EARLY JURASSIC FAUNA AND FACIES OF SCHAFBERG (SALZKAMMERGUT)

Attila VÖRÖS[1,2], János SZABÓ[1], Alfréd DULAI[1], István SZENTE[3], Oskar EBLI[4] & Harald LOBITZER[5]

[1] Department of Geology and Paleontology, Hungarian Natural History Museum — H-1083 Budapest, Ludovika tér 2, Hungary
[2] Research Group for Paleontology, Hungarian Natural History Museum – Hungarian Academy of Sciences — H-1083 Budapest, Ludovika tér 2, Hungary
[3] Department of Paleontology, Eötvös Loránd University — H-1117 Budapest, Pázmány sétány 1/c, Hungary
[4] Universität München, Instititut für Paläontologie und historische Geologie, D-80333 München, Richard Wagner Str. 10, Germany.
[5] A-4820 Bad Ischl, Lindaustrasse 3, Austria

From among the various Lower Jurassic formations of the Schafberg, the biodetrital, crinoidal-brachiopodal limestones of Hierlatz facies is of extraordinary interest. This and the associated formations were studied by in situ collecting work carried out in the last decade, during several joint field-trips of the authors. The area may be divided into two main tectono-sedimentary units, separated by a large-scale overthrust at the northern foot of the Schafberg („Grünsee-Überschiebung").

The **upper unit** forms the bulk of the Schafberg consisting chiefly of Hierlatz limestones of extremely great thickness and grey, siliceous limestones of Lower Jurassic (mainly Sinemurian) age. The Hierlatz limestones are exposed on the southern slope of Schafberg in the form of coarse, not well-defined beds dipping roughly concordant with the slope. It can be interpreted as a wide belt of submarine, biodetrital talus of 200-300 m thickness.

The ***bivalve assemblage*** of the Upper Sinemurian Hierlatz Limestone of the Schafberg (a few dozen specimens) consists exclusively of epifaunal forms. The bivalve taxa identified are: *Praechlamys palosus* (STOLICZKA), *P. rollei* (STOLICZKA), *P. subreticulatus* (STOLICZKA), *Praechlamys* sp., *Oxytoma (O.) inaequivalve* (J. SOWERBY), *Limea (Pseudolimea)* sp., *Placunopsis* ? sp.

The ***brachiopod fauna***, collected from the Hierlatz Limestone at Schafberg and its surroundings (Mondsee, Schwarzensee, Suissensee), is very rich: 62 taxa are represented by 815 determined specimens from 15 different collecting points. The most common genus in the studied material is *Zeilleria* (282 specimens, 10 taxa), while the most diverse is *Liospiriferina* (223 specimens, 12 taxa). *Prionorhynchia*, *Cirpa*, *Calcirhynchia*, *Cuneirhynchia, Cisnerospira* and *Lobothyris* are also frequent. At the same time *Salgirella*, *Homoeorhynchia*, *Piarorhynchia*, *Gibbirhynchia*, *Orthotoma*, *Viallithyris*, *Linguithyris*, *Securina* and *Bakonyithyris* are represented by only a few specimens.

The **lower tectono-sedimentary unit** is exposed in a narrow belt along the northern foot of Schafberg and consists of Upper Triassic „Plattenkalk", penetrated by vertical neptunian dykes filled with red, mostly micritic, crinoidal-brachiopodal limestones of Pliensbachian age. This unit can be interpreted as a remnant of an Early Jurassic submarine horst. In the Pliensbachian, due to repeated distensive tectonic movements, gigantic fissures opened along the rim of the submarine horst. These trapped most of the biodetritus and lime mud what was previously swept and carried down to the southern basin. Our main collecting points were at Suissensee, Mittersee, along the road from Schwarzensee to Feichtingeck and at Meislalm.

From the fissure-filling limestones a highly diversified ***gastropod fauna*** has been identified. The available 44 specimens belong to 14 genera and 18 species. The fauna is predominated by archaeogastropods. Six species (8 specimens) are members of five pleurotomarioidean genera (*Cyclostomaria, Anodomaria, Pleurotomaria, Bathrotomaria, Laevitomaria)* that possibly belong to the carnivore group. Most of the remaining species are related to herbivore groups (*Anticonulus*, *Ataphrus*, *Crossostoma* and *Eucyclus*). *Discohelix reticulata* STOLICZKA, the aporrhaid *Pietteia (Trietteia) fischeri* (STOLICZKA), and the sinistral cirrid *Cirrus hoernesi* (STOLICZKA) represent the curiosities of the assemblage.

The ***bivalve fauna*** of the red fissure-filling limestone (a few dozens of specimens) is dominated by the peculiar species *Praechlamys rollei*, reported by earlier authors as a frequent form at the Schafberg. Other bivalve taxa are: *Praechlamys subreticulatus* (STOLICZKA), *Entolium* ? sp., *Oxytoma (O.) inaequivalve* (J. SOWERBY), *Limea (Pseudolimea)* sp., *Placunopsis* ? sp.

The ***brachiopod fauna*** collected from the Pliensbachian red limestones is very diverse: the 383 specimens belong to at least 27 taxa. In most localities the fauna is dominated by the large-sized species *Securithyris adnethensis* (SUESS), what may suggest that the brachiopod associations rather closely reflect the composition of the original communities. The state of preservation is medium (or poor at Meislalm), but the inarticulated (single) brachiopod valves are subordinate; this also speaks against a longer transport of the shells. The 19 identified species represent the following genera: *Apringia, Cirpa, Prionorhynchia, Cuneirhynchia, Koninckodonta, Liospiriferina, Orthotoma, Linguithyris, Securithyris, Viallithyris, Rhapidothyris, Lobothyris, Bakonyithyris, Zeilleria.*

Our field trips and studies were supported by the Bilateral Agreement between the Geologische Bundesanstalt and the Hungarian Geological Institute, by the Hungarian Natural History Museum, and by the grant T43325 of the Hungarian Scientific Research Fund (OTKA).