



XI Baltic Stratigraphical Conference

Abstracts and Field Guide

Edited by Olle Hints, Peep Männik and Ursula Toom



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Brief history of lithostratigraphic work at the Geological Survey of Estonia

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The classification of stratigraphic units has been almost continuously revised since the 19th century in Estonia. Since the 1960s, the subdivision of the stratigraphic succession and boundaries of units used in the course of geological mapping carried out by the former state geological survey were defined by stratigraphic schemes that were subject to a two-step approval (local approval followed by the decision of the Interdepartmental Stratigraphic Commission in Moscow). The system of units was developing rapidly in the course of preparation of the published stratigraphic schemes, with major revisions in 1962, 1976 and 1984, with subsequent publications from 1965, 1978 and 1987, respectively. In the course of preparation of these schemes, differences and amendments to the subdivision were always extensively discussed with the academic institutions before they got accepted.

During this period, the geological mapping was carried out in accordance with the Stratigraphic Code of the former USSR, which by definition linked chrono- and lithostratigraphic units (stages and formations) – a practice that was not in accordance with the International Stratigraphic Guide of today.

Further refinements were introduced after 1987, but there has also been less discussion, and the changes were not so well documented. During the 1990s and 2000s, there was a change of generations in the state geological organisation, and the number of people who had long-time and extensive experience in describing and identifying lithostratigraphic units decreased rapidly. The last overview on stratigraphic units in Estonian language was released in 1983, an emended version in English in 1997, but neither of them contains a thorough description of practices of distinguishing neighbouring units, addressing the problems related to transitional lithological boundaries, etc. Both written sources are partially outdated today. The analysis of distribution and discrimination practices of the lithostratigraphic units within a special project funded by the Estonian Centre of Environmental Investments has demonstrated numerous mismatches in the practical application of these units within different mapping and exploration projects, eventually because of incomplete primary written documentation of rock units and their boundaries.

The Geological Survey of Estonia, in cooperation with the University of Tartu, has initiated a project to compile guiding materials for describing and discriminating lithostratigraphic units, starting with the Ordovician strata. This work is based on a large-scale comparative study of key core sections stored in the drillcore warehouse of the Arbavere Research Centre. The newly built drillcore storage in Arbavere has made this kind of study possible for the first time. Within this work, the historical perspective of the older mapping units will be taken into account in order to reduce the risks of possible misinterpretation of old primary core documentation. Unit descriptions will be analysed, revised and refined in order to unify the future discrimination practices. Preliminary results have already demonstrated problems with discrimination and description of several formations, e.g. Petseri, Zebre, Varangu, Leetse and Rokiškis. In parallel, the Geological Survey of Estonia is also working on updating the Ediacaran lithostratigraphic scheme based on the new and old drillcore data.

Keywords: correlations, revision, Ediacaran, Ordovician, historical data.