ACTA PALAEONTOLOGICA POLONICA

Evolution of oral apparatuses in the conodont chordate

Jerzy Dzik
Acta Palaeontologica Polonica 36 (3), 1991: 265-323

The oldest well known conodonts had seven pairs of their phosphatic denticles arranged into a grasping apparatus closely resembling that of the Chaetognatha. During the Early Ordovician apparatuses with three morphologic groups of elements developed, and a single unpaired element that splits the apparatus into two parts, the posterior one being presumably enclosed into the throat. Subsequent evolution resulted in the development of an incisor-like morphology of the anteriormost pair of elements, a filtratory basket in the remaining exposed part of the apparatus, and a heavily molarized, hidden platform complex. Further development resulted in great diversity of forms of the apparatuses, from secondarily simplified, through robust (of the Myxine type), to highly sophisticated apparatuses with all the element pairs being morphologically distinctive. The unusual, ventral location of molarized surfaces in some advanced conodonts suggests some change in muscular armament of the throat. Conodonts reached their greatest diversity in the Middle Ordovician. Co-occurrence of many morphologically similar sympatric species is typical for the Late Paleozoic. A modified classification of the conodonts is proposed.

Key words: conodonts, apparatuses, evolution, Cambrian to Triassic.

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 (4,025.6 kB)