Middle Jurassic to Lower Cretaceous radiolarian ages constrain the geodynamic evolution of the Tethyan oceanic realm preserved in Armenia

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The Sevan-Akera ophiolitic zone originated in a Tethyan oceanic realm that was situated between Eurasia and the Gondwana-derived southern Armenian block. Radiolarites are often associated with submarine lavas that are considered to be part of an ophiolitic complex. Radiolarian biochronology of radiolarites cropping out at this zone and at the Vedi ophiolite klippe, combined with petrographic observations and geochemical analyses of associated lavas, helps us to improve our understanding of the geodynamic and paleoenvironmental evolution of this geologically complex region.

We present here results from two outcrops of radiolarian cherts, both dated as Bajocian and containing evidence of subaerial volcanic activity. The first comes from the Sotk pass, east of the Lake Sevan, where a block of radiolarian cherts is incorporated in a mélange. Thin section observations display angular elements of volcanic glass integrated in the background pelagic sediment of the chert.

The second outcrop comes from the Vedi area, where radiolarian cherts lie over pillow lavas of MORB affinity and are overlain by altered variolitic lavas. Fine laminae of volcanic projections (tephra, pyroclastite) are observed in thin sections of the cherts. Volcanic activity contemporaneous to the sedimentation is also suggested by the presence of crystals of sphene fractured at the moment of eruption of titano-magnetittic pyroclastites and of laminae composed of fine pyroclastites deformed during the deposition of sediments.

These two cases represent the oldest evidence (Bajocian) of subaerial volcanism in the ophiolites of the Lesser Caucasus. As the youngest currently known evidence of subaerial activity comes from Barremian cherts of the Amasia ophiolite, our results suggest the presence of an intra-oceanic volcanic island arc active for over 50 Myrs in the Tethyan realm that is now preserved in the Lesser Caucasus.

Mots-Clés : Radiolaria, Jurassic, Cretaceous, Tethys, Armenia

Merci de ne rien inscrire dans cette zone et ne pas modifier les marges des pieds de page et entêtes.