

Early ontogenetic growth stages of Middle Ordovician orthoceratoid cephalopods from Bohemia

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This study describes 18 specimens representing the earliest growth parts of orthoceratoid cephalopods, most of which have been recently obtained from the Middle Ordovician strata of the Prague Basin, central Bohemia. Only about 20 specimens of Ordovician orthoceratoids displaying embryonic shell are known globally and the Bohemian material thus significantly expands their current record. The studied collection includes twelve specimens assigned to the species *Bactroceras sandbergeri* and shows that the morphological variability in early ontogenetic growth stages of this species was rather low. The absence of a cicatrix was definitely confirmed in this phylogenetically important cephalopod. Six other specimens investigated herein are indeterminate orthoceratids. Initial chambers, where preserved, are generally large compared to known, stratigraphically younger specimens. This is interpreted here as supporting the previously postulated trend of decreasing the egg- and hatchling sizes in orthoceratoid cephalopods from mid-Ordovician times onwards. Alternatively, the large sizes of these Bohemian orthoceratids may be explained by the position of the Prague Basin in relatively cool-water high palaeolatitudes during the Middle Ordovician.

Key words: Cephalopoda, Orthoceratida, early ontogeny, embryonic shell, Paleozoic, Darriwilian, Bohemia, Czech Republic.

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