



A reclassification of the Pauropoda (Myriapoda)

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Abstract

In the reclassification proposed below the Pauropoda is divided in two orders: Hexameroceta with one family and Tetramerocerata with eight families. Bagnall's division in the suborders Ectomorpha and Endomorpha is removed. The Tetramerocerata is divided in three superfamilies: Pauropodoidea with four families (Pauropodidae, Polypauropodidae, Amphipauropodidae and Diplopauropodidae), Brachypauropodoidea with two families (Brachypauropodidae and Hansenauropodidae) and Eurypauropodoidea with two families (Eurypauropodidae and Sphaeropauropodidae). One new family is erected, Amphipauropodidae, and three new genera are erected, *Ferepaurpus* and *Eburnipauropus* in Pauropodidae and *Borneopauropus* in Brachypauropodidae. The following taxa have got new stat.: *Decapauropus* Remy, *Desmopauropus* Scheller, *Perissopauropus* Scheller, *Propopauropus* Scheller, *Donzelotauropus* Remy, *Nesopauropus* Scheller, Diplopauropodidae Scheller, Hansenauropodidae Remy, *Antillauropus* Remy, *Virginopauropus* Scheller, Sphaeropauropodidae Verhoeff. A list of incertae sedis, nomina dubia and nomina nuda has been prepared. For each genus the distribution and the number of known species is given. The Pauropoda has now two orders, 9 families, 40 genera and about 780 species.

Key words

Myriapoda, Pauropoda, systematics, taxonomy, biogeography

Introduction

The Pauropoda are small progoneate myriapods with the sexual opening between the bases of the 2nd pair of legs. The antennae have 4- or 6-segmented stalk and are branched distally and provided with flagellae and a distal specific branched sense organ. Adults have 12-segmented abdomen with 6-12 tergites with 5 pairs of bothriotricha and 8-11 pairs of legs with 5-6 segments. The pygidium is cleft horizontally and provided with one or two anal plates or replacing appendages.

Although the Pauropoda appears to be a homogenous group, we know almost nothing about generic relationships to understand the affinities between the genera. A few early workers have demarcated genera and presented classifications (Silvestri 1902; Hansen 1902; Verhoeff 1934; Bagnall 1935a) but their studies are all now old and of limited value because the number of species has increased many times over and several new characters have been discovered. When the latest classification appeared, Bagnall's "An extended classification of the Pauropoda to include two new families", somewhat more than 40 species were known, compared to to-day's quite 780 species.

During many years it has been my privilege to examine numerous collections of pauropods from many parts of the world observing, partly a high variation in many characters earlier considered as stable and trustworthy, and partly new characters of taxonomic value which have to be considered. That requires, together with the increased number of species, a new classification, which embodies our present knowledge.

Bagnall (1935a: 621-622) divided the Pauropoda in two suborders:

1. Ectomorpha: "Head and anal segment free and uncovered dorsally. Trunk, exclusive of the pygidium, with 6 terga (which are subdivided in Brachypauropodidae), of which I-V are each furnished with 2 series of dorsal setae (exclusive of lateral pairs), which may be weakly claviform, hastiform, or simply setiform.". This suborder comprised the superfamily Pauropodoidea for Pauropodidae, Polypauropodidae and Asphaeridiopodidae.

2. Endomorpha: "Head, anal segment, and legs concealed by the strongly produced tergal plates. Trunk with six large, strongly chitinized and highly elaborated tergal plates which are without true setae, but are ornamented with numerous modified spines or protuberances and the surfaces of which are either simple (uniform) or broken up into panels or irregular areas by raised ribs.". This suborder comprised the superfamilies Brachypauropodoidea for Brachypauropodidae and Scleropauropodidae and Eurypauropodoidea for Eurypauropodidae.

However, in some species of to-day which evidently have to be classified as Brachypauropodidae in the sense of Bagnall ("Ocular areas of the head not exposed dorsally; last pair of tactile hairs not longer than the first.") the head is free (most genera in Brachypauropodidae) or/and they have more than six tergites (*Hansenuropus*, *Panamauropus*). It has been shown also that species of Asphaeridiopodidae are moulting phases in Pauropodidae (Scheller 1970) and some genera in Pauropodidae and Eurypauropodidae have been revised (Remy 1937b; Scheller 1974a, 1997, 2007b; Scheller & Minelli 2008; Hasenhütl 1986). Several species in Bagnall's Scleropauropodidae are better placed in genera in Pauropodidae (Scheller 2007b). The status of Remy's two genera *Afrauropus* and *Monodauropus* has been changed (Scheller 2008). The former is a genus in Pauropodidae and the latter has to be placed among incertae sedis. In addition the order Hexamerocerata has been discovered (Remy 1950a, 1953c), many hundreds of new species have been described and some new genera have been erected. It is evident that Bagnall's Ectomorpha and Endomorpha no longer can satisfy our need of exactitude.