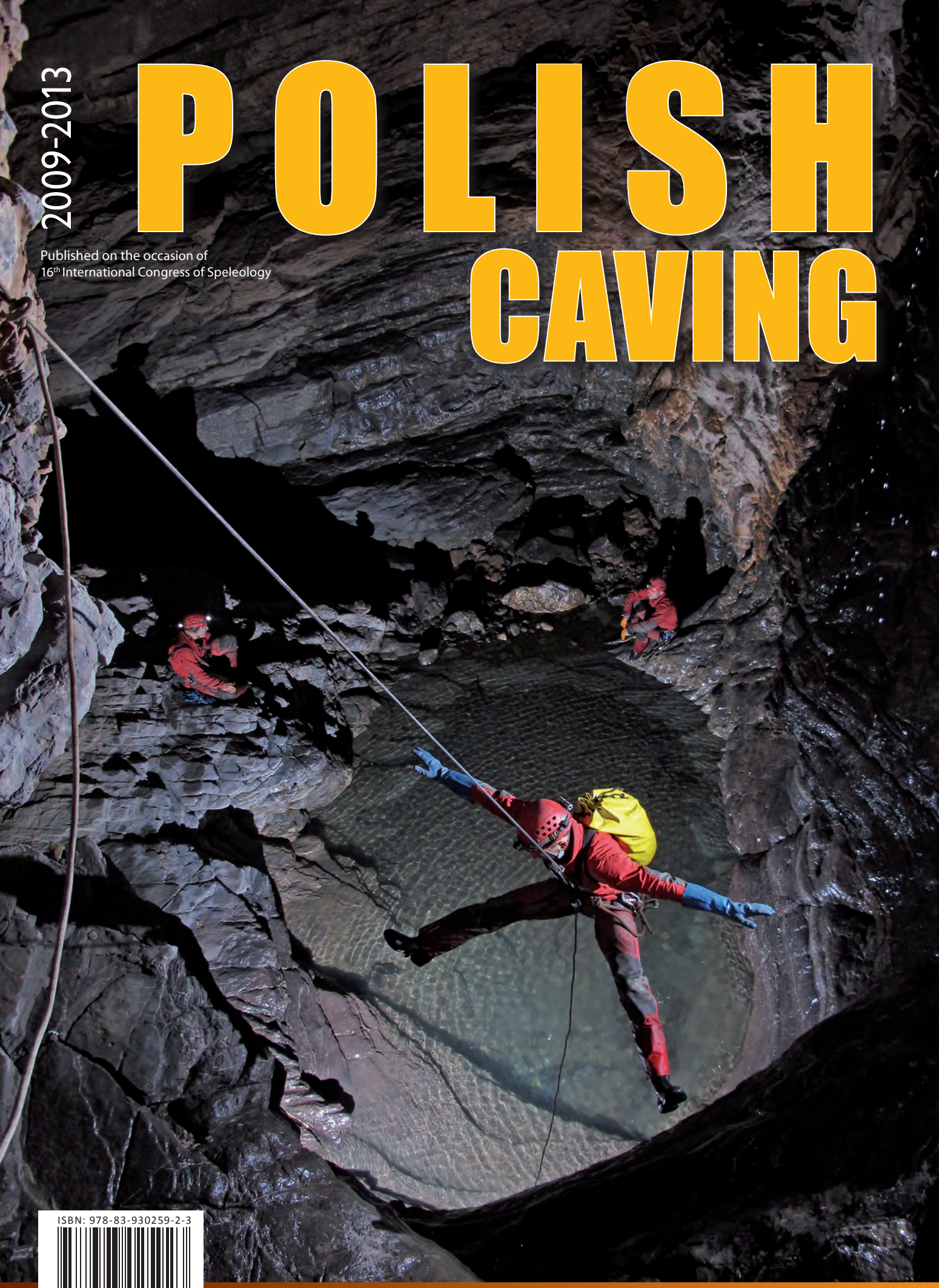
2009-2013

POLISH CAVING

Published on the occasion of
16th International Congress of Speleology



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What is new since 2009?

Feichtnerschacht, Kitzsteinhorn massif

JAKUB NOWAK

JackDaniel's Cave, Tennengebirge massif

RAJMUND KONDRATOWICZ

Arabica

SZYMON SOŚNICKI

Kolektor, Prokletije Mountains

ZBIGNIEW TABACZYŃSKI

Niedźwiedzia Cave

MAREK MARKOWSKI

BC10, Kanin massif

PAWEŁ RAMATOWSKI

Zhakou Dong, China, the stones

EWA WÓJCIK

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Contens

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Editor: Ditta Kicińska

Translation: Natalia Biegała, Mateusz Golicz, Marek Wierzbowski

Layout and design: Paulina Szelerewicz-Gładysz, Pracownia Kreatywna Bezliku

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From the editor

With great pleasure we present the special publication entitled "Polish Caving 2009-2013", published on the occasion of 16th International Congress of Speleology. The aim of the publication is to show the main achievements of Polish cavers over the last four years.

Traditionally, a lot of teams continued exploration in Austria. The most spectacular success seems to be the reaching of -1394 m in the Hochschartehöhlensystem (Hoher Göll massif). It is the deepest cave ever explored solely by Polish cavers (see article by Golicz). In the neighboring Hagengebirge massif Interessante Höhle were explored, which exceeded the length of 10 km and Höhle in Roten Steinen was explored to the depth of -855 m (see article by Wierzbowski). Some of the achievements were done in the Kitzsteinhorn massif. The Feichtner Schacht Cave reached the length of 8 km and the depth of -1145 m (see article by Nowak). For many years the main aim of expedition to Tennegebirge was the JackDaniel's Cave. After 2012 the cave has the horizontal length of almost 8.5 km (see article by Kondratowicz). Exploration was continued in Leoganger Steinberge (in Dürrkar), where the Tropik-Ćwiartka Cave system is now 6 km long and -780 m deep (see article by Ciszewski). In the Picos de Europa massif, there are results of discoveries in two cave systems: Cemba Vieja and Pozu del Torre Santa Maria which have the depth exceeding -860 m (see article by Jędrzejczak). The Poles carried out exploration in the Kanin massif, where BC-10 Cave was explored to the depth of -863 m and the length of 1,7 km (see article by Ramatowski). In Abkhazia exploration was conducted in the PL-1 cave (see article by Górski). Exploration has been carried out in Prokletije, Maganik and Durmitor mountains. In the Belič massif (Prokletije) discoveries are made in some of the caves, among them Górnicza, the deepest one, reached the depth of -516 m (see article by Kicińska & Najdek). Every year the group of divers conducts exploration in Albania, Kosovo, Montenegro, Greece and Mexico.

Outside Europe the most spectacular discovery was made in China. In the area of Shizilu more than 8,7 km of passages were surveyed, for example, Da Dong with its length of 3,6 km and depth of -165 m (see article by Ciszewski). The Polish cavers are participants of explorations conducted by either national expeditions from other countries or international groups (see summary activities).

The most spectacular discovery in Poland took place in the Niedźwiedzia Cave in the Sudetes, which due to the latest explorations became the deepest and longest cave outside the Tatra Mts. What is more, in this cave one of the largest chamber in Poland was discovered (see article by Markowski).

Besides the mentioned articles on the Polish achievements in this issue one can also find information on caves in Poland, caving organizations and summary activities.

Ditta Kicińska

Front cover:
Xiao Luo Xi – skok nad marmitem.
Photo Michał Ciszewski

Caves in Poland

Michał Gradziński & Ditta Kicińska

There are more than 4680 known caves in Poland. They are of karst and non-karst (pseudokarst) origin. The former are developed in karstic rocks, mainly limestones and dolomites, rarely in gypsum and marbles and exceptionally in rock salt. Although the karstified rocks are widely distributed, the outcrops are rather small and occupy only about 2.5% of the country area (i.e., about 8000 km^2). Most of the country is covered with loose Cainozoic deposits. The non-karstic caves are developed mainly in sandstones. The eight main regions of cave occurrence in Poland are characterized below.

Western Tatra Mountains (Tatry Zachodnie)

The Tatra Mountains are the only alpine mountains in Poland. They occupy the area of 785 km^2 (only 175 km^2 in Poland). The karstic rocks (limestones and dolomites of Triassic, Jurassic and Cretaceous age) build mainly the western part of the Tatra range. They occur over the area of 50 km^2. This area is practically the only region in Poland with large and deep caves. Because of that fact, everyday activity of Polish cavers, both exploration and training is concentrated in this area. Long life anchors were installed in the most popular caves of this region.

More than 814 caves are now known in the Tatra Mountains: 783 in the Western Tatra Mts. and 31 caves in the High Tatra Mountains. Most caves of the High Tatra Mts. occur in granitoids. The total length of the Tatra caves exceeds 131 km. The highest outcrops of karstic rocks lie at altitudes above 2000 m and the main karst springs are situated at the level of about 1000 m. Most caves are located in the following areas: slopes of the Bobrowiec, Kominiarski Wierch, Kościeliska Valley, Czerwone Wierchy massif, Giewont, Kalacka Turnia and Kopa Magury. The longest and deepest caves are situated mainly in the Czerwone Wierchy massif. The Jaskinia* Wielka Śnieżna system is the largest in the Western Tatra Mts (with vertical extent of 824 m and length more than 23 km).

For four years the most significant achievement has been the exploration of Siwy Kocioł and Harda caves, located in the Czerwone Wierchy massif. Siwy Kocioł Cave is 295 m deep and 1161 m long. In 2011 Harda Cave was discovered, which is ca. 120 m deep and 600 m long.

All the Tatra caves are situated in the Tatra National Park and caving activities are strictly limited by the Park authorities. Only six caves are open for tourists. For visiting other caves special permit is needed. 29 caves are available for caving (this constitutes 50% of the length of all the corridors). For each visit in a cave the cavers are obligated to obtain special permission from the Tatra National Park (TPN). One cave can be visited by maximum 15 people a day.

Pieniny Klippen Belt (Pieniński pas skałkowy)

In this area resistant Mesozoic limestones build up isolated klippen surrounded by non-karstic rocks. There are more than 90 caves in this area. Although all these caves are in limestones, most of them are of non-karstic (pseudokarst) origin. The longest cave is Jaskinia w Ociemnem, which is 196 m long and 47.5 m deep.

Beskidy Mts. (Beskidy)

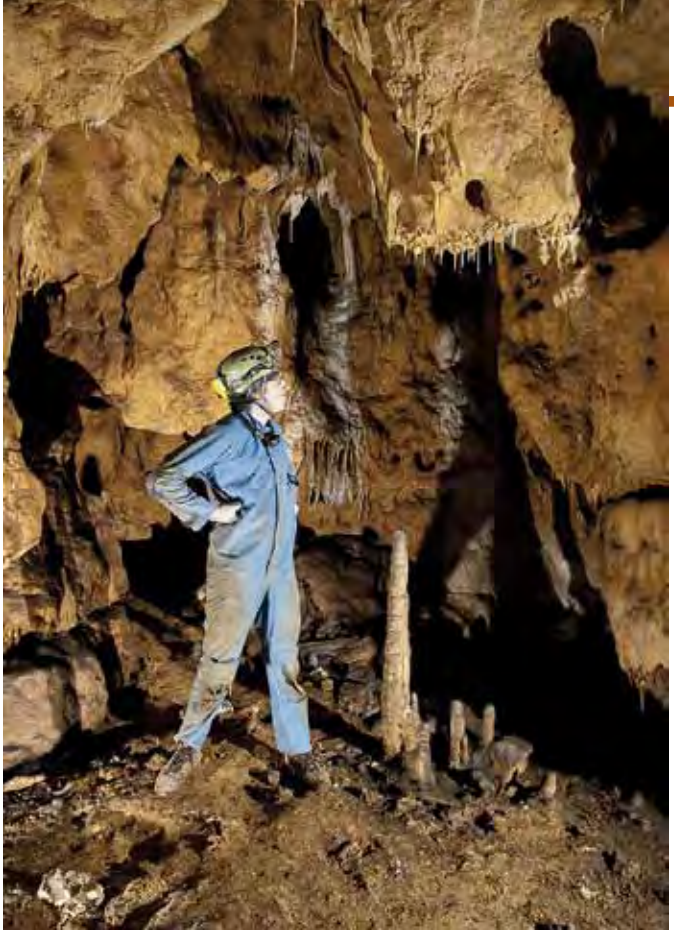
The Beskidy Mts. are built of Cretaceous-Paleogene flysch – sandstones and shales. More than 1246 caves are known there, all of non-karstic (pseudokarst) origin with sandstones as the host rocks. They originated from gravitational movements of rocks along cracks. The longest cave is Jaskinia Wiślańska (2 275 m long, 41 m vertical extent) and the deepest is Jaskinia Ostra-Rolling Stones system (-60 m deep, 855 m long) in the Beskid Śląski Mts. Jaskinia Wiślańska was discovered in 2003, it reached the length of more than 300 m long after the first year of exploration. The explorers came back in 2007. Renewed exploration soon brought the length of 2275 m. Probably it is now the longest non-karstic cave in Central Europe. The exploration has not been finished yet.

Kraków – Wieluń Upland (Wyżyna Krakowsko-Wieluńska)

This area occupies about 2500 km^2. Nowadays there are more than 1913 known caves. Almost all of them are developed in Upper Jurassic limestones. Only a few occur in Lower Carboniferous limestones and Middle Triassic limestones and dolomites. Jaskinia Wierna, which was explored in 1990 is the longest cave in the Kraków-Wieluń Upland. It is 1027 m long. The caves of this area are mainly horizontal, the deepest is Jaskinia Studnisko (-77.5 m). Some caves are situated within protected areas (i.e., the Ojców National Park and the Jurassic Landscape Parks). The access to these caves requires special permit. Five caves are open for tourists and four of them are lit by electricity. Jaskinia Nie-dźwiedzia Górna in the greatest cave discovered in the recent years in the Kraków-Częstochowa Upland. It is 635 m long and 25 m deep. The cave entrance has been closed with a gate shortly after its discovery, because of the speleothem richness.

Distribution of caves in Poland; the caves mentioned in text: 1. Jaskinia w Ociemnem, 2. Jaskinia Wiślańska, 3. Ostra-Rolling Stone, 4. Kryształowe Groty in Wieliczka salt mine, 5. Jaskinia w Diablej Górze, 6. Jaskinia Wierna, 7. Jaskinia Studnisko, 8. Jaskinia Skorocicka, 9. Chelosiowa Jama, 10. Jaskinia Raj, 11. Jaskinia Niedźwiedzia, 12. Szczelina Wojcieszowska, 13. caves near Inowrocław, 14. caves near Gdańsk

* The names of Polish caves were not translated to avoid confusion. The often word „jaskinia" means cave.



Jaskinia Niedźwiedzia Górna. Photo Maciej Jeziorski

The deepest caves in Poland

CAVE	LOCATION	VERTICAL EXTENT
Jaskinia Wielka Śnieżna	Tatra Mts, Małołączniak	824 m (-808; +16)
Śnieżna Studnia	Tatra Mts, Małołączniak	763 m (-726; +37)
Bańdzioch Kominiarski	Tatra Mts, Kominiarski Wierch	562 m (-546; +16)
Jaskinia Mała w Mułowej	Tatra Mts, Ciemniak	-555 m
Jaskinia Wysoka - Za Siedmioma Progami	Tatra Mts, Ciemniak	435 m (-288; +147)
Jaskinia Kozia	Tatra Mts, Kozi Grzbiet	389 m (-376; +13)
Ptasia Studnia	Tatra Mts, Kozi Grzbiet	-352 m
Jaskinia Miętusia	Tatra Mts, Dolina Miętusia	305 m (-283; +22)
Jaskinia Czarna	Tatra Mts, Dolina Kościeliska	304 m (-242; +62)
Siwy Kocioł	Tatra Mts, Dolina Małej Łąki	-295 m
Studnia w Kazalnicy	Tatra Mts., Dolina Miętusia	244 m (-199; +45)
Jaskinia Zimna	Tatra Mts., Dolina Kościeliska	176 m (-16; +160)
Jaskinia Pod Wantą	Tatra Mts., Małołączniak	172 m (-158; +14)
Jaskinia Małołącka	Tatra Mts., Małołączniak	-166 m
Jaskinia Zośka-Zagonna	Tatra Mts., Małołączniak	163 m (-154; +9)
Jaskinia Marmurowa	Tatra Mts., Ciemniak	151 m (-126; +25)
Jaskinia Miętusia Wyżnia	Tatra Mts., Dolina Miętusia	145 m (-108; +37)
Jaskinia Harda	Tatra Mts., Dolina Miętusia	-120 m
Jaskinia Niedźwiedzia w Kletnie	Sudety Mts, Masyw Śnieżnika	115 m (-83; +32)

The longest caves in Poland

CAVE	LOCATION	LENGTH
Jaskinia Wielka Śnieżna	Tatra Mts., Małołączniak	23 723 m
Śnieżna Studnia	Tatra Mts., Małołączniak	12 350 m
Jaskinia Wysoka – Za Siedmioma Progami	Tatra Mts., Ciemniak	11 700 m
Jaskinia Miętusia	Tatra Mts., Dolina Miętusia	10 780 m
Bańdzioch Kominiarski	Tatra Mts., Kominiarski Wierch	9 550 m
Jaskinia Czarna	Tatra Mts., Dolina Kościeliska	6 940 m
Ptasia Studnia	Tatra Mts., Kozi Grzbiet	6 283 m
Jaskinia Zimna	Tatra Mts,Dolina Kościeliska	5 335 m
Jaskinia Mała w Mułowej	Tatra Mts., Ciemniak	3 863 m
Jaskinia Niedźwiedzia w Kletnie	Sudety Mts., Masyw Śnieżnika	3 800 m
Chelosiowa Jama-Jaworznicka	Świętokrzyskie Mts., Góra Kopaczowa	3 670 m
Jaskinia Kozia	Tatra Mts., Kozi Grzbiet	3 470 m
Jaskinia Kasprowa Niżna	Tatra Mts., Dolina Kasprowa	3 020 m
Szczelina Chochołowska	Tatra Mts., Dolina Chochołowska	2 320 m
Jaskinia Wiślańska	Beskid Śląski Mts., Dolina Malinka	2 275 m
Jaskinia Miecharska	Beskid Śląski Mts., Dolina Malinka	1 838 m
Jaskinia Mylna	Tatra Mts., Dolina Kościeliska	1 630 m
Jaskinia Bystrej	Tatra Mts., Dolina Bystrej	1 480 m
Jaskinia Magurska	Tatra Mts., Dolina Jaworzynki	1 285 m
Jaskinia Naciekowa	Tatra Mts., Dolina Kościeliska	1 260 m
Jaskinia w Trzech Kopcach	Beskid Śląski Mts., Trzy Kopce	1 249 m
Jaskinia Pajęcza	Świętokrzyskie Mts., Góra Kopaczowa	1 183 m
Siwy Kocioł	Tatra Mts., Dolina Małej Łąki	1 161 m

Jaskinia Wielka Śnieżna. Photo Jan Kućmierz

Silesian Upland (Wyżyna Śląska)

This area of more than 3900 km² is built mainly of Middle Triassic carbonates. More than 166 caves are known there. They are rather small. Only one of them exceeds the length of 100 m (Jaskinia w Diablej Górze, 107 m long). Most of the caves were opened during quarrying. Some of them were afterwards destroyed by exploitation. A few caves were discovered during zinc-lead ores mining in the Olkusz area to the north-west of Kraków. These caves are developed in Middle Triassic ore-bearing dolomites. One small cave is developed in Holocene tufa.

Świętokrzyskie Mts. (Góry Świętokrzyskie)

Chelosiowa Jama is developed in Devonian limestone; it is 3670 m long. Another long cave, Jaskinia Pajęcza, with the length of about 1000 m, is located very close to the first one. Chelosiowa occupies the eleventh place on the list of the longest Polish caves, the other 135 caves occurring in this area are rather small. The caves in the Świętokrzyskie Mts. developed mainly in Devonian limestones, only subordinately in Jurassic limestone. The best known one is Jaskinia Raj (Paradise), famous from its speleothems. This cave is open for tourists and illuminated.

Nida River Basin (Niecka Nidziańska)

This is the only area of non-carbonate karst in Poland. Almost all of 116 caves situated in this region are developed in Miocene deposits, mainly in gypsum and only subordinately in kalkarenites, many near the groundwater level. The longest is Jaskinia Skorocicka (350 m).

The Sudetes (Sudety)

Most of karst caves in the Sudetes are developed in Precambrian and Palaeozoic marbles. Apart from them some karst caves are situated in Permian limestones. Other caves, these of non-karstic origin, occur in granites and sandstones. More than 180 caves are known from the Sudetes. The famous one is Niedźwiedzia Cave. New galleries and shafts were discovered by cavers in 2012. The total length of new series reaches 1324 m. Niedźwiedzia Cave is the longest (3800 m) and the deepest (vertical extent 115 m) in the Sudetes. Its upper part is open for tourists. Some of the caves in the Sudetes are situated in a big, still active quarry in Wojcieszów (e.g. Szczelina Wojcieszowska). The access to these caves is strongly prohibited. Some caves have been destructed by quarrying (due to quarry works more than 1400 m of passages have been destroyed), whereas entrances to others have been blocked with rubble.

Other caves in Poland

Some caves in Poland are situated outside the above characterized regions. Some of them are developed in locally lithified Pleistocene sands in northern Poland. Jaskinia w Mechowej (Cave in Mechowo) near Gdańsk, is the longest one (61 m). Other small caves, which are probably exhumed fossil karstic forms, are known from Jurassic limestone quarries near Inowrocław in central Poland. A few caves were discovered during mining of rock salt. The most famous of them are small caves in the Wieliczka salt mine (south-east of Kraków), named Kryształowe Groty (Crystal Caverns) after the giant halite crystals lining their walls. Other similar caves developed in Permian rock-salt occurred near Inowrocław. Unfortunately they were flooded after the end of rock-salt mining. A few small caves were also surveyed in Miocene limestones of the Roztocze Upland.

Jaskinia Magurska. Photo. Jakub Nowak

References

The morphometric data on caves mentioned in above were derived from many sources. Some of them have already been published in the 17 volumes of the inventory of Polish caves published by Polskie Towarzystwo Przyjaciół Nauk o Ziemi (Polish Society of Earth Science Fellows) and edited mainly by J. Grodzicki. These data are also available on the website: http://geoportal.pgi.gov.pl/portal/page/portal/jaskinie_polski and http://www.jaskinie.m3.net.pl/.

The inventory covers the caves situated in most of the above mentioned regions. The following publications were also used: A. Armirowicz, J. Baryła, K. Dziubek & M. Gradziński (1995) on caves in the Pieniny National Park, M. Gradziński & M. Szelerewicz (2004), several volumes of inventory of caves in the Ojców National Park in the Kraków–Wieluń Upland. Many current data have been published in quarterly journal Jaskinie as well as on Epimenides Cave Page – http://www.sktj.pl/epimenides/index_d.html and on Krakowski Klub Taternictwa Jaskiniowego page – www.kktj.pl. The geological data on distribution of karst features in Poland are based on the articles by J. Głazek, T. Dąbrowski & R. Gradziński (1972), as well as by J. Głazek, R. Gradziński & M. Pulina (1982).

Niedźwiedzia Cave, Kletno, Sala Mastodonta. Photo Anna Haczek

Caving in Poland

Ditta Kicińska

In Poland there are 26 caving clubs, associated in the Polish Mountaineering Association (PMA, Polski Związek Alpinizmu). According to a decades-long tradition, Polish caving is connected with alpinism, therefore PMA brings together climbers, mountaineers (including Himalayan explorers), cavers, rock climbers and ski mountaineers. In 2012 the first canyoning club was admitted to the organization.

The Polish Mountaineering Association is a founding member of Union Internationale des Associations d'Alpinisme (UIAA) and member of Union Internationale de Speleologie (UIS), the International Federation of Sport Climbing (IFSC), the International Ski Mountaineering Federation (ISMF) and the European Speleological Federation (FSE).

PMA is represented by a management board, elected every three years by the representatives of all the clubs. The role of PMA is mostly the one of representation. It decides on general rules of any sport activities in the Polish mountains, supervises training courses and takes care of safety regulations. PMA does not influence the activities of the clubs. PMA has some financial means and sometimes does support projects, such as expeditions, trainings and editorial activities.

There are more than 5,600 members of this organization and among them 900 people cave. Caving community is represented in the PMA by the Caving Committee (Komisja Taternictwa Jaskiniowego). The main goals of the committee are: representing to national and foreign institutions/organization (e.g. UIS, FSE, Ministry of Sport and Tourism, national parks authorities), overseeing basic cave training, carrying qualifications for becoming a caving instructor, organizing country-level trainings in rescuing and surveying, supporting Polish exploration expeditions abroad and promoting the cave protection.

The vast majority of cavers associated in PMA completed basic cave training (which ends with an examination), after which obtained a caving license (*Karta Taternika Jaskiniowego*). This course includes the following topics: extensive SRT training using the standard Petzl's equipment (with emphasis on re-belays), rigging in presence of permanent anchors (knots, Y-rigs, deviations, traverses, climbs), visiting at least eight caves, including four vertical caves in mountainous areas (typically at least one with the depth of 250 m ascended using SRT), basics of self-rescue and elementary first aid, basics of cave protection, elements of geology and karst science as well as elements of winter/avalanche specific behavior. Detailed information can be found on the website: http://pza.org.pl/jaskinie, available also in English. Due to safety reasons, KTJ encourage our foreign partners issuing caving permits to ask their applicants coming from Poland for scans of their "*Karta Taternika Jaskiniowego*" or to verify that their name is on the official list of certified PMA caving instructors. This naturally concerns technically difficult caves.

Most caves in Poland are situated in either national parks or protected landscape areas, so cave exploration and visiting are possible only with permits from respective authorities (the Tatra National Park, nature reserves in the Cracow – Częstochowa Upland). Outside the protected areas, caves in Poland can be visited without any permits. Few caves are the private properties, in such cases, the visit requires consent of the owner.

In the Tatra National Park sscientists conducting research under the auspices of scientific institutions can apply for relevant permits. Permits concerning research are seasonal and limited to particular caves or cave areas. For caving, non-commercial trips to one of the available 29 caves in the Tatra Mts. can be legally organized through one of the clubs associated in PMA. Every cave trip has to be registered in the National Park in advance, via website. In order to register foreigners, the club has to provide a caving instructor to take care of the group and confirm that he takes the responsibility for the visitors' actions. To visit the caves for other purposes or in other protected areas, an individual permit from the Park authorities is required.

In the last four years, Polish clubs have been organizing over dozen exploration expeditions (Austria, Spain, Slovenia, Montenegro, Iran, Oman, Turkey). The central expedition is also organized in China. We are also participants of explorations conducted by national expeditions of other countries and international groups (Mexico, Abkazia, Italy). These are organized under the auspices of PMA and are partially subsidized from PMA funds.

Every year the national competition in caving techniques is organized in Wojcieszów. There is also a post-expedition meeting of the majority of active Polish cavers where the exploration achievements of the year are presented (Speleokonfrontacje in Podlesice).

The Caving Committee of PMA in cooperation with the Tatra National Park conducted a detailed natural inventory of selected caves in the Tatra Mts., both available and unavailable for caving. Independently, for many years the Caving Commission of PMA and the caving clubs have been organizing the caves cleaning.

Besides the PMA, which is the sport organization, there is the Speleological Section of Polish Naturalists Society (Sekcja Speleologiczna Polskiego Towarzystwa Przyrodników – http://www.ssb.strefa.pl/ssptp/). Its members are not only scientists researching karst and speleological problems, but also all people interested in this subject.

Addresses of the Polish caving organizations

Polski Związek Alpinizmu (Polish Mountaineering Association), Komisja Taternictwa Jaskiniowego (Caving Committee) ul. Corazziego 5/24, 00-087 Warszawa (WARSZAWA)
Official Polish caving web page: www.pza.org.pl/jaskinie and http://www.sktj.pl/epimenides/index_d.html • e-mail: ktj@pza.org.pl
Jaskinie – Polish caving quarterly, ul. Ehrenberga 36a, 31-309 Kraków (KRAKÓW), www.jaskinie.info.pl • e-mail: jaskinie.speleo@gmail.com; szelerewicz@ceti.pl
Akademicki Klub Grotołazów (KRAKÓW), www.akg.krakow.pl; akg.krakow@gmail.com • **Katowicki Klub Speleologiczny** (KATOWICE), www.kks.dy.pl; kks@dy.pl • **Klub Alpinistyczny przy Grupie Beskidzkiej GOPR** (SZCZYRK), http://www.kagb.pl; prezes@kagb.pl • **Klub Speleologiczny 'Aven' Sosnowiec** (SOSNOWIEC), www.ksaven.pl; ksaven@ksaven.pl • **Klub Taternictwa Jaskiniowego Speleoklub Bielsko-Biała** (BIELSKO-BIAŁA), www.speleobielsko.pl; speleo.bielsko@gmail.com, ktj@speleo.bielsko.pl • **Krakowski Klub Taternictwa Jaskiniowego** (KRAKÓW), www.kktj.pl; kktj@kktj.pl • **Rudzki Klub Grotołazów 'Nocek'** (RUDA ŚLĄSKA), www.nocek.pl; rkgnocek@poczta.onet.pl • **Sądecki Klub Taternictwa Jaskiniowego** (NOWY SĄCZ), www.sktj.com.pl; sktj@poczta.onet.pl • **Sekcja Grotołazów Wrocław** (WROCŁAW), www.sgw.wroc.pl; sgw@sgw.wroc.pl • **Sekcja Taternictwa Jaskiniowego KW Kraków** (KRAKÓW), www.stj.krakow.pl; stj@stj.krakow.pl • **Sopocki Klub Taternictwa Jaskiniowego** (SOPOT), http://sktj.pl; zarzad@sktj.pl • **Speleoclub Wrocław** (WROCŁAW), www.scw.wroc.pl; speleo@scw.wroc.pl • **Speleoklub 'Bobry' Żagań** (ŻAGAŃ), www.speleo.bobry.com.pl; bobry@o2.pl • **Speleoklub Częstochowa** (CZĘSTOCHOWA), http://www.speleoklub.czest.pl; speleoklub.czest@gmail.com • **Speleoklub Dąbrowa Górnicza** (DĄBROWA GÓRNICZA), www.sdg.org.pl; wloski@op.pl • **Speleoklub 'Gawra' Gorzów Wielkopolski** (GORZÓW WIELKOPOLSKI), www.gawra.org; biuro@gawra.org • **Speleoklub Kras** (KRAKÓW) • **Speleoklub Łódzki** (ŁÓDŹ), www.speleolodz.pl; speleolodz@gmail.com • **Speleoklub Olkusz** (OLKUSZ), www.speleoklub.olkusz.pl, speleo.olkusz@gmail.com • **Speleoklub Świętokrzyski** (KIELCE), www.ssk.kielce.pl; andrzejka@poczta.onet.pl • **Speleoklub Tatrzański** (ZAKOPANE), http://speleoklubtatrzanski.pl; kontakt@speleoklubtatrzanski.pl • **Speleoklub Warszawski** (WARSZAWA), www.speleo.waw.pl; speleo@speleo.waw.pl • **Tarnogórski Klub Taternictwa Jaskiniowego** (TARNOWSKIE GÓRY), http://www.tktj.pl; tktj@interia.pl • **Tatrzański Klub Górski Vertical** (ZAKOPANE); http://www.tkg-vertical.pl; tkg-vertical@home.pl • **Wałbrzyski Klub Górski i Jaskiniowy** (WAŁBRZYCH), www.nietoperek.boo.pl; nietoperek@boo.pl • **Wielkopolski Klub Taternictwa Jaskiniowego** (POZNAŃ), www.wktj.poznan.pl; zarzad@wktj.poznan.pl.

Niedźwiedzia Cave (Sudetes)

Marek Markowski (Sekcja Grotołazów Wrocław)

The Niedźwiedzia (Bear) Cave was discovered on October 14th 1966 during the exploitation of marbles in the Kletno III quarry located on the slopes of Stroma (1166 m a.s.l.) in the Śnieżnik Massif in the Sudetes. Since that day the place has been the subject of interest for many scientists and specialists of many fields. It had been thoroughly explored and in 1983 became available for tourists. Due to its unique microclimate and unusual speleothems as well as the bone remains of Pleistocene animals, the cave has become a natural feature of historic importance and has been protected by forming a nature reserve. The cave is also a very precious habitat of bats.

Acting in accordance with the permit of the Regional Director for Environmental Protection in Wrocław, the members of Sekcja Grotołazów Wrocław and Sekcja Speleologiczna Niedźwiedzie renewed the exploration in the reserve area. Analysing available publications and research results they could not help but get the impression that so far known parts of the cave were only a small piece of still unexplored cave system, which probably had formed in a marble lens, where the Niedźwiedzia Cave is situated. At the beginning the exploration was conducted on the surface and included checking of few smaller caves located near the Niedźwiedzia Cave. After the initial penetration of caves: Dudnisko and Sadejowa Szczelina it appeared that they would not lead deep into the massif and would not connect with the Niedźwiedzia Cave as they were tectonic joints ended with breaking downs. The exploration was moved to the Niedźwiedzia Cave itself and included systematic checking of all so far known exploratory problems as well as another cave mapping as not all the passages had been measured and showed on the plans. During those works we led new traverse in the main passage of the lower cave level and mapped: Meander, Chomisiowe, Korytarz Rafy Koralowej and the southern branch of Korytarz Kryształowy.

At the end of 2011, during checking of the Korytarz Kryształowy ceiling the mapping team disassembled the breaking down in the joint called later as Krasowe Urwisko and after ca. 20 m of hard chimneying they found the entrance to Gang Zdzicha. A new 150 m long passage was discovered but the further exploration became impossible due to a few-m-deep pitch. Those were our first significant discoveries in the Niedźwiedzia Cave, however as the year was ending the further exploration must have been postponed till the next nature conservator permit and the end of bats hibernation.

In the spring of 2012 continuing the exploration we discovered the further parts of Gang Zdzicha, and on May 2nd after few narrowings of which the hardest was called Gilotyna, we entered the new chamber, large as for the Sudetes (115x20x30m), forming the main passage of the cave, called Sala Mastodonta. That discovery became crucial for further exploration and confirmed assumption about the existence of large yet unknown cave system. Continuing the exploration on Septemper 8th 2012 we passed through the breaking down at the end of Sala Mastodonta and during one weekend we

Wielka Kaskada (Great Cascade). Photo Szymon Kostka

Column. Photo Szymon Kostka

NIEDŹWIEDZIA CAVE

The sketch of new discovered parts

- building
- passages known until 2011
- passages discovered in early 2012
- parts behind Mastodon – the upper level
- parts behind Mastodon – the middle level
- parts behind Mastodon – the lower level

The sketch based on measurements made by SSN and SGW in 2011 and 2012. Drawing preparation: Szymon Kostka

discovered more than 1 km long multi-level system of chambers and passages.

New parts discovered in the Niedźwiedzia Cave in 2012 are characterised by dimensions so far unusual in the Sudetes as well as unique speleothems which cannot be found anywhere in Poland.

Recently the Niedźwiedzia Cave denivelation is 115 m, what makes it the deepest cave in Poland outside the Tatras and 19th deepest one of all caves in Poland. Recently works have been carried out to determine the exact length of all passages in the Niedźwiedzia Cave which now is 3800 m, what makes it the longest outside the Tatras and 10th in Poland. ❑

Sala Mastodonta (Mastodon Chamber). Photo Anna Haczek

Sala Mastodonta (Mastodon Chamber). Photo Anna Haczek
Sala Humbaków (Humbaków Chamber). Photo Marek Markowski

Hagengebirge, Austria

The exploration of the Interessante Höhle by Sopocki Klub Taternictwa Jaskiniowego and Sekcja Grotołazów Wrocław

Marek Wierzbowski

Plateau in Hagengebirge. Photo Jakub Nowak

The Hagengebirge is a mountain massif of the Berchtesgaden Alps (mountain range of the Northern Limestone Alps) located at the Austrian-German border with its larger part being on Austrian side. It is known mainly for its two largest caves, recognized for their length, size of passages and decent depth, the Tantalhöhle and the Jägerbrunntrogsystem. Both caves are extensive horizontal systems, which formed at different levels corresponding to the old horizontal flows and ancient levels of river valleys. Almost half a century ago exploration of both, together with the Grubernhornhöhle in the neighboring the Hoher Göll and the Lamprechtsofen in the Leoganger Steinberge made one of the most interesting exploration stories in the history of speleology.

The massif is predominantly built of Dachstein limestone in the form of horizontal beds with convex shape. It drains mostly to giant karst resurgence Torren in Bluntautal Valley at the northern foot of the mountain. The central plateau of the massif features many geologically younger caves, mostly being young canyons with active streams. The geological situation makes the exploration of these young systems complicated. The shape and orientation of horizontal limestone beds increase the possibility of encountering local siphons, whose presence stops further progress.

Our presence in the massif started in 2002 at the instigation of Walter Klappacher. Since then, we run expeditions on yearly basis. On average, each expedition takes 20 days and there are 12 cavers involved. Generally, we split our time equally between looking for new caves and further exploration of the existing ones. One of the main problems is the weather, as there are only very few days of sunshine. Snow in summer and frequent long periods of heavy rain are not uncommon. The expeditions take place only in summer, as in the winter the cave entrances are not accessible due to many meters of snow on the plateau.

We begun with resuming exploration of the Alvermannschacht (1335/280, depth of -452 m), a vertical canyon cave discovered in the 80s. In the coming years we explored many caves, often in the form of young canyons. One of the biggest success was exploration of the Höhle in Roten Steinen (1335/491) to a depth of 855 m. This cave is a typical example of a young meander with countless shafts and an active stream. Despite numerous re-belays and good rope handling, cavers are exposed to water already at a depth of 150 m. Small rainfall makes the shafts and canyons very dangerous and often impassable for the explorers. The main passage of the cave ends with a siphon. The way to the end of the cave goes around by a older dry route. It is very tight and ends with tubes filled with sediments.

Zachodni Meander (Western Meander). Photo Jakub Nowak

During the 2006 expedition, we found the Interessante Höhle entrance (1335/495). While ridge walking in a rainy day on the plateau, we found an opening resembling a meander, which was shaped into a pit, and disappeared into the depths of the mountain. This hole looked much more interesting than all the other, so we decided to come back to us here. The shaft was given the temporary name J0 – the letter "J" came from the name of one of the discoverers. The first well was followed by another, but its floor was completely choked with boulders. There was also no sign of the airflow. In the shaft corner we found a pipe 10 cm in diameter, which had a very strong draft. The removal of some stones opened a narrow canyon with an obvious air flow.

The following year (2007) we went back to that "interesting" cave entrance, but we did not proceed with the exploration. The canyon was too narrow for a caver to fit and, attracted more by other caves in the massif, we left the cave for another year. During the preparations for the 2008 expedition we named the corresponding GPS waypoint "interesting". In this strange way the cave received its name. That year, we finally managed to go through squeezes in the narrow meander. After going down 168 meters through series of shafts, we made it to the floor of huge meander. At this depth, the series of pits we were going down crossed vast meander from a different geological age.

During next years, ie. 2009 onwards, we focused on exploration of horizontal passages. The decision was made to wait with the exploration of vertical shafts until we know the horizontal parts better and thus may choose the optimal way down. During this phase of exploration, we encountered many pits on the way, only to traverse them and leave behind unexplored. An only exception was the Versturzhalle, its size and the amount of work associated with traversing encouraging us to descend. Beyond the traverse we discovered the Westmäander and, extending to the south, the Gang der Weißen Steine (Western Meander).

The direction and heading of both passages is striking when compared with the topographic and geologic maps. It is entirely consistent with the prominent tectonic fault and other features found on the surface of the massif. The passages contain a vast amount of sediments, which are frequently subject to "secondary erosion". It is not uncommon for the passages to be filled completely. In Westmäander we reached almost the western edge of the karst plateau, approaching steep slopes running to local lake. Unfortunately, we were unable to find a second entrance.

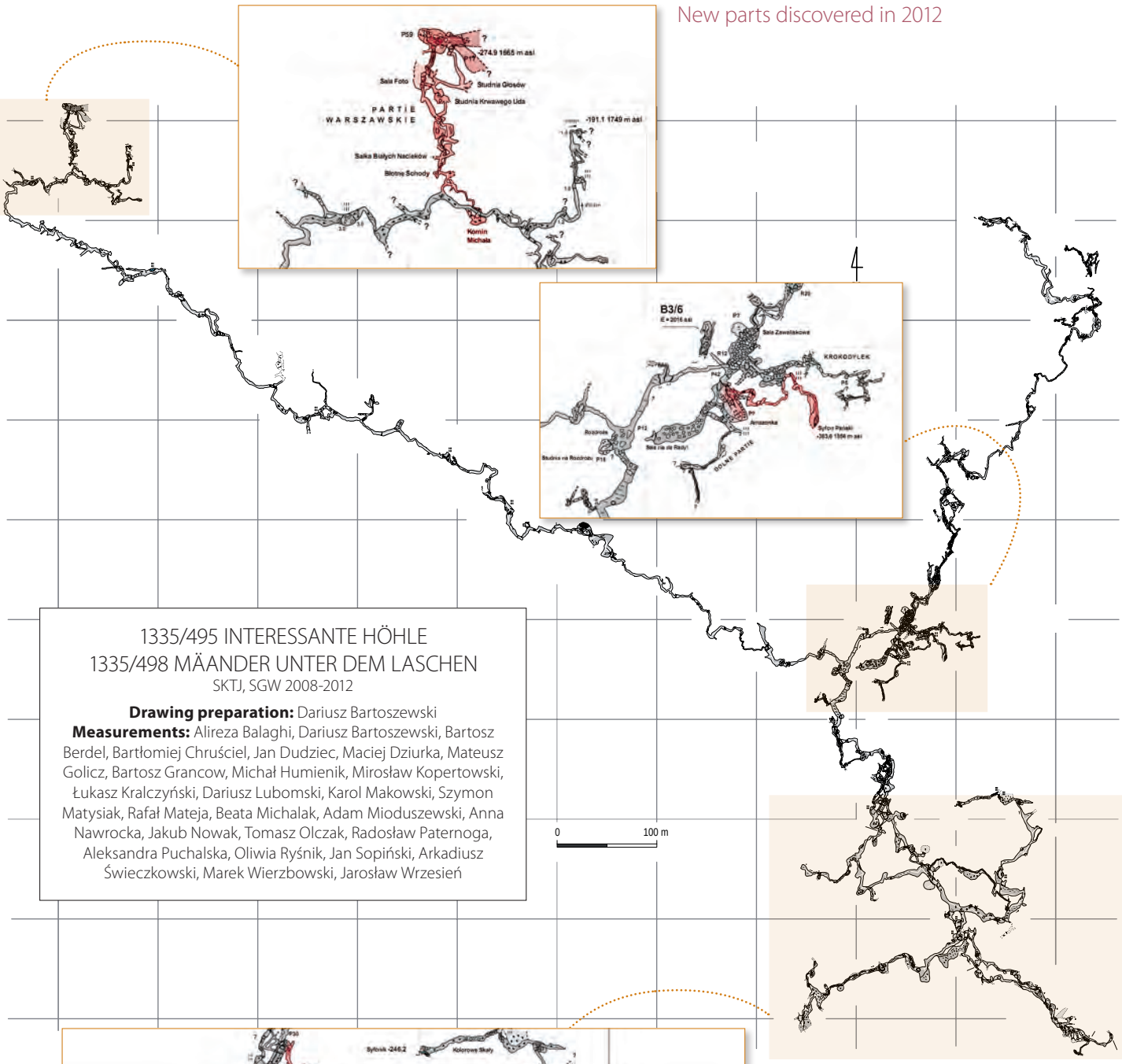
In 2011 we made the first attempts to deepen the cave – mainly in hope to discover overlapping lower level passages, which are clearly developed in caves in this area. They are evidence of ancient horizontal flows of water during a long-lasting stable geological periods. Unfortunately, that year the weather was extremely poor and the intense summer rainfall kept the high water level underground. The pits, even when rigged well away from water, presented danger high enough to wait for better conditions.

The following year (2012), very favorable weather conditions encouraged us to tackle the problem again. After descending series of pits starting in the Versturzhalle, we reached a large sump at -384 m.

Despite several attempts to deepen the cave, in 2012 we actually made the most significant discoveries in the extension of the Optimistischen Höhlenteile of the cave. The passages branch in several directions. Unfortunately, the most interesting parts extending ▷

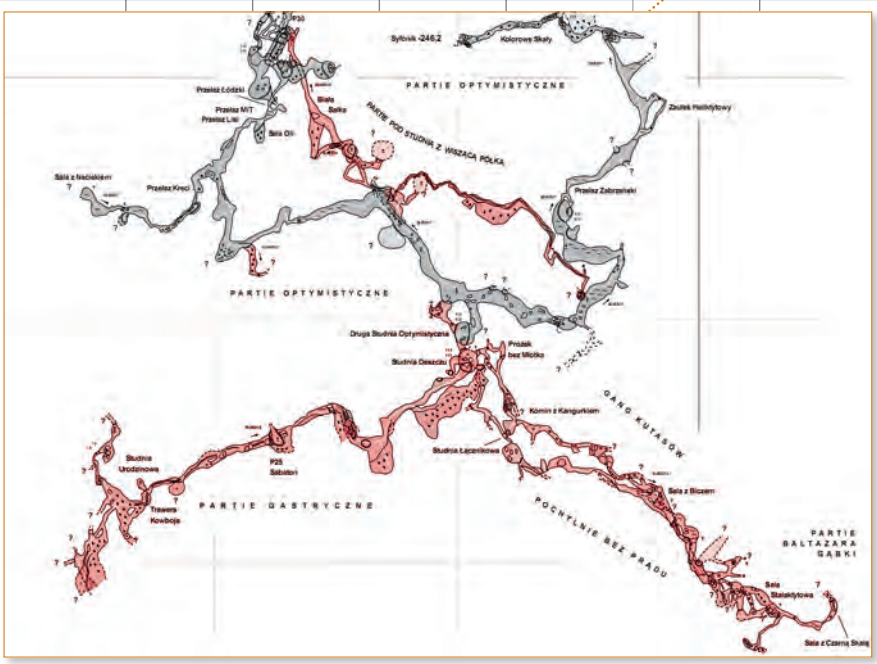
→ Pitch in Western Meander. Photo Jakub Nowak
↓ Western Meander. Photo Jakub Nowak

New parts discovered in 2012



1335/495 INTERESSANTE HÖHLE
1335/498 MÄANDER UNTER DEM LASCHEN
SKTJ, SGW 2008-2012

Drawing preparation: Dariusz Bartoszewski
Measurements: Alireza Balaghi, Dariusz Bartoszewski, Bartosz Berdel, Bartłomiej Chruściel, Jan Dudziec, Maciej Dziurka, Mateusz Golicz, Bartosz Grancow, Michał Humienik, Mirosław Kopertowski, Łukasz Kralczyński, Dariusz Lubomski, Karol Makowski, Szymon Matysiak, Rafał Mateja, Beata Michalak, Adam Mioduszewski, Anna Nawrocka, Jakub Nowak, Tomasz Olczak, Radosław Paternoga, Aleksandra Puchalska, Oliwia Ryśnik, Jan Sopiński, Arkadiusz Świeczkowski, Marek Wierzbowski, Jarosław Wrzesień



to southeast become increasingly fragile and lose their previous course. In all likelihood, they they reached a area on the surface on the surface that is destroyed geologically by being broken up and jagged. Since the cave is not very deep, it can be assumed that the observations from the surface reflect the situation underground.

During next years of exploration we are planning to extend the cave in all directions, however finding new entrances to access different parts more quickly will be our priority.

All expeditions were organized with the support of the Polish Moutaineering Association (Polski Związek Alpinizmu) and the National Association for Caving in Salzburg (Landesverein für Höhlenkunde in Salzburg). ❑

Recent activity in Hoher Göll

Mateusz Golicz

(Rudzki Klub Grotołazów „NOCEK")

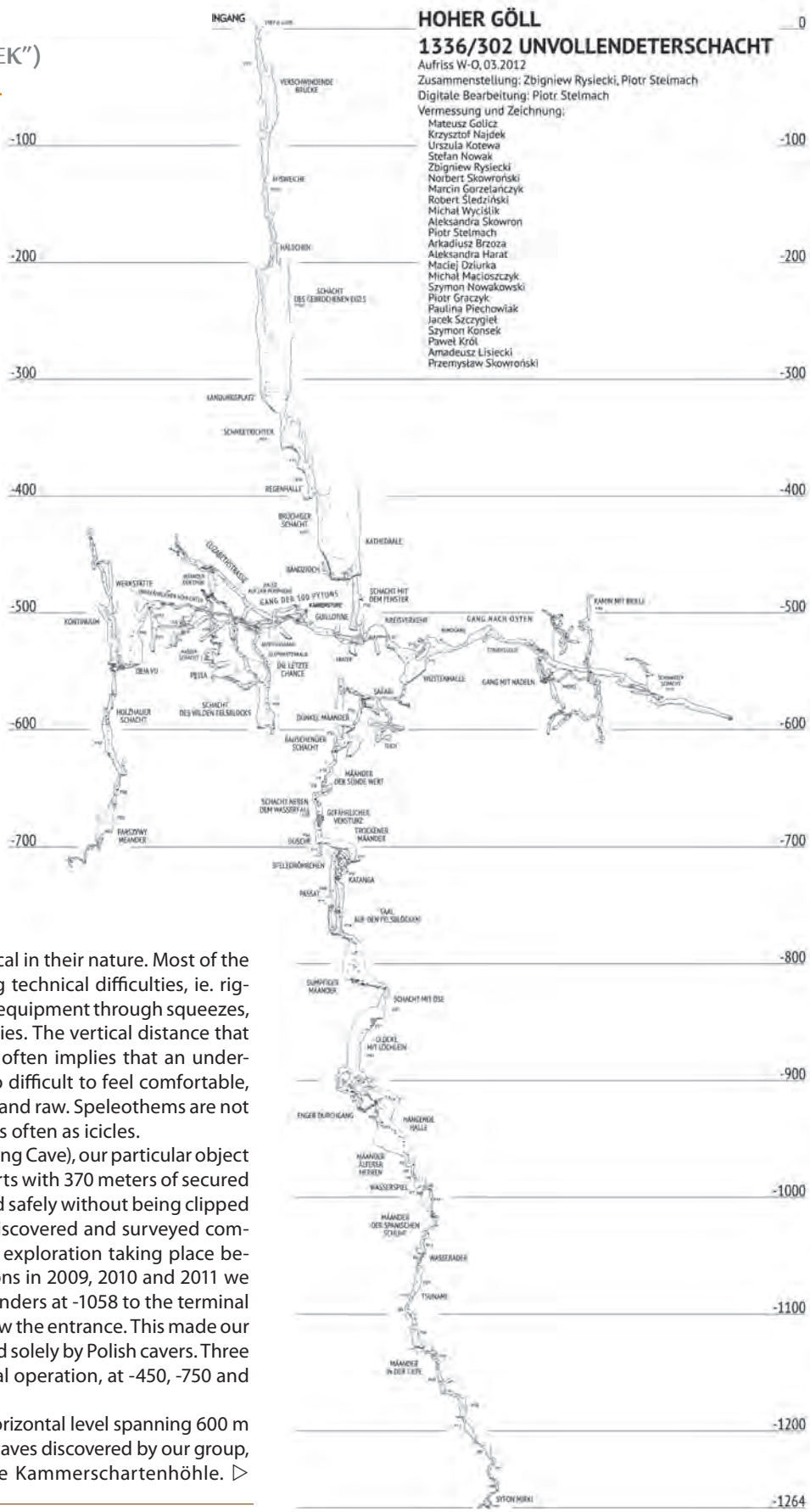
Hoher Göll is a narrow, 11 km long ridge in the Salzburg country, Austria, that hosts one of PZA's most prominent long term projects. Göll's highest peak reaches 2522 m above sea level while the main resurgence, the Schwarzbach-fall, lies almost 2000 meters lower. It is best known by the great Gollinger Wasserfall and the infamous Eagle's Nest, or Obersalzberg, the former mountain residence of Adolf Hitler. The geological structure is similar to surrounding massifs of the Northern Calcareous Alps with Dachstein limestones of the Upper Triassic sequence lying on Dachstein dolomites, as well as Wetterstein limestones, Ramsau dolomites and Ramsau/Reifling limestones (Klappacher & Knapczyk 1985). First Polish cavers appeared on this mountain in 1969 and since 1989 the area is thoroughfully explored by at least one expedition every summer.

Almost all caves in the area are difficult to access. The terrain is very steep and accordingly, there is very limited tourist traffic with only a few hiking trails, which makes it different than other Alpine regions. Usually, entrances are actually discovered by our group rather than shown us by the local people. It takes a long time searching for the entrances and it is possible to identify at most a few every year.

The caves themselves are very vertical in their nature. Most of the time spent underground is overcoming technical difficulties, ie. rigging pitches or climbs and transporting equipment through squeezes, rather than surveying the new discoveries. The vertical distance that has to be travelled by SRT techniques often implies that an underground camp has to be set up. It is also difficult to feel comfortable, because the caves of Göll are quite cold and raw. Speleothems are not encountered often on Göll, not nearly as often as icicles.

Unvollendeterschacht (The Unfinishing Cave), our particular object of interest during the last four years, starts with 370 meters of secured descent, where there is no place to stand safely without being clipped to the rope. This 7 km long cave was discovered and surveyed completely by our group, with most of the exploration taking place between 2004 and 2011. During expeditions in 2009, 2010 and 2011 we rigged our way down from muddy meanders at -1058 to the terminal sump which is located 1264 meters below the entrance. This made our discovery the deepest cave ever explored solely by Polish cavers. Three underground camps supported the final operation, at -450, -750 and -1000 m respectively.

The cave itself also features a vast horizontal level spanning 600 m east-west and connects with two other caves discovered by our group, Höhle der Sprechende Steine and the Kammerschartenhöhle. ▷



Projected profile of Unvollendeterschacht

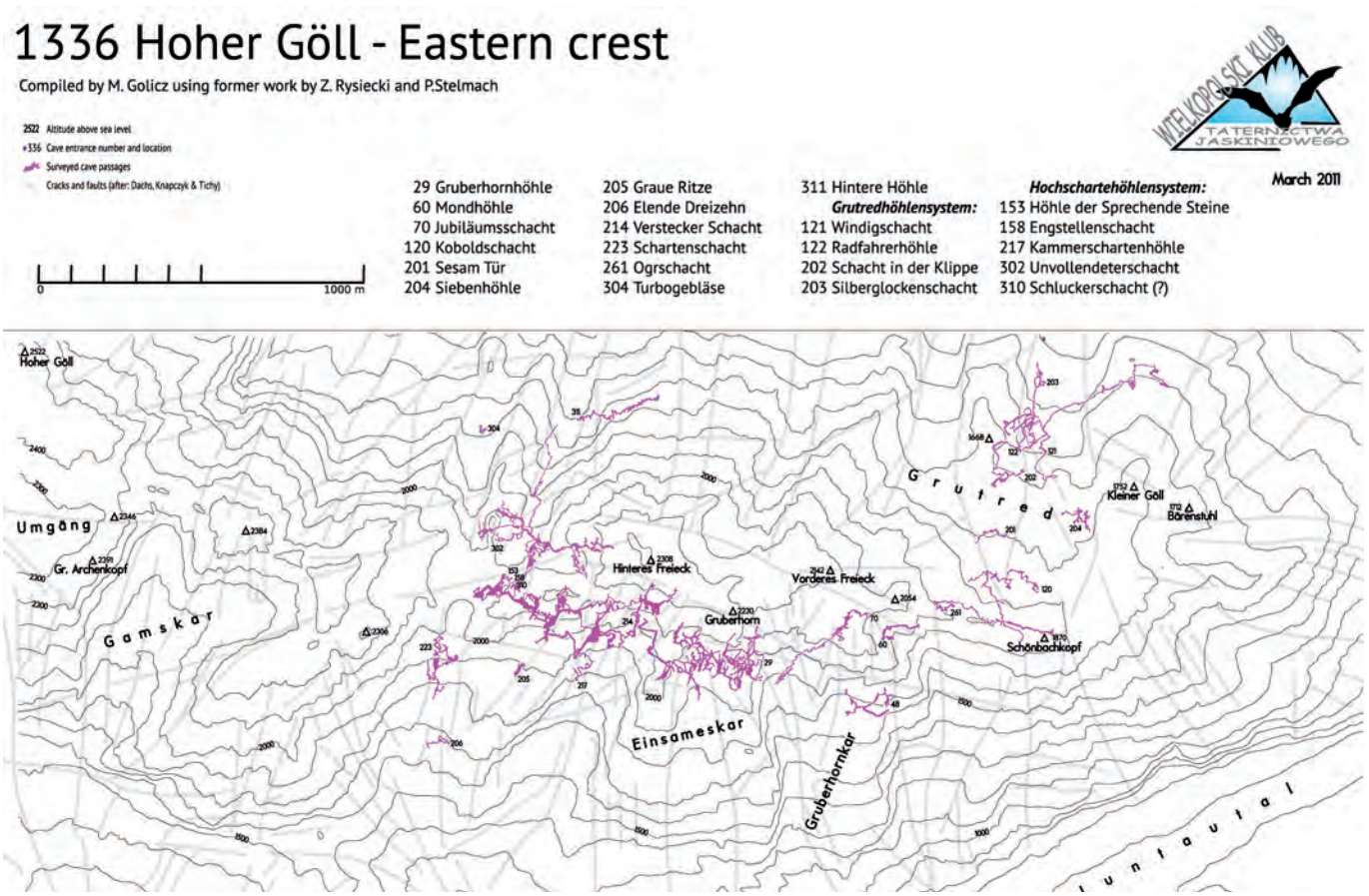
Together, these objects form a system (Hochschartehöhlensystem) that is totally 14,7 km long. Preliminary research (Kicińska 2005) indicates presence of Augenstein formation deposits in the highest parts of the system, at relatively high altitudes (more than 1900 m asl). Since Hoher Göll is one of the northmost massifs of Northern Calcareous Alps, further research may result in a few interesting clues on reconstructing paleogeography of this particular part of Alps.

It yet remains to be confirmed if the Hochscharte system joins with the snow-choked Schluckerschacht, which would give it 1394 m of denivelation. There are also still a few open, though squeezy problems 700 m below the entrance of Unvollendeterschacht. These could possibly lead west, to an area of the massif which remains unexplored due to extremely difficult access from the surface.

Near the entrance of Unvollendeterschacht

Our base camp is located at approx. 1900 m above sea level. It cannot be reasonably reached otherwise than via a fixed rope trail. On a number of occasions we had been using helicopters to supply the camp. The 2012 expedition took place unusually late – in September – and had to be shortened because of an early 30 cm snowfall that hit the camp. Despite that, seven new entrances were located, of which four were surveyed. The largest cave found on this expedition occured to be 51,5 m deep, although unfortunately with no prospects of continuation.

Overall, more than 47 km of passages have been surveyed by Polish expeditions in Hoher Göll during more than fourty years of exploration. Still, much remains to be discovered on Göll. Especially the area west and northwest from our present camp at the Hochscharte pass has not been extensively searched and probably still hides plenty of unknown entrances. However, our main, short term goal is to move back to the east and have a look at few problems abandoned in the 20. century. Who knows, perhaps it is possible to make the long expected, symbolic connection between "our" Kammerschartenhöhle and the Gruberhornhöhle – which was discovered and mostly explored by the Austrian cavers back in the sixties. ❑



An overview of the area.

Exploration in Kanin massif
by Caving Section of Kraków Mountaineering Club in years 2009–2012

Paweł Ramatowski (leader of Polish expeditions 2009–2012)
Piotr Sienkiewicz

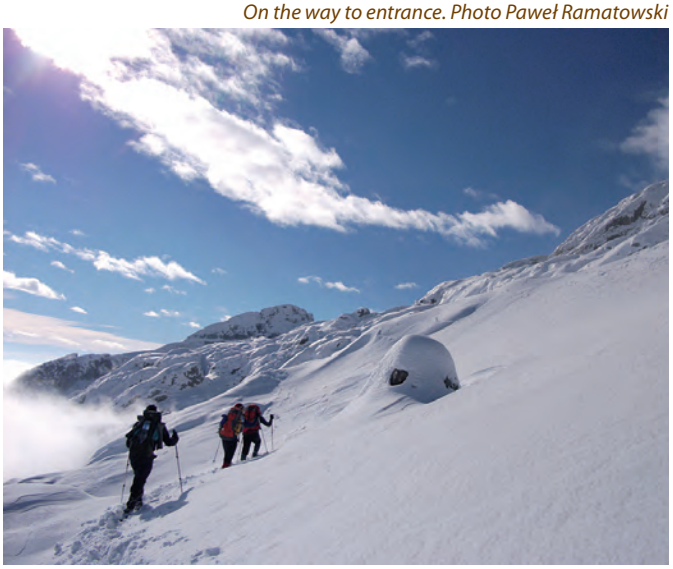
Since 2008 our main goal of the exploration in the Kanin massif has been the BC10 cave. During the summer 2009 expedition and short trip in November 2009 we explored another muddy meander called "Gdzie te Gangi" and pitch called "Odprężenia" with the depth of 75 m. At the depth of -490 m the stream was falling down to the next pitch. Owing to the huge amount of falling water we descended only 60 m down the pitch. The way down led through the narrow meander over the pitch head. The meander contained incredible amount of wet mud which did not make the exploration easier. The meander called "Meander Upodlenia" led through a few pitches (e.g. P15, P20, Studnia ku Pamięci Skwira – P53) to the depth of 630 m. In 2009 the cave length exceeded 1.2 km. Zdenko Rejec kindly informed us that the vertical distance between BC10 and Galeria Vilinskia in Mala Boka is around 100-150 m while the horizontal one is only ca. 200 m.

The august 2010 expedition was our 11th expedition to the Kanin massif. We expected joining BC10 with Mala Boka. The exploration was carried out from the bivouac located at -320 m. During the first cave-trip we descended down through a spacious pitch without wet mud. After 40 m we reached the shelf dividing the pitch into two parts. The direction of the cave changed from south-leading to north-leading. We bottomed the northern pitch, in which water was falling down from the ceiling. We went down the subsequent waterfall and passed along horizontal meandering passage leading northwards to the depth of 720 m. The dry mud occurred in the upper part of the meander. The exploration trips lasted around 14 hours since we left our camp and we came back completely wet. The Meander Upodlenia was especially unpleasant and difficult during the way back. Moreover, wet weather also complicated our exploration activity.

Each exploration trip appeared to be surprising. In meander we descended a 10 m drop and found much more dry mud lining its walls. The water passage led to a pitch which head were located at -750 m. We descended only a few metres in this pitch due to cascade falling down. The meander over the pitch head led further. It was completely dry, had black walls locally draped with huge amount of mud. Some tiny speleothems, probably built of aragonite, occurred on its ceiling. The meander was predisposed by vertical fissure and narrowed downward. Its bottom was covered with dry mud. The meander reached 1 m of width. We found possible continuations at several levels; however we chose the parts near the cave bottom. After a few drops and 35 m deep pitch (Zielona Studnia) we reached -823 m where the wet mud reappeared. We descended some small pitches and explored the northward leading series. Finally, we approached a sump, probably of perched character, located at -860 m. The last exploration trip lasted 16 hours what proves the great distance from the bivi to the sump. During our way back we found the by-pass of Meander Upodlenia leading through 224 m pitch from the level of 490 to 710 m. After that expedition in BC10 the depth of 860 m was reached and the length exceeded 1.7 km.

In August 2011, we came back with the same goal although last explorations turned out to be surprising. The main passage led clearly to the north. The last year's exploration stopped at a sump located at the depth of 863 m. Several possibilities between 730 m and the sump had been not checked. Especially, a series following a big fracture seemed to offer a possibility of bypassing the sump, as was suggested by a strong air current. Unfortunately, our plans had to ▷

On the way to entrance. Photo Paweł Ramatowski



BC10, first P 40. Photo Mateusz Golicz
Beginning of BC 10. Photo Paweł Ramatowski

be changed because of really bad weather. Heavy rains practically made any activity in the cave below the depth of 400 m impossible. The abrupt and unexpected rise of water level forced a four men team to wait some 30 hours in the cave for conditions that would allow safe return to the surface. The descent in "Odprężenia" Pitch was dangerous and P224 turned into a big waterfall which completely blocked access to the bottom series of the cave. The extremely narrow and muddy meander called "Meander Upodlenia" was the only emergency way back from the bottom bivouac.

Unexplored passages between the depth of -300 m and the bottom of Kurpałka Pitch were checked during the bad weather. There were boulder chocks in that interval of the cave. A promising horizontal passage, starting at the bottom of Siemanka Pitch and leading to the south, ended with a chock after 100 m. We also climbed up the chimney near "Psychomeander".

During the second part of the expedition, weather was milder. We started to explore the bottom series of the cave. The activity was based on the bivouac at the depth of -650 m.

Dry mud below Myjnia Pitch -800m. Photo Paweł Ramatowski

Psychomeander. Photo Paweł Ramatowski

Going down along a stream from a depth of -730 m, we reached a lake with a possible continuation but the empty space between the lake level and the ceiling was only around 20 cm. What seemed to be interesting was that the direction of the cave at that point changed from S-N to SW-NE. However, keeping in mind a possible water rise we did not explore this part.

We carefully checked the vicinity of the terminal sump and we found the entrance to unknown narrow meander at the level of -770 m. Meander led to a cascade, which we climbed up using aid climbing. The passage ran northwards and had a form of meander which ended in a pitch with an active water flow. We had checked that pitch during November expedition. At the bottom, short corridor through three ways led to a sump. Above that pitch there was a chimney, not yet explored.

Ascending P224 at the level of -550 m we traversed to the well visible entrance leading to a south-going gallery with a strong air flow. The gallery was decorated with old, weathered speleothems. We explored 60 m of the gallery and stopped near a drop. The gallery was continuing but we did not have time to check it. In the upper part of P224 we localized the entrance to a parallel pitch located to the SE. The dimensions of that pitch were similar to those of P224.

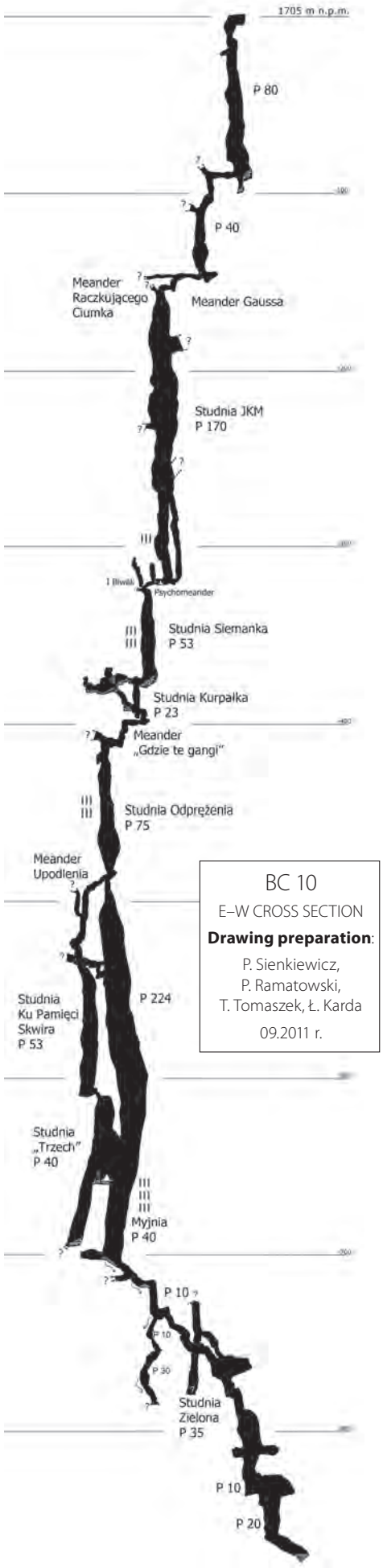
As the effect of that year's exploration the length of the cave was extended from 1,72 km to almost 2 km.

We hoped that 13th expedition in 2012 would be the final one for the connection of BC10 with Mala Boka. We concentrated our efforts on the problems we left unsolved the previous year, but unfortunately all problems ended without success. Hopefully, checking out one problem near the entrance of the cave, we found new parts leading to series of chimneys giving us a potentially highest denivelation. We managed to climb only three of them in case we lacked the time and equipment.

In the same time during surface exploration we found small entrance with a strong air draft. It occurred that beneath there were series of pitches which led us to the depth of -221 and it was not over. We had to stop exploration at that point due to the lack of equipment. To that level we used 450 metres of ropes and over 100 points. That cave represented as P41, was a huge surprise, because not even one narrow meander occurred during exploration. We will come back to this cave during next summer expedition. Although the main goal – connection of BC10 with Mala Boka – had not been achieved, we could say that it was a very successful expedition.

Special thanks to:

- KTJ PZA for the financial support
- Caving Section of Kraków Mountaineering Club
- JSPD Tolmin ❑



More than 8 km in Feichtnerschacht

Jakub Nowak (Krakowski Klub Taternictwa Jaskiniowego)

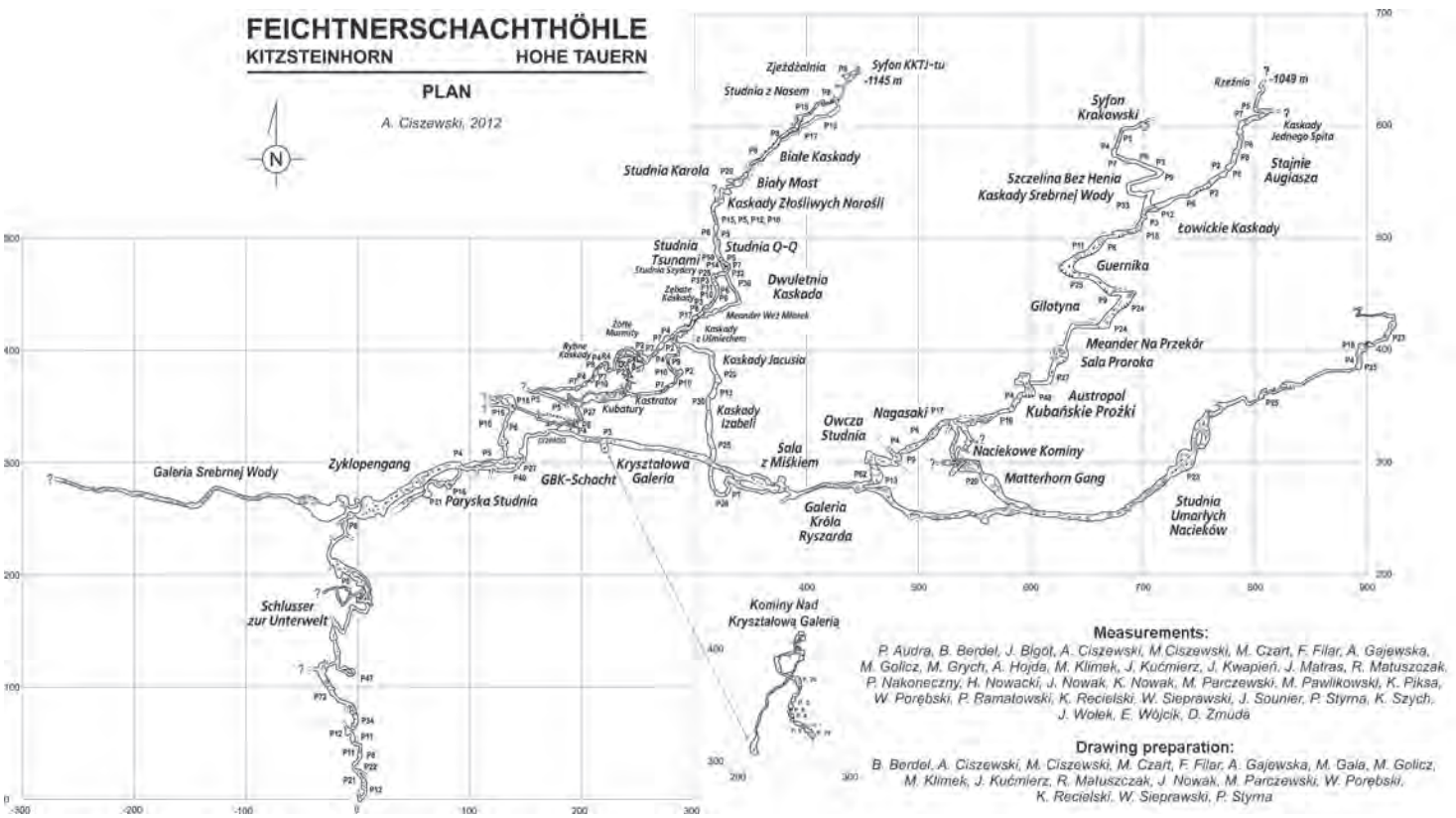
The Kitzsteinhorn massif is a part of the Hohe Tauern mountains in Austria, its highest summit reaching 3203 m above sea level. First Poles arrived in the area in 1982 in order to explore the Zeferet Cave. Since 1998 members of KKTJ[1] have systematically been examining the Feichtnerschacht Cave, which was discovered in 1984 and then explored by Richard Feichtner up to -500 m. This cave is developed in shales rich in mica and carbonates, a kind of rock not commonly encountered in the context of karst. The glacier that contributed to its formation still exists. In 2009, the cave already was 6,2 km long and 1145 m deep.

Asbestos Chamber (-350 m). Photo Jakub Nowak

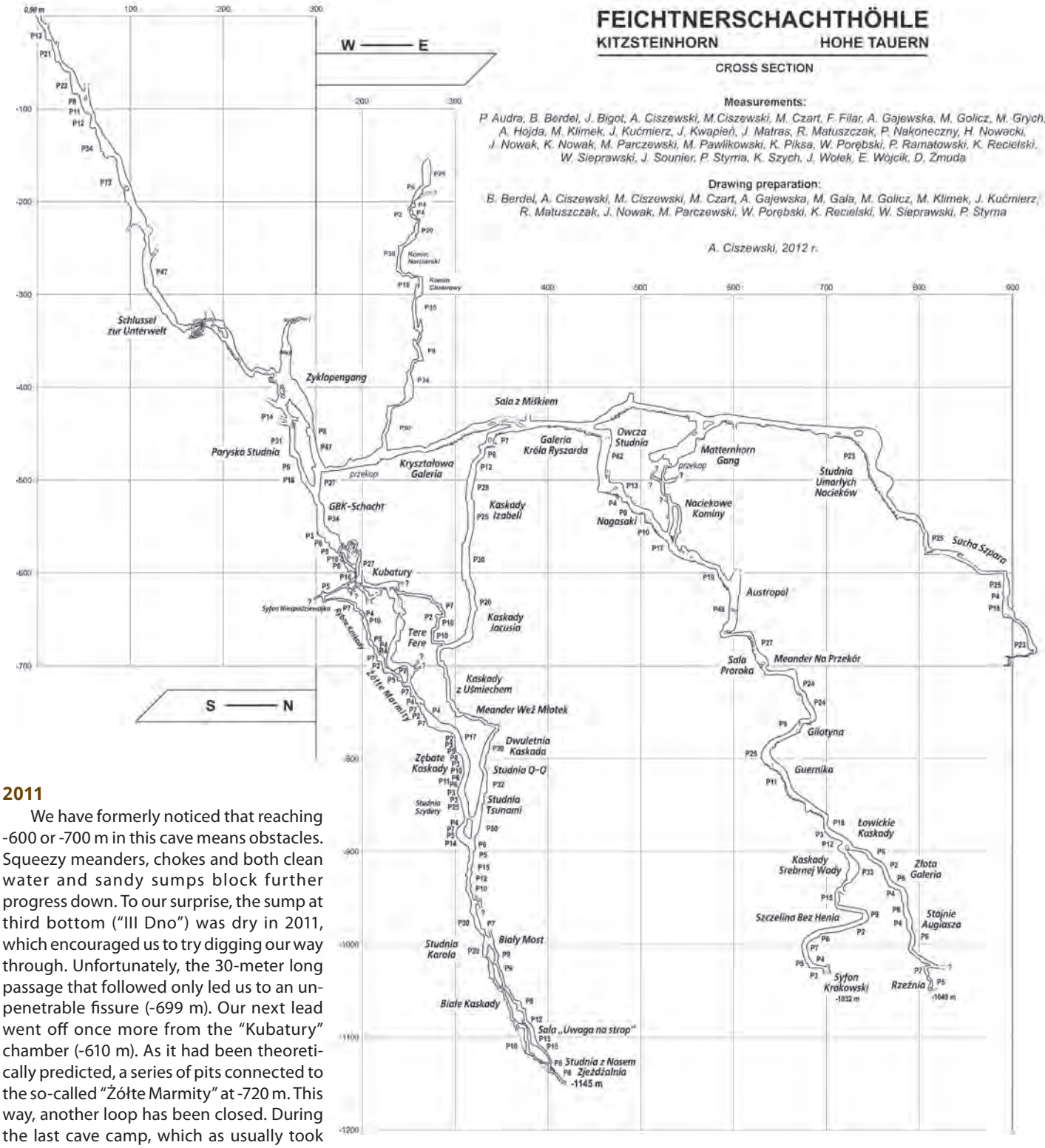
2010

A year before we had been wondering whether the "Kubatury" Chamber can be connected to the old cave bottom ("Stare dno", approx. -600 m). Surveys had been indicating that this is likely and in 2010 we managed to confirm it. We had to climb a 70 m chimney followed by a muddy and tight tube. Thus, we closed another loop in our surveys and paved a shorter way to "Kubatury".

Another lead to check was "Studnia Umarłych Nacieków", a pit located in the eastmost part of the cave, level 450 to 580 m below the entrance. Climbing revealed only a few chokes in the pit's ceiling. However, it occured that its bottom (-580) is not a definite end, but rather leads to a 100 m long fissure. Afterwards, we discovered a number of pits and reached a wet, sandy sump at -690 m. ▷



[1] "Krakowski Klub Taternictwa Jaskiniowego", meaning roughly "Kraków Caving Association". Note: there are three distinct caving societies in the city of Krakow: KKTJ, STJ KW and AKG (ed.)



2011

We have formerly noticed that reaching -600 or -700 m in this cave means obstacles. Squeezy meanders, chokes and both clean water and sandy sumps block further progress down. To our surprise, the sump at third bottom ("III Dno") was dry in 2011, which encouraged us to try digging our way through. Unfortunately, the 30-meter long passage that followed only led us to an unpenetrable fissure (-699 m). Our next lead went off once more from the "Kubatury" chamber (-610 m). As it had been theoretically predicted, a series of pits connected to the so-called "Żółte Marmity" at -720 m. This way, another loop has been closed. During the last cave camp, which as usually took place in the "Sala z Miśkiem" (-450 m), we began to climb the greatest chimney in "Galerie Kryształowe" (-480 m). We managed to ascend approx. 50 m and the chimney went on, up and up…

2012

…which meant the primary objective for the next year was obvious – we continued to climb. Dull, aided climbs on smooth walls were interrupted by dangerous chokes and squeezy meanders, but still, the lead went on.

Subsequent teams kept adding new pitches and at the end of the 2012 expedition, we reached -156 m, a clear prospect of going on still before us. The last trip brought the biggest surprise. In "Zyclopengang" (at approx. -400 m) we did a 20 m climb leading to the spacious "Sala Azbestowa". The sloping floor of this chamber is choky and covered in all sorts of aluminosilicates, including also asbestos! "Galeria Srebrnej Wody", a passage going off this chamber led us then to another sandy sump at -330 m. Luckily, a few prospective chimneys were present on the way.

2013

Our first goal was to finish climbs in the chimneys going up from "Kryształowa Galeria". It was evident that we are close to the surface, though we were not sure if we can reach an opening. Unfortunately, after another 40 meters of climbs we reached a choke in the celing. We made it to -110 m relatively to the main entrance, which was however just 20–30 m below the surface. While withdrawing equipment, we explored a few side leads and a parallel series of chimneys, hoping to find an entrance anyway. Meanwhile, in "Galeria Srebrnej Wody" an aided climb was started in one of the chimneys, some boulders (the so-called

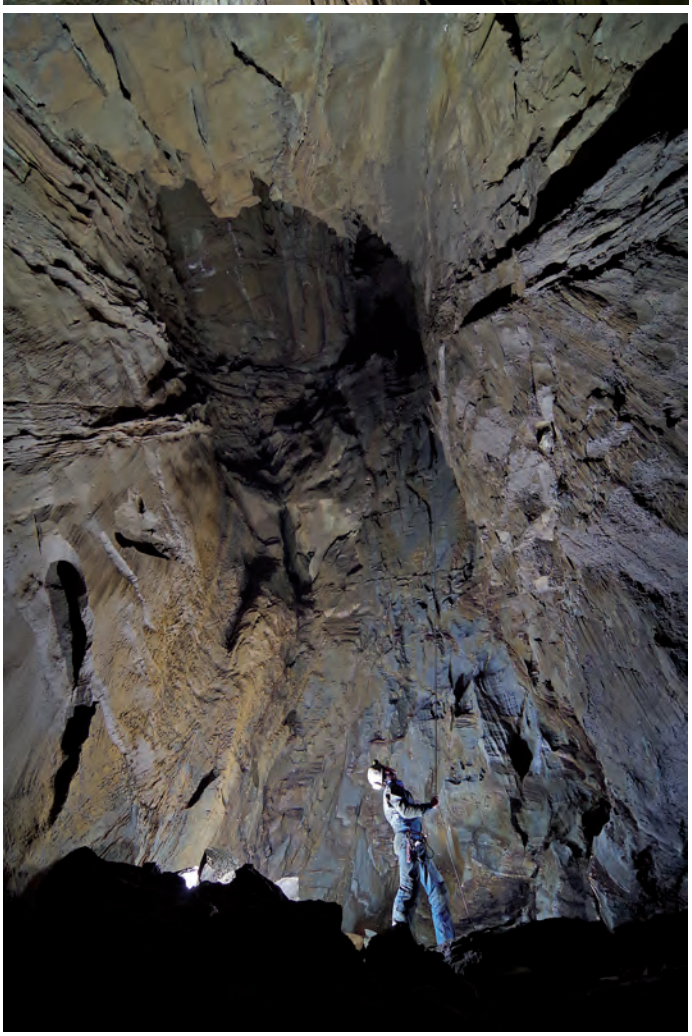
"Legoland") making it a somewhat complicated task. What is there, past them? Well, we hope to solve this and other mysteries in 2014, during our next expedition.

Conclusion

Between 2010 and 2013 four KKTJ expeditions took place, all led by Andrzej Ciszewski. During that time, approximately 2 kilometers of passages have been discovered. At the moment, the "Feichtnerschacht" cave is 8,1 km long and 1145 m deep, being the only such a deep cave known to exist in marly shales.

Read more on: http://kktj.pl, http://pza.org.pl. ❑

→ Speleothems in Zyclopengang (-380 m). Photo Jakub Nowak
↓ Summer water level in Cristal Gallery (-480 m). Photo Jakub Nowak

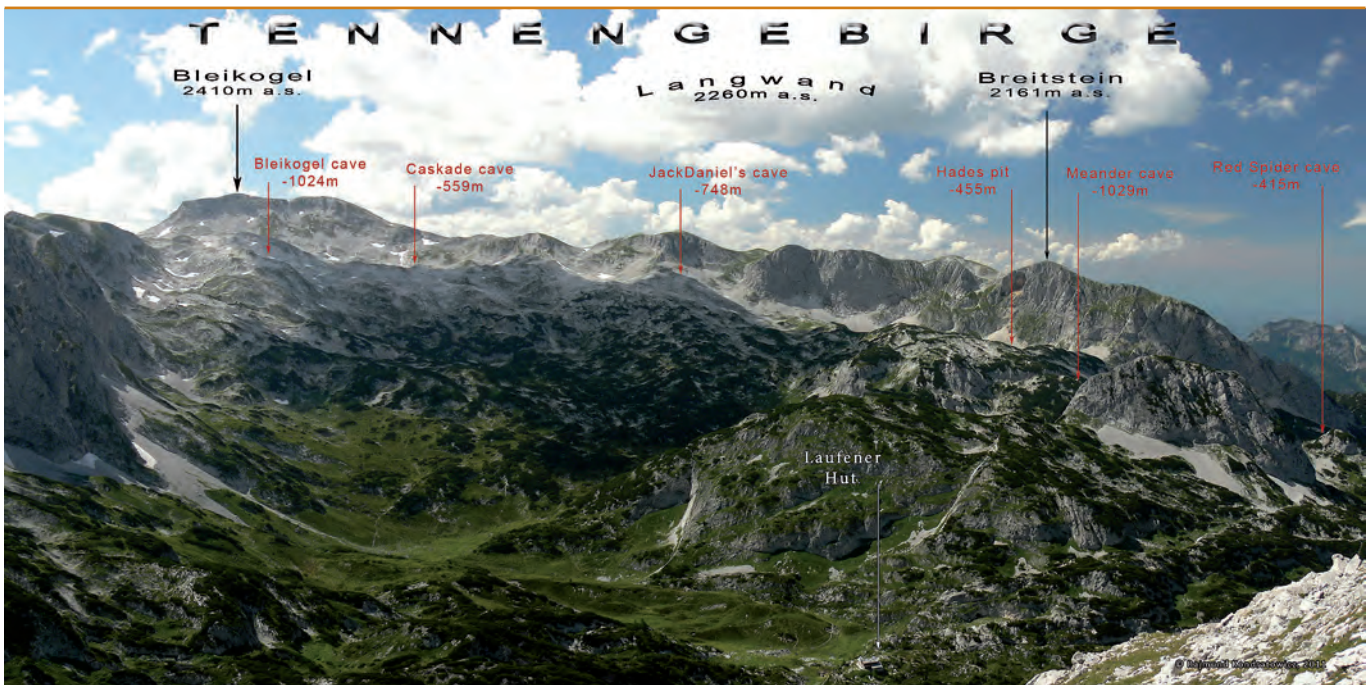


↑ Chimney in Silver Water Gallery (-330 m). Photo Jakub Nowak
→ Tight tube (-180 m). Photo Jakub Nowak

Explorations in the eastern part of the Tennengebirge massif

by Speleoklub Bobry from Żagań (2009–2012)

Rajmund Kondratowicz



Panorama of Tennengebirge. Photo Rajmund Kondratowicz

Our adventure with exploration of JackDaniel's cave began in 2003, when two members of the expedition, Jack and Daniel, coming down from the ridge Langwand discovered a small hole located in a karst depression at the altitude of 2120 m above sea level. After clearing some breakdown a low curving passage appeared. After few meters the passage turned into a pit and the first week of exploration has shown that it would be a large cave. A year later, after another trip to the cave, we received the confirmation. Depth of -615 m was reached with a new gallery being discovered at the level of -200 m. This opened new possibilities for future exploration. The year 2008 ended exploration of the wet parts, where we reached the largest depth of -748 m and the length exceeded 3500 m. But that year in particular has shown a new direction for exploration, the vast galleries extending to the north.

In August and September 2009, we were going on an expedition with great optimism. Parts discovered a year earlier, called Karkonoskie, are one-kilometer-long series of galleries intersected by pits. Corridors stretch here at a depth of -270 to -400 m on two floors interconnected by extensive shafts.

The passages presented itself with huge number of formations and unprecedented beauty comparing to the surrounding alpine karst caves. In 2009 exploration began in the well Pitch of Rescuers. With removal of few boulders we got into the room and stood before 25 meters high wall. Stalactite wall was named from an anniversary since our Tennengebirge expeditions began 30 years earlier, in 1979. Climbing was not easy, but after completing the climb a passage with greatly developed formations was discovered. The newly discoveries were close to 2 km and were called Capricorn Gallery. The forms and colors of formations in those parts of the cave are extremely diverse, change in number of places and are categories: stalagmites, stalactites, mushrooms, helictites, rimstone, waterfalls, bowls, etc. The whole gallery has a strongly noticeable air flow which is motivating for future explorations.

Expedition was three weeks long with following people taking part: Wit Dokupil – leader, Piotr Szukała, Marcin Oleksy, Piotr Jakubowicz, Irena Gabriel, Tomasz Krotowski, Marcin Furtak, Łukasz Wójtowicz, Przemysław Chmielowiec, Franciszek Kramek, Rajmund Kondratowicz. After dis-

In Analogue. Photo Rajmund Kondratowicz

covering Capricorn Gallery and its side passages the cave reached 5.5 km in length. Thus it became the longest cave in the eastern part of the Tennengebirge massif.

For further discoveries we had to wait until next year. In August 2010 we went to Austria, again under the leadership of Wit Dokupil following people took part: Jarek Blinkiewicz, Przemek Chmielowiec, Marcin Furtak, Irena Gabriel, Rajmund Kondratowicz, Albert Kościński, Franek Kramek, Tomek Krotowski, Magda Kwiatkowska, Piotr Kwiatkowski, Darek Sawicz, Piotr Szukała, Łukasz Wójtowicz, Renata Wcisło.

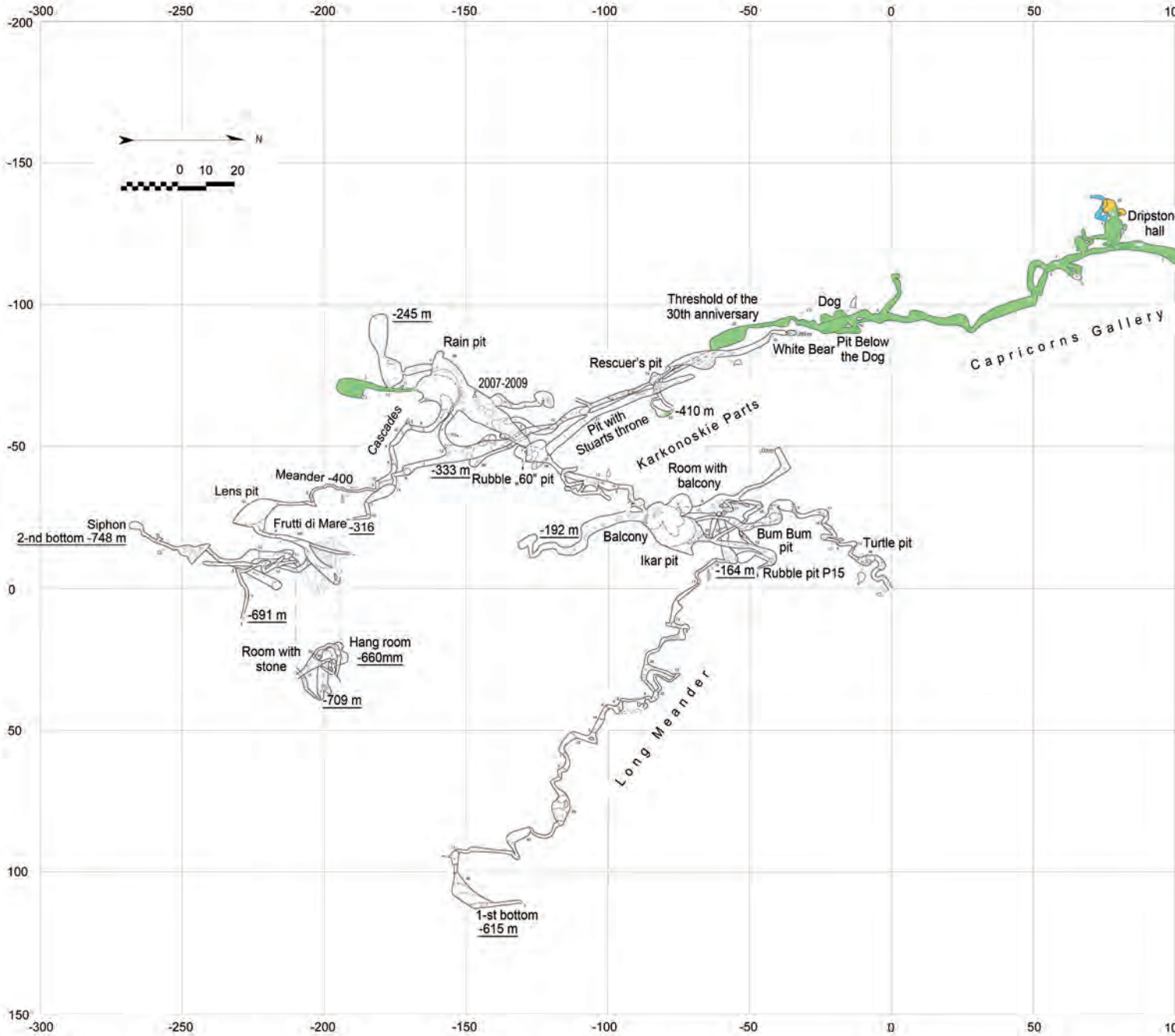
Exploration was carried out from new camp located in the place called Loop Analogue, which was close to our exploration sites. The main activities were focused on climbing chimneys over WX parts. We followed the air flow in the corridors in the hope of finding a new entrance to the cave. Climbing chimneys ended about 200 meters higher but the second entrance was not found. Was also explored parts resembling swiss chease, where the corridors formed many loops, tubes and pits. On that expedition we explored 700 meters, which gave the cave total length of 6130m. We left many unexplored passages, including another parallel series of chimneys to climb. However, in early September in Tennengebirge the weather declined with almost half a meter of snow fall. Access to the cave became a nuisance, and the passages inside got very wet. We decided to end the expedition.

We came back to JackDaniel's cave in 2011, as usually in August. Full of enthusiasm we continued exploration started in the previous years. Again there was a lot of climbing in chimneys, so exploration was moving quite slowly. Again, this time we did not managed to find the second entrance, which could greatly shorten the way to the northern cave parts. Chimneys of Hope ended up in a impassible slot, other new corridors also ended or joined with known ones. However one connection made helped us to reduce access important for cave area. We decided to move camp another half an hour to the north, so the places of exploration were even closer. We chose the room discovered a year ago, which later received the name of Rome. ▷

Sala Matki Boskiej (Chamber of Virgin Mary). Photo Rajmund Kondratowicz

Szrenica. Photo Rajmund Kondratowicz

Galeria Koziorożca (Capricorn Gallery). Photo Rajmund Kondratowicz
WX parts. Photo Rajmund Kondratowicz

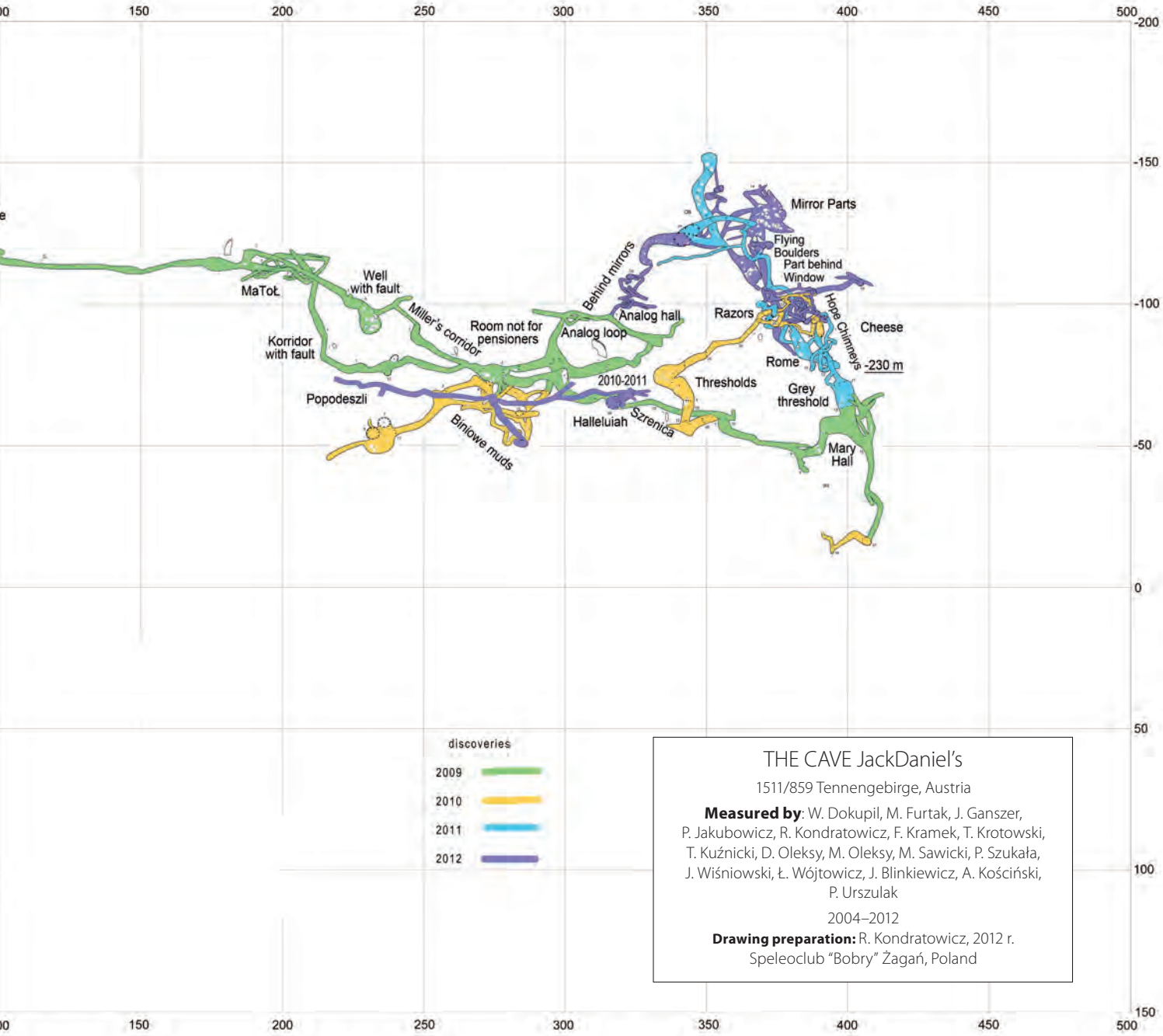


In the Biały Miś (White Teddy Bear) Room. Photo Rajmund Kondratowicz

By that time we surveyed another 700m of new corridors. JackDaniel's Cave reached length of 6.8 km. In 2011, 12 people participated in the expedition. The leader was Rajmund Kondratowicz, the other participants are: Paulina Bednarowicz, Jarek Blinkiewicz, Wit Dokupil, Irena Gabriel, Piotr Jakubowicz, Albert Kościński, Franek Kramek, Daniel Oleksy, Marcin Oleksy, Piotr Szukała, Przemek Urszulak, Łukasz Wójtowicz. Most people were already thoroughly familiar with the cave JackDaniel's, but every year there are young speleologists.

After a few years break Marcin Furtak was the leader of the expedition in 2012. He is the president of Speleoklub Bobry and he put together expedition with probably the largest number of participants up to this date. The participans numberd 20 and Paulina Bednarowicz, Jarek Blinkiewicz, Karol Borejszo, Przemek Chmielowiec, Wit Dokupil, Irena Gabriel, Dawid Ganczarek, Rajmund Kondratowicz, Albert Kościński, Franek Kramek, Tomek Krotowski, Michał Królewicz, Tomek Kuźnicki, Daniel Oleksy, Marek Sawicki, Kasia Sieja, Piotr Szukała, Przemek Urszulak and Renata Wcisło.

With this amount of people the supply went very quickly and in the cave was well manned. JackDaniel's Cave was increasing in it size however many passages were turning out to be dead ends. The expedition worked in the cave from 10 to 30 August. Within 20 days more than 1580 m of passages has been discovered and surveyed. Most extensive (600 m) and the most northerly located were Mirror parts. The connection of passages from the Hall of Mirrors with Analogue Chamber gave us the longest closed loop in the cave numbering 630 m. We also returned to explore a bit to the south, where thanks to climbing Alleluia chimney we discovered new gallery called



THE CAVE JackDaniel's

1511/859 Tennengebirge, Austria

Measured by: W. Dokupil, M. Furtak, J. Ganszer, P. Jakubowicz, R. Kondratowicz, F. Kramek, T. Krotowski, T. Kuźnicki, D. Oleksy, M. Oleksy, M. Sawicki, P. Szukała, J. Wiśniowski, Ł. Wójtowicz, J. Blinkiewicz, A. Kościński, P. Urszulak

2004–2012

Drawing preparation: R. Kondratowicz, 2012 r.
Speleoclub "Bobry" Żagań, Poland

Popodeszli. Gallery developed along the NS axis parallel to and approximately 30 m above the main corridor. There are many indications that in other places it also connects to the known passages. Climbing in the Alleluia is not yet complete, the chimney is still continuing.

The main problem now is to find the second entrance and search for new ways down below-400 m. JackDaniel's cave is approaching 8.5 km of horizontal length and there are still many places to be explored. As each expedition is also looking for new caves in last years we discovered several small objects, but none of them was likely to bring major exploration as the JackDaniel's cave. In August 2013 we plan another expedition, this time under leadership of Rajmund Kondratowicz so there is no end in sight... ❑

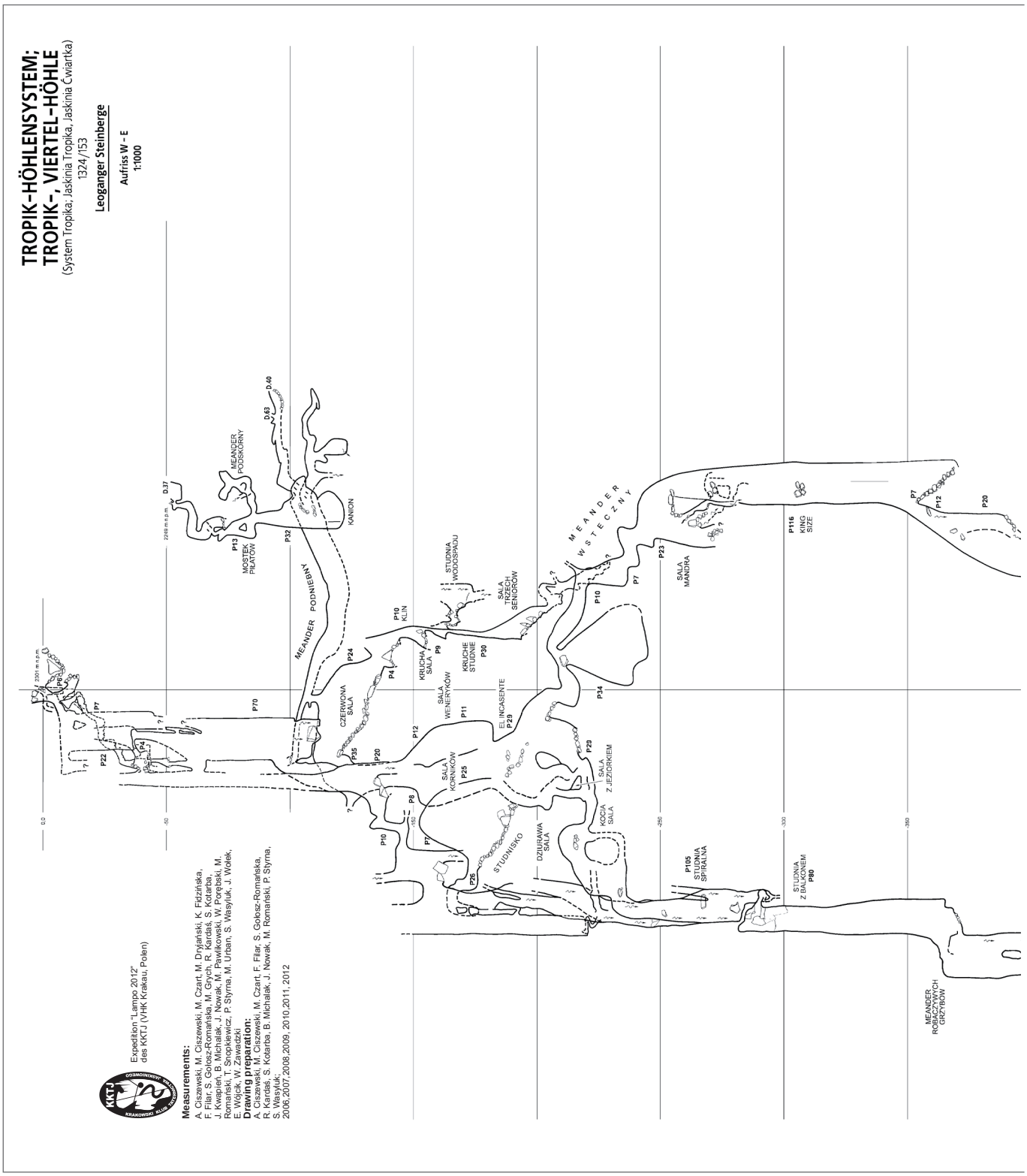
Participants of the 2012 expedition. Photo Rajmund Kondratowicz

Leoganger Steinberge

Andrzej Ciszewski (Krakowski Klub Taternictwa Jaskiniowego)

The last years of exploration in the Leoganger Steinberge massif were focused on two lesser side cirques. They are called Hochgrub and Dürrkar and before 2006 no systematic exploration was conducted in them. The cirques differ from each other quite essentially on the surface. Dürrkar is a steep, rocky, sloping steeply from an altitude of 2300 m above sea level down to 1800 m, with developed surface karst features, and small surface watercourses appearing on the contact with harder, soluble rock.

Hochgrub is greater than Dürrkar and located at the foot of the highest peak of the Birnhorn massif. The upper part is deeply carved and covered with scree. The cirque falls from 2200 m above sea level down to 1800 m, connecting there with Dürrkar.



In Dürrkar, we started searching for caves in 2006 and ran the sufrace exploration until 2012 covering the whole area. As a result of this sweep, more than 100 entrances were checked. Most of them turned out to be pits that ended blindly at shallow depths, usually in narrow cracks. The reason for that is the presence of numerous dolomite inserts, which are also visible on the surface. One large cave system was however discovered, the Tropic-Viertel Höhle. The system is close to the ridge separating Nebelsbergkar and Dürrkar. Its higher entrance is located at an altitude of 2305 m above sea level . The cave consists of large and extensive pit series . The lowest point reached is at -783 m and it is a comprehensive sump with an active water flow on a contact with a layer of dolomite.

The nature of cave parts close to the sump indicates that we have achieved the top of a great layer of dolomite dipping south-east of the massif. In this section of the cave, we consider the exploration finished.

We also stopped the exploration of a series of vertical pits emerging from the entrance of Tropic Höhle Cave and developing to the west. The lowest point reached is at -605 m and it is a very narrow crack with an intensive air flow. Interestingly, these passages cross under the ridge to Nebelsbergkar and develop towards the Lamprechtsofen cave system.

The second interesting cave in the area is close to the south-eastern edge of the Hochgrub cirque, at elevation of 2061 meters. Schacht mit dem Fahrn is a system of meanders and small pits with water flow, leading into a vast shaft with big waterfalls.▷

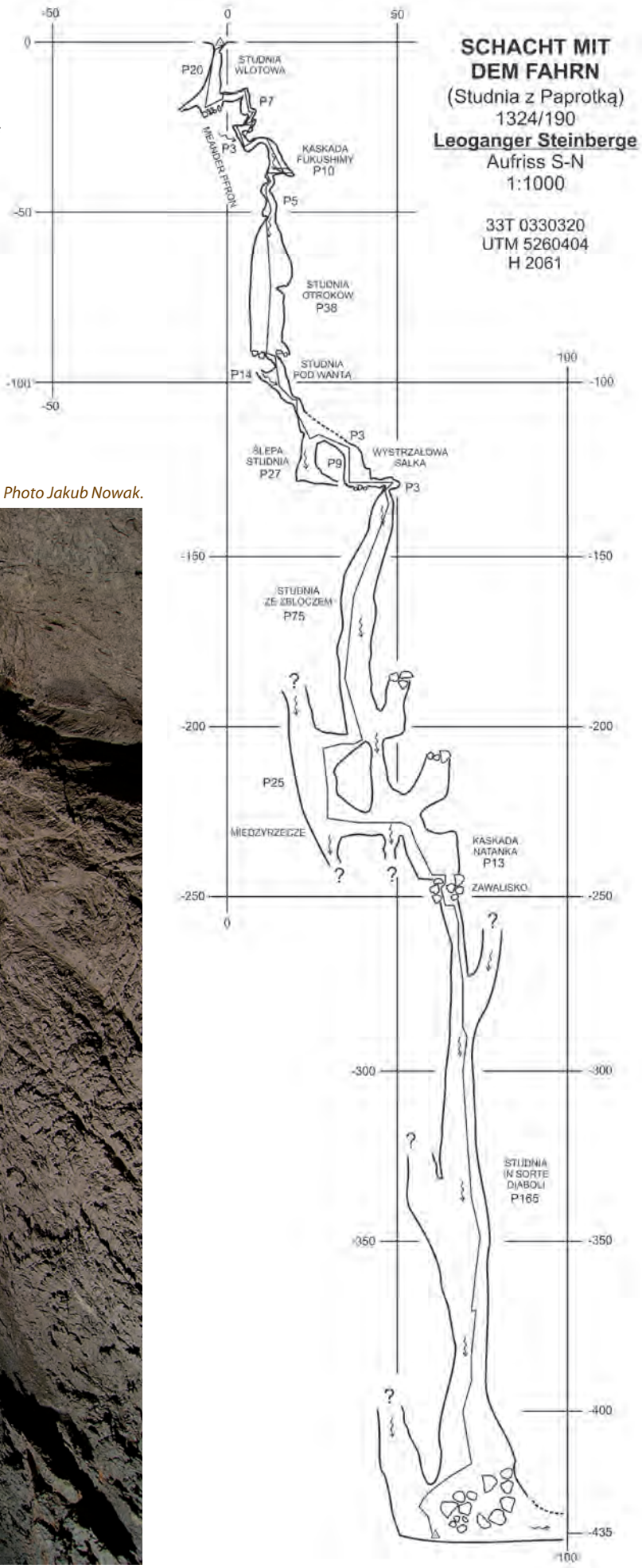
This pit turns into a narrow crack, impossible to pass. The end lies at -435 meters and is developed in dolomite.

There are signs that both Dürrkar and Hochgrub are partially drained to springs located at the entrance of Lamprechtsofen, as well as the Birnbachloch resurgence, located high on the opposite, southern part of the massif. Exploration in the area was led by KKTJ (Krakow Caving Club) [Note: There are four distinct caving associations in the city of Krakow: STJ/KW, KKTJ, AKG and Speleoklub Kras – ed.] under the direction of Andrzej Ciszewski with over 10 people taking part in each expedition. ❑

Expedition "Lampo 2012"
des KKTJ (VHK Krakau, Polen)

Measurements:
M. Ciszewski, D. Danilowski, F. Filar, S. Golosz-Romańska, R. Kardaś, B. Michalak, P. Pawłowski, M. Pindel, M. Romański, P. Skupiński, S. Wasyluk, E. Wójcik

Drawing preparation:
F. Filar, S. Wasyluk
2012



Mariana Trench, Tropik-Ćwiartka System. Photo Jakub Nowak.

Studnia z Paprotką, Hochgrub. Photo Michał Ciszewski

Entrance of Hubert's Keller Cave. Photo Stanisław Wasyluk

Edelweiss Cave. Photo Jakub Nowak

Tropic Höhle Cave. Photo Michał Ciszewski

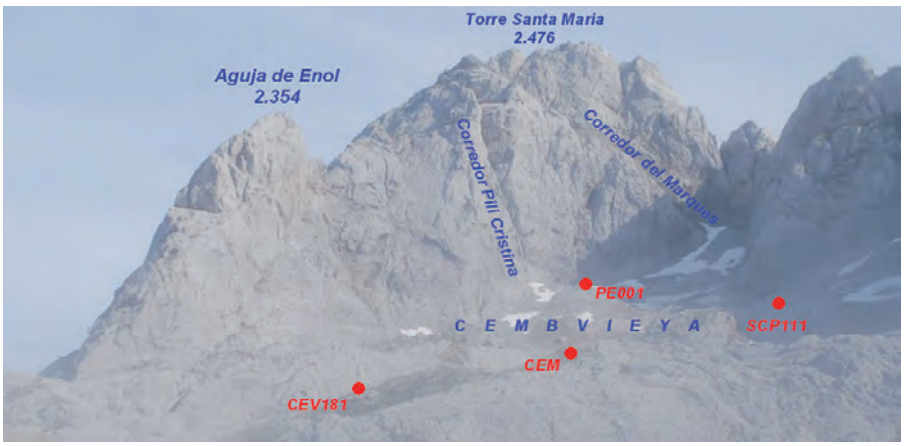
Picos de Europa – El Cornion

Marek Jędrzejczak (Speleoclub Wrocław)

Exploration of caves in Picos de Europa is co-ordinated by the Picos de Europa National Park. Through Federación Asturiana de Espeleologia, Poles were allocated a broad area in the Asturian section of the Picos range. Our region is located on the northern slopes of Torre Santa Maria and Torre del Alba, covering an area of 4,5 square km. It spans altitudes between 2390 (Torre del Alba) and 1460 (bottom of the Haas de Resecu cirque) meters above sea level.

This part of El Cornion was seriously explored for the first time in 1961. Cavers from Grupo Espeleológico Polifemo (GEP) which arranged an initial recconaissance trip. It confirmed that the area is speleologically attractive. Other groups that visited the zone were: Oxford University Cave Club (OUCC; also began in 1961) and French cavers from Speleo Club Orsay de Faculte (SCOF; between 1972 and 1975).

The Poles have been present in the area since 1978. Speleoklub Gliwice [* - No longer in existence (ed.)] has totally organized 7 expeditions (1979–80, 1984, 1986–89). The most prominent caves explored during that time were: Sima Profunda (up to -204 m), Pozu del Porru la Capilla (-863 m), Pozu las Barrastrosas (-429 m) and Pozu del Picu de los Asturianos (–265 m). In the meantime, the neighbouring zones occured to host remarkable cave systems. In Vega de Ariu area, Sistema del Hitu reached 1135 meters of depth in 1981, becoming the first „-1000" in the whole Picos de Europa. Even until now, with totally 1264 m of denivelation it remains the deepest system of the western massif.



← Torre Santa Maria Northern Wall. Photo Marcin Krajewski, description: Marek Jędrzejczak

↓ Base camp (from left: Torre del Alba, Picu Los Asturianos, Torre de la Canal Parda). Photo Marcin Krajewski

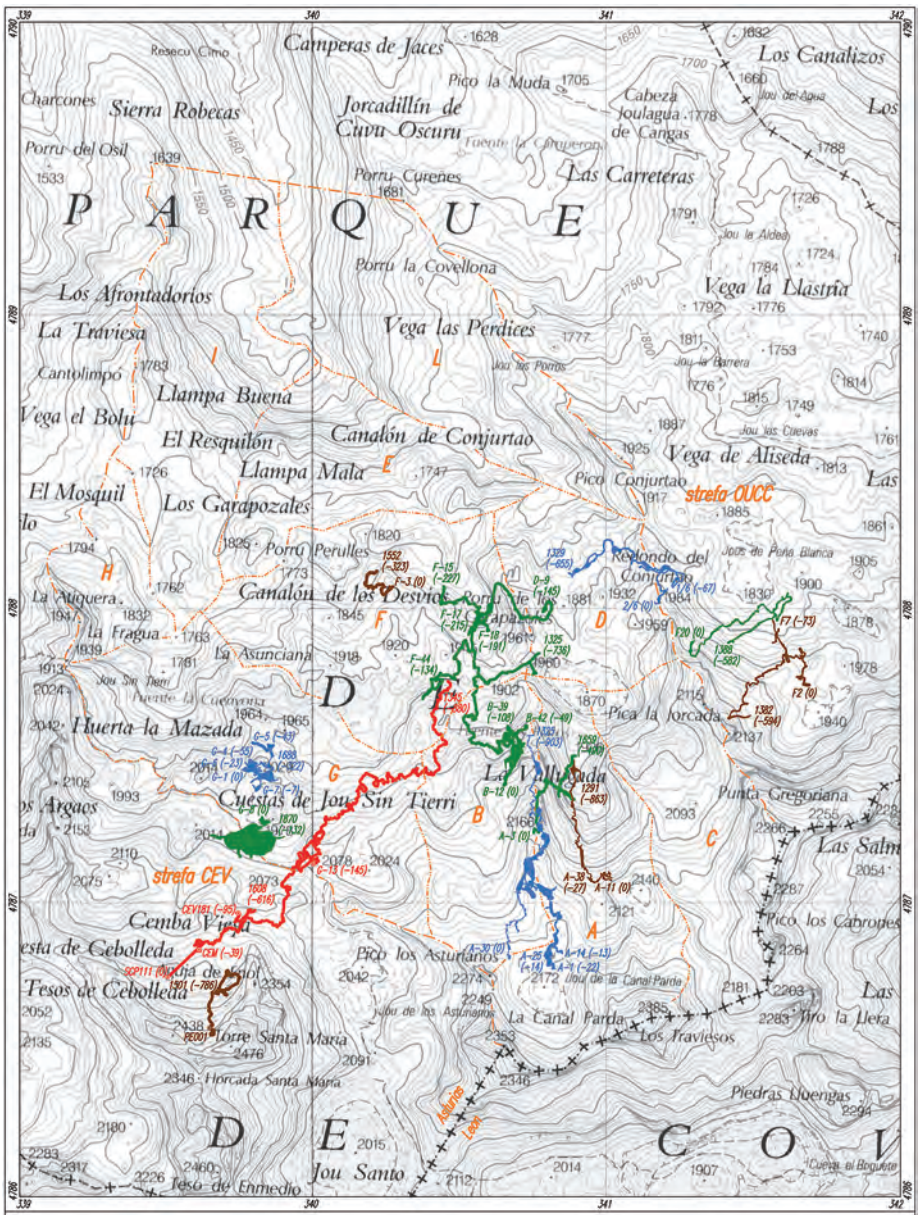
In 1991, Speleoclub Wrocław [* - Note: There are two distinct cave associations based in the city of Wrocław: Sekcja Grotolazow Wrocław (SGW) and Speleoclub Wrocław (SCW) – ed.] took over the organization of the Polish expeditions. Initially, we continued to explore Pozu del Picu de los Asturianos and Sima de la Torre de los Traviesos (Torre del Alba) o de los Organos, which resulted in joining these two objects in 1995 year into Sistema del Jou de la Canal Parda. In 1996, we deepened it to 903 meters. Meanwhile, in 1994 we started to explore Sistema del Canalon de los Desvios reaching -501 m.

Between 1997 and 2000 we searched for new entrances and did some hydrogeologic research. The most successful expedition during this period took place in 1998. That year, significant discoveries were made in Sistema del Canalon de los Desvios (-542) and Pozu del Porru de los Garapozales (-432 m). Unexpectedly, expeditions between 2001 and 2006 brought us back to Sistema del Canalon de los Desvios. We subsequently connected new entrances to that system: B-12 (2002), D-9 (2003), B-39 (2005), B-42 (2005), as well as F-44 (2006).

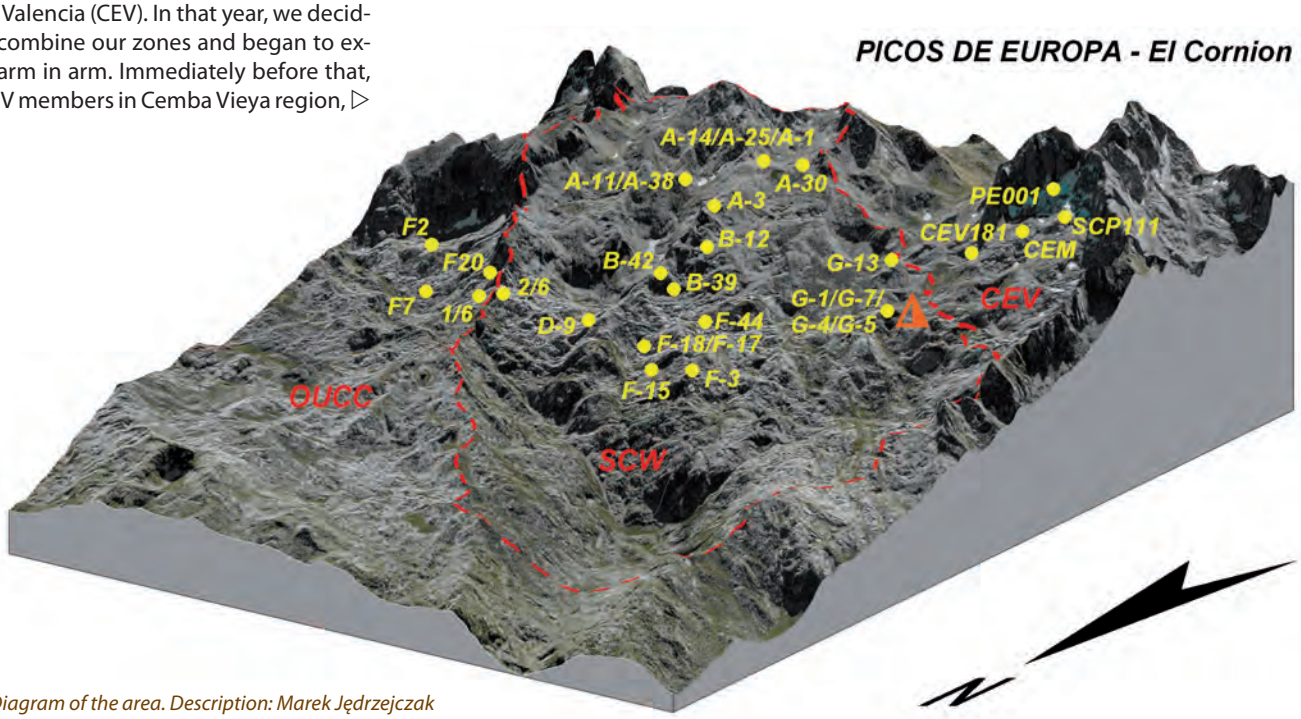
In 2003 we returned to Pozu del Porru de los Garapozales. In 2004 we reached -490 m and during the 2005 expedition we eventually finished this cave, not finding any new possibilities.

At the same time, long-term effort in the neighbouring zone paid off and the OUCC group accomplished another great success. By connecting Pozu Joulagua with Asopladeru la Texa, they announce in 2003 the Sistema Joulagua - la Texa, being 1004 meters deep.

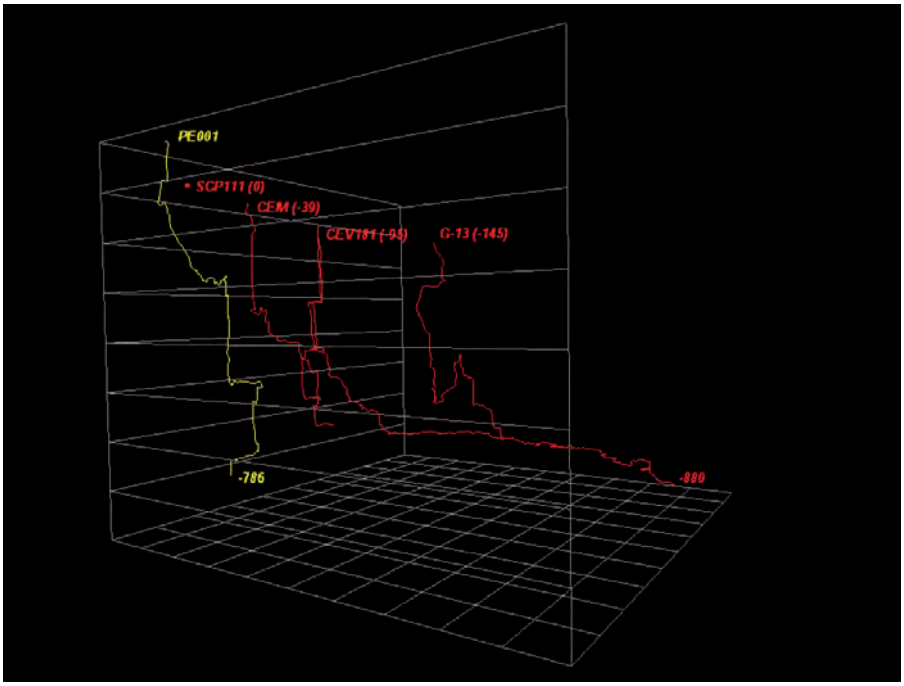
Since 2008, we have been strictly cooperating with members of Sección de Exploraciones Subterráneas de Centro Excursionista de Valencia (CEV). In that year, we decided to combine our zones and began to explore arm in arm. Immediately before that, the CEV members in Cemba Vieya region, ▷



Map of the area. Description: Marek Jędrzejczak



Block Diagram of the area. Description: Marek Jędrzejczak



Pozu del Torre Santa Maria (PE001) and Sistema Cemba Vieya (SCP111_CEM_CEV181_G-13). Description: Marek Jędrzejczak

Entrance of Pozu del Torre Santa Maria (PE001). Photo Marek Jędrzejczak

among other objects, had been exploring Pozu del Aguja de Enol reaching initially -207 m in 1990 and finally -499 m in 2006.

During 2008, our main goal was Pozu del Aguja de Enol. We made it to –574 m, not finishing all the leads. The northwestern part part of this cave approached closely Pozu Las Barrastrosas, which is developed along the same joint. Lots of snow remaining after the winter of 2009 made futher progress difficult. Finally, we reached -730 m during the 2009 expedition. Unfortunately, we failed to survey the new discoveries, but at least the cave did not end. During the same trip, in Pozu Los Barrastrosas we tried hard to bypass a choke on the floor of Sala Iberia, at the cave bottom. After a series of aided climbs up to -320 m, we were able to descend via a new way and achieve -488 m.

In 2010, together with a small group of cavers from Sección de Exploraciones Subterráneas de Centro Excursionista de Valencia, we went on exploring Pozu del Aguja de Enol and Pozu Las Barrastrosas. Working through the G-13 entrance, at the –540 m level we connected these both caves and then reached a sump at -784 m. Sistema Pozu del Aguja de Enol - Pozu de los Barrastrosas became 784 m deep and 4,3 km long, with a significant horizontal span of 1,1 km.

The following year we tried, but we did not achieve success to join Sistema Pozu del Aguja de Enol – Pozu de los Barrastrosas with Sistema del Canalon de los Desvios. Our goal was to bypass a sump, but we could not find any way leading northwest. We also visited Sima Cemba Vieya, with the same objective in mind. The cave was also resurveyed, in order to verify the old documentation as well confirm if the connection is actually possible. Besides, in Pozu del Torre Santa Maria we made it to -324 m.

In 2012, working from Pozu de la Aguja de Enol, we manged to connect Sistema Pozu de la Aguja de Enol – Pozu los Barrastrosas with Sistema Cemba Vieya. The combined system boasts 880 m of denivelation and 6 km of length. A study of karst flow commenced that year has confirmed the system discharges to Güeyos de la Texá and Riu Redimuna (Pomperi) river. Also, exploring Pozu del Torre Santa Maria, we reached –786 m, still not finishing the cave.

Read more on: http://www.scw.wroc.pl/wyprawy.php

We would like to especially thank our friend and a honorary member of our club, Armando Alonso Bernardo, for supporting our activities throughout many years. We would also like to thank the authorities of Parque Nacional de Picos de Europa, as well as Federación Asturiana de Espeleologia, without whom our expeditions could not take place. Moreover, we remain indebted to the Spanish cavers that cooperate with us, especially Juan Jose Gonzalez Suarez, Miguel Ángel Carrasco Moreno, Fernando Arranz Sanchis, Daniel Ballesteros. ❑

	NAME	ENTRANCE SYMBOLS	DEPTH [M]	LENGTH [M]	HORIZONTAL EXTENT (M)	YEAR, THE CLUB, THE RESULT
1.	Sistema del Hou de la Canal Parda (Pozu del Picu de los Asturianos – Sima de la Torre del Alba o de los Organos)	A-30 (0) A-14 (-13) A-25 (-14) A-1 (-22)	-903	4401 + ca. 450	760	1974 SCOF, -330 in A-1 1975 SCOF, -416 in A-1 **1988 SG, -100 in A-30** **1989 SG, -265 in A-30** **1991 SCW, -552 in A-30** **1994 SCW, -726 in A-30** **1995 SCW, -429, connection of A-1 with A-30 (-726)** **1996 SCW, -903**
2.	Sistema Cemba Vieja (Sima Parodia – Sima Cemba Vieja – Pozu de la Aguja de Enol – Pozu les Barrastoses)	SCP111 (0) CEM (-39) CEV181 (-95) G-13 (-145)	-880	5644 + ca. 450	1390	1974 GMT, -75 in CEM 1977 SEII and GEP, -280 in CEM 1979 SEII, -315 in CEM 1981 SEII, -510 in CEM 1982 SEII and LUSS, -577 in CEM 1984 SCP, ca. -250 in SCP111 1985 SCP, ca. -330 in SCP111 and connection with CEM **1989 SGKWW, -429 in G-13** CEV, -30 in CEV181 1990 CEV, -207 in CEV181 2006 CEV, -499 in CEV 181 **2008 SCW and CEV, -574 in CEV181** **2009 SCW and CEV, -690 in CEV 181** **SCW, -459 in G-13** **2010 SCW, -548, connection G-13 with CEM (-880)** **SCW and CEV, -784** **2012 SCW, -482, connection of CE181 with CEM (-880)**
3.	Pozu del Porru la Capilla	A-11 (0) A-38 (-27)	-863	1754	440	**1984 SG, -180** **1986 STJC, -400** **1987 SG, -863** **2003 SCW, -123, connection of A-38 with A-11 (-683)**
4.	Pozu del Torre Santa María	PE001	-786	1437	230	**2009 SCW, 0** **2011 SCW, -324** **2012 SCW, -786**
5.	Sistema del Canalon de los Desvios	B-12 (0) B-42 (-43) B-39 (-104) F-44 (-134) D-9 (-148) F-18 (-202) F-17 (-226) F-15 (-239)	-736	6610 + ca. 50	706	**1994 SCW, -501 in F-18/F-17** **1995 SCW, -446, connection F-15 with F-18/F-17 (-501)** **1998 SCW, -542 in F-18/F-17/F-15** **2001 SCW, -404 in B-12** **2002 SCW, -710, connection of B-12 with F-18/F-17/F-15 (-736)** **SCW, -324 in D-9** **2003 SCW, -491, connection of D-9 with F-18/F-17 (-736)** **2005 SCW, -257, connection of B-39 with B-12 (-736)** **SCW, -320, connection B-42 with B-12 (-736)** **2006 SCW, -582, connection F-44 with F-18/F-17/F-15/D-9 (-736)**
6.	Pozu del Porru de los Garapozales	A-3	-490	1250	298	1975? SCOF?, -60? **1998 SCW, -432** **2003 SCW, -457** **2004 SCW, -490**
7.	Pozu los Desvios	F-3 F-3B (-3)	-323	702	97	1973 shepherd, -100 1975 SCOF, -280 **1980 SG, -323** **2000 SCW, ca. -60, connection F-3B with F-3 (-323)**
8.	Red de les Barrastroses	G-1 (0) G-7 (-7) G-4 (-55) G-5 (-43)	-322	?	145	1972 SCOF, -215 in G-7 1973 SCOF, -315 in G-7, SCOF, -130, connection G-4 with G-7 (-315) 1975 SCOF, -140, connection of G-5 with G-4/G-7 (-315) **1998 SCW, ca. -50, connection G-1 with G-4/G-7/G-5 (-322)**
9.	bez nazwy	SCP 134	-240	?	42	1984 SCP, -38 1985 SCP, -157 **1986 SCP and KKS, -240**
10.	Sima Profunda	Prof.	-204	?	?	**1979 SG, -188** **1980 SG, -204**

* **KKS** – Katowicki Klub Speleologiczny; **SCW** – Speleoclub Wrocław; **SG** – Speleoklub Gliwice; **SGKWW** – Sekcja Grotołazów Klubu Wysokogórskiego Wrocław; **STJC** – Sekcja Taternictwa Jaskiniowego Częstochowa;
CEV – Sección de Exploraciones Subterráneas de Centro Excursionista de Valencia, Hiszpania; **GEP** – Grupo Espeleologia Polifemo, Oviedo, Hiszpania; **GMT** – Grupo de Montana Torreblanca, Oviedo, Hiszpania; **LUSS** – Lancaster University Speleological Society, Lancaster, Anglia; **SEII** – Seccion de Espeleologia Ingenieros Industriales, Madrid, Hiszpania; **SCOF** – Speleo Club Orsay Faculte, Orsay, Francja; **SCP** – Espeleo-Club de la Universidad Politecnica de Valencia, Hiszpania. In bold – Polish expeditions

Prokletije 2009–2013

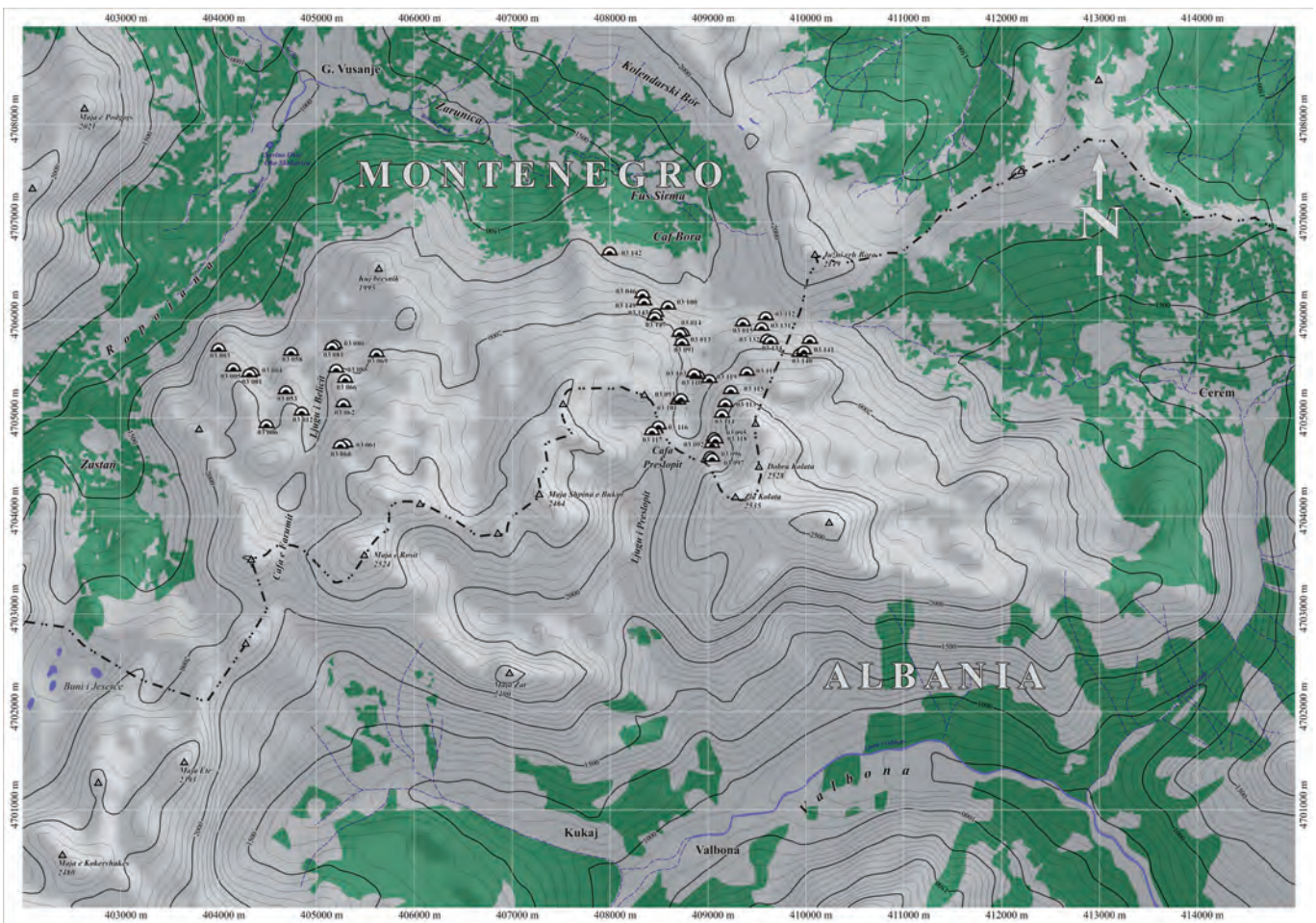
Ditta Kicińska, Krzysztof Najdek (Wielkopolski Klub Taternictwa Jaskiniowego)

The Prokletije Mountains (the Northern Albanian Alps or the Albanian Alps or Bjeskët e Nemuna) are the southernmost and also the highest part of the Dinarides. The highest peak is Jezerski Vrh/Maja Jezerce Mount (2,694 m a.s.l.) situated in Albania. On the both sides of the border denivelation between the peaks and the bottom of valleys reaches 1000 m.

The selected carbonate massifs, such as Karanfili-Vesirova Brada, Zastan Grbajski, Volušnica and Belič have been explored by Polish and Serbian speleologists since 2006. In the last four years the main activities of the expedition have been focused on the Belič massif, which is located at the boundary between Montenegro and Albania.

Geologically, this region belongs to the High Karst unit, which is composed of Mesozoic limestones and dolomites. Glacial and karst forms predominate in the morphology of this area. Carbonate massifs surrounding two biggest valleys: Grbaja and Ropojana – are drained by two big springs: Alipašni Izvori and Savino Oko. The Savino Oko spring

Maja Kolata, the highest peak of Montenegro. Photo Ditta Kicińska

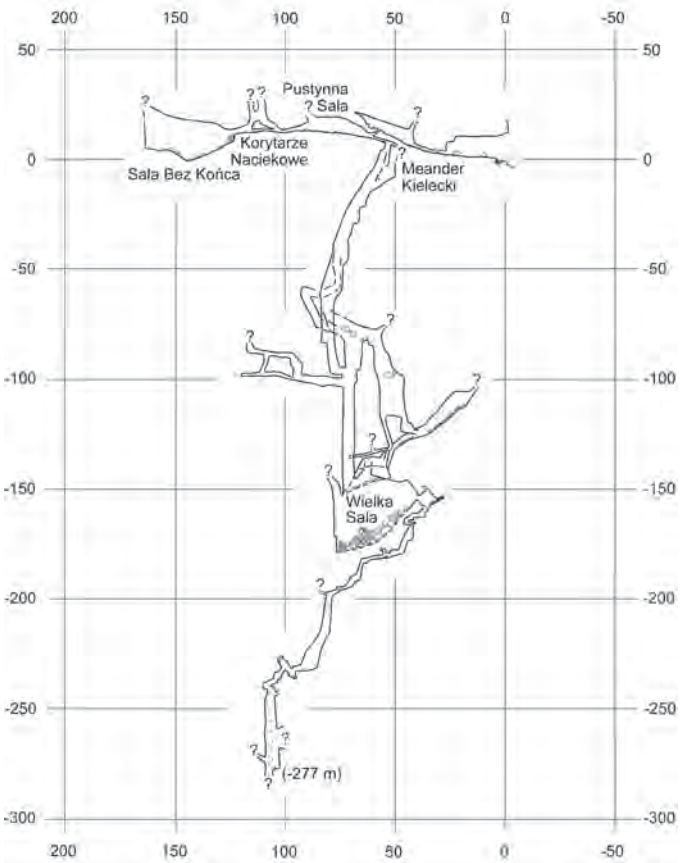


Map of the Belič massif showing discovered caves. Author Krzysztof Najdek

is discharging the Belič massif (two groups from Poland dived in this spring and descended to the depth of 96 m).

During the period of 2009-2012 4 exploratory expeditions took place in summer and 3 trips in spring, organized by Polish and Serbian speleologist (Wielkopolski Klub Taternictwa Jaskiniowego and Speleoklub Świętokrzyski from Poland, and Akademski Speleosko-Alpinisticki Klub from Serbia) in the Prokletije Mts.

The expeditions have discovered 50 caves, among these the Górnicza Cave was explored to -516 m. Unfortunately the bottom of this cave is filled by sediments and further exploration at this point cannot be continued. However, as in other caves there is there still a few places to check. Near the Górnicza Cave the second deepest one – the Lodowa Cave (depth of -451 m) is located. In 2013 it will ▷



03 113 GIGANT CAVE
Czarnogóra, Prokletije, Belič
SE-NW
Measurements 2009: A. Kasza, Z. Tabaczyński; **2010**: A. Szrek Buczyk, P. Buczyk, F. Filar, A. Kasza, D. Kicińska, K. Maciąg, P. Niziołek, M. Parczewski, B. Piróg, P. Szukała; **2012**: D. Drzewiecka, D. Kicińska, Ł. Marciniak, K. Najdek, K. Piotrowski, Z. Tabaczyński
Drawing preparation 2010, 2012: A. Kasza, K. Najdek, Z. Tabaczyński

↑ Base camp on Caf Bora. Photo Mariusz Woźniak
→ Lodowa Cave (Ice Cave). Photo Zbigniew Tabaczyński
→ Lodowa Cave. Photo Mariusz Woźniak

be checked for the possibility of the connection between the two caves. The Gigant Cave (depth of -296 m, length of 1,635 m) is another interesting object. At a depth of approximately 100 m a pit was traversed in the upper part, which made possible to get further, through parallel passages in the lower parts to the previously discovered a large chamber. Near the bottom of this pit passages are situated with speleothems (the caves of this area are poor in it).

Every year a lot of entrances on the surface have been checked. Unfortunately most of them are terminated with blocks, snowy plugs or narrow places. During exploration some caves were connected into bigger systems as Nibyczarna and Babina Sisa caves or Łezka and Kolektor.

The longest and deepest caves of the Belič massif are:

- Jaskinia Górnicza 03 013 (depth of -516 m, length of 1,218 m),
- Jaskinia Lodowa 03 110 (depth of -451 m, length of 1,956 m),
- Jaskinia Nibyczarna-Jaskinia Babina Sisa 03 015-03 131 (depth of -236m, length of 1,611m),
- Jaskinia Gigant 03 113 (depth of -296 m, length of 1,635 m),
- Jaskinia w Trzech Kopcach 03 142 (depth of 141 m, length of 456 m),
- Jaskinia Entuzjastyczna 03 147 (depth of -107 m, length of 543 m),
- Jaskinia Łezka-Jaskinia Kolektor 03 115-03 111 (depth of -236 m, length of 1,011 m).

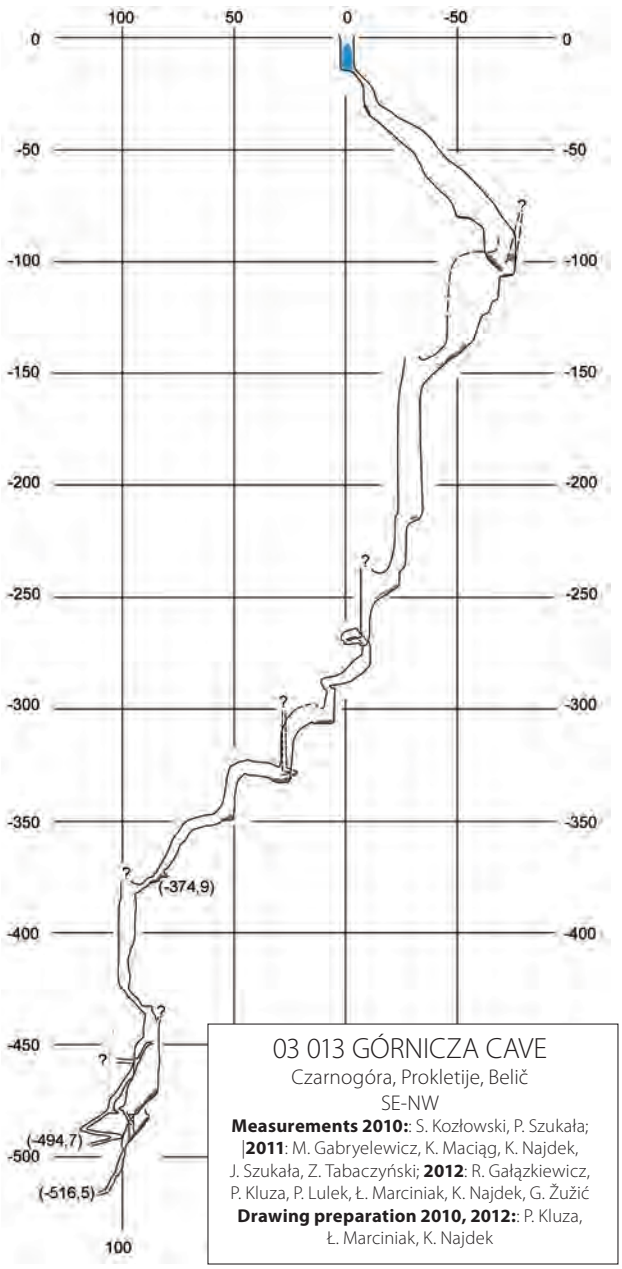
The caves of this area occur in thick-bedded limestones. The cross section of horizontal corridors often are elliptical what indicates formation under phreatic conditions. The passages and chambers developed in these rocks are large and occur at different depths.

The caves of Belič massif are developed along tectonic discontinuities (SE-NW and SW-NE) or bedding planes. In most caves vertical invasion vadose passages occur (Górnicza, Lodowa, W Trzech Kopcach). In the past water probably flowed westward to the Ropojana Valley, and recently it is likely that it flows into Savino Oko spring.

The exploration will be continued in all of the mentioned caves as well as on the massif surface.

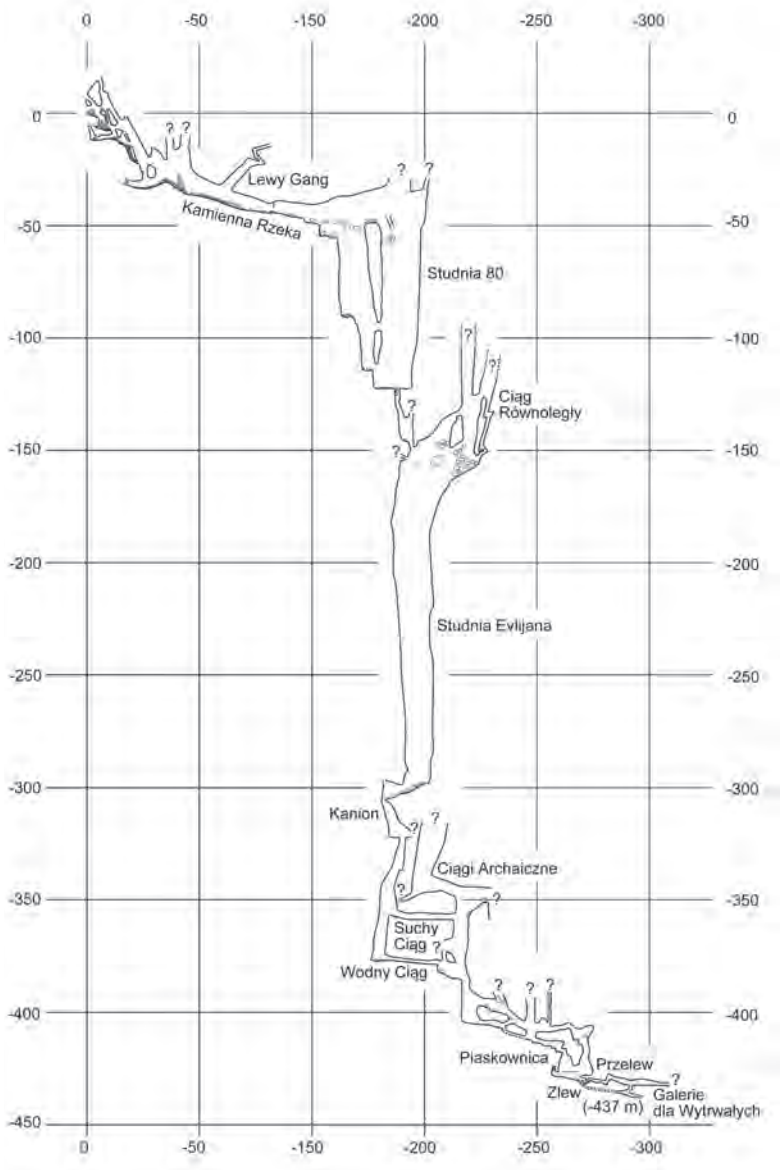
The exploration and scientific activities have been conducted in agreement with the Speleological Society of Montenegro and the National Park of the Prokletije. All the results of exploration one can find on the website: www.prokletije.pl.

Expeditions were led by Krzysztof Najdek and Aleksandra Filipiak. ❑

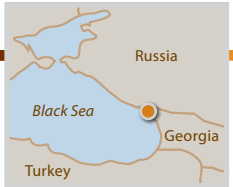


03 013 GÓRNICZA CAVE
Czarnogóra, Prokletije, Belič
SE-NW
Measurements 2010:: S. Kozłowski, P. Szukała; |**2011**: M. Gabryelewicz, K. Maciąg, K. Najdek, J. Szukała, Z. Tabaczyński; **2012**: R. Gałązkiewicz, P. Kluza, P. Lulek, Ł. Marciniak, K. Najdek, G. Žužić
Drawing preparation 2010, 2012:: P. Kluza, Ł. Marciniak, K. Najdek

03 110 LODOWA CAVE
Czarnogóra, Prokletije, Belič
SE-NW
Measurements 2009: A. Kasza, U. Kotewa, K. Najdek, Z. Tabaczyński; **2010**: F. Filar, M. Kwiatkowski, P. Lulek, K. Najdek, P. Niziołek, Z. Tabaczyński, M. Parczewski, P. Szukała; **2011**: K. Maciąg, A. Maciejewska, K. Najdek, I. Njunjić, Z. Tabaczyński **2012**: I. Cvetkovic, M. Macioszczyk, Ł. Marciniak, Z. Tabaczyński
Drawing preparation 2009, 2010, 2011, 2012: K. Najdek, Z. Tabaczyński



Arabika
Western Caucasus



Michał Górski (Sekcja Grotołazów Wrocław)

Sekcja Grotołazów Wrocław (Wrocław Caving Club) started exploration of the Arabika massif in the Western Caucasus in 2005.

During the first years of exploration 2005 – 2008 cave named Bretska Krepost was explored, and the discovery of PL-1 took place. After the trip in 2008, we finally finished the exploration of the Bretska Krepost. In the next years we decided to focus on the exploration of PL-1. At the bottom of the Well of Lost Hope we decided to work on the impassable breakdown. The year 2009 brought many changes. In the PL-1 cave after a week of work, we managed to get through the breakdown. During the last two days of expedition we deepened the cave by 160 meters and left the problem open for next year. In addition to PL-1 we discovered cave called Cellar. It was a difficult to move narrow meander which continued for 200 meters and had strong airflow.

Waiting for the helicopter. Photo Szymon Sośnicki

In the following year, unable to wait for further discoveries, we decided to organize winter expedition. In February and March we went back to Arabika. It was the first winter expedition in our area. Until that time, no one in the winter undertook the exploration in this part of the massif. We encountered a lot of problems especially those connected with weather. Shortly after helicopter landing in the mountains we were greeted by blizzard. With the huge snowfall tents were becoming useless and we moved to an igloo for the next three days. After the snowstorm ended, we dug a hole in the snow to reach the entrance of PL-1 and continued the exploration for five days, until we reached a depth of 605 meters.

In 2010, the summer expedition also took place. The aim was to push further the exploration of the PL-1, as well as the Cellar Cave. Unfortunately, Pl-1 again ended in a breakdown. Our attempts to get through it, failed. Cellar Cave, however, surprised us pleasantly. After the tight meander, we reached an extensive way down with pits. The largest pit was 60 m deep and it looked very promising. That year's expedition ended at the bottom of a well called Czaczałaków and further exploration would have to wait for another year.

The Arabika 2011 expedition brought new discoveries in the Cellar Cave. Unfortunately, the promising, broad and big pit series did not bring anything new. The pit below Czaczałaków ran into narrow meander that after a few dozen meters ended without giving real opportunities for further exploration. Cellar Cave however continued in another direction. Narrow and tight meander sometimes extending into small steps ran into the massif. This lead was left unfinished.

Meanwhile, in PL-1 we attempted to search all the breakdowns at the bottom. We did a traverse around the pits to a big window, ▷

Transport. Photo Szymon Sośnicki

Entrance to PL1. Photo Szymon Sośnicki

← Base camp. Photo Szymon Sośnicki

→ Photo Joanna Furmankiewicz
← View on the Arabika massif. Photo Joanna Furmankiewicz
↓ Photo Szymon Sośnicki

↑ Transport. Photo Joanna Furmankiewicz
→ Studnia Miauczek. Photo Szymon Sośnicki
↓ Three dirty. Photo Leszek Zając

in which surprisingly, we found only a large alcove. By the end of the expedition we just had three unchecked chimneys to climb. Unfortunately, they were all difficult with active water flow and lots of unstable rock.

The year 2012 was very unlucky for our project. We arrived in Abkhazia using new way, through Georgia. Until then, we had been told that entry from that side may not be possible. It turned out that the road is actually easier, faster and, most importantly, cheaper. We flew all the way by aircraft and we did not have to buy Russian visas. In the mountains, unfortunately, we did not do so well. From the moment of our arrival we had serious problems with food poisoning and our camp turned into a hospital as all the members got sick. Most people were not ready for caving until a week had passed.

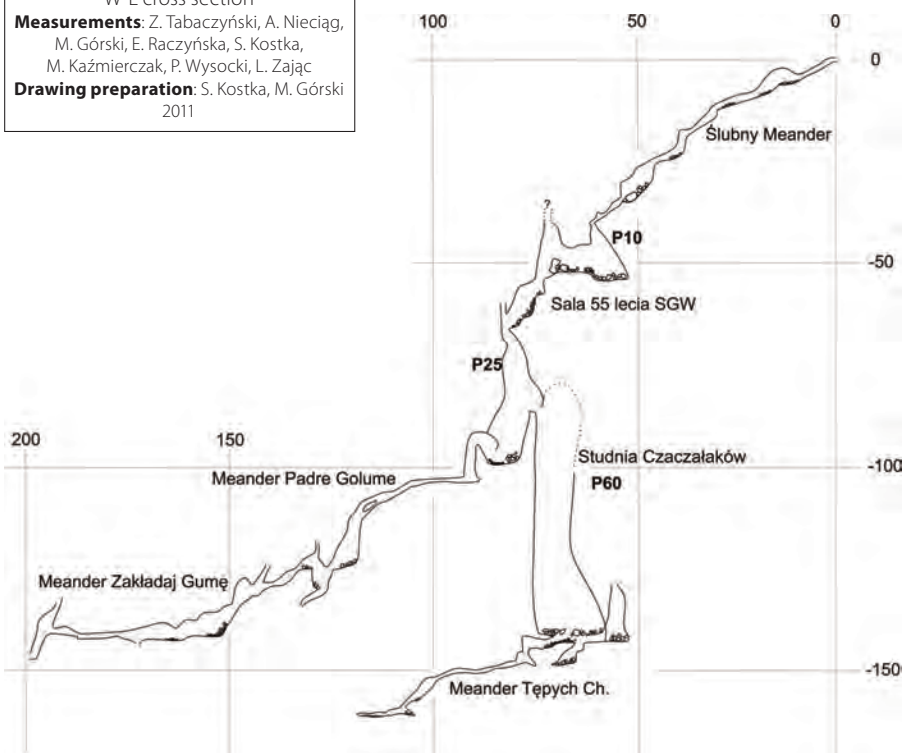
The work began with the Cellar Cave. Each trip brought more meters of new discoveries, however these were paid for with great effort. The cave developed along a narrow and tight meander with small pits. When all the participants returned to their full physical potential and health, we decided to try for the last time to return to the chimneys in PL-1. Equipped appropriately with hooks and a light drill, we started climbing. It went quickly and smoothly and we entered a meander in the upper part of chimney. Further exploration was planned for the next shift.

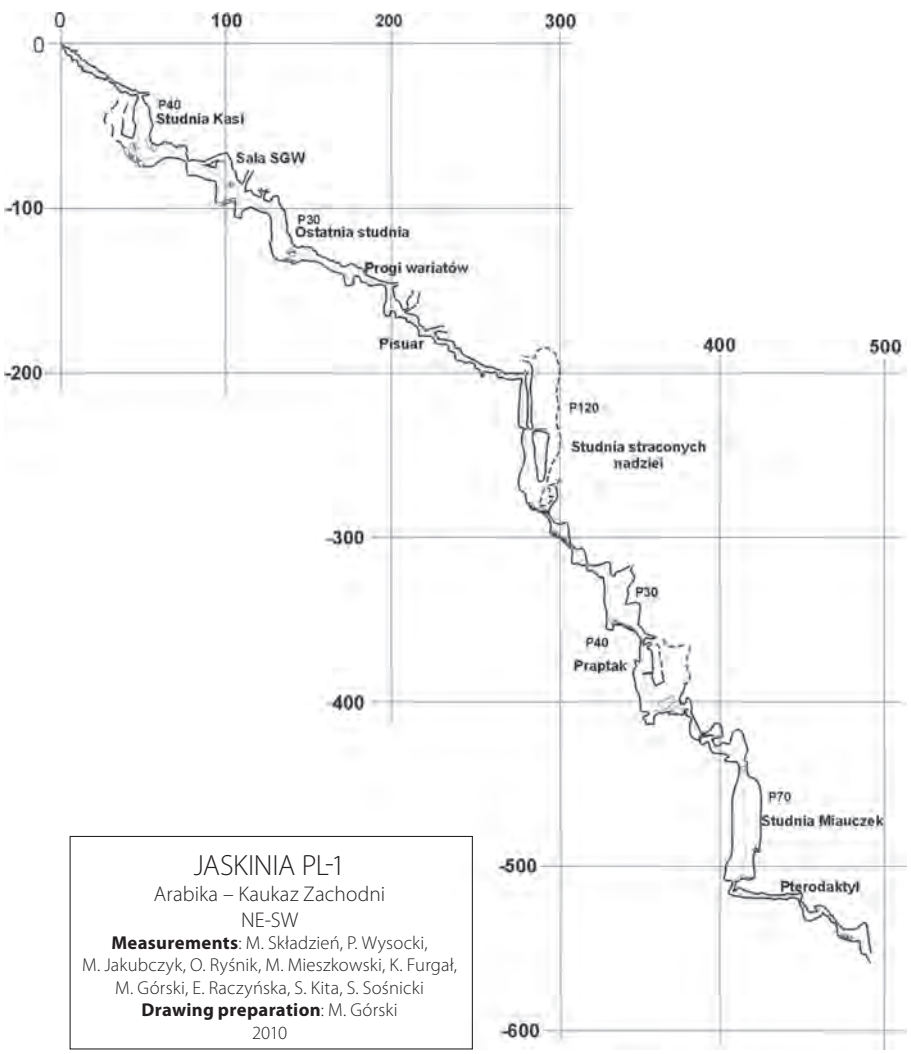
Unfortunately, we did not leave bad luck behind. First of all, when the team made their way up, a heavy storm broke out outside, that could firmly be felt underground. Water cut the climbers off from the exit, and a major waterfall suddenly formed in the newly climbed chimney, making ascending impossible. Besides that, we got much sadder news about a fatal accident happened in the sump number 2 in the Iliuhina Cave. We knew that people required help and equipment from our trip. Despite the abundant rain we returned to the cave to collect our gear. We waited at the camp as the water went down and we gathered everything that could have been useful during the rescue operation. We passed all the equipment to our friends, as over 40 cavers from all over the country arrived to carry the rescue of Alexei. We then returned to the sea, not bursting with joy. This tragedy could have also happened to our expedition.

The current state of the most important caves in our area explored by the Poles is as follows:

- Cave of PL-1 – depth: 605 m, length: 1624 m,
- Cave Cellar – depth: 207 m, length: 780 m,
- Cave Bretska Krepost – depth: approximately 420, length: 1250 m (no measurement data from before 2005),
- several small caves up to 50 m deep. ❑

JASKINIA PIWNICZKA
Arabika – Kaukaz
W-E cross section
Measurements: Z. Tabaczyński, A. Nieciąg, M. Górski, E. Raczyńska, S. Kostka, M. Kaźmierczak, P. Wysocki, L. Zając
Drawing preparation: S. Kostka, M. Górski
2011





JASKINIA PL-1
Arabika – Kaukaz Zachodni
NE-SW
Measurements: M. Składzień, P. Wysocki, M. Jakubczyk, O. Ryśnik, M. Mieszkowski, K. Furgał, M. Górski, E. Raczyńska, S. Kita, S. Sośnicki
Drawing preparation: M. Górski
2010

In the caves of China

Andrzej Ciszewski (Krakowski Klub Taternictwa Jaskiniowego)

In spring of 2012 it had been decided that our federation will commence regular exploration in the caves of China. To make it possible, in April 2012 a small recce group consisting of Andrzej Ciszewski and Ewa Wójcik travelled to China. They met with Erin Lynch, the leader of the Hong Meigui caving association, as Hong Meigui had already cooperated with a few Polish cavers during their few expeditions. The Dalou Shanmai mountain range, near the city of Lichuan, Hubei province, had been earlier considered the potential area of interest.

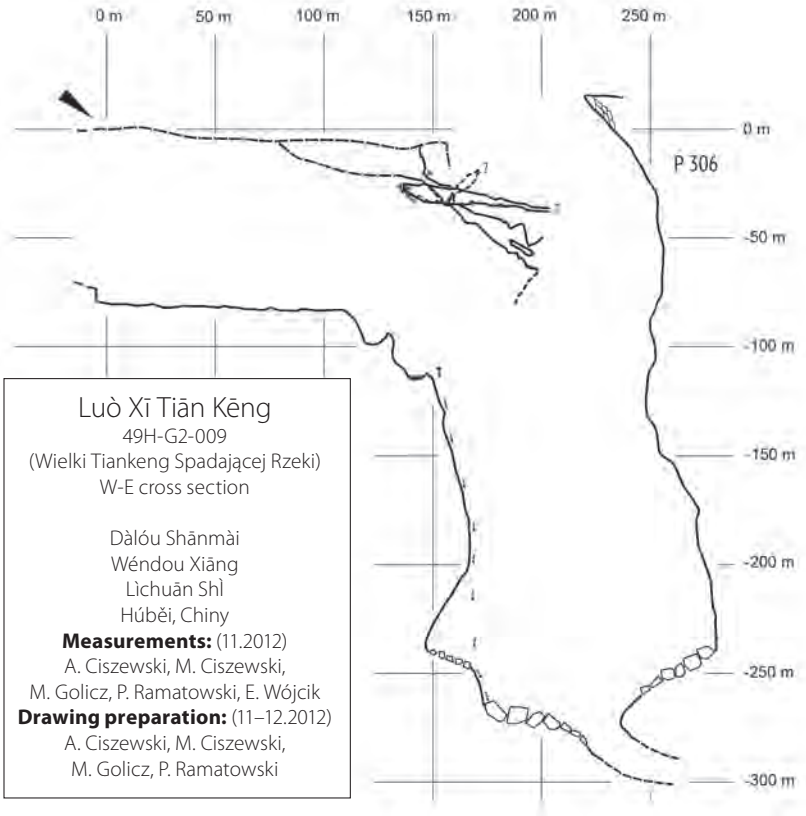
The trip mainly served to get an overview of the surroundings and narrow down the area of interest. Finally, the vicinity of Shizilu (a village 100 km away from Lichuan) has been selected. Because of rapidly deteriorating weather, only a few days of actual reconnaissance took place. Nevertheless, a few interesting cave entrances have been located. The area had never been explored, so we hoped for interesting discovereies.

On October 21, 2012 a more serious expedition of 8 persons left Poland for China, Andrzej Ciszewski being the leader. The other Polish participants were Michał Ciszewski, Mateusz Golicz, Włodzimierz Porębski, Paweł Ramatowski, Jan Wołek, Ewa Wójcik, Zbigniew Wiśniewski. In China we were joined by Erin Lynch (USA), Jan Roma Skok (USA), He Duan Yong (PRC), as well as two Polish girls – Anna Iskra and Rita Frieske – that perfectly knew Chinese and interpreted our conversations with the locals. Quickly, we reached Shizilu and began

Mi Shui Dong – underground river. Photo Jan Wołek

Da Dong – waterfall. Photo Mateusz Golicz

Da Dong – travertine. Photo Michał Ciszewski

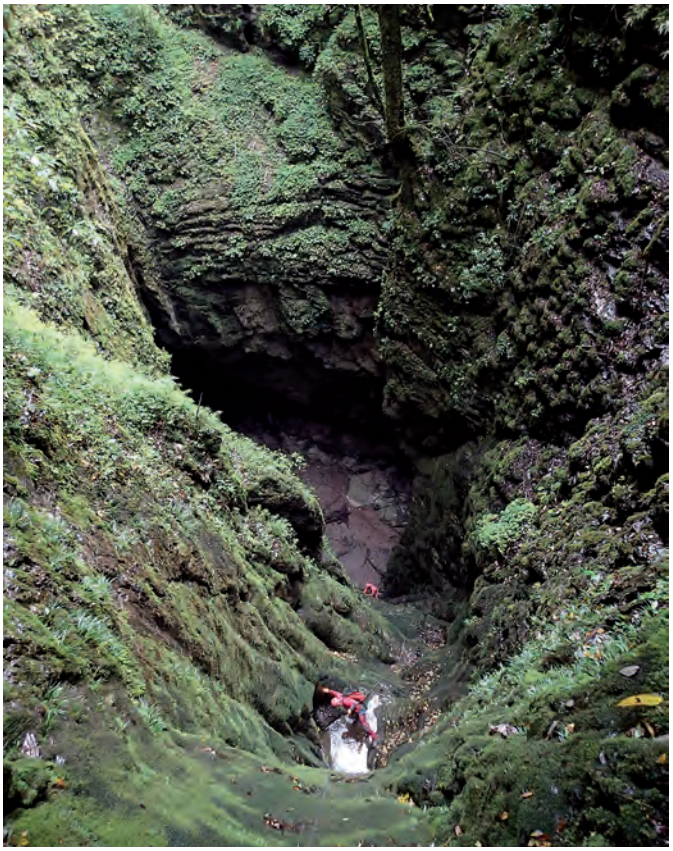


exploring entrances both discovered on the recce and subsequently found thanks to the villagers.

The very first days made us consider the area very prospective. We operated in the middle of typical cone karst, approximately 1300–1450 meters above sea level. Mostly, the objects of our interest were located on a plateau drained by Dong Nao Ke, a resurgence at 700 m asl, with an outflow on the order of 3 ~ 4 m^3/s.

Expedition's activities were concentrated on nine caves, various in their nature. One of most prominent was the Da Dong, in which we surveyed 3600 m. Definitely, the cave has not been finished yet. Its location, as well as observations underground hint that the cave may play an important role in draining the surrounding part of the massif. Numerous watercourses also suggest that it should only be explored in favourable weather conditions.

Luo XI Tian Keng was perhaps the most interesting cave explored during the expedition. Its entrance is essentially an enormous pit. Approximately 100 meters below its edge a 1200 m long gorge connects in one of its side walls. It could be seen that the gorge leads intermittently a river, its streamflow reaching perhaps a few m^3/s. It occured that the pit is altogether 306 m deep and its volume is on the order of 500 000 cubic meters. The oval shaped bottom measures 160 × 80 m and features lots of great boulders. A 10 meter wide and 60 meter high passage goes off the bottom. We quickly investigated, though did not survey the first 700 meters, only to discover that our already powerful headlamps need another upgrade to become usable in this cave. ▷



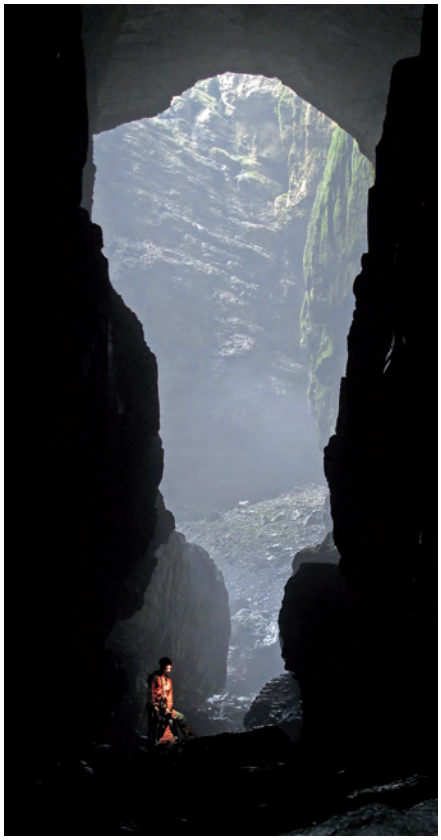
Xiao Luo Xi, Shizilu – descent to entrance. Photo Mateusz Golicz

Weng Jia Dong. Photo Michał Ciszewski

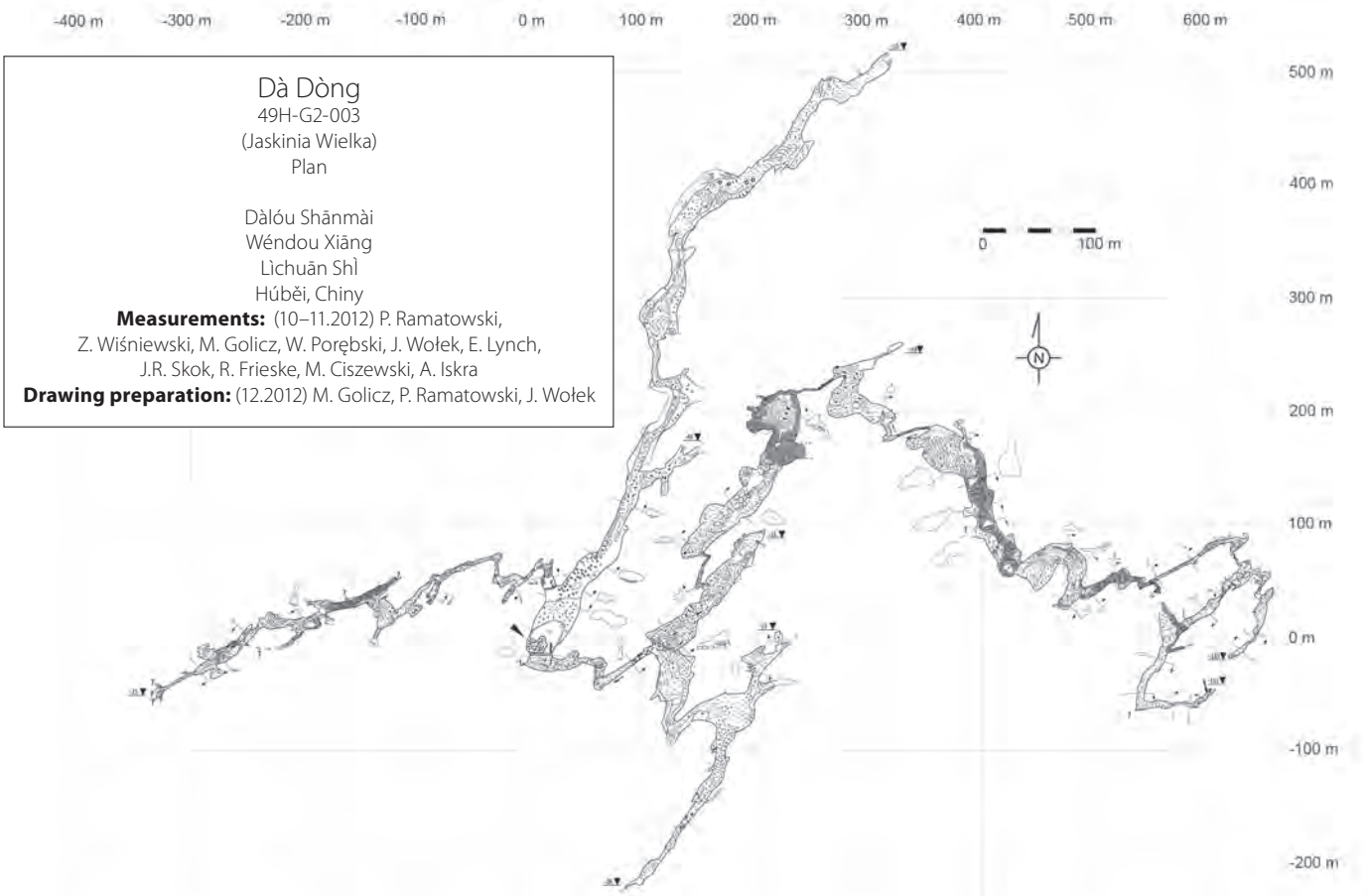
Exploration of Luo XI Tian Keng was suddenly stopped, because during surveying the bottom a few stones detached from the upper edge of the pit. We had luck in that no one got hurt. Before any further discoveries can be made, a serious rigging operation needs to be commenced in order to possibly reduce the danger.

Our trip lasted three weeks effectively. In nine caves we managed to survey altogether 8710 m. Lots of side leads were left unchecked. Our plan is to return in autumn of 2013 and continue work in both the caves we have already been exploring, as well as past a few other entrances that we managed to locate in the meantime. The vicinity of Shizilu obviously has enough caves to explore for quite a few expeditions. ❑

Zhakou Dong. Photo Ewa Wójcik



Passage extending from the entance pitch. Photo Michał Ciszewski



Summary of other activities

The Poles on the international expeditions

In the last 4 years the Polish cavers have participated in the international expeditions or taken part in the expeditions organized by speleological federations of other countries.
For many years some people from Speleoklub Warszawski and Sopocki Klub Taternictwa Jaskiniowego have been participating in the exploration of Mexican cave systems: J2 and Huautla (among others: K. Biernacka, M. Gala, D. Graczyk). In 2013 Marcin Gala with the British, Phil Short, passed through the key 4th sump. The cavers, however, could not continue further exploration due to the lack of descending equipment. Four Poles participated also in the international expedition, conducted by Jose Morales, to Puerto Rico, where the system of Rio Encantado was explored. During that exploration it was deepened from -254 m to -344 m and lengthened from 17 km to 21,7 km.
For several years the expeditions to Turkey have taken place, organized by Wałbrzyski Klub Górski i Jaskiniowy. The cavers explored among other things: caves in the Aladaglar massif, where the Düzkır Cave turned out to be the greatest success due to its depth of 131 m and length of 444 m; and in the Akdag mountains, where the deepest cave achieved the depth of -90 m.
In Papua New Guinea in 2010 the expedition organized by Aven Sosnowiec discovered several caves in the region of Baliem valley, where the most interesting was the pitch of Minima with its diameter of 300 m and depth of 168 m. The cavers from Klub Alpinistyczny przy Grupie Beskidzkiej GOPR started the cooperation with the Italians and they have carried out the exploration in the Grigna massif.

Ditta Kicińska

Iran

The Polish exploratory activity in Iran began in 1972. The purpose of our first expedition, managed by Bernard Koisar, was the exploration of the Ghar Parau cave. The expedition however, due to the high water level, did not succeed. The following expedition in 1973 managed by Janusz Śmiałek reached the bottom of the Ghar Parau cave, during that time regarded as one of the hardest; also discovered the Ghar-e-Morgan cave and checked 49 avens not exceeding the depth of 30 m. The exploration was continued in 1974 under the management of Janusz Baryła. The expedition reached -240 m in Ghar-e-Morghan, -130 m in Ghar-e Mariz and discovered the Ghar-e Boland cave (-120 m).
In 2008 at the UIAA congress in Teheran, contacts with the representatives of Iranian federation were renewed. It resulted in many years of cooperation. The Iranians few times visited our country to exchange training experiences. The Polish cavers in turn were invited to the exploratory expeditions. In 2009 under the management of Andrzej Ciszewski a reconnaissance was carried out in the Atashgah massif (the Zagros Mountains), where a few pitches were discovered, with the deepest one of -137 m and in the region of Kuh-e Parau, in the Siruyan valley, where the Poles met the Iranian expedition. Later on there were several expeditions and a few caves have been discovered including Ghar Som, located in the north-eastern part of Elbrus. Over 400 m of traverses were mapped in this cave. After the expedition many of the smaller exchanges took place. Iranian cavers participated in Polish expeditions in Europe, including Austrian Alps, took cave and technical diving courses conducted both in Iran and Poland. In near future we are additional courses in cave rescue and other speleological matters are being planed. As a effect of this friendship also many polish climbers from our federation are visiting Iran and its mountains.
Based on the articles in Jaskinie: Ciszewski (2010) and Kubarek (2010, 2012)

Marek Wierzbowski

The Balkans

More and more Polish expeditions, especially cave divers, visit the Balkans. The aim of Grupa Nurków Jaskiniowych (Cave Divers' Group) was, among other things, the exploration of outflows in the Bihor Mauntains in the Padis plateau in Romania and outflow near the town of Kelcyre in Albania. In 2011 the group explored sumps in the largest cave of Kosovo – Gryka e Madhe. The transport and diving actions (500 m from the entrance) took 4 days. Due to heavy weather only 70 m of new corridor could have been mapped to the depth of 31 m. In general, 30 divings were made during 13 hours and 300 m of new passages were discovered. GNJ also carried out the explorations in the caves of Montenegro, Greece, Kosovo, Macedonia and Serbia. Since 2007 the expedition are organized by cavers from Kraków to the Maganik massif in Montenegro. In this massif there are three caves which have depths exceeding -450 m: M73 (-473 m deep, 646 m long), M9 (-450 m deep, 566 m long) and M13 (-444 m deep, 720 m long). The members of KKS (Katowicki Klub Speleologiczny) and TKTJ (Tarnogórski Klub Taternictwa Jaskiniowego) have been exploring the Durmitor massif in Montenegro. The actions have been taking place mainly in the X1108 cave, that recently has the length of 1,3 km and the depth of 270 m. In Albania, in the Valbona Valley, the exploratory actions have been carried out for several years by cavers from the club – Aven Sosnowiec. The main discoveries are: Sphella Haxhise with the length of 364 m and the deepest - Sphella Sportive (denivelation 264 m, -259 m/ +5 m, length 683 m). One expedition organized by the club of Bielsko-Biała took place in the region of village Koplik. The largest explored object is Jaskinia Nadziei (-170 m deep, 286 m long).
In Bosnia and Herzegovina (Bjelasnica massif near Gacko) the exploration were conducted by Wielkopolski Klub Taternictwa Jaskiniowego. The deepest cave is PBL 373 (-268 m).

Ditta Kicińska

Polska

Except from the most spectacular discovery in the Niedźwiedza Cave in Kletno, the exploratory activities have been carried out (by cavers from Zakopane) in the area of the Tatra National Park in caves such as Siwy Kocioł and Śnieżna Studnia, which exceeded the length of – respectively
– 1 km and 12,5 km. To Jaskinia Harda, discovered in 2011, with the depth of 120 m (which gives it the 18th place in the list of the deepest Polish caves) should be given great consideration.
One of the greatest discoveries in the last years in the Krakow-Czestochowa Upland was Jaskinia Niedźwiedzia Górna. It is 635 m long and 25 m deep. It is rich in varied and undestroyed speleothems. In the area of the Outer Carpathians there is Jaskinia Wislańska, with its length of 2275 m, probably the longest non-karstic cave in Central Europe.

Ditta Kicińska

"The Caves of Easter Island. Underground world of Rapa Nui Las Cuevas de la Isla de Pascua. El Mundo Subterráneo de Rapa Nui"

Editors: Andrzej Ciszewski, Zdzislaw Jan Ryn, Mariusz Szelerewicz

The presented book, which was published in 2010, is a monograph on the caves of Easter Island (Rapa Nui) based on field research of the Polish team composed of speleologists, archaeologists and anthropologists conducted in the years 2001–2008 under the direction of Andrzej Ciszewski. The researches were performed under the auspices of the Explorers Club and National Geographic, as well as in cooperation with the management of Isla de Pascua National Park. Three participants are members of the Explorers Club. The expedition took place under the scientific patronage of the Jagiellonian University of Cracow, University of Warsaw and AGH University of Science and Technology in Cracow.
During four stages of activity, the topographic, archaeological and anthropological inventory of 315 volcanic caves in the Roiho, Poike and selected cliff sectors of the island was made. Field works helped in construction of the plan with description of every cave. 30 speleologists of different specialities participated in subsequent parts of the expedition.
The presented monograph provides general information on the island, cave genesis and the role of the caves in the population history and culture; and on various ways of their use (Zdzisław Jan Ryn). Its detailed part contains an outline of the geology of Easter Island and the cave genesis (Andrzej Paulo). Separate chapter synthetically describes large and small archaeological objects in caves (Maciej Sobczyk).
The extensive bibliography, prepared in such a wide range for the first time, will lead the reader through the worldwide writing. 315 cave plans with professional descriptions constitute an integral part of the monograph. The entire book (400 pages) contains photographic documentation in colour.
The presented monograph is a pioneering work on a world scale. It uncovers the natural and cultural wealth unknown until now, helping discovering the island's history; since it turned out that the unusual archaeological treasures on the island's surface (about 30 000 archaeological sites) were accompanied by the cultural wealth underground.
Although it is a specialist publication, it will surely arouse interest of every reader looking for the exotics and adventure of discovering the unknown. It documents an important part of the Polish research and exploration in the faraway corners of the world.
Book can be ordered via e-mail: jaskinie.speleo@gmail.com

The project „the Crown of the Underground"

The cavers from the Speleoclub „Bobry" Żagań have been accomplishing their original project for the last 19 years. The idea of reaching „Korona podziemi", i.e. descending through the deepest cave pitches of the world (more than -400 m deep), came out after passing through one of such caves, during that times the deepest one – Hades (-455 m) in the Austrian Alps. Since that time they have conquered 10 pitches all over the world. Next expeditions are to be prepared. How many there are left to conquer? No one knows. When it appears that they are close to the end of the project, a new pitch is discovered...Is it a never-ending story?
In the last years the Poles reached in China: Da Keng (-520 m) and Miao Keng (-491m), and also Nyx (-429 m) in Montenegro.

Marcin Furtak

Krzysztof Starnawski in Hranicka Propast

In 2012 Krzysztof Starnawski, supported by the Czechs, reached the record-breaking depth of -217 m in Hranicka Propast, in Hranice, Czech Republic. The submersion lasted 8 hours in water at a temperature of 15o C. At the achieved depth K. Starnawski lowered the rope to the bottom – it reached depth of 373 m, therefore the cave became the second deepest underwater cave of the world.

Ditta Kicińska

National Championships in Caving Techniques

Every year in Wojcieszów the National Championships in Caving Techniques are organized by the Speleoclub „Bobry". The Championships are recently also the European Championships qualifiers.
The competition takes place in the „Gruszka" quarry in the Kaczawa Mountains, Lower Silesia. Every year the route changes. For example, in 2013 it was divided into 3 parts: the first one – ascending 60-m-long rope in time, the second – passing through a technical route ended with squeeze, the third – rigging of traverse and abseil. The time of passing and the technical correctness counted. For every error there were given penalty points and for exceeding the time limit the competitor were disqualified.
The meeting is accompanied by many additional events. The competition is co-organized by: Wałbrzyski Klub Górski i Jaskiniowy, Komisja Taternictwa Jaskiniowego Polskiego Związku Alpinizmu, the city of Wojcieszów.

Renata Wcisło

From the deepest cave to the highest mountain

To reach the deepest cave – Woronia (-2080 m) in Abkhazia and the highest mountain – Mount Everest (8848 m). To conquer the greatest denivelation of the world and in the process set the record. It was made by 47 years old mountain rescuer, Grzegorz Michałek. Although on Everest he had to turn back at 8300 due to strong wind, during two expeditions he reached the denivelation of 10 380 m.
„Heaven & Hell" („Niebo i piekło") is a project of members of Klub Alpinistyczny przy Grupie Beskidzkiej GOPR (Polish Mountain Rescue Organization). Three of them: G. Michałek, Tomasz Piprek and Ryszard Głowacki are mountain rescuers and GOPR instructors.
The idea came out in the spring of 2011. On August 13th 2012 together with T. Piprek and M. Kwiatkowski reached the bottom of the Abkhazian cave.
On April 8th 2013 G. Michałek and R. Głowacki went to Everest. Due to heavy weather, on May 17th they turned back from the height of 8300 m, but G. Michałek still set the world record – such a denivelation has not been reached by anyone.

Renata Wcisło

Inventory of the environmental state of the caves

For several years, the inventory of recent environmental state in the Tatra caves has been being made. It applies to the caves available for caving (e.g. the Czarna cave), as well as to the unavailable ones (e.g. Szczelina Chochołowska, Studnia w Kazalnicy). Thanks to the inventory, all of the changes in the cave environments will be monitored in the future. The inventory is very detailed and based on documenting valuable objects (speleothems, cave deposits) and their destruction, fauna (bats, arachnids and others), devastations (digs, knocks), carbide residue, blackened points, equipment parts, organic pollution (excrements, food remains) and technical elements (grids, bolts, pegs). Apart from the type of documented objects 3-step scale has been introduced for the devastations/pollution: 1 – small (spots, small scale), 2 – medium (small scale of devastation on a large surface or larger concentrations of pollutants), 3 – large (large scale of devastation, large surface of devastation, devastation of valuable objects). The inventoried points shall be accompanied by their pictures, description and graphic made in ARCGIS. It should be noted that not only the devastations are inventoried, but also environmentally valuable objects. The inventory was carried out by cavers at the request of the Tatra National Park. Until now, the inventory has included cave such as: Czarna, Szczelina Chochołowska, Zimna, Bańdzioch Kominiarski. Regardless of the inventory, KTJ has been undertaking in media the subject of team building and other commercial activities as adversely affecting the cave environment and has been highlighting the need for regulations.

Ditta Kicińska


RAJMUND KONDRATOWICZ

JackDaniel's Cave, Tennengebirge massif


WIT DOKUPIL

JackDaniel's Cave, Tennengebirge massif


ZBIGNIEW GRZELA

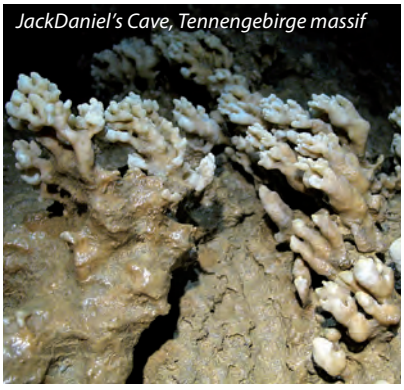
Picos, Torre Santa Maria


RAJMUND KONDRATOWICZ

JackDaniel's Cave, Tennengebirge massif


MAREK MARKOWSKI

Niedźwiedzia Cave, Poland


WIT DOKUPIL

JackDaniel's Cave, Tennengebirge massif


PAWEŁ RAMATOWSKI

Luo Xi Tiankeng, China


DARIUSZ PIROS JEWIK

Hagengebirge

JASKINIE

Polish caving quarterly