

Middle Miocene freshwater ostracods from the Aflenz Basin (Eastern Alps, Austria)

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The Neogene intramontane Alpine Aflenz Basin in Northern Styria (Austria) is part of the so-called Norische Senke Depression and is situated south of the Hochschwab region. It is 18 km long and 2 km wide. The geology and evolution of the Aflenz Basin was revised in a diploma thesis by REISCHENBACHER (2003b, see also 2003a) who divided the Miocene basin fill into two formations, the underlying coarse-grained Feistring Formation and the overlying Göriach Formation. The last is subdivided into the underlying Groisenbach Subformation containing partly laminated brown-greyish to yellow clays, claymarls and marls with brown coal, diatomites and plant remains and the overlying Sulzgraben Subformation with sands and conglomerates. The age of the Miocene Basin fill was dated to be of Badenian age by mammals from the coal layers of Göriach (ZAPFE 1956) and diatoms (HAJOS 1970), of which the last more precisely state an early Badenian age.

During field work done for the geological mapping programme of the Geological Survey of Austria for sheets Aflenz (ÖK 102) and Kindberg (ÖK 103) several samples were taken from the Miocene deposits of the Aflenz Basin in which for the first time ostracods could be found. Samples 102/1/09 and 102/2/09 originate from the Feistring Formation, which outcrops near Jauring (sheet Aflenz). Recently, an endemic freshwater mollusc assemblage was described from this outcrop (HARZHAUSER et al. *subm.*). Sample 103/99/09 was taken from brownish marls of the Groisenbach Subformation from the locality Turnau (sheet Kindberg) which is located in the eastern part of the Aflenz Basin. The sediments of the Groisenbach Subformation were deposited in a lake which is supposed to have been temporarily under brackish water influence (HAJOS 1970; REISCHENBACHER 2003a).

The ostracode association mainly consists of members of the family Candonidae, whereas Ilyocyprididae and Darwinulidae are occurring with one species each. Most of the species are represented by adult and larval stages. The mentioned families live in freshwater environments, only very few species also tolerate oligo- to mesohaline waters, like representatives of *Candona*, *Ilyocypris* and occasionally *Darwinula* (VAN MORKHOVEN 1963), which were found in the samples. Because in all samples *Cypria* and/or *Candonopsis* occur the freshwater environment of the sampled deposits could be confirmed.

Taxonomically several species are similar to species of the co-eval locality Sandelzhausen in Bavaria (WITT 1988), the Mydlovary beds (Karpatian – Lower Badenian) of the Trebon Basin in southern Bohemia (KHEIL 1964), the early Miocene Kirchberg beds (STRAUB 1952) and the late Miocene of the Slovakian Turiec Basin (PIPIK & BODERGAT 2003). First results of the ongoing taxonomic study are presented here.

References

- HAJOS, M. (1970): Kieselsurfvorkommen im Tertiärbecken von Aflenz (Steiermark). – Mitteilungen der Geologischen Gesellschaft in Wien, 63: 149-159, Wien.
- HARZHAUSER, M., NEUBAUER, T., MANDIC, O., ZUSCHIN, M. & ČORIĆ, S. (subm.): A Middle Miocene freshwater mollusc assemblage from an intramontane Alpine lake (Aflenz Basin, Eastern Alps, Austria).
- KHEIL, J. (1964): Die Ostrakoden der Mydlovary-Schichtenfolge im südböhmischen Trebon-Becken. – Sbornik Geologických Ved, paleontologie, 4: 7-46, Praha.
- PIPIK, R. & BODERGAT, A.-M. (2003): Ostracodes du Miocène supérieur du Bassin de Turiec (Slovaquie): Familles Darwinulidae et Ilyocyprididae. – Revista Española de Micropaleontología, 35(3): 345-355, Madrid.
- REISCHENBACHER, D. (2003a): Bericht 2001 über geologische Aufnahmen im Miozän des Aflenz Beckens auf den Blättern 102 Aflenz und 103 Kindberg. – Jahrbuch der Geologischen Bundesanstalt, 143(3): 420-422, Wien.
- REISCHENBACHER, D. (2003b): Geologie und Entwicklungsgeschichte des Aflenz Beckens. – 122 p., Diploma thesis Montanuniversität Leoben, Institut für Geowissenschaften, Leoben.
- STRAUB, E. (1952): Mikropaläontologische Untersuchungen im Tertiär zwischen EHINGEN und ULM a. d. DONAU. – Geologisches Jahrbuch, 66: 433-524, Hannover.
- VAN MORKHOVEN, F.P.C.M. (1963): Post-palaeozoic Ostracoda. Their Morphology, Taxonomy, and Economic Use. Vol. II, Generic Descriptions. – 478 p., Elsevier Publishing Company, Amsterdam-London-New York.
- WITT, W. (1998): Die miozäne Fossil-Lagerstätte Sandelzhausen. 14. Ostracoden. – Mitteilungen der Bayerischen Staatssammlung für Paläontologie und historische Geologie, 38: 135-165, München.
- ZAPPE, H. (1956): Die geologische Altersstellung österreichischer Kohlenlagerstätten nach dem gegenwärtigen Stand der Kenntnis. – Berg- und Hüttenmännische Monatshefte, 101(4): 71-81, Wien.

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