

ON SOME INTERSTITIAL POLYCHAETES FROM THE BEACH SANDS OF WALT AIR COAST

BY G. CHANDRASEKHARA RAO AND P. N. GANAPATI, F.A.Sc.

(*Department of Zoology, Andhra University, Waltair*)

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ABSTRACT

The paper reports the occurrence of eight species of microscopic interstitial polychaetes in the sandy beach of Waltair Coast. All the eight forms have not previously been recorded from India. Among the forms reported some are previously known only from the Atlantic and their occurrence in Indian Ocean throws considerable light on their geographical distribution.

INTRODUCTION

VERY little is known at present about the microscopic interstitial polychaetes inhabiting the beach sands of the Indian coasts. During an investigation of the interstitial fauna inhabiting the beach sands of Waltair Coast, we came across as many as eight species which have not been previously reported from India. The occurrence of some of the Atlantic species on the Indian coast throws considerable light on their geographical distribution.

The polychaetes were collected by taking fresh sand samples in a glass beaker and vigorously swirling them with sea-water when the worms were shaken off to the surface. The supernatant water was quickly decanted off into a petri dish from where the animals were picked up with a pipette under a binocular microscope. All the forms were studied in the living condition and the figures were made with the aid of a camera lucida. The worms were fixed in Bouin's fluid and preserved in 5% formalin containing 2% glycerine.

The worms usually occurred in coarse and medium sands between the low and the half-tide levels of the beach, and they showed preference for the deeper layers of sand presumably to avoid exposure to the severity of wave action and to avoid the danger of getting washed off into the sea. The range of temperature in the habitat was 26° C. to 30° C. while the salinity varied from 24 to 34%. The forms were more abundant during the summer months when both the temperature and salinity were high and steady.

Family: PHYLLODOCIDAE

Genus: *Eteonides* Hartmann-Schroder, 1960

Eteonides elongata (Southern, 1914) (Fig. 1, 1-3)

The form has previously been reported by Southern (1914) from Clare Island in the Atlantic and by Renaud (1956) from the Bimini Island in Bahamas. The worms measured about 3 mm. in length and were collected from coarse sand between the low and mid-water levels of the beach. They were very active in their movements and appeared to be carnivorous in their feeding habits.

Family: HESIONIDAE

Genus: *Hesionides* Friedrich, 1937

Hesionides arenarius Friedrich, 1937 (Fig. 1, 4-6)

Friedrich (1937) described the species from the intertidal sands of the North Sea coast and later it has been reported on the coasts of Baltic, Gulf of Gascogne, Mediterranean, Bahamas, Pacific and Red Sea (Hartmann-Schroder, 1960). The type specimens reach a length of 2-3 mm. and bear uniformly thread-like anal cirri. The local forms are slightly longer attaining 3-4 mm. with the anal cirri characteristically spindle-shaped at their proximal extremity. The worms are light reddish-brown, sometimes matching with the colour of the sand grains. They were present in small numbers in coarse sands 10 cm. below the surface, between the low and the mid-water levels. The adhesive anal lappets are thigmotactic. The worms appeared to be omnivorous, feeding on detritus and the smaller organisms admixed with it. In the laboratory, the forms avoided light exhibiting a negative phototaxis.

Hesionides gohari Hartmann-Schroder, 1960 (Fig. 1, 7-9)

Hartmann-Schroder (1960) described the species from the beach sands on the Red Sea coast. The local forms are identical with the Red Sea species in all the essential features and attain a length of 0.7-0.8 mm. They are light-green in colour and are common near half-tide level at depths of about 15 cm. in medium sand grades measuring 300-500 μ in their mean diameter. The body is well adapted for moving actively through the interstices of the habitat with considerable ease. At the slightest commotion in the environment the worm firmly sticks to the substrate with the help of its adhesive anal lobes keeping the rest of the body freely suspended in the water. The worms were often collected in association with *H. arenarius* and like the latter they are also gregarious in habit,

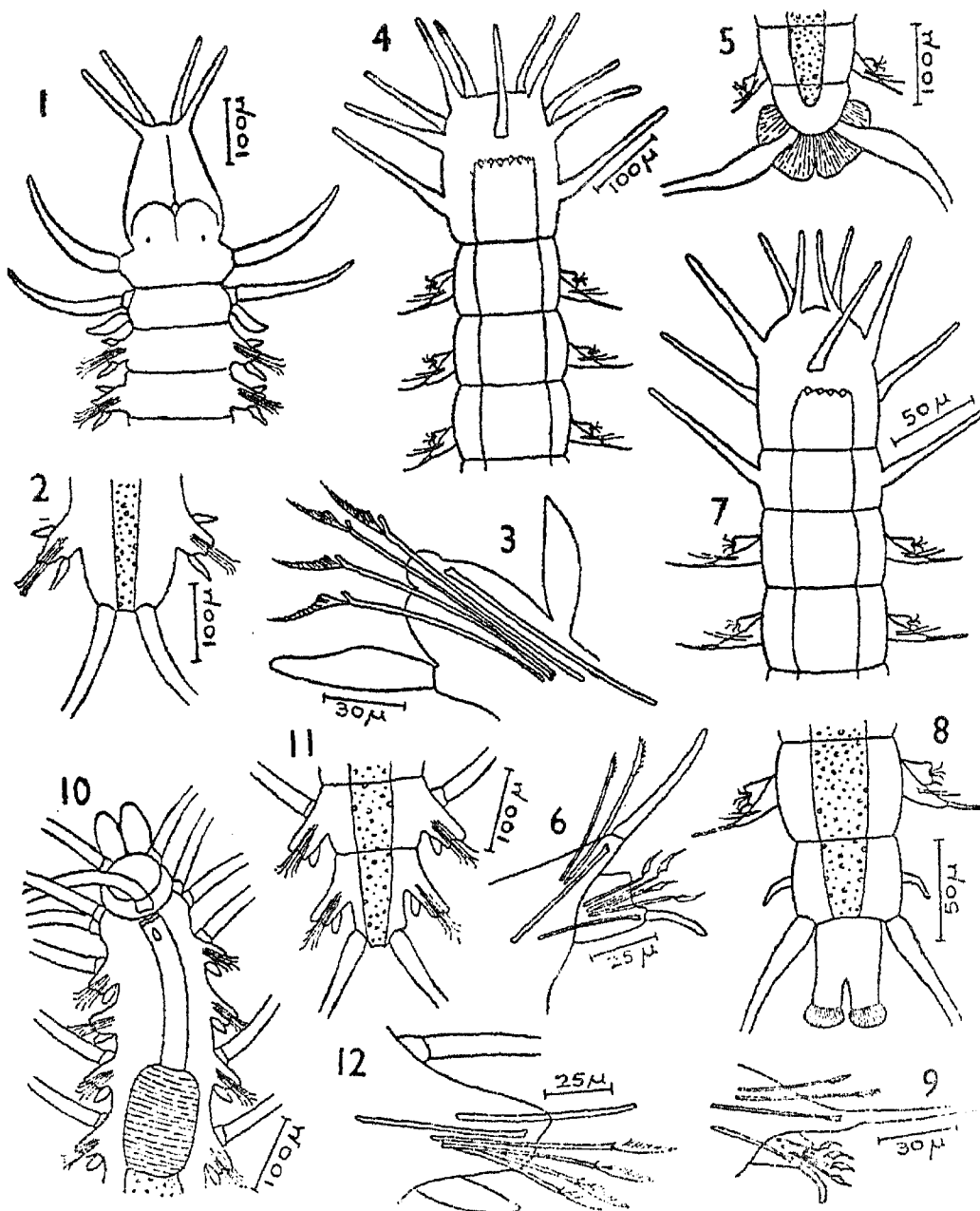


FIG. 1. 1-3. *Eteonides elongata*. 1. Anterior region. 2. Posterior region. 3. Parapodium. 4-6. *Hesionides arenarius*. 4. Anterior region. 5. Posterior region. 6. Parapodium. 7-9. *H. gohari*. 7. Anterior region. 8. Posterior region. 9. Parapodium. 10-12. *Eusyllis homocirrata*. 10. Anterior region. 11. Posterior region. 12. Parapodium.

Family: SYLLIDAE

Genus: *Eusyllis* Malmgren, 1867

Eusyllis homocirrata Hartmann-Schroder, 1958 (Fig. 1, 10-12)

Hartmann-Schroder (1958) described the species from the beach sands of the Bimini Island, Bahamas. The local forms are transparent, hardly distinguishable from sand particles and reach a length of 1.6 mm. The worms were encountered in small numbers in coarse and medium sands 20 cm,

below surface near half-tide level. The forms are highly thigmotactic and firmly cling to sand particles when subjected to the severity of water currents in the habitat due to wave action, etc. The species is negatively phototactic and gregarious in habits.

Genus: *Parapionosyllis* Fauvel, 1920

Parapionosyllis subterranea Hartmann-Schroder, 1960 (Fig. 2, 1-3)

Hartmann-Schroder (1960) described the species from the intertidal sands on the Red Sea coast. This form was occasionally collected from coarse sands 15 cm. below surface between the low and the mid-water levels. The individuals agree with the original description of the species and reach a length of 1.3 mm. The worm is thigmotactic and sluggish in habits.

Genus: *Sphaerosyllis* Claparede, 1963

Sphaerosyllis minima Hartmann-Schroder, 1960 (Fig. 2, 4-6)

Hartmann-Schroder (1960) described the species from the intertidal sands on the Red Sea coast. The local forms agree with the original species description and attain a length of 1 mm. Only a few specimens of the species were collected in medium sands 15 cm. below surface near half-tide level. The worms are transparent, thigmotactic and sluggish in habits.

Genus: *Petitia* Siewing, 1955

Petitia amphophthalma Siewing, 1955 (Fig. 2, 7-9)

Siewing (1955) described the species from the coasts of the Gulf of Gasconne and Mediterranean. Later it has been reported on the coasts of Bahamas and Red Sea (Hartmann-Schroder, 1958, p. 60). Locally, the juveniles bearing eye spots on the prostomium and pigment spots on the pygidium, were more commonly encountered in the collections than the adult forms. The adults are slightly smaller than the type specimens and reach a length of 1.4 mm. The forms were collected between sand grains in coarse and medium sands 10 cm. below surface between the low and the half-tide levels of the beach. The worm is sluggish in habits and coils into a hump on being disturbed. The species did not appear sufficiently tolerant to the fluctuating conditions occurring in the environment as evidenced by a decrease in their numbers following periods of sudden changes in salinity and temperature.

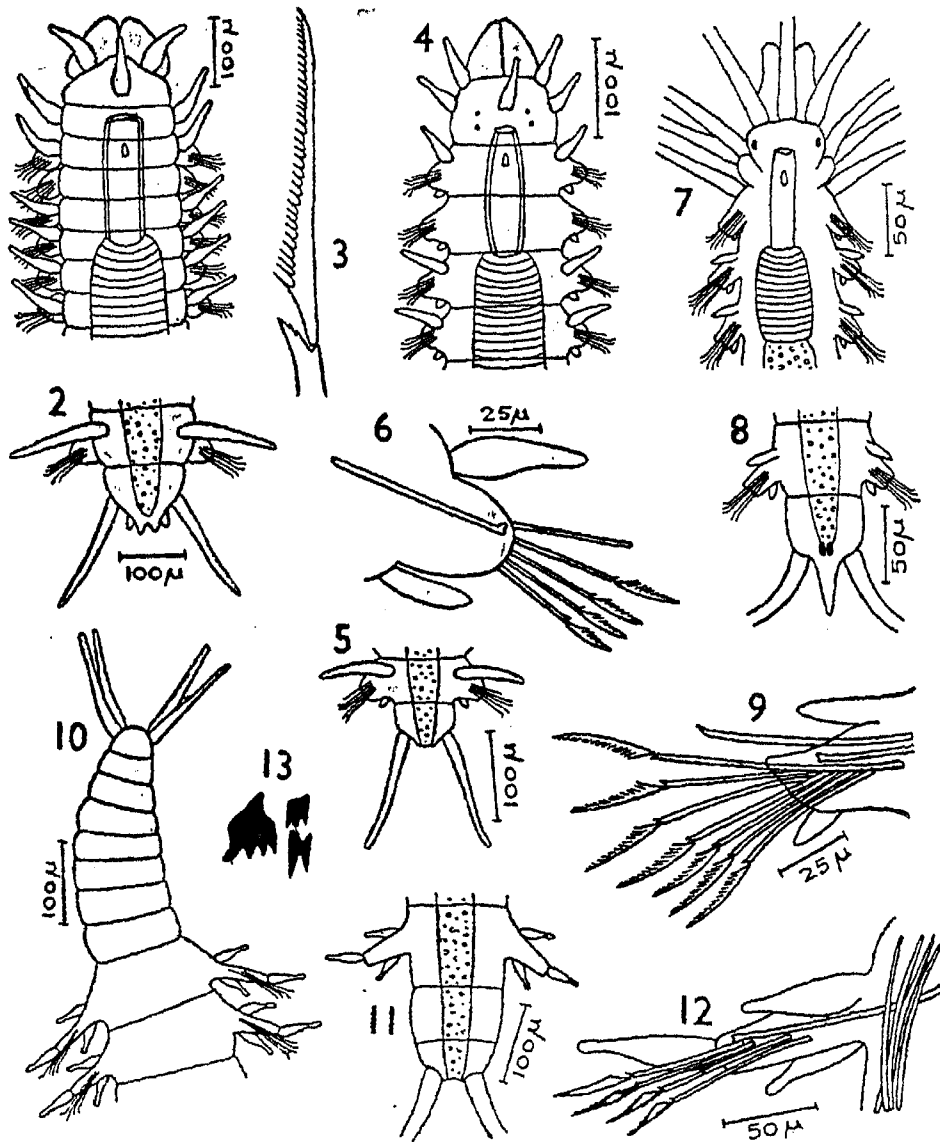


FIG. 2. 1-3. *Parapionosyllis subterranea*. 1. Anterior region. 2. Posterior region. 3. Seta from middle parapodium. 4-6. *Sphaerosyllis minima*. 4. Anterior region. 5. Posterior region. 6. Parapodium. 7-9. *Petitia amphophthalma*. 7. Anterior region. 8. Posterior region. 9. Parapodium. 10-13. *Goniadides aciculata*. 10. Anterior region. 11. Posterior region. 12. Parapodium. 13. Jaws.

Family: GLYCERIDAE

Sub-family: GONIADINAE

Genus: *Goniadides* Hartmann-Schroder, 1960

Goniadides aciculata Hartmann-Schroder, 1960 (Fig. 2, 10-13)

Hartmann-Schroder (1960) described the species from the intertidal sands on the Red Sea coast. The individuals on this coast conform to the description of the type species except for a few minor structural variations. The Red Sea forms attain a length of 7.0 mm, while the local forms are smaller

in size reaching only 4.5-5.0 mm. The paired tentacles are four-segmented in the type specimen while the segmentation is indistinct in the local forms. The number of acicular setae constituting the notopodium of the biramous parapodia is three in the type specimen as against four seen in the local forms. The forms were occasionally encountered in coarse sands 15 cm. below surface between the low and the mid-water levels of the beach. The worm was observed carnivorous, feeding on detritus admixed with small animals like protozoans, turbellarians, nematodes, gastrotrichs, ostracods, copepods, etc.

SUMMARY

The present paper reports for the first time the occurrence of eight species of interstitial polychaetes inhabiting the beach sands of Waltair Coast.

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