ophiolitic unit, in the SE of the capital city Yerevan, is considered as a folded klippe sequence thrusted on the South-Armenian Block. We focus here on biostratigraphic results obtained recently on the sedimentary cover of the Sevan ophiolite, considered to have been formed in a low spreading back-arc oceanic basin. Amongst the various localities studied, three yielded identifiable radiolaria. Radiolarian assemblages obtained from the Sarinar section allow to investigate the sedimentary and volcanic history recorded in an ca. 30 m-thick radiolarite sequence associated with spilitic lavas of the Sevan ophiolitic suture zone. Three distinct Radiolarian assemblages were recognized and they establish that the studied sequence is tectonically reversed. The younger assemblage can be assigned to the Unitary Association Zones (U.A.Z.) 19-22 of Baumgartner et al. (1995) and correlated with the Early Hauterivian/late Barremain to early Aptian interval, based on the co-occurrence of species *"Sethocapsa" (?) orca*, *Tethysetta boesii* and *Hiscocapsa uterculus*. The latter two species last occur in the lower Aptian Verbeeki subzone of O'Dogherty (1994). The intermediate assemblage is Late Jurassic in age (middle Oxfordian to early Tithonian; U.A.Z. 9-11), based essentially on the presence of *Zhamoidellum ovum*. Finally, the oldest assemblage may be correlated with the late Bajocian-early Bathonian, based on the presence of *"Tricolocapsa" sp. M sensu* Baumgartner et al. 1995. Several tuff levels are intercalated within the Upper Jurassic part of the radiolarite sequence. They are the evidence for a subaerial volcanic activity that took place in the oceanic realm of Tethys preserved in the ophiolites of Sevan-Akera zone.

In the Dali section, radiolarites overly spilitic lavas and are intercalated with tuffites. The co-occurrence of *Cinguloturris cylindra* and *Emiluvia pessagnoi multipora* allows the assemblage to be correlated with the Late Tithonian-Berriasian (U.A.Z. 12-14). This age proves that oceanic crust was being formed at the Jurassic/Cretaceous transition being accompanied by subaerial volcanic activity.

At the locality Tsegnaged, situated north of the town Sevan, two chert samples associated with lavas yielded Early Cretaceous radiolarian assemblages: the first can be assigned to U.A.Z 13-17 (latest Tithonian to late Valanginian) based on the co-occurrence of *Archaeospongoprunum patricki* and *Obesacapsula cetia*, while the other to U.A.Z. 18-22 (latest Valanginian/Hauterivian to early Aptian) based on the presence of *Aurisaturnalis carinatus perforatus*.

The Nea Santa submarine rhyolite dome of the Triassic silicic volcano-sedimentary succession, Circum-Rhodope Belt, northern Greece

Asvesta A.[1] and Dimitriadis S.[2]

[1]*Department of Geotechnology and Environmental Engineering, Technological Educational Institute (TEI) of West Macedonia, Kila, 50100 Kozani, Greece,* asvesta@teikoz.gr
[2]*School of Geology, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece,* sarantis@geo.auth.gr

A Triassic Silicic Volcano-Sedimentary (SVS) succession is part of the Circum-Rhodopes Belt in Northern Greece. It records the voluminous rhyolitic activity that occurred on a Paleozoic composite basement (united Vertiscos plus Pelagonia terranes) at the early stages of extension that ended in continental break-up, separation of the above two terranes and creation of the Almopias Ocean. The SVS succession stratigraphically overlies the alluvial fan deposits of the Permo-Triassic Examili Formation, sourced from the eroded Vertiscos terrane, and is overlain by a Neritic Carbonate Formation of Triassic age. It comprises pyroclastic rocks, lava flows and quartz-feldspar-phyric intrusions, as well as epiclastic volcanic, non-volcanic and mixed volcanic – non-volcanic sediments, all now metamorphosed in low greenschist facies.

The Nea Santa rhyolite dome is part of the SVS succession and is exposed in the Xiropotamos Creek between Nea Santa and Krithia villages. The dome is ~1000 m across and includes four facies recognizable despite their metamorphism and deformation. These are: (a) the "coherent rhyolite facies", representing the core of the dome and consisting of massive, non-vesicular quartz-feldspar porphyry, locally flow-banded; (b) the "lithophysal rhyolite facies", occurring in parts of the periphery of the dome. It is perlitic rhyolite porphyry containing spherulites weathered out from the host rock. Each spherulite contains a quartz-filled, star-shaped internal cavity (lithophysa); (c) the gradational "carbonate sediment matrix – sericite-altered rhyolite breccia facies", defining the original contacts of the dome with carbonate sediments of the Neritic Carbonate Formation. It is composed of fluidal, ragged clasts and stringers of sericite-altered pumiceous rhyolite enclosed in bio-calcirudite host sediment (reef-debris). It is interpreted as intrusive hyaloclastite or fluidal peperite, based on criteria like: hydrothermal metamorphism of the host sediment adjacent to rhyolite clasts (bleaching, silicification and calcite recrystallization) and fluidization of the host sediment (calcite-filled vesicles in rhyolite clasts); (d) the "carbonate sediment matrix – quartz-feldspar porphyry breccia facies", occurring as dyke-like breccia zones that range from 5 mm to 50 cm in width and penetrating the western part of the dome. It comprises blocky, angular, in places jigsaw-fitted porphyry clasts enclosed in carbonate host sediment. It is interpreted as blocky peperite intruded into dome's open fractures formed at its last, brittle stage solidification. Some clasts were also spalled from the sides of the fractures. A relatively younger facies, named "mixed rhyolite – carbonate epiclastic sedimentary facies" was formed adjacent to the dome. It consists of rounded quartz-feldspar porphyry and carbonate clasts (granular siltstone, pebbly granular siltstone and pebble conglomerate). It is interpreted as mixed provenance mass- and debris-flow deposits.

The Nea Santa dome displays typical characteristics of domes formed in submarine successions. During emplacement, its margins were quench-fragmented and mingled with wet unconsolidated carbonate sediment forming intrusive hyaloclastite (fluidal pepperite). The pumiceous nature of the fluidal hyaloclasts and the lithophysal nature of the periphery of the dome imply volatile exsolution not inhibited by the confining pressure, implying further that the sediment cover above the dome was thin and the water depth probably less than 200 m. The host carbonate sediment composed of reef-debris indicates that the dome intruded in a shallow submarine environment, below wave-base. The dome finally reached above storm wave-base level and was at least partly extrusive. Its fragmented margins were subjected to reworking and were syn-deposited with carbonate clasts on its flanks below wave-base as mixed provenance gravity-driven debris- and mass-flows. The identification of peperitic or intrusive hyaloclastite margins of the Nea Santa dome within the SVS succession is decisive for the relative chronology, facies architecture and palaeoenvironmental reconstruction because its presence demonstrates approximate contemporaneity of rift magmatism and sedimentation.

Petrology and geochronology of the Vitosha volcano-plutonic edifice, Western Srednogorie, Bulgaria

Atanasova-Vladimirova S.[1], von Quadt A.[2], Marchev P.[3], Peytcheva I.[2,3], Piroeva I.[4] and Mavrudchiev B.[5]

[1]*Bulgarian Academy of Sciences, Institute of Physical Chemistry, Bulgaria, stelaatanasova@hotmail.com*
[2]*Institute of Isotope Geochemistry and Mineral Resources, ETH Zurich, Switzerland albrecht.vonquadt@erdw.ethz.ch, irena.peytcheva@erdw.ethz.ch*
[3]*Bulgarian Academy of Sciences, Geological Institute, Bulgaria, pmarchev@geology.bas.bg,*
[4]*Bulgarian Academy of Sciences, Central laboratory of mineralogy and crystallography, Bulgaria, piroeva@abv.bg*
[5]*Sofia University, Department of Mineralogy, Petrology, Ores and Minerals, Bulgaria*

The Vitosha volcano-plutonic edifice crops out in the western part of the Srednogorie structural zone. The plutonic body is composed of abyssal gabbros and anorthosites, hypoabyssal monzonites, syenites and late veins of granosyenitic composition, intruded in Late Cretaceous volcano-sedimentary sequence. Volcanic rocks are represented by basaltic andesites and andesites.

The major rock-forming mineral phases are plagioclase, K-feldspar, amphibole and clinopyroxene. Common accessory minerals include apatite, titanite, magnetite, ilmenite and zircon. Secondary minerals are epidote, tourmaline, chlorite, actinolite, adularia and clay minerals.