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A NEW SPECIES OF POLYCHAETE WORM, *TYLONEREIS HETEROCHAETA* (POLYCHAETA: NEREIDIDAE) FROM SINGAPORE

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ABSTRACT. - A new species of polychaete worm from Changi beach, Singapore, *Tylonereis heterochaeta* (Nereididae) is described. This is also the first record of the genus *Tylonereis* Fauvel from Singapore. The new species is closely related to *T. fauveli* Southern, the main differences being in the presence of a distinct group of heterogomph setae, which occur from the first setiger at the ventral setigerous group, and in proboscis formula for *T. heterochaeta*.

INTRODUCTION

To date only two species of the genus *Tylonereis* Fauvel, 1911, family Nereididae, are known. These are *T. bogoyawlensky* Fauvel, 1911, and *T. fauveli* Southern, 1921, of which the former is the type species. This genus was established by Fauvel (1911) on the basis of the presence of soft papillae found only on the maxillary ring, structure of the dorsal setigerous division of the parapodia and only having one type of setae. It does not have any horny paragnaths which are distinct in other genera. The prostomium typically consists of four pairs of tentacular cirri, parapodia are biramous and setae are all homogomph spinigers.

Specimens of a new species of *Tylonereis* have been collected from the shores of Changi beach (Fig. 1), where coastal birds, such as plovers, have been feeding on them. This also represents the first record of this genus from Singapore. Specimens are deposited in the Zoological Reference Collection (ZRC), Department of Zoology, National University of Singapore.

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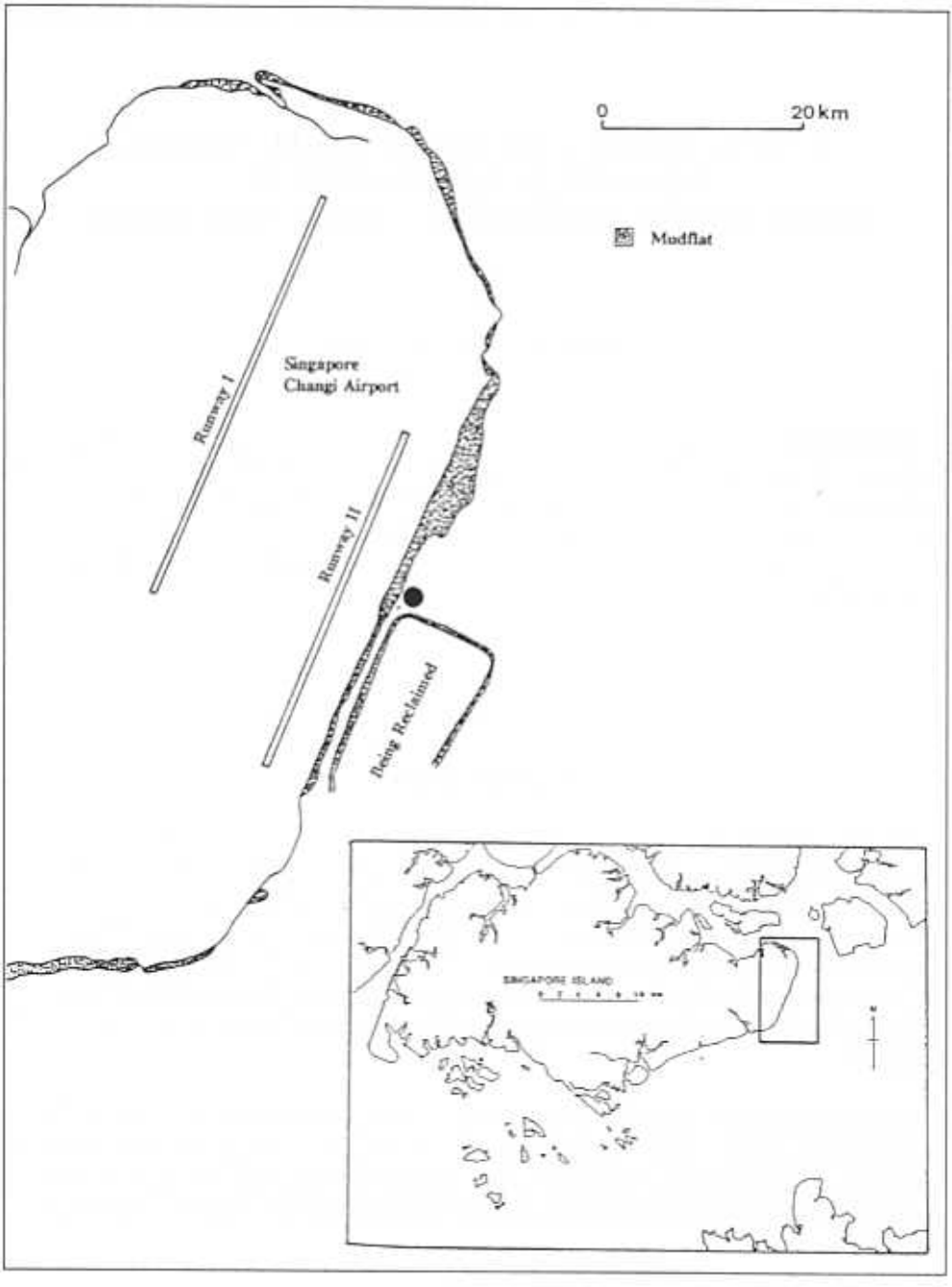

Fig. 1. Map of Changi Beach, indicating site of collection (in shaded circle). Inset shows location of Changi Beach in Singapore.

Key to species of *Tylonereis* Fauvel

1. Ventral setigerous lobe bilobed in anterior parapodia 2
   Ventral setigerous lobe trilobed in the anterior parapodia .....
   ..... *T. bogoyawlensky* Fauvel, 1911

2. Only one papilla in each group VI of the proboscis; ventral setae all homogomph; heterogomph setae absent ..... *T. fauveli* Southern, 1921
   Four papillae in each group VI of the proboscis; ventral setae with distinct group of heterogomph occurring from the first setiger at the ventral setigerous lobe .....
   ..... *T. heterochaeta*, new species

SYSTEMATICS

FAMILY NEREIDIDAE

Genus *Tylonereis* Fauvel, 1911

Tylonereis heterochaeta, new species
(Fig. 2)

Material examined. - ZRC 1993.6840 (Holotype); ZRC 1993.6841-6842 (Paratypes, 2 spec.). All specimens were collected from Changi beach.

Description.- Colour in alcohol cream. Largest specimen has 159 segments, measuring at 115mm long and 5mm wide, including parapodium. The prostomium is wider than long with a shallow indentation between the prostomial tentacles. Two pairs of eyes arranged in an open trapezium. Two short tentacles and four pairs of tentacular cirri with longest pair reaching posteriorly to the sixth setiger (Fig. 2a).

The proboscis is without horny paragnaths. Both maxillary and oral ring consist of only soft papillae (Fig. 2a, b). Group I consists of only one conical or semicircular papillae. On each side of group II is one short papillae. Group II, IV with eight to nine slender concentrated bundles of papillae. The area on group III and IV is covered with about three rows of 31 to 32 short papillae. Group V has no papillae. Three to four short tapered papillae occur in a bundle on group VI. No papillae on group VII. Occurring on the base Group VIII is a single row of four slender papillae. Jaws not heavily sclerotised, translucent, golden with seven teeth along the cutting margin.

The first parapodium is small. The dorsal and ventral cirri are almost the same length as the dorsal and ventral ligules, though they appear more slender. The ventral setigerous lobe is slightly fusiform (Fig. 2c), with the setae occurring in two groups; one above and one below the spine. Ventral setae consisting of two types; homogomph (projecting above the spine) and heterogomph (projecting below the spine), both with finely serrated terminal pieces. It has about five homogomph setae and five heterogomph setae. The second parapodium (Fig. 2d) resembles the first except that it is slightly larger, the lobes are larger and the setae more numerous (about eight homogomph and six heterogomph setae).

From the fifth parapodium, dorsal and ventral cirri become short and small, not extending beyond parapodial lobe. The dorsal ligule is large, inflated and blade-form, pointed at the tip and filled with glands at the basal dorsal edge of the ligule (Fig. 2e). Dorsal setigerous lobe club-shaped. Dorsal setae consist of about six homogomph setae. The ventral setigerous lobes of all parapodium are bilobed.

At the 25th parapodium (Fig. 2f), the dorsal ligule extend beyond other parapodial lobes, ventral ligule, however, becomes small. The presence of glands in the dorsal ligule extend more than half the length at the dorsal edge. Dorsal and ventral cirri are much reduced. Dorsal setigerous lobe is cylindrical with its base surrounded by a sheath or fillet. The ventral setigerous lobe is distinctly bilobed. Only one group of dorsal setae appears above the dorsal setigerious lobe. All dorsal setae are homogomphs. Two groups of ventral setae appear on the ventral setigerous lobe; one group is attached dorsally while the other is attached ventrally to the ventral setigerous lobe. The dorsal group setae and ventral group setae are homogomphs and heterogomphs respectively. Terminal pieces of the dorsal setae are short while the terminal pieces of the ventral setae are about 2 times as long and taper very gradually to the tip.

Begining at the 41st parapodium (Fig. 2g), slight indentation at the terminal end of the dorsal setigerous lobe is observed which becomes more pronounced in the 80th parapodium (Fig. 2h).

Setae are all compound spinigers. Notosetae are all pure homogomph spiniger (Fig. 2i) while neurosetae consists of two groups; heterogomph (Fig. 2j) and homogomph spinigers.

Remarks. - This species is very closely related to the *T. fauveli* described by Southern (192':582), collected from Chilka Lake, India, in having a bilobed condition in the ventral setigerous lobe. The main difference is the presence of a distinct group of heterogomphs setae occurring right from the first setiger of this species which is absent in *T. fauveli*. Another difference is the occurrence of four papillae in each of group VI of the proboscis while there is only one large papilla reported for *T. fauveli*. A minor difference is in the size of the ventral setigerous lobe of the first parapodium. *T. bogoyawlenskyi* on the other hand, differs from both the present species and *T. fauveli* chiefly by the trilobed condition of the ventral setigerous lobe in the anterior parapodia.

Habitat. -Specimens of this species were collected by hand along intertidal areas of Changi beach. The substrate type was sandy. It served as food for coastal birds found to feed along the shores of the beach during low tides.

Etymology. - The name is derived from two Greek words, *heteros* and *chaeta*, alluding to the presence of heterogomph setae on the species. Name used as a noun in apposition.

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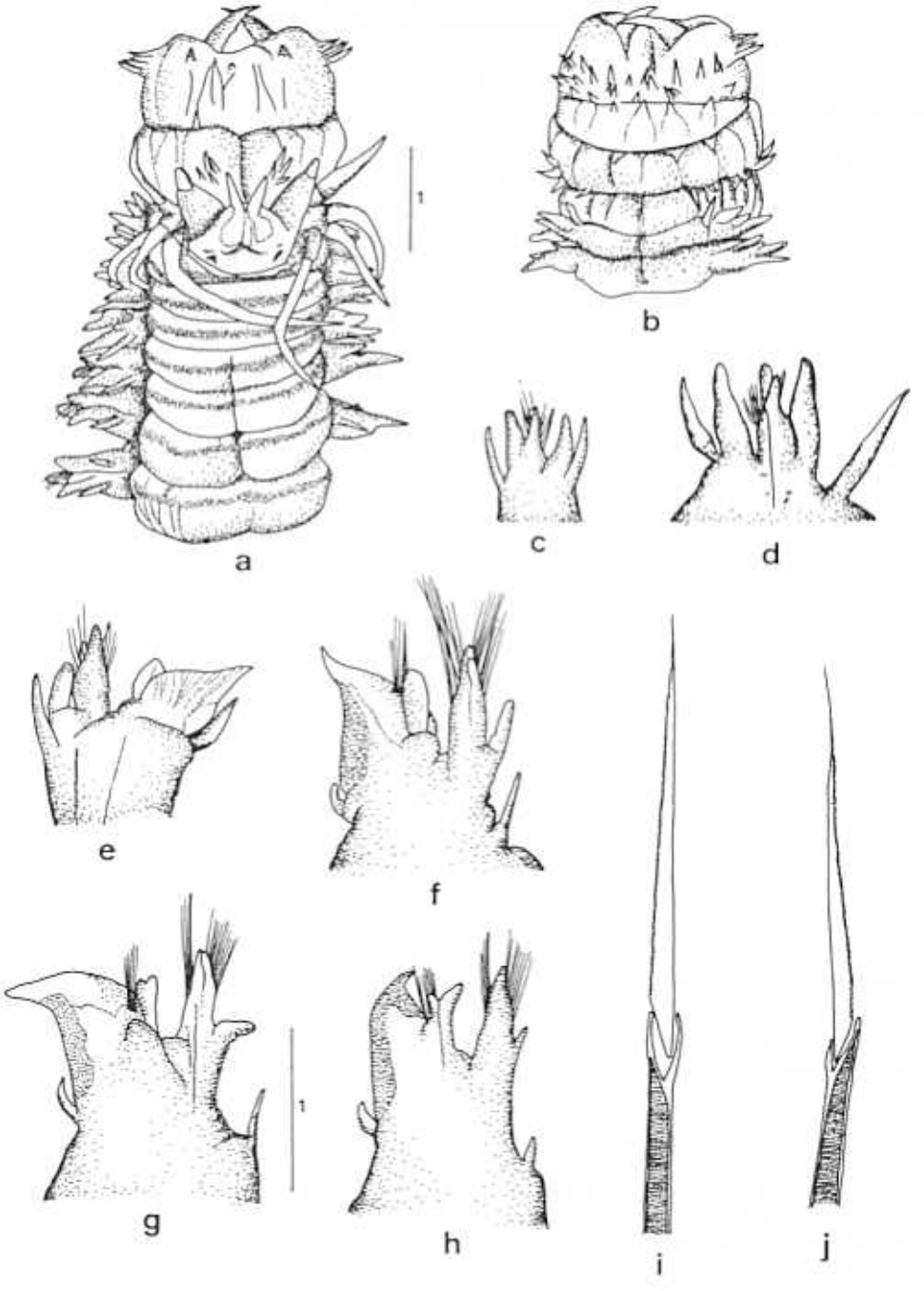

Fig. 2. *Tylonereis heterochaeta*, new species, (ZRC 1993.6840, Holotype). a. dorsal view of head end; b. ventral view of head end; c. posterior view of first parapodium; d. anterior view of second parapodium; e. anterior view of parapodium 10; f. posterior view of parapodium 25; g. posterior view of parapodium 41; h.anterior view of parapodium 80; i. homogomph spiniger seta, x100; j. heterogomph spiniger seta, x100. (Scale bars in mm)

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