

Sandbian-lower Katian conodont correlation of Baltoscandian Basin

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Conodonts are used as one of the main biostratigraphical correlational tools for the Ordovician strata in the Baltoscandian Palaeobasin. Established biozones have been fairly stable, with only a few changes implemented after the pioneering work in the last century. Conodont zones for Sandbian–lower Katian are based on the successive species of genera *Amorphognathus* and *Baltoniodus*, namely *A. inaequalis*, *A. tvaerensis* and *A. superbus*, and *B. variabilis*, *B. gerdae* and *B. alobatus*. Recently, it was discovered that *A. inaequalis* appears to be missing from Estonian and Swedish sections. With the *A. inaequalis* Conodont Subzone being part of regional biostratigraphic schemes, an additional study on the topic was advised. Additionally, an analysis of changes in the succession of *A. tvaerensis* revealed that elements in the upper part of its range differ morphologically quite distinctly from those in its lower part, and they were described as a new conodont species *A. viirae*. This raises a need to re-examine the *A. tvaerensis* Conodont Zone.

Validity of the use of *A. inaequalis* Conodont Subzone in the Baltoscandian region and revision of the *A. tvaerensis* Conodont Zone was based on the data from the Bliudziai-150 (Lithuanian) and Kovel-1 (Ukraine) drillcores. These two sections are currently the only ones in the Baltoscandian Palaeobasin where the *A. inaequalis* Conodont Subzone is still reported, and the presence of the *A. viirae* is not yet confirmed. The information we obtained enabled us to update the current Sandbian-lower Katian conodont zonation and correlation in Baltoscandia. The revision of the biozones enables the equalisation of all the zones to lineage interval zones. A few specifications for concurrent regional stages are also considered based on changes to current biozones.

An updated Sandbian–lower Katian conodont biostratigraphy in Baltoscandia allows us to evaluate the current correlations of sections based on $\delta^{13}\text{C}_{\text{carb}}$ data in the region. There are two distinct $\delta^{13}\text{C}_{\text{carb}}$ excursions known at that time interval: The Lower Sandbian Negative Isotopic Carbon Excursion (LSNICE; Upper Kukruse Low) and the Guttenberg Excursion (GICE). Reliable ties of conodont biozones and $\delta^{13}\text{C}_{\text{carb}}$ data would enhance regional and global correlations.

Keywords: Ordovician, conodont, biostratigraphy, carbon isotopes, chemostratigraphy.