

Institute of Ecology and Earth Sciences, University of Tartu
Institute of Geology at Tallinn University of Technology
Geological Survey of Estonia

4th Annual Meeting of IGCP 591
The Early to Middle Paleozoic Revolution
Estonia, 10-19 June 2014

Abstracts & Field Guide



Edited by
Heikki Bauert, Olle Hints, Tõnu Meidla & Peep Männik

Tartu, 2014

4th Annual Meeting of IGCP 591
The Early to Middle Paleozoic Revolution
Estonia, 10-19 June 2014

Organizing Committee:

Leho Ainsaar (Department of Geology, University of Tartu)
Heikki Bauert (Institute of Geology at Tallinn University of Technology)
Olle Hints (Institute of Geology at Tallinn University of Technology)
Tõnu Meidla (Department of Geology, University of Tartu)
Peep Männik (Institute of Geology at Tallinn University of Technology)
Anne Põldvere (Geological Survey of Estonia)
Oive Tinn (Department of Geology, University of Tartu)

Scientific Committee:

Mikael Calner (Department of Geology, Lund University)
Bradley D. Cramer (Department of Earth and Environmental Sciences, University of Iowa)
Dimitri Kaljo (Institute of Geology at Tallinn University of Technology)
Oliver Lehnert (GeoZentrum Nordbayern, Friedrich-Alexander Universität Erlangen)
Živilė Žigaitė (Evolutionary Biology Centre, Uppsala University)



www.igcp591.org



www.ut.ee



www.kik.ee



www.ttu.ee



Eesti Geoloogikeskus
Geological Survey of Estonia

www.egk.ee

Suggested reference format:

Munnecke, A. 2014. The Early Palaeozoic in motion. In: Bauert, H., Hints, O., Meidla, T. & Männik, P. (eds). *4th Annual Meeting of IGCP 591, Estonia, 10 - 19 June 2014. Abstracts and Field Guide*. University of Tartu, Tartu, p. 65.

Bauert, H., Hints, O., Meidla, T. & Männik, P. (eds). 2014. *4th Annual Meeting of IGCP 591, Estonia, 10-19 June 2014. Abstracts and Field Guide*. University of Tartu, Tartu, 202 pp.

Electronic copies of this publication may be obtained from the Department of Geology, Institute of Ecology and Earth Sciences, University of Tartu and Institute of Geology at Tallinn University of Technology.

ISBN 978-9985-4-0822-3

Estonian geocollections information system focusing on Early to Mid Paleozoic rock record, fossils and analytical data from Baltoscandia

**Olle Hints¹, Mare Isakar², Kairi Põldsaar³, Annette Talpsep⁴, Sander Tint¹,
Ursula Toom¹ and Kristjan Urtson¹**

¹ Institute of Geology at Tallinn University of Technology, 19086 Tallinn, Estonia; olle.hints@ttu.ee, ursula.toom@ttu.ee, kristjan.urtson@ttu.ee, sander.tint@ttu.ee

² Geological Museum, University of Tartu, Vanemuise 46, Tartu, Estonia; mare.isakar@ut.ee

³ Estonian Museum of Natural History, Lai 28A, Tallinn, Estonia; kairi@loodusmuuseum.ee

⁴ Department of Geology, University of Tartu, Ravila 14a, Tartu 50411, Estonia; annette.talpsep@ut.ee

Most geological collections of Estonia – from single mineral grains to drill cores and from microfossil preparations to individual fossil specimens – characterise Early to Mid Paleozoic environments and biota of the Baltoscandian paleobasin, Baltica paleocontinent. These collections are extensively used in Cambrian to Devonian research by Estonian as well as foreign geologists. In order to organise various types of data related to these collections, aid curatorial work, and make the collections more accessible for research and education, development of national geocollections database started more than 10 years ago. Now this system is being redesigned and extended to facilitate multi-institutional usage, support wider range of data objects and user needs, and utilise modern web technologies. Most important new developments include a possibility to deposit original research data sets, make them publicly accessible when appropriate, assign digital object identifiers (doi numbers), and run various analysis on combined data sets on-line.

The data are stored on central relational database server, on replicated hardware and with multiple backup solutions. The software components are based on various open source technologies (Linux, MySQL, Python, Django, PHP etc). Data entry and editing is primarily done via web-based applications. Public access to the data is enabled through the national geocollections portal (<http://geokogud.info>), where data from multiple institutions can be searched for fossil specimens, rock samples, drill cores, localities, references, regional stratigraphy etc. Additionally, dedicated interfaces are being created for Baltoscandian fossil taxa (<http://fossiilid.info>), and analytical research data (<http://ermas.geokogud.info>). The latter provides, for instance, access to raw data on Ordovician and Silurian stable isotope analyses and bentonite geochemistry from the Baltic region. It will also include map visualisations, vertical log creation and on-the-fly statistical analysis based on R scripts.

Currently the system holds data on more than 0.2 million Paleozoic fossil specimens and rock samples, ca 20% of them complete with digital images. By the end of 2014, the system will also include ca 40000 analyses characterising various properties of Baltoscandian rock record and fossil occurrences. Well over 95% of all the data in the Estonian geocollections information system, including full resolution media files, are available for download, usage and redistribution under the Creative Commons BY-NC and Open Data Commons attribution licences. The specimen-level data are also made available through international data networks and online resources, notably the GeoCAsE (Geosciences Collection Access Service; <http://geocase.eu>), GBIF (Global Biodiversity Information Facility; <http://gbif.org>) and Europeana (<http://europeana.eu>). Moreover, development of open API is in progress and will enable using the Estonian geoscience data by third party applications and creating automatic data exchange protocols. The planned national developments include integration with the geoscience data of the Estonian Geological Survey and Estonian Land Board and linking with Estonian eBiodiversity information system (<http://elurikkus.ut.ee>).

Acknowledgements. Development of the Estonian geocollections information system has been supported by the national R&D projects NATARC and ERMAS.