

Distribution of Teredinids (Mollusca: Teredinidae) in Papua New Guinea

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ABSTRACT. Thirty-eight species of Teredinidae, 2 of which may be new, were collected from the coasts and estuaries of Papua New Guinea. There was little difference in the occurrence of the majority of these species in the Bismarck, Solomon and Coral Seas. A few species restricted to the Bismarck and Solomon Seas have been found in the islands to the north of Papua New Guinea but not in Australia, and one species restricted to the Coral Sea has been previously reported only from north-east Australia.

There was a significant difference in the species composition in estuarine brackish waters compared with that in coastal marine waters. The teredinids may be put into 4 categories according to their occurrence in waters of different salinities: stenohaline marine species, euryhaline marine species, brackish water species and euryhaline brackish water species or marine and brackish water species.

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Species in the family Teredinidae, commonly called shipworms or teredos, are bivalve molluscs adapted to boring into wood. Their elongated bodies extend beyond the posterior margin of the shell valves, enabling them to bore deep within the timber while their siphons maintain contact with the seawater.

Prior to 1947 there was no published literature on the marine wood borers of Papua New Guinea. Schillinglaw and Moore (1947) investigated the Service harbour installations from March to July 1945 for the Scientific Liaison and Information Bureau, a war-time organization. They found that when non-resistant timber piling was used there was a general failure of wharves after twelve months. Generally attack was observed to be faster in estuarine conditions, and the rate of destruction in Port Moresby was seen to be markedly less than on the north coast of New Guinea, possibly due to the slightly lower water temperatures along the Papuan south coast. The greatest damage in the wharves was caused by the teredinids, of which 21 unidentified species in six genera were reported. The pholad *Martesia* was found mainly in the intertidal region while the isopods *Sphaeroma* and *Limnoria* were found to be restricted in distribution and of little importance in the destruction of Service structures.

From 1947 to 1970 the only other available literature relevant to marine borers in Papua New Guinea were

the report by Hartwell and Eddowes (1967) on the natural resistance of 22 indigenous timbers to marine wood borers and the reports by Wight (1969) and Tamblin (1970) on the resistance of treated timbers to marine wood borer attack.

From August to September 1970 I accompanied Dr R.D. Turner, of the Museum of Comparative Zoology, Harvard University, and Ms J.V. Marshall, a postgraduate student with the School of Zoology, University of New South Wales, on an extensive collecting trip to the major ports of Papua New Guinea. This was part of a combined C.S.I.R.O./U.N.S.W. project on a survey of marine wood borers in Australasian waters. Distribution data obtained during this survey are available in UNSW Project 12-045-15 publication 1970-1972 and are included in this paper.

Methods and Materials

From 1971 to 1975 additional data on the occurrence of teredinids were collected through field collections in mangrove and driftwood, from fixed timbers and by the submersion of a large number of test panels in the major estuarine and marine harbours. (The term "mangrove" as used in this report refers to the roots and trunks of mangrove species such as *Rhizophora stylosa*, *Bruguiera*

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