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CHELODESMID STUDIES. XX. MILLIPEDS OF THE NEW BRASILIAN TRIBE CORNALATINI

RICHARD L. HOFFMAN¹

ABSTRACT

The tribe Cornalagini is defined to include the two Brazilian genera Cornalatus Attems, 1938, and Obiricodesmus Schubart, 1955; in both taxa the paranota of males are slender, recurved, spiniform, and elevated about 45° above the dorsum, and the valves of the cyphopods form a deep rounded distal cavity. The two species of Cornalatus, permutatus Attems and tabulus sp.n. (both from Espírito Santo), differ gonopodally from those of Obiricodesmus in the presence of a very large laminate process on the ventral side of the femoral region. Polydesmus rosascens Brandt, studied from the original type specimen and freshly collected material, is assigned to Obiricodesmus as a close relative of O. brasiliae, it appears to be restricted to the Serra do Mar, SP. The population from Ilha São Sebastião referred by Schubart to O. flavomaculatus may be a distinct subspecies or species, as shown by gonopod characters. The five species of Obiricodesmus occur in the Serra do Mar, Serra da Mantiqueira, and Serra dos Órgãos.

Despite extensive variation in structure of the male genitalia, the chelodesmid millipeds of southeastern Brasil adhere fairly closely to a uniform plan of body form and coloration. Most species tend to be moderate in size (30-60 mm long) and relatively narrow (usually broadest at segment 3), with laterally depressed paranota and a generally uniform reddish coloration. A striking exception occurs in the genus *Odontopeltis* whose species are noteworthy for their great size (up to 120 mm long), large, horizontal, laterally dentate paranota, and nearly black dorsum with bright yellow paranotal spots. A second kind of deviation from the local norm is provided by the subjects of the present paper: small slender creatures in which the midbody paranota are widely separated, elongated, and set on the metazona at an angle of about 45° from the horizontal. The adaptive significance of this body form remains unknown, although it recurs randomly amongst other families: in *Rhachidomorpha* (Rhachodesmidae) in southern Mexico and in *Centrodosmus* (Paradoxosomatidae) in Sumatra, for instance.

Known since the early part of the last century (1839) the Brazilian species under consideration have experienced all of the usual complications that impede the study of tropical millipeds. Having had the opportunity to examine a variety of pertinent specimens, I venture at this time to present a short synopsis of a group that may be considered of tribal, rank, distinguished by combined features of genitalic and peripheral form. The existing family-group name Cornalagini (Verhoeff, 1941) is available to denominate this taxon.

Specimens have been studied at the Zoologisches Museum, Hamburg (ZMH), the Zoologisches Museum der Humboldt-Universität, Berlin (ZMB), and the Museu de Zoologia, Univer-

¹Virginia Museum of Natural History, Martinsville, Virginia 24112, USA.

cidade de São Paulo (MZUSP). I express my appreciation to Frau Dr. Gisela Rack, the late Dr. Wolfgang Crome, and Drs. P. E. Vanzolini and José L. Leme, who kindly made these investigations possible under the best conditions. I owe a special debt of gratitude to Prof. Alejo Mesa (UNESP, Rio Claro, SP) for the donation of critical material and the opportunity to visit the locality at which it was found.

Family Chelodesmidae Cook

Tribe Cornalatini Verhoeff, 1941

(nomen translatum herein, ex subfamily Cornalatinae)

Components: *Cornalatus* Attems, 1931; *Obiricodesmus* Schubart, 1955.

Diagnosis: Small chelodesmids (length less than 40 mm) of unusual body form. Segments distinctly constricted at midlength and not deeply telescoped, imparting a slender, submoniliform appearance; paranota of midbody segments (fig. 3) reduced in length, not occupying entire metazonal length, elongated and directed upward to as much as 45° from horizontal, curved posteriad and apically acuminate. Ozopores in normal sequence, located at apex of paranota in subovoid peritremata abruptly set off from paranotal edge. Stricture not distinctly defined. Sides of body unmodified. Epiproct (fig. 6) with relatively large lateral tubercles, not otherwise modified. Sterna broad, mutic, sparsely setose. Podomeres long and slender (fig. 4) especially tarsi. Sterna of anterior segments broad, without processes. Anterior legs of males unmodified.

Gonopod aperture of moderate size, transversely oval, edges not notably elevated. Gonocoxae narrowly separated, median sternal element (fig. 18) narrow dorsally, distinctly broader ventrad to level of cannulae; coxal apophysis present, moderately long, subacute, with two macrosetae near the base. Telopodite set against coxa at nearly a right angle; prefemoral region variable relative to size of telopodite, but in any case smaller than coxa, prefemoral process typically spatulate, short, simple; distal region (acropodite) of gonopod variable but usually in the form of a thin, flattened lamina carrying the prostatic groove along the lateral side to apex, a 180° torsion evident at the base.

Sternum and coxae of 2nd pair of legs of female unmodified; cyphopods (fig. 16) large, their apices visible in ventral aspect behind coxae; oriented so the distal surface is directed posteriad with apical third of this surface deeply excavate; opeculum large, nearly in contact with the excavation.

Distribution: Southeastern Brasil, states of Espírito Santo, Rio de Janeiro, São Paulo, and Minas Gerais. Most of the known species occur in the Serra de Mantiqueira and Serra do Mar (fig. 23).

Remarks: Despite the superficially striking difference in gonopod structure between *Cornalatus* and *Obiricodesmus*, the overall similarity in body form and structure assures that these two genera are closely related. Already Schubart (1956) noted the "certa semelhança" of the two in terms of peripheral characters, and relied largely upon the relative brevity of the acropodite in *Obiricodesmus* to separate the two taxa. He was mistaken, however, to emphasize that the prefemur was "muito comprido" in opposing *Obiricodesmus* to other genera, since in fact it is the distal elements of the gonopod which have been condensed (as a comparison of the prefemora with the coxae will show).

In any event, the form of the paranota implies a relatively derived status for the tribe, although other character systems such as anterior male legs and sterna show little or no modification. Cyphopod structure is as good as unknown for most chelodesmid genera, but among those known to me, the form seen in the Cornalatini is so distinct as to constitute, at least provisionally, perhaps the most convincing apomorphy for the taxon.

A possible third member of this tribe is represented by a species named *Leptodesmus corniger* by Brolemann (1903) from "Rio Grande", São Paulo. Brolemann placed this species in his subgenus *Rachidomorpha*, implying relationship with *O. brasiliae*, and his drawings of body form reflect some external similarities with that species. The gonopod coxa, however, is not shown to have a dorsal apophysis, and a final decision on the status of *corniger* must await the

study of new material of both sexes. Schubart's 1946 summary of Brazilian "Leptodesmus" included the species but it was omitted from his later (1955) treatment of the chelodesmoids of São Paulo.

Lastly, one other possible component of the Cornalatini require also a future assessment. This is the genus *Heptaporodesmus* (Schubart, 1950), of the Serra dos Orgãos, RJ, whose species show a gonopod structure generally similar to that of *Obiricodesmus*. The paranota, however, are strongly reduced to the extent that if the genus is to be regarded as cornalatine, it must occupy a very disjunct position vis-à-vis the others. Again, knowledge of cyphopod structure will be crucial to settle this point.

Key to the genera of Cornalatini

1. Gonopod with large laminate process originating at base of acropodite on ventral side (fig. 9); acropodite equalling or exceeding length of prefemur, and set off by a distinct cingulum (Espírito Santo) *Cornalatus*
 Gonopod without basal process on femoral region (fig. 17); acropodite much shorter than length of prefemur and not set off by a basal cingulum (Rio de Janeiro, São Paulo, and Minas Gerais) *Obiricodesmus*

Cornalatus Attems

Rhachidomorpha (in part, nec DeSaussure, 1859) Attems, 1901, Mitt. Naturh. Mus. Hamburg, v. 18, p. 95.

Cornalatus Attems, 1931, Zoologica (Stuttgart), v. 30 (no. 79), p. 40. Type species, *Polydesmus (Rhachidomorpha) tarascus* DeSaussure, 1859, by monotypy.

Cornalatus: Attems, 1938, Das Tierreich, v. 69, p. 61. Type species: *Cornalatus permutatus* Attems, 1938, a new name proposed for the species misidentified as *tarascus* in 1931, by original designation.

Cornalatus: Hoffman, Bull. Zool. Nomencl., v. 43, p. 366. Proposal to ICZN to validate *Cornalatus permutatus* as type species of *Cornalatus*.

Diagnosis: With the characters of the tribe, distinguished from *Obiricodesmus* by structure of the gonopods, particularly the presence of a large, laminate process on ventral side of the acropodite.

Distribution: The two species referred to this genus are known only from the state of Espírito Santo, Brasil.

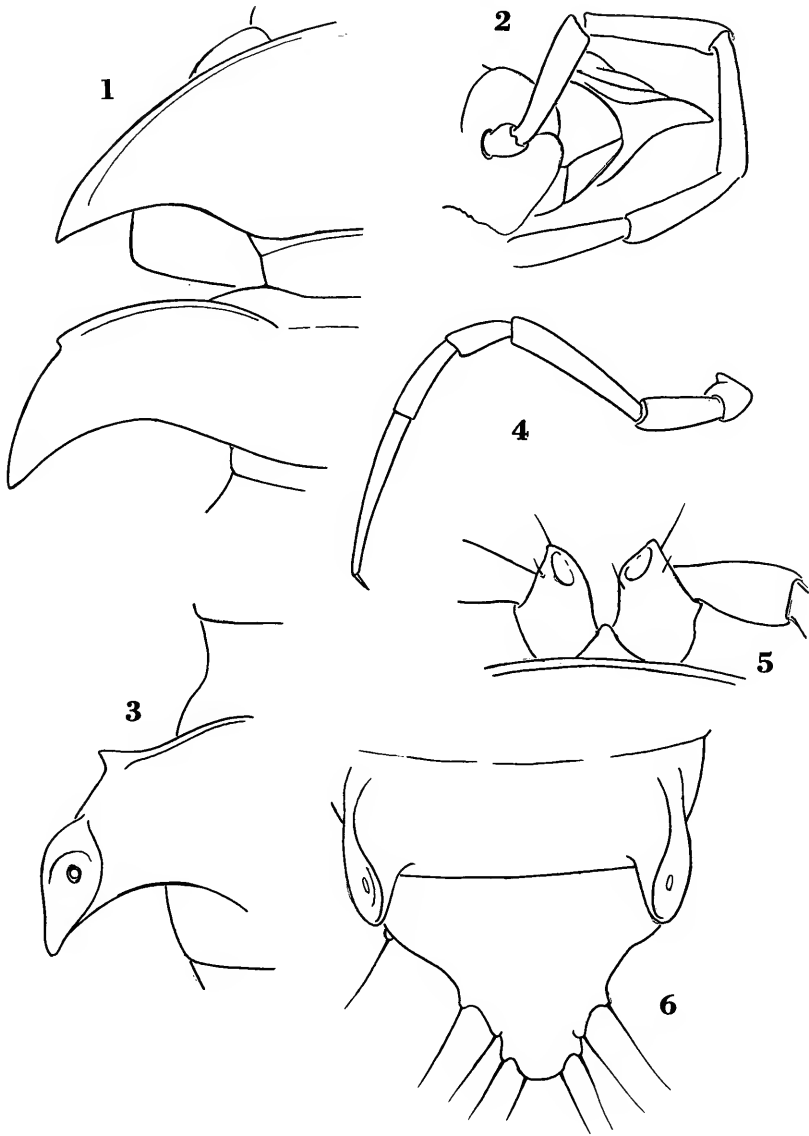
Key to the species of *Cornalatus*

1. Paranota of midbody segments narrow, only half length of metazona at base, lateral edge with acute dentation, apex of peritreme subacute (fig. 3); prefemoral process of gonopod short, only 2/3rds length of acropodite (Fig. 7) *permutatus* Attems
 Paranota of midbody segments broader, at base nearly as long as metazonum, lateral edge smooth, apex of peritreme rounded (Fig. 11); prefemoral process of gonopod nearly as long as tip of acropodite and much more robust than in *permutatus* (fig. 10)
 *tabulus*, sp. n.

Cornalatus permutatus Attems

Figs. 1-8, 23

Leptodesmus (Rhachidomorpha) tarascus (nec DeSaussure, 1860), Attems, 1901, Mitt. Naturh. Mus. Hamburg, v. 18, p. 95, figs. 24, 25. Mis-identification of specimens from Espírito Santo, Brasil.



Figs. 1-6. *Cornalatus permutatus* Attems: 1, paranota of collum and second segment, left side in dorsal aspect; 2, left antenna and side of head, anterolateral aspect; 3, left paranotum of 10th segment, dorsal; 4, midbody leg; 5, coxae of 2nd pair of legs, aboral aspect; 6, posterior end of body, dorsal. Drawings from holotype.

Cornalatus tarascus (nec DeSaussure, 1860): Attems, 1931, *Zoologica* (Stuttgart), v. 30, no. 79, p. 40, figs. 58, 59.

Cornalatus permutatus Attems, 1938, *Das Tierreich*, v. 69, p. 61, figs. 66, 67. Male holotype, Zool. Mus. Hamburg, labeled "Espírito Santo, Brasilien" without further details.

Cornalatus permutatus: Attems, 1943, *Senckenbergiana*, v. 26, p. 444.

Cornalatus permutatus: Hoffman, 1986, *Bull. Zool. Nomencl.*, v. 43, p. 366.

The last paper cited above gives a detailed summary of the tangled nomenclatorial background of this species. The International Commission on Zoological Nomenclature has been requested to designate *Cornalatus permutatus* Attems, 1938, as type of the genus instead of *Polydesmus* (*Rhachidomorpha*) *tarascus* DeSaussure, 1860, which Attems originally cited in error.

To the best of my knowledge this species remains known only from the male holotype in the Hamburg museum, taken at an unspecified place in state of Espírito Santo. The descriptions of this animal published by Attems in 1901 and 1938 are fairly accurate, and the drawings given here (made from the same specimen) give an adequate impression of general body form, legs, antennae, and male genitalia. Differences between this and the only other known member of the genus are set out in the foregoing key to species.

***Cornalatus tabulus*, sp. n.**

Figs. 9-13.

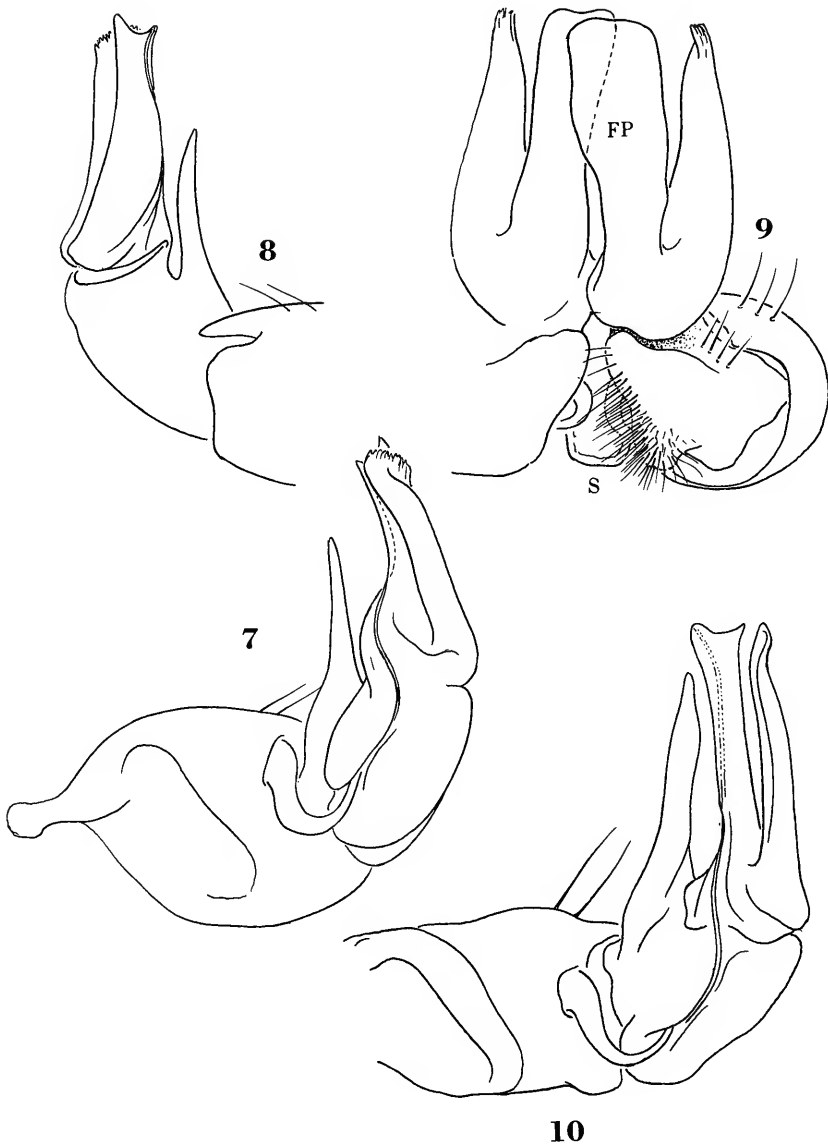
Material: Male holotype and female paratype (MZUSP 803) from Cachoeira de São Lourenço, Mun. Santa Teresa, Espírito Santo, Brasil; Otto and Jandira Schubart leg. 2 November 1944.

Diagnosis: Differing from *C. permutatus* in details of segmental form and gonopod structure as stated in the foregoing key to species.

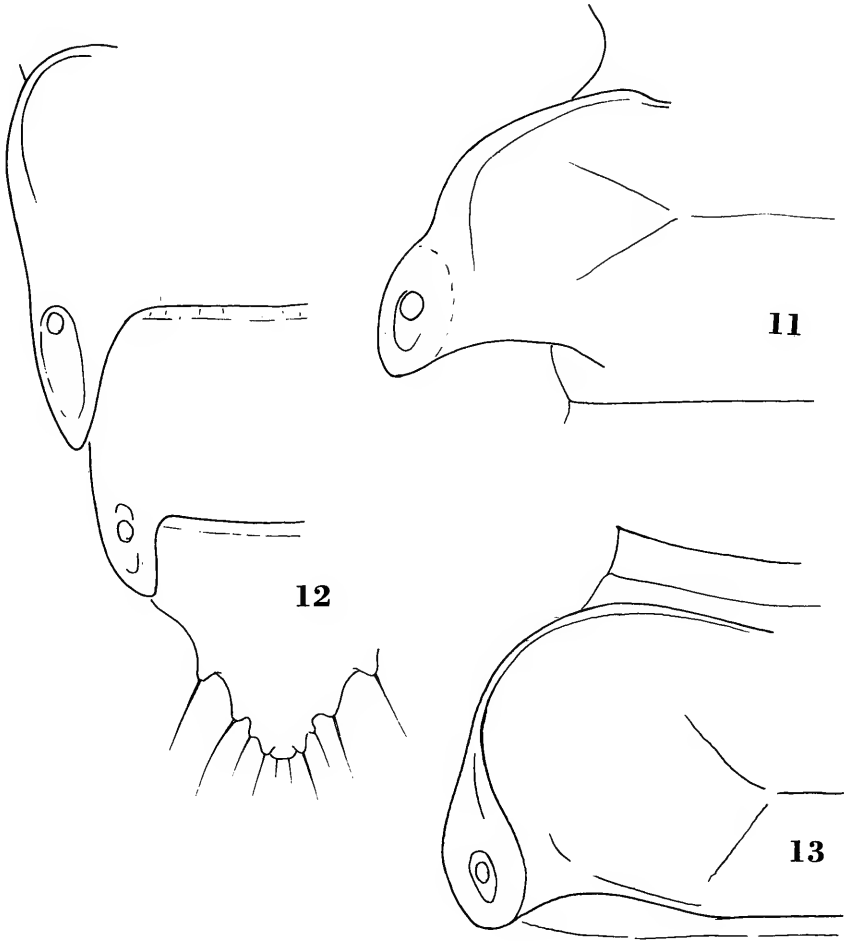
Holotype: Adult male, length ca. 30 mm (specimen fragmented), body width across paranotal apices ca. 3.5 mm over segments 5-16, the more anterior segments very slightly narrower (ca. 3.4 mm), but posterior more abruptly narrowed: 2.6 mm at 17th segment and 2.0 mm at 18th. Coloration at present uniformly light brown, legs, antennae, and sterna lighter, and perhaps yellow in life.

Head unmodified, overall sparsely setose. Antennae long (ca. 7.2 mm), extending back to 6th segment. Segments prominently constricted around stricture, prozona only moderately telescoped into metazona, with paranota thus broadly separated on all but the last few segments; metazona with broad and shallow transverse sulcus between paranotal bases (evident only in optimal perspective). Paranota of collum and 2nd segment nearly horizontal, those of subsequent segments increasingly elevated, up to an angle of about 45° by 6th, this inclination persisting back over most of body, but posteriorly becoming gradually lower and paranota of segments 17-19 almost horizontal. Paranota of form shown in fig. 11, those of poreless segments nearly acute distally, the others terminated in distinctly-set off apical peritremata; in general, paranota less "spiniiform" than in *C. permutatus* (cf. fig. 3), broader at the base. Surface of metazona overall smooth to very minutely granulate, no rows of tubercles or setae evident. Paranota of segment 17 very strongly produced caudad into slender processes nearly as long as median dorsal length of segment, those of 18th and 19th segments substantially shorter (fig. 12). Epiproct without modification, subconical in shape with prominent lateral tubercles (fig. 12). Paraprocts and hypoproct typical for the family.

Sides of metazona smooth, without supracoxal knobs or carinae. Podosterna moderately developed, relatively broad, smooth, unmodified; legs long, similar to those of *C. permutatus* (fig. 4), tarsal podomere somewhat longer than femur and only half its diameter, none of the legs with adenostyles, subarsal pads, or prefemoral knobs; anterior sterna without paramedian processes.



Figs. 7-10. Gonopod structure in *Cornalatus*: 7, left gonopod of holotype of *C. permutatus*, mesial aspect; 8, the same gonopod, lateral aspect; 9, gonopods of *C. tabulus*, in situ, ventral aspect; 10, left gonopod of *C. tabulus*, mesial aspect, from holotype. Abbreviations: S, sternum; FP, femoral process



Figs. 11-13. *Cornalatus tabulus*, sp. n.: 11, left paranotum of 10th segment of holotype, dorsal; 12, left side of posterior end of body of holotype, dorsal; 13, left paranotum of 10th segment of female paratype, dorsal.

Gonopod aperture small, transversely oval, its rim not elevated. Gonopods in situ as shown in fig. 9, the telopodites extending forward to rear edge of 6th sternum. A moderate median sternal element present. Coxae approximate but not touching, femoral processes of the gonopods overlapping apically. Coxae with short acute apophysis placed dorsolaterally, with two macrosetae at its base; prefemoral region forming about a 45° angle with longitudinal coxal axis, setose as usual but lacking enlarged distal hairs; prefemoral process large, lanceolate, nearly as long as main branch of telopodite (fig. 10); acropodite set off from prefemur by evident textural difference on median side and by prominent cingulum ventrally and laterally; femoral region with long spatulate, distally truncate branch (fig. 9, FP). Prostatic branch of acropodite (?tibiotarsus, ?solenomerite) straight, parallel-sided, distally expanded into two conjoint subtriangular projections, one of which carries the prostatic groove; latter on mesal side at base, thereafter curving around to the lateral over the distal half, suggesting 180° torsion.

Paratype: Adult female, length ca. 30 mm, width 3.8 mm between segments 10 and 16, narrowed very slightly anteriorly, more abruptly posteriorly. In general similar to male in external features, except paranota much less elevated and spiniform (fig. 13), sterna broader, and legs more slender. Color largely altered by preservation but appearing to have been darker than in the male. Cyphopods similar to those figured for *Obiricodesmus rosascens*.

Name: *Tabulus* is the Latinized form of the proper name Mesa, this species being named for my colleague, Prof. Alejo Mesa (Rio Claro), a specialist on Neotropical Orthoptera.

Obiricodesmus Schubart

Obiricodesmus Schubart, 1955, Arq. Mus. Nac. Rio de Janeiro, v. 42, p. 512. Type species: *Rachidomorpha brasiliae* Brolemann, 1902, by original designation.
Obiricodesmus: Schubart, 1956, Rev. brasil. Biol., v. 16, p. 341.

Diagnosis: With the characters of the tribe, distinguished from *Cornalatus* by the absence of a large laminate ventral process from the femoral region of the gonopod.

Distribution: The five species referred to this genus occur in southeastern Brasil, chiefly in the Serra da Mantiqueira and Serra do Mar, states of São Paulo, Rio de Janeiro, and Minas Gerais.

Key to the species of *Obiricodesmus*

1. Apex of telopodite of gonopod distinctly curved ventrad (Fig. 19), when viewed in mesial aspect 2
Apex of telopodite directed more or less distinctly distad (Fig. 22) when viewed in mesial aspect 3
2. Apex of telopodite subtruncate; prefemoral process smaller, dorsal side rounded in profile (Serra da Mantiqueira) *brasiliae* (Brolemann)
Apex of telopodite acutely narrowed; prefemoral process large, distally expanded, the apex acutely triangular (Serra do Mar) *rosascens* (Brandt)
3. Subapical ventral process of telopodite only a third the length of the solenomerite; prefemoral process divergent from acropodite at nearly a right angle (Serra dos Orgãos)
..... *terrigenus* (Attems)
Subapical ventral process of telopodite approximately as long as solenomerite; prefemoral process oriented nearly parallel to direction of acropodite 4
4. Prefemoral process short, not attaining level of base of solenomerite; metaterga with middorsal yellow markings *flavomaculatus* Schubart

Prefemoral process longer, attaining or surpassing level of base of solenomerite; metaterga without yellow median spots *rupestris* Schubart

Obiricodesmus brasiliae (Brolemann)

Rachidomorpha brasiliae Brolemann, 1902, Rev. Mus. Paulista, v. 5, p. 95, figs. 105-110. Male holotype (MZUSP) from Piquete, SP.

?*Rachidomorpha bicolor* Brolemann, 1902, Rev. Mus. Paulista, v. 5, p. 98, figs. 111-112. Female holotype (MZUSP) from Piquete, SP.

Obiricodesmus brasiliae: Schubart, 1955, Arq. Mus. Nac. Rio de Janeiro, v. 42, p. 512, fig. 1 (specimen from Campos do Jordão, SP).

Obiricodesmus brasiliae: Schubart, 1956, Rev. brasil. Biol., v. 16, p. 342, fig. 1.

This species has been adequately described and illustrated by both Brolemann and Schubart in the above-cited papers. Schubart's assumption that the two names *brasiliae* and *bicolor* are synonyms is probably correct, but cannot be verified until further collections have been made at Piquete to exclude the possibility that two species distinguishable by male genitalia exist at that locality (or, more likely, in the forested mountains west of it).

So far *brasiliae* is known only from the two localities mentioned above, which are about 40 km apart on the eastern slope of the Serra da Mantiqueira. As noted in the discussion of *O. rosascens*, the degree of separation between the two taxa is relatively slight, and it seems likely that subspecific status will eventually be found appropriate for them.

Obiricodesmus rosascens (Brandt)

(Figs. 14-20, 23)

Polydesmus rosascens Brandt, 1839, Bull. Sci. Acad. Imp. Sci. St. Petersburg, v. 20, p. 130.

Male holotype (ZMB 28) from "Brasilia" without further locality (Virmond leg.).

Polydesmus rosascens [sic] Gervais, 1847, in: Walckenaer & Gervais, Hist. nat. Insect. apt., v. 4, p. 113.

Polydesmus (*Rachidomorpha*) *rosascens* (by implication): De Saussure & Humbert, 1872, in: Mission sci. Mexique, Zool., v. 6(2): p. 38.

Polydesmus (*Rachidomorpha*) *rosascens*: Peters, 1865, Monatsb. Akad. Berlin, p. 536.

Rachidomorpha rosascens: Attems, 1898, Denks. Akad. Wien, v. 68, p. 410.

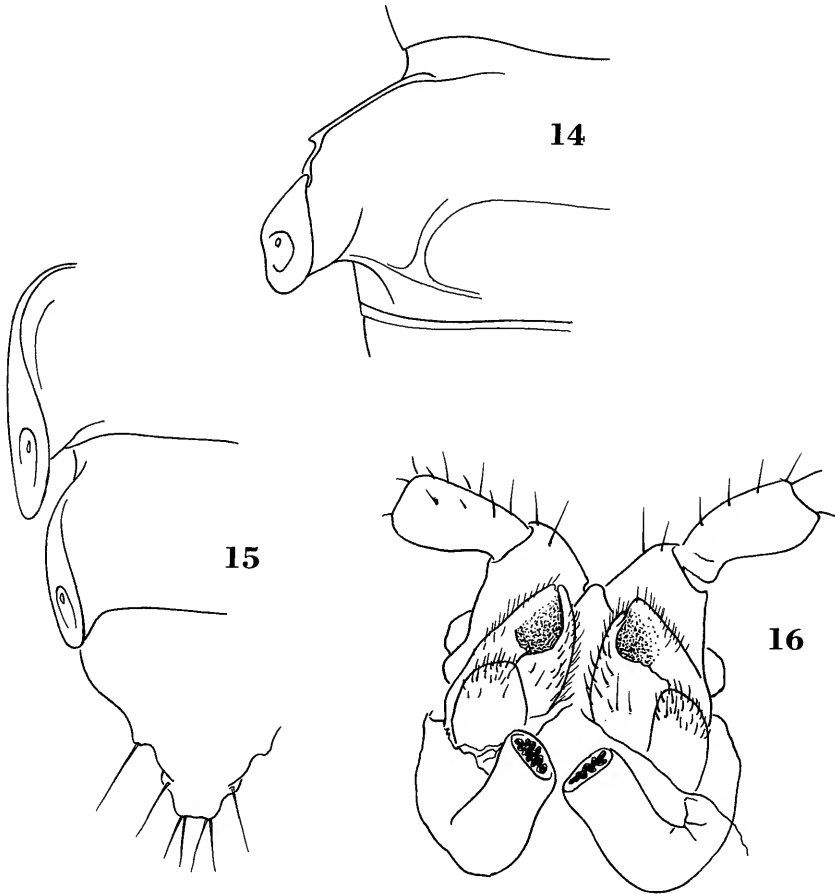
Leptodesmus (?*Rachidomorpha*) *rosascens*: Brolemann, 1909, Cat. Fauna Brasil, v. 2, p. 72.

Rachidomorpha rosascens: Attems, 1938, Das Tierreich, v. 70, p. 472.

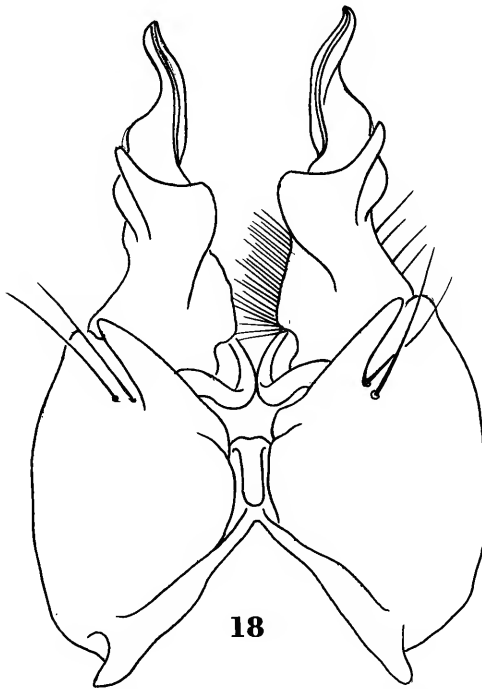
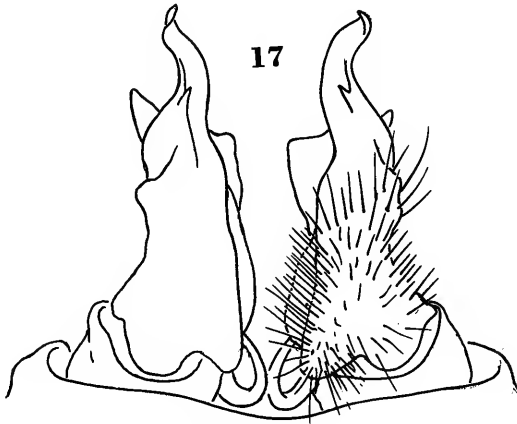
The history of this species has been one of uncertainty and neglect. The original description is brief and ambiguous, and the precise origin of the type specimen is unknown. All of the cited references after the first are only of nominal mention although a few of them do speculate on the status of the species.

In 1966 I was able to study the male holotype of *rosascens*, a dried and pinned specimen in nearly perfect condition in the Berlin collection; figures 14, 15, and 20 were drawn from this individual. Comparison of my notes and drawings with published information about *O. brasiliae* showed at once the close structural similarity of the two taxa, and the generic assignment incidentally provided some insight into the approximate provenance of the specimen: obviously somewhere in the coastal region of São Paulo or Rio de Janeiro. Only "Brasilia" was recorded on the pin label, and of the collector Virmond, no information was available to Papavero (1971) nor has any become available to me.

Recently the deficiencies in our knowledge of *rosascens* were corrected by a single serendipitous event: a male and female were collected near Ubatuba, S.P., and later transmitted to me by Prof. Alejo Mesa, thus giving the first definite locality and enabling an examination of female characters.



Figs. 14-16. *Obiricodesmus rosascens* (Brandt): 14, left paranotum of 10th segment, dorsal; 15, posterior end of body, left side, dorsal; 16, coxae of 2nd pair of legs, cyphopods, and bases of oviducts, aboral aspect. Figs. 14-15 from holotype, Fig. 16 from female from Ubatuba, S.P.



Figs. 17-18. *Obiricodesmus rosascens* (Brandt): 17, gonopods in situ, ventral aspect; 18, gonopods, dorsal aspect. Specimen from Ubatuba, S.P.

Comparison of drawings made from the holotype and from the Ubatuba male shows nearly complete agreement in structural details. The telopodite appears to be a little longer in the holotype, a difference which could scarcely reflect more than subspecific distinction between the two specimens (cf. figs. 19 and 20). Except for the noticeably different shape of the prefemoral process, the Ubatuba specimen might be referred to *O. brasiliae*, which emphasizes an obvious relationship between that taxon and *O. rosascens*. Eventually more material will be obtained which will delimit the geographic ranges of these organisms. It may be noted that, so far, *rosascens* has not been found in the two fairly-well collected localities "Boraceia" and Parana-piacaba in eastern São Paulo, nor at Rio de Janeiro, suggesting a restricted distribution in the coastal mountains.

The two gonopod drawings for *O. brasiliae* published by Schubart in 1955 and 1956 are in error as regards the course of the prostatic groove, shown by him to proceed along the mesial side of the acropodite for its entire length. My own examination of the holotype of *rosascens* as well as of the fresh material from Ubatuba shows clearly that the groove curves around to the lateral side of the gonopod just at the end of the prefemur (cf. figs. 18 and 19). The same condition occurs also in *O. flavomaculatus* (Fig. 22), and no doubt is constant for all members of the genus. Although a relatively small point anatomically, it is significant from both morphological and systematic points of view, constituting a 180° torsion of the telopodite beyond the prefemur, and therefore a derived character.

The material examined by me, shortly after its preservation, was almost uniformly orange, except for the antennae which were black in striking contrast. The colors of the female tended to be distinctly less intense.

These specimens were taken in February 1987 by F. A. Mello at a cacao plantation located about 4 km north of Ubatuba, S.P., and are now housed in the collection at São Paulo (MZUSP).

***Obiricodesmus flavomaculatus* Schubart**
(Figs. 21-23)

Obiricodesmus flavomaculatus Schubart, 1956, Rev. brasil. Biol. v. 16, p. 343, fig. 3. Male holotype (MZUSP) from Morro do Jaraguá, Mun. São Paulo, SP.

The original description is detailed and includes a good drawing of the right gonopod (incorrect only in the distal course of the prostatic groove).

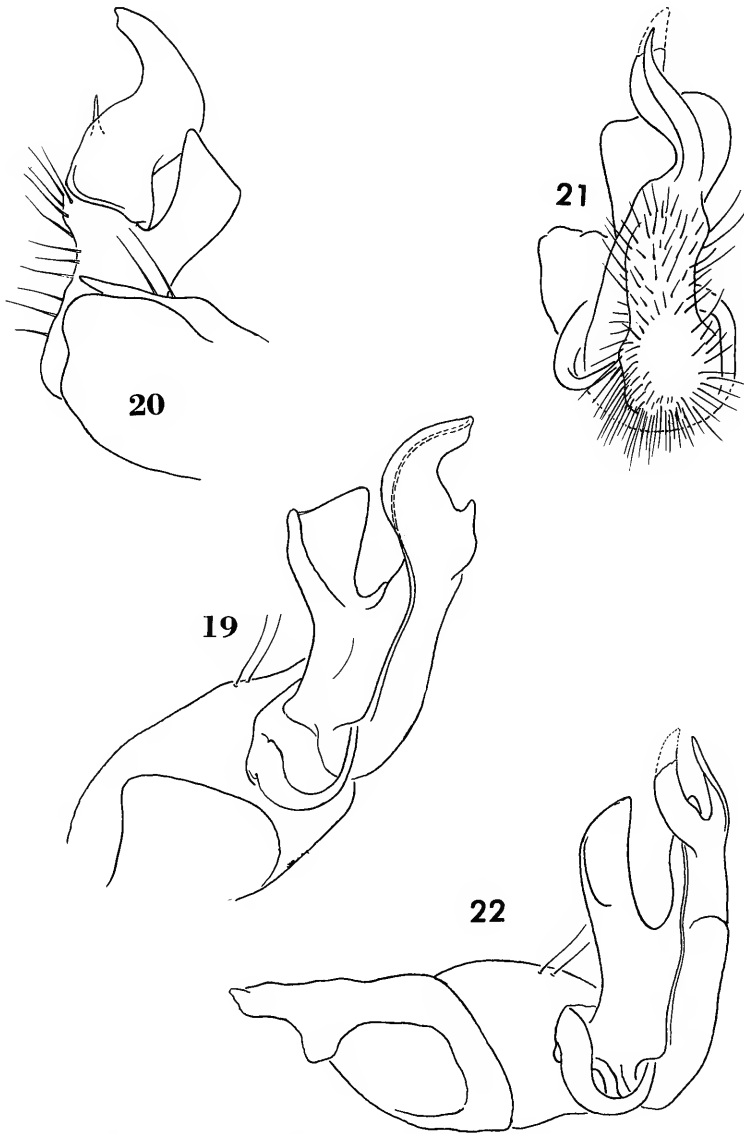
Besides the holotype, Schubart recorded four males from Ilha de São Sebastião. I have examined one of them, and give here two drawings made from the left gonopod, for comparison with Schubart's original. Regrettably the apex of the tibiotarsus was broken in the holotype, and the end of the solenomerite in the example I studied; nonetheless there is general agreement evident between the two appendages. On the other hand, there are also some differences. In the male from Ilha de São Sebastião, the prefemoral region is considerably broader and the space between the prefemoral process and acropodite wider, than in the holotype. Possibly, if such differences are found to be constant, subspecific status for the two populations might be merited.

As shown in fig. 22, the solenomerite has the shape of a flattened sigmoid lamina which is so oriented that it presents chiefly its medial edge when seen from mesal aspect.

***Obiricodesmus rupestris* Schubart**

Obiricodesmus rupestris Schubart, 1956, Rev. brasil. Biol., v. 16(3), p. 345, fig. 4. Male holotype (MZUSP) from Gruta da Lapinha, Mun. Lagoa Santa, MG.

The adequate original description was based on a large number of males and females mostly from the type locality. The color was noted to be chestnut, anterior part of body darker, with legs and sterna yellow.



Figs. 19-22. Gonopods of *Obiricodesmus* species: 19, *O. rosascens*, left gonopod, mesial aspect, specimen from Ubatuba; 20, *O. rosascens*, left gonopod of holotype, lateral aspect; 21, *O. flavomaculatus* Schubart, left gonopod in situ, ventral aspect, specimen from Ilha São Sebastião, S.P.; 22, the same gonopod, mesial aspect (apex of solenomerite reconstructed).

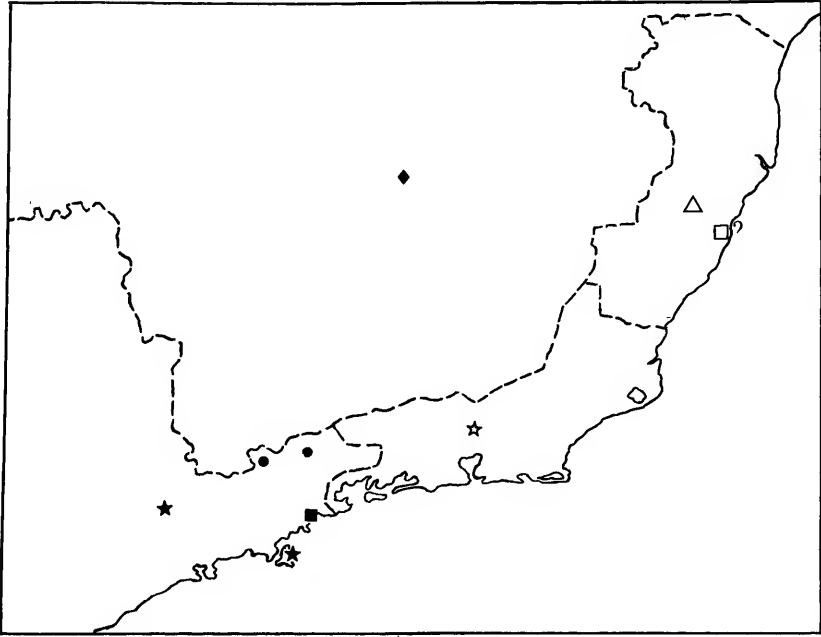


Fig. 23. Distribution of the species of Cornalatus in São Paulo, Rio de Janeiro, Espírito Santo, and Minas Gerais. Open square, *Cornalatus permutatus*, possibly from Vitoria, E.S.; open triangle, *C. tabulus*, Cachoeira de São Lourenço, ES.; diamond, *O. rupestris*, Mun. Lagoa Santa, MG.; open star, *O. terrigena*, Barreira, RJ.; solid square, *O. rosascens*, Ubatuba, SP.; solid dots, *O. brasiliae*, Piquete and Campos do Jordão, SP.; solid stars, *O. flavomaculatus*, Morro do Jaraguá and Ilha de São Sebastião, SP.

This species seems not to have been recorded or collected since the description was published in 1956. It is notable for being the most "inland" member of the genus, implying that other such species will be found west of the Serra da Mantiqueira.

***Obiricodesmus terrigena* (Attems)**

Cornalatus terrigena Attems, 1943, Senckenbergiana, v. 26, p. 444, figs. 21, 22. Holotype male (SMF) from "Barreira [east of Teresopolis, state of Rio de Janeiro] Brasil."

Obiricodesmus terrigena: Schubart, 1956, Rev. brasil. Biol., v. 16, p. 343, fig. 2.

This species is apparently still known only from the original collection, made by E. Bresslau in 1914. Schubart (1956) provided a translation into Portuguese of the original German description, and reproduced Attems' rather schematic gonopod drawing. In terms of gonopod structure, *terrigena* appears to be somewhat intermediate between the two species *O. brasiliae* and *O. flavomaculatus*.

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