



Zoogeography of the echiuran fauna of the Indo-West Pacific Ocean (Phylum: Echiura)

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Abstract

This report provides a checklist of the echiuran fauna of the Indo-West Pacific Ocean and analyses their distribution in relation to general biogeographic regions. Currently the echiuran fauna of the Indo-West Pacific comprises three families, 30 genera and 103 species. The family Bonelliidae contains 43 species in 21 genera; the Echiuridae is represented by eight genera and 58 species, and the Urechidae by two species, *Urechis novaezealandiae* (Dendy) and *U. uncinatus* (von Drasche). Investigations undertaken on this group of animals after the publication of the monograph by Stephen & Edmonds (1972) on the phyla Sipuncula and Echiura have revealed one new genus, 15 new species and several new records. This study shows that the Indo-Pacific has a high species diversity, comprising about 62% of the known world fauna. The West Indian Ocean is currently represented by 28 species; 55 species have been recorded in the Central Indo-West Pacific and 53 species in the West Pacific. Only four species are thought to be cosmopolitan while approximately 50 species appear to be endemic to the Indo-West Pacific Ocean. Members of the Echiuridae are usually found in shallow-waters of littoral and subtidal zones while bonelliids are inhabitants of deeper bottoms where cold temperatures prevail.

Key words: Zoogeography, Echiura, Indo-West Pacific Ocean

Introduction

This is a first report on the diversity and distribution of the known echiuran fauna of the Indo-West Pacific Ocean. The information on this group needs updating as many new taxa and new records have come to light since the publication of the monograph by Stephen & Edmonds (1972) on the phyla Sipuncula and Echiura. Furthermore, some important amendments have been made in the classification of this group by Nishikawa (2002). It is felt that this investigation will be of benefit to future workers in this field.

Some of the significant contributions on the echiuran fauna of the western Indian Ocean are those of Fischer (1892), Stephen & Robertson (1952), Jones & Stephen (1955), Wesenberg-Lund (1959, 1963), Stephen & Cutler (1969), and Biseswar (1984, 1985, 1988a, 1988b, 1997a, 1997b). The echiurans occurring around the coasts of India and adjacent areas are largely due to the works of Shipley (1899a, 1899b, 1902), Annandale & Kemp (1915), Prashad (1919, 1921, 1935), Prashad & Awati (1929), DattaGupta & Menon (1961, 1964, 1965, 1971), DattaGupta *et al.* (1963) and Haldar & DattaGupta (1991). A large number of species has been recorded and described from the North West Pacific, especially around the coasts of Japan and adjacent areas by Ikeda (1904, 1905a, 1905b, 1907, 1908a, 1908b, 1911, 1924), Satô (1931, 1934, 1935, 1939), Fisher (1946), Zenkevitch (1957, 1958, 1964, 1966), Murina (1976, 1978), Zenkevitch & Murina (1976). Echiurans recorded and described from the southern part of the West Pacific, along the eastern and south-eastern coasts of Australia, are largely due to the works of Johnson & Tiegs (1919, 1920) and Edmonds (1960, 1963, 1987).

The present paper provides a checklist of all the genera and species of Echiura occurring in the Indo-West Pacific Ocean and maps their distribution. The nomenclature used here follows that of Nishikawa (1998, 2002). According to this author, the phylum Echiura consists of two orders—Echiuroinea Bock and Xenopneusta Fisher. The two families in the order Echiuroinea are: Echiuridae Quatrefages and Bonelliidae Lacaze-Duthiers—while the order Xenopneusta contains the single family Urechidae Monro. The two subfamilies in the Echiuridae are Echiurinae Quatrefages and Thalassematinae Forbes and Goodsir.