

shape while the elements of *Furnishina?* differ in size.

### Conodont Zonation and Paleoecology in the Silurian of Estonia.

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Conodonts are widespread in all facies of the shelf and slope area of the Paleobaltic basin. But only four European conodont zones have been identified: *celloni* (Adavere Stage), *amorphognathoides* (the uppermost Adavere and the lowermost Jaani Stages), *sagitta* (subspecies *sagitta* in Jaani and lower Jaagarahu and Rootsikula Stages), *eosteinhornensis* (Kuressaare, Kaugatuma and Ohesaare Stages). There are no distinct European zones in the Baltic Ludlow.

The conodonts from the Jaani and Jaagarahu Stages resemble the Clarita Formation, Oklahoma ones. As in the case of the latter, in Estonia the *amorphognathoides*-Zone is followed by the *ranuliformis*-Zone (in Jaani and lower Jaagarahu Stages). In the middle Jaagarahu specimens similar to Pa element of *Kockelella amsdeni* occur.

In the shallow water facies of the late Wenlock Rootsikula Stage there is only one multielement conodont *Ctenognathodus purchisoni*, considered as the index-species of a local zone.

Ludlow Paadla Stage and Pridoli Kuressaare, Kaugatuma and Ohesaare Stages are dominated by multielement genus *Ozarkodina*: *O. confluens*, *O. excavata*, *O. steinhornensis eosteinhornensis* (only Pridoli). Spathognathodontan elements of *Ozarkodina* are abundant and variable, there is possible to distinguish some subspecies and morphotypes useful in local correlations.

The upper Paadla Stage is marked by occurrence of *Pelekysgnathus dubius* and may be correlated with the uppermost Hemse Beds of Gotland. Specimens similar to *O. crispus* are found in the uppermost beds of Paadla Stage.

There are differences in conodont distribution in the five facies belts of the Paleobaltic basin. Characteristic are: in the lagoon facies *C. purchisoni*, in the shoal-inshore and open shelf facies abundant conodonts, especially multielement species of *Ozarkodina*, *Oulodus* etc., in the slope facies *Pterospa-thodus amorphognathoides*, *Panderodus*, etc.

### Conodont Metamorphism: Grain Size – Temperature Relationship

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Grain size of recrystallized apatite on the surface of metamorphic conodonts have been studied in the Harz Mts. by means of SEM. The conodonts are derived from an Upper Devonian section from the contact zone of the Variscan Oker Granite to slightly metamorphic regions of the surrounding sedimentary sequence. They represent the metamorphic grade ranging from CAI 5 to CAI 7.

Mean grain sizes vary from 3–5  $\mu$  in the contact zone to about 0,5–0,8  $\mu$  of almost unaltered conodonts in a distance of 5–6 km from the intrusive. Preliminary results show a clear relationship between grain size and temperature of the metamorphic event. However, grain sizes as well as conodont colours evidently depend on primary carbonate petrology and carbonate chemistry. Presumably, grain size analyses provide more reliable data of higher metamorphic conodonts than do conodont colours.