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A taxonomical review of the *Gnathophausia* (Crustacea, Lophogastrida), with new records from the northern mid-Atlantic ridge

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Abstract

Taxonomy of 11 species contained within the Lophogastrida genus *Gnathophausia* is presented. We report new records of *G. affinis*, *G. gigas*, *G. ingens*, and *G. zoea* from the Atlantic Ocean between Iceland and the Azores. We also describe a new species, *G. bergstadi* that resembles *G. zoea*, but differs in having a heart-shaped apex on the telson and having the lower lateral keels of the carapace not fusing with the upper lateral keels.

Gnathophausia is found to be most abundant at bathyal depths. *G. zoea*, *G. gigas*, and *G. ingens* are reported distributed throughout the world's oceans. *G. affinis* and *G. bergstadi* are confined to Atlantic water masses, whereas *G. childressi*, *G. longispina*, and *G. elegans*, are found in the Pacific. A more limited distribution in tropical regions of the world's oceans is observed in *G. gracilis*, and also *G. fagei* and *G. scapularis* that are confined to the South China Sea and Indian Ocean, respectively.

We include an identification key and known distribution of all accepted *Gnathophausia* species.

Key words: new species, Lophogastrida, *Gnathophausia bergstadi*, bathypelagic, Atlantic Ocean

Introduction

First established by Willemoes-Suhm (1873), for the inception of *Gnathophausia gigas* and *G. zoea*, the Lophogastrida genus *Gnathophausia* has had a complicated taxonomical history. Diversifying morphology due to morphogenesis from juveniles to adults has led to misidentifications and erroneous erections of new species. In effect 21 species have been described whereof 10 are at present considered valid (Mees 2012). In addition, two of these species, *G. gigas* and *G. ingens*, have been suggested to constitute a separate genus, *Neognathophausia* Petryashov, 1992, which has later, based on phylogenetic arguments, been contested as invalid (Casanova *et al.* 1998).

In collections from the 2004–2007 Mar-Eco cruises, which were retrieved from the mid-Atlantic Ridge between Iceland and the Azores, more than 4000 individuals belonging to the order Lophogastrida were captured. Five species were identified to the family Gnathophausiidae Udrescu, 1984. *G. bergstadi* n.sp. is described as new to science, and the remaining four, *G. affinis* G.O. Sars, 1883; *G. gigas* Willemoes-Suhm, 1873; *G. ingens* (Dohrn, 1870); *G. zoea* Willemoes-Suhm, 1873; are now known to have a global distribution.

Of the remaining six species, *G. gracilis* Willemoes-Suhm, 1875 is also found worldwide, while *G. childressi* Casanova 1996b; *G. elegans* G.O. Sars, 1883; *G. fagei* Casanova, 1996a; *G. longispina* G.O. Sars 1883; and *G. scapularis* Ortmann, 1906 are described from the Pacific Ocean.

In this paper, we present a complete taxonomic overview of the *Gnathophausia*, and include new distributional data from bathypelagic depths of the mid-Atlantic.