Two pteridophyll remains, both about 3 cm long, are exposed at the surface. One specimen represents the terminal part of a last order pinna with a rachis 0.8 mm wide. The pinna consists of 5 nearly opposite pairs of pinnules which pass into a terminal part with indistinct lobes. The venation pattern is poorly preserved. The leave is best determined as cf. Callipteridium pteridium, a genus of Permo-Carboniferous pteridosperms but could also represent a fragment of Alethopteris. Independent of any generic determination, the maximum stratigraphic age is Carboniferous; Callipteridium pteridium is typical for Stephanian with rare occurrences in the Lower Permian, Alethopterids occur in the Upper Carboniferous and Lower Permian. The stratigraphic age is therefore in the same range as the intrusion ages determined for the Zentralgneis in this area.

THE TWO PHASE REGION BETWEEN ORTHO- AND CLINOZOISITE

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Analyses of natural coexisting clino- and orthozoisite can give some constraints about the position of the two phase region in dependence of P and T. We analysed epidote minerals from rocks with different P-T-history (Dorfer Tal and Frosnitztal, Tauern: 20 kbar/600 °C with retrograde equilibration; Weissenstein, Münchberger Gneismasse: < 10 kbar/620 °C with retrograde equilibration; Schwingen, Münchberger Gneismasse: < 4 kbar, 400 °C). For the high P-T-rocks we could confirm a transition loop from - 15 to - 30 mole % Al_2Fe consistent with data by ACKERMAND & RAASE (1973), but significantly smaller than that given by ENAMI & BANNO (1980) and the experimental data by PRUNIER & HEWITT (1985). Retrograde reequilibration at low P and T yields epidote compositions inconsistent with the transition loop. Also, minerals from low P-T-rocks span the whole range between 5 and 30 mole % Al_2Fe of the proposed transition loop. We conclude that in addition to temperature, pressure plays a very important role; variations of mineral assemblages can be explained in a hypothetical P-T-x diagram.

Epidote minerals from the above mentioned localities show a complex growth zoning pattern which is only slightly modified by diffusion. This indicates that they may be potentially useful as petrogenetic indicators, but analyses have to be carried out with a back-scattered-electron image system in order to obtain interpretable results.

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