GOLD MINERALISATION IN LACK OF OBVIOUS HYDROTERMAL ENVIRONMENT IN THE CRETACEOUS AND PALEOGENIC SEDIMENTS OF WESTERN AND CENTRAL BULGARIA

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During lithological studies of Upper Cretaceous and Paleogenic sediments, gold, silver and copper mineralisations have been identified for the first time in the Western Fore Balkan and the Central Balkan.The Upper Cretaceous – Paleogene sequence consists mainly of fine – grained sandy, silt or biodetritic limestone and rare conglomerates and hyporocks. The native elements were found in fraction of 0,25 – 0,125mm and 0,125 – 0,063mm rarely in fraction of 0,50 – 0,25mm. Native gold, silver and copper form flakes, elongated or rounded grains. The gold from the Cretaceous sediments has high purity ranging between 977 ‰ and 995 ‰ and from the Paleogenic between 923 ‰ and 955 ‰. Native silver has purity of 99,96 % being contaminated with 0,04 % gold. Copper was found in the transgressive facies of the Upper Cretaceous sediments its purity ranging between 99,01 % and 99,77 %. The ET AAS/analysis has determined gold content in some samples: 147 g/t, 21.91 g/t, 5.89 g/t, 4.57 g/t and 0.104 g/t. The predominant amount of gold occurs as grains visible with naked aye and only a small part of it is included as submicronic particles in pyrite. Analysis of monomineral samples of pyrite proved low concentration of gold – 0.38 g/t. The alterations of the host rocks are expressed by week recrystallisation of the limestone. Rarely are observed quartzification, pyritisation, dolomitisation, hematitisation and calcitisation. The main factors responsible for the localisation of the precious metals are the lithological and tectonic control.