

## A note on the milliped genus *Helodesmus* (Polydesmida: Helodesmidae)<sup>1</sup>

by

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Hitherto our knowledge of the Javan diplopod genus *Helodesmus* has been confined to the original proposal of the genus and its type species. This account, like so many of O. F. COOK's other preliminary diagnoses, is extremely brief and was never followed by a fuller description with illustrations. Other workers have never attempted to cope with the names, other than to relegate them to the status of "uncertain genera and species".

The combined original generic-specific diagnosis runs as follows, in its entirety:

"*Helodesmus porosus*.

Related to *Comodesmus* rather than to the other families, but with remarkable differences. First segment widest, concealing the head; body tapering caudad, subcylindric, not coiled into a spiral; dorsum very convex, rough with low granules, and incrustated with earth; pores with distinct raised rims, located far above the slightly prominent carinae of segments 5, 7—17; antennae and legs very short and stout; copulatory legs of two simple, equal processes; segments of adult 19; color above black; below white; length of female 4 mm; width 6 mm; locality, mountains of western Java, 8,000 feet. This species may be considered the type of a new family, *Helodesmidae*."

When examined critically, this succinct diagnosis actually states a number of important and singular characters, which, when taken in combination with the type locality should make recognition at least of the genus possible with some confidence. However, *Helodesmus* has been redescribed as a new genus twice since its first proposal.

The first of these junior generic synonyms is *Gonomastis*, published by Count ATTEMS in 1930. It is well-known that ATTEMS had no patience with COOK's short diagnoses, in fact he regarded the majority of COOK's tropical species to be *nomina nuda* and therefore beyond the limits of consideration. *Gonomastis* and its single Sumatran species *parvula* was described and illustrated in considerable detail.

The second synonym is *Porauxus* Chamberlin, 1945, based upon a species *pangrangus* from west Java. The generic diagnosis mentions only another new genus (*Elatosus*), and does not allude to *Gonomastis*, with which the diagnostic characters indicate obvious affinity. This omission is the more curious, since another genus, *Aphlotes*, described on the following page in CHAMBERLIN's paper, is compared with *Gonomastis*, but here the relationship is clearly more remote. Presuming that CHAMBERLIN had consulted ATTEMS' 1930 paper, it is difficult to visualize his failure to recognize the virtual identity of his *P. pangrangus* with

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*G. parvula* (compare especially figs. 21, 23, and 30 of ATTEMS' paper with figs. 31, 30, and 32 respectively, of CHAMBERLIN's).

There can be no doubt whatever that the two species just mentioned are strictly congeneric, and that they appear to differ only in small details of the male gonopods.

The original types of *Helodesmus porosus*, a male and female, are preserved in the collection of the U. S. National Museum, and I examined them closely in 1960. They were purchased among many other diplopods from the collector H. FRUHSTORFER, and in all probability originated on Mt. Gede-Pangerango, near Tjibodas. The male agrees exactly with the description and figures of *Porauxus pangrangus*, the type of which presumably came from the same mountain.

In summary, therefore, we arrive at the following synonymy:

*Helodesmus* Cook

*Helodesmus* Cook, 1896, *Proc. Acad. nat. Sci. Philadelphia*, 48 : 262. Type species, *H. porosus* Cook, by monotypy.

*Gonomastis* Attems, 1930, *Arch. Hydrobiol. Suppl.* 8 : 136. Type species, *G. parvula* Attems, by original designation. **New synonymy!**

*Porauxus* Chamberlin, 1945, *Amer. Mus. Nov.*, no. 1282 : 6. Type species, *P. pangrangus* Chamberlin, by original designation. **New synonymy!**

The detailed description of *Gonomastis* obviates the necessity for any additional diagnostic statement at this time. The anatomical components of the gonopods are still not clearly identified. ATTEMS at first considered the two branches of the telopodite to be femoral in origin, neither functioning as a solenomerite. Later (1940) he identified the shorter, broader, dorsal branch to be the tibiotarsus and the longer, flagelliform branch to be the solenomerite, with the seminal groove extending to its tip. Another possibility which occurs to me would be to regard the dorsal branch as the prefemoral process, and the ventral as a combined femur-tibiotarsus functioning as a solenomerite.

Species: Two are known with certainty:

*Helodesmus porosus* Cook

*Helodesmus porosus* Cook, 1896, *op. cit.* : 262. Types, U. S. Nat. Mus.; "west Java, 8,000 feet."

*Porauxus pangrangus* Chamberlin, 1945, *op. cit.* : 6, figs. 30—32. Types, Amer. Mus. Nat. Hist.; Pangrango, 2400 m, Java. **New synonymy!**

*Helodesmus parvulus* (Attems), new combination

*Gonomastis parvula* Attems, 1930, *op. cit.* : 136, figs. 21—31. Types, Naturh. Mus. Wien; Pauh Cave near Fort de Kock, Sumatra.

The systematic position of this genus remains in doubt, and can never be settled until the entire "cryptodesmoid" complex has been restudied. COOK did not stipulate his reasons for erecting a family Helodesmidae, it can only be surmised that he considered the entire facies of the animal to be sufficiently distinctive. In 1940, Count ATTEMS set up a subfamily Gonomastinae for the two genera *Gonomastis* and *Lophoscytus*, diagnosed as follows: "Rinnenast des Gonopoden in

einen sehr langen, ganz dünnen, mehrfach gebogenen Faden verlängert." Both of these genera are composed of tiny Javanese species, whether they actually comprise a homogeneous unit remains to be established.

For the time being, it seems preferable to retain COOK's family designation provisionally, as a means of reflecting the considerable divergence of at least *Helodesmus*. It is interesting to speculate how many other minute millipeds of this and other genera will eventually be discovered in the East Indies by quantitative soilsampling techniques!

#### References

- ATTEMS, C., 1930, Myriopoden von Java, Sumatra und Bali. *Archiv für Hydrobiol.*, Suppl., 8: 115—192, figs. 1—126.  
 ———, 1940, Polydesmoidea III, Fam. Polydesmidae et al., *Das Tierreich* (70): 1—577, figs. 1—719.  
 CHAMBERLIN, R. V., 1945, On some diplopods from the Indo-australian archipelago. *Amer. Mus. Nov.*, No. 1282: 1—43, figs. 1—137.  
 COOK, O. F., 1896, Summary of new Liberian Polydesmoidea. *Proc. Acad. nat. Sci. Philadelphia* 48: 257—267.

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Nogmaals: het kunstmatig drogen van vlinders. Dit onderwerp is al eens eerder ter sprake gebracht, onder meer door mijzelf (*Ent. Ber.* 15: 254) en in reactie hierop door de heer H. G. VAN GALEN (idem, blz. 459).

Mede naar aanleiding van het laatstgenoemd artikel ben ik verder gegaan met experimenteren en sedert enkele jaren maak ik voor bovengenoemd doel gebruik van een inwendig gespiegelde infrarood lamp van 150 w. De lamp kan zonder meer boven de te drogen objecten vrij worden opgehangen, waarbij de intensiteit van de gebundelde straling naar wens kan worden geregeld door de hoogte te variëren. Het is niet nodig om in een afgesloten ruimte te werken; met het oog op de ventilatie is dit zelfs minder gewenst. Wil men de straling nog meer concentreren, dan kan men de spanplankjes in een biscuitblik plaatsen.

De methode is zeer effectief en betrouwbaar, en kan overal waar elektrische aansluiting is zonder meer worden toegepast, waarbij de vervoersmogelijkheden vrijwel onbepert zijn. Het brandgevaar is volkomen nihil en de vlinders blijven nagenoeg vrij van vervorming. Naar ik voorts heb opgemerkt heeft de straling een snelle dodelijke werking op ongedierte en schimmel en ik heb hiervan al meer dan eens met succes gebruik gemaakt.

Uiteraard kan voor een en ander ook gebruik worden gemaakt van een gewone gespiegelde lamp, maar een infrarood-lamp lijkt mij beter, daar hier het gedeelte van het licht, dat het meest actinisch is en mogelijk de kleuren zou kunnen beïnvloeden, wordt geëlimineerd.

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#### Berichtigung

Im Literatur-Verzeichnis zu dem Artikel: Die auf Rosaceen lebenden *Macropsis*-Arten der Niederlande von W. WAGNER (Heft 7, S. 136) sind leider die 5 u. 6. Literaturangabe falsch zitiert worden. Diese Angaben müssen heißen:

- MEER, F. A. VAN DER & H. J. DE FLUITER, 1956, Bestrijdingsmogelijkheden van de vector van de dwergziekte van de framboos. *Tijdschr. Plantenz.* 62: 26.  
 FLUITER, H. J. DE & F. A. VAN DER MEER, 1958, The biology and control of *Macropsis fuscata* Zett., the Vector of the Rubus Stunt virus. Proc. 10th Intern. Congr. Entomol. Montreal 3: 341—345.