

CRASIELLA INDICA N. SP. (GASTROTRICHA, MACRODASYIDA) FROM  
ORISSA COAST, INDIA

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ABSTRACT

A new interstitial species of macrodasyid gastrotrich, *Crasiella indica*, is described from Orissa coast (Bay of Bengal), India.

INTRODUCTION

Recent studies of the marine interstitial meiofauna carried out by the author in the intertidal sands of Orissa coast, have revealed the occurrence of some interesting gastrotrichs and the results are being published. The description of a new macrodasyid gastrotrich belonging to the genus *Crasiella* Clausen, encountered in the collections is given here. The genus is recorded for the first time from Indian Ocean.

SYSTEMATIC ACCOUNT

- Order : MACRODASYIDA  
Family : PLANODASYIDAE Rao & Clausen, 1970  
Genus : *Crasiella* Clausen, 1968  
*Crasiella indica* n. sp.  
(Fig. 1, A-D).

*Description* : Adult specimens are of medium size, 430-500  $\mu$ m long and 50-70  $\mu$ m wide. Body transparent, elongated, dorsoventrally flattened, widest in the middle and slightly tapers towards the posterior end. Anterior end truncate. Head not

distinct. Posterior end terminates in two symmetrical tail lobes characteristic of the genus. Tail lobes somewhat triangular in outline and reach about 16  $\mu$ m in length. Cuticle thin and finely granular, without any dorsal armament as papillae, scales, hooks, spines, etc. Epidermis contains numerous small and round dorsolateral glands measuring about 2-4  $\mu$ m in size. Head with two shallow lateral pits, each carrying a tuft of long cilia about 25  $\mu$ m in length. Anterior and lateral margins of head bear short sensory hairs 10-15  $\mu$ m long. Lateral sensory hairs 15-25  $\mu$ m long occur on the trunk. Ventral surface is flat, with ciliation entire and nearly uniform.

Adhesive tubes, anterior, lateral and posterior, present. Anterior tubes occur in a slightly diagonal row on the ventral surface just behind buccal cavity and are directed forwards. Nine tubes occur on each side in two groups of 4 + 5 and measure about 10  $\mu$ m in length. Lateral tubes arranged in two longitudinal rows, extending just behind the anterior tubes to close to the posterior tubes. About 30-36 pairs of lateral tubes present. The tubes are nearly even distributed and 10-15  $\mu$ m long. Each tail lobe

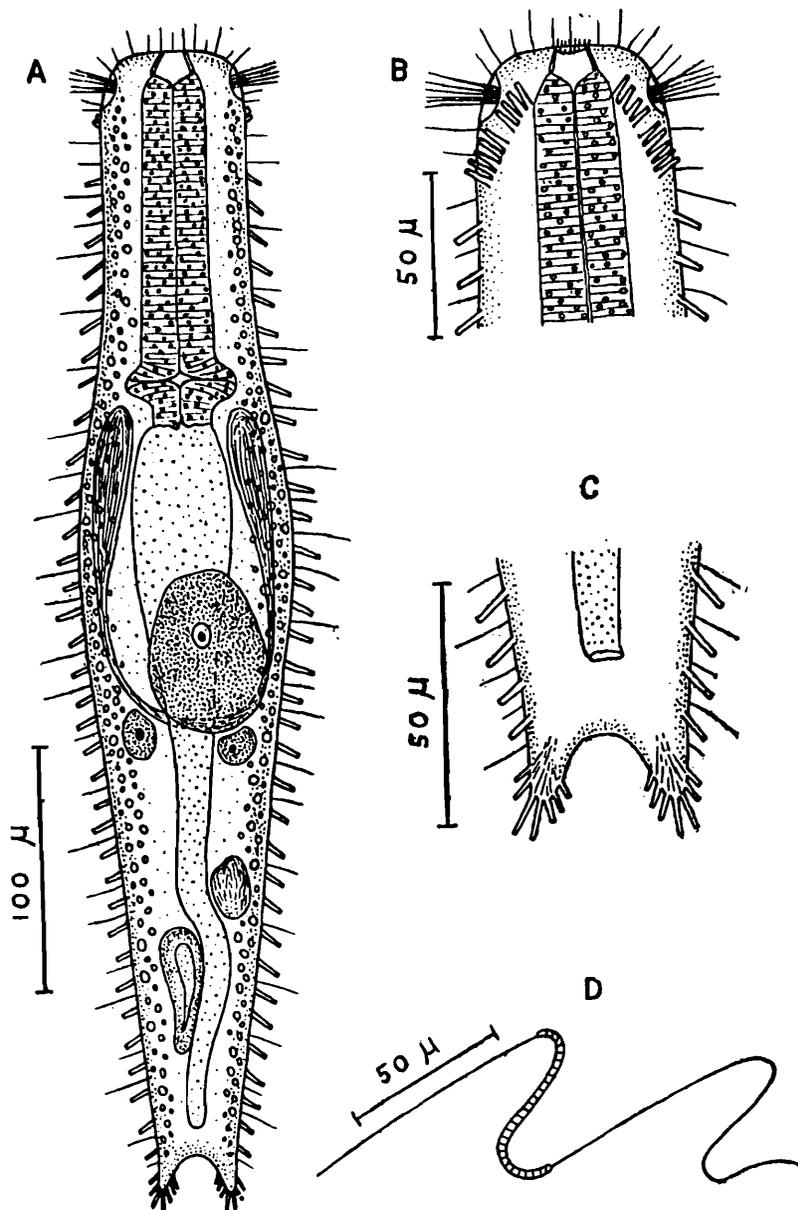


Fig. 1. *Crasiella indica* n. sp. A—Entire, dorsal view. B—Anterior region, ventral view. C—Posterior region, ventral view. D—Spermatozoon.

bears 7 posterior tubes disposed on its inner and outer edges. The tubes are directed backwards and attain 5-10  $\mu\text{m}$  long, the two distant ones located at the tip being the longest. Adhesive tubes absent on posterior border between the two tail lobes.

Mouth is about 10  $\mu\text{m}$  wide, terminal and slightly inclined to ventral side. It is surrounded by a corona of short sensory

setae 2-3  $\mu\text{m}$  long. Buccal cavity with cuticularized walls, 10×15  $\mu\text{m}$  in size and widest at its base. Pharynx contains numerous small refringent granules, attains a length of about 145  $\mu\text{m}$  and makes up nearly 1/3 of the total gut length. Pharyngeal pores conspicuous and occur close to the posterior end of pharynx. Intestine about 300  $\mu\text{m}$  long, granular and divisible into a broad anterior region and a narrower posterior region with subterminal bent. Anus

subterminal and opens on ventral surface about 15  $\mu\text{m}$  from posterior border.

Reproductive system consists of paired testes extending laterally from behind pharyngeal knobs to the anterior part of intestine. Vasa deferentia coverage just behind the stomach, forming a single transverse seminal vesicle ; thus making the male genital system look typically U-shaped. Penis absent. Structure of spermatozoon is shown in Fig. 1. It is thread-like and reaches a total length of about 300  $\mu\text{m}$ . Sperm head is about 150  $\mu\text{m}$  long, with a thin anterior part and a beaded thickening at its proximal part. Tail thin, 150  $\mu\text{m}$  long and occupies about 1/2 of total length. Paired dorsal ovaries occur just behind testes. Egg attains about  $65 \times 45$   $\mu\text{m}$  in size. A granular and elongated copulatory bursa about 50  $\mu\text{m}$  in length occurs on left side adjacent to curved intestinal region. An oblong seminal receptacle about  $25 \times 15$   $\mu\text{m}$  in size is seen on right side of intestine just anterior to bursa.

**Holotype :** Specimen 480  $\mu\text{m}$  long, with gonads, collected by the author on 31st January, 1977. Deposited with the Zoological Survey of India Calcutta. Regd. No. P 3038/1.

**Type locality :** Medium sand, 5 cm below surface, intertidal zone, Gopalpur Beach (Lat.  $19^{\circ}15'28''$  N and Long.  $84^{\circ}55'14''$  E), Orissa, India.

**Remarks :** Until now, the genus *Crasiella* Clausen is reported to contain three species, viz. *C. diplura* Clausen (1968, type species), *C. (?) oceanica* d'Hondt (1970, *nomen nudum*) and *C. pacifica* Schmidt (1974). Among these species, *C. indica* n. sp. approaches *C. diplura* in the structure of buccal cavity, tail lobes, seminal receptacle and the disposition of posterior adhesive

tubes. However, the new species is clearly distinguished from both the known species by the number and disposition of anterior adhesive tubes and the structure of bursa and spermatozoon.

**Diagnostic features :** Shape of body typical of genus. Body up to 500  $\mu\text{m}$  long, 70  $\mu\text{m}$  wide and dorsoventrally flattened. Head indistinct, anteriorly truncate and with lateral sensory pits. Hind end bilobed. Cuticle thin and granular. Dorsal armament absent. Numerous small dorsolateral epidermal glands present. Ventral ciliation entire and nearly uniform. Nine (4+5) pairs of anterior adhesive tubes disposed in a diagonal row, 30-36 pairs of lateral adhesive tubes and 7 pairs of posterior adhesive tubes present. Buccal cavity wide and cuticularized. Pharynx / total gut length about 1/3. Conspicuous pharyngeal pores close to the posterior end of pharynx. Intestine bent subterminally. Anus subterminal. Gonads paried. Penis absent. Elongated copulatory bursa and oblong seminal receptacle present.

**Ecological notes :** The specimens of *Crasiella indica* were collected in clean medium sands 5-10 cm. below surface between the low and half-tide levels of the intertidal zone. The sands are brown, silicious and angular, with a mean diameter of 300-500  $\mu\text{m}$ . At the time of collection, temperature in the habitat was read  $27.6^{\circ}\text{C}$ , while the salinity of interstitial water indicated 32.5%. The gastrotrich is agile and a ciliary glider. The species is highly thigmotactic and sensitive to external stimuli. Other interstitial meiofauna collected in association with the gastrotrich included ciliates, turbellarians, nematodes, gastrotrichs, polychaetes, ostracods, copepods and halacarids.

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