REVISION OF THE GENUS *Baltoplana* (RHABDOCOELA: SCHIZORHYNCHIA: CHELIPLANIDAE) WITH THE DESCRIPTION OF TWO NEW SPECIES

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Introduction

Marine microturbellarians are important components of the meiofauna and contribute significantly to the processes and functioning of marine ecosystems (Balsamo et al., 2020). Microturbellarians of the taxon Cheliplanidae are, among other things, characterized by a proboscis with protractile hooks (Smith III et al., 2015). Within Cheliplanidae, the genus *Baltoplana* currently includes four described species: *B. bisphaera* from Kenya, *B. cupressus* from South Africa, *B. magna* from the Mediterranean and the European Atlantic coasts, and *B. valkanovi* from the Black Sea (Ax, 1959; Jouk & De Vocht, 1989; Karling, 1949, Willems et al., 2017). *However, the* phylogeny of *Baltoplana* within Cheliplanidae and Schizorhynchia remains unresolved.

Objective

This study revises the genus *Baltoplana* from an integrative framework, using morphology and, for the first time, DNA sequences (28S).

Materials and Methods

A preliminary phylogeny of *Baltoplana* was constructed based on newly collected material, confirming its position within Cheliplanidae. The analyses we used to build the phylogenetic tree refer to boostrat, ultrafastboostrat and the approximate Bayesian probability. We also provide new distributional data for *B. magna*, and two new species of *Baltoplana* are described based on DNA sequences and the morphology of the male copulatory organ, particularly of the cirrus and accessory cirri.

Results

Eukalyptorhynchia Meixner, 1928

Schizorhynchia Meixner, 1928

Cheliplanidae Schilke, 1970

***Baltoplana* Karling, 1949**

New species:

Baltoplana n. sp. 1 (Fig. 1)

Main features:
The male copulatory organ has an armed cirrus adjacent to an accessory armed cirrus.
The ejaculatory duct connects to the cirrus, which has small, robust spines that gradually increase in length from the proximal to the distal region.
The accessory cirrus is also armed with long and robust spines extending to the distal area.

Baltoplana n. sp. 2 (Fig. 2)

Main features:
The male copulatory organ has an armed cirrus with three accessory cirri.
The cirrus has short spines in its proximal region, which increase in length towards the distal end. One of the accessory cirri is long, while the other two are oval. All three of them have equally sized spines.

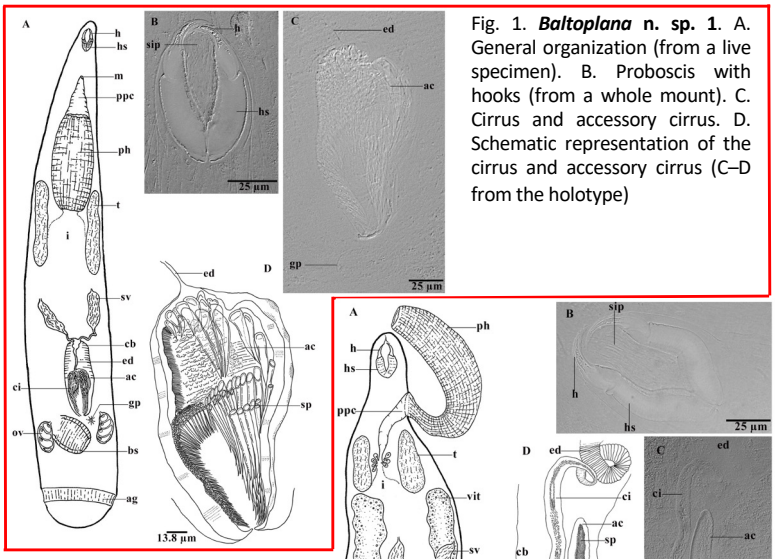

Fig. 1. ***Baltoplana* n. sp. 1**. A. General organization (from a live specimen). B. Proboscis with hooks (from a whole mount). C. Cirrus and accessory cirrus. D. Schematic representation of the cirrus and accessory cirrus (C–D from the holotype)

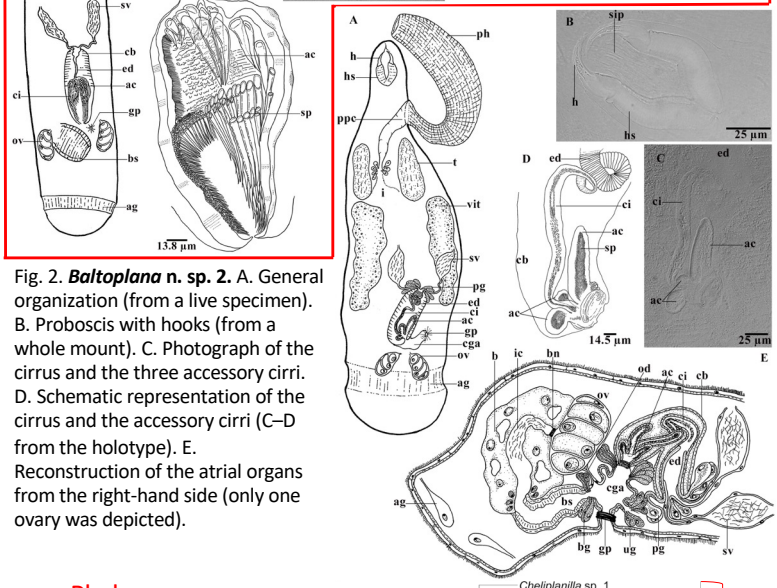

Fig. 2. ***Baltoplana* n. sp. 2.** A. General organization (from a live specimen). B. Proboscis with hooks (from a whole mount). C. Photograph of the cirrus and the three accessory cirri. D. Schematic representation of the cirrus and the accessory cirri (C–D from the holotype). E. Reconstruction of the atrial organs from the right-hand side (only one ovary was depicted).

Phylogeny

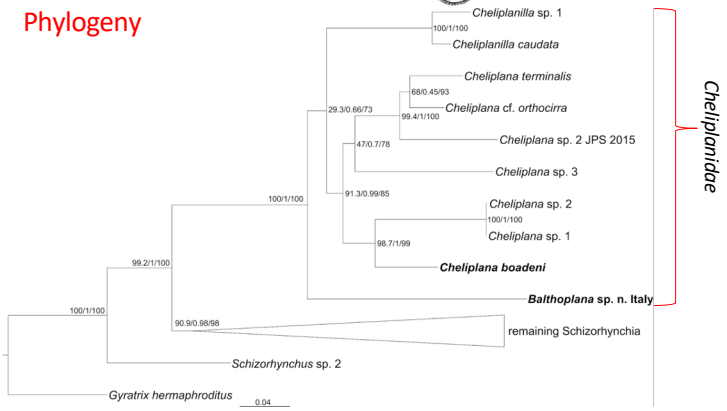

Fig. 3. The preliminary phylogenetic analysis places the genus ***Baltoplana*** in the family Cheliplanidae. Boostrat, ultrafastboostrat and the approximate Bayesian probability test, are shown in branches respectively.

Discussions and conclusions

All the species of the genus *Baltoplana* (the known ones and the newly described ones) can easily be identified by the different morphology of their copulatory organs. There is much variation in shape and length of the cirrus, the number of accessory cirri and the presence and length of the spines in the cirri and accessory cirri.

This is the first time we perform a molecular analysis to place *Baltoplana* within Cheliplanidae, *Cheliplanilla*+*Cheliplana*+*Baltoplana* form a well-supported, but unresolved clade between them.

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