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Stratigraphie, Sedimentation und Beckenentwicklung im Karbon und Perm

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Abstracts der Vorträge

Vertebrate Biostratigraphy of the Bohemian Permo-Carboniferous Limnic Basins - Recent Results of Investigation

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The first attempt at a vertebrate biostratigraphy of the Bohemian and Moravian Permo-Carboniferous limnic Basins was published by ZAJÍC (1990). The local biozones were based on the both articulated specimens and ichthyoliths which were found on the bedding surfaces. The investigation of ichthyoliths which were isolated by a chemical way was supported by Grant Agency of the Czech Republic during the last three years (1994-1996). The latter research was closely connected with the IGCP 328 project (ZAJÍC in press).

I suggest following terminology of microvertebrate remains:

- Ichthyoliths *sensu lato*:** are isolated fossil skeletal elements (like scales, teeth or bones) of aquatic or semi-aquatic vertebrates.
- Ichthyoliths *sensu stricto*:** are free ichthyoliths separated by chemical or mechanical way.
- Ichthyoliths on the bedding surfaces:** are ichthyoliths which are attached to a sediment surfaces.
- Microvertebrate community:** is an assemblage of ichthyoliths s. l. of a clearly defined fossiliferous layer or stratigraphic unit

The investigation of both ichthyoliths s. s. and ichthyoliths on the bedding surfaces is necessary to the complete microvertebrate analysis. Some ichthyoliths are very thin and fragile (e. g. most of actinopterygian scales is known as indeterminable fragments among ichthyoliths s. s.) and, on the other hand, some ichthyoliths are often too small for searching on the bedding surfaces (e. g. remains of hybodontid sharks). The complete microvertebrate analysis is necessary to combine with the investigation of articulated vertebrate specimens. The redescription, as detailed as possible, of complete specimens of the majority of vertebrate taxa is needed.

I used 10% or 15% acetic acid (in case of marlstones and carbonates) and 10% hydrogen peroxide (in case of claystones and mudstones) for dissolution of sediments during my investigation of ichthyoliths s. s. Other tested chemical methods dissolved both sediment and ichthyoliths. New local biozone *Xenacanthus decheni* was erected with help of microvertebrate analysis (see below). Many new data (such as presence of genera *Limnoselache* and *Lissodus*) were obtained for the local subzone *Sphaerolepis*. The little known Stránka Horizon (the upper fossiliferous horizon of the Líne Formation in the Central Bohemian Basins) was classified (according to absence of characteristic scales of *Sphaerolepis kounoviensis*) as belonging to Permian. The Bohemian and Moravian limnic Permo-Carboniferous sediments can be sectioned into the following biozones which are based on fresh-water vertebrates (for details see ZAJÍC in press):

1. The biozone (assemblage-zone) *Pyritocephalus-Sceletophorus*
Age: Upper Podolskian - Myachkovskian
Lower boundary: first appearance of *Pyritocephalus sculptus*, *Sceletophorus bisserialis*, or *S. verrucosus*
Upper boundary: last appearance of *Pyritocephalus sculptus*, *Sceletophorus bisserialis*, or *S. verrucosus*
2. The fauna lacking zone (interval-zone)
Age: Krevyakinskian
3. The biozone (assemblage-zone) *Sphaerolepis-Watsonichthys*
Age: Chamovnichian - Noginskian
Lower boundary: first appearance of *Sphaerolepis kounoviensis*, *Watsonichthys krejci*, or *W. sphaerosideritarum*,
Upper boundary: last appearance of *Sphaerolepis kounoviensis*, *Watsonichthys krejci*, or *W. sphaerosideritarum*,
This biozone divides into two subzones.

- 3A. The subzone (acme-zone) *Watsonichthys*
Age: Chamovnichian - Dorogomilovskian
Lower boundary: first appearance of *Sphaerolepis kounoviensis*, *Watsonichthys krejci*, or *W. sphaerosideritarum*,
Upper boundary: dominance of *Watsonichthys krejci*, or *W. sphaerosideritarum*
- 3B. The subzone (acme-zone) *Sphaerolepis*
Age: Klasminskian - Noginskian
Lower boundary: dominance of *Sphaerolepis kounoviensis*
Upper boundary: last appearance of *Sphaerolepis kounoviensis*, *Watsonichthys krejci*, or *W. sphaerosideritarum*
4. The biozone (taxon-range-zone) *Acanthodes gracilis*
Age: Asselian
Lower boundary: first appearance of *Acanthodes gracilis*
Upper boundary: last appearance of *Acanthodes gracilis*
5. The new biozone (taxon-range-zone) *Xenacanthus decheni*
Age: Lower Sakmarian
Occurrence: the Sudetic area, the Furrows area
Lower boundary: first appearance of *Xenacanthus decheni* and absence of acanthodians
Upper boundary: last appearance of *Xenacanthus decheni*

The biozones were not established in the Krušné hory Mts. area, Furrows area, and Česká Kamenice and Orlice Basins because of missing or insufficient data.

References

- ZAJÍC J. (1990): Recent results of the study of Permo-Carboniferous vertebrates from boreholes in Bohemian limnic basins. - Acta Mus. reginaehradec., Ser. A, 22 (1989): 45-51; Hradec Králové.
- ZAJÍC J. (in press): Vertebrate Zonation of the Non-marine Permo-Carboniferous Basins of the Czech Republic. - IGCP 328 Final Report, Cour. Forsch.-Inst. Senckenberg.

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