

The Centenary of the Discovery of the Prehistoric Striped Flint Mines in Krzemionki

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Undoubtedly, the exploitation field in Krzemionki, situated within the properties of the present villages of Sudół, Stoki Stare and Ruda Kościelna, constitutes a unique relic – a monument of prehistory whose preservation in as good state as possible accompanied with skilful facilitating public access to it is going to be the subject of our concern throughout the upcoming century. On one hand, one can find it surprising that the monument did not become a symbol equally recognizable to the public as the Biskupin fortified town. On the other, it is a source of satisfaction that the whole range of activities connected with the monument have not caused any significant alterations to the site (while admitting that they might possibly occur along with the increasing popularization and commercialization of the Krzemionki mines). Of course, some interference has taken place here. Luckily, taking into account the number of intact mining shafts and the extent of the post-mining landscape still visible today, their scale has not caused much loss. It seems that in the case of this archaeological monument, a successful compromise has been obtained. This merges efforts to retain it in a state that is as little changed as possible, while gaining knowledge in the course of research and finally the need for presenting this knowledge and the monument itself. If it is possible to maintain this situation, this will mean that the long-term activities of several generations within various circles working in the service of the Krzemionki monument have had the proper effects.

The discovery made on July, 19th 1922 by the geologist Jan Samsonowicz initiated a series of events, including archaeological research, conservation work and

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ownership transformations of the land on which the site lies that have extended over as long as 100 years. They have led to better knowledge about the site, its protection and making it available to visitors and finally – declaring it a UNESCO World Heritage site.

The first surface survey work was started in 1923 by Stefan Krukowski and Zygmunt Szmit, whereas the first excavation research was conducted two years later by Józef Żurowski. The exploration of subsequent shafts by Z. Szmit and S. Krukowski allowed an initial diagnosis of the characteristics of the site. As a result of the excavations and surface research which was being conducted also around Krzemionki village, the first monograph of the mines by S. Krukowski came into being in 1939. Simultaneously, there also appeared the problem of securing the exploitation field against damage caused by limestone extraction to produce lime. After enacting a new Law on the Protection and Care for Historical Monuments in 1928, the process of creating an archaeological reserve started. Through the use of state funds, the contributions of individual donors, with the support of local authorities and industrial plants as well as thanks to the commitment of the Polish Country Lovers' Society, a part of the exploitation field was acquired from private owners and put under protection.

After the Second World War, the biggest challenge for Krzemionki researchers and conservationists became to secure vandalized shafts and to provide documentation in addition to protecting the exploitation field. As early as in 1945, the mines became registered ancient monuments. In 1953, intensive conservation works were started by Tadeusz Żurowski. In their course, the shafts number 1, 2 and 3 became successfully secured and were covered with special ferroconcrete domes. The underground portions of these mines were explored and prepared for being shared with limited numbers of tourists. In the process of the research, a Neolithic drawing was discovered. It is created with charcoal on a limestone pillar in one of the mines. A graphic reproduction of this drawing became the logo of the Krzemionki Museum in 2012. The biggest innovation introduced during this time was the integration of archaeological research with conservation work being carried out underground with the participation of mining methods. This way, between 1959 and 1961, Shaft 4 was examined and preserved. It is one of the best explored mining features in the area of the whole exploitation field.

Concurrently with the research in the 1950s and 1960s, the extension of forms of protection of the monument was progressing. The total area of the reserve was expanded to over 300 ha. Properties in Krzemionki village were bought, and the majority of the place passed into state ownership. This is the only case in the history of Poland when for the good of an archaeological monument, a whole village has been displaced. The post-war years brought also multiple changes in the administration of the complex. Until



Fig. 1. View of the excavation of pillar-chamber mines seen from the tourist route.
Photo: K. Cybulska.

1952 (and between the years 1968–1978), the monument was governed by the State Archaeological Museum in Warsaw, between 1953 and 1967 by the Provincial Monument Conservator, whereas since 1979 the museum and mines have been a branch of Historical and Archaeological Museum in Ostrowiec Świętokrzyski.

After a short episode of research work in the area of mine number 5 (1969–1970), the next substantial work was carried out from 1979 onwards by a separate archaeological mission of the State Archaeological Museum. The research aims here were to provide information on the widest part of the exploitation field along the east–west line, and then making the explored mines accessible to the public in the form of an underground tourist route. This way, much new information was provided about the geology of the striped flint deposit as well as various types of mines related to its exploitation. Between 1983 and 1985, an underground gallery in the area of mines no. 1, 2 and 3 was prepared by deepening the original excavation that had been under study since the interwar period. Finally, in 1990, the next route of similar length was opened to visitors. It was marked out around the mine number 7. An innovation introduced in the second stretch was sinking a gallery in solid rock, around the chamber

of the mine. It led only to minimal disturbance in the original monumental substance in the course of providing some insights into its interior (Fig. 1).

The method of integrating the rock layers that are typical for Krzemionki's rock mass that was developed in the meantime is also worthy of note. Low-pressure injections with a limestone-based binding preparation, formulated by the engineer Adam Krawczyk, became a major means of protecting the roofs of historic mining tunnels – especially where newer interferences took place. Employing this method, together with classic mining methods of support, comprises effective prevention of rock falls in the area of the prehistoric pillar-chamber mines and the chambers of the Great Limekiln that are preserved as the remnants of mining activity from the beginning of the 20th century.

The next, intensive stage of scientific research and investment works, fell in the opening years of the 21st century. At that time, the Historical and Archaeological Museum in Ostrowiec Świętokrzyski started the process of joining the two then-existing underground tourist routes into one unit. In the years 2001–2002, a ventilation-evacuation shaft and an exhibition tunnel over 150 metres long were bored. Within the next two years, archaeological research examined about 200 m² of the underground spaces in the area of the chamber and pillar-chamber mines. The work enabled the examination of one of the world's biggest flint mines – the chamber mine No. 795. The new, underground tourist route opened to the public in 2004 is 465 m long. Its integral part are also some elements displayed overground, having been successively made available to the public in the period 2001 to 2009. These include: an exhibition over Shaft no. 7 along with the reconstruction of flint workshops, exhibition of the security protections of shafts and miners' paths, a wooden observation catwalk over the exploitation field as well as the excavation of an opencast niche-corridor mine (No. 6). The tourist route additionally embraced some reconstructions made outside the exploitation field. They consist of a display depicting the buildings of part of a prehistoric miners' settlement, now including two reconstructed buildings of the Funnel Beaker Culture, two others of single dwellings of the Globular Amphora and Mierzanowice Cultures and a reconstruction of a megalithic tomb of the Funnel Beaker Culture.

Over the course of recent years (since 2011), the Historical and Archaeological Museum has completed two massive infrastructure projects, which included the construction of a new museum building in Krzemionki, preparing a permanent archaeological exhibition, renovation of the underground route with entrance and exit pavilions and finally making the route available to the disabled (Fig. 2). Both the projects were carried out with the financial support of the European Union with contributions ensured by the local authorities of Ostrowiec County.



Fig. 2. Part of a permanent archaeological exhibition “The Lords of Flint. Everyday life of the prehistoric miners of the Kamienna river valley”. Photo: K. Cybulska.



Fig. 3. Geophysical research in the area of the southern zone of the “Krzemionki” exploitation field in 2021. Photo: A. Jedynak.



Fig. 4. A coin „The centenary of the discovery of Krzemionki prehistoric striped flint mines complex”, issued by the National Bank of Poland, nominal value 50 zł, silver, diameter 4.5 cm, design by U. Walerzak. Photo: NBP.

Between the years 2015–2018, together with the specialists from the National Heritage Institute in Warsaw and independent experts, the Krzemionki Museum prepared an application for the Krzemionki Prehistoric Striped Flint Mining Region to be entered on the UNESCO World Heritage list. In July 2019, the status of World Heritage site was bestowed to the “Krzemionki”, “Borownia” and “Korycizna” mines as well as to the Neolithic settlement “Gawroniec”. Between 2019 and 2022, in cooperation with the National Heritage Institute and the Giant Mountains Foundation, the Museum prepared a project of a cultural park which is to embrace the whole prehistoric region of flint exploitation upon the Kamienna river with legal protection. This was an initiative of the local governments that declared they would introduce such a form of protection for the components of the above mentioned World Heritage sites and their buffer zones as early as in 2019. In terms of ensuring the proper, ongoing protection for the components proposed as a UNESCO World Heritage Site, the Museum constantly cooperates with Świętokrzyskie Provincial Monument Conservator in Kielce. Further archaeological research of prehistoric mining with related settlement is also in progress (Fig. 3).

The year 2022 brought the 100th anniversary of the discovery of the Krzemionki mines. Due to the uniqueness of this place – as one of the best preserved prehistoric mining sites in the world and the only Polish archaeological monument listed as



Fig. 5. A postcard issued on the occasion of the centenary of the discovery of Krzemionki. Project by J. Fleszar-Haspert.

a World Heritage Site – the celebration of the jubilee became a festival of the Polish archaeological community and of all committed to this site.

The inauguration of the celebration took place on July 16th in the presence of MPs, local officials and some representatives of the Ministry of Culture and National Heritage. A particularly numerous group of those that came for the festivities were the representatives of scientific, museum and monument-protection related institutions. An important agenda item was the promotion of a silver 50-złoty coin which was issued on the occasion by The National Bank of Poland (*NBP*; Fig. 4). In addition to that, the Polish Post Office (*Poczta Polska*) presented a jubilee postcard dedicated to the anniversary of the discovery (Fig. 5).

On the same day, a three-day outdoor event titled “The Krzemionki Meetings with Stone Age” began. It presented the everyday life of Krzemionki miners and popularized archaeology along with the archaeological heritage. With regard to the jubilee, the event in 2022 had a very rich programme and a record number of participants. In the area



Fig. 6. The staging of neolithic funeral rites, presented during “The Krzemionki Meetings with Stone Age”. Photo: B. Janiczek.

of the reconstruction of the prehistoric settlement, there were some stalls devoted to experimental archaeology, giving demonstrations of prehistoric craft. There was also the staging of a depiction of the funeral rite and other elements of spiritual culture of the New Stone Age in the area of Krzemionki (Fig. 6). Among the presented Neolithic activities there could be found flint craft, pottery, salt making, kindling, copper smelting, amber processing, tools and weapons production as well as food making and herbalism. Presentations in the settlement were conducted both by individual performers and representatives of various institutions or associations, including: The Museum of Cracow Salt Mines in Wieliczka (*Muzeum Żup Krakowskich w Wieliczce*), The Rydno Ancient Settlement Association (*Stowarzyszenie Praosada Rydno*), The “KraK” Brotherhood of Wislata Warriors (*Bractwo Wojów Wiślańskich “KraK”*), Archeo MJP, Mr. Wilson Bushcraft.

An important element of the event, revealing the secrets of the office work of an archaeologist, but also depicting other fields of study defined as auxiliary ones, was the “Archaeological Laboratory”. Representatives of a few scientific institutions, among them: the Institute of Archaeology and Ethnology, Polish Academy of Sciences – Cracow branch (*Instytut Archeologii i Etnologii PAN – Oddział w Krakowie*),



Fig. 7. “Archaeological Laboratory” – a part of “The Krzemionki Meetings with the Stone Age”, dedicated to the methods of archaeological research and auxiliary sciences. Photo: B. Janiczek.

Adam Mickiewicz University in Poznań, University of Warsaw, Wrocław University of Environmental and Life Sciences, the Marie Curie-Skłodowska University in Lublin and Montefortino Prospection and Digitalization (*Montefortino Prospekcja i Digitalizacja*), presented non-invasive methods of exploring archaeological monuments as well as some secrets of the work of archaeozoological, geoarchaeological or paleobotanic researchers (Fig. 7).

A two-day session devoted to various monuments, interesting discoveries and research methods indicated the idea of popularization the archaeological and mining heritage as well as the idea of presenting the results of scientific research to the public. Lecturers from different regions and centres presented research on the presence of two important crop plants: poppy and flax in the Globular Amphora Culture, the discovery of the exact sites of some ancient cities known only from historical sources, zooarchaeological research or the history of discoveries of the most interesting archaeological sites on the Polish eastern Baltic seaside. A complementation of the presentation was an outdoor exhibition titled “From the Stone Age settlement to the Cultural Park – the Settlement of Seal Hunters in Rzucewo, Puck Commune”, prepared by



Fig. 8. Katarzyna Kerner-Gubała during a popular-scientific lecture is presenting the results of research undertaken in the prehistoric mines in Orońsko. Photo: B. Janiczek.

the Centre of Culture, Sport and Tourism in Puck Commune (*Ośrodek Kultury, Sportu i Turystyki w Gminie Puck*). On the second day, there were presentations of: research methods in aerial archaeology, lead, silver and zinc mines in Tarnowskie Góry, plus the system of management of underground waters – UNESCO World Heritage Site, the natural virtues of the exploitation field’s surface in Krzemionki, chocolate flint mines in Orońsko (Fig. 8) and the press image of Krzemionki in the interwar period.

On July, the 19th – the anniversary of the day of discovery– celebrations in front of Jan Samsonowicz’s monument took place. Delegations of Ostrowiec County Office and other local government institutions along with the delegation of our Museum laid flowers in honour of Krzemionki’s discoverer. Afterwards, a historic show produced by the “Huzar” company was presented and it depicted Jan Samsonowicz’s arrival to Krzemionki as well as the realities of geological and archaeological research in the opening years after Poland regained its independence (Fig. 9). The next weekend of celebrations was devoted to megalithic cultures and this was due to an archaeological festival: “A Time Machine. The Builders of Megaliths” that took place between 23th and 24th of July and was organized in cooperation



Fig. 9. The reconstruction of an outdoor archaeological-geological workshop from the 1920s, presented during a historical performance “Jan Samsonowicz’s arrival to Krzemionki”. Photo: B. Janiczek.

with the Association of Artists and Cultural Organizers of Kuyavia and Dobrzyń Land from Izbica Kujawska (*Stowarzyszenie Środowisk, Twórców i Animatorów Kultury Kujaw i Ziemi Dobrzyńskiej z Izbicy Kujawskiej*). The most important aspects of the everyday life of people of the Globular Amphora Culture were presented in the area of the Neolithic settlement reconstruction. This population were the builders of the largest Polish megalithic tombs and the initiators of striped flint mining in Krzemionki. Simultaneously, two vernissages of exhibitions took place inside the Museum. One of them, prepared by the Institute of Archaeology and Ethnology of the Polish Academy of Sciences in Warsaw was devoted to Prof. Zygmunt Krzak – the researcher of megaliths, prehistoric religions, but also flint mines and settlements in Krzemionki area. The other one, titled “Stones. The Megaliths of Europe” is a display of the Italian photographer Franko Storti’s photos depicting several dozen megalithic sites from several European countries. The exhibition came into being owing to the commitment of the representatives of the Association of Artists and Cultural Organizers of Kuyavia and Dobrzyń Land. An popular lecture devoted to the megalithic idea and to the research of Funnel Beaker Culture tombs in



Fig. 10. The dismantling of a slag-pit furnace in order to obtain iron in the course of an experiment carried out during the “Ostrowiec Festival of Prehistoric and Ancient Culture”. Photo: K. Dziewięcki.

Słonowice, given by Dr Krzysztof Tunia, served as a symbolic summary of the issues mentioned on the 23th of July.

Other interesting events in the series of celebrations were also some trips, botanic workshops and an archaeological walk across the reserve grounds. As there are no such trips in a standard Museum’s offer, it was an unusual opportunity to get familiar with the rich natural and cultural heritage of Krzemionki under the guidance of scientific workers of the University of Łódź and the Historical and Archaeological Museum in Ostrowiec Świętokrzyski. The range of attractions available to the visitors was enriched by some promotion-education stalls, prepared by the Institute of Archaeology and Ethnology of the Polish Academy of Sciences in Warsaw, the National Museum of Przemyśl Land in Przemyśl, the Archaeological Museum in Cracow, the Kostrzyca Forest Gene Bank, the Association of Artists and Cultural Organizers of Kuyavia and Dobrzyń Land as well as the Publishing House and *Profil-Archeo* Archaeological Lab from Pękwowice. On the occasion of the Krzemionki Holiday two publications came into existence. “The Krzemionki Herald” (“Kuryer Krzemionkowski”) – a guide to the jubilee stylized as press of the interwar period (in July and August there were two issues prepared and the next is intended for September), and “Stones. The Megaliths of Europe” including information about the author of the photos, the phenomenon of megaliths and a selection of pictures presented at the above-mentioned exhibition.

The last week of July, 2022 did not see an end to the celebrations of the 100th anniversary of the discovery of prehistoric striped flint mines in Krzemionki. On August, 13th–15th, the next event took place and it was titled “Ostrowiec Festival of Prehistoric and Ancient Culture”. It familiarized the public with the archaeological heritage of the Kamienna River Valley – from the Neolithic Period till the Period of Roman Influences within the wider cultural background – this also referring to lands situated outside Poland’s present borders. Around 180 workshop and presentation leaders came from various Polish centres and institutions, but also from the Czech Republic (the *Familia Gladiatoria Taurus* groups and *Marobudum Project*). The Festival referred to the annual event with the same title from last year. At that time, the visitors were presented some information about the remains left by people of various cultures from prehistory and ancient times, both in Krzemionki and in Ostrowiec Świętokrzyski, but also in the Kamienna Valley. These include coin deposits, loose finds, settlement remnants, burial grounds and manufacturing sites, among others connected with iron production in the period of Roman influences (Fig. 10).

The celebrations of the jubilee of the discovery of the Krzemionki mines are held under the patronages of: the President of the Republic of Poland – in the centenary of the regaining of Polish independence, the Minister of Culture and National Heritage, the Marshal of the Świętokrzyskie Province and Governor of Ostrowiec County. The event is subsidized from the budget of the Ministry of Culture and National Heritage. An archaeological conference titled “Krzemionki: 100 years since its discovery”, scheduled for October, is going to be the closing event of the celebrations. It will summarize a century of research, work on making the monument available to the public and of actions aiming at preserving it for future generations.



KRZEMIONKI

Archaeological Museum and Reserve Krzemionki

interactive exhibition / underground tourist route /
reconstruction of a prehistoric settlement



**Krzemionki are a relic
of prehistoric mining.
A visit there is an unique
opportunity to see
the original Neolithic
and Early Bronze Age
striped flint mines.
In 2019 Krzemionki
Prehistoric Striped Flint
Mining Region was
inscribed on UNESCO
World Heritage List.**

**It is the only such place
in the world that is open
to a wider audience.**



United Nations
Educational, Scientific and
Cultural Organization



Krzemionki Prehistoric
Striped Flint Mining Region
inscribed on the World Heritage List in 2019

Organizacja Narodów
Zjednoczonych
dla Wychowania,
Nauki i Kultury

Krzemionkowski region prehistorycznego
górnictwa krzemienia pasiastego
wpisany na Listę Światowego Dziedzictwa w roku 2019