

# Meteorite collection at the Faculty of Mining and Geology, Belgrade, Serbia – forgotten gems

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## Abstract

Here we describe a collection of 36 meteorites within the Collection of Rocks and Minerals at the Faculty of Mining and Geology, University of Belgrade. At the end of the XIX century, the Mineralogical Cabinet of Great School of Belgrade (precursor of Belgrade University) received a gift of 30 samples from a French collector and nobleman Charles Adrien marquise de Mauroy and 3 samples from the Collection of the Mining Institute of the empress Catherine II. Among the aforementioned examples, all but one from the so-called Russian collection are preserved. In addition to these, the collection contains a meteorite sample from Romania and three meteorites of unknown name and origin.

## 1. Historic background

Early meteoritics in Serbia has been initiated after the witnessed fall of Sokobanja meteorite in 1877. The meteorite was named after the location where it was recovered – Sokobanja, in central-eastern Serbia. One of the team members investigating the fall and recovering the material was Prof. Josif Pančić (1814–1888), a sciences professor at the Great School of Belgrade (Beogradska Velika Skola). A series of subsequent meteorite falls (Jelica in 1889, Čačak in 1919, and Dimitrovgrad in 1947), has contributed to further developments of meteorite collection in Serbia, as well as to sample exchanges with foreign museums. Josif Pančić was very active and respected scientist across Europe, and with his collaborations and private efforts, he collected 95 world well known meteorites. Unfortunately, most of this collection went missing during the WWI [2]. On the good side, rather quick development of geological sciences in Serbia at the end of the XIX century has helped retain an evidence of the original meteorite collections. Due to internationally affirmed pioneers (Josif Pančić, Jovan Žujović, Sava Urošević) in

geology, many meteorites from the missing collection were recorded throughout European and world archives and most of the exchanged samples are still kept in famous museums worldwide (e.g. Smithsonian or Vienna collection). In total, 52 meteorites are today stored in the Collection of Rocks and Minerals, as well as in the Paleontological collection of the Belgrade University. The most exceptional are the two meteorite collections that were donated to the Mineralogical Museum of High school (precursor of Belgrade University) in 1899, via St. Petersburg Mining Institute of the empress Catherine II (precursor of Saint Petersburg State University). Above mentioned collections are: three samples of meteorites donated by the Museum of the Mining Institute in Saint Petersburg and 30 samples of meteorites donated by the French nobleman, collector and honored member of the Mineralogical Emperor Society in Saint Petersburg. In course of time, the two University collections have lost the samples of the Serbian recorded falls, which are now stored in the Natural History Museum, Belgrade.

### 1.1 Collection donated by St. Petersburg's Mining Institute

In 1899, at the meeting of the Serbian geological Society, Sava Urošević presented two exceptional collections of minerals and meteorites that were donated to the Mineralogical Museum of the High School [4]. One of them was the collection of 1525 samples of minerals including three samples of meteorites donated by the St. Petersburg's State Mining Institute of the empress Catherine II. An honoured mining ingenier M. Melnikoff, conservator of the Mining Institute Museum in St. Petersburg, signed an accompanying catalogue written in french. Samples were numbered according to their original catalogue number within the Russian collection. Besides numbering, each sample in that catalogue contained information on the sample's name and the locality from which it was collected. Meteorites

donated to the serbian collection had numbers 36, 37 i 38, but meanwhile the one with the number 36 went missing. Descriptions of these three meteorites in the original catalogue were as follows. **36:** *Fer météorique aveque troilite (pesant 284 gr.), Trouvé, en 1890, pres de la village Augustinowka, gouv. de Ecatherinoslaw dans l'argile alluvial);* **37:** – Palasite with olivine (65,6 g) *Fer météorique aveque olivine - (Pallassite de Krassnojarsk), Trouvé, en 1749 par Pallass, en Sibérié, 400 kilomètres de Krassnojarsk, pres de la rivière Oubei );* **38:** (težine 268 g) *Fer météorique, Trouvé, en 1889 au placer de Pétropawlovsk sur la rivière Toubil ar.d'Artchinsk, g. d'Jenisseisk.*

## 1.2. Collection donated by Marquiz de Mauroy

Collection of 30 meteorite samples were also donated to the Mineralogical Museum of the Great school in 1899. by a French nobleman and honored member of the Mineralogical Emperor Society in Saint Petersburg, Marquis de Mauroy (*Marquis Adrien Charles de Mauroy, 1848 – 1927*) [4]. At the end of XIX century, marquize de Mauroy's meteorites collection was the second largest collection in the world [3]. The donated collection represents the small fragments of Mauroy's numerous collection, which it has personally donated to the Vatican Observatory in Italy ten years later [1], [4]. This collection did not possess a catalogue, and the samples were not numbered. A revision of the collection was therefore not directly based on the original samples description but rather on facts announced at the Meeting of the Serbian geological Society, which was held a century ago (in 1899). It was confirmed that the samples and labels with French handwriting are truly donated by Marquise de Mauroy. The samples weight written on the labels was also very useful. Now it is known that due to circumstances, the original catalog of the entire Mauroy's collection from 1909. is located in the Vatican Observatory in Italy with majority of collector's samples. The cooperation with their curator Mr. Guy Consolmagno in 2013. was helpful for our numbering of the samples and confirming the names on the labels. All 30 samples from this donation are kept at the Museum of Rocks and Minerals, in Belgrade.

## 1.3. Individual samples and labels

There are four aditional meteorites in the Collection of rocks and minerals. Among them is the meteorite sample named Mocs, Cluj from Romania with handwritten etiquette with all necessary data. On the label on its surface is written "Mocs 25 g", and on the etiquette with details written on Serbian: *Meteorite, Lithite, Chantonite, fall 3.02.1972., Mocs, Kluž, Romania, weith 24,55, No 32.* Two iron meteorite samples, different in shape and in weight without any data and labels (P80 Fe-meteorite 202g and P81 Fe-meteorite 48,8g), and one obviously non iron meteorite sample which is still unclassified (11,5 cm long), are also held in our collection. Individual label from the period between two World wars pointing out that the Fe-meteorite with the name Arva Megye was present or is still present in the Collection.



Figure 1. Unclassified meteorite sample (11,5 cm)

## 2. Summary and Conclusions

Most the meteorites within this Collection have been classified, apart from three samples for which the name and description went missing. However, these meteorites haven not been subjected to any other scientific investigations in past decades. We have a plan to prove their authenticity by using modern mineralogical methods supported through the Open University.

**References** [1] Consolmagno, G.: A Brief History of the Vatican Meteorite Collection, Submitted to History of Geology, 2004. [2] Jović, V.: From the history of Geology in Serbia, Jantar group, Belgrade, 2002. [3] Salpeter, E. W.: The Vatican Collection of Meteorites. *Specula Astronomica Vaticana*, Vatican City, 21, 1957. [4] Urošević, S.: *Comptes Rendus des Séances de la Société Serbe de Géologie*, LXXII, Belgrade, 1899. [5] Zdravković, A.: Marquise de Mauroy's meteorites in the Collection of rocks and minerals at the Faculty of Mining and Geology, XVI Congress of geologist of Serbia, 22 - 25. May 2014, Donji Milanovac, Serbia, 2014.