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## **STOP 2: Zogelsdorf Johannes quarry**

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**Locality:** The quarry is positioned on the northwestern margin of Zogelsdorf, about 2.5 km southwards from Eggenburg. The stone production began here around 1870 when the large scale reconstructions around the capitol's old city, initiated by the Austro-Hungarian Emperor, triggered an outstanding demand for building materials. Among others also blocks for the four Hercules statues at the Michaelertor in the Vienna City originates from here. The quarry was at that time the property of the famous female writer, pacifist and 1905 Nobel Peace Prize laureate Bertha von Suttner with the domicile in the neighbouring Harmannsdorf. Today the quarry represents the natural and industrial monument and contributes the exhibition of the stonemason museum "Steinmetzhaus" on the main road of Zogelsdorf. The original traces of old production methods together with the typical ancient tools can be checked up already at site.



The Johannes quarry in Zogelsdorf.

**Section:** The Johannes quarry represents the type section of the **Zogelsdorf Formation** in a bryozoan dominated facies. This detritic, muddy biogene limestone succession with about 3 m in thickness reflects a fining and thinning upward trend upsection. The position and the character of the foot wall is unknown. The basal part of the succession shows one single 1 m thick homogenous bed. It is overlaid by a well bedded part consisting of 10 to 30 cm thick packages. Finally the topmost 50 cm is intensively bedded comprising the 5 to 10 cm thick sediment packages. These rudstones are throughout dominated by bryozoan remains and characterized likewise by a high muddy content. The significant contribution, with up to 30 % of additional biogene material in the lower half of the succession, dominated by bivalves, barnacles, echinoid and coral algal remains, diminish definitely upsection with values pushed down to only 10 %. The bryozoan colonies are mostly celleporiform. Hence they form commonly macroids build by several, interchanging bryozoan taxa as well as other incrusting organism groups like serpulids or coralline algae. Accompanied with dominant Celeporidae the following bryozoan genera are additionally present in the type section: *Cellaria*, *Sertella*, *Porella*, *Schizoporella*, *Myriapora*, *Crisia*, *Entalopora*, *Lichenopora*, *Fron dipora*, *Mesenteriopora*, *Tetrocycloecia*, *Tervia*, and *Hornera*. Moreover characteristic are monospecific pectinid layers bearing disarticulated and articulated, horizontally oriented shells of *Pecten hornensis*. Among echinoderm remains the representatives of Echinoidea, Asterozoa, Ophiuroidea as well as Crinoidea can be found.



The monotypic, mass occurrence of the *Pecten hornensis* in the Zogelsdorf Formation of the Johannes quarry. Note the large left valve in the lower-right edge of the picture.

**Interpretation:** The site is positioned in the southern part of the Eggenburg Bay that was originally sheltered from the influence of the open sea by roughly north-south striking submarine, crystalline swells, islands and peninsulas. In consequence the Zogelsdorf



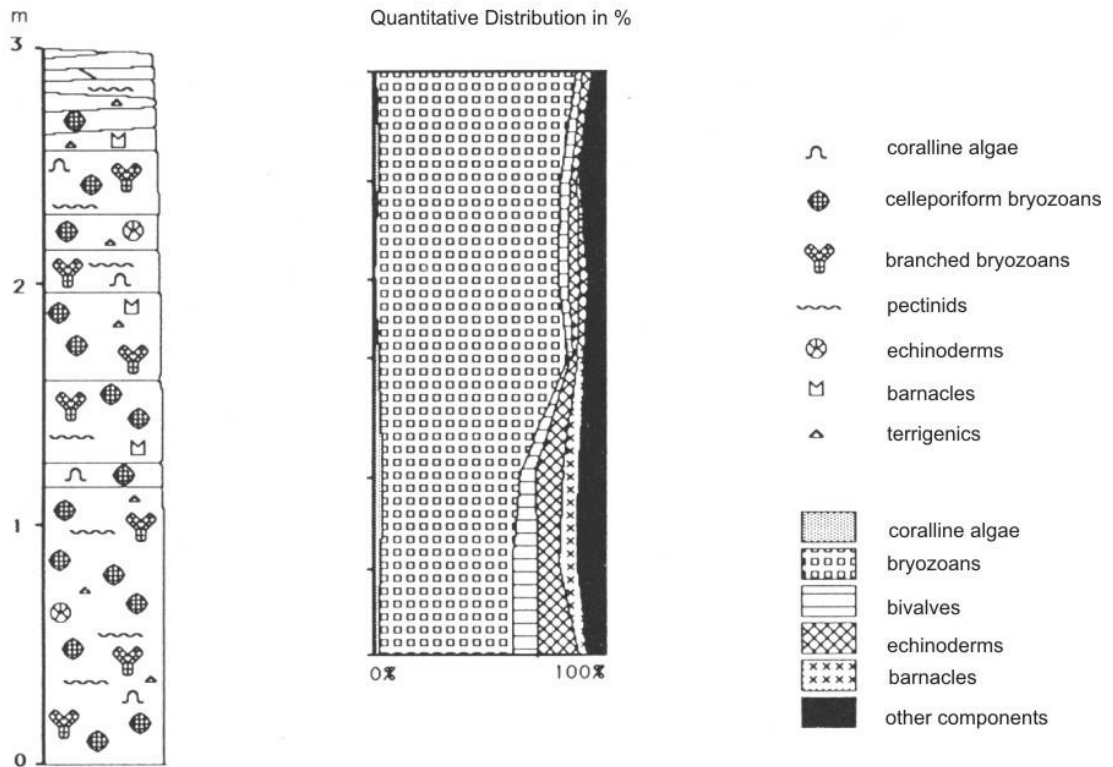
Formation, topping therein the basal Late Eggenburgian siliciclastics is developed in a typical terrigenous poor, bryozoan rich facies.

Yet the absence of the bryozoan genus *Crisia*, being in contrast common in many other sites of the Eggenburg Bay, appears indicative for the succession. Hence this could point to the absence of the submarine vegetation at the depositional site. Indeed the common incrusting byozoans as well as other incrusting organisms dominating the biogene composition indicate the lowered sedimentation rate resulting possibly from the missing vegetational sedimentary trap on the sea bottom. Moreover the high mud content of limestones points to a less agitated hydrodynamic regime certainly below the fair weather wave base at the depositional site. The fining upward along with the thinning upsection reflects the deepening of the depositional environment. That goes together with the diminishing upsection of the shallow subtidal depth indicators like barnacles or common echinoid remains. The pectinid shell beds are remains of their original colonies typically inhabiting detritic, shelly bottoms at medium subtidal depths around the storm weather wave base.



Illustration shows the original traces of the production made by hand tools of the 19<sup>th</sup> century as demonstrated by the worker's shadow.

The mass occurrence of *Pecten hornensis* in the Zogelsdorf Formation represents important regional biostratigraphic signal. Hence along with the remarkable facies change during the latest Eggenburgian (basal marine siliciclastic sequence in the base vs. detritic carbonate sequence on top), the FAD of that pectinid species in the carbonates enables their clear stratigraphic distinction.



The section of the Johannes quarry. The diagram shows the vertical distribution of the biogene components. Note the increase of the bryozoan contribution upsection (NEBELSICK, 1989).

Text from: MANDIC, O., HARZHAUSER, M., STEININGER, F. & ROETZEL, R.: RCMNS 2005. Excursion C: Miocene of the Eastern Alpine Foredeep – The Bohemian Massive southeastern margin. – 52 p., Vienna 2005.

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