

Echinoid spines from the Triassic reef complex near Liptovská Osada (Western Carpathians)

P. Ledvák

Geological Institute, Slovak Academy of Sciences, Ďumbierska 1, 974 01 Banská Bystrica, geolledv@savba.sk

During the biggest mass extinction at the end of the Permian approximately 96% species of marine animals were eliminated (Erwin, 1990). Echinoids along with many other invertebrate groups survived this event and slowly began to recover during the Early and Middle Triassic. In the Carnian echinoids underwent significant diversification and colonized many shallow water environments, especially reef habitats.

One of the best known examples of highly diversified Triassic echinoid fauna come from Lower Carnian patch reefs of the famous Cassian Fm. in Italy. Similar assemblages have also been sporadically reported from other countries like Hungary, Romania and now also from Slovakia.

The studied fauna from Western Carpathians (Slovakia) originates from a massive light grey biohermal limestone exposed in the vicinity of Liptovská Osada village. Bujnovský et al. (1975) attributed the massive bioherm composed predominantly of sponges to the Raming Limestone. Because the Raming Limestone is generally considered as organodetrital allodapic sediment (Lein, 1989) the biohermal limestone at Liptovská Osada is here attributed to Wetterstein Fm.

Age of the biohermal limestone can not be precisely stated since it lacks biostratigraphically important fauna. Based on Sphinctozoa Jablonský (1971) considered the limestone to be of Ladinian age. Additionally, from the uppermost part of the bioherm Bujnovský et al. (1975) described echinoderm and brachiopod fauna which indicates Ladinian–Lower Carnian (Cordevolian) age. Considering the very similar composition of the invertebrate fauna from Liptovská Osada with fauna from Cassian Fm. of St. Cassiano district the age of the studied bioherm may be Longobardian and/or Cordevolian.

Except sponges and brachiopods the biohermal limestone yielded rich echinoderm fauna partly described by Ledvák P. & Šimo V. (2010). The most common are spines of cidaroid echinoids which are classically assigned to “*Cidaris*”. Till now following parataxa have been recognized: “*Cidaris dorsata*”, “*C.*” *trigona*”, “*C.*” *flexuosa*”, “*C.*” *waechteri*”, “*C.*” *buchi*”, “*C.*” *ovata*”, “*C.*” *alata*”, “*C.*” *decorata* and “*C.*” *lineola*.

This work was supported by the Operational Programme Research and Development (proj. ITMS 26220120064).

References:

- Bujnovský, A., Kochanová, M. & Pevný, J., (1975): Korytnica Limestones – a new lithostratigraphical unit and its fauna. – Geol. Práce, Spr., 63, 21 – 53.
- Erwin D. H. (1990): The end-Permian mass extinction. – Annu. Rev. Ecol. Syst., 21, pp. 69-91.
- Jablonský, J., (1973): Liptovská Osada. In: Bystrický, J. (ed.): Triassic of the West Carpathians Mts. Guide to excursion D. 10 Congress of Carpathian-Balkan Geological Association. Bratislava, GÚDŠ, 107 – 109.
- Ledvák P. & Šimo V. (2010): Ladinian-Lower Carnian echinoderms from the biohermal Raming Limestone at Liptovská Osada (Western Carpathians). – Mineralia Slovaca, 42, (4), pp. 453-460.
- Lein, R., (1989): Neufassung des Begriffes Raminger Kalk (Oberladin - Unterkarn) auf mikrofazieller Grundlage. 4. Treffen deutschsprachiger Sedimentologen, Innsbruck.