

## **CLAY MINERALS OF SAPROLITE AND RED CLAYS FORMED ON ANDESITE IN THE MÁTRA MOUNTAINS**

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Red clays and andesite saprolite occur near the surface around Mátraháza and in the valley of Somor Creek. They unconformably overlie the grey pyroxene andesite indicating that they were reworked by mass transport. The aim of the present work is to find connection between the saprolite and red clays in the mountains and paleosols located on the southern pediment of the Mátra Mountains. Stratigraphy, mineralogy and pedology of paleosol profiles were studied by MICHÉLI *et al.* 1997, HORVÁTH 1999 and NÉMETH *et al.* 1999 on the southern where greyish and red paleosols were identified between the Pannonian sediments and the topsoil. The morphology of the studied red paleosol indicates that the parent material of the paleosol was not formed in situ.

Petrographic and mineralogical studies (XRD, DTA) were carried out on samples from around Mátraháza and the valley of Somor Creek from the fresh rock, weathered rock fragments and the weathering product (red clay). The texture of the weathered shows the original structure but it became red with some white and yellowish green grains. It consists of dioctahedral smectite, cristobalite, feldspars and some pyroxene. The predominating mineral in the red clay is a dioctahedral smectite having beidellitic character as the layer charge originates from the tetrahedral sheet and low layer charge. Besides smectite, they contain cristobalite, hematite and quartz in minor amounts and kaolinite interstratified with smectite in plagioclase remnants. The yellowish green grains are nontronite, based on the 060 reflection at 1.51–1.52 Å.

The feldspars of the massground have changed completely to smectite and in the meantime some SiO<sub>2</sub> precipitated. The feldspar phenocrysts have only partially altered to smectite with some interstratified kaolinite. These data suggest that the red clay may have been the parent material of the red paleosols on the pediment.

### References

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