

A new genus of millipede (Diplopoda: Polydesmida: Dalodesmi- dae) from Tasmania with a pseudo-articulated gonopod telopodite

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Abstract

Ginglymodesmus tasmanianus n. gen., n. sp., *G. penelopae* n. sp. and *G. sumac* n. sp. are described from northwest Tasmania, Australia. The three species have long, slender gonopod telopodites divided into proximal and distal sections, with the distal section pivoting around a hinge-like structure which appears to differ from the typical joint in an arthropod leg.

Key words: Diplopoda, Polydesmida, Dalodesmidae, *Ginglymodesmus*, Tasmania, Australia, gonopod, telopodite

Introduction

The taxonomy of Polydesmida is based largely on the structure of the male gonopods. These first appear after the final moult in place of the anterior leg-pair (leg-pair 8) on segment 7. In the later pre-adult stadia, the gonopods are represented by low, rounded primordia with proximal and distal portions separated by a groove (Filka & Shelley 1980). The two portions are thought to be homologous to the coxa and more distal podomeres, respectively, of a walking leg, and to develop during the final moult into the gonocoxa and telopodite of the gonopod.

No developmental studies to date have related individual components of the gonopod telopodite in any Polydesmida to individual podomeres. Instead, taxonomists have relied on hypotheses of homology to name these components. The most recent hypothesis appears to be that of Jeekel (1956), whose work on paradoxosomatids led him “to the conclusion that the [telopodite] branches arising posteriorly of the course of the spermal channel [prostatic groove] are to be considered as tibiotarsus, and the one which arises anteriorly of this course as a femoral process”. The branches to which Jeekel refer arise from the base of the telopodite, which he regarded as homologous to the prefemur. Jeekel (1982) later extended this hypothesis to include all Polydesmida.