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PECULIARITIES OF CAMBRIAN FAUNAS AND CAMBRIAN STRATIGRAPHY

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A common place in many publications dealt with the Cambrian problems is that the Cambrian stratigraphy has to be different because of a very high endemicy of the Cambrian faunas. However, such a suggestion has not ever been proved by a comparison of the degree of endemicy during the Cambrian with that during any other Phanerozoic period.

The degree of endemicy can be measured at the generic level after the average geographic distribution index used by Zhuravlev (2000). The latter is calculated as follows. An appearance of a genus within a single province is accepted arbitrary as 1 unit; an appearance of genus in several provinces is scored as 5 units; a global distribution is scored as 10 units. As has been shown, the change of unit value as well as the change of province configurations do not influence the general pattern of the geographic distribution. The plotting of this index against a provisional zonal Cambrian scale reveals that the average geographic distribution index in general is highest for the Middle - early Late Cambrian faunas while its lowermost values are typical of Lower and lower Upper Cambrian intervals. It means that the degree of the endemicy is highest in general in the Early and latest Cambrian (below *Acidiscus atavus* 'subdivision' lower boundary and above *Eolotagnostus scrobicularis* Zone) and it is the lowest in the Middle and early Late Cambrian (equivalent of the *Acidiscus atavus* - *Eolotagnostus scrobicularis* interval).

Another approach related to the analysis of the development of the Early Cambrian palaeocommunities also shows that these palaeocommunities were very volatile entities even within persistent facies, with a high degree of species replacement (Zhuravlev, Wood and Naimark in prep.). Such data do not reveal a community stasis in Early Cambrian which would be comparable either with the coordinated stasis observed in middle and late Palaeozoic palaeocommunities (Ivany, 1996) or even with a relative stability displaying by Late Cambrian trilobite palaeocommunities (Westrop, 1996).

Thus, it is not surprising that among 'Chronostratigraphic' boundaries having been proposed recently by the International Subcommittee on Cambrian Stratigraphy the boundaries restricted to the *Acidiscus atavus* - *Eolotagnostus scrobicularis* interval have got a better reception (Geyer

and Shergold, 2000).

However, even within the Early Cambrian the degree of faunal endemicity varies. During the Atdabanian and late Botoman stages (according to the Siberian stage scale) this index is as high as during the *Acidiscus atavus* - *Eolotagnostus scrobicularis* interval. It is also high enough during the earliest Tommotian Stage of the same scale. Thus, the search of Early Cambrian 'Chronostratigraphic' boundaries valuable for the international correlation should be restricted to these intervals.

Perhaps, a relative failure of the 'Chronostratigraphic' boundaries having been suggested for the Lower Cambrian by Geyer and Shergold (2000) is entirely related to their preponderance of trilobites over other fossils. Unfortunately, these are the trilobites that show in average a higher degree of endemicity in comparison with archaeocyaths and some groups of small shelly fossils.

The first appearances of the *Watsonella* small shelly fossil assemblage (base of the Tommotian), *Hadimopanella-Microdictyon* small shelly fossil assemblage (uppermost Atdabanian), and *Syringocnema* archaeocyathan assemblage (uppermost Botoman) are of good correlative potential within the interval under discussion (Zhuravlev, 1995).

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