Georgian block, from the Western Georgia up to Upper Racha. The Upper Cretaceous sediments consist predominantly of terrigenous-volcanogenic (Cenomanian-Lower Turonian) and marly carbonate limestones with the layers of variegated flints (Upper Turonian-Maastrichtian). According to planktonic and benthic foraminifera in the Abkhazia-Racha sediments have been distinguished 14 foraminifera complexes. The detailed analyses have proved that: 1. The lower boundary of the Upper Turonian is connected to the massive occurrence of the genera *Marginotruncana pseudolinneiana-M. schneegansi-M. lapparenti;* 2. The Turonian/Coniacian boundary is based on the occurrence of *Marginotruncana coronata* Bolli; 3. The Coniacian/Santonian boundary - *Dicarinella concavata* (Brotzen); 4. The lower boundary of the Upper Santonian is based on the appearance of *Contusotruncana (Rosita)* fornicata (Plummer); 5. The Santonian/Campanian boundary is based on the presence of *Globotruncana arca* (Cushman); 6. The Campanian/Maastrichtian boundary, based on the occurrence of *Globotruncanita stuarti* (Lapparent). In the Odishi-Okriba facies type has been distinguished the suite "mtavari", investigated in detail by planktonic foraminifers. The analyses made possible to establish 5 foraminiferal zones in the studied sections. These complexes have been correlated with macrofauna and nannoplankton complexes to specify the age of the suite. At present, there exists a definite methodology for the reconstruction of some parameters of the paleobasin that is based on quantitative interrelations of foraminifer associations. This technique is based on actual data of contemporary water areas. The PF (Planktonic Foraminifer) data can be used for the interpretation of the fossil material data applicable in paleogeographic reconstructions. The relation of planktonic and benthic foraminifera and the content of planktonic complex enable to define depth of the basin. According to the percentage of the left- and right-coiling species of Globotruncanidae, there have been estimated the temperature conditions of the Late Cetaceous basin. The question on the parity of left- and right-coiling foraminifera is a part of big problem of coiling directions in the nature.

Gemstone deposits of Lece volcanic complex (South Serbia)

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Gem raw materials do not have a long tradition in Serbia, neither concerning their geological exploration nor their utilization. Nevertheless, few relatively modest exploration campaigns discovered number of gemstone deposits and occurrences grouped into several regions. One of the most important regions is Lece volcanic complex which is situated in the southern part of Serbia and covers an area which exceeds 700 km². This volcanic complex, formed as a result of Tertiary volcanic (intermediate) activity, is a part of Serbo-Macedonian metalogenic province, i.e. Lece–Chalkidiki metalogenic zone. It comprises mostly andesite rocks and their pyroclastic equivalents.

Gemstone deposits of Lece volcanic complex became the subject of interest after the World War II, although on the basis of certain archeological finds, we can assume that the Ancient Romans beside gold exploited amethyst and agate as well. The first modern explorations were carried out during 1970`s and at the beginning of 1980`s, when several deposits with calculated reserves were defined. The exploration was continued in 2002 and 2003. Laboratory analyses – at first micropetrographic, were followed by chemical and gemological (refractive index). Apart from the above mentioned investigations, in order to establish whether silica minerals have real gem quality gemstone processing (lapidary) was conducted.

This paper deals with explored deposits (having reported reserves according to Serbian laws). There are two basic types of deposits: primary (hydrothermal) and secondary (sedimentary).

Rasovača deposit. Precious minerals in this deposit occur in the same fracture zone together with metallic ore mineralization of Pb, Zn, Ag and Au (Lece underground mine). It is a quartz-brecciated fracture zone, with hydrothermal (epithermal) mineralization, a few kilometers long. Numerous intensive tectonic movements made space for the circulation of hydrothermal solutions which deposited not only galena, sphalerite, pyrite and gold but gem minerals as well. Precious silica minerals are represented by amethyst, amethyst-agate, and agate. Red jasper appears only in small quantities. Amethyst is characterized by a fine dark purple colour. Chalcedonic agate is represented by concentric bands of grey, bluish, brown, purple and red chalcedony.

Bučumet deposit. In the succession of andesite lava flows and pyroclastic material, silica masses formed as plate-like ore bodies. These masses are result of depositing silica around thermal springs and geysers. This type of deposit is known as siliceous sinters or geyserites and represents second type of primary gem deposits in this volcanic complex. Siliceous mass, represented by fibrous chalcedony, granular quartz and relict opal, has very heterogeneous colour varieties. Basically, a very wide range of colours appears in short range. Chalcedony is represented by dominantly mixed and uniform colour varieties of white, bluish, gray, brown, red and black colour. Jasper is yellowish-brown to reddish-brown.Vrtače and Kameno rebro deposits. These deposits belong to the group of secondary deposits – placer type deposits. While Vrtače is an eluvial deposit in pyroclastic material with partially preserved primary ore body, Kameno rebro is a completely delluvial deposit formed beyond the volcanic complex in the surrounding Proterozoic metamorphic complex. Gem minerals which occur in these two deposits are of the same type as in the Bučumet. It is assumed that the material in the deposit of Kameno rebro mostly originates from the eroded part of Bučumet deposit.

Apart from the above mentioned deposits with defined reserves, there are also numerous insufficiently explored occurrences, mostly placer ones (eluvial, delluvial, proluvial and alluvial). These occurrences are mostly concentrated out of the volcanic complex, i.e. on its eastern rim.

Geomorphological characteristics of Kratovo-Zletovo palaeovolcanic area

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Kratovo-Zletovo palaeovolcanic area is known as one of the largest in the F.Y.R. Macedonia and wider, covering a total of 970.1 km^2. A huge amount of pyroclastic material is expelled here, with an average depth of about 700 m. According to Serafimovski, Arsovski etc., volcanic activity in Kratovo-Zletovo area started at the end of Eocene or lower Oligocene, and with some pauses last up to lower Pliocene. In that period, volcanic activity successively moved from north-east to south-west, with changes in volcanic intensity (violent eruption followed by expel of pyroclastic material; with silent phases followed by lava flows). The volcanism in the region was generally caused by deep sub-meridianal dislocations, activated by Paleogene east-west extension. To the end of Miocene, volcanic activity is reestablished by longitudinal neotectonic dislocations, started with younger north-south extension. Geomorphologically, in Kratovo-Zletovo area there are about 20 volcanic cones and calderas, highly eroded by post-volcanic fluvial-denudation processes. Only Plavitsa cone (1297 m) and Lesnovo cone (1167 m) are better preserved, as well as their calderas on the top. These two volcanic centers, together with Uvo-Bukovets cones, Zdravchi Kamen, Zhivalevo and other volcanic necks, belongs to the older volcanic phases, while younger centers are located in the south and west part of palaeovolcanic area (Crni Vrv (1115 m), Preslap (1117 m) and Rajcani (867 m) cones with some remnants of calderas). After finishing of the volcanic activity, due to strong erosion, volcanic forms subdue significant morphologic modifications. Today, on the remnants of palaeovolcanic cones, there are many fluvial, denudation landforms and even fossil coastal terraces. For that reason, the recent nature of Kratovo-Zletovo palaeovolcanic landscape is polygenetic.