

## Vertebrate biozonation of the limnic Permo-Carboniferous deposits of the Czech Republic in the light of the last fossil finds

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The local biozones in the Upper Carboniferous and Lower Permian non-marine deposits of the Czech Republic were for the first time described by ZAJÍC (1990), briefly presented at the “XLVIII<sup>th</sup> Berg- und Hüttenmännischer Tag” (ZAJÍC 1997), and exactly defined by ZAJÍC (2000; the manuscript was submitted in 1997). The list of the representative, common, and safely determinable vertebrate osteological elements of Stephanian and Lower Permian biozones is presented here for the first time. The oldest (Westphalian) *Pyritocephalus-Sceletophorus* biozone is not mentioned here because all known vertebrates come only from the long time (from the end of 19<sup>th</sup> century to the start of 20<sup>th</sup> century) abandoned mines in Nýřany and Třemošná.

The most important vertebrate remains are following:

### 1. The *Sphaerolepis-Watsonichthys* biozone

The *Watsonichthys* subzone is characterized by the prevailing sharply sculptured scales. The generic name of the two *Watsonichthys* species has to be change for *Elonichthys* (ŠTAMBERG, personal communication). The other sculptured scales (*Acrolepis gigas*, *Progyrolepis speciosus*, *Sphaerolepis kounoviensis*, *Spinarachthys disperses*, and *Zaborichthys fragmentalis*) and sculptured teeth of *Progyrolepis speciosus* are rather infrequent. *Orthacanthus kounoviensis* and *Plicatodus plicatus* are the most important teeth of xenacanth sharks.

*Sphaerolepis* subzone is characterized by often mass occurrence of the cycloid scales *Sphaerolepis kounoviensis* (notably in the Uppermost Stephanian). The other actinopterygian taxa (except of teeth of *Progyrolepis speciosus*) are not so frequent. The representatives of the genera *Orthacanthus*, *Plicatodus*, and *Triodus* are the most frequent xenacanthid teeth. The euselachian sharks are represented by relatively common scales of *Sphenacanthus carbonarius*, and by rather rare teeth of *Lissodus* cf. *lacustris*. The interesting find of the amphibian *Branchierpeton* cf. *saalensis* comes from a drill core.

### 2. The *Acanthodes gracilis* biozone

Numerous tiny dimples cover scale crowns of the *Acanthodes gracilis*. The acanthodian remains (scales, fin spines and other elements) are common. Xenacanthid sharks are represented by well recognizable and common teeth and rather rare occipital spines of *Triodus carinatus*. The only recognizable sculptured actinopterygian scales belong to the less frequent taxon *Igornichthys* sp.

### 3. The *Xenacanthus decheni* biozone

The most important are teeth and occipital spines of the nominal xenacanth shark.

Formation	Section	Member	Horizon (number of layers)	Biozones (Zajíc 2000)
Letovice	Uppermost	Sudice		?
	Upper		Bačov (5)	<i>Xenacanthus decheni</i>
	Middle		Míchov (4)	
	Lower		Kochov (1-2)	
	Lowermost		Lubě Zboněk-Svitávka (4-6) Zbraslavce	<i>Acanthodes gracilis</i>
Veverská Bitýška		Chudčice		
Padochov		Říčany Zbýšov		
Rosice-Oslavany				(?) <i>Sphaerolepis-Watsonichthys</i>

Fig. 1: Lithostratigraphy (compiled according to unpublished draft of JAROŠ which was partly used in PEŠEK et al. 2001) and biostratigraphy of the Boskovice Graben.

Following new important vertebrate remains were found lately:

1. Fragments of labyrinths and otoliths were found in several specimens of *Acanthodes gracilis* from the Zbýšov Horizon (Boskovice Graben; see fig.1).

2. New acanthodian finds (*Acanthodes gracilis*) on the locality Kladoruby-Trávník, úzký pepřík imply the possible correlation of the Lowermost Letovice Formation with the Lower Prosečné Formation (for proposed correlation between the Boskovice Graben and the Krkonoše Piedmont Basin see fig. 2).



Fig. 2: The proposed correlation of the Lower Permian lithostratigraphic units of the Boskovice Graben and the Krkonoše Piedmont Basin.

3. The first find of the xenacanth shark (*Xenacanthus decheni*) was done in the Otovice Horizon (Upper Olivětín Member; locality Otovice; Intra-Sudetic Basin). The absence of sharks and amphibians was known long time (e.g. FRIČ 1912). Teeth of *Xenacanthus decheni* were recently found also on the locality Veselá (Veselá Horizon; Krkonoše Piedmont Basin) and locality Klášterská Lhota (overlying beds of the Kalná Horizon; Krkonoše Piedmont Basin). The upper boundary of the *Xenacanthus decheni* biozone must therefore be changed for the Otovice Horizon in the Intra-Sudetic Basin and for the Veselá Horizon in the western part of the Krkonoše Piedmont Basin.

#### References

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