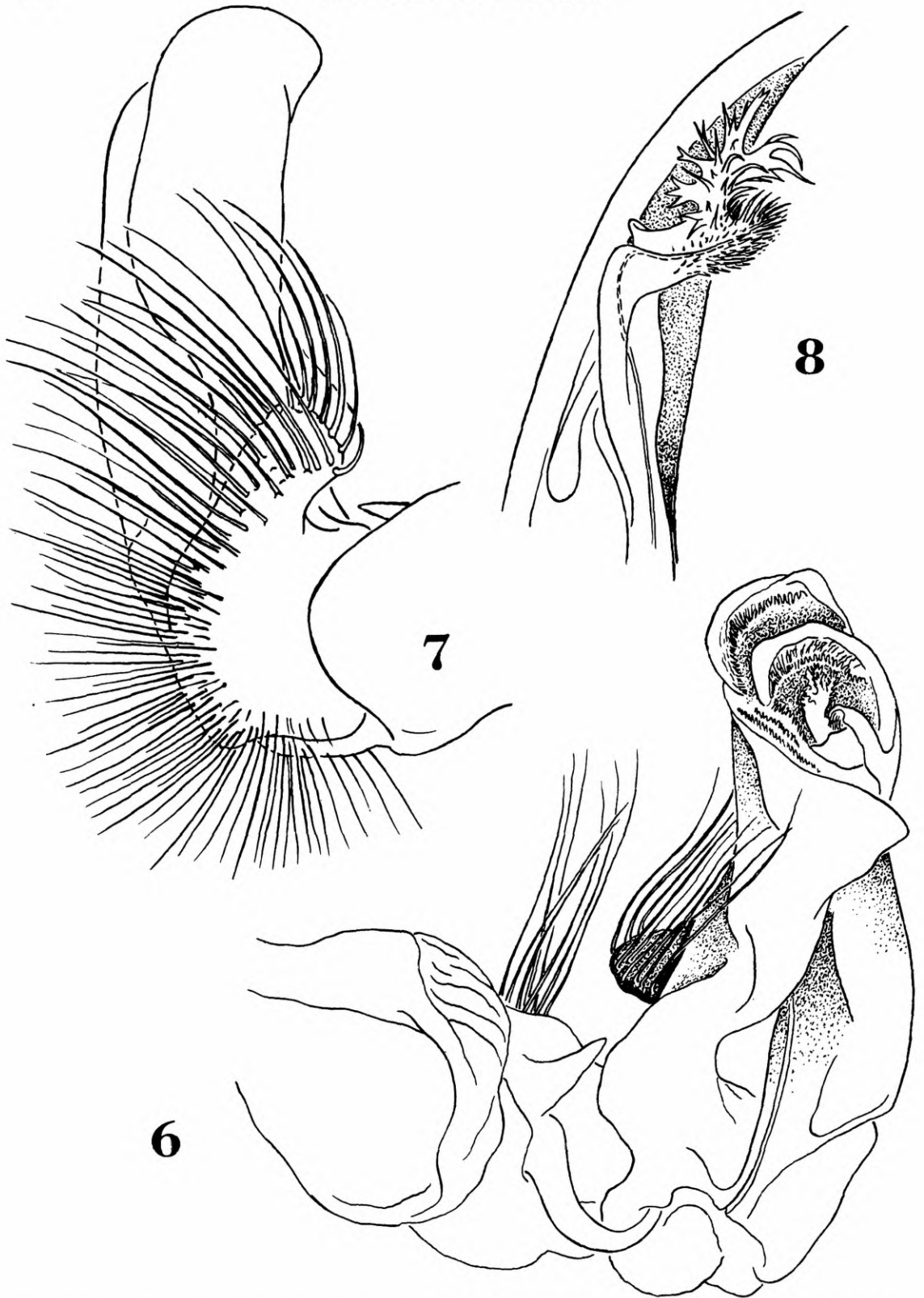


Fig. 6-8. *Peltoeurydesmus sanctus*, s.p. n.; fig. 6, left gonopod, mesal aspect; fig. 7, the same gonopod, lateral aspect (only part of the larger setae shown to enhance clarity); fig. 8, solenomerite, dislodged from its normal position between tibiotarsus and prefemoral process, to show detailed structure. Figs. 6 and 7 drawn X 45, fig 8 X 90. All drawings from holotype.

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