

12. THE SHRIMPS ASSOCIATED WITH INDO-WEST PACIFIC ECHINODERMS, WITH THE DESCRIPTION OF A NEW SPECIES IN THE GENUS *PERICLIMENES* COSTA, 1844 (CRUSTACEA: PONTONIINAE).

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SUMMARY

At present, fifty one species of shrimp are known to live in association with Indo-West Pacific echinoderms. Of these, only one is a stenopodidean, all others belong to the Caridea, principally to the subfamily Pontoniinae (35 species), with the others in the families Alpheidae (11 species) and the Gnathophyllidae (4 species). The echinoderm hosts may belong to any class but are mainly the Crinoidea (26 species), Echinoidea (18 species) and Asteroidea (18 species), although only a very small number of shrimp species are associated with the latter class. Three ophiuroids, all basket stars, and eight species of holothurians are known to have shrimp associates. The available knowledge of the biology of these associations is outlined.

Keys for the *provisional* identification of these shrimps are provided and one new species, *Periclimenes ruber*, is described and illustrated. The distribution of the shrimps is outlined and the known hosts listed.

INTRODUCTION

The shrimp fauna of the tropical and subtropical Indo-West Pacific region is dominated, in shallow water, by three groups, the Pontoniinae, the Alpheidae and the Hippolytidae. Numerous species of these groups are now known to live in "commensal" association with other marine animals. The details of these associations are very poorly known, and the use of the term "commensal" is, in general, rather misleading as it implies that something is known about the trophic relationships involved. This is rarely the case, and in the vast majority of examples virtually nothing is known about the feeding methods concerned. The use of the term "associates" is probably preferable in the present state of ignorance, especially as it seems probable that a variety of feeding strategies may be involved.

Associations between shrimps and other marine animals are particularly common in the warm tropical waters around coral reefs and are relatively infrequent in colder waters. Only a single example is known from the British Isles, *Typton spongicola* Costa, a pontoniine shrimp that lives in sponges. Little is known of these associations in deep water but they appear to be less frequent. Species of many shrimp families do occur in depths well over 100 fms and some of these probably are "commensals".

SYSTEMATIC ACCOUNT

Keys are provided below for the provisional identification of the known shrimp associates of Indo-West Pacific echinoderms. Where possible these identifications should be based on ovigerous females, and should be checked in detail with the original or later descriptions for confirmation. The keys will not separate related species found on non-echinoderm hosts.

KEY TO THE GENERA OF SHRIMP ASSOCIATED WITH INDO-WEST PACIFIC ECHINODERMS

1. First two pairs of pereopods with chelae 2
- First three pairs of pereopods chelate *Odontozona*

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