Embryonic development of phylactolaemate bryozoans

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Phylactomaemate bryozoans are the only group of bryozoans restricted to fresh water of merely 70-80 species. Therein the family Plumatellidae constitutes the most speciose one. These bryozoans reproduce asexually via budding and as adaption to freshwater habitats also by dormant buds or statoblasts, which serve overwintering and dispersal. Besides asexual reproduction, they also reproduce sexually and brood their embryos in specific chambers, so-called embryo sacs. The embryo sac form from an invagination of the cystid wall, close to the ovary. Only two species of this family, *Plumatella fungosa* and *Plumatella casmiana,* have been subject to few studies that deal with the embryology and sexual development of phylactolaemate bryozoans. According to those studies a presumably unfertilized egg is transferred from the ovary to the embryo sac, where it gets fertilized and further nourished by a placenta-like structure. Sexual development results in a phylactolaemate-specific mantle larva, that consists of a ciliated mantle surrounding two functional zooids. It settles as a small colony after a short free-swimming period. Ever since the pioneering studies of Braem from the 19th and beginning of the 20th century, no detailed has been carried out on the embryology of this group of bryozoans. Still, several gaps remain in our understanding of the developmental processes in Phylactolaeamata. Consequently, the aim of this study is to analyse and reconstruct the embryology of *Plumatella casmiana* by means of serial semithin sections and 3D-reconstrucion, but also ultrastructural studies for the first time. Preliminary results will be presented.