

The identity of *Dalodesmus tectus* Cook, 1896, and the status of the family names Dalodesmidae Cook, 1896, Vanhoeffeniidae Attems, 1914, and Sphaerotrichopodidae Attems, 1914 (Diplopoda, Polydesmida)

by

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A number of years ago (JEEKEL, 1956) I discussed the identity of the somewhat enigmatic South African polydesmoid genus *Vanhoeffenia* Attems, 1908. I pointed out then that the type-species of this monotypical genus, *V. nodulosa* Attems, 1908, could be nothing else than a species of the large sphaerotrichopodid genus *Gnomeskelus* Attems, 1926, and was, in fact, quite closely related to *G. repandus* Attems, 1927, and *G. mixtus* Attems, 1944.

The consequence of this was, that the name *Gnomeskelus* had to fall as a synonym of *Vanhoeffenia*, and that the family names Vanhoeffeniidae Attems, 1914, and Sphaerotrichopodidae Attems, 1914, until then in use for two different families, were now covering the same systematic concept.

In the meantime KRAUS (1957) rightly proposed to provisionally take up the name Trichopolydesmidae Verhoeff, 1910, for what was left of the decapitated family Vanhoeffeniidae.

As to the validity of the name Sphaerotrichopodidae I made already allowance then for the probably oldest available name for the group, *viz.* Dalodesmidae Cook, 1896.

COOK (1896) created the genus *Dalodesmus* and the family Dalodesmidae for the reception of a single polydesmoid species from Madagascar, *D. tectus* Cook. The name of the species, genus and family shared the fate of many others proposed in the "Brandtia" paper and did not find recognition among contemporary workers, obviously because of the short and rather inadequate description and the lack of illustrations.

However, it is more and more generally realised now that COOK had an outstanding feeling for taxonomy, and that his ideas more than once were far ahead of his time. We can only regret now that he dedicated only a comparatively short period of his life to millipede taxonomy, and that only in a few instances he apparently found the time to work up his preliminary notes into more comprehensive papers.

In his monograph of the Polydesmida, ATTEM (1940), haunted by an obvious dislike for COOK's taxonomic work, merely mentioned *Dalodesmus* as an "unsichere Gattung", and referred the name Dalodesmidae to a category "Familiennamen, die keine Gültigkeit haben". Actually, however, the description of *Dalodesmus tectus* was one of COOK's most verbose in the "Brandtia" paper, and as I observed earlier, both the description and the occurrence on Madagascar pointed

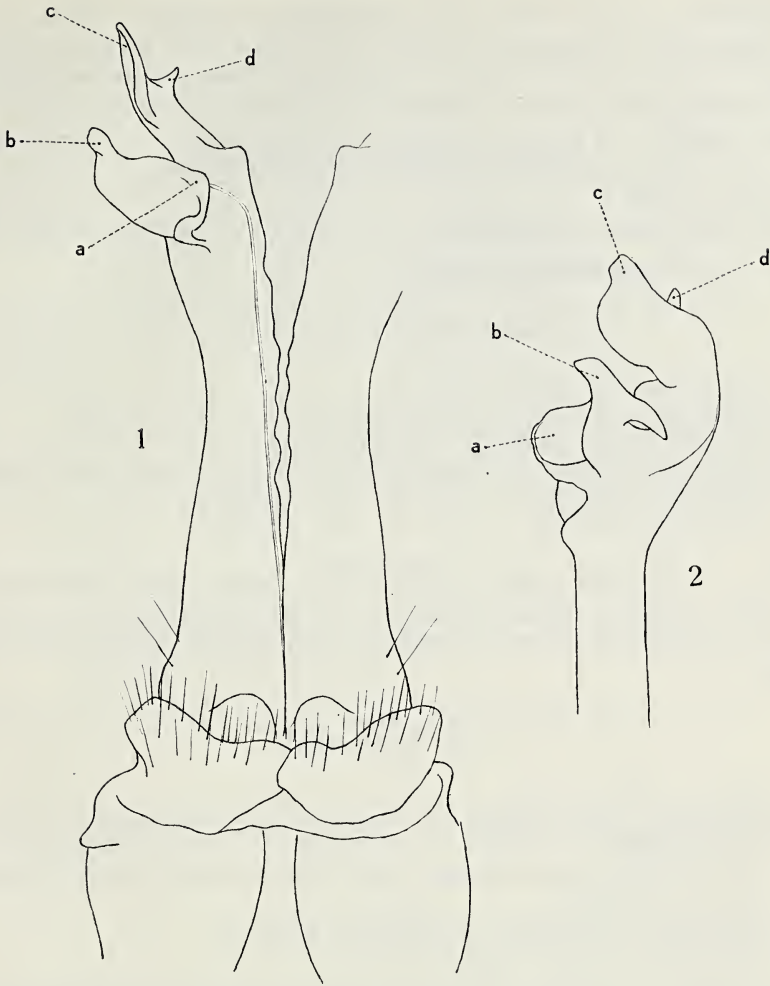


Fig. 1—2. *Dalodesmus tectus* Cook, holotype ♂. — 1: right gonopod and basal part of left gonopod, caudal aspect. — 2: apical part of left gonopod, lateral aspect. a, b, c, d indicate the corresponding processes of the gonopod apex in both drawings.

to a species of the sphaerotrichopodid genus *Tubercularium* Attems, 1898.

At the time my attempts to ascertain the identity of *Dalodesmus tectus* were unsuccessful inasmuch as the type material in the Berlin Museum could not be found. Recently, however R. L. HOFFMAN, during his stay in Berlin, located the type and on his subsequent visit to Amsterdam surprised me with some drawings of the gonopods (fig. 1—2).

A comparison of these drawings with the gonopod figures of the species of *Tubercularium* proves that my earlier surmise that *Dalodesmus* and *Tubercularium* are one and the same genus was correct. *Dalodesmus tectus* is obviously most

closely related to *Tubercularium hova* (De Saussure & Zehntner, 1897). In caudal and lateral aspect the gonopods of these two species have practically the same outline. Differences concern mainly the apical part of the gonopod telopodite, and the following may be noted in particular. In lateral aspect process *a* in *hova* is pointed caudally, and process *b* appears to be more slender and slightly longer. Moreover, process *b* in *tectus* has a basal process pointing cephalad which obviously is lacking in *hova*.

The nomenclatorial consequences of the identity of *Dalodesmus* and *Tubercularium* can be summarized as follows:

Family DALODESMIDAE Cook

- 1896 Dalodesmidae Cook, Brandtia (5): 26.
 1914 Vanhoeffeniidae Attems, Arch. Naturg. 80A (4): 158. (new synonymy).
 1914 Sphaerotrichopodidae Attems, l.c.: 238. (new synonymy).
 1916 Semnosomatidae Brölemann, Ann. Soc. ent. France 84: 555, 585. (new synonymy).
 1916 Tuberculariini Brölemann, l.c.: 557, 585. (new synonymy).
 1916 Icosidesmidae Brölemann, l.c.: 567, 586. (new synonymy).

Note. — The family names based on *Sphaerotrichopus* and *Semnosoma* were incorrectly formed as Sphaerotrichopidae and Semnosomidae and according to article 11 of the Code must be emended to Sphaerotrichopodidae and Semnosomatidae.

Dalodesmus Cook

- 1896 *Dalodesmus* Cook, l.c.: 26.
 1898 *Tubercularium* Attems, Denkschr. k. Akad. Wiss. Wien, math.-naturw. Cl. 67: 360. (new synonymy).
 1901 *Pterodesmus* De Saussure & Zehntner, Abh. Senck. naturf. Ges. 26: 436 (preoccupied name, new synonymy).
 1916 *Eutubercularium* Brölemann, l.c.: 605. (new synonymy).
 1940 *Tubercularium*; Attems, Tierreich 70: 434.

Type-species. — *Dalodesmus*: *D. tectus* Cook, by monotypy. *Tubercularium*: *T. odontopezum* Attems, by monotypy. *Pterodesmus*: no type-species designated. *Eutubercularium*: *Pterodesmus sakalava* De Saussure & Zehntner, by original designation.

The genus now has four species which are confined to Madagascar and Nosy Bé, and which are easily separated on account of the structural details of the gonopods.

Dalodesmus tectus Cook

- 1896 *Dalodesmus tectus* Cook, l.c.: 26.

Dalodesmus hova (De Saussure & Zehntner)

- 1897 *Polydesmus hova* De Saussure & Zehntner, in: GRANDIDIER, Hist. phys., nat. polit. Madagascar 27: pl. 5, fig. 23—23c.

- 1901 *Pterodesmus hova*; De Saussure & Zehntner, l.c. : 436.
 1902 *Polydesmus (Tubercularium) hova*; De Saussure & Zehntner, in : GRANDIDIER, Hist. phys., nat. polit. Madagascar 27 : 91.
 1940 *Tubercularium hova*; Attems, l.c. : 435, fig. 619—620.

Dalodesmus odontopezus (Attems)

- 1898 *Tubercularium odontopezum* Attems, l.c. : 360, pl. 7, fig. 158—161.
 1940 *Tubercularium odontopezum*; Attems, l.c. : 434, fig. 618.

Dalodesmus sakalava (De Saussure & Zehntner)

- 1901 *Pterodesmus sakalava* De Saussure & Zehntner, l.c. : 437, pl. 39, fig. 8—10.
 1902 *Polydesmus (Tubercularium) sakalava*; De Saussure & Zehntner, l.c. : 93, pl. 14, fig. 20—20b.
 1940 *Tubercularium sakalava*; Attems, l.c. : 436, fig. 621.

It is a pleasure to me to acknowledge my obligation to my good friend R. L. HOFFMAN for kindly giving me the drawings which served as the material base for the present paper.

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On klinotaxis in the caterpillars of *Bupalus piniarius* L. (Lep.)

by

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In an earlier paper in Dutch (1957, *Ent. Ber.* 17 : 108—113) I mentioned the ability of caterpillars of the pinelooper, *Bupalus piniarius* L., to counteract their displacement by external forces, e.g. after falling to the ground. When the caterpillar, which lives on the pine needles, falls to the ground, it tends to move toward vertical objects, such as tree trunks, poles and human beings. That movement is independent of the direction of the rays of the sun, so that the phenomenon falls under the term of skototaxis, rather than negative phototaxis (c.f. KLEIN 1934, experiments with *Julus*).

HUNDERTMARK (1937) gave a description of the various dummies to which caterpillars (e.g. larvae of *Lymantria monacha*) react, when presented simultaneously. Compare the WEBER-FECHNER quantitative law of sense excitation. The caterpillar, when taking samples of the surroundings (c.f. *Buccinum undatum* L.), makes weaving movements with its head and front part of the body. It is clear that this is the most simple form of orientation, namely klinotaxis (Greek: klinein = slope). The fluctuation in intensity of the stimuli, received at short intervals by the sense organs, determines the direction. The classic example of this type of