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CHELODESMID STUDIES. XII. TWO NEW GENERA IN THE BRASILIAN TRIBE LEPTODESMINI (DIPLOPODA, POLYDESMIDA)

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ABSTRACT

The heretofore monotypic tribe Leptodesmini is enlarged and redefined with the addition of two new genera, Drepanodesmus (type peltatus, sp. nov.), so far known only from "Brasil" without further data, and Dialysogon, based upon Leptodesmus jucundus Brolemann, 1902, a common but so far poorly-known species endemic to São Paulo. A key to the three genera of Leptodesmini is given, and the implication made that Leptodesmus sensu Hoffman 1971 is still somewhat heterogeneous and requires future dismemberment.

For many years the genus *Leptodesmus* was virtually coextensive with the present concept of the family Chelodesmidae. As recently as 1962 *Leptodesmus* was used to embrace a great variety of species which were not disjunct enough to refer to easily defineable small genera, and was manifestly very heterogeneous. In 1971, in an earlier part of this series, I proposed a reasonably stringent definition of *Leptodesmus* based to a large extent upon characters of the type species *L. carneus*, and even in this restricted sense the genus numbered no less than 21 species. As rediagnosed on the basis of gonopod characters *Leptodesmus* stood somewhat apart from other Brazilian chelodesmids, and in a work now in press I recognized a monotypic tribe Leptodesmini to emphasize this disjunct status.

Although *Leptodesmus* in its current context is obviously composed of some divergent groups, I felt in 1971 that most were related through various intermediate species and did not propose any formal taxonomic names to reflect this internal diversity. Such a position now appears too conservative and is subject to future emendation. For the present, I wish to place on record two species which, although related to *Leptodesmus* within tribal limits, cannot be referred to that genus without doing violence to its present circumscription.

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Proposal of two new generic names provides the opportunity to formally document the tribe Leptodesmini, which can no longer be defined by the characteristics of its type genus.

One of the new genera is based upon a well-known Brazilian species, which was described as *Leptodesmus jucundus* in 1902. Material of this form was kindly loaned to me for study by the authorities of the Museu de Zoologia, Universidade de São Paulo. The other genus is based on an undescribed species in the collection of the Zoologisk Museum, København, examined through the cooperation of Dr. Henrik Enghoff.

Family Chelodesmidae Cook

Tribe Leptodesmini Attems

(Nomen translatum Brolemann, 1916, ex subfamily *Leptodesminae* Attems, 1898)

Components: *Leptodesmus* DeSaussure, 1859; *Drepanodesmus*, gen. nov.; *Dialysogon*, gen. nov.

Diagnosis: Moderate to large-sized chelodesmids in which the body is relatively slender, widest across segments 2 and 3, paranota of medium width, often decreasing in size posteriorly, set high on sides, middorsum only slightly convex. Metaterga smooth to vermiculately wrinkled medially, without transverse sulcus or polygonal areation. Stricture evident around body, dorsally without sharp anterior rim. Ozopores in the usual sequence, peritremata oviform, continuous with paranotal scapulae or (rarely) set off by an anterior notch, placed near posterior corner of paranota. Epiproct slender, acuminate, the sides concave as seen in dorsal aspect. Paraprocts and hypoproct without modification. Segments of anterior half of body with fairly prominent, cristate, pleurosternal carinae.

Prefemora with apical glomus, tibiae with prominent ventral subtarsal tylus, on some or all legs. Other podomeres of anterior legs unmodified. Coxae of second pair of legs of males not produced, merely rounded distally. Sterna of segments 4, 5, and sometimes 6 with paramedian processes, their form and distribution varying among the species. Sterna of other segments unmodified, at most with low conical projections behind coxal condyles.

Gonopod aperture large, extending into prozonum, and transversely oval, caudolateral edge usually somewhat elevated into a thin rim. Gonopod coxae moderate to large in size, subglobose, with prominent elongated dorsal apophysis, two dorsal setae, and several to many macrosetae on median side subtending base of cannula. Prefemoral region variable in length, sometimes half or more total length of telopodite, with a dorsal process of variable size and shape, usually smaller than acropodite and usually with basal projection on median side. Acropodite highly variable in form, without torsion, prostatic groove visible along median surface, ending at base of an apical cavity or merely flush on surface, never on a distinct solenomerite.

Distribution: Southeastern Brasil, states of São Paulo, Guanabara, Rio de Janeiro, and Mato Grosso.

Remarks: The present context of this tribal name is much more exclusive than as originally conceived by Brolemann in 1916, in which usage it corresponded closely with the entire family Chelodesmidae as now defined.

KEY TO THE GENERA OF LEPTODESMINI

1. Coxae of gonopods broadly in contact medially; telopodite attached to distal end of coxa, the condyles and intervening coxal rim visible in dorsal aspect when telopodite is removed (Fig. 11), dorsal coxal apophysis projecting distolaterad at about a 45° angle 2
 Coxae of gonopods broadly separated except for contact between two prominent mesal lobes (Figs. 6, 7 X); telopodite attached subterminally in a median location owing to an enlargement and prolongation of the coxa, condyles and distal coxal rim mostly invisible in dorsal aspect (Fig. 7); coxal apophysis directed distad in a plane almost parallel to median axis of coxa *Dialysogon*, gen. nov.
2. Prefemoral process variable in size, but never larger than acropodite, latter simple in form, without large processes.
 *Leptodesmus*
 Prefemoral process in the form of a large flattened dorsal shield, larger than acropodite and partially enclosing it, latter with a large falcate dorsal process at about its midlength (Fig. 5, D) *Drepanodesmus*, gen. nov.

Leptodesmus DeSaussure

Leptodesmus DeSaussure, 1859: 323 (as subgenus of *Polydesmus*);
 Hoffman, 1971: 229 (redefinition and synopsis).

Type species: *Polydesmus (Leptodesmus) carneus* DeSaussure, 1859, by subsequent designation of Pocock, 1909.

Diagnosis: Generally with the features of the tribe Leptodesmini as stated above, generically characterized by gonopod structure. Sternum strongly reduced and/or displaced, with the coxae more or less broadly in contact medially (resulting in the cannulae being in contact or overlapping); telopodite set at distal end of coxa; and coxal apophysis directed obliquely distolaterad. Telopodite variable in form but usually with prominent prefemoral process carrying a more or less retrorse basal branch or lobe on its median side, and usually with a distinct cingulum between prefemoral region and acropodite on the lateral side.

Distribution: Southeastern Brasil (São Paulo, Goiás, Minas Gerais).

Remarks: My restricted concept of this genus published in 1971 was based to a considerable extent upon literature accounts and drawings. Since then, I have been able to examine members of

additional species, and have been compelled to revise my opinion about the homogeneity of the genus.

It now seems probable that observance of consistency in the definition of generic groupings in other milliped taxa will require that *Leptodesmus* be still more exclusively diagnosed, following the examination of more representative material.

Species: In the present context of this genus, *Leptodesmus* contains 21 nominal species, listed below with an indication of their known distribution:

- L. acuminatus* Hoffman, 1971 (Goiás)
- L. badius* Attems, 1944 (?Paraguay)
- L. bidenticulatus* Schubart, 1960 (São Paulo)
- L. carneus* (DeSaussure, 1859) (Rio de Janeiro)
- L. cochranæ* Hoffman, 1971 (Rio de Janeiro)
- L. cristulatus* Schubart, 1955 (São Paulo)
- L. cuspidatus* (Schubart, 1952) (Goiás)
- L. defensus* Hoffman, 1971 (Goiás)
- L. dentellus* Schubart, 1946 (São Paulo)
- L. forceps* Brolemann, 1902 (São Paulo)
- L. geniculatus* Schubart, 1946 (São Paulo)
- L. godoi* Schubart, 1946 (São Paulo)
- L. limbatus* Schubart, 1955 (São Paulo)
- L. piraputangus* Chamberlin, 1955 (Mato Grosso)
- L. rostratus* Schubart, 1955 (São Paulo)
- L. rubicundus* Schubart, 1960 (São Paulo)
- L. serrulatus* Schubart, 1955 (São Paulo)
- L. stimulatulus* Schubart, 1960 (São Paulo)
- L. triangularis* Schubart, 1960 (Minas Gerais)
- L. tridentatus* (Schubart, 1960) (Minas Gerais)
- L. vagans* Schubart, 1944 (São Paulo)

Drepanodesmus, gen. nov.

Type species: *D. peltatus*, sp. nov.

Diagnosis: A leptodesmine genus in which the gonopod structure is basically similar to that of the nominate genus, but with the following important exceptions (1) prefemoral process larger than telopodite and with the form of a broad, convex shield, basally without a median dentate projection, distally with a thin, bilobed lobe on the median side (Figs. 3, 4, A and B); (2) acropodite set off from prefemur on the lateral side by a distinct cingulum, immediately distad of which originates a large falcate branch (D) which curves dorsad and mesad within the concavity of the prefemoral process. Distal end of acropodite simple, not forming a partly closed chamber as in most species of *Leptodesmus*. Peripheral characters of body similar to those of that genus.

Distribution: Brasil, the exact locality not known (perhaps in Minas Gerais or Mato Grosso).

Etymology: The name is a neologism composed of the Greek elements *drepanē* (sickle) + *-desmus* (a common suffix in this order,

from *Polydesmus*), alluding to the sickle-shaped dorsal process of the telopodite.

***Drepanodesmus peltatus*, sp. n.**

(Figs. 1-5)

Type specimens: Male holotype, male and female paratypes (Zool. Mus. Kobenhavn), male paratype (Mus. Zool. Univ. São Paulo), labeled only "Brasilien/Reinhart leg."

Diagnosis: With the characters of the genus.

Holotype: Adult male, length about 41 mm; width of body segments as follows:

Segment 1 — 5.8 mm	Segment 10 — 6.7 mm
2 — 6.9 mm	12 — 6.7 mm
4 (broken)	14 — 6.7 mm
6 — 6.9 mm	16 — 6.4 mm
8 — 6.8 mm	18 — 4.3 mm

Width/length ratio at midbody, 16.6%. Color largely faded, original pattern indistinguishable.

Head without special modifications, smooth and polished. Genae moderately convex, with shallow median depression, lacking lateral margin. Facial setae as follows: epicranial 0-0, interantennal 1-1, subantennal 1-1, genal 3-3, frontal about 4-4, clypeal 12-12, labral 14-14, these setae merging laterally into lower end of genal series.

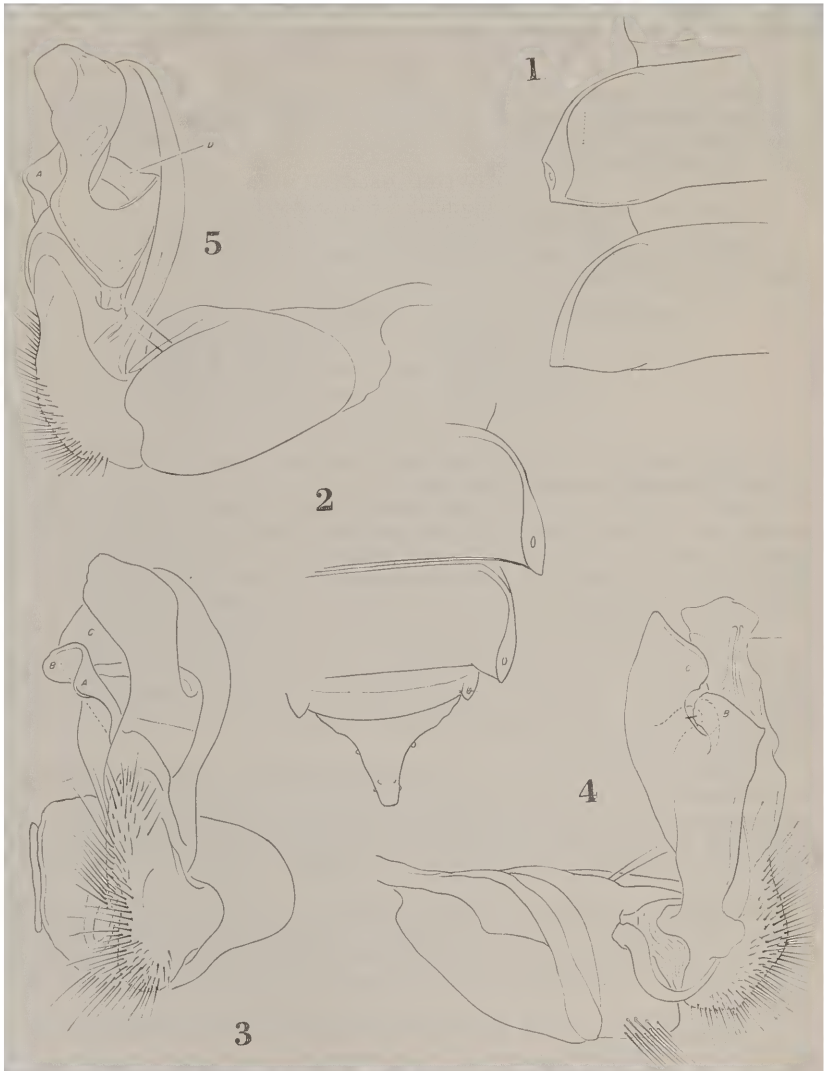
Antennae relatively long (ca. 9.0 mm) and slender, extending back to middle of paranota of 4th segment; antennomeres 2-6 similar in size and shape, each slightly clavate distally. 7th article semiglobose, without distinct rounded sensory organ on outer side; sensory cones divided into two oblique diads. Basal articles nearly glabrous, 3d-7th moderately hispidulose.

Collum wider than head, lateral ends depressed; surface smooth and polished, anterior edge margined up to level of mandible. Paranota of segments 2-5 relatively broad, transverse, subquadrate, those of segments 5-15 not notably smaller, all with broadly rounded anterior shoulders; beginning with segment 8 posterior corners acutely angled (Fig. 1).

Segments distinctly rugulose-coriaceous middorsally, without sulcus or areations. Stricture distinct dorsally but shallow, smooth, and without sharp anterior rim. Surface of prozona minutely textured, more matte in appearance than metazona. Limbus narrow and unmodified.

Epiproct (Fig. 2) of typical chelodesmid form; paraprocts and hypoproct unmodified.

Sides of anterior segments with moderately prominent pleurosternal carinae, beginning on segment 4 and disappearing by segment 15. Stigmata small vertical slits, their rims not elevated, both stigmata similar in size and shape. Podosterna relatively low and nearly flat, not divided into quadrants, intercoxal width at midbody 1.7 mm; surface smooth, polished, and glabrous; a small conical projection just posterior to each coxal condyle.



Drepanodesmus peltatus; sp. n., holotype: 1, left side of segments 10 and 11, dorsal aspect; 2, segments 17-20, dorsal aspect; 3, left gonopod, ventral (in situ) aspect; 4, left gonopod, mesal aspect; 5, left gonopod, lateral aspect. (Abbreviations: A, B, C, distal lobes of the prefemoral process; D, falcate dorsal process of the acropodite; E, termination of the prostatic groove.)

Legs long and slender, 7.9 mm long at midbody; actual lengths of podomeres: coxa 0.8, prefemur 1.1, femur 2.4, postfemur 0.9, tibia 1.1, tarsus 1.6. Tibiae with small apical tyli back to legs of 13th segment, prefemora with distal knob back to 14th. Tarsal claws small, nearly straight. Anterior legs without adenostyles or other modifications. Coxae of 2nd pair of legs evenly rounded distally, not produced; gonopore opening flat on surface.

Paramedian sternal processes between 4th pair of legs large and digitiform, broadly in contact medially; only two small rounded paramedian lobes between 5th pair of legs. Segment 6 with prominent bilobed transverse ridge between anterior pair of legs, slightly excavated between posterior pair.

Gonopod aperture moderately large, ovoid in shape, edge produced into a rim laterally and posteriorly. Gonopods of the form defined in the generic diagnosis and shown in figures 3-5.

Etymology: The specific name is a Latinized Greek term meaning "armed with a shield" and alludes to the form of the prefemoral process.

Dialysogon, gen. n.

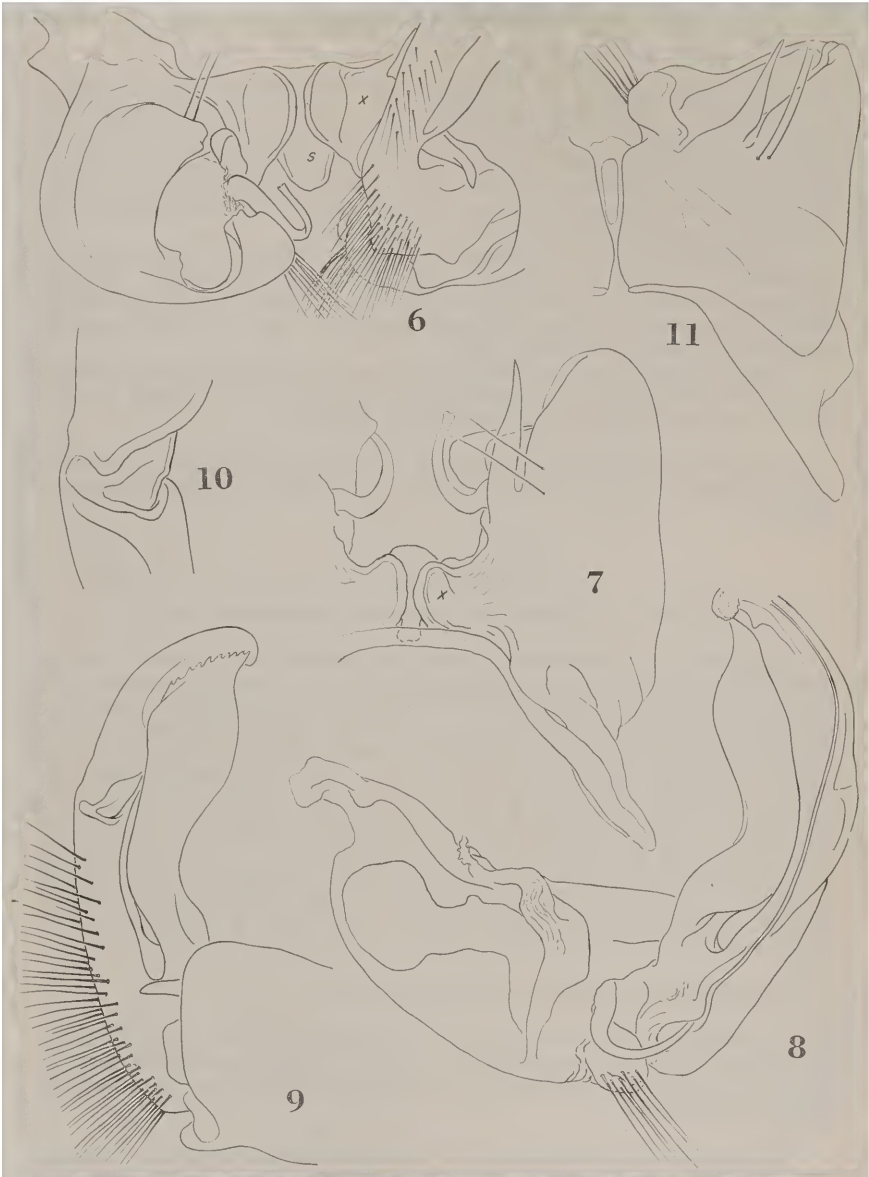
Type species: *Leptodesmus jucundus* Brolemann, 1902.

Diagnosis: A leptodesmine genus in which the gonopod coxa is distinctly enlarged and prolonged distad into a broadly rounded apex that surpasses the base of the telopodite on the lateral side, the telopodite thus functionally attached on the distomedian part of the coxa with the point of attachment not visible in dorsal aspect. Coxae widely separated except for the contact of the large lobes from their median surface (Figs. 6, 7, X). Dorsal coxal apophysis projecting parallel to median axis of coxa. Prefemoral region of telopodite elongated, with a prominent cingulum on lateral side separating it from acropodite region. Prefemoral process large, its distal margin denticulate, lacking a basal projection on the median side. Prostatic groove mostly visible in mesal aspect, terminating in or near a small distal chamber as in *Leptodesmus*.

Distribution: Southern Brasil (São Paulo).

Etymology: The name is a neologism composed of the Greek derivatives *dialysein* (separating) + *-gon* (from gonopod), alluding to the wide spacing between the gonopod coxae in the type species. Gender masculine.

Remarks: The affinities of *L. jucundus* were completely misapprehended by me for many years. On the basis of Fig. 43 (particularly the rendition of the gonopod sternum) in Brolemann's 1902 monograph, I assumed that this species was probably referable to the genus *Ethydesmus* (Silvestri, 1902). But on having the occasion to prepare a review of that group, I appealed to Dr. G. R. Kloss for a loan of a male specimen from the Museu de Zoologia, and upon its arrival I was surprised to find it a close relative of *Leptodesmus* in the strict sense.



Dialysogon jucundus (Brolemann): 6, gonopods conjointly, ventral (posterior) aspect, telopodite of the right gonopod removed to show details of the articulation surface, condyles, &c, only base of the left telopodite illustrated; 7, coxa of right gonopod, dorsal aspect showing median lobes and direction of the apophysis; 8, left gonopod, mesal aspect; 9, left gonopod, lateral aspect; 10, articulation between prefemur and acropodite, enlarged. Fig. 11. *Leptodesmus godoi* Schubart, coxa of left gonopod, dorsal aspect, to compare with fig. 7, drawn to same scale and with same orientation. (Abbreviations: S, gonopod sternum; X, median coxal lobe.)

It is obvious that Brolemann's drawing was made with insufficient magnification, and the intercoxal relationships shown in a generalized way only. Actually, as may be seen from figures 6 and 7, the coxae are separated by two prominent dorsal distomedian lobes ("X") which are virtually in contact medially and have compensated for the strong reduction of the sternum (S). This latter sclerite, although fairly distinct and well-sclerotized, is decidedly vestigial in comparison with its stature in such genera as *Leiodesmus*, *Euthydesmus*, *Eucampesmella*, and others.

Despite its general similarity externally with the better-known large species of *Leptodesmus*, I believe that the gonopod structure of *jucundus* is sufficiently disjunct to warrant placement of this one species in a separate genus.

***Dialysogon jucundus* (Brolemann), comb. n.**

(Figs. 6-10)

Leptodesmus jucundus Brolemann, 1902: 64, figs. 41-44 (type material from Santa Rita, São Paulo); Attems, 1938: 11, fig. 3; Schubart, 1944: 347, fig. 17 (material from Mun. Pirassununga, Sta. Cruz das Palmeiras, Santa Rita do Passa Quatro, and Descalvado); Schubart, 1952: 413; Schubart, 1955: 513 (material from Mun. Porto Ferreira, Altinópolis, Sto. Antonio da Alegria, São Joaquim da Barra, and Guaira, all in São Paulo).

According to the publications of Schubart cited above, *D. jucundus* is one of the most abundant polydesmoids in the 'Planalto' of central São Paulo and apparently occurs in a number of different biotopes.

The external structure has been carefully described by Brolemann, with supplementary notes by Schubart (1944), but so far only schematic drawings of the gonopods have been published. I now correct this deficiency by providing some illustrations intended to show structural as well as diagnostic features. The specimen examined is from Fazenda Campo Alegre, at Pirassununga, São Paulo (Dina Gaspar leg. 6 March 1945, in MZUSP). To be noted in particular are the large median coxal lobes (labeled X), the prolongation of the coxa distally and dorsally, and the prominent cingulum on the lateral side of the telopodite (Fig. 9, and enlarged, Fig. 10). The gonopod coxa of *Leptodesmus godoi* Schubart is shown in dorsal aspect (Fig. 11) for comparison with that of *jucundus*.

REFERENCES

- Attems, C., 1938. Fam. Leptodesmidae, Platyrrhachidae, Oxydesmidae, Gomphodesmidae. *In: Das Tierreich* 69, 1-487.
- Brolemann, H. W., 1902. Myriapodes du Musée de São Paulo. *Rev. Mus. Paulista* 5: 35-237.
- Brolemann, H. W., 1916. Essai de classification des polydesmiens (myriapodes). *Annls Soc. ent. France* 84: 523-608.

- Hoffman, Richard L., 1971. Chelodesmid studies. V. Some new, redefined, and resurrected Brazilian genera. *Arg. Zool.*, São Paulo, 20: 225-277.
- Schubart, Otto, 1944. Os diplopodos de Pirassununga. *Acta Zool. Lilloana* 2: 321-440.
- Schubart, Otto, 1952. Diplopoda de Pirassununga. IV. Adenda a fauna regional. *Dusenía* 3: 403-420.
- Schubart, Otto, 1955. Materiais para uma fauna do Estado de São Paulo — Os Leptodesmidae. *Arg. Mus. Nac.*, Rio de Janeiro, 42: 507-540.