

A new interstitial flatworm (Turbellaria: Promesostomidae) from the Indian Ocean

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Key words: Turbellaria; Typhloplanoida; Promesostomidae; Indian Ocean; Seychelles; Kenya.
Paraproboscifer alacerregis, representing a new genus and a new species of the interstitial typhloplanoid flatworms is described from the Seychelles and Kenya. It is placed in the turbellarian family Promesostomidae, The type locality is on Mahé Island, Seychelles.

Introduction

Martens & De Clerck (1994) gave a preliminary report on the results of their studies on the interstitial and parasitic Platyhelminthes during the 'Oceanic Reefs' expedition to the Seychelles in 1992 and 1993. Several undescribed species were mentioned but none of them was described in the cruise report. The first description of a new species, also representing a new genus, is given below. In the preliminary report it is listed as Promesostomidae n.gen. n.sp.

Description

Turbellaria - Typhloplanoida
Family: Promesostomidae
Paraproboscifer alacerregis gen. et spec. nov.
(figs 1-8)

Type locality.— Baie Beau Vallon; N.W. coast of Mahé (Seychelles). Station no. 641B. Fine sand from shallow pool, in seagrass meadow. Middle to high eulittoral, 27.xii.1992.

Other localities.— Port Launay National Marine Park, southern part of bay; Mahé (Seychelles). Station no. 646A. Very fine sand from beyond reef front. Depth: 2-3 m, 29.xii.1992.

Mc Kenziepoint, Mombasa (Kenya), very fine sand in a shallow intertidal pool, middle to high eulittoral, 01.10.1991.

Material.— Seychelles: live observations of several specimens; whole mounts of two specimens in lactophenol, one of them designated as holotype. Kenya: live observations of one specimen; paraffin sections of two specimens stained with Heidenhain's iron hematoxylin using eosin as counterstain. Material is deposited in the collection of the Zoology Research Group, Limburgs Universitair Centrum, Diepenbeek, Belgium.

Derivation of name.— The genus name is a reference to the muscles around the rhabdoid tracts, the species name is in honour of the author's wife.

General description.— The white slender animals (about 1 mm in whole mounts) tend to move around like slow Proseriates with a very contractile headpart. Eyes are

lacking. The two rhabdite tracts are strongly developed (up to 170 μm long) and are surrounded by circular muscles. The basophilic rhabdites are about 11 μm long. The pharynx is situated just in front of the middle of the body and has a diameter in the mounted holotype of 91 μm . The epidermis is cellular with very long cilia. The epidermal basophilic rhabdites (length: 3 μm -8.4 μm) are scarcely dispersed over the whole body, but highly concentrated in the tail region.

Male organs.— The paired testes are situated in front of the pharynx. The two seminal vesicles merge together just before entering the globular copulatory bulb. The globular part of the cell bodies with the nuclei of the basophilous prostate glands are concentrated in the proximal part of the bulb, while the tubiform and secretion-filled cell necks surround the distal part of the ejaculatory duct. No extracapsular glands were observed. The ejaculatory duct ends in a short spiny cirrus (length of cirrus: 10-11 μm ; length of spines: 9 μm) which is surrounded by a sclerotised papilla (length: 14-17 μm ; width: 15 μm). The wall of the male antrum is slightly sclerotised.

Female organs.— The paired ovovitellaria start just behind the pharynx with the posteriorly situated ovary part lying next to the copulatory organ. Both ovovitellaria open laterally into the stalk of the terminal bursa by means of short ovovitelloducts. Large glands with a fine eosinophilous secretion and small ones with coarse basophilous secretion are associated with these ducts. A first, terminally situated globular bursa is connected with the genital atrium by means of a long muscular bursa stalk. Its lumen, containing sperm, is surrounded by large, distinctly delimited cells and touches both ovovitellaria laterally, but without a direct connection. A second, triangular shaped bursa opens dorsally in the common genital atrium and is surrounded by longitudinal muscles. This bursa is suspended in the body cavity by three muscle bundles, which may give it its triangular shape.

Discussion

With its single connection between the ovaria and the outside world *Paraproboscifer alacerregis* should be placed in the Promesostomidae Den Hartog, 1964. Due to the presence of a strongly developed atrial bursa, the genus is placed in the 'Coronhemiis-group' within the Brinkmanniellinae Karling et al., 1972 (see also Ehlers, 1974; Ehlers & Ehlers, 1981). The overall organisation, the presence of a cirrus and the long epidermal cilia clearly suggest a relationship with *Cilionema* Karling et al., 1972. The most striking differences are the possession of circular muscles around the rhabdoid tracts in *Paraproboscifer* and the so called 'cup cells' in *Cilionema*. The presence of muscles around the rhabdoid tracts is a clear autapomorphy for the newly erected taxon.

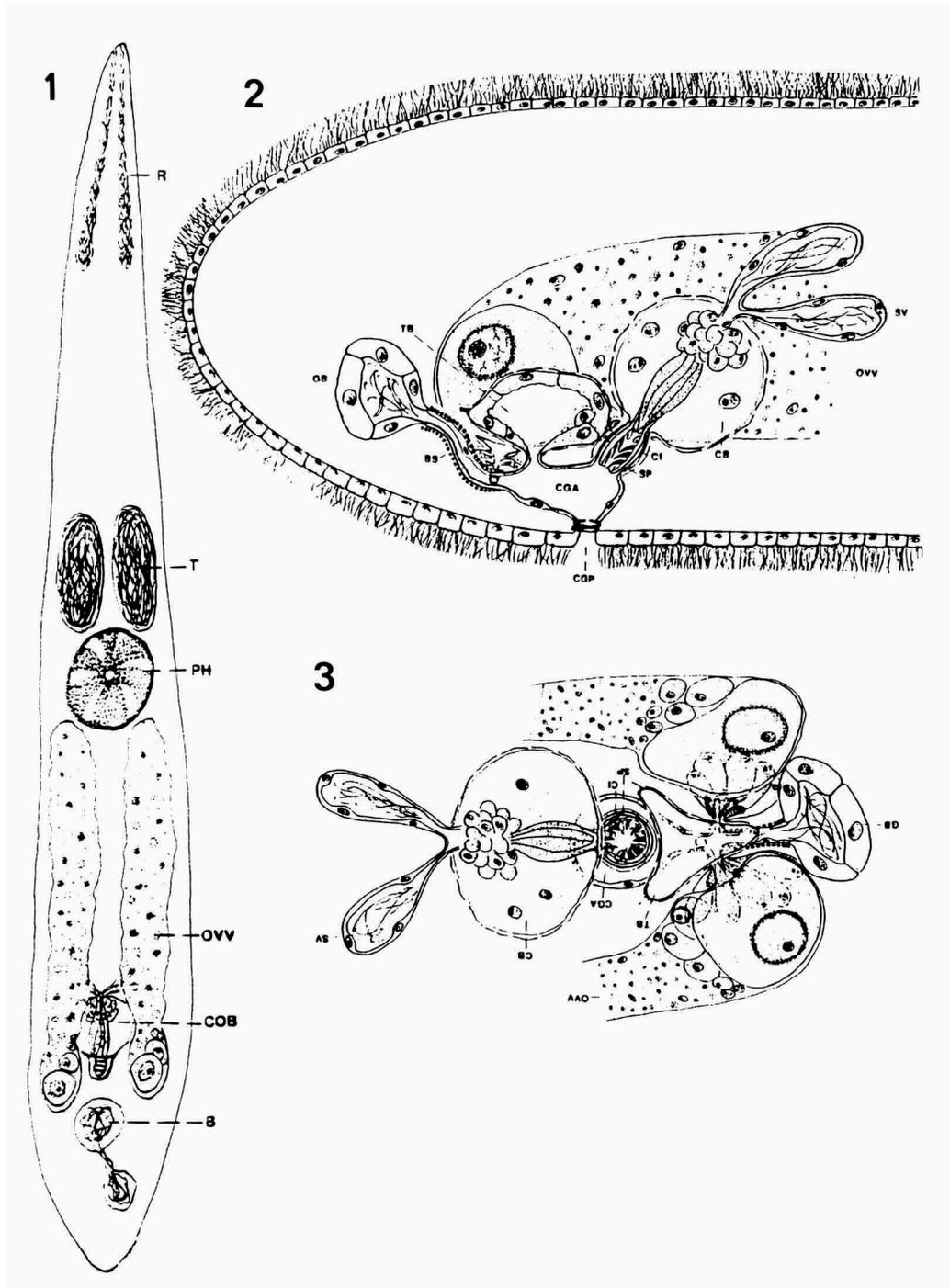
We agree with Karling et al. (1972) and Ehlers & Ehlers (1981) that the monophyletic character of this 'Coronhemiis-group' is highly questionable. The Brinkmanniellinae is defined on plesiomorphic characters only (Karling et al., 1972) as is the family Promesostomidae. We have started to work on a revision of the whole family and until we get more clearness about the relationships between the different genera the genus will be placed in the above mentioned taxa: family Promesostomidae, subfamily Brinkmanniellinae.

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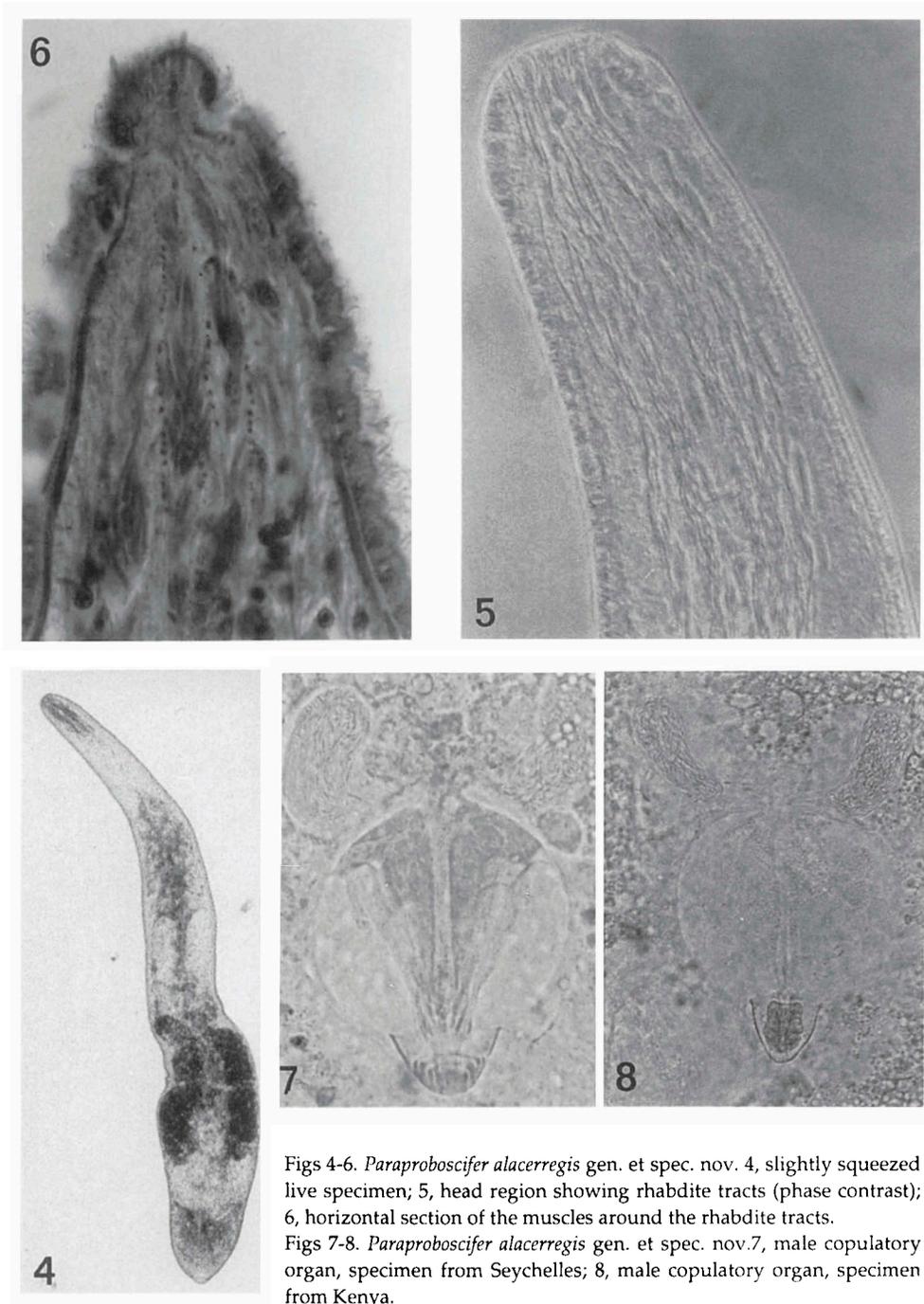
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Figs 1-3. *Paraproboscifer alacerregis* gen. et spec. nov. 1, free hand drawing of slightly squeezed specimen; 2, horizontal reconstruction of the genital organs viewed from the left; 3, dorsal view.

Abbreviations: B: bursa; BS: bursal stalk; CB, COB: copulatory bulb; CGA: common genital atrium; CGP: common genital pore; CI: cirrus; GB: globular bursa; OVV: ovovitellarium; PH: pharynx; R: rhabdites; SP: sclerotised papilla; SV: seminal vesicle; T: testis; TB: triangular bursa.



Figs 4-6. *Paraproboscifer alacerregis* gen. et spec. nov. 4, slightly squeezed live specimen; 5, head region showing rhabdite tracts (phase contrast); 6, horizontal section of the muscles around the rhabdite tracts.
Figs 7-8. *Paraproboscifer alacerregis* gen. et spec. nov. 7, male copulatory organ, specimen from Seychelles; 8, male copulatory organ, specimen from Kenya.