

Studia breviora

Upper Eocene (Priabonian) rhyolite tuffs in the region of Dambaluk Mountain (East Rhodopes, Bulgaria)

Rhyolite volcanoclastics, mainly air fall tuffs, cover about 30 km² of the eastern foot of the Dambaluk mountain and of the western slope of the Bujukdere valley — east of the town of Momchilgrad (East Rhodopes, Bulgaria). Up to now they have not been directly dated but always have been referred to the Oligocene as a "Glied des dritten rhyolitischen Vulkanismus" (Ivanov, Kopp, 1969) or as a "formation of the 4th acid volcanism" (Goránov, Atanasov, 1989).

The lowermost parts of the tuffaceous section are built up by psephitic to ash tuffs, associated with reef-limestones and more rarely — with tuffaceous polymictic conglomerates. Along the Bujukdere valley the tuffs overlain a sedimentary formation, represented by marls with interbeds of organogenic limestones and sandstones, containing a volcanoclastic component of andesitic (?) composition. These sedimentary rocks have been thought to be a part of the Oligocene sequence too and have been described as a "Glied des dritten andesitischen Vulkanismus" (Ivanov, Kopp, 1969) or as a "formation of the 4th medium-acid volcanism" (Goránov, Atanasov, 1989).

We established numerous new outcrops of the same sedimentary rocks under the rhyolite tuffs in the dip stream valleys near the villages of Raven, Tatoul, Bivoljane. There is a zone of lithological transition between the tuffs and the sedimentary formation. In this up to 10-25 m thick zone the amount and the thickness of the marls decrease upwards at the expense of the tuffs (Gaunar, Kjtchukdere and Sarpdere valleys, near the village of Raven, etc.). Only in some places (confluence of the Sjuljukljudere and the Bujukdere streams and near the village of Koss) the tuffs overlain an uneven surface washed out in the marls (with or without thin interbeds of rhyolite tuffs).

A rich microfaunistic, mainly benthonic, assemblage was established in the marls from the transition zone. As a whole it corresponds to the assemblages which are characteristic for Upper Eocene sections in North-East Bulgaria (Мандев, 1955, Белмустак, 1968). The typical Upper Eocene taxa are represented by: *Discorbis brandenburgensis* (Kiesel), *Vaginulina alazanensis* Nuttall, *Bolivina nobilis* Hantken, *B. microfanceltriformis* Subb., *B. antegressa* Sahakjan, *Uvigerina spinicostata* Cushman & Jarvis, *U. eocaensis* Cushman, *Turborotalia cerroazulensis* (Cale), *Asterigerina bartoriana* (Ten Dam), *Almaena taurica* Sam, *Pararotalia lithothamnica* (Uhlir), *Marginulina behmi* (Reuss) etc. The species which appeared during the Upper Eocene and continued into the Oligocene time, together with the transitional taxa form another large group. No typical Oligocene species were established. The guide-fossils from this assemblage are considered to be characteristic for the Upper Eocene in other Carpatho-Balkan areas (Samuel, 1975; Odrzywolska-Bienkova & Pozaryska, 1984).

The finding of the Upper Eocene microfaunistic assemblage in the sections studied is a basis to stay that at least the lowermost parts of the rhyolite tuff formation in the area between the Bujukdere valley and the Dambaluk mountain ridge have been deposited in Upper Eocene (Priabonian) time. This statement will result in considerable corrections of the ideas on the East Rhodope Paleogene stratigraphy.

References

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