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Characterization of a monophylum *Echinocletodes*, its exclusion from Ancorabolinae (Copepoda, Harpacticoida), and displacement of *E. bodini* and *E. walvisi* to *Cletodes*, including the description of two new species

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Abstract

The discovery of two new species of Harpacticoida (Crustacea, Copepoda), *Echinocletodes voightae* **sp. nov.** (Ancorabolidae Sars, 1909) and *Cletodes meyerorum* **sp. nov.** (Cletodidae T. Scott, 1905 sensu Por, 1986), permitted a phylogenetic re-examination of the genus *Echinocletodes* Lang, 1936, whose membership in Ancorabolidae has been increasingly queried in the past decade. *Echinocletodes voightae* was discovered in wood-falls in the Gorda Ridge (Northeast Pacific Ocean). It resembles the type species *E. armatus* T. Scott, 1903, sharing with it seven synapomorphies. In contrast, the other two species in the genus, *E. bodini* Dinet, 1974 and *E. walvisi* Dinet, 1974, were originally collected in the deep Angola Basin (SE Atlantic), and do not exhibit any of these synapomorphies. In fact they correspond more closely with *Cletodes meyerorum*, which is undoubtedly *Cletodes* Brady, 1972, due to the presence of two apomorphies of that genus. Consequently, both *E. bodini* and *E. walvisi* are moved from *Echinocletodes* to *Cletodes*. A revision of ancorabolid apomorphies showed ambiguities, being absent from some Ancorabolidae but present in other non-ancorabolid taxa (like e.g. *Cletodes*). Ancorabolidae were, therefore, considered to be a paraphyletic group that requires extensive re-evaluation, additionally including at least the Cletodidae and Laophontidae T. Scott, 1905. Similarly when comparing *Echinocletodes* with the two ancorabolid subfamilies, Ancorabolinae Sars, 1909 and Laophontodinae Lang, 1944, it was revealed that many species are apparently distributed chaotically over several supraspecific taxa (at least Ancorabolidae and Cletodidae) instead of forming monophyla.

Key words: Systematics, *Echinocletodes voightae*, *Cletodes meyerorum*, wood-falls, deep sea, meiofauna

Introduction

In 1903, Thomas Scott described a peculiar harpacticoid species he named *Cletodes armata* T. Scott, 1903, found in pieces of wood dredged from 159 m in the Faroe Channel. Decades later, Lang (1936a) published a detailed revision of the family Cletodidae T. Scott, 1905. He noted several differences between *C. armata* and the five then known *Cletodes* species and, therefore, established *Echinocletodes* Lang, 1936 transferring *Cletodes armata* into that new genus. Subsequently, Lang (1944, 1948) moved *Echinocletodes* from Cletodidae to Ancorabolidae Sars, 1909, more precisely to the subfamily Ancorabolinae Sars, 1909.

Echinocletodes remained monotypic until *E. bodini* Dinet, 1974 and *E. walvisi* Dinet, 1974 were described from the deep Southeast Atlantic (Dinet 1974), and no additional species have been described since. After Lang's (1948) consideration of the genus within a systematic analysis of Ancorabolidae, no subsequent systematic study included it, perhaps because of the unavailability of type material and the rather unsatisfying descriptions of the known species. Most recently, Conroy-Dalton & Huys (2000) listed the taxon as genus inquirendum, and although Conroy-Dalton (2003a, 2004) also noted the unresolved position of *Echinocletodes*, no further phylogenetic insights were provided. Therefore, the systematic status of *Echinocletodes* within Ancorabolidae remains unclear.

During the cruise M 48/1 DIVA 1 of RV METEOR in July–August 2000 several multicorer (MUC) samples were taken at different stations in the Angola Basin (SE Atlantic off Namibia) (Rose *et al.* 2005). Some of these samples contained many specimens of a new copepod species showing a high morphological affinity to both *E.*