



**Estonian Journal of
Earth Sciences**
2023, **72**, 1, 127

<https://doi.org/10.3176/earth.2023.04>

www.eap.ee/earthsciences
Estonian Academy Publishers

ABSTRACT

Received 24 March 2023
Accepted 4 April 2023
Available online 8 June 2023

Keywords:

Ordovician, Estonia, bryozoans,
history of research, diversity, ecology

Corresponding author:

Andrej Ernst
Andrej.Ernst@uni-hamburg.de

Citation:

Ernst, A. 2023. Ordovician Bryozoa of
Estonia. *Estonian Journal of Earth
Sciences*, **72**(1), 127.
<https://doi.org/10.3176/earth.2023.04>

Ordovician Bryozoa of Estonia

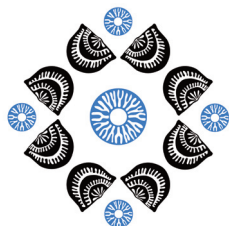
Andrej Ernst

Institute for Geology, University of Hamburg, Bundesstraße 55, D-20146 Hamburg, Germany

Bryozoans are one of the most important groups of fossils found in the Ordovician deposits of Estonia. Bryozoa comprise sessile colonial, filter-feeding animals, many of which possess hard carbonate skeletons of different morphology. The bryozoan faunas of the Ordovician of Estonia were studied early by famous naturalists such as Karl Eduard von Eichwald and Władysław Dybowski. Later, in the 20th century, many palaeontologists, among them Ray Bassler, Hendrik Bekker, and Ralf Männil, devoted extensive studies to the Ordovician bryozoans of Estonia. Soviet and Russian specialists contributed to the knowledge about this important group of fossils with numerous publications. The Ordovician deposits bearing abundant and well-preserved bryozoans are well exposed and often easily accessible. Therefore, the Estonian bryozoan faunas are much better studied than the contemporary assemblages of Sweden or Norway.

Few representatives of this phylum appeared in the sediments of the Lower Ordovician, but then the group experienced a rapid diversification. The current evaluation of the data (published and based on the results of our own research) on the distribution of bryozoans in the Ordovician (Tremadoc–Hirnantian) deposits of Estonia revealed 194 species of 90 genera. The most diverse bryozoan group is trepostomes, with 77 species of 36 genera. The Sandbian and the Katian show the highest species richness of bryozoans, with 92 and 112 species, respectively. During the Hirnantian, bryozoans in Estonia experienced an immense diversity drop, with only a few species passing through the Silurian. This pattern mirrors the global development of bryozoan faunas during the Ordovician.

Ordovician bryozoans of Estonia have been found in diverse environmental settings. The best-known deposit containing excellently preserved bryozoans is kukersite. This oil shale was formed in shallow subtidal shelf conditions, and contains more than 60 bryozoan species. Another famous bryozoan locality is the reefs of the Vasalemma Formation (Katian), exposed in the Vasalemma quarry. The bryozoans found in the Ordovician deposits of Estonia reveal a great variety of growth forms adapted to different biotopes of the sea bottom. The sizes of bryozoans vary immensely within the same assemblages. Some massive trepostomes such as *Diplotrypa petropolitana* attained heights of up to 20 cm, whereas species such as the cyclostome *Kukersella borealis* developed colonies less than 0.5 mm in diameter.



**14TH ISOS
ESTONIA 2023**