

GEMSTONES IN GEOTOURISM

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Abstract: The study deals with the opportunities how to connect mining sites with precious gemstones exhibited in the museums. Seemingly unrelated fields, especially at first sight, display various pieces of information, which are mutually connected and inseparable and this way they both create an integrated concept about precious gemstones, which is truly important for geotourism, mining tourism and modern museology. Through examples and specific illustrations, the work points out to a specific connection of Dubník opal mining site, as a significant mine, on one hand and precious gemstones represent central exhibitions in several European museums, on the other hand.

Key words: gemstones, geotourism, mining tourism

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INTRODUCTION

Gemstones have always fascinated people, therefore, they are partly responsible for fights and arguments about their ownership. They represent beauty, value and at the same time social status maybe not today but definitely in the old times. Thus, the possession of jewellery with gemstones have always been the privilege of wealthy, well-off and the most influential people. This might be also the reason why are contemporary people interested in jewellery with gemstones so much, this way they might come closer to the most famous people from the history. Whatever reasons for fascination by gemstones we may find, today, people visiting museums admire the beauty of gemstones on one hand, however, they also try hard to find as much information as possible to quench their thirst for knowledge about gemstones and become knowledgeable (Bell, 2008; Eckert, 1997; Köroğlu et al., 2009).

One way how to get to know gemstones is the geological genesis and here we must mention the study of geo-science, this way we come closer to geotourism (Gerner et al., 2009; Rybár et al., 2010a; Rybár et al., 2010b; Yolal, 2012; Hronček, 2013). The aim of the work is to point out to the invisible interconnection of two, at first sight not related worlds - gemstones and jewellery on one hand, and geotourism with the

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geological origin, on the other one. Nowadays, similar topics are the subject of interest of many researchers, not only in the field of geotourism (Domaracká & Muchová, 2013; Kršák, 2011; Toredas, 2010; Weis, 2012).

RESEARCH

The insight of the visitors to the gemstones have always developed, however their beauty fascinated people equally 10 or 100 years ago, of course the range of information that is interesting for the tourists is higher and higher. They are interested not only in the history but at the same time they search for thematic information. This way a lot of pressure is put to the tourist guides in the museums. Sometimes, even a knowledgeable person cannot answer all the questions from various fields.

To reveal what fascinates the tourists and what catches their attention, a research has been conducted, where our respondents have answered 12 questions. There was no influence as the questions were not in groups. Respondents could choose 5 questions that caught their attention and then they stated numbers 1-5, with 1 for the most interesting question and 5 for the least interesting one.

Later we put these questions into 3 groups, each group consisting of 4 questions. The first group included historical questions, the second one –technical questions and the last one consisted of geological and mining questions.

Before the final analysis, it was expected that historical point of view will be most interesting – as we are used to hearing a lot of historical information during the visits of the museums. The largest number of people was actually interested in geological point of view – specifically: What gemstone is it? Regarding the number of people interested, this question was the second one most often asked. The research proves that the respondents are interested in geological or possibly mining background of the gemstones. This is the reason why we want to point out to the geological and mining background of the chosen gemstones used in jewellery.

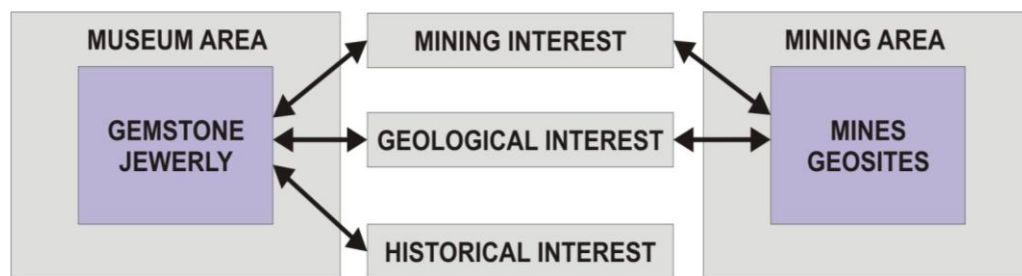


Figure 1. Connection between museum and mining area

DUBNÍK REGION MINES

Dubník mining deposits of gemstone are extraordinary from global point of view. We cannot find it anywhere else in the world, in such numbers and so early in history as it was here in Slovakia. In the 19th century opal deposits were found in Mexico and Australia. And despite the fact, the mining in that region in Australia today is comparable with the opal mining in Slovak Dubník region 150 years ago, where we had more than 25 000 karat.

Regarding beginnings of opal mining in Slovakia, we have no written records and no evidence. Ancient authors wrote about gemstones, as strange and unique gemstones of 60 colours allegedly with magical power hidden in them.

Their original place of occurrence was India, since according to records they were colourful and other features typical for Dubník region opal proved that they

might possibly be from that region - Dubník. The first written records about the opals in that region are from the 14th of May 1597, when the emperor Rudolf II, gave an obligation for mine maintenance to Albert Magnus from Vratislav. Another record is a rescript from the 5th November 1603, given again by Rudolf II to Štefan Kecer, the owner of the land above the mines. A personal doctor of the emperor Rudolf II, Anselm Boetius de Boot mentions an old mine with gemstones in his work - *Gemmarum et lapidum historia* from 1609, which proves the mining history of that region, as stated in the written records. Another information about the gemstone opal comes from the pater Brown from 1673.

According to him, we could find unformed opal, expensive one, and larger than a fist in the collection of the emperor's mineral room. In 1771, the largest well-known opal with the weight 607g, which was for its beautiful and original colours named Harlekýn (Vienna Imperial Opal) was found, allegedly not far from the stream Olšavka, flowing from Šimonka and today it can be found in a Vienna museum.

In the 17th and 18th century the owners of the land were changing, however nobody led the mining activity effectively till the 19th century. In 1830 – 1845 Gabriel Fejerváry hired the mines in the region. Mr. Fejerváry, an amateur geologist and archeologist, who established the basis of new effective opal mining, started to use modern mining technologies and this way he made the process of mining much more effective. At the end of this period we could see prosperity of the mine however it was not under his administration.

According to an auction process, in 1845 – 1880 the mine was hired by the Goldschmidt family. Salomon G. – a Vienna jeweller and a businessman brought some other positive changes. This is the time when Dubník opal mining came to its zenith and we could record enormous prosperity. Adolf, the jeweller's son, was awarded for his contribution to the development of mining here by noble (aristocratic) predicate „Libanka”. There were employed over 400 miners and mining activity was done in a larger range. For example, a little mining railway in the tunnel Viliam was constructed. At the same time, new mining pits and tunnels were created.

The period of mining led by small businessmen was finished because of the financial problems at the end of the 19th century, when the maintenance of the mine was given to the state. After the initial revival of the mining activity, stagnation was recorded mines were still in use however we cannot see any special results in mining activity. During the WWI the world trade was influenced badly, which had bad impact on the opal trade as well. In 1914 the state set regulations upon the opal production purposefully. The last mining work was recorded in 1918. Symbolic end of this so called “only crucial survival” came together with the end of the WWI. During the period between years 1918 – 1922, there were various unsuccessful attempts for the revival of opal mining in that region. Anyway, finally, the process of opal mining in Dubník region was stopped in 1922.

Consequently, Dubník opal mines were labelled as protected area in 1964 and later changed to protected area with the occurrence of wintering bats, being one of the largest in central Europe. In old mining buildings, it is worth seeing secondary sulphates and disulphates, limonite pseudokasrt, colourful little lakes of acid solutions (liquids) and beautiful ice decoration occurring frequently (Budkovič, 1970).

Regarding the protection of this historical and natural treasure, at the end of 1999 a Charity - Dubník opal mines - was created. Since 2005, Dubník opal mines have been hired again. Nowadays, there is higher interest in revival of opal mining, the prettiest Slovak gemstone (Opal mines Dubník). The current time of industrial downsizing allows one to discover the cultural and tourist features of the mining towns, where increasing numbers of tourists are attracted every year, eager to visit the industrial heritage assets (Iancu & Stoica, 2010).

Prepared mining plans including research results, soon will be used in practical way. There is still possibility to use mining area similar to other closed mines, as the object of mountain tourism. We can have as model regions in Germany (Drebenstedt & Domaracká, 2011). A current owner of the mine is planning mainly to put the unique Slovak gemstone to the world market.

PONTIFICAL RING WITH GEMSTONE OPAL

Dominant part of the ring, created from massive cast and cultivated gold, is precious opal, which was refined into an oval shape. Opal is surrounded by 19 little gemstones - brilliants out of which 17 are diamonds, 2 missing diamonds were substituted by zircons in 1940.

Precious opal of yellow-greenish and bluish phosphorescence is with regard to its size (13 x 17mm) special and remarkable gemstone. The central stone is carried by a couple of angels (with wings coming from their heads). Archbishop Theodor Kohn (1893–1904) asked a well-known Roma jewellery company Orazio Negri & Co, to create a ring with the precious opal for him, probably during his first journey „*ad limina apostolorum*”. In the period church annals, regarding its cost, the value of the ring was evaluated as high as 2 000 golden coins.

According to Kohn last will in Ehrenhausen from the 8th of April in 1915, it can be seen that the ring with the diamonds was inherited by former ceremonialist and assistant secretary František Botka. At the present time, this artefact is the property of Olomouc Archdiocese and is currently in a Museum of Art in Olomouc.



Figure 2. Pontifical ring with gemstone opal
(Source: Museum of Art in Olomouc, 2013)

A BROOCH AND A BRACELET WITH GEMSTONE OPAL

It is a bracelet and a brooch with gemstone opal in gold 580/1000. The diameter of the bracelet is 6,6cm and the weight is 10,45g, while the length of the brooch is 5cm and its weight is 4,9g.

The jewellery is labelled- Rosenberg 7893, Austrian import carat mark, used in 1872. A bracelet is composed of the decoration of oval opal, four flashing ruby knobs and little pearls and beads. The brooch is created in the same motive like the bracelet. The jewellery was created in the western or central Europe between the years 1890 –

1900. The jewellery is put in the original box-etui. It was bought by antique shops in 1965 for 1 150 Sk. Nowadays, a bracelet and a brooch with precious gemstone opal can be seen in Morava gallery in Brno.

HARLEKÝN – VIENNA IMPERIAL OPAL

In 1873, in Vienna a whole range of various precious gemstones and opals was exhibited on a world exhibition. Spectacular collection of opals, which was introduced here, was exceptionally interesting not only from the jewellery and shaping (hewing) point of view, but at the same time it was a great example of treasure regarding geological, mineral and mining attitude.

The world-famous exhibition in Vienna meant a real flashpoint and a top of rising opal price. We could watch such high price even after the end of the Goldschmiedt hire period (So for instance a cameo from opal, beautified by flashing knobs (ruby stones) and emeralds on the edges, decorated by a design of Queen Elisabeth, cost 26 000Ft. Another cameo with a design of František Jozef I, beautified by brilliants, cost 15 000Ft. A gemstone necklace from expensive opals cost 65 000Ft Golden head-band with precious opals cost 20 000Ft and so on).

Some artefacts which were valuable have changed their owner over the centuries. It can be claimed that a carat-mark of a colourful precious opal was estimated for 25 to 30 Ft. During the exhibition in Vienna, the Goldschmiedts practically showed all sorts of opal, which were being mined in Dubník region during a 28-year-long hire period.

So not only those refined opals embedded in gold or silver and the accesories with other precious gemstones (at that point we must mention that opal goes perfectly well with brilliants, sapphires and topaz and is therefore valuable - it was valued as much and estimated around 500 000 golden coins), but also the opals in their crude form in their maternal trachyte, together they offer great experience for any gemstone lovers. It is also well-known that previously mentioned opal „harlekýn“ weighing 600g (3000 carat-mark), 12cm long, 6cm wide, 2-7cm thick, was interesting also as a wedding present for English queen for its period price and beauty.

A Dutch merchandiser with gemstones offered half a million Ft. for this masterpiece. However, it was said, that they chipped the stone, and separated only a smaller part, about as big as an egg. In other materials, we see that extremely precious opal can be seen on the buckle of the coronation coat of a French king. That time, they allegedly bought it for 30 000 golden coins (Eckert, 1997).



Figure 3. Opal milky together with gemstone opal
(Source: Slovak mining museum in Banská Štiavnica, 2013)

OPAL IN A SLOVAK MINING MUSEUM

In Slovakia we can find expensive opal in Slovak national museum in Banská Štiavnica. Precious opal belongs to more important collections, which was bought by the doctor Samuel Bothár, who was a Banská-Bystrica doctor and a mineral collector, a part of his great collection can be seen in the Slovak mining museum and a part also in Tihányiovsky mansion in Banská Bystrica. Samuel Bothár owned also milky opal with gemstone opal with the measurements 12x7x4 cm. Allegedly bought for 220 Kč. It was original in the collection of the State Mining Museum of Dionýz Štúr. A beautiful collection of gemstone opal is 7x7x6cm. The original owner was Mrs. Wittichová, M. Later Mr. Ludovít Cseh, a mining geologist in Banská Štiavnica got it and finally Mr. František Fiala obtained it for the State Mining Museum of Dionýz Štúr.

POSSIBLE CONNECTION BETWEEN GEMSTONES AND GEOTOURISM

Regarding time horizon, possible interconnection of museum exhibits with geological or possibly mining sights within two horizons.

Short-term horizon:

- creation of informational system, consisting of information about precious gemstones and their origin, creation and mining from 2 different points of view, the first one available for the broad public, offering information, pictures, videos and maps for the visitors (Hvizdák, 2013). This part of the informational system would be published in popular but educational (science) style, and it would be easily and freely affordable through the web application;

- the second part would represent detailed information about the gemstones, exclusively in scientific form. As this piece of information would be addressed to tour guides in the museums, geological or mining sights, it would be a closed system with controlled access privileges. However, to make it affordable for these people, it would be online alike;

- mutual promotion and advertising - leaflets and brochures about similar sights suitable for visitors. This informational material would refer to original land - mining region, where the gemstones were mined, or possibly would refer to similar gemstones.

Long-term horizon:

- proposal and encouragement of strong cooperation between museums, mining or possibly geological regions, in terms of information exchange and lending of museum collection;

- workshops and conferences organization, with the opportunity to exchange priceless experience;

- organisation of sight-seeing tours for museums where the tour guides would be offered a chance to see the original place of gemstones occurrence and the genesis of mining would be presented to them.

CONCLUSION

At present, we live in the period of information, thus, the amount of information about particular exhibits, interesting for the visitors of museums, is equally constantly growing. This tendency can be similarly observed also in the increase of the interest in precious gemstones and jewellery. During the research, it has been discovered that the growth occurs not only in the quantity of information, but also in the aspect of visitors' involvement or public interest, regarding mainly fields like geology and mining history. This creates the possibility for connection of precious gemstones and jewellery as museum exhibits with mining tourism and geotourism.

Museum exhibits of precious Dubník opal mined in our chosen area are a great example of the previously mentioned relation between these two fields. Since these exhibits can be seen not merely in Slovakia, but also in other European countries, it is

necessary to create certain informational system – for example a web application, which would be a huge contribution to the spreading of information for common users speaking several foreign languages. This would lead to a natural opening of opportunities how to get to know these attractions and how to become familiar with them in much broader sense, not only within a regional area, but also in a wider European concept.

It is indeed essential to create partnership of the relevant institutions, which would encourage and supplement each other, consequently they would establish the knowledge interconnection themselves and hence they would extend the opportunities for their visitors. Regarding the tourists' visiting rate, it can be considered only later whether the visit rate grew or not. Only after the realization of these proposals we can judge how effective they were.

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