

Geological Society of Estonia
Tallinn University of Technology, Department of Geology
University of Tartu, Department of Geology
Geological Survey of Estonia

XI Baltic Stratigraphical Conference

Abstracts and Field Guide

Edited by Olle Hints, Peep Männik and Ursula Toom



First aulaceratid stromatoporoid from Baltica

Juwan Jeon^{1,2} and Ursula Toom^{3*}

¹ The Institute of Basic Science, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul, 02841, Republic of Korea

² Department of Earth and Environmental Sciences, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul, 02841, Republic of Korea

³ Department of Geology, Tallinn University of Technology, Ehitajate 5, Tallinn, 19086, Estonia

* Corresponding author, ursula.toom@taltech.ee



During the Great Ordovician Biodiversification Event, stromatoporoids, especially labechiids, underwent a significant radiation. Various skeletal architectures in labechiids emerged since the late Darriwilian of the Middle Ordovician, peaking in the subsequent Late Ordovician. Among these, aulaceratid stromatoporoids stand out due to their tree-like growth morphologies, which can range from branching or unbranching columnar forms to dendroid or digitate structures. These distinctive stromatoporoids achieved worldwide distribution in the Late Ordovician but had not been previously discovered in Baltica. *Aulacera vohilaidia* Jeon & Toom sp. nov. from the Upper Ordovician Adila Formation (Pirgu Regional Stage; late Katian Stage) of Estonia is reported in this study, the first aulaceratid stromatoporoid reported from the Ordovician of Baltica. *A. vohilaidia*

consists of three distinct zones - axial, lateral and outer - each characterised by distinct cyst plates of varying size and convexity. The axial zone is particularly narrow and has large horseshoe-shaped cyst plates arranged in a wavy imbricate pattern. The lateral zone consists of smaller cyst plates interspersed with sporadically developed pillars, while the outer zone consists of flat and parallel cyst plates. The outer zone also shows ridged structures with cusps formed by the parallel arrangement of cyst plates, and the growth surface shows a pustular reticulated structure with a polygonal morphology. The discovery of *A. vohilaidia* in Estonia extends the palaeogeographical range of aulaceratid stromatoporoids to Baltica, previously known only from peri-Gondwana, Laurentia and Siberia in the Ordovician. The appearance of aulaceratid stromatoporoids in Baltica coincides with the climatic warming of the palaeocontinent since the early Katian and the extensive expansion of this group during the Late Ordovician.

Keywords: Late Ordovician, Baltica, Estonia, Adila Formation, stromatoporoid, aulaceratid.