

# **Magmatic clasts from turbidites in the Moldavide nappes as indication of a late Proterozoic subduction event in the foreland of the Eastern Carpathians**

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Granite, granodiorite and rhyolite clasts are associated with Cretaceous successions in the Moldavide nappes of the Eastern Carpathians. Their source was originally attributed to a presumed Cuman Ridge located within the flysch basin [1]. U-Pb zircon dating on Albian breccias with granitoid and rhyolite clasts from the Moldavide nappes produced the age of ca. 600 Ma [2]. We report similar ages from new geochronological U-Pb zircon investigations on granite, granodiorite and rhyolite clasts associated with sandstones and banded shales of early Campanian age (based on nannoplankton dating) from Breaza, in the Banded Shale Nappe from the southern part of the Eastern Carpathians bend. These clasts show cumulate-type mineral relations in the intrusive rocks (cumulus plagioclase with intercumulus potassium feldspar and quartz) and features characteristic to peraluminous I-type granitoids (presence of biotite, hornblende and sphene with no muscovite). Their geochemistry indicates formation in volcanic arc geotectonic setting. The source of the clasts can be attributed to one of the crustal entities abutting the East European Craton in the foreland of the Eastern Carpathians: Moesian Platform, North Dobrogea and the Scythian Platform, to a sliver of one of these, displaced within the Eastern Carpathians flysch basin, or to another terrane (possibly similar to Brno-Silesia) eroded and covered by the flysch nappes. These entities have either origin disputed between peri-Gondwana and Baltica (Moesian Platform, Brno-Silesia, North Dobrogea) or poorly known basement (Scythian Platform). Nevertheless, the characteristics of the granitoid clasts in the Eastern Carpathians suggest a subduction event at ca. 600 Ma, possibly part of the make-up of the Pannotia supercontinent.

## References

[1] Murgeanu, G., 1937. Sur une cordillère ante-sénonienne dans le geosynclinal du flysch carpatique. *Comptes rendus de séances de l'Institut Géologique de Roumanie*, vol. XXI (1932-1933), p. 69-85.

[2] Roban, R. D., Ducea, M. N., Mațenco, L., Panaiotu, G. C., Profeta, L., Krézsek, C., Melinte-Dobrinescu, M. C., Anastasiu,