

Phylogeny of the clawed lobsters (Crustacea: Decapoda: Homarida)

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Abstract

The generic and familial structure of the clawed lobsters, Homarida, was studied by cladistic analysis. Previous phylogenetic studies of the clawed lobster genera have focussed on the putative nephropoid families: Nephropidae, Thaumastochelidae, and Chilenophoberidae. Recent high-level studies of decapod phylogeny, however, show that in addition to Nephropidae and Thaumastochelidae (both Nephropoidea), the Enoplometopidae (Enoplometopoidea) are ingroup homaridans. Conversely, the homaridan placement of Chilenophoberidae has been questioned, instead possibly having astacidan affinities. This study, building on previous analyses, incorporates additional taxa and data to examine phylogenetic relationships of the genera and families. Analyses were conducted including both extant and extinct taxa (analysis A), and with extant taxa only (analysis B). The resulting topologies from analyses A & B were largely compatible indicating that the phylogenetic signal among homaridan genera was not significantly impacted by fossil taxa. Results support recognition of Nephropoidea, comprising Thaumastochelidae and Nephropidae, and Enoplometopoidea, comprising Enoplometopidae and Uncinidae. Affinities of Chilenophoberidae were found to lie with Astacida rather than Homarida, albeit with weak jackknife support. Thaumastochelidae is strongly supported as monophyletic, with two extant genera and the extinct *Oncopareia*. Present data, however, are equivocal about an independently monophyletic Nephropidae.

Key words: Decapoda, Homarida, Nephropoidea, Chilenophoberidae, Enoplometopoidea, Nephropidae, Thaumastochelidae, Enoplometopoidea, Uncinidae, phylogeny, lobster

Introduction

The Astacidea comprises Astacida Latreille, 1802, containing the freshwater crayfish, and Homarida Bate, 1888, containing the marine clawed lobsters (Ahyong & O'Meally 2004). Homaridans, at least at a popular level, are best known as culinary delicacies, largely through three, commercially harvested species in the genera *Homarus* Weber, 1795, and *Nephrops* Leach, 1814. Presently, however, more than 130 species in more than 20 genera