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Graptocarcininae n. subfam., an extinct subfamily of Dynomenidae Ortmann, 1892 (Crustacea, Brachyura, Podotremata)

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Abstract

Newly available material of a dynomenid crab, *Graptocarcinus urbasaensis* n. sp., from the Upper Cretaceous of northern Spain (Álava and Navarra), allowed the study of the morphology of well preserved ventral surfaces. We describe a new subfamily of Dynomenidae, comprising the middle-Upper Cretaceous *Graptocarcinus* and the Upper Jurassic *Cyclothyreus*. Graptocarcininae n. subfam. shows a primitive configuration of the abdomen and an abdominal holding mechanism that is similar to that of the Acanthodromiinae. Recognition of this ancient extinct subfamily confirms that the Dynomenidae is amongst the most basal brachyuran families.

Key words: Crustacea, Decapoda, Brachyura, Dynomenidae, Acanthodromiinae, *Graptocarcinus*, *Cyclothyreus*, fossil crab, new subfamily, new species

Introduction

The basal brachyuran family Dynomenidae was revised by McLay (1999) and subdivided into four subfamilies by Guinot (2008): Acanthodromiinae Guinot, 2008, Dynomeninae Ortmann, 1892, Metadynomeninae Guinot, 2008, and Paradynomeninae Guinot, 2008. The polarity of dynomenid character states recognised by Guinot (2008) led her to hypothesise that Acanthodromiinae, was the most basal among the extant dynomenids.

Schweitzer & Feldmann (2009: 358) suggested that "...many of the extinct so-called dynomenids cannot reliably be placed within the Dynomenidae as currently understood". The four subfamilies established by Guinot (2008) were ignored in the list of fossil and living genera by De Grave *et al.* (2009: 8) and in the list of fossil taxa of Schweitzer *et al.* (2010: 65) despite the fact that a listing of taxa should be free from an *a priori* selective treatment, all the more so since other fossil taxa in the same papers are cited as "unplaced at subfamily level" or are *incertae sedis*.

The relatively few genera and species in the four extant dynomenid subfamilies and their wide geographic distribution are evidence that they are relicts of a much richer, more diverse group, with a long, perhaps complex evolutionary history. McLay (1999: 434) expressed the view that "The fossil record does not provide a clear answer to the question about the relationships of these crabs". Extinct forms may both emend currently recognised dynomenid subfamilies, or are members of extinct subfamilies, already known or new. Reliable differentiation of extinct dynomenid subfamilies can only be achieved by the study of ventral characters, but unfortunately only isolated carapace material is known. Newly available material of a dynomenid crab from Santonian (Upper Cretaceous) deposits of Álava and Navarra provinces, northern Spain, being described here as a new species, nevertheless permitted the study of the morphology of well preserved ventral surfaces. The new findings presented herein thus substantially add to our understanding of the primitive brachyuran crabs.