

The Families and Genera of Marine Gammaridean Amphipoda (Except Marine Gammaroids)

Part 1

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ABSTRACT. Keys, diagnoses and lists of species are presented for the marine families and genera of Gammaridea except those marine gammaroids treated by Barnard & Barnard (1983). This work is a handbook for the identification of gammaridean amphipods to generic level through the use of artificial (non-phylogenetic) keys at the family-group level which lead to subsidiary keys to the genera of families or family groups. Genera in polytypic families are diagnosed and described sufficiently to fit the taxonomic complications within each group. Diagnoses of families are limited to those characters departing from a gammaridean model which is diagnosed in words and illustrations; hence some families may have identical diagnoses. Therefore, cross-comparisons to similar families are made an organic part of each diagnosis. Family descriptions amplify the generalities of family characters. Relationships are identified not at phylogenetic level but in terms of possible confusion in making identifications. The reader must cross-compare relationships among the several families that might be mentioned as part of the diagnoses because, to save space, all possible combinations are not replicated at every possible node. The same comparative method is generally but not exclusively used for the genera of each family. Multiple keys are provided for some of the more difficult families; taxa are often cited more than once in a key. A pictorial key to families operates with the same proviso that only the deviations from the model gammaridean are depicted. The pictorial key is arranged in reverse order so that the most anomalous taxa appear first and those closest to the model diagnosis are placed at the end. This progression follows the idea that the most deviant taxa are the easiest to identify to family level. The master key to families has the endpoints necessary to identify marine gammaroids by reference to Barnard & Barnard (1983); the two works are constructed in parallel fashion. Families, and genera within families, are organised alphabetically. An index provides the principal reference for each genus and species. Where necessary, each taxon is supplied with notes on removals or major changes since 1965 which have not become common

knowledge, or which are implemented herein. Each genus is supplied with a list of species and selected references. A geographic code, applied to each species, can be identified in the lists and maps of Barnard & Barnard (1983). A bibliography includes many publications not cited in the text but omits the marine gammaroids except for items published since 1980 which were not included in Barnard & Barnard (1983). Effective use of this handbook requires memorisation of a gammaridean model, skill in dissection following directions supplied herein, familiarity with the glossary, and acceptance of the idea that keys and diagnoses are only aids, not absolute endpoints.

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Keys and diagnoses, with illustrations, to the families and genera of marine gammaridean Amphipoda are presented here in the form of a handbook. A handbook represents the subject in a condensed fashion which abbreviates many of the topics of concern that would be more fully elaborated in a definitive monographic treatise; for example, taxal diagnoses are abbreviated by reference to a basic model diagnosis, descriptions and variables are pared to the essential minimum, synonymies include only principal references and species are only listed but neither diagnosed nor provided with keys. The taxa are largely presented in alphabetical rather than in phyletic order to assist in rapidly locating endpoints in keys. Illustrations are reduced to representations.

This work comprises an update to Barnard (1969) and forms a companion to the work by Barnard & Barnard (1983) which treated all freshwater gammarideans and all marine Gammaridea in the section Gammarida. None of that material is repeated herein but the main family keys here are constructed to contain all marine components of those volumes; marine gammarideans are herein called 'Gammarida'. The various classificatory levels of Gammarida are found in the glossary and their adjectives are Gammaridan, gammaroid and gammarid.

Since 1969, when J.L. Barnard monographed this suborder, the number of families has increased from 54 to 91, the number of genera from 670 to 1055 and the

number of species from 3300 to 5733 (J.L. Barnard, 1959d and subsequent files). Stebbing's (1906) and Barnard's (1969c) general arrangement of families has been radically altered and reorganised into superfamilies and many new families and subfamilies by Bulycheva (1957), Bousfield (1973, 1977, 1978, 1982a, 1983), J.L. Barnard (1972b, 1973b, 1974), and Barnard & Drummond (1982), but superfamilies are so difficult to diagnose that it remains easier to write a handbook for identification of genera with focus at family level. Superfamilies, infraorders and sections are therefore ignored as an overall classificatory scheme but a few of the categories are taken up where we have found them useful, such as grouping together the various families assignable to Amphilochoidea, Corophioidea (Corophiida), Gammarida, Haustorioidea, and Talitroidea, so that subsidiary and supergroup keys can be provided. Of the 91 families recognised herein, those we treat are listed in our table of contents, whereas List 1 delineates families we cannot yet recognise and List 2 lists family groups found in Barnard & Barnard (1983). Once an amphipod has been identified to family level in the keys the relevant family is found in alphabetical order rather than in phyletic order. The discovery of many additional species and genera since 1969 has required a considerable emendation of familial and generic limits. The near absence of phyletic monographs at family level and the plethora of faunal