AMPHIONIDES REYNAUDII (H. MILNE EDWARDS), REPRESENTATIVE OF A PROPOSED NEW ORDER OF EUCARIDAN MALACOSTRACA

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INTRODUCTION

Heegaard (1969) has recently described the full larval development of Amphion H. Milne Edwards and confirmed that such larvae metamorphose to produce the form known as Amphionides Zimmer. I have, however, come to quite different conclusions from those of Heegaard on the sexual dimorphism of this remarkable crustacean. It is suggested in the following pages that the female possesses a unique form of thoracic brood pouch, that in view of this and other peculiarities the animal cannot be retained in the Caridea, where most recent authors have placed it, and its retention in the Decapoda must be seriously reconsidered.

This paper is based on 251 larvae in all stages taken in the upper 200 m during the International Indian Ocean Expedition and on 15 late larvae and 43 metamorphosed specimens collected at greater depths by R.R.S. ‘Discovery’ off the west African coast.

SYNONYMY

The larval and post-larval forms of the species were described under different names (generic and specific) by H. Milne Edwards (1832) and Zimmer (1904) respectively. Heegaard (1969) has now shown convincingly that only one species is involved and therefore the same binomen must be used for all stages. Unfortunately he overlooked the fact that H. Milne Edwards’ generic name, although the oldest, was pre-occupied when first proposed. This fact also affects the family name.

AMPHIONIDIDAE


Amphionides Zimmer, 1904

Amphionides reynaudii (H. Milne Edwards, 1832)

*Amphion [Reynaudii]* H. Milne Edwards, 1832: 339, pl. 12A. Type locality: "les mers d'Asie".


*Amphion Reynaudii*: H. Milne Edwards, 1837: 489, pl. 28 figs. 8, 9.

*Amphion provocatoris* Bate, 1888: 347, 913-918, pl. 148. Type locality: south of the Azores.

*Amphion armata* Koeppel, 1902: 295. No type locality given.

*Amphionides valdiviae* Zimmer, 1904: 225. Type localities: south east of Madeira, south of Cape Palmas, and between Seychelle Is. and Dar es Salam.

The original description nowhere includes the binomen *Amphion Reynaudii*, although Milne Edwards (1832) stated that he was dedicating the single species to his friend M. Reynaud, and the legend to the plate refers to "Amphion de Reynaud"; the caption beneath the plate gives the species as "*Amphion Reinaudii* (Edw.)". Milne Edwards (1837) used the name *Amphion Reynaudii* for the first time in his Histoire Naturelle des Crustacés, and he substituted "l'Océan indien" for "les mers d'Asie" as the locality.

Bate (1888) founded his species *Amphion provocatoris* on a female in the last zoeal stage with no rostrum but with the post-rostral spine well developed. This latter spine, on the anterior dorsal organ, is present in all specimens I have seen from both the Atlantic and Indian Oceans, except those in the first two zoeal stages. It is also present in Pacific specimens (Heegaard, 1969) and it cannot be used as a character on which to subdivide the genus. As noted by Gurney (1936), the rostral spine is completely absent in some specimens. This condition can be found both in larvae and in metamorphosed specimens, and it appears to be much more common in the Atlantic than in the Indian Ocean, although Milne Edwards' type specimen was stated to have no rostrum. In recent specimens taken by R.R.S. 'Discovery' south-west of Cape Verde, the rostrum may be prominent, minute or absent, and in some cases the complete range of variation may be found in a single sample. While the proportion of specimens with no rostrum may, perhaps, be used to distinguish different populations, it would seem invalid to distinguish separate species on rostral characters. The name *Amphion provocatoris* Bate must therefore be regarded as a synonym of *Amphion reynaudii* H. Milne Edwards.

Koeppel (1902) recognized four species:

1. *A. Reynaudii* H. Milne Edwards, with neither rostrum nor post-rostrum;
2. *A. Reynaudii* Bate, with rostrum but no post-rostrum;
3. *A. provocatoris* Bate, with post-rostrum but no rostrum;
4. *A. armata* Koeppel, with both rostrum and post-rostrum.

For reasons given above, all four must be regarded as synonymous.

Gurney (1936) and Heegaard (1969) both came to the conclusion that there is only one valid species, but Balss (1957) listed Amphionella as containing three species (presumably *A. reynaudii, A. provocatoris* and *A. armata*) and regarded Amphionides as a separate genus with one species.