

ENTOMOLOGISCHE MITTEILUNGEN
aus dem
Zoologischen Staatsinstitut u. Zoologischen Museum
Hamburg

Herausgeber: Prof. Dr. Herbert Weidner

3. Band

Hamburg

Nr. 59

Ausgegeben am 15. November 1967

The identity of *Cordyloporus sulcatus* ATTEMS, 1898:
another diplopod riddle solved ¹⁾

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(with 7 figures)

The class Diplopoda probably contains at the present a greater percentage of *n o m i n a d u b i a* at the species level than any other animal group of comparable size and rank. The chief reason for this situation is that although, after the first century of milliped taxonomy, systematic characters have been derived chiefly from male genitalia instead of from external body features very few workers have taken the trouble to re-describe the type specimens of earlier species. Because of the basic importance of gonopod structure in the definition of species, it follows naturally that any published description based upon females, or one that fails to include an illustration of the gonopods, is predestined to a career of exasperating obscurity. Since such names are always potential threats to nomenclatorial stability, a high premium is desirably attached to their disposal at the earliest opportunities.

I am glad to be able to strike from the long list of enigmatic species a combination that has been on the books ever since 1898. The history of this name and the details supporting its present disposition may be recounted in the following paragraphs.

The combination *Cordyloporus sulcatus* was first published on page 364 of ATTEMS' well-known „System der Polydesmiden“, as one of the six originally-included members of the new genus *Cordyloporus*. The description is fairly detailed, and gives a verbal account of the male genitalia, but unfortunately, no illustration. The account ends with the remark „Fundort der dem Hamburger Museum gehörigen Thiere unbekannt“.

In the absence of gonopod drawings, the species was essentially unidentifiable from the instant it was published, and has come down to the

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present time rather dubiously attached to the genus *Cordyloporus* (ATTEMS, 1938: 379) or to the presumptive senior synonym *Prepodesmus* (CHAMBERLIN, 1952: 330). Ever since 1959, when I commenced work toward revision of the Prepodesmidae, the existence of the name *sulcatus* has been a source of vexation, because there are several characters mentioned in the original description that would seem to exclude it from this family.

The type specimen is still in existence, and in 1960, I gave it a rather cursory examination during a visit to the Hamburg Zoological Museum. Owing to time limitations, and the fact that I found no gonopods in the tube, I recorded the observations merely that the type was a female and apparently is a chelodesmid rather than a prepodesmid. Moreover, the bottle contained a label „Fundort? (vielleicht Bahia, Kpt. AHLERS ded. No. 65)“ which therefore seemed likely to be correct. So nothing further was done about *sulcatus* until 1967, when I noticed that ATTEMS had described the gonopods of a single holotype, so that my assumption that the specimen was a female was obviously incorrect. Thinking that possibly the gonopods had become detached and hidden somewhere within some of the body segments, I appealed to my colleague Dr. GISELA RACK to send me the type for re-examination. This she promptly did, and I could ascertain that it is in fact a male, but with the gonopods removed (presumably by ATTEMS, as it was his custom to retain these appendages in his personal collection).

However, although the gonopods are missing, other features of the specimen are singular enough to remind me strikingly of some Brazilian chelodesmoids that I had studied since 1960, and it did not require much time to recall them. The body size, peculiar formation of the paranota and peritremata, very large oval gonopod aperture with produced caudal edge, and formation of the anterior sterna all point to the group of species from northeastern Brasil that includes *tuberculiporus* ATTEMS, 1898, *lar-tiguei* SILVESTRI, 1897, and *expansus* BRÖLEMANN, 1903.

Having no specimens of these various species on hand for direct comparison, I checked the type of *sulcatus* against their original descriptions, and found essential agreement in all particulars with that of *tuberculiporus*. But during this procedure the discovery was also made that the description of *sulcatus* is virtually verbatim that of *tuberculiporus*, and I feel sure that this similarity goes beyond mere coincidence. Both commence with the same words only slightly varied: „Das einzige dieser Beschreibung zu Grunde liegende Exemplar ist schlecht erhalten. Die Farbe scheint dunkel kastanienbraun mit gelben Kielen gewesen zu sein“ for *sulcatus* (p. 364) and „Das einzige Exemplar ist schlecht erhalten, daher nicht mehr Alles genau constatirbar. Die Farbe scheint dunkel kastanienbraun gewesen zu sein, mit gelben Kielen“ for *tuberculiporus* (p. 384).

The gonopod description for *sulcatus* begins „Der Schenkeltheil mehr kurz und gedrungen, trägt die vollständig getrennten zwei Äste.“ and that for *tuberculiporus*: „Schenkel kurz und gedrungen. Haupt- und Nebenast vollständig getrennt.“ The interested reader can compare the remainder of these accounts to satisfy himself of their virtual identity.

Although no locality was cited for *sulcatus*, the Fundort for *tuberculiporus* is given as „Bahia?“ This information, even to the interrogation mark, is present on the label with the *sulcatus* type. Finally, although the

name *tuberculiporus* was based upon a male specimen said to belong to the Hamburg Zoological Museum, there is no record of anything by this name occurring in the myriapod collections. WEIDNER (1960: 84) mentions the species only with the remark „fehlt“.

Taking all of the foregoing information into account, it seems quite obvious to me that both of the foregoing names were in fact based upon the same type specimen, possibly through a lapse of memory or the decision to change the name or the description without making the necessary deletion of the original account from the manuscript.

The name *sulcatus* has a 20-page priority in the „System der Polydesmiden“, but has apparently been mentioned nominally only two or three times since 1898, whereas the name *tuberculiporus*, having been supported by gonopod illustration, is considerably better-known and has been published at least six times. It certainly seems in the best interests of stability to preserve *tuberculiporus*, and I herewith exercise the „right of first reviser“ in declaring the two names synonymous, to regard *Cordyloporus sulcatus* as a junior objective synonym.

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It may be useful to append a few remarks on the status of *tuberculiporus* and the genus to which it appears referable.

The name has recently been placed in the synonymy of *Catharodesmus lartiguei* SILVESTRI 1897 by OTTO SCHUBART (1948: 87) who at that time considered both names referable to the old genus *Leptodesmus*. In my opinion, the two are quite distinct not only in details of gonopod structure, but in paranotal outline as well: in *lartiguei* the ozopores are located in rather ordinary looking peritrematic swellings continuous with the scapular edge whereas in *tuberculiporus* — as the name implies — each peritreme is a distinctly set-off ovoid swelling (see figures 2—4). On the other hand, it does seem evident that SCHUBART correctly identified material from Pernambuco as *lartiguei*. His illustration of the gonopod corresponds very closely with SILVESTRI's original.

In the same paper, Dr. SCHUBART described and illustrated a congeneric species from Pernambuco that he identified with the long-enigmatic *Leptodesmus expansus* of BRÖLEMANN, 1903, whether rightly or wrongly cannot be decided at the present. But the list must be still extended by the addition of *Pseudoleptodesmus tricuspis* ATTEMS, 1931, which is certainly very similar to the species already mentioned, differing mainly in that the solenomerite is separated nearly down to the gonopod prefemur.

Recognizing that *tricuspis* is not congeneric with the type species of *Pseudoleptodesmus* (*rubescens* GERVAIS, by monotypy), Dr. SCHUBART in 1955 erected the monotypic genus *Eucampesmella* for it. It now appears that this category is not only valid but includes minimally five species from the northeast of Brasil (it is uncertain whether two Peruvian species referred to *Eucampesmella* by Dr. OTTO KRAUS actually are congeneric with *tricuspis*). These may be nomenclatorially summarized as follows:

Genus *Eucampesmella* SCHUBART

Eucampesmella SCHUBART, 1955, Arq. Mus. Nac. (Rio), 42: 509. Type species: *Pseudoleptodesmus tricuspis* ATTEMS, 1931, by original designation.

Diagnosis: Moderate to large-sized chelodesmids with broad paranota; prominent cristate pleurosternal carinae; smooth metatergites;

normal pore formula; and unmodified sterna. — Sterna of segments 3—5 of males usually with low paramedian paired knobs; prefemora arched dorsally; no subtarsal pads or other modifications; gonopod aperture unusually large, transversely oval, reducing the prozonite to a thin strip in front, the posterior edge elevated and projecting back between coxae of 8th pair of legs. — Gonopods large and robust, the coxae massive and attached to a broad, subtrapezoidal sternum, nearly or completely concealing the prefemur on the lateral side, without coxal apophyses on the dorsal side, no median field of setae; prefemur continuing main axis of coxa, densely setose, with a large distally expanded or branched prefemoral process set on it at a right angle; acropodite demarcated by a prominent basal constriction, likewise set at a right angle to prefemur, usually broadened or laminate with the solenomerite originating about at the midlength (at the base in one species).

Species: At least five (perhaps six) species are referable to this genus in the present concept, listed as follows:

Eucampesmella tricuspis (ATTEMS)

Pseudoleptodesmus tricuspis ATTEMS, 1931, Zoologica 30 (79): 27, figs. 36—39.

Leptodesmus (*Pseudoleptodesmus*) *tricuspis*: ATTEMS, 1938, Tierreich 69: 41.

Leptodesmus tricuspis: SCHUBART, 1946, An. Acad. Brasileira Cienc. 18: 196.

Distribution: Brasil, no precise locality known.

Eucampesmella tuberculipora (ATTEMS), new combination

Cordyloporus sulcatus ATTEMS, 1898, Denkschr. Akad. Wien, 67: 364. **New Synonymy!**

Leptodesmus tuberculiporus ATTEMS, 1898, Denkschr. Akad. Wien, 67: 384, fig. 124.

Pseudoleptodesmus tuberculiporus: ATTEMS, 1931, Zoologica, 30 (79): 31, fig. 46.

Leptodesmus tuberculiporus: ATTEMS, 1938, Tierreich, 69: 42, fig. 45.

Distribution: ? Bahia, the dubious type locality. Recorded in 1931 with only the locality "Soledad" of which there are dozens of such place names in Brasil.

Eucampesmella lartiguei lartiguei (SILVESTRI), new combination

Catharodesmus lartiguei SILVESTRI, 1897, Ann. soc. ent. Belg., 41: 358, figs. 45—48.

Leptodesmus lartiguei: SCHUBART, 1948, Rev. Brasil. Biol. 8: 87, figs. 1, 2.

Leptodesmus lartiguei lartiguei: SCHUBART, 1956, Rev. Brasil. Biol., 16: 424.

Distribution: Pernambuco (the type locality), many localities cited by SCHUBART (1948); also reported from Ceara and Alagoas by SCHUBART (1956) but on the basis of female and immature specimens only, such reports somewhat doubtful.

Eucampesmella lartiguei ferrii (SCHUBART), new combination

Leptodesmus lartiguei ferrii SCHUBART, 1956, Rev. Brasil. Biol., 16: 423, figs. 2—4.

Distribution: Bahia (Mun. Gloria), the type locality.

Eucampesmella expansa (BRÖLEMANN), new combination

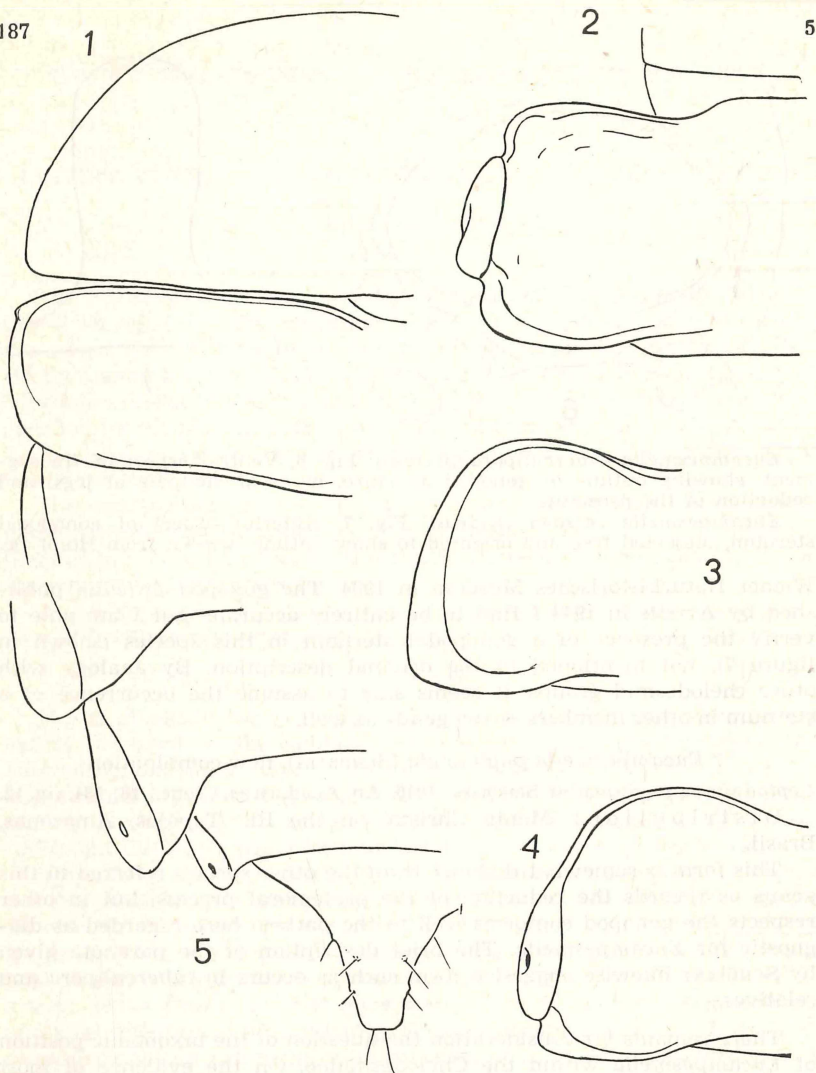
Leptodesmus expansus BRÖLEMANN, 1903, Ann. soc. ent. France, 71: 672, figs. 23—24.

Leptodesmus expansus: SCHUBART, 1948, Rev. Brasil. Biol., 8: 90, figs. 3, 4.

Distribution: Pernambuco (the type locality), Mun. Boa Vista, (SCHUBART).

Eucampesmella serrana (ATTEMS), new combination (Figure 7)

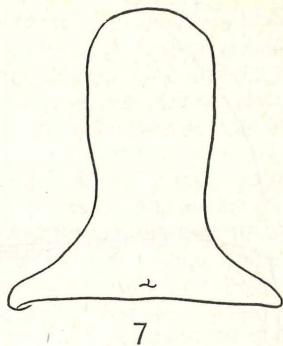
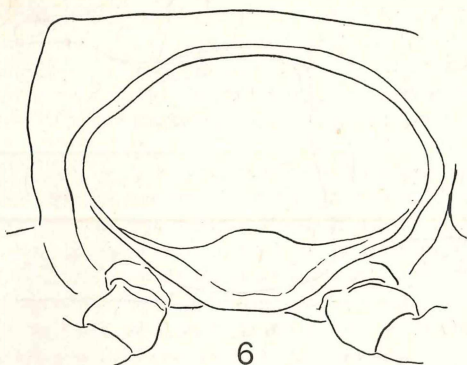
Leptodesmus (*Pseudoleptodesmus*) *serranus* ATTEMS, 1944, Zool. Anz., 144: 277, fig. 1.



Eucampesmella tuberculipora (ATTEMS). Fig. 1, Left side of collum and paranotum of 2nd segment. Fig. 2, Left paranotum of segment 7, showing the abruptly demarcated peritreme. Fig. 3, Left paranotum of segment 14, poreless. Fig. 4, Left paranotum of segment 15, the peritreme of more or less typical polydesmoid form. Fig. 5, Left side of posterior end of body. All drawings dorsal aspect, made from the holotype.

Distribution: "Brasilien, Serra." This locality is so ambiguous as to be meaningless unless there is some such place especially designated in the route of the Austrian Brazilian Expedition of 1903—05. One possibility is the city by the name Serra located a few kilometers north of Vitoria, Espirito Santo.

Though the kind cooperation of my colleague Herr Dr. GERHARD PRETZMANN, I was able to restudy the holotype of *serranus* during a visit to the



Eucampesmella tuberculipora (ATTEMS). Fig. 6, Ventral aspect of 7th segment, showing outline of gonopod aperture, bases of 8th pair of legs, and reduction of the prozonite.

Eucampesmella serrana (ATTEMS). Fig. 7, Anterior aspect of gonopodal sternum, dissected free and oriented to show outline. Drawn from Holotype.

Wiener Naturhistorisches Museum in 1964. The gonopod drawing published by ATTEMS in 1944 I find to be entirely accurate, but I am able to verify the presence of a gonopodal sternum in this species (shown in figure 7), not mentioned in the original description. By analogy with other chelodesmid groups, it seems safe to assume the occurrence of a sternum in other members of the genus as well.

? *Eucampesmella pugiuncula* (SCHUBART), new combination

Leptodesmus pugiunculus SCHUBART, 1946, An. Acad. Bras. Cienc., 18: 184, fig. 12.

Distribution: Monte Christo, on the Rio Tapajos, Amazonas, Brasil.

This form is somewhat disjunct from the other species referred to this genus as regards the reduction of the prefemoral process, but in other respects the gonopod conforms well to the pattern here regarded as diagnostic for *Eucampesmella*. The brief description of the paranota given by SCHUBART likewise suggest a form such as occurs in *tuberculipora* and relatives.

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There remains for consideration the question of the taxonomic position of *Eucampesmella* within the Chelodesmidae. On the evidence of most features, one notes a similarity with genera of the tribe Telonychopodini and in fact one species (*lartiguei*) was even first described in *Catharodesmus*. The very large gonopod aperture, prominent gonopodal sternum, and general lack of secondary sexual characters in the males are telonychopodine characters. On the other hand, the limbus is unmodified by setae or fringing, and the peritreme is obviously specialized in form. Probably it will become desirable to distinguish another tribe to include *Eucampesmella*, *Macrocoxodesmus*, *Leptherpum*, and perhaps *Storhtotropis*, in which the gonopod opening is unusually large, the gonopod coxae prolonged outside the prefemora and lacking coxal apophyses, and the limbus unmodified.

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Zeitschrift/Journal: [Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg](#)

Jahr/Year: 1965

Band/Volume: [3](#)

Autor(en)/Author(s): Hoffman Richard L.

Artikel/Article: [The identity of Cordyloporus Attems, 1898: another diplopod riddle solved 183-188](#)