ProGEO NEWS

ProGEO 2017 n.3

the european association for the conservation of the geological heritage

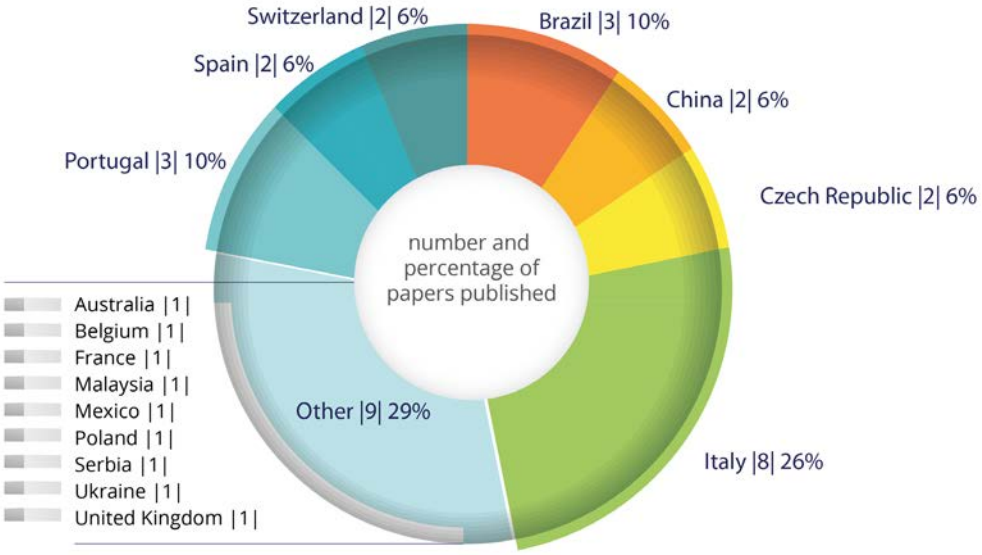
Papers published in Geoheritage

a general picture of 2016

by:
Lidia Selmi [lidia.selmi@gmail.com]

The journal Geoheritage was founded in 2009 and until August 2017, 255 articles have been published. The volume no. 8 (2016) integrates 31 papers written by authors based on 17 different countries, mainly in Europe (figure 1). During 2016, the three most active countries were Italy (26%), Brazil (10%) and Portugal (10%).

The 31 papers were downloaded almost 10,000 times. The most popular articles with around 1000 downloads each are the ones written by J. Brilha (2016) and P. Migon (2016), covering methods for geosite inventory and assessment and geotourism, respectively.



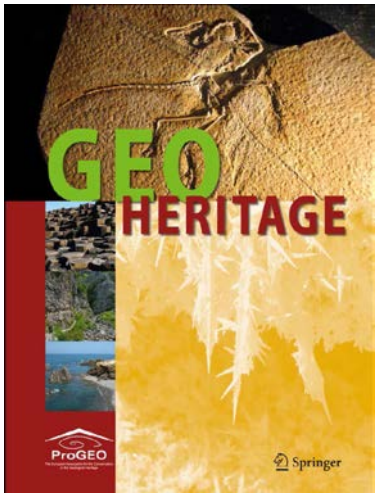


Figure 1 : Eight papers published in 2016 (out of the 31) were written by authors from Italy, the most active country in Geoheritage in 2016.

Since the beginning of the journal that special issues have been organized, either thematic or as a compilation of contributions that were presented in a certain scientific meeting. The issue No 1 of the 2016 volume is one of these special issues, this one dedicated to geomorphosites and organised by E. Reynard, P. Coratza, and F. Hobléa.

The keywords in published papers reflect the main topics covered in the journal. The most cited keywords in the 31 papers published in 2016 are Geosite/Geomorphosite,

Geomorphological Heritage, Geotourism, Geoconservation, Geopark, Palaeontological Heritage, and Geocultural.

Research on geosites continues to be developed. Geoscientists are experimenting different methods for the selection and evaluation of geosites, leading to new approaches specifically aimed at integration with other fields of research (culture, tourism, education).

Conservation practices are constantly in discussion and strongly connected with the research on geotourism and education activities aimed to raise the awareness on geoheritage. The theme of geoconservation together with geotourism appears recurrently in many papers published in 2016.

In addition to these main themes, it is important to mention other issues that are common in many papers, such as the importance of geoarchaeology and palaeontology in certain geosites. Fossiliferous areas, like archaeological sites, are suffering from strong natural and anthropic threats and are at high risk of degradation. Some articles deal with the production of high-resolution digital 3D models used for the characterisation of different fossil outcrop features. These technologies provide new possibilities for better preservation and diffusion of geological heritage locations prone to be damaged, and enables public awareness for the protection of fossil sites with high scientific and cultural value.)

Lidia Selmi (Erasmus Trainee of the Università degli studi di Modena e Reggio Emilia, Italy at the Universidade do Minho, Portugal).

Urban geoheritage

The Old City of Cracow as a case

by:
Jan Urban [urban@iop.krakow.pl]

Cracow is important as a historic city and has a long range of historical monuments such as several tens of churches built in Romanesque, Gothic and Baroque styles, Medieval arrangement of the Old City, the largest Central Square in Europe with the Renaissance "supermarket", one of the oldest universities in Europe founded in 1364 (Jagiellonian University), fragments of the Medieval ramparts among many others. Cracow was a capital of Kingdom of Poland from the 11th through 16th century and the Renaissance King Castle built on the Wawel Hill towers over the Old City.

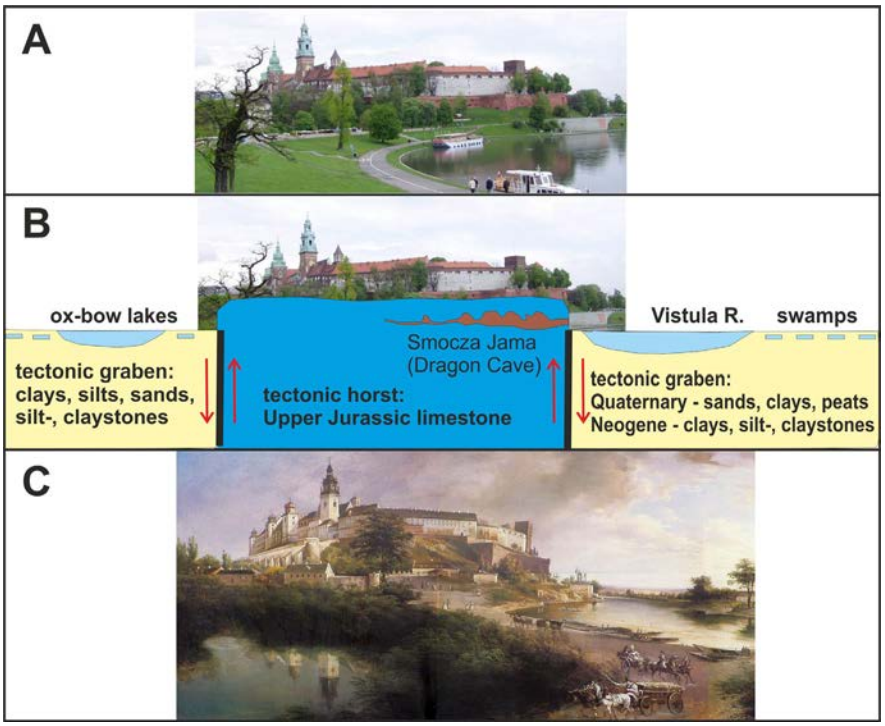


Figure 1 : Wawel Hill with the King Castle, above the Vistula River: A) current state; B) simplified geological structure (cross-section); C) at the beginning of the 19th century

In geological terms, Cracow is situated in one of the most interesting places in Poland: in the boundary zone between the strongly folded and faulted Alpine orogen of the Carpathians and the Palaeozoic platform covered with slightly undulated Mesozoic sedimentary series.

This zone, called the Carpathian Foredeep, is a tectonic basin filled with Neogene marine sediments: clays, claystones and siltstones, which are overlain by Quaternary alluvial sands and muds of the Vistula River valley. In the Cracow area and vicinity, this basin is at its narrowest and most irregular, diversified and dissected into many grabens with numerous secondary horsts built of Upper Cretaceous marls and – most of all – strong Upper Jurassic limestones.

These tectonic horsts form hills towering over the flat swampy area of the Neogene-Quaternary depression. The Wawel Hill crowned with the King Castle is one of the highest and the most characteristic of these horsts. The specific tectonics and variegated lithology of the Cracow area, as well as geomorphological consequences of this structure were the crucial reasons of human settlement in the pre-historic and Early Medieval period. In this sense, Wawel Hill with the Castle is an extremely clear example of a geological foundation of human settlement.
This can be demonstrated by the fact that in the past (before the town modernisation in 19th century) the Wawel Hill was surrounded by meandering Vistula River, its tributaries, as well as ox-bow lakes and swamps.

As a consequence, this was extremely convenient place for settlement since the Stone Age, because the settlements here were naturally sheltered (from enemies and plunderers) by the river, lakes and swamps. Besides, the population of the Wawel Hill would never suffer hunger: during rainy years farmers harvested good crops on the top of the hill, while during dry periods the crops were pretty good in the fields on the river bank. Moreover, the river was rich in fish, independently of weather and human activity.

The Vistula river served as a convenient way of communication, trade and transport. Therefore, the Wawel Hill favoured a powerful settlement developed into a regional and national administration centre. Since Cracow town is situated in such a specific geological region, there are several geosites of high scientific and educational importance within this urban agglomeration and its proximity. Apart from the Smocza Jama (Dragon) Cave, a show cave situated within the Wawel Hill, the most famous are the Wieliczka Salt Mine and Bochnia Salt Mine situated close to this town with their historical mining and geological heritage. Within the frames of Cracow, there are also several landscape and geological natural reserves as well as geological outcrops (abandoned quarries) and crags that are not legally protected.

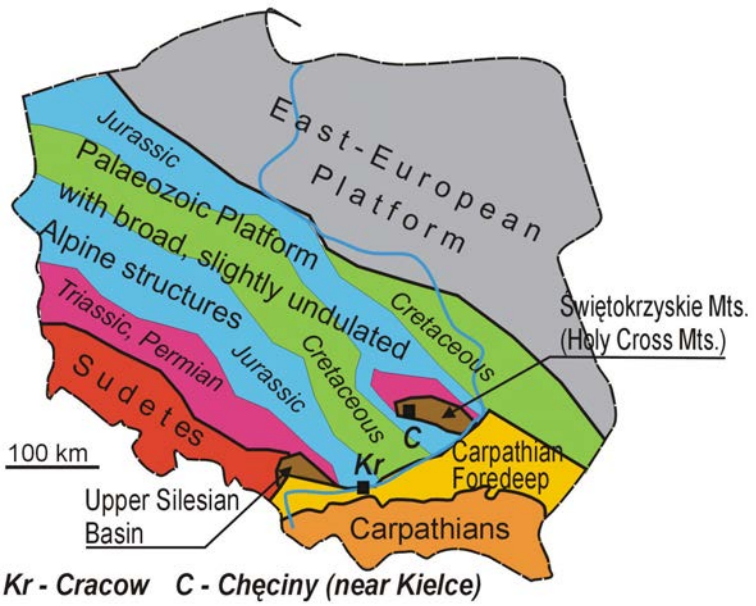


Figure 2 : Simplified geological map of Poland

The Bonarka Nature Reserve comprises abandoned quarry in which Upper Jurassic-Upper Cretaceous unconformity is visible. A flat surface of Upper Jurassic limestone is densely drilled by numerous palaeo-burrows of Late Cretaceous sponges, whereas in the Upper Cretaceous marls fossils of Echinoidea are frequent. Due to the subsequent, Neogene tectonics, the truncated surface of Upper Jurassic limestone slightly dips and dissects into several platforms by hinge faults.

Close to the Bonarka Nature Reserve is located the abandoned Liban Quarry. This quarry was a Nazi (Second World War) labour camp and is also known as a location of the "Schindler's List" (by Steven Spielberg).

Above the face of the Liban Quarry is located the pre-historic Krakus Mound, interpreted as ancient kurgan, with a nice view on the town. Cracow and its vicinity is an area which has several geosites of regional and national/international scientific relevance.

Figure 3 : Smocza Jama (Dragon Cave) within Jurassic limestone of the Wawel Hill

Figure 4 : Limestone face of the Liban Quarry and the Krakus Mound above it; Krakus Mound is a prehistoric construction considered to be a grave of Krakus king, a legendary founder of the town

The crucial question, however, is whether the fact of principal role of geological circumstances in the foundation of ancient Polish capital fits into criteria used to define Geoheritage. In other words: does, the Cracow Old City meet the definition of geoheritage as a historical and cultural site conditioned by the geological reasons?. This raises an important discussion on definition of geoheritage and especially geoheritage in a multidisciplinary setting. Can we, geologists and geoconservationists, leave the geological aspects of human history to humanists: let them lose the richness of geological factors driving human history in their voluminous knowledge, or should we promote and emphasise such aspects as geological heritage?

Some of these questions will be discuss during the pre-conference field-trip of the on the IX International ProGEO Symposium, June 2018 Cracow (Kraków).

The Miocene gypsum deposits in Poland

a unique record of evaporitic sedimentation in the Carpathian Foredeep Basin

by:
Maciej Bąbel [m.babel@uw.edu.pl]

The Badenian (or Wielician) salinity crisis, taking place in the Central Paratethys ca 13.6 Ma BP, in the Serravallian (Middle Miocene), was one of the most important events in the geological history of the Carpathian and circum-Carpathian regions (the Badenian and the Wielician are the regional Paratethyan stratigraphic stages, the Serravallian is the global stratigraphic stage). At that time several formerly marine basins and sub-basins situated in these regions were transformed into evaporite basins due to restriction of their connections with the Mediterranean Sea and the global ocean.

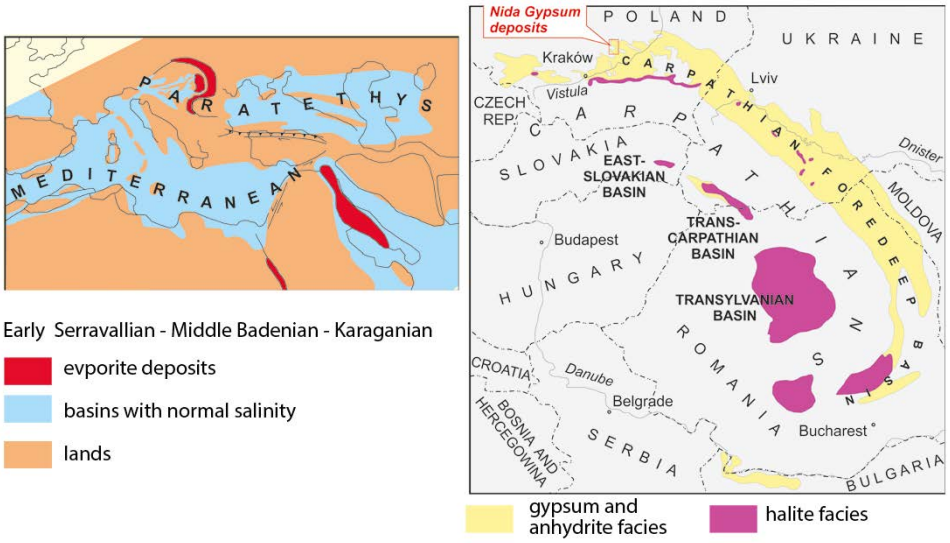


Figure 1 : Palaeogeography during the Badenian salinity crisis (left), and present-day distribution of the Badenian evaporites and location of the Nida Gypsum deposits (right)

The widespread evaporite deposits (gypsum, anhydrite and halite) were formed at that time in the largest of these basins – the Carpathian Foredeep Basin. Now these evaporites are mostly hidden in the subsurface.

In the Polish part of the Carpathian Foredeep Basin their outcrops are rare and the largest area of exposures of the gypsum deposits occurs in the vicinity of towns Busko, Wiślica and Pińczów, in the northern periphery of the basin. The Badenian gypsum deposits of this area are called the Nida Gypsum deposits (named after the Nida river, a left tributary of the Vistula river). In the regional stratigraphic scales they are better known as the Krzyżanowice Formation (in Poland) and the Tyras (or Tiras) Suite (in Ukraine, where very extensive exposures of this gypsum formation occur).

The Badenian gypsum deposits are comparable to the famous, widespread, slightly younger Messinian gypsum deposits formed during the Messinian salinity crisis ca 5.97-5.33 Ma BP, in Late Miocene, in the Mediterranean region. Like many Messinian gypsum deposits the Nida Gypsum evaporites were not dehydrated and transformed into anhydrite during diagenesis and burial. Because of that their primary sedimentary structures were not obliterated. In particular, large primary crystals forming the selenite deposits (i.e. deposits composed of large, over 2 m in size, bottom-grown gypsum crystals) are excellently preserved and available to direct study. Being investigated since XVIII century the Nida Gypsum deposits are now the best recognised part of the Badenian evaporites in Poland.

Figure 2 : Outcrop of giant gypsum intergrowths at Gacki; the longest crystal is outlined

The Badenian evaporites exposed on the Nida river offer an excellent insight into the uncommon sedimentary environment of the giant evaporite basin which once spread along the entire Carpathian Foredeep from the Czech Republic to Romania. Evolution of the sedimentary environments of the Nida Gypsum deposits is reconstructed based mainly on facies analysis and event stratigraphy methodology. A few tens of meters thick Nida Gypsum deposits enclose several characteristic facies occupying particular beds occurring in a constant vertical succession. The set of facies includes (from the base to the top of the section):

1) giant gypsum intergrowths facies – composed of extraordinary large (up to a few meters) crystals forming palisade structures;

2) selenite debris facies – composed of debris of selenite crystals;

3) grass-like gypsum facies – built of rows of selenite crystals intercalated with fine-grained gypsum, and including also gypsum microbialite or stromatolite domes;

4) sabre gypsum facies composed of long (up to 0.5 m and more) curved selenite crystals arranged in thick massive beds, and also comprising giant domes (some several meters in size);

5) variable clastic gypsum and clay-gypsum facies, such as selenite debris flow deposits, breccias, laminated gypsum deposits, and other.

Each facies represents some specific environment of the shallow, semi-emerged evaporite basin, commonly only a few meters deep. The giant gypsum intergrowths, sabre gypsum, and rows of selenite crystals in the grass-like facies were crystallised in relatively deeper saline pans filled with Ca-sulphate saturated brines.

The fine-grained gypsum intercalating the selenite deposits was deposited mostly on semi-emergent evaporite shoals. The selenite debris was accumulated during emersion and is connected with weathering of the exposed selenite deposits. The clastic gypsum facies was mostly deposited in brackish pans.

Figure 3 : Sabre gypsum crystals, Siesławice

Two of the listed facies exhibit spectacular worth remarking features. The giant intergrowths, which are a real crystallographic curiosity, show not only the uncommon structure and morphology, so far known only from the Carpathian Foredeep Basin, but also they contain one of the largest natural gypsum crystals occurring on Earth. The record specimens attain about 3.5 m in length and are still preserved and visible in some outcrops of the Nida Gypsum deposits.

The other uncommon structure is present in the sabre facies where the rows of curved selenite crystals commonly show apices turned in similar horizontal direction. It is interpreted that the crystals grew on the bottom of evaporite basin preferentially towards the inflowing current of Ca-sulphate saturated and oversaturated brine (i.e. upstream). Conformable orientation of the curved crystals permitted to perform the palaeocurrent analysis in the Badenian evaporite basin, and it is perhaps the only one gypsum evaporite basin where such an analysis was successfully done.

Figure 4 : Gypsum karst cave (natural bridge), Skorocice

Both the giant intergrowths and the sabre gypsum deposits create thick beds very resistant to erosion. They commonly build the top parts of hills or substrate in the Nida Gypsum area. The widespread occurrence of gypsum rocks both on the surface and in the subsurface decides about the natural and geographic uniqueness and specific beauty of this region of Poland. It is characterised by active karst relief related to a high solubility of gypsum in water (this rock is 10-30 times more soluble than limestone). There are many karst sinkholes, springs, valleys, and caves in this region. It is also characterised by occurrence of gypsum soils (gypsum rendzinas), the presence of Ca-sulphate enriched surface and ground waters, as well as the characteristic plant cover with many xerothermic and in places halophytic species inhabiting the gypsum substrate.

The unique flora and landscape of the Nida Gypsum exposures are under protection of Polish law in several nature reserves established in this area.

Participation of ProGEO

in the First Review by experts of the IPBES Global Assessment of Biodiversity and Ecosystem Services

by:
José Brilha [jbrilha@dct.uminho.pt]

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body and "provides policymakers with objective scientific assessments about the state of knowledge regarding the planet's biodiversity, ecosystems and the benefits they provide to people, as well as the tools and methods to protect and sustainably use these vital natural assets."

IPBES has organized a Global Assessment aiming to critically "assess the state of knowledge on past, present and possible future trends in multi-scale interactions between people and nature, taking into consideration different disciplines, worldviews and knowledge systems." "The global assessment will provide decision-makers with the state of knowledge regarding the planet's biodiversity, ecosystems and the benefits they provide to people, as well as the options to protect and use these natural assets more sustainably. Furthermore, the global assessment will provide vital data for the Aichi Biodiversity Targets and the Sustainable Development Goals (SDGs). "

Under the scope of the First Review by experts of the IPBES Global Assessment of Biodiversity and Ecosystem Services, ProGEO has promoted a joint contribution subscribed by several international and national organisations. The aim was to express great concern over the total absence of one fundamental component – geodiversity – that is essential to fully address the proposed Global Assessment goals. The contribution stressed the importance of geosystem services for the well-being of humans and also that it is not possible to achieve a sustainable future without considering the non-living components of nature. It is quite surprising that an international initiative with so important goals for the next generations clearly state that is impossible to face present and future challenges without nature but at the same time deliberated omit the abiotic component of nature that offers critical benefits to Man and to ecosystems.

The contribution was prepared by Murray Gray, José Brilha, Lars Erikstad, John Gordon and Kevin Page and was sent on behalf of ProGEO, the Geoheritage Specialist Group of the World Commission of Protected Areas (IUCN), and of the International Commission on Geoheritage (International Union of Geological Sciences). Other institutions have also used this contribution and have associated to this initiative, namely the International Association of Geomorphologists, the European Federation of Geologists, the Geological Society of Spain, the Geological Society of France, the Italian Association of Physical Geography and Geomorphology, and the Portuguese Geologists Association.

Other future joint actions involving these and other relevant organisations are absolutely necessary to be done in order to, little by little, change the paradigm from a monolithic bio-centred perspective to a much more realist and effective nature-centred perspective.

Polish post-mining facility

UNESCO World Heritage List

by:
Ryszard Chybiorz [ryszard.chybiorz@us.edu.pl]
Bogumiła A. Piwowar [bogumila.piwowar@us.edu.pl]

During an ordinary session of the UNESCO World Heritage Committee (July 2017 in Poland) a new site was added to the World Heritage List. One of new inscribed properties is the site Tarnowskie Góry Lead-Silver-Zinc Mine and its Underground Water Management System, which is located in southern part of Poland, in Upper Silesia - the largest urbanized area in Central Europe and one of the wealthiest provinces in the country. It is the 15th Polish site listed on the World Heritage List but the first from Silesia Province. In the past, the Silesian economy was mainly dependent on mining activity (coal, lead, silver and zinc). Tarnowskie Góry town is known for historical lead ore mining.

During the 12th century, metallic ore were exploited from middle Triassic limestone and dolomite (Muschelkalk). The exploitation in the Tarnowskie Góry region beginning later in 1526 (when new deposits of galena were found) and stopped in 1912 due to resource shortage.

Figure 1 : Angel Shaft - center of Historic Silver Mine and museum

The secular mining activities resulted on several underground shafts (20000), adits, 150 kilometers of underground galleries and sidewalks (varying from 0.6 to 4.0 m heights). In addition, the underground sidewalks in Tarnowskie Góry are covered by the NATURA 2000 and are the second largest wintering area for bats in Poland.

The first works related to the creation of an underground museum in Tarnowskie Góry were taken in the 1930s and, in 1953 was established the association to rebuild and restore the mine. The tourist route in Historic Silver Mine in as opened in 1976 (http://www.kopalniasrebra.pl/EN/). Since 2006, the mine together with the Black Trout Adit (the longest - 600 meters underground tourist route in Poland travelled by boats and located in a park in the west of the town Tarnowskie Góry) belongs to the Route of Silesian Technical Monuments (http://www.zabytkitechniki.pl/en-US), and since 2014 are Anchor Points of the European Route of Industrial Heritage (which combines European engineering monuments - http://www.erih.net/).

Figure 2 : Tarnowitzite, also known as Plumboan Aragonite, named in 1841 by August Breithaupt for the type locality

A total of 28 post-mining facilities (associated with the extraction of silver ores, lead and zinc ores) included in the UNESCO World Heritage List, are located in Tarnowskie Góry, in Bytom and Zbrosławice. The property comprises the entire underground system of mining work: all principal drainage galleries (adits) that contribute to the underground water management system, chambers, transport galleries, and shafts, together with the water station, under/above ground structures.

Figure 3 : Machine Hall, Adolph shaft, on the Friedrich Deep Adit

To be included in the World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria. The site of the Tarnowskie Góry Lead-Silver-Zinc Mine and its Underground Water Management System fulfilled three criteria: 1) to represent a masterpiece of human creative genius; 2) to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design; 3) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history. Full documentation of the facility, including maps and photos, is available online at: http://whc.unesco.org/en/list/1539.

The historic site of the zinc-lead-ore mining can be also notices in the nearby geosites like Bobrowniki, Blachówka, Segiet nature reserve, landscape-nature complexes Doły Piekarskie and Suchogórski rock labyrinth. All protected natural sites are located within the borders of the towns of Tarnowskie Góry and Bytom (http://geoserwis.gdos.gov.pl/mapy).

Among other Polish geological objects on the World Heritage List, there are two others: Muskauer Park and Wieliczka and Bochnia Royal Salt Mines. Muskauer Park (http://whc.unesco.org/en/list/1127) is located in the area on both sides of the German-Polish border and it is a part of the UNESCO Global Geoparks - Global Geopark Muskau Arch (http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/unesco-global-geoparks/). The Muskau Arch is a unique glacitectonical structure in Central Europe (due to the size, shape and condition) which, with other hills, is a clear reflection of the face of the Pleistocene continental glacier.

Figure 4 : Underground tourist route in the Black Trout section of Friedrich Deep Adit

Wieliczka and Bochnia Royal Salt Mines (http://whc.unesco.org/en/list/32) illustrate the historic stages of the development of mining techniques from the 13th to the 20th centuries. Bochnia Royal Salt Mine is the oldest active industrial plant in Europe, still active since 1248. A part of the mine workings was made open to the public as a tourist route, while the biggest of the preserved chambers (Ważyn Chamber) with of 248m in deepness, 266m in length and with a specific microclimate was adjusted to fulfil recreation and sanatorium purposes. One of the attractions of the mine is an underground wooden slide of 150 m (length) and 32 m (height), which connects two levels of the mine.

Some of places will be visit during one of the field-trip of the on the IX International ProGEO Symposium, June 2018 Cracow.

The IXth International ProGEO Symposium

by:
ProGEO [progeo@progeo.ngo]

Geoheritage and Geoconservation: Modern Approaches and Applications Towards the 2030 Agenda

Chęciny, Poland
25-28th June 2018

IMPORTANT DATES

http://www.conference-eceg.pl

2017

October	2nd circular
	Online registration opens
	Online abstract submission opens

2018

15th February	The deadline for early registration and conference cost payment with reduced rates
15th March	The deadline for abstract submission
30th April	The deadline of final acceptance of abstracts. The deadline for regular payment of conference cost
15th May	The deadline for cancellation with a full refund of conference cost
15th June	The deadline for cancellation with 80% refund of the conference cost
~15th June	3rd circular with program timetable

MEETING CALENDAR

PRE-SYMPOSIUM FIELD TRIP (24-25th JUNE)

Saturday - 23rd June	Check in the Hotel Studencki Żaczek in Kraków. Registration for the field trip. Dinner
Sunday - 24th June	Departure for the field trip. Overninght stay in the Hotel Studencki Żaczek.
Monday - 25th June	Check-out. Departure for the 2nd day of the trip. Transfer to Chęciny is provided. Arrival to the ECEG Venue.

SYMPOSIUM DAYS (25-28th JUNE)

Monday - 25th June	Icebreaker party and grill dinner in the ECEG Venue in Chęciny.
Tuesday - 26th June	Registration. Opening ceremony. Key-lecture. Oral and poster plenary sessions. Workshops.
Wednesday - 27th June	Oral and poster plenary session. Workshops. Conference Dinner and Cultural Event
Thursday -28th June	Oral and poster plenary sessions.

ProGEO General Assembly (starts approximately at 4 pm; for ProGEO members). Closing ceremony.
A free English-speaking Guided Tour in Chęciny.

POST-SYMPOSIUM FIELD TRIP (29-30th JUNE)

Friday - 29th June	Departure for the post-symposium field trip
Saturday - 30th June	Arrival to the ECEG Venue in Chęciny for the overnight stay.
Sunday - 1st of July	Check-out and Departure.

VENUE

ECEG – Europejskie Centrum Edukacji Geologicznej Uniwersytetu Warszawskiego (European Centre of Geological Education of the University of Warsaw).

REGISTRATION FEES

	Early payment UNTIL 15th February 2018	Late payment ON and AFTER 16th February 2018
ProGEO members	500 PLN	860 PLN
Non-ProGEO members	750 PLN	1120 PLN
Ph.D. students	500 PLN	860 PLN
Accompanying person	650 PLN	990 PLN

PAYMENT

Payment can be made using payment card via the PayU system of online payments at www.conference-eceg.pl, or by bank transfer.
Payment is in Polish Zloty (PLN).
Exchange rates to PLN are applied on the day of the payment.
15th of February, 2018 is the deadline for early payment of a total amount of conference fee (registration fee with reduced rate included).
30th of April, 2018 is the deadline for regular payment of a total amount of conference fee.

ORGANIZING COMMITTEE

EWA GŁOWNIAK (Chair)
AGNIESZKA KŁOPOTOWSKA
AGNIESZKA WASIŁOWSKA
BARTOSZ PIWOWARSKI
JAN URBAN
MACIEJ BĄBEL
MAŁGORZATA BIEŃKOWSKA-WASILUK
MARCIN STĘPIEŃ
MICHAŁ POROS
PAULINA LEONOWICZ
PIOTR ZIÓŁKOWSKI
STANISŁAW SKOMPSKI
WIESŁAW TRELA

HONOR COMMITTEE

TYMOTEUSZ WRÓBLEWSKI
ZOFIA ALEXANDROWICZ

HONOR COMMITTEE

AGNIESZKA GAŁUSZKA
ALEXANDRU ANDRASANU
ANNA KALINOWSKA
BARBARA RADWANEK – BĄK
DANIEL PIVKO
GUILLERMO MELÉNDEZ
GÜNTER SCHWEIGERT
JOÃO ROCHA
JOSÉ BRILHA
KEVIN PAGE
KURT GOTH
KYUNG SIK WOO
LOVÍSA ÁSBJÖRNSDÓTTIR
MAREK DOKTOR
ZBIGNIEW ZWOLIŃSKI
ZDZISŁAW MIGASZEWSKI

Deadline next issue of ProGEO NEWS

December 10th, 2017

Please send contributions to ProGEO NEWS. Members are interested in things that happen all over the world, your experiences, activities, science, geosites, geoconservation and geotourism efforts!

ProGEO NEWS are available in the ProGEO site (under publications) www.progeo.ngo

ProGEO NEWS issued 4 times a year with information about ProGEO and its activities.
Editor: Lars Erikstad • lars.erikstad@nina.no • + 47 91 66 11 22 (phone)
Please send your contributions (unformatted word file). 500 – 2000 words with photographs, maps and figures clearly marked as ProGEO NEWS.
If longer texts are needed, please contact the editor.

ProGEO: European Association for the Conservation of the Geological Heritage.
President: José Brilha • Executive Secretary: Lars Erikstad • Treasurer: Sven Lundqvist.
Membership subscription: € 50 (including GEOHERITAGE journal), 25/yr.(without GEOHERITAGE journal). Institutional subscription: €185/yr.

ProGEO is affiliated with the IUGS and is a IUCN member

ProGEO NEWS produced with support from the Norwegian directorate for Nature Management