

MARINE WOOD-BORERS FROM THE MANGROVE ECOSYSTEM
OF GREAT NICOBAR, ISLAND, INDIA

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ABSTRACT

Three species of teredinid borers, namely, *Dicyathifer manni* (Wright), *Lyrodus pedicellatus* (Quatrefages) and *Nausitora dunlopei* Wright, one species of pholadid borer, *Martesia striata* (Lamarck) and one species of isopod borer, *Sphaeroma terebrans* Bate are reported from the mangrove ecosystem of Great Nicobar Island. *D. manni*, *L. pedicellatus* and *S. terebrans* constitute new records for this island.

INTRODUCTION

Great Nicobar Island is located between 6°45' and 7°15' N latitudes and 93°37' and 93°56'E longitudes. This island is topographically unique because it is the southernmost island of the Andaman and Nicobar group. Moreover, its southern tip, the Pygmalion Point, is the southernmost part of Indian territory and only 144 km from the Achin Head of Sumatra.

A perusal of literature reveals that there is no published account on the marine wood-borers of this island excepting a single paper (Rajagopal and Daniel, 1972) wherein a single species of teredinid borer, *Nausitora dunlopei* Wright has been reported from 25 km up Galathea river affecting submerged wooden structure. Therefore, there is no record of any marine wood-borer from the mangrove forest ecosystem of this island although a

couple of papers have been published in recent years by Das and Dev Roy (1980, 1981 and 1984) and Tiwari *et al* (1980) dealing with this group from the mangroves of different islands of both the Andamans and the Nicobars. The present work is, therefore, attempted in order to fill up this gap. Altogether three species of teredinid borers (viz., *Dicyathifer manni*, *Lyrodus pedicellatus* and *Nausitora dunlopei*), one species of pholadid borer, *Martesia striata* and one species of isopod borer, namely, *Sphaeroma terebrans* were collected from the mangroves of this island. Excepting *N. dunlopei* and *M. striata* all the borers are reported for the first time from Great Nicobar.

Mention may be made here that while pholadid borers were collected from the drift wood in the mangrove area, all other borers were extracted from the dead stumps of

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Rhizophora mucronata and *R. stylosa* as well as roots of *R. mucronata* and *Bruguiera gymnorhiza*. Moreover, live pneumatophores and cable roots of *Sonneratia alba* were also found to be infested with teredinid borers. These borers were too immature to be identified. Absence of *Bactronophorous thoracites* in the present collection is noteworthy in view of the fact that this borer has been found to be very common in the mangroves of other islands of both the Andaman and the Nicobar groups studied so far (Das and Dev Roy, *op. cit.*).

SYSTEMATIC ACCOUNT

A. Molluscan borers Family TEREDINIDAE

1. *Dicyathifer manni* (Wright)

Material : 8 exs., Magar Nallah, Great Nicobar Is., Coll. *M. K. Dev Roy* ; 29.ix.83.

Distribution : India : Sundarbans ; Mahanadi estuary ; Visakhapatnam ; Madras Harbour ; Pulicat Lake ; Cochin ; Karnataka ; Bombay ; Goa ; Daman ; Gujarat ; South Andaman (Places around Port Blair) ; Middle Andaman (Bakultala) ; Ritchie's Archipelago ; Camorta Is. (Nicobar) and Great Nicobar (present record).

For distribution from outside India see Das and Dev Roy (1981).

Remarks : This species has been found to attack dead stumps and knee roots of the mangrove, *Bruguiera gymnorhiza* in Magar Nallah where salinity of the surrounding water was only 0.6‰ at the time of collection. This suggests that this borer can thrive even in almost freshwater condition.

From the distribution data it is evident that this species of teredinid is quite

common in both the east and west coast of India as well as Andaman and Nicobar group of Islands.

2. *Lyrodus pedicellatus* (Quatrefages)

Material : 2 exs., Lakshman Beach, Great Nicobar Is., Coll. *M. K. Dev Roy* ; 2.x.83.

Distribution : Mahanadi estuary ; Visakhapatnam ; Madras ; Tondi ; Adiramapatnam ; Pamban ; Kayamkulam ; Cochin ; Mangalore ; Karwar ; Madvi estuary ; Zuari estuary ; Ratnagiri ; Bombay ; Daman ; Kolak ; Cambay ; Diu ; Veraval ; Okha ; Kandla ; Lakshadweep (Minicoy, Kadmal, Kavaratti, Cheriyam) ; South Andaman (places around Port Blair) ; Ritchie's Archipelago ; Little Andaman ; Camorta Is. (Nicobar) and Great Nicobar (present record).

For distribution from outside India see Das and Dev Roy (1981).

Remarks : This is also a common teredinid borer and found to be very active in the mangrove areas of Andaman and Nicobar group of Islands.

The present materials were extracted from the knee roots of *Bruguiera gymnorhiza* where salinity was 35‰. In Little Andaman this species has been reported to occur in salinities ranging from 16.7‰ to 32‰ (Das and Dev Roy, *op. cit.*).

3. *Nausitora dunlopei* (Wright)

Material : 4 exs. ; Magar Nallah, Great Nicobar Is., Coll. *M. K. Dev Roy* ; 29.ix.83.

Distribution : India : Calcutta ; Sundarban ; Mahanadi estuary ; Visakhapatnam ; Madras ; Cochin harbour ; Little Andaman ; Car Nicobar and Great Nicobar.

For distribution from outside India see Turner, 1966 and Rajagopal and Daniel (1972).

Remarks : *N. dunlopei* was extracted from the dead stumps of the mangroves, *Rhizophora mucronata* and *R. stylosa* in Magar Nallah where salinity was estimated to be 0.6‰ at the time of collection.

This species in general occurs in fresh and brackish water. But it is also found in marine environment. Wright (1864) who described this species for the first time obtained the specimens from the freshwater of Comer river. Rajagopal and Daniel (*op. cit.*) as well as the present authors collected this species in Great Nicobar in almost freshwater condition. Mohan (1981) recorded this species at salinities varying from 3.92‰ to 19.98‰ at Cochin. Das and Dev Roy (1984) reported this borer from Little Andaman at salinity 5.15‰.

Mention may be made here that in Andaman and Nicobar group of islands *N. dunlopei* has so far been recorded from Little Andaman, Car Nicobar and Great Nicobar.

FAMILY PHOLADIDAE

Martesia striata (Linnaeus)

Material : 15 exs. ; Campbell Bay, Great Nicobar Is. ; Coll. *M. K. Dev Roy* ; 24.ix.83.

Distribution ; India : Throughout entire East and West Coast and all the Indian harbours (*see* Daniel and Subba Rao, 1982).

Outside India : Pacific, Indo-Pacific and Western Atlantic.

Remarks : This species was collected from drift wood in the mangrove area of Campbell Bay where salinity was 32‰. This

borer can tolerate wide range of salinity varying from 0.5‰ to 35‰ (Balasubramanyan, 1968). Karande (1978), observed that this borer causes appreciable damage to submerged structures in water surrounding Port Blair.

B. Crustacean borer

Family SPHAEROMIDAE

5. *Sphaeroma terebrans* Bate

Material : 66 exs. ; Magar Nallah, Great Nicobar Is. ; Coll. *M. K. Dev Roy* ; 29.ix.83.

Distribution : India : Kerala ; Karnataka ; South Andaman ; Ritchie's Archipelago ; Little Andaman and Great Nicobar (present record).

For distribution outside India *see* Das and Dev Roy (1984).

Remarks : This species was found to attack live knee roots of *Bruguiera gymnorhiza* and *Rhizophora mucronata* in large numbers in Magar Nallah where salinity was 0.6‰ at the time of collection. The present authors also collected this species in Little Andaman at salinity ranging from 5.15‰ to 32‰ (Das and Dev Roy, *op. cit.*). *S. terebrans* can also withstand freshwater for a considerable period. Mc Neil (1932) reported the occurrence of this species from the freshwater in Brisbane river.

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