

## REPLICA OF THE “GREAT TRIANGLE GOLD NUGGET” BELONGING TO BELGRADE UNIVERSITY COLLECTION, GILDED OR NOT?

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### Introduction

The Collection of Rocks and Minerals, Faculty of Mining and Geology, the University of Belgrade in Serbia, has been holding over a hundred years the gypsum model of triangular shape that represents the replica of one of the world's largest native gold nugget weighing 36.2 kg, known as “The Great Triangle”. Nugget model is golden metallic in colour with a shape similar to a rectangular triangle, more or less flat with an average thickness of 8 cm, with a length of about 37 cm and height of about 27.5 cm. In order to enrich the information of gold replica as an exceptional exhibit from the 19<sup>th</sup> century and to determine its value and significance, it was important to examine the composition of its golden metallic colour surface. Since the gold colour and shine remained the same, did not darken by the time it was assumed that the model is gilded.

### Material and method

Chemical composition of the gypsum model surface was carried out in the Laboratory for SEM, Faculty of Mining and Geology, University of Belgrade, using a JEOL JSM-6610LV scanning electron microscope, coupled with an X-Max energy-dispersive spectrometer (Oxford Instruments). The small amount of the skim was gently removed from the surface and glued onto a graphite strip, without covering. Chemical analysis was performed on unpolished pieces, using the EDS detector and the internal standards.

### Historic background

The gold nugget was mined in the Southern Ural, in the gold-bearing sands of the Tachkou-Targanka river in 1842. At the time of its invention, the whole area of Zlatoust was the most significant in the world with its gold mines (JONES, 1844). Today, this unique native gold nugget adorns showcases with numerous unique exhibits in the Diamond Fund display in Moscow, Russia, Kremlin. The gold nugget replica, which is kept today in the Collection of Rocks and Minerals, is part of

old and numerous mineral collection which numbered 1525 samples donated by the St. Petersburg's State Mining Institute of the empress Catherine II (precursor of Saint Petersburg State University) to the Mineralogical Cabinet of Great School of Belgrade (precursor of Belgrade University) in 1899 (UROŠEVIĆ, 1899). The original accompanying catalogue, written in French and signed by the honoured mining engineer M. Melnikoff, conservator of the Mining Institute Museum in St. Petersburg, contains details of its location of finding, the weight of the natural nugget (Archive of the Collection of Rocks and Minerals), but with no information of the number of the replica made, and the type and manner of material that was used for covering.

### Result and conclusion

The data obtained by EDS analysis show that the gypsum model is covered with gold leaf, which was expected according to the macroscopic characteristic of the object. How many such gilded replicas of the original native gold were made in Russia is not yet known. The replica exhibited in the Collection of Minerals and Rocks has not always been treated with care, probably due to a lack of details, which is clearly visible on the surface itself. The acknowledgement that this gypsum model is gilded indicates that the collection donated by the Empress Catherine II State Mining Institute of St. Petersburg had exceptional value, which obliges us to treat it with great care. In this regard, it is planned that its restoration with gold leaves will be done soon so that it can be preserved for generations to come.

### References

- JONES, T. P. (1844): Journal of the Franklin Institute of the State of Pennsylvania and American Repertory, Third series, 8: 66–67.
- UROŠEVIĆ, S. (1899): Comptes Rendus des Séances de la Société Serbe de Géologie, LXXII, Belgrade, pp. 1–6