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Cilicaea Latreillei Leach: A Little Known Fouling Sphaeromatid From Bombay High, Arabian Sea

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Abstract Cilicaea latreillei *Leach, 1818, a hemibranchiate sphaeromatid, had been found to be present among the fouling community of an offshore oil platform situated in the Bombay High area of Arabian Sea. This is the first record of* C. latreillei *from Indian waters. The discovery is interesting, and it is hypothesized that the introduction of this species to Bombay High had been mediated by ships. A small account of its distribution is also given in this article.*

Keywords *Cilicaea latreillei*, sphaeromatid, fouling, Bombay High.

Introduction

Isopods from Indian waters have received very little attention (Eleftheriou et al., 1980). Even among them only a few groups like the Sphaeromatidae have been dealt with in the literature because of the role they play in the destruction of submerged timber (Nair, 1968; Pillai, 1955). However, there are hardly any references available on fouling isopods. During the course of investigations on the fouling of offshore platforms of the Arabian Sea, occurrence of *C. latereillei* in the fouling community was observed. A review of the literature reveals that its occurrence in Indian waters has not been reported so far. Furthermore, its transportation to the Bombay High area seems to be an intriguing question, and hence its occurrence is reported and a probable explanation for the same is offered in this article.

Materials and Methods

The area of study is about 170 km off Bombay on west coast of India, generally known as Bombay High (19°21'N, 71°21'E). The studies were carried out from an offshore oil-producing and processing platform. Standard method of exposing test panels was employed for studying the biofouling community: panels of size 15 cm × 10 cm × 0.3 cm, made of different materials such as mild steel, aluminum, a fiber glass-reinforced plastic were used for this purpose. Four depths, *viz.*, 2 m, 22 m, 42 m, and 62 m, were selected for panel exposure, the depth of the water column at the study site being 78 m. The panels were exposed for three different time durations—monthly, four monthly, and annual. The work was initiated in May, 1983, and continued until to March, 1986.

Observations

The first specimen of *C. latreillei* was collected in August, 1984, from a panel that was exposed at 2 m depth for one year. Thereafter, specimens were observed on panels almost continuously. No specimens were observed on panels that were exposed for monthly durations. It appears that the organisms require some sort of shelter offered by the hyroid and algal mat or empty shells of oysters, which probably explains their occurrence on only panels that had an exposure period of four months or more and had adequate fouling.

The organisms seemed to prefer the upper two depths to the lower ones as could be seen from the fact that only one specimen was collected from 62-m depth. Harrison and Holdich (1984) reported that this species might be found in depths extending up to 289 m. In the present studies the species were observed on all three types of panels used.

Both males and females were collected during the course of the study. Females were smaller than males. The length (from cephalon to tip of uropod) of the largest male was 1.60 cm and the breadth was 0.65 cm. For details regarding description of the morphologic features, see Harrison and Holdich (1984).

Discussion

In the very little literature published on *C. latereillei*, its distribution has been reported to be confined to Indonesia, the Philippines, Sri Lanka, South Africa, the Red Sea, and Australia (Harrison and Holdich, 1984). This species has not been reported earlier from the Arabian sea. Furthermore, it was not encountered by Jones (1986), who made extensive surveys along the coasts of the Arabian Gulf. With the present finding, the distribution is further extended northward. At present, 12 species of *Cilicaea* are known, the distribution of which was reported by Harrison and Holdich (1984) and is presented in Table 1. It is interesting to note that all the species occur in Australia or New Zealand. Out of the 12 species, only *C. tenuicaudata* and *C. latereillei* had been reported from other areas.

Although not a prominent member of the Bombay High fouling community, *C. latereillei* has been observed almost continuously since August, 1984. Our own investigations made prior to this time, initiated in May, 1983, did not collect the species. All the specimens obtained during these studies were more than 7–8 mm in length which indicated that the organisms had attained a minimum growth before entering into the biofouling community, unlike some other crustaceans like amphipods (e.g., *Podocerus* sp.) whose recruitment occurred quite early in their life cycle. Earlier researchers of the biofouling on Indian coastal waters did not come across this sphaeromatid. Some of the published reports include Iyenger et al. (1957) and Karande (1968) from Bombay, Anil (1986) from Goa, Menon et al. (1977) from Mangalore, and Nair (1967) from Cochin waters on the west coast. The present work being the first done in the deeper offshore waters of Indian peninsula, further research of this kind would be necessary to describe the exact distribution of this species.

An important finding from the present study is that, as mentioned previously, the specimens reach a definite size before they form a part of the fouling community. Nor do they appear to be residents of the planktonic community, evidenced by the fact that fortnightly samples collected from near-bottom to surface

Table 1
Distribution of Various Species of *Cilicaea*

Species	Area of Distribution
C. crassa	East Australia
C. crassicaudata	North and East Australia
C. curtispina	South and Southeast Australia
C. hystrix	East Australia
C. longispina	Southeast Australia
C. spinulosa	East Australia
C. dolorosa	New Zealand
C. tasmanensis	New Zealand
C. augustispinata	New Zealand
C. caniculata	North and Northeast Australia
	New Zealand
C. tenuicaudata	East Australia, New Britain
C. latreillei	Indonesia, Philippines
	Sri Lanka, South Africa
	Red sea, Australia, and Arabian sea[a]

[a] Present observation.

have failed to indicate their presence. Extensive benthic surveys were carried out in the vicinity of the platform, but the fauna did not include any of these sphaeromatids. This, along with the fact that *C. latreillei* was not reported by any of the previous workers who studied the fouling aspects of the Indian waters, indicate that this species might have been transported to Bombay High by some agency. The latter is an area of intense offshore activity (oil exploration and recovery), with rigs and supply vessels from many parts of the world. It is probable that *C. latereillei* could have been transported to Bombay High by ships from southern waters. Such incidents of transportation of marine invertebrates have been reported earlier (Mak et al., 1985). Allen (1953) in his review, discussed the conditions for the transfer of marine invertebrate foulers and their successful establishment in the new locality. We believe that the transfer of *C. latreillei* culminated in its successful recruitment in the Bombay High fouling community, resulting in its first observation in August, 1984. They are probably part of the established marine growth on the underwater structures of the oil platforms and make their visit to the panels once they have sufficient fouling to offer protection and/or food.

Test panels of timber (*Mangifera indica*) exposed in this area were fouled and not bored by *C. latereillei*, indicating that the latter is not a boring sphaeromatid.

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