Bull. zool. Surv. India, 2 (2 & 3) : 213-215, 1980

ON A NEW SPECIES OF *PARADASYS* (GASTROTRICHA : LEPIDODASYIDAE) FROM ANDHRA COAST, INDIA

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ABSTRACT

A new interstitial species of the macrodasyid gastrotrich genus *Paradasys* collected from the intertidal sands on Andhra coast (Bay of Bengal), is described under the name *P. lineatus*. Of the species hitherto known, the new species approaches *P. hexadactylus* in general organization, but clearly differs from the latter in morphological details.

INTRODUCTION

While surveying the interstitial meiofauna inhabiting the intertidal sands of Andhra coast, specimens of a new macrodasyid gastrotrich belonging to the genus *Paradasys* Remane were encountered in the collections. The description of the new species will form the subject matter of the present paper. Hitherto, *P. littoralis* Rao and Ganapati is the only species of the genus known to occur on the Indian coast.

SYSTEMATIC ACCOUNT

Order MACRODASYIDA

Family LEPIDODASYIDAE Ramane, 1927

[Genus **Paradasys** Remane, 1934

Paradasys lineatus sp. nov. (*Fig.* 1, A-D)

Description : Adult specimens attain 650-800 μ in length and 70-80 μ in maximum width, depending on the state of contraction. Body transparent, elongated, dorsoventrally flattened and slightly tapering towards both the ends. Head is not delineated from the rest of the body and the posterior end rounded. Cuticle thin, finely granular and without epidermal glands, papillae, scales, spines, etc. Numerous cephalic sensory cilia about 5 μ long occur on anterior border. Trunk bears several lateral sensory hairs 10-20 μ long. Ventral surface flat, with sparse ciliation more or less uniform.

Two pairs of anterior adhesive tubes about 10 μ in length occur behind the buccal cavity and are directly borne on ventral body surface. Lateral and dorsal adhesive tubes absent. Six posterior adhesive tubes about 8 μ in length occur on posterior border of posterior end, three of them being located on either side of midline.

Mouth is about 20 μ wide, terminal but slightly inclined to ventral surface and surrounded by short sensory bristles 4-5 μ in length. Buccal cavity small and cup-shaped. Pharynx is 240 μ long, contains numerous round refringent granules and forms slightly

more than one-third of total gut length. Pharyngeal pores well developed and occur at the posterior end of pharynx. Intestine is about 440 μ long, granular and divisible into a broad anterior region and a narrower posterior region. Anus subterminal and opens on the ventral surface about 25 μ from the posterior border.

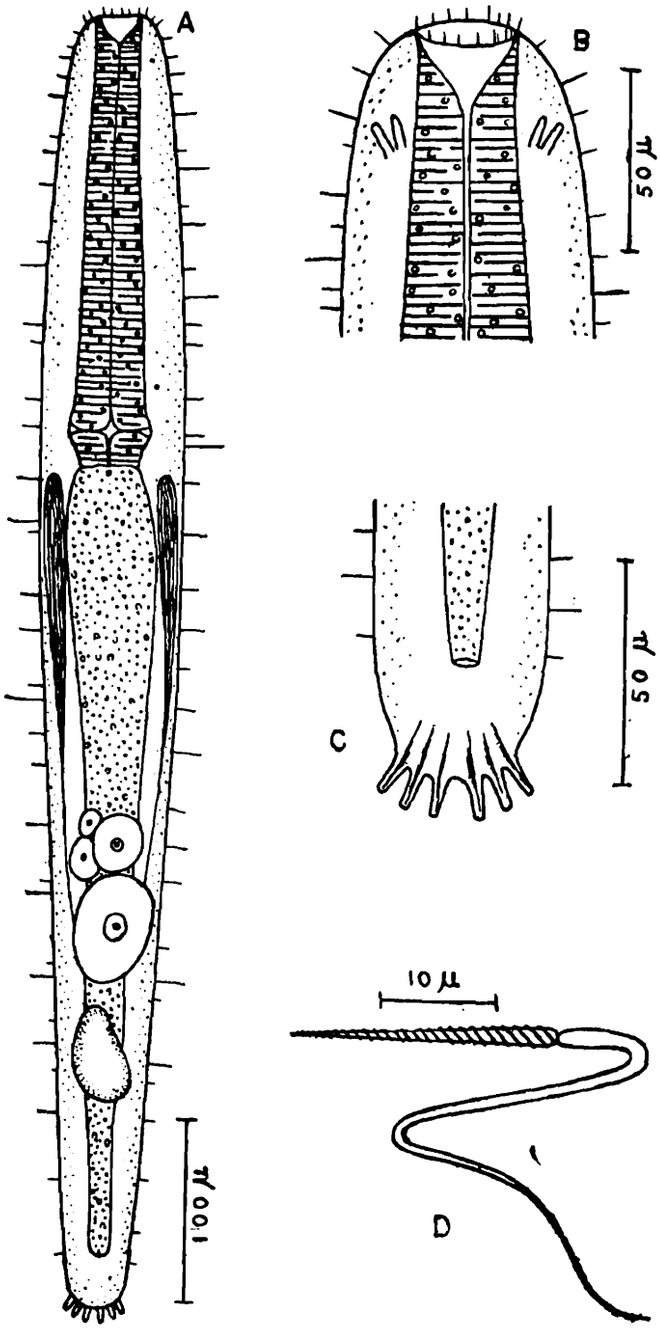

Fig. 1. *Paradasys lineatus* sp. nov., A—adult, dorsal view ; B—anterior region, ventral view ; C—posterior region, ventral view ; D—spermatozoon.

Testes paired, located lateral to the anterior part of intestine and extend anteriorly up to the posterior end of pharynx. Vasa deferentia converge behind the egg cells and the actual male pore not seen. Structure of spermatid is shown in fig. 1. It reaches about 90 μ in length. Sperm head is about 25 μ long, tapers anteriorly to a fine point and shows complete spiral thickening. The tail occupies about 65 μ or slightly more than two thirds of its total length. Ovary is solitary and dorsal, with 3-5 eggs situated in the posterior third part of body. The egg attains about 60 μ in maximum diameter. A dorsal oblong seminal receptacle about 55 μ in length occurs behind the ovary.

Holotype : Specimen 720 μ long, with gonads, coll. *G. C. Rao*, 3.iii.1978. Deposited with the Zoological Survey of India, Calcutta. Regd. No. P 3028/1.

Type locality Medium sand 10 cm below surface, intertidal zone, Krishnapatnam Beach (Lat. 14°17'28" N and Long. 80°08'12" E), Andhra Pradesh, India.

Remarks : Four species of the genus *Paradasys* Remane are hitherto known (see Hummon, 1974). They are *P. subterraneus* Remane (1934), *P. hexadactylus* Karling (1954), *P. littoralis* Rao and Ganapati (1968) and ? *P. pacificus* Schmidt (1974). Of these species, *P. lineatus* sp. nov. approaches *P. hexadactylus* in the general organization, but clearly differs from the latter in the size and shape of body, number of adhesive tubes and the structure of genital apparatus.

The specific name of the new species refers to the linear shape of its body.

Diagnostic features : Body up to 800 μ long, 80 μ wide and dorsoventrally flattened. Head not delineated. Hind end rounded.

Two pairs of anterior adhesive tubes. Three pairs of posterior adhessive tubes. Lateral adhesive tubes absent. Cuticle thin and granular. Ventral ciliation sparse and uniform. Mouth terminal. Buccal cavity cupshaped. Pharynx slightly more than $\frac{1}{3}$ of the total gut length. Pharyngeal pores at posterior end of pharynx. Anus subterminal. Testes paired. Penis absent. Seminal receptacle oblong. Solitary dorsal ovary.

Ecology : The specimens of *Paradasys lineatus* were collected in medium sands with a grain size of 300-500 μ in mean diameter and at a depth of 10-20 cm below surface between the low and half—tide levels of the intertidal zone. The sands are mostly sllicious, angular and rich in organic detritus. At the time of collection, temperature in the habitat was read 28°C, while the salinity of interestitial water showed 32%. The gastrotrich is agile, negatively phototactic and moves through the interestices of sand with considerable ease.

Other interstitial species collected in association with the gastrotrich included, the turbellarian *Otoplana* sp., the nematodes *Enoplóides* sp., *Platycoma africana* Gerlach, *Metepsilonema* sp., *Desmodora* sp., the gastrotrichs *Xenotrichula velox* Remane, *Chaetonotus* sp., *Pseudostomella indica* Rao, *Paraturbanella* sp., the polychaetes *Sphaerosyllis bengalensis* Rao and Ganapati, *Hesionides gohari* Hartmann-Schroder, *Petitia amphophthalma* Siewing, *Eusyllis homocirrata* Hartmann-Schroder, *Protodrilus indicus* Aiyar and Alikunhi, *Saccocirrus minor* Aiyar and Alikunhi, the copepods *Ameira* sp., *Kliopsyllus wilsoni* (Krishnaswamy), *Arenopontia indica* Rao, *Sewellina reductus* Krishnaswamy, *Parameso-chra* sp., the isopod *Microcerberus predatoris* (Gnanamuthu) and the halacarid *Halacarus anomalus* Trouessart.

ACKNOWLEDGEMENTS

The author is grateful to the Director, Zoological Survey of India, for the facilities provided to carry out this work.

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