

NOTES

SHIPWORMS FROM THE COCHIN HARBOUR, SOUTH-WEST COAST, INDIA

EARLIER studies have shown the existence of not less than twenty-eight valid species of shipworms (Becker, 1958 ; Nagabhushanam, 1960; Roch, 1961 ; Nair, 1962, 1963, 1964) in the Indian waters. Notwithstanding the considerable amount of work done on the different aspects of the marine wood borers embodied in nearly hundred publications, it is strange that very little attention has been paid to a study of the occurrence of shipworms along the west coast of India. As early as 1936, Erianson reported the results of a preliminary survey on the marine boring organisms of the Cochin harbour. This work represents the initial effort or almost so on scientific lines regarding these pests from the Indian waters. According to this report the boring molluscs collected included both the genera *Bankia* and *Teredo* of the family Teredinidae. The *Bankia* sp. collected from Cochin was identified as *B. setacea*, a cold water form. Erianson (1936) also collected a variety of pallets of *Teredo* and these have been tentatively identified by her as *T. diegensis* Bartsch, *T. furcillatus* Miller, *T. navalis* Linnaeus and *T. samoensis* Miller. Owing to the great difficulty regarding the identification of the shipworms, the determinations of the species reported were doubtful.- In view of the paucity of information regarding the exact number of species that occur in the area, and since a precise knowledge of the species is an essential requisite for further investigations, a collection of the shipworms was undertaken, the results of which form the subject of the present communication.

With a view to collect as much material as possible different kinds of underwater structures such as piles, stakes etc., used extensively in the harbour area, discarded country canoes, wooden hulls of boats, drift wood collected from off-shore waters by fishing boats and water logged timber collected by trawl nets have been examined. The present report deals only with the shipworms. The species reported here are not looked upon as affording a complete list of all the species that occur in the area, but they give an idea of the common and therefore, more destructive forms.

The present collection is noteworthy since the ten species of shipworms collected include species of all the three genera *Teredo*, *Bankia*, and *Nausitora*. Genus *Teredo* was represented by at least six species namely *Teredo (Teredo) elongata* Quatrf., *Teredo (Teredo) furcifera* Martens, *Teredo (Lyrodus) malaccana* Roch, *Teredo (Kuphus) manni* Wright, *Teredo (Dactyloteredo) diederichsent* Roch and *Teredo (Coeloteredo) renschi* Roch. The three species of *Bankia* collected were *B. (Bankiella) carinata* Gray, *B. (Bankiella) consularis* Moll and *B. (Liliobankia) campanellata* Moll/ Roch. *Nausitora hedleyi* Schepman was the only representative of the genus *Nausitora*. Many of the species collected from Cochin Harbour showed an extensive distribution not only along the Indian coasts (see Fig. 1) but also in the Indo-Pacific area.

Teredo elongata has been recorded from the Suez Canal, Red Sea, East African coasts up to Cape Province, Madagascar and Reunion. *Teredo malaccana* is more widely distributed, having been reported from the Suez Canal, Aden, Kenya, Tanga

nyika, Madagascar, Singapore, Riouw Archipelago, Sumatra, Java, Borneo and New Guinea. *Teredo manni* extends still further from east African coasts to Australia through Indonesia and Philippines. Two species, *T. furcifera* and *T. diderichseni* are particularly remarkable for their occurrence even in the mid Pacific, extending

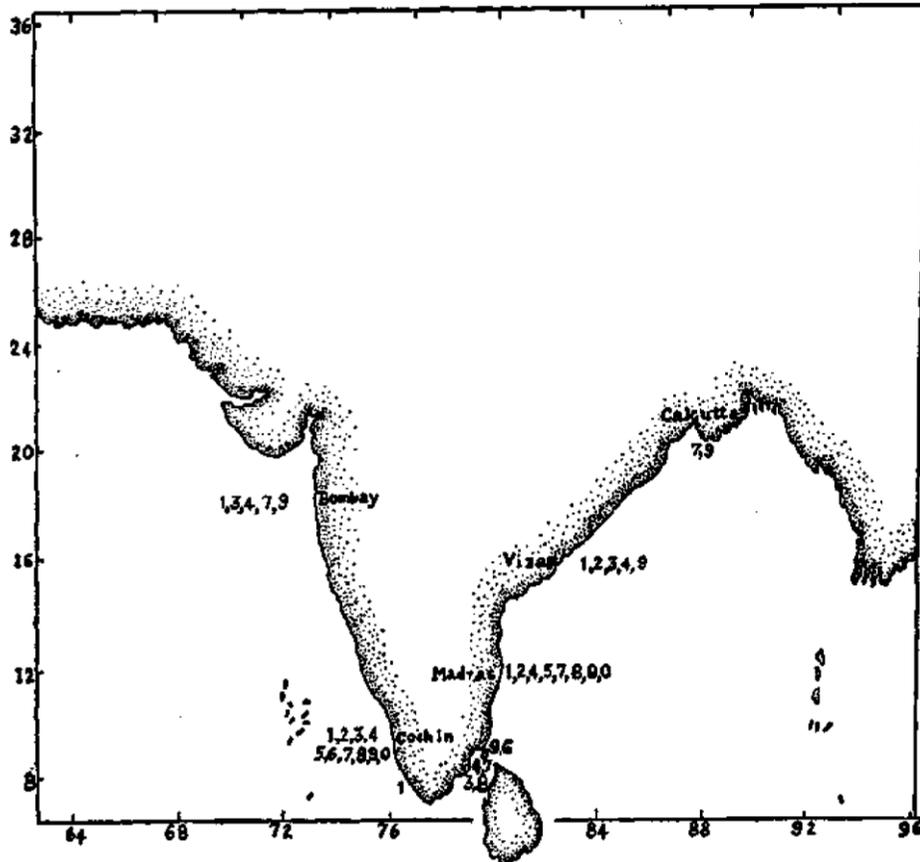


FIGURE 1. Distribution of the species of teridines, reported in this paper, along the Indian Coast.

1. *T. elongata*, 2. *T. furcifera*, 3. *T. malaccdna*, 4. *T. manni*, 5. *T. diderichseni*, 6. *T. renschi*, 7. *B. carinata*, 8. *B. consularis*, 9. *B. campanellata*, 10. *N. hedleyi*.

from Indian coasts right up to Hawaii. *T. renschi* has been reported only from Singapore and Riouw Archipelago. The *Bankia* and *Nausitora* species reported in this paper are mainly distributed between Reunion and New Caledonia. A detailed systematic account will be published later.

Thanks are due to Dr. N. Balakrishnan Nair, Reader in Oceanography, University of Kerala, for suggesting the problem and guidance and to the University of Kerala for the award of a Fellowship during the tenure of which this work was carried out.

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**ON A RECORD OF *CHARYBDIS (GONIOHELLENUS) EDWARDSI*
LEENE & BUITENDIJK**

The present account reports on the occurrence of *Charybdis (Goniohellenus) edwardsi* Leene & Buitendijk in the oceanic waters of the Arabian Sea. The species was originally recorded from Malabar and Port Natal by A. Milne Edwards in 1861 (= *Goniosoma truncatum*). Alcock (1899) treated the species (*G. truncatum*, reported by A. Milne Edwards) as a synonym of *C. (Gonioneptunus) truncata* (De Haan). Subsequently, Leene and Buitendijk (1949) renamed this species as *C. (Goniohellenus) edwardsi* since it was found to be different from the true *C. (Goniohellenus) truncata* (Fabricius).

The present collection contains two male specimens from latitude 11°22'N. and longitude 70°25'E. in the Arabian Sea. They were collected with a scoop net at 0415 hrs. on 30th November 1962 during the cruise of the Research Vessel *VARUNA*. The species appears to be quite common in this part of the Indian Ocean, since they were also observed in subsequent stations swimming in the surface layers of the sea. The echosounder reading showed that all these areas are quite deep and often exceeded 3000 metres in depth (depth at the place of collection 3840 metres). It may be pointed out here that most of the species of *Charybdis* were observed as bottom dwelling forms, but *Varuna litterata* (Fabricius) is known to drift along with floating objects. However, there were no floating objects in these areas, thereby indicating that this species is an active swimmer capable of sustained swimming.

Both specimens in the collection (carapace measuring 38.5 mm. to 41.5 mm. in length and 56.5 mm. to 61.0 mm. in breadth) agree in all respects with the description and figures provided by Leene and Buitendijk (*loc. cit.*) and hence no attempt is made here to redescribe the species.

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