

On the nature and development of graptoblasts

Piotr Mierzejewski

Acta Palaeontologica Polonica 45 (3), 2000: 227-238

Two specimens of graptoblasts, which provisionally may be assigned to "*Graptoblastoides*" sp. and "*Graptoblastus*" sp., are described from the early Llandovery of Anticosti Island (Québec, Canada). Previous reports of Silurian graptoblasts were restricted to a single specimen from Poland. One of the new specimens is morphologically distinct from all known graptoblasts - both chambers of the inner cavity contain numerous incomplete septae, here referred to as hemiseptae. SEM observations show distinct two-layered character of the transverse septum, whereas the hemiseptae show no trace of layering. Hemiseptae and the transverse septum are derivatives of the inner lining of the graptoblast. The "genera" *Graptoblastus* Kozłowski, 1949 and *Graptoblastoides* Kozłowski, 1949 are interpreted as stages in graptoblast development, and are consequently replaced by the purely descriptive terms "graptoblastus" and "graptoblastoides". The following stages of graptoblast development are recognized: (1) pre-graptoblastoides stage, (2) early graptoblastoides stage, (3) late graptoblastoides stage, (4) early graptoblastus stage, and (5) late graptoblastus stage. A graptoblast s.s. (i.e., devoid of a blastotheca) and its developmental stages strikingly resemble the earliest stages of the astogeny of the modern pterobranch *Rhabdopleura*. These observations support A. Urbanek's hypothesis that zooids became encysted within graptoblasts and rejuvenated by a process of metamorphosis.

Key words: Graptolites, graptoblasts, Crustoidea, ultrastructure, paleoecology, Silurian, Anticosti, Canada.

Piotr Mierzejewski [mierzejewski@post.pl], Instytut Paleobiologii PAN, ul. Twarda 51/55, PL-00-818 Warszawa, Poland. Present address: ul. Filtrowa 83 m. 49, PL-02-032 Warszawa, Poland.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(333.7 kB\)](#)