BULLETIN
ZOOLOGISCH MUSEUM
UNIVERSITEIT VAN AMSTERDAM

Vol. 3 No. 6 16-V-1973

ON THE STATUS OF THE DIPLOPOD GENUS *MIMOSOMA* CHAMBERLIN, 1920 (POLYDESMIDA, PARADOXOSOMATIDAE)

C.A.W. JEEKEL

ABSTRACT

A re-examination of the type material of the five described species of *Mimosoma* Chamberlin, 1920, has revealed that only two species have been based on male specimens. The gonopods of these two, *M. setosum* Chamberlin, 1920, and *M. glabrum* Chamberlin, 1920, are illustrated, and a description is given. Brief notes on the characters of the three remaining species are added. *Mimosoma* is regarded to be a synonym of *Eustrongylosoma* Silvestri, 1896 (new synonymy).

In a previous paper (Jeekel, 1968: 35, 146) a new tribe of the family Paradoxosomatidae, Eustrongylosomatini, was set up for a small group of genera from New Guinea, viz., *Eustrongylosoma* Silvestri, 1896, *Perittotresis* Attems, 1914, *Nothrosoma* Attems, 1929, and an unnamed genus proposed for the reception of *Atropisoma horvathi* Silvestri, 1899, and *Atropisoma insulare* Silvestri, 1899. To the same tribe were referred *Mimosoma* Chamberlin, 1920, from the Solomon Islands, and *Papuosoma* Chamberlin, 1945, from New Guinea, "with a reservation as to the independent status of the genera".

Indeed, the characterization of the genera belonging to the Eustrongylosomatini is still far from satisfactory, and this was certainly the case with regard to *Mimosoma*. Chamberlin's description of the genus and its five species, being virtually useless by the absence of drawings of the gonopods, made the reference of *Mimosoma* to the Eustrongylosomatini even somewhat arbitrary. In his description Chamberlin compared the gonopods in *Mimosoma* with those of the species of *An-*

tichiropus Attems, 1911, an australiosomatine genus, as it appears now because he erroneously interpreted the solenomerite and the tibiotarsus in *Mimosoma* as a single process. My earlier reference of *Mimosoma* to the Eustrongylosomatini was, in fact, largely based on geographical evidence.

An examination of the type material of *Mimosoma*, preserved in the Museum of Comparative Zoology, Harvard University, Cambridge, Mass., U.S.A., finally clarified the position of the genus. It seems better now to bring it into the synonymy of *Eustrongylosoma*. Thanks are due to Dr. Herbert W. Levi for kindly providing facilities at the M.C.Z.

Eustrongylosoma Silvestri

Eustrongylosoma Silvestri, 1896: 198; Jeekel, 1967: 344.
Thalatthipurus Attems, 1932: 10.
Mimosoma Chamberlin, 1920: 125. New synonymy.

The gonopods of the two species of *Mimosoma* of which male specimens are known are very similar to those of the species of *Eustrongylosoma*, and as such do not give sufficient grounds for keeping the two genera separate. Neither does apparently the remaining morphology of the species concerned.

A key to the New Guinea species of *Eustrongylosoma* was published earlier (Jeekel, 1967: 346). As Chamberlin failed to give an analysis of the five *Mimosoma* species, it may be useful to give a key to these Solomon Island species now. Some of the species are known in the female sex only, but since most of the characters are non-sexual in this genus, this seems to be of minor importance. Anyhow, they are apparently closely related to either *E. setosum* or *E. glabrum*.

1. Transverse furrow of metatergites deeply impressed. Metatergites densely pubescent 2
-. Transverse furrow of metatergites weakly impressed. Metatergites virtually hairless 4
2. Transverse furrow present from the 3rd somite onwards 3
-. Transverse furrow present from the 5th somite onwards, absent on the 3rd and 4th .... *E. gracile* (Chamb.)
3. Epiproct ending with a pair of acuminate terminal cones ..... *E. setosum* (Chamb.)
-. Epiproct truncate, without terminal cones.. ..... *E. reductum* (Chamb.)
4. Antennae dark, collum white, legs white ... . *E. sequens* (Chamb.)
-. Antennae pale, collum dark, legs pale .... *E. glabrum* (Chamb.)

Eustrongylosoma setosum (Chamberlin)

Mimosoma setosum Chamberlin, 1920: 126.

Locality.- Solomon Island, Malaita, Auki.

Material.- The holotype, M.C.Z. 4994, is a male specimen of which only the head and ten anterior somites are left. The paratype series, M.C.Z. 4995, consists of three males and three females.

Colour.- In the holotype, possibly on account of its state of preservation, the colour differences between the various antennomeres and podomeres are actually not as clear as described by Chamberlin. The general colour is castaneous with paler brownish parts. In the paratypes the differences in colour are more pronounced: antennae with the entire 1st and the basal half of the 2nd antennomere, and the 6th, 7th, and 8th antennomeres pale. Legs whitish except the distal part of the 3rd podomere and the entire 4th podomere, which are dark.

Width.- Holotype ♂: 1.5 mm; paratype ♂♂: 1.6 mm; paratype ♀♀: 2.0 mm.

Head and antennae.- Labral emargination very weak. Clypeus weakly convex, its lateral border weakly emarginate near the labrum. Pubescence rather dense, present up to the frontal region, and on the lateral swellings; setae rather short. Postantennal groove moderately impressed, the wall in front moderately inflated. Antennal sockets separated by just half the length of the 2nd antennomere, or by a little more than the diameter of a socket. Vertex moderately convex, smooth, hairless. The vertigial sulcus well impressed, running downward to just above the upper level of the sockets. Antennae rather long and slender. Pubescence moderate in basal antennomere to dense in the distal ones. Relative length of antennomeres: 2nd= 3rd > 4th > 5th= 6th; the 6th antennomere eight ninths of the length of the 2nd.

Collum.- Scarcely narrower than the head,

elongate reniform in dorsal outline. The anterior margin widely and almost evenly convex, the posterior margin widely and faintly concave, more laterally widely convex. Lateral margin moderately convex, with the caudal edge subangular, narrowly rounded. Surface of collum convex in the middle, somewhat inflated laterally; the lateral margin with a narrow raised rim. Surface irregularly setose, the setae rather densely set in about four quite irregular transverse rows. The integument shiny, somewhat scabrous.

Body somites.- Waist rather narrow, rather strongly constricted, and with a faint sculpture of longitudinal striae. Prosomites dull. Metatergites more shiny, with a deep transverse furrow, present from the 3rd to the 18th somite, deeply impressed in the 5th to the 17th. Pubescence of tergites as in collum, arranged in three or four transverse series of erect setae in front of the transverse furrow, and about the same number of series behind the furrow. In the middle and posterior somites the pubescence becomes denser and almost fur-like. Sides of metasomites subgranular. Pleural keels present up to the 4th somite.

Lateral keels.- Moderately developed. Keels of 2nd somite situated well below the level of those of the 3rd, anteriorly shouldered at base, rounded laterally, and caudally produced with a somewhat rounded edge. Keels of 3rd somite subsimilar. All keels with two (in poriferous somites, fig. 1) or three (in poreless somites) lateral teeth.

Sternites and legs.- Sternites of middle somites a little broader than long. Transverse furrow of sternites weak in the middle; longitudinal furrow indistinct, represented by a very weak impression. Sternites sparsely setiferous. A process between the anterior legs of the sternite of the 5th somite of the male. Legs rather long, pubescence long, with tibiae and tarsi densely hairy on all sides. Tibial and tarsal brushes present on almost all legs. Relative length of podomeres: 3rd= 6th > 2nd > 5th > 4th.

Anal somite.- Epiproct with sides converging, halfway with a pair of lateral setiferous tubercles. The end with a pair of acuminate terminal cones. Hypoproct triangular with convex sides. Anal somite normally setiferous, without the dense pubescence of the preceding tergites.

Gonopods.- (fig. 2). Aside from differences in the relative proportions of the various joints and in other small details, the gonopods of this species are strongly reminiscent of the gonopods of *Eustrongylosoma fasciatum* (Silvestri, 1895). Apparently the circular pit in the prefemur, marking the beginning of the spermal channel in *fasciatum*, is lacking in *setosum*, but it remains to be seen whether or not this character has much taxonomic significance.

Female.- The female paratypes have a weak impression between the vertex and the frontal region.

Remarks.- This species, which is the type of *Mimosoma*, must be closely related to the type of *Eustrongylosoma*, considering the similarity in the gonopods. In the characters of the remaining morphology, however, there are many obvious differences, such as e.g. the shape of the lateral keels.

Although there is, at least for the time being, no possibility for distinguishing a genus *Mimosoma* from *Eustrongylosoma*, it remains possible that some minor detail in the gonopods, or a particular difference in the external morphology of the two type-species may eventually prove to have a supra-specific taxonomic value. However, the scanty knowledge of Papuan Paradoxosomatidae makes a careful evaluation of such characters premature and, in fact, impossible.

Eustrongylosoma reductum (Chamberlin)

Mimosoma reductum Chamberlin, 1920: 126.

Locality.- Solomon Islands, Santa Ysabel, Fulakora.

Material.- The holotype, M.C.Z. 5010, and the paratype, M.C.Z. 5011, are both females.

Width.- Holotype ♀: 2.0 mm; paratype ♀: 1.8 mm.

This species is very similar to *setosum* but may be distinguished from that species on account of the epiproct being truncate instead of bifurcate.

Eustrongylosoma gracile (Chamberlin)

Mimosoma gracile Chamberlin, 1920: 128.

Locality.- Solomon Islands, San Cristobal, Wainoni Bay.

Material.- The holotype, M.C.Z. 5014, is a female specimen. It is in a rather bad condition.

Width.- 1.2 mm.

Body somites.- Waist and transverse furrow of metatergites both with sculpture. Transverse furrow deeply impressed, present from the 5th to the 18th somite, generally reaching the upper furrow of the lateral keels. Tergites not rugose, up to the 8th somite with few hairs; from the 9th onwards the tergites become more and more setose, with short, erect, pointed hairs, about four rows in front of the furrow, and about four behind.

Eustrongylosoma glabrum (Chamberlin)

Mimosoma glabrum Chamberlin, 1920: 127.

Locality.- Solomon Islands, Malaita, Auki.

Material.- The holotype, M.C.Z. 4995, is a male, the paratype M.C.Z. 4997, is a female specimen.

Width.- Holotype ♂: 1.6 mm; paratype ♀: 1.9 mm.

Head and antennae.- Clypeus and frons rather densely to moderately setiferous. Antennal sockets separated by three quaters of the length of the 2nd antennomere. Vertigial sulcus well impressed, not reaching the upper level of the sockets. Vertex hairless. Antennae rather short, distinctly clavate, somewhat moniliform. Pubescence moderate to, distally, dense. Relative length of antennomeres: 2nd > 3rd > 4th= 5th < 6th; the 6th antennomere of same length as the 3rd.

Collum.- (fig. 3) Tegument smooth and shiny, hairless.

Body somites.- Prosomites somewhat dull. Waist weakly constricted, narrow, distinctly ribbed. Metatergites shiny, smooth, hairless; transverse furrow present from the 5th to the 17th somite, weakly impressed and laterally fading away quite distant from the dorsal delimitation of the lateral keels. Sides smooth. Pleural keels weakly developed in the 2nd and 3rd somites, lacking in the subsequent somites.

Lateral keels.- (figs. 3 - 5) Second somite as wide as collum and slightly narrower than the 3rd. The keels of the 2nd somite rather strongly declined. All keels situated on a relatively low level; the poriferous ones thick, with the pores near the ventral demarcation in a weak excavation. Caudal edges of all keels pointed, generally projecting a little behind the posterior margin of the somites. Keels of the 18th and 19th somites distinct and projecting well behind the caudal margins.

Sternites and legs.- Sternites of middle somites as long as wide, without cones but with distinct cross-impressions. Pubescence consisting of curved hairs on each of the sternal quadrants. Legs (fig. 6) very short, and those up to the 7th somite very thick.

Anal somite.- Epiproct rather short, the sides moderately converging, halfway with a pair of distinct setiferous tubercles. The end rather narrowly truncate, with a pair of terminal knobs separated by a weak emargination. Hypoproct broadly triangular, the sides a little convex; setiferous tubercles weakly developed, projecting very slightly.

Gonopods.- (fig. 7) Very similar to those of *E. setosum*, but the femur relatively longer, and the tibiotarsus shorter. Differing otherwise in small details which are evident upon comparison of the relevant drawings.

Remarks.- By the absence of the pubescence of the metatergites and the weak development of the transverse furrow this species is at once distinguished from the three preceding ones. It is also distinct by the short legs and antennae and by the absence of the lateral serrations of the keels.

Eustrongylosoma sequens (Chamberlin)

Mimosoma sequens Chamberlin, 1920: 127.

Locality.- Solomon Islands, Santa Ysabel, Fulakora.

Material.- The holotype, M.C.Z. 5012, is a female.

Width.- 1.5 mm.

This species is structurally almost identical with the preceding one; however, it differs in colour having dark antennae, white legs and a white collum. Besides it is smaller in size.

REFERENCES

ATTEMS, C., 1932. Myriopoden, in: Van Straelen, (ed.), Résultats scientifiques du Voyage aux Indes Orientales Néerlandaises de LL. AA. RR. le Prince et la Princesse Léopold de Belgique.- Mém. Mus. r. Hist. nat. Belg. (Hors Série), 3 (12): 1-34, pls. 1-6.

CHAMBERLIN. R.V., 1920. The Myriopoda of the Australian Region.- Bull. Mus. comp. Zool. Harv., 64: 1-269.

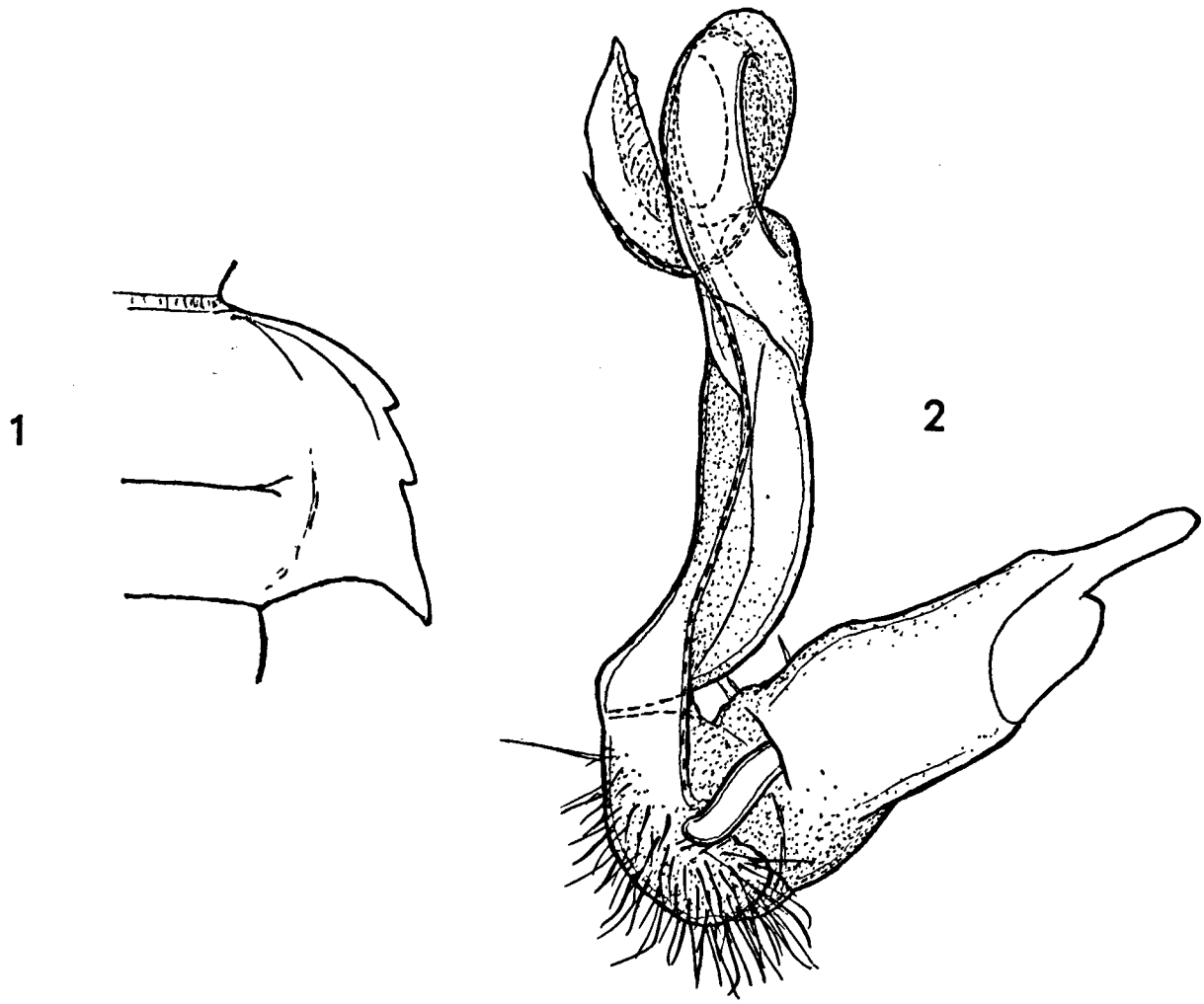
JEEKEL, C.A.W., 1967. A revision of the Papuan Paradoxosomatidae (Diplopoda, Polydesmida) in the Museo Civico di Storia Naturale at Genoa.- Tijdschr. Ent., 110: 343-379.

-------, 1968. On the classification and geographical distribution of the family Paradoxosomatidae (Diplopoda, Polydesmida). Amsterdam, privately published. i-vii, 1-162.

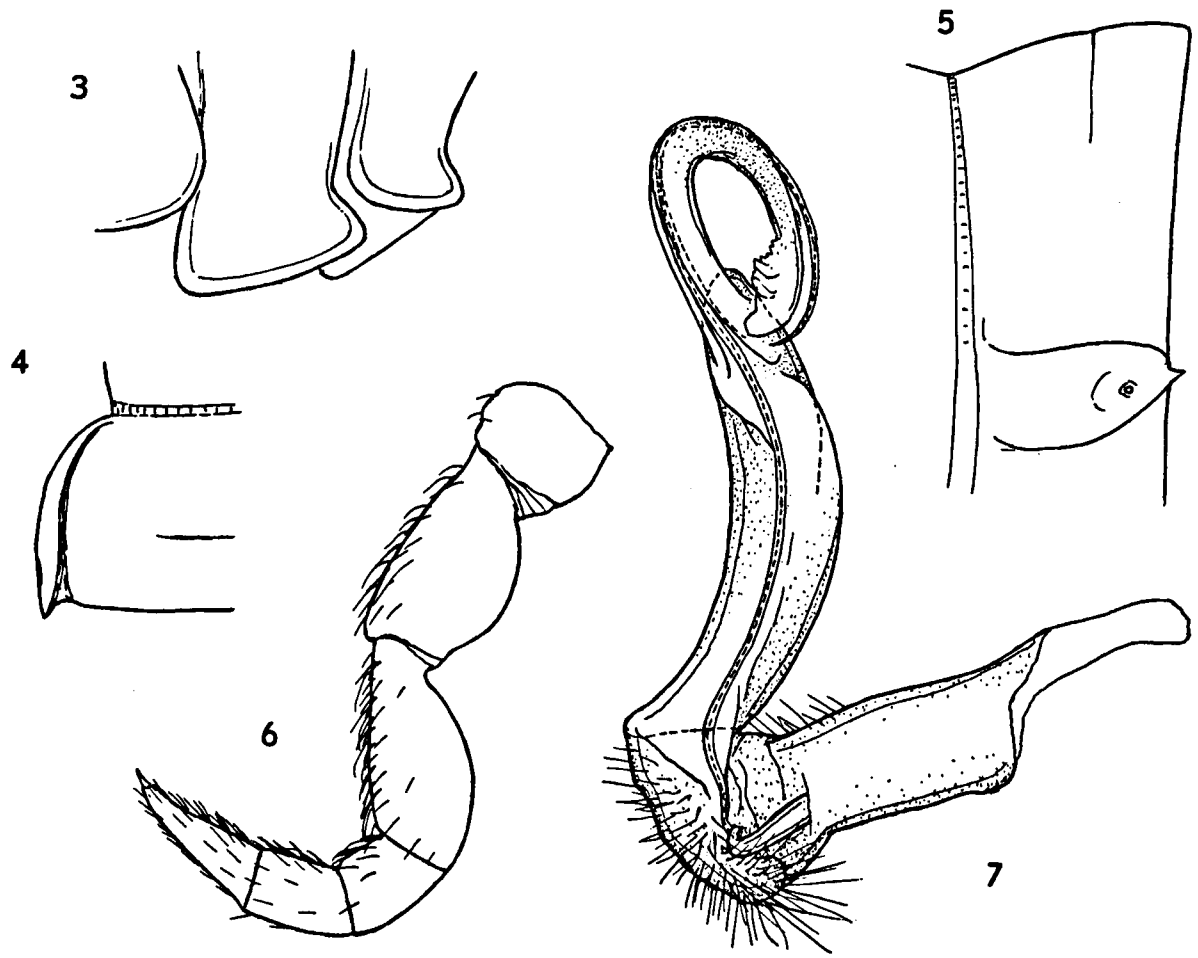
SILVESTRI, F., 1896. I Diplopodi. Parte I.- Sistematica.- Annali Mus. civ. Stor. nat. Genova, 36: 121-254.

Dr. C.A.W. JEEKEL
Institute of Taxonomic Zoology (Zoölogisch Museum)
Plantage Middenlaan 53
Amsterdam - C, The Netherlands

Received: February 8, 1973



Figs. 1-2. *Eustrongylosoma setosum* (Chamb.). 1, paratype ♂, right side of 5th somite, dorsal aspect; 2, holotype ♂, right gonopod, medial aspect.



Figs. 3-7. *Eustrongylosoma glabrum* (Chamb.), holotype ♂. 3, lateral aspect of the left side of somites 1 to 3; 4, left side of 9th somite, dorsal aspect; 5, left side of the 10th somite, lateral aspect; 6, 2nd right leg of 6th somite; 7, right gonopod, medial aspect.