LABORATORY LARVAL CULTURE OF A SPIDER CRAB, *DOCLEA MURICATA* (FABRICIUS, 1787) (DECAPODA, MAJIDAE)

BY

T. KRISHNAN and T. KANNUPANDI
Centre of Advanced Study in Marine Biology, Annamalai University, Parangipettai 608 502, Tamil Nadu, India

RÉSUMÉ
Le développement larvaire de *Doclea muricata* (Herbst), élevé au laboratoire, comprend deux stades Zoé et un stade mégalope. Avec une salinité de 33 ± 1‰ et à la T° de 27 ± 1.5°C. Utilisant des nauplii d'*Artemia* (San Francisco Bay Brand) comme source de nourriture, le stade mégalope a pu être atteint en cinq jours. Les différents stades larvaires sont décrits et comparés avec ceux appartenant à trois autres espèces du même genre.

INTRODUCTION

Although the genus *Doclea* (family Majidae, subfamily Pisinae) is represented by 7 species in Indian marine waters (Alcock, 1895), the present knowledge of the larval development for this genus is restricted to only three species. For *D. gracilipes* Stimpson, 1857, megalopal and first crab stages were described from plankton collections (Ghappar, 1956). Sankolli & Shenoy (1975) presented detailed descriptions of larval stages reared in the laboratory for *D. hybrida* (Fabricius, 1798). Very recently, Mohan & Kannupandi (1985) reported the complete life history from first zoea to first crab stage for *D. ovis* (Fabricius, 1787) under laboratory conditions. This paper describes the larval stages of *D. muricata* reared under laboratory conditions.

Although Alcock (1895) considered *D. hybrida* as the adult stage of *D. muricata*, Sankolli & Shenoy (1975) clearly established that *D. muricata* and *D. hybrida* are two independent species having clear-cut differences in their anterior male abdominal appendages. Further, *D. muricata* can be separated from *D. hybrida* by the presence of spines and absence of tubercles on the carapace of the former and also the presence of tubercles and absence of spines on the carapace of the latter (Alcock, 1895).

MATERIALS AND METHODS

On 19 January 1985 an ovigerous female of *D. muricata* was collected from trawl catches off Porto Novo (11°29’N 79°46’E) and was maintained in a plastic trough with filtered and aerated sea water until hatching which lasted
for 2 hours in the early hours on 21 January 1985. Ten vigorously swimming positively phototactic zoeae were placed in individual glass bowls containing 100 ml filtered seawater at the combination of salinity 33 ± 1 ppt and temperature 27 ± 1.5°C. Every morning the rearing water in each bowl was changed and the larvae were fed ad libitum with newly hatched San Francisco Bay Brand *Artemia* nauplii.

The larvae were examined each day to record survival, moulting and other rearing methods were similar to that of Mohan & Kannupandi (1985, 1986).

**RESULTS**

The development includes two zoeal stages and a megalopa, which is characteristic for majid crabs. The duration of zoea I was 2½ days and mortality was less than 20% of the reared population. The duration of zoea II was 2½ days and 40% mortality occurred, before moulting into megalopa.

**Zoea I (figs. 1A-L)**

Dorsal spine length, 1.18 mm; carapace length, 1.05 mm; abdomen length, 1.82 mm.

Carapace (figs. 1A, B). Smooth, globose with very short rostrum, posteriorly curved dorsal spine, a small dorsal protuberance behind rostrum, a seta present between the dorsal protuberance and the dorsal spine, two equal protuberances on either side of the dorsal spine on the carapace. Postero-ventro-lateral carapace border slightly dilated and expanded with a characteristic "majid seta" followed by 5 setae. Eyes sessile.

Abdomen (fig. 1C) with 5 somites plus telson, first somite with 3 dorso-median setae, second with 2 lateral anteriorly curved knobs. No pleopod buds. Telson forked with smooth furca, without lateral spines. Posterior margin bearing 6 spines armed with spinules.

Antennule (fig. 1D) uniramous, small, conical with 3 long, 1 short aesthetases plus a small simple seta terminally.

Antenna (fig. 1E). Protopodite an elongated tapered process armed with 2 rows of spinules in distal half. Endopodite bud unarmed, about one sixth length of protopodite. Exopodite slightly shorter than protopodite with 2 naked setae subterminally.

Mandible (fig. 1F) asymmetrical. Left incisor margin with 2 small acute teeth, right with 1 small acute tooth. Left and right molar with 14 small teeth each.

Maxillule (fig. 1G). Coxal endite with 2 sub-terminal and 4 terminal setae. Basal endite bearing 4 spines and 2 setae. Endopodite unsegmented with 2 sub-terminal and 4 terminal setae.

Maxilla (fig. 1H). Unilobate coxal endite with 3 setae. Bilobed basal endite with 2.3 setae progressing distally. Unilobate endopodite bearing 4 setae. Scaphognathite with 16 plumose setae.