

A BURIED LATE MIOCENE ALKALINE TRACHYTE VOLCANO AT THE AXIS OF THE LITTLE HUNGARIAN PLAIN, NW HUNGARY

SCHLÉDER, Zs. & HARANGI, Sz. (Department of Petrology and Geochemistry, Eötvös L. University, Budapest, Hungary)
E-mail: schleder@ludens.elte.hu

Alkaline volcanism developed in two main stages in the Little Hungarian Plain Volcanic Field. In the late Miocene, dominantly trachyandesite–trachyte volcanism took place, building up a more than 2000 m thick stratovolcano at the axis of the Little Hungarian Plain, right at the Rába low angle fault. It was followed by an alkaline basaltic volcanism after a few Myr quiescence. The trachytic stratovolcano was penetrated by several boreholes (Pásztori, Tét, Mihályi, Szany, Bósárkány) beneath 2000 m thick Quaternary to Late Miocene sequence. This volcanic activity could be related to the narrow rift stage (TARI & HORVÁTH, 1995) of the LHP.

This volcanic association is particularly important since it is unique in the Pannonian Basin. The volcanic series consists of pyroclastic rocks and lava flows. At the lower parts alkaline trachytic lithology dominates that changes upwards to trachyandesitic composition. The upper levels are penetrated by alkaline basaltic dyke rocks. It is hard to estimate the thickness of different rock types because coring was sparse. The only thing to be said is that alkaline basalt occurs at the top of the series at about 1800–2000 m, trachyandesite is between 2200–2400 m and trachyte occurs deeper than 2400 m.

Petrographically, basalts are the freshest rocks. They have porphyritic intergranular texture, with phenocrysts of slightly iddingsitic olivine, less augite and labradoritic plagioclase. The groundmass contains plagioclase, magnetite and apatite. Trachyandesitic rocks have porphyritic holocrystalline texture with large zoned oligoclase–andesine plagioclase phenocrysts enriched in glass inclusions. Large aegirinaugite, brown amphibole and biotite occur as phenocrysts and apatite, magnetite and ilmenite as accessories in groundmass. Trachyte has porphyritic holocrystalline, fluidal texture with large, rarely antiperthitic sanidine lath. The groundmass consists of sanidine laths, carbonate and quartz, with accessories such as rutile, zircon and apatite. Several rocks also contain aegirine, riebeckite and aenigmatite.

Geochemical composition suggests clear intraplate character. The isotopic composition of the trachytes is consistent with derivation from an asthenosphere derived mafic magma by fractional crystallisation and without assimilation of crustal material (HARANGI *et al.*, 1995).

References

- HARANGI, SZ., VASELLI, O., TONARINI, S., SZABÓ, CS., HARANGI, R. & CARADOSSI, N. (1995). *Acta Vulcanologica*, 7: 173–187.
TARI, G. & HORVÁTH, F. (1995). AAPG International Conference and Exhibition, Nice, France, Guidebook to Fieldtrip No. 6, Hungary, 75–105.