

The Ernstbrunn Limestone and Klentnice Beds (Kimmeridgian to Berriasian; Waschberg-Žďánice Unit; NE Austria and SE Czech Republic) and their fauna – a tale of giants and dwarfs

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The Ernstbrunn Limestone and Klentnice Beds occur as so-called “tectonic klippen” inserted in the autochthonous sedimentary succession of the Waschberg-Žďánice Unit. The latter is a distal, transitional Alpine-Carpathian tectonic nappe that extends between the Danube and Thaya rivers in Lower Austria and southern Moravia. Both strata have also been identified from several drillings and belong to the autochthonous Mesozoic succession deposited on the southern slope of the Bohemian Massif. Ammonite biostratigraphy and micropalaeontology reveal a Kimmeridgian to early late Tithonian age for the Klentnice Beds, and a middle Tithonian to Berriasian (?Hauterivian) age for the Ernstbrunn Limestone. The Ernstbrunn-Pavlov Carbonate Platform gradually developed from the Klentnice Beds and persisted during the Jurassic–Cretaceous transition. The rock record provides evidence for lagoonal and patch reef facies and fringing ooid-oncoid bars, all attributed to the Ernstbrunn Limestone. A gradual transition to more distal, siliciclastic-influenced settings is formed by the upper portion of the Klentnice Beds that developed as lateral equivalents of the carbonates. In places, both strata are highly fossiliferous. The lagoonal limestones preserve a highly diverse, mollusc-dominated assemblage of more than 500 species of invertebrates and calcareous algae. Most abundant taxa include *Heterodicerias* and *Epidicerias* bivalves (basal rudists), nerineid gastropods, decapods, ammonites, corals, and dasycladaceans. Several species, in particular the bivalves of the genera *Pachyrisma*, *Pachyrismella*, and *Pterocardia*, as well as the impressive gastropod *Leviathania gigantea* (Makowsky), attained exceptional size. The majority of the fauna, however, is composed of small taxa, which are often subject to taphonomic loss, leading to a strongly biased assemblage. The fauna of the Klentnice Beds appears impoverished as a result of diagenetic aragonite loss and is dominated by echinoderms, calcareous sponges, and brachiopods. Altogether, however, a remarkably large portion of the complex depositional and natural environment of the Ernstbrunn Limestone and Klentnice Beds is preserved both at outcrop and in subsurface and still awaits systematic scientific effort in various fields.