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A re-assessment of *Konarus* Bamber, 2006 and sympatric leptocheliids from Australasia, and of *Pseudoleptochelia* Lang, 1973 (Crustacea: Peracarida: Tanaidacea)

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Abstract

Following recent revelations regarding males with subchelate chelipeds in the tanaidacean genus *Parakonarus*, a number of Australian leptocheliid taxa are re-assessed, and their males and females variously re-allocated. To assist the interpretation of taxa with subchelate males, *Heterotanais anomalus* Sars is redescribed based on material from the Balearic Islands. The males of *Konarus* are now known to have a subchelate cheliped. The male (only) of *Pseudoleptochelia bulbus* from Melanesia is re-assigned to *Konarus cheiris*, while *Pseudoleptochelia bulbus sensu stricto* is reassigned to *Leptochelia* together with its “*minuta*”-type male, as *Leptochelia bulbus*. *Pseudoleptochelia straddi* is re-assigned to *Konarus*, together with its females from Queensland, Australia, which were previously assigned to *Konarus cheiris*. *Pseudolepto-*

chelia fairgo is confirmed as a member of *Parakonarus*, but material from Queensland is re-described as a new species. Other species previously assigned to *Pseudoleptocheilia* are re-assessed: *P. inermis*, *P. mercantilis* and *P. mortenseni sensu stricto* are transferred to *Leptocheilia*. The “small females” and males of *P. mortenseni* are transferred to *Parakonarus* as a new species. *P. antarctica* is provisionally reverted to *Heterotanais*, *P. mergellinae* to *Leptocheilia*, and *P. filum* is tentatively transferred to *Pseudonototanais*. *Pseudoleptocheilia magna* is synonymized with *P. anomala*. *Pseudoleptocheilia provincialis* is tentatively transferred to *Parakonarus*. *Pseudoleptocheilia occiporta* (females only) is reassigned to *Leptocheilia*; the male of *P. occiporta* is considered to represent a species of *Parakonarus*. *Pseudoleptocheilia juliae* is reassigned to *Parakonarus*. *Konarus*, *Makraleptocheilia*, *Bassoleptocheilia*, *Parakonarus* and *Pseudoleptocheilia* are placed in the new subfamily Konariinae. Generic relationships in this subfamily were confirmed by Principle Components Analysis. *Catenarius* is placed in the new subfamily Catenariinae.

Key words: Leptocheliidae, Leptocheliinae, Konariinae, Catenariinae, *Konarus*, *Leptocheilia*, *Parakonarus*, *Pseudoleptocheilia*, *Makraleptocheilia*, *Bassoleptocheilia*, subchelate

Introduction

When Lang (1973) established the leptocheliid genus *Pseudoleptocheilia*, he inadvertently laid the groundwork for much future confusion in the tanaidacean family Leptocheliidae Lang, 1973. Essentially, although designating *Heterotanais anomalus* Sars, 1882 as the type-species, he defined the genus based largely on his new species *Pseudoleptocheilia mortenseni*, a taxon with females resembling closely those of the genus *Leptocheilia* Dana, 1849, and males with a subchelate cheliped (as has *P. anomala*, females of which were unknown; see Sars, 1886). While this feature of the males was unique to the genus within the Leptocheliidae, not all of the species which he allocated to *Pseudoleptocheilia* had such a cheliped: males of *P. antarctica* (Lang 1953), *P. inermis* Dollfus 1898, *P. mercantilis* (Smith 1906) and *P. mergellinae* (Smith 1906) all have “normal” chelipeds little different from those of the females or those of less-dimorphic species of *Leptocheilia*.

Strangely, Lang’s (1973) diagnosis of the genus *Pseudoleptocheilia* offers no uniquely characterizing features of the males (see Appendix 1). His females are diagnosed as having a one-segmented flagellum on the antennule (expressed as a small cap-like segment), a ventral spine rather than seta on the second article of the antennal peduncle, and swollen bases to the posterior pereopods (unlike *Pseudonototanais* Lang, 1973 or *Heterotanais* Sars, 1882), and only two distal setae on the maxilliped basis (unlike *Leptocheilia sensu* Lang, 1973).

Leptocheliid males are highly specialized at maturity, with atrophied mouthparts; as they are non-feeding, they die soon after breeding. Thus, a common feature of leptocheliid populations is limited seasonality of the presence of mature males, and a highly female-biased sex-ratio, to the point that, for much of the year (in temperate waters at least), mature males can be absent. As a consequence, studies have been challenged when trying to determine characterizing features of the females of *Pseudoleptocheilia* (e.g. Bird & Bamber, 2000, p.81), as these were often all that was available. Nevertheless, taxa with subchelate males were inevitably attributed to *Pseudoleptocheilia* (e.g. Bamber, 2008) and as a consequence assigned to what appeared to be appropriate females in the samples, if any (e.g. Bamber, 2005; 2006).

Bird (2011) was the first to shed some light on the error in this thinking. He described as new the leptocheliid genus *Parakonarus*, a taxon with females somewhat similar to those of the existing genus *Konarus* Bamber, 2006 (thought to be known only from females) but also having subchelate males. Bird (*ibid.*) also pointed out that *Pseudoleptocheilia mortenseni* “may prove to be a chimera, and the small female ... and the male ... could belong to an undescribed species of *Konarus* or *Parakonarus*”; in other words, Lang’s (1973) concept of *Pseudoleptocheilia*, with females like those of *Leptocheilia* and males sometimes subchelate, was likely to be misguided.

Of further relevance, Smith (1906) re-described what he took to be Sars’ *Heterotanais anomalus*, including females which showed features characteristic of *Konarus* (*vide* Bamber, 2006), such as a stout antennule and a cheliped “cuff” (Smith, 1906, Pl. 21, figs 32, 34). These were quite distinct from *Pseudoleptocheilia mortenseni*, or indeed from any species allocated to *Pseudoleptocheilia* by Lang (1973) of which females were known; in addition, Smith himself (*ibid.*) described the female of his *Heterotanais magnus* as resembling that of his “*H.*” *anomalus* “in all particulars”.

Morales-Núñez *et al.* (2013) attempted to resolve the anomaly of *Pseudoleptocheilia* in their description of a new species from Puerto Rico, involving examination of Mediterranean material of *P. anomalus*, including