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CRASIELLA DIPLURA GEN. ET SP. N.  
(GASTROTRICHA, MACRODASYOIDEA)<sup>1</sup>

By  
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Gastrotricha  
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ABSTRACT

A new marine macrodasyoid gastrotrich, *Crasiella diplura*, is described from the Bergen area, Norway. Among the characters which distinguish it are a pair of very small tail lobes and a marked asymmetry in the posterior third of the intestinal tract. As it combines characters met with in various families, the taxonomic placing is difficult. Provisionally it is placed in the family Lepidodasyidae.

DESCRIPTION

The study of the marine gastrotrich fauna in the Bergen area was taken up a few years ago, and in three earlier papers (CLAUSEN 1965a, b, c) four new macrodasyoid species have been described: *Tetranchyroderma tribolosum*, *Platydasys mastigurus*, *P. ocellatus* (fam. Thaumastodermatidae), and *Desmodasys phocoides* (fam. Turbanellidae). These are all inhabitants of sublittoral shell gravel, and so is a fifth new gastrotrich species from the Bergen area described in this paper.

*Crasiella diplura* gen. et sp. n. (diagnoses are given below) has been found in two localities in the inner part of Korsfjorden, Donhamna (Biol. Station Ref. Nos. 429-65, coarse shell gravel; 82-66, medium to coarse shell gravel; 115-66, coarse shell gravel) and Storaviki (No. 156-66, fine shell gravel) at depths ranging from 18-27 m; and in medium shell gravel from one locality in Raunefjorden, the sound between Bjelkarøy and Lauvholmen at a depth of 3 m (No. 393-66).

The new species belongs to the macrodasyoid group of gastrotrichs. The body (Fig. 1) is of medium size, about 600  $\mu$  long, and dorso-ventrally flattened. There is no discernible head. The pharyngeal portion makes up one third of the total length and, except for the bluntly pointed anterior part, the breadth is almost constant (c. 60  $\mu$ ) to near the posterior end of the pharynx. From here the body widens, reaching in its middle part a breadth of c. 80  $\mu$ , to taper again in the posterior third before it terminates in two symmetrically arranged small tail lobes.

The dorsal surface appears a little rough, but there are no cuticular hooks or scales.

The epidermis is densely filled with small (8-10  $\mu$ ), round, homogeneous glands. Sensory hairs arise all along the body sides, but are most numerous

<sup>1</sup> Contribution from the Biological Station, Espegrend, N-5065 Blomsterdalen, and from the Zoological Laboratory, University of Bergen, Norway.

around the mouth. The "head" has two shallow lateral pits, from each of which a tuft of long cilia emerges.

The ventral surface is entirely covered with cilia, but medially the ciliation is poor except in the anterior and posterior regions.

Adhesory tubules occur as usual in three groups, anterior, lateral, and posterior. The number of tubules in each group increases with the size of the animal. The anterior group consists of two longitudinal ventrolateral fields, each with some 14 irregularly placed tubules about 12  $\mu$  long (Fig. 2).

The lateral tubules are also arranged in two longitudinal rows, extending from just behind the anterior group to near the posterior end. There are up to 40 tubules on each side, but only four to six in the pharyngeal region. Both long (20–35  $\mu$ ) and short (c. 15  $\mu$ ) tubules occur, the shorter tubules being more numerous and the very longest ones being found in the middle body region.

The posterior tubules are grouped in a characteristic way. Two c. 18–20  $\mu$  long tubules are placed at the tip of each tail lobe. The inner, or median, side of the lobe bears 3 or 4 tubules, diminishing in size towards the base of the lobe, while the outer lobe side bears 2–3 similar tubules. The tubules that flank the lobes are placed somewhat ventrally.

The buccal cavity is circular in transverse section and widened at the base. It is somewhat cuticularized. The mouth rim bears about 20 fine hooklike projections c. 3  $\mu$  long.

The pharynx, which is rust coloured, has prominent knobs inside the pharyngeal pores at a little distance from its posterior end. It occupies about 2/5 of the total intestinal tract.

The remainder of the intestinal tract has a straight and broad anterior stomach portion, while the equally long intestinal portion is narrow and bent very like an S in the frontal plane. The anus is situated ventrally and medially near the posterior end.

The paired testes run from the pharyngeal knobs along the posterior part of the pharynx and the anterior part of the intestine. The vasa deferentia bend ventrally and join each other below the intestine just behind the stomach, forming a single transverse "seminal vesicle". When viewed from above, the male genital system as a whole is U-shaped. Sperms have been seen protruding from the ventral portion of the genital tract, although an actual male genital pore has not been observed.

The spermatozoa are shaped as shown in Fig. 3 and reach the considerable length of c. 320  $\mu$ . A spermatozoon is composed of three main parts. A very long and thin anterior portion, c. 140  $\mu$ , is spiralized nearest the tip. Then follows a thickened head and middle portion, c. 60  $\mu$  together, which is subdivided into two different parts, an anterior portion made up of 21–22 elliptic nodules, and a posterior portion composed of 21–22 denser rings. Then follows the relatively short tail (c. 120  $\mu$ ).

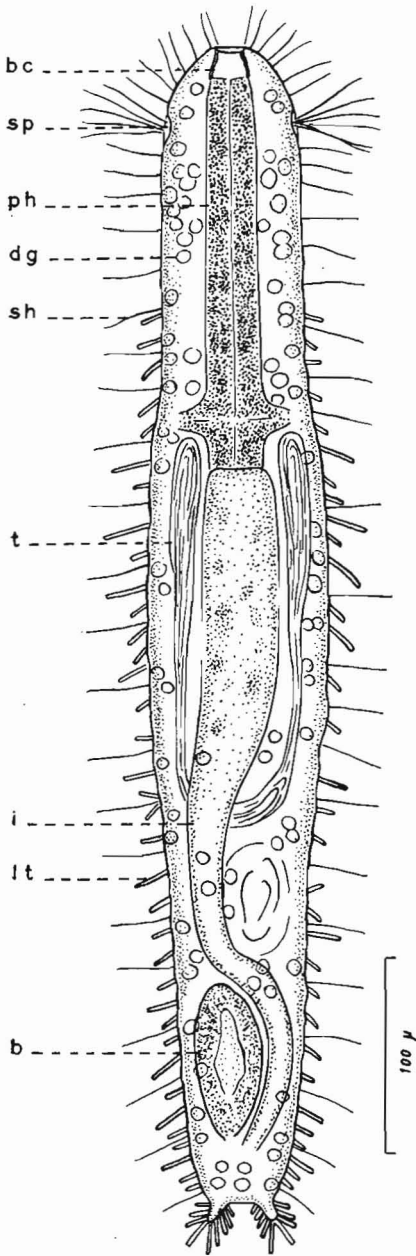


Fig. 1.

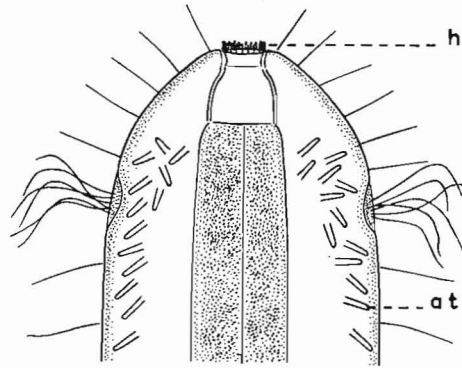


Fig. 2.

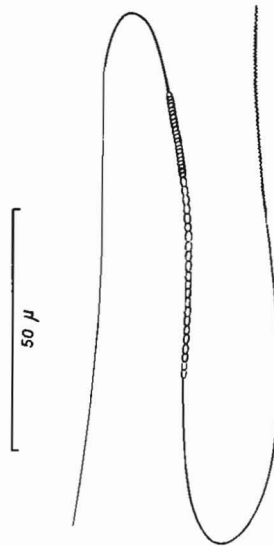


Fig. 3.

Fig. 1. *Crasiella diplura*. Dorsal view. *b* bursa, *bc* buccal cavity, *dg* dorsal gland, *i* intestine, *lt* lateral adhesive tubule, *ph* pharynx, *sh* sensory hair, *sp* sensory pit, *t* testis. Fig. 2. *Crasiella diplura*. Anterior region in ventral view. Ventral cilia omitted. *at* anterior adhesive tubule, *h* mouth hooklets. Fig. 3. *Crasiella diplura*. Spermatozoon.

Knowledge of the female genital system is as yet only fragmentary, as no ripe eggs have been observed and no ovaries have been traced. However, rather posteriorly, where the intestine curves, a large, oblongish bursa copulatrix is found to the left of the intestine (Fig. 1). A fairly large oval-shaped cavity anterior to the bursa, but at the opposite side of the intestine, probably represents the receptaculum seminis, as sperms were occasionally observed there.

*Crasiella diplura* moves forward in a slow gliding manner, but like many other macrodasyoid gastrotrichs it may retreat quickly in a leech-like manner.

**H o l o t y p e .** Specimen 550  $\mu$  long, with ripe testes. Collected by the author on 29 March 1966. Deposited in the Zoological Museum, Bergen, Catalogue No. 49, 346.

**T y p e l o c a l i t y .** Norway, Korsfjorden, Donhamna, 60°12'36" N, 5°15'45" E, 24–27 m, medium to coarse shell gravel, Biol. St. Ref. No. 82–66.

**P a r a t y p e s .** 4 specimens, from the type locality, 2 of them deposited in the Zoological Museum, Bergen, Catalogue No. 49, 347, and 2 deposited at the Biological Station, Espegrend.

**D i a g n o s e s .** *Crasiella* gen. n. Paired small tail lobes flanked by adhesive tubules. Without cuticular armament. Gut differentiated into a broad and straight stomach portion and a slender, curved intestinal portion. Testes paired, in the middle-third body region. Vasa deferentia with a broad common end portion. Posterior bursa copulatrix. Typus generis: *Crasiella diplura*.

*Crasiella diplura* sp. n. Maximum body length at least 600  $\mu$ . No distinct head, with lateral sensory pits. Paired irregular longitudinal rows of anterior adhesive tubules. Lateral tubules also in anterior body region. Two very small tail lobes, each with up to 9 tubules. Buccal cavity wide. Pharynx/total gut length 2/5. Pharyngeal pores at posterior end of pharynx. Intestine with a marked bend to the right in the frontal plane.

#### DISCUSSION

The taxonomic position of the new species is uncertain. It shows morphological features characteristic of genera of different families, and the intention is to indicate just this blending of traits with the genus name *Crasiella* (from Greek *crasis* = a blending). The moderately cuticularized and spacious buccal cavity recalls the conditions in *Paraturbanella* REMANE, 1927 (see e.g. BOADEN 1963). The bilobed hind body flanked by adhesive tubules recalls *Dactylopodalia* REMANE, 1929, even if the lobes are more expressed in the latter. However, as regards the testes, which are of great taxonomic importance in the Gastrotricha, their pattern and location are more like the conditions met with in the families Lepidodasyidae and Macrodasyidae.

Everything taken into account, *Crasiella* seems to come closest to the genera *Mesodasys* REMANE, 1951 and *Cephalodasys* REMANE, 1926 of the family Lepidodasyidae. In *Mesodasys*, however, the bursa has a more anterior position, and in *Cephalodasys* the testes reach farther posteriorly, opening near the anus. Common

traits are the occurrence of lateral adhesive tubules anterior to the pharyngeal pores, and the position of the latter near the posterior end of the pharynx. The anterior group of adhesive tubules has a similar pattern as in *Mesodasys lobocercus* BOADEN, 1960 and *Lepidodasys platyurus* REMANE, 1927. In just these traits *Crasiella* differs from most of the Macrodasidae, where also a penis is mostly found. In view of this and also because of the incomplete information on the female genital system, I prefer provisionally to place it within the family Lepidodasyidae.

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