

Chapter 1

Polychaetes of Andaman and Nicobar Islands

R. Rajasekaran and Olivia J. Fernando

Abstract This chapter deals with 30 species of polychaetes that belong to eight families and 23 genera. All species were recorded for the first time from the Andaman and Nicobar Islands, of which 15 species are new to Indian waters. An updated checklist of polychaetes of Andaman and Nicobar Islands is also presented in this chapter.

Keywords Andaman and Nicobar • Diversity • Polychaetes

1.1 Introduction

Polychaetes are mainly marine although a few species have successfully invaded freshwater and fewer still are parasitic or terrestrial, living in moist habitats (Hutchings 1998). There are no reliable data available concerning the worldwide species number and distribution of polychaetes, and only few marine regions have been subjected to detailed studies. Fauchald (1977) reported 897 genera and 6,800 species of polychaetes worldwide. Hartman-Schroder (1993) listed 13,000 species, and Westheide (1997) estimates about 10,000 species. According to Glasby et al. (2000), the number of polychaetes species worldwide is about 8,500 belonging to 1,100 genera including approximately 400 species from India (Misra 1991).

The polychaetes from Andaman and Nicobar Islands available in the Indian Museum collections were described by Fauvel (1932) and subsequently incorporated in the Fauna of India (Fauvel 1953) in which he describes 90 species from the Andaman and Nicobar Islands. Subsequently, Tampi and Rangarajan (1964) recorded 43 species including 21 new record to Andaman and Nicobar Islands and 2 new to

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Indian water. Daniel and Ghosh (1964) described 8 species of polychaetes of which the 2 from little Andaman are new to Andaman water. Hartman (1974b) has described 11 species of polychaetes collected during International Indian Ocean Expedition (1963–1964) from this island. Soota and Rao (1977a, b) have described 26 species from the intertidal regions of Andaman and Nicobar Islands including 8 new to Andaman and Nicobar Islands and 5 new to Indian water. Soota et al. (1980) recorded 24 species including 4 new to these groups of islands and listed 161 species hitherto known from this region. The present study reports 30 more species belongs to eight families and 23 genera.

1.2 Methods

Great Nicobar Island is the southernmost island of this archipelago and lies about 482 km south of Port Blair and 145 km north of Sumatra. The polychaetes were collected from live and dead corals, beach rocks, seagrass beds and mangrove sediments of the intertidal region. The sediment samples collected were sieved through a 0.5 mm sieve. Polychaetes associated with dead corals were collected by breaking them with a hammer and chisel. Before fixation, polychaetes were dropped into strong alcohol to have their pharynx everted, as it is helpful in identification of this group. They were fixed in 10% formalin diluted with seawater and later transferred to 70% ethanol. The proboscis jaws and other structures of the parapodia were examined under a microscope. The features of the polychaetes studied were drawn with a camera lucida and measured using oculometer.

1.3 List of Species Recorded from Great Nicobar Island

1. *Harmothoe aequiseta* (Kinberg, 1855)^a
2. *Pherecardia striata* (Kinberg, 1857)
3. *Phyllodoce castanea* (Marenzeller, 1879)
4. *Notophyllum splendens* (Schmarda, 1861)
5. *Eulalia trilineata* Saint Joseph, 1888^a
6. *Eulalia capensis* Schmarda, 1861^a
7. *Neanthes glandicincta* (Southern, 1921)
8. *Perinereis nuntia caeruleis* (Hoagland, 1920)^a
9. *Perinereis weijhouensis* Wu Boaling, 1984^a
10. *Perinereis obfuscata* (Grube, 1878)^a
11. *Glycera longipinnis* Grube, 1878
12. *Glycera capitata* (Orsted, 1843)^a
13. *Eunice vittata* (Delle Chiaje, 1825)^a
14. *Eunice savigny* (Grube, 1878)
15. *Eunice tubifex* Crossland, 1904

16. *Eunice coccinea* Grube, 1878
17. *Marphysa macintoshi* Crossland, 1903
18. *Nematonereis unicornis* (Grube 1840)
19. *Malacocers indicus* (Fauvel, 1928)
20. *Scolecopsis squamata* (Müller, 1806)
21. *Prionospio (Prionospio) ehlersi* (Fauvel, 1936)^a
22. *Dodecaceria pulchra* Day, 1955^a
23. *Scolaricia capensis* Day, 1961
24. *Pherusa parmata* (Grube, 1878)
25. *Piromis arenosus* Kinberg, 1867^a
26. *Idanthyrus bihamatus* (Caullery, 1944)^a
27. *Lanice conchilega* (Pallas, 1766)
28. *Megalomma quadrioculatum* (Willey, 1905)^a
29. *Spirobranchus tetraceros* (Schmarda, 1861)^a
30. *Hydroides externispina* Straughan, 1967^a

^aNew record from Indian waters

1.4 Species Description

1.4.1 Family: Aphroditidae Savigny, 1818

1. *Harmothoe aequisetata* (Kinberg, 1855)

Anlinoe aequisetata (Kinberg, 1855: 385)

Harmothoe aequisetata (Augener, 1918:137; Day, 1967: 66, Fig. 1.9f–k)

Material. Nine specimens collected from crevices of dead and live corals of the intertidal zone.

Description. Body is 20–25 mm long for 38 segments, colour yellowish brown with dark cirrophores. Prostomium with frontal peaks below which are the anterior pair of eyes. Median antenna twice the prostomial length, lateral half as long (Fig. 1.1a). Dorsal cirri short. Antennae and cirri papillose. Elytra deciduous, fringed and mottled brown, the surface being covered with thorn-like chitinous tubercles with dark centres. Notosetae of varying length, stout, closely serrated, the ends being stout and pointed back from the apical one.

Remarks. This is the first record of the species from Indian waters.

Distribution. South West Africa.

1.4.2 Family: Amphinomidae Savigny, 1818

2. *Pherecardia striata* (Kinberg, 1857)

Hermodice striata (Kinberg, 1857: 13)

Pherecardia striata (Day, 1967: 131, Fig. 3.2p–t; Misra & Chakraborty, 1991: 142).

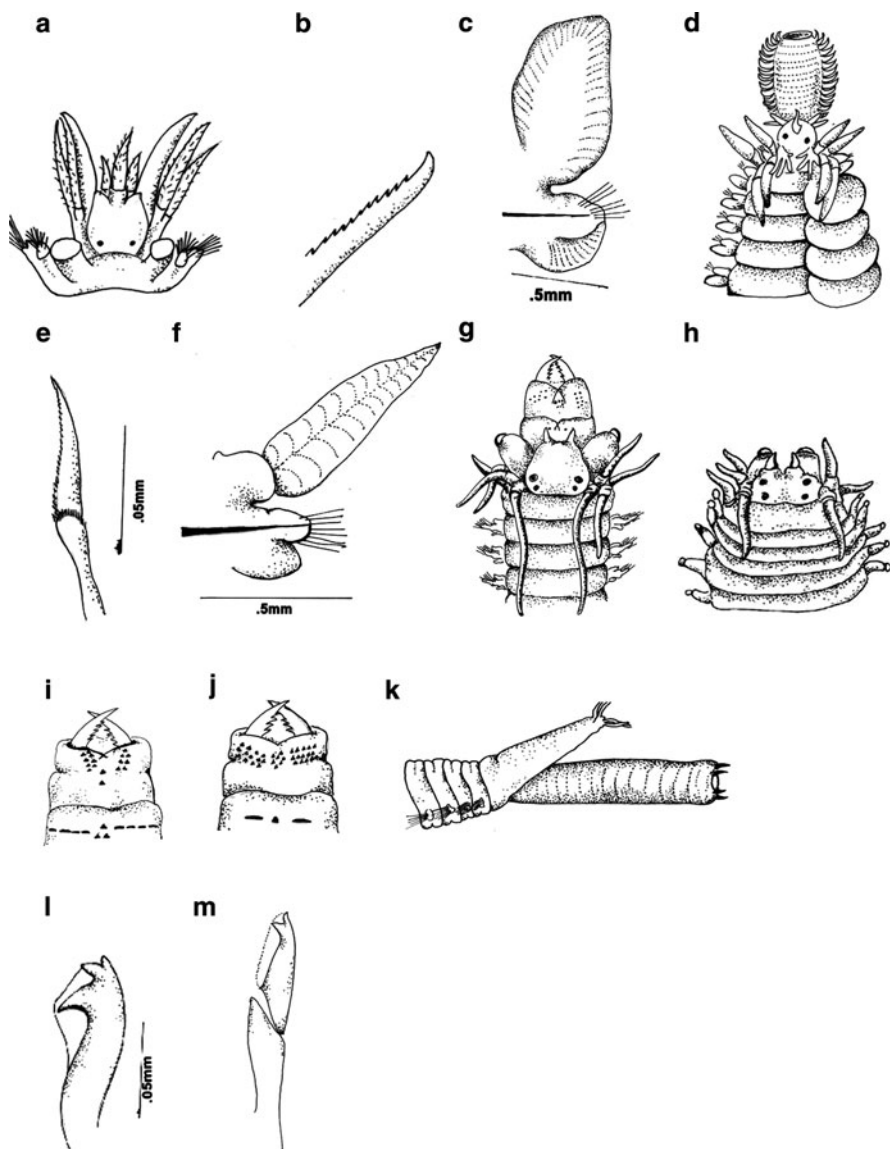


Fig. 1.1 Internal and external morphological features. (a) *Harmothoe aequiseta*—anterior region. (b) *Pherecardia striata*—neuropodial setae. (c) *Phyllodoce castanea*—anterior foot. (d) *Notophyllum splendens*—anterior region. (e) *Eulalia trilineata*—setae. (f) *Eulalia capensis*—anterior foot. (g) *Neanthes glandicincta*—anterior region with pharynx. (h) *Perinereis nuntia caeruleis*—anterior region. (i) *Perinereis weijhouensis*—dorsal view of proboscis. (j) *Perinereis obfusca*—dorsal view of proboscis. (k) *Glycera longipinnis*—anterior region. (l) *Eunice vittata*—acicular setae. (m) *Eunice savigny*—heterogomph falcigers

Material. Two specimens were collected from crevices of live corals in the intertidal zone.

Description. Body is soft and smooth and triangular in cross section. The median tentacle arises between the posterior pair of eyes, just anterior to the median caruncular ridge. Gills commencing on the first setiger has simple capillaries in both dorsal and ventral rami. Single dorsal cirri on each notopodium. The Notosetae are of two kinds: (1) long, white setae with a slender, elongate tip and (2) large, straight, harpoon-shaped setae. Neuropodial setae are all slender capillaries with serrated and smooth tips (Fig. 1.1b).

Remarks. This is the first record of the genus from Andaman and Nicobar Islands.

Distribution. Madagascar, Indonesia, Mozambique, Philippines, South Africa, India: Lakshadweep.

1.4.3 Family: *Phyllodocidae* (Williams, 1851)

3. *Phyllodoce castanea* (Marenzeller, 1879)

Carobia castanea (Marenzeller, 1879: 127; Izuka, 1912: 199, pl. 21 Fig. 3)

Phyllodoce castanea (Day, 1967: 149, Fig. 5.3d–f)

Material. Sixteen specimens collected for crevices of dead corals and beach rocks.

Description. Body is short, with some red pigmentation. Prostomium is bluntly triangular with four antennae. No occipital tentacles. Proboscis is slender and covered with small irregularly arranged papillae. All tentacular cirri are short and spindle shaped. The second and third tentacular segments are with setae. Dorsal cirri cordate and reddish. Setigerous lobes are bluntly rounded apically (Fig. 1.1c). Ventral cirri oval. Setae are few, with long shafts ending in truncate and strongly striated shaft heads; blades are short and dagger-like.

Remarks. This is the first record of the species from Andaman and Nicobar waters.

Distribution. Australia, Japan, New Zealand, Ceylon, Red Sea, California, India: Tuticorin.

4. *Notophyllum splendens* (Schmarda, 1861)

Macrophyllum splendens (Schmarda, 1861: 82)

Notophyllum splendens (Day, 1953: 408, Fig. 2h–k; 1967: 151, Fig. 5.3k–n)

Material. Twelve specimens collected from crevices of dead corals and beach rocks.

Description. Body is 33–40 mm long, greenish colour or brownish in spirit. Body is short and thick. Prostomium is rounded, with median tentacles between two large eyes. Nuchal organs are 3–4 finger-like lobes on posterior margin of the prostomium (Fig. 1.1d). Tentacles and palps fusiform. Four pairs of short tentacular cirri. Broad reniform, closely imbricating, dorsal foliaceous cirri. Parapodium biramous. Notopodia with one aciculum but no setae. Ventral setae compound, with rather long serrulate end-piece.

Remarks. This is the first record of the genus from Andaman and Nicobar Islands.

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