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

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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.

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Plagioclases span much of the crystallization history throughout the magmatic series, generally decreasing in anorthite component from basic to acid plutonic varieties. In volcanic rock the plagioclase is in the bytownite–labradorite range.

Potassium feldspar of orthoclase composition is typical for the monzonite and syenite. It forms large crystals, disposed between plagioclase. The orthoclase is the major carrier for Sr, Ba, Pb, Rb.

Amphibole is the main mafic mineral in all rock types, with Mg# 58-97. In the classification diagram of Leake et al. (1997), the amphibole from the plutonic rock falls in the field of the magnesio hornblende and ferrohornblende, whereas the amphibole from the volcanic rocks is tschermakite.

Clinopyroxene is a characteristic mineral for all rock types with Mg# 58-84. It forms deep resorption nuclei or single grains with euhedral contours. Compositionally it is augite and diopside.

U-Pb single zircon method was used for the precise geochronological dating of the Vitosha volcano-plutonic edifice. Sr and Nd whole rock and Hf–zircon tracing have been used to clarify the origin of the studied rocks.

Following U-Pb single zircon age data have been obtained for the plutonic rocks: gabbro 81.58±0.23, monzonite 82.45±0.4 and syenite 79.67±0.76. U-Pb data of single zircon grains from an andesite plot on a discordia with a Paleozoic age.

Strontium isotope data are quite variable, ranging between 0.7044 and 0.7042 in the less evolved gabbro and andesite, through 0.7052 in the monzonite, to 0.7091 in the syenite. Nd (80 Ma) values also show a large variation, from 0.37 to 2.74.

The new age data reported here provide that the rocks of the Vitosha pluton range between 82.4 and 79.7 Ma. Chemistry of the parental magma suggests similarity with the other plutonic suites from the axial part of the western Srednogorie. Compositional variations of the rock-forming minerals indicate calc-alkaline I-type signature for the Vitosha pluton. Sr and Nd isotope data indicate the presence of depleted mantle source for the parental magma, whereas generation of most evolved magmas requires different degree of crystal contamination. The upper discordia intercept U-Pb zircon of Paleozoic age suggest that the contaminant must have been lithologies from the Variscan basement.

New Hippopotamid finds in Eurotas Valley (Laconia, Greece)

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A new locality tracked down in the Eurotas Valley (Laconia, Greece) yielded mammalian dental remains of a young individual referred to as Hippopotamus antiquus. The findings are of very large size compared to already known specimens from Greece and W. Europe. The new locality is biochronologically dated at the Early–Middle Pleistocene.

On Pliocene mammal remains in the area of Epanomi (Macedonia, Greece)

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Neogene/Quaternary deposits along the east shoreline of Thermaikos Gulf (Thessaloniki, Greece) occasionally yielded several isolated fossil vertebrate remains. A proboscidean tusk and an equid astragalus have been recently unearthed from a new

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