The Ordovician–Silurian boundary in the Timan–northern Ural region has been under discussion for a long time (e.g. Beznosova & Männik 2002). In the latest official stratigraphical scheme for the Urals (Antsygin et al. 1993) it was drawn between the Yaptikshor and Dzhagal formations. The possible boundary level is marked by lithological changes but is not proved biostratigraphically due to the lack of well-preserved identifiable fossils. For example, in the Kozhym-108 section, Subpolar Urals, the boundary was tentatively drawn well below the upper boundary of the Yaptikshor Formation (in the lowermost part of bed 20), just above the level of the uppermost identified *Proconchidium muensteri* (St. Joseph) (Beznosova 2000). No identifiable macrofossils were found in the strata above this level.

Carbon isotope studies of the Kozhym-108 section revealed a δ13C curve almost identical with that from the Dob’s Linn (Scotland) sections, although the Ordovician–Silurian transition interval in the Ural region is represented by various shallow-shelf carbonates (Beznosova & Männik 2002). It became evident that the upper part of the Yaptikshor Formation corresponds to the Hirnantian, and the Ordovician–Silurian boundary should be looked for higher in the sequence, in the lower part of the Dzhagal Formation (Beznosova et al. 2002). The configuration of the δ13C curve in the Kozhym-108 section also suggests that no major gap occurs at the Ordovician–Silurian boundary in the Subpolar Urals.

In 2003, another section (Kozhym-116), about 5–6 km NNW of Kozhym-108, was studied. The lithological sequence and the δ13C curve of the Kozhym-116 section fit well with the earlier data from Kozhym-108, and allow detailed correlation of these sections. Also in the Kozhym-116 section all macrofossils collected are too strongly recrystallized to be properly identified. Here an interval (bed 36, about 7 m in thickness) rich in pentamerid brachiopods was recorded about 100 m above the contact between the Yaptikshor and Dzhagal formations. The study of some better preserved specimens shows that they possibly belong to the Ordovician genus *Proconchidium* and, accordingly, this level still lies below the Ordovician–Silurian boundary. However, just recently conodonts were found in one of the samples collected from the Kozhym-108 section (processing of samples from this section and from Kozhym-116 is still in progress). The sample (C 01-49) comes from the lower part of the Dzhagal Formation (about 25 m above its lower boundary; Fig. 1). So far, 25 specimens have been found, 18 of which belong to *Panderodus* sp. The occurrence of typical Silurian taxa *Oulodus?* *aff. nathani* (2), *Walliserodus cf. curvatus* (Branson et Branson) (2) and a probable fragment of *Ozarkodina* sp. in this sample indicates that this level is already of Silurian (Ruddanian) age. However, the sample comes from a level below the Ordovician–Silurian boundary interval proposed on the basis of comparison of the δ13C curves (Beznosova & Männik 2002; Beznosova et al. 2002; Fig. 1), and evidently far below the level with probable *Proconchidium* in the Kozhym-116 section (Fig. 1). There seem to be two explanations for this problem:

1. In a continuous section across the Ordovician–Silurian boundary the Silurian-type conodont faunas appear already in the uppermost Ordovician strata (e.g. Armstrong 1995). If this is the case, then it is another proof of continuous sedimentation in the Ordovician–Silurian transition in the studied region and the system boundary should be searched for higher in the sequence.

2. The probable Ordovician–Silurian boundary interval defined by the comparison of the δ13C curves is not correct and the boundary in reality lies below sample C 01-49. But, if the pentamers in bed 36 (Kozhym-116) really turn out to be *Proconchidium*, the above conclusions will need a complete revision. As demonstrated above, the data available at the moment seem to be contradictory and further detailed sedimentological, geochemical and biostratigraphical studies are necessary to solve the problem.

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**Fig. 1.** The Ordovician–Silurian boundary beds in the Kozhym-116 and Kozhym-108 sections correlated by isotope data with the Dob’s Linn section. The δ13C curve for the Dob’s Linn section is modified after Underwood et al. (1997). Thick dashed line – position of the Ordovician–Silurian boundary based on conodonts; grey area – Ordovician–Silurian boundary interval based on the comparison of the δ13C curves after Beznosova & Männik (2002). P. = Proconchidium; extraordin. = extraordinarius; persc. = persculptus.

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**References**


