



## Report on freshwater Catenulida (Platyhelminthes) from Sweden with the description of four new species

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### Abstract

This contribution is one of the very first reports on Swedish species of freshwater Catenulida, a group of free-living, small flatworms. A total of 13 species were collected from 33 localities all over the country. Four species, all belonging to the taxon *Stenostomum*, are new to science. *S. gotlandense* n. sp., found on Gotland, has small ciliated pits located more posteriorly than other species of *Stenostomum*, large anterior brain lobes and a large mouth opening with peculiar wrinkles of the proximal rim of the pharynx. *S. handoelense* n. sp., from Jämtland, has long ciliated pits and a mobile prostomium with a lined appearance due to “metamerical” anterior brain lobes. *S. heebuktense* n. sp., from Bohuslän, has small ciliated pits and an extremely large and muscular pharynx which, in living animals, is bluish. *S. steveoi* n. sp., found in the provinces Bohuslän and Småland, has small ciliated pits and a large rectangular mouth opening. The remaining 9 species are illustrated and commented upon where necessary. For the sake of completeness three undescribed species are mentioned. Some general remarks on identification of catenulid species are given.

**Key words:** Taxonomy, flatworm, faunistics, turbellaria, biodiversity

### Introduction

Catenulida Meixner, 1924 is a species-rich taxon of small worms and is regarded as a basal clade of Platyhelminthes (Ehlers 1985; Peterson & Eernisse 2001; Jondelius *et al.* 2002; Telford *et al.* 2003; Larsson & Jondelius 2008). The majority of species lives in freshwater habitats such as mires, ponds, streams and moist terrestrial substrates. Limnic catenulids are often very abundant, but marine species on the other hand are rare. Catenulids must be studied alive since they are very fragile. Together with the lack of robust characters this makes species recognition problematic.

At present about 110 catenulid species are known worldwide. However, due to difficulties in species delimitation the number can vary and the taxon is in great need of revision. This group has mainly been studied in South America (Marcus 1945a, 1945b; Noreña *et al.* 2005) and Finland (Luther 1960). Until now the Swedish catenulid fauna was practically unknown. Luther (1960) recorded one limnic *Stenostomum leucops* Schmidt, 1848 and one brackish water *Stenostomum karlingi* Luther, 1960. Two marine species (*Retronectes clio* Sterrer & Rieger, 1974 and *Retronectes melpomene* Sterrer & Rieger, 1974) were described by Sterrer & Rieger (1974). Interestingly, Luther (1960) found 15 limnic species in neighbouring Finland.

Catenulids lack sclerotized parts such as copulatory stylets, which are often used in species recognition in other flatworm taxa. Characters such as size, colour and shape are often variable, and sexually mature specimens are rarely encountered (Luther 1960; Marcus 1945b). In most catenulid species the mode of reproduction is by producing new worms growing from the posterior end of the animal, thus generating a chain of zooids. Each zooid develops into a separate specimen and detaches from the mother-zooid. The size of the animal is therefore variable. Most species are whitish in colour but this can vary due to the intestinal