

for a problematic, small tubular fossil: *Lamelitubus caoticus* OTT, and for the thalamid sponge *Vesicocaulis carinthiacus* OTT. Fauna and flora of the Dobratsch is indicative of a reef facies. It was studied in thin slides by OLAF KRAUS and ERNST OTT in 1968. The authors described and photographed the following forms: *Tubiphytes obscurus* MASLOV, *Ladinella porata* OTT, *Lamelitubus caoticus* OTT, *Uvanella irregularis* OTT, *Dictyocoelia manon* (MÜNSTER) and *Vesicocaulis carinthiacus* OTT. The fossil list also includes: *Coelospongia catenulata* OTT, *Girtyocoelia oenipontana* OTT, *Vesicocaulis* aff. *depressus* OTT, *Holocoelia toulai* STEINMANN and big Codiaceae as *Mitcheleania*.

Literatur

- ANDERLE, N. (1951): Zur Schichtfolge und Tektonik des Dobratsch und seine Beziehung zur alpin-dinarischen Grenze. — Jb. Geol. B.-A., Bd. 94. Wien.
- KRAUS, O., & OTT, E. (1968): Eine ladinische Riff-Fauna im Dobratsch-Gipfelkalk (Kärnten, Österreich) und Bemerkungen zum Faziesvergleich von Nordalpen und Drauzug. — Mitt. Bayer. Staatssamml., Paläont. hist. Geol., Bd. 8. München.

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Global Stratigraphy of the Tertiary

During the last ten years Tertiary stratigraphy has been more and more based upon evolution of planktonic organisms. At present subdivision of the Tertiary rests mainly upon planktonic foraminifera and nannoplankton.

The boundary between the Cretaceous and the Tertiary is characterized by disappearance of Globotruncanas and existence of a „Globigerina-horizon“ with *Gl. djaubergensis*, which can be recognized worldwide. Evolution of planktonic foraminifera gives good possibilities for zonation of the Paleocene and Eocene. Besides planktonic forms, larger foraminifera (Nummulites, Assilina, Alveolina a. o.) give evolutionary sequences, which permit zonation of the calcareous marginal facies.

Especially the evolutionary peak in the Middle Eocene offers good possibilities for wide ranging correlations. During the Oligocene evolution of planktonic foraminifera is not characteristic. At the boundary between the Oligocene and Miocene evolution of the genus Globigerinoides begins — which date is often used as definition of the boundary mentioned.

Evolution of Lepidocyclines and Miogypsina gives valuable zone fossils for division of the calcareous marginal facies during the Lower Miocene.

Very important for far reaching correlations during the Miocene is the evolutionary sequence from *Globigerinoides bisphericus* to *Praeorbulina*

and further *Orbulina suturalis*. In the tropical regions evolution of *Globigerinatella insueta* and the group of *Globorotalia fohsi* is important.

The Miocene-Pliocene boundary cannot be defined exactly on a worldwide base, since climatic differentiation is already strongly pronounced.

The boundary Tertiary/Quaternary (Pliocene-Pleistocene) is characterized by deterioration of climate and its influence on the fauna and flora over extensive areas in the northern as well as the southern hemisphere.

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The Pleistocene of the Inn valley/Tyrol

(Abstract)

Pleistocene deposits and the morphological characteristics of the Inn valley in the Tyrol have gained great importance on the stratigraphy of the Quaternary and the paleogeography of the entire Alpine region as well. Four different main glaciations can be traced in the foreland of the Alps, according to their moraine deposits and fluvio-glacial gravel beds (ranging from GÜNZ as the oldest over MINDEL and RISS to WÜRM as the youngest member). In the surroundings of Innsbruck the most complete series of Pleistocene sediments in the inner Alpine region are to be found. This area shows three different ground-moraine deposits of separate glaciations and two fossiliferous beds in interglacial and interstadial sediments.

The "Hötting Breccia" located on the slopes and along the foothills of the "Nordkette" North of Innsbruck was deposited in a comparatively warm interglacial period. In the "Geologenstollen" the underlying ground moraine of the Mindel glaciation (classified by some authors as Riss) can well be made out. The breccia contains frequent plant fossils such as imprints of needles of *Pinus silvestris* and leaf imprints of *Rhododendron ponticum* found in some outcrops. The "Conglomerate of Ampfaß", which is underlain also by ground moraine deposits, is most probably of the same age.

Both breccia and conglomerate are overlain by younger ground moraine sediments and again above these the so-called "terrace sediments" are following, made up by varved clays and silts near the bottom of the sequence and coarse gravel at its top. In a clay pit situated E of Innsbruck (loc. Baumkirchen) pollen grains, wood belonging to different plants and fish remains were found in fine grained sediments. Radiocarbon dates of the (subfossil) wood gave the result of 26,800 and 31,000 before present. The above clays, silts and gravel beds again are superposed by ground moraine deposits which are related to the latest stage of the Würm glaciation due to the fact, that these are showing the formation of recent soil.