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BREDERVELDIA BIDENTATA GEN. N., SP. N., A NEW SPECIES OF THE FAMILY TRIGONOSTOMIDAE

(TURBELLARIA, NEORHABDOCOELA) FROM THE NETHERLANDS

G. VAN DER VELDE & J.L.M.W. VAN DE WINKEL

ABSTRACT

A new species is described belonging to a new genus within the subfamily Trigonostominae. It was found in a salt-marsh in the island of Texel, The Netherlands.

In a soil sample, originating from a salt-marsh known as De Eendracht, in the Dutch island of Texel, seven specimens of an interesting turbellarian were discovered. The specimens belonged to an undescribed species, and it is necessary to propose a new genus to accommodate the species.

Brederveldia gen. n.

Diagnosis.- Animals with characteristics typical of the subfamily Trigonostominae sensu Den Hartog (1964) (fig. 1). The new genus is characterized by the structure of the male cuticular copulatory

organ. The testes are small and situated caudally of the pharynx and the vitellaria.

The cuticular copulatory organ consists of a stylet and two spines, both connected with the mantle sheath; the inner spine is situated with its tip on one side of the stylet, giving the cuticular copulatory organ an asymmetrical shape. The stylet itself is bow-shaped at its proximal end and its distal end is trunk-like with an inner lobe.

Type-species.- *Brederveldia bidentata* sp. n.

Etymology.- The genus *Brederveldia* is named in honour of our colleague L.L. Brederveld. The species name *bidentata* means "with two teeth", a distinct character of the cuticular copulatory organ.

Brederveldia bidentata sp. n.

Material examined.- Seven specimens, soil sample from the salt-marsh De Eendracht, island of Texel, The Netherlands. The soil sample was obtained January 30th, 1975 and stored in a room with a constant temperature of 4°C. The animals were obtained from the soil sample by means of the ice-method in the beginning of March, 1975 and studied by squashing under a cover-slip.

Description.- The animals are 0.5 mm long and white in colour. The anterior part of the body is rounded. The caudal part is rounded. The two eyes are situated anteriorly at about $\frac{1}{7}$ of the body length. The pharynx is situated in the middle or just behind the middle of the body. The margin of the pharynx is not ciliated.

The testes are ovoid, small, about 20 µm long and situated caudally of the vitellaria and the pharynx.

The vasa deferentia are widened into two spermaducal vesicles before they enter the muscular part of the copulatory organ, where secretory glands occur.

The cuticular copulatory organ is 18 µm long and 10 µm broad. The structure is not yet completely understood, because some details were difficult to observe. When the cuticular copulatory organ is squashed, two distinct spines with rounded tips are visible. The outer spine seems to be connected with the mantle sheath and a continuation of it. The inner spine is situated asymmetrically with the tip on one side of the stylet. Its length is about the same as that of the outer spine. The inner spine is 13 µm long and connected by means of a ring on the outer side of the mantle sheath. The proximal end of the stylet is bow-shaped. The stylet ends in a trunk-like tube or gutter, which has a lobe on its inner side. Near the atrium commune a number of secretory glands are found. The vitellaria are paired and caudally continuing into the germaria. No cuticular bursal appendage or other structures of the bursa copulatrix have been found, so the animals are probably protandric.

Habitat.- The seven specimens were sampled on the north-eastern edge of the salt-marsh De Eendracht along the Dutch Waddenzee from a soil sample of 25 cm² and 5 cm thick clayish sand with a vegetation of *Enteromorpha* cf. *prolifera* (O.F. Müller) J. Agardh. In the same soil sample also two specimens of *Macrostomum balticum* Luther, 1947, two specimens of *Ptychopora hartogi* Ax, 1971, and two

specimens of *Ptychopora westbladi* (Luther, 1943) were found.

DISCUSSION

The bow-shaped proximal end of the stylet of *Brederveldia* is a character shared with the genera *Proxenetes*, *Ceratopora* and *Messoplana* (see Den Hartog, 1964 and Ax, 1971); it justifies its inclusion within the subfamily Trigonostominae. The systematic position within this subfamily is not at all clear, however, because the structure of the bursa copulatrix and that of the feminine ducts are not yet known and the characters of the cuticular copulatory organ do not indicate any direct relationship with one of the other genera. The outer spine shows some similarity to the additional duct of the genus *Messoplana*, but also to the big spine of *Proxenetes* (*Archixenetes*) *cisorius* Den Hartog, 1966. The position of the inner spine resembles in several respects that of the shorter duct of *Ceratopora paradoxa* (Pereyaslawzewa, 1892) (see Den Hartog, 1964); in this species the duct is a continuation of the mantle sheath, situated laterally of the stylet, and it has a rounded tip too.

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G. VAN DER VELDE & J.L.M.W. VAN DE WINKEL
 Laboratory of Aquatic Ecology
 Catholic University
 Toernooiveld, Nijmegen - The Netherlands

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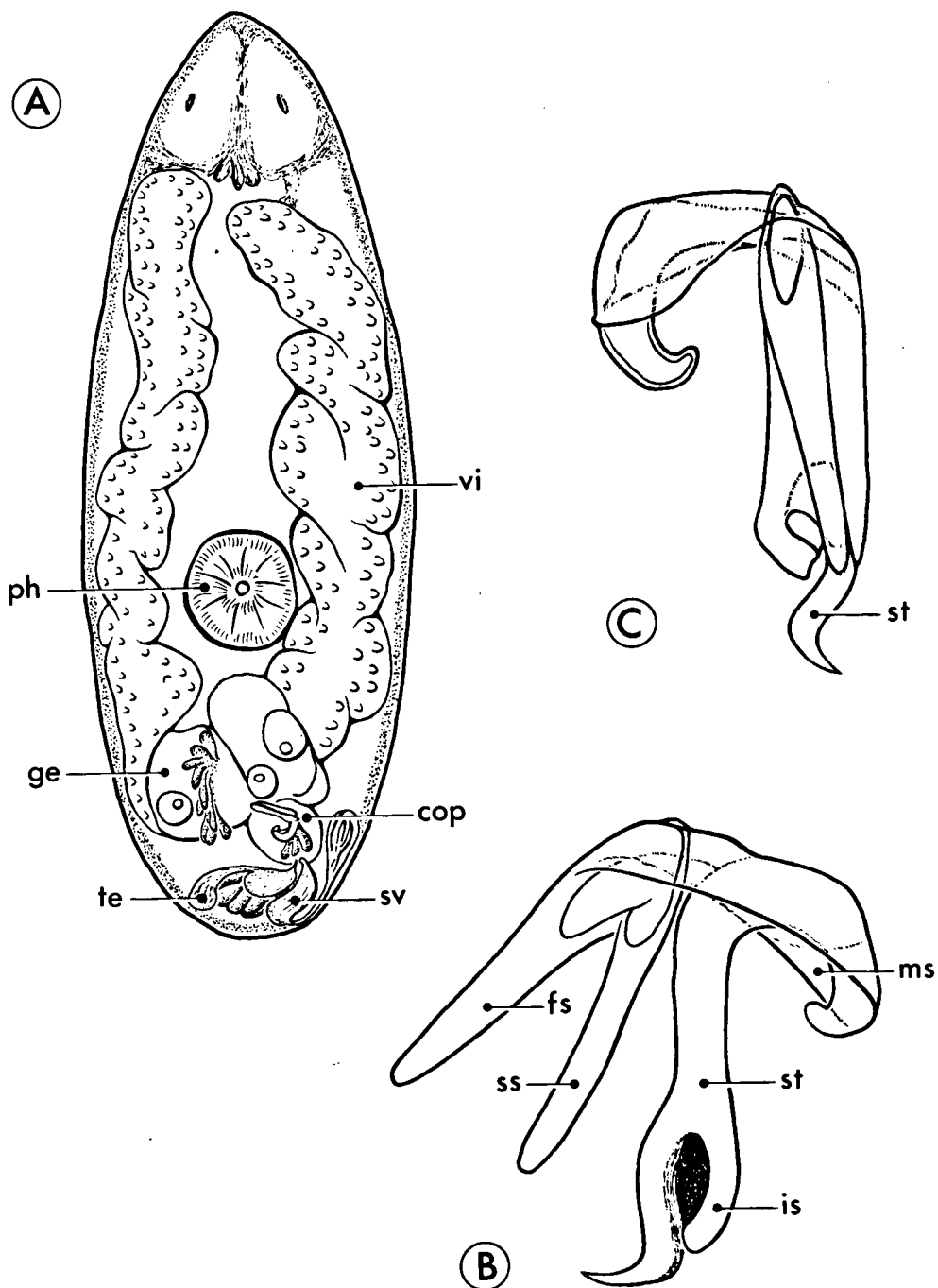


Fig. 1. A, general organization of *Brederveldia bidentata* n. sp.; B, squashed male cuticular copulatory organ; C, male cuticular copulatory organ.
 fs, first or outer spine; ss, second or inner spine; st, stylet; ms, mantle sheath; is, inner lobe; vi, vitellaria; ph, pharynx; ge, germaria; cop, male copulatory organ; te, testis; sv, spermaducal vesicle.