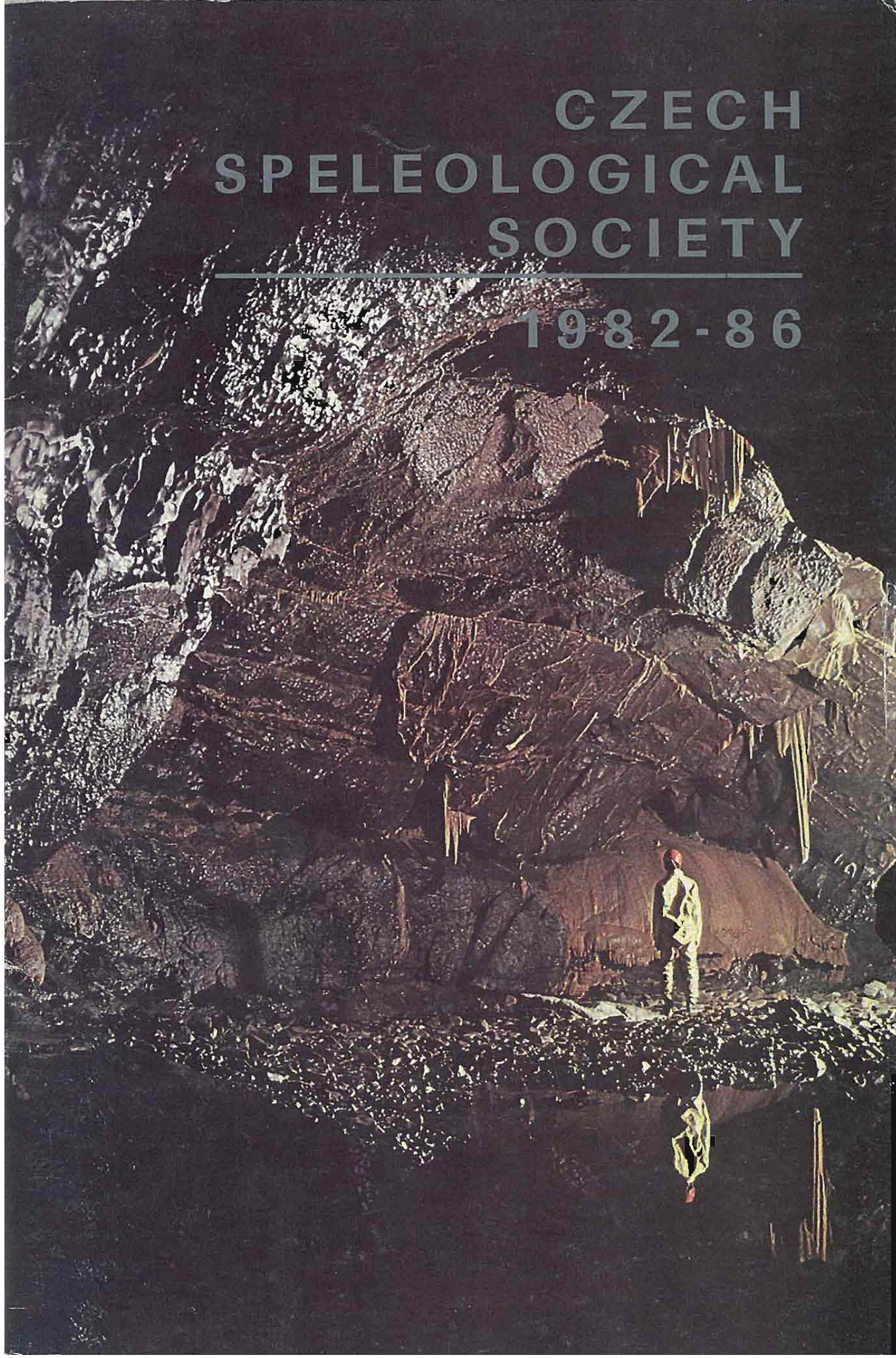
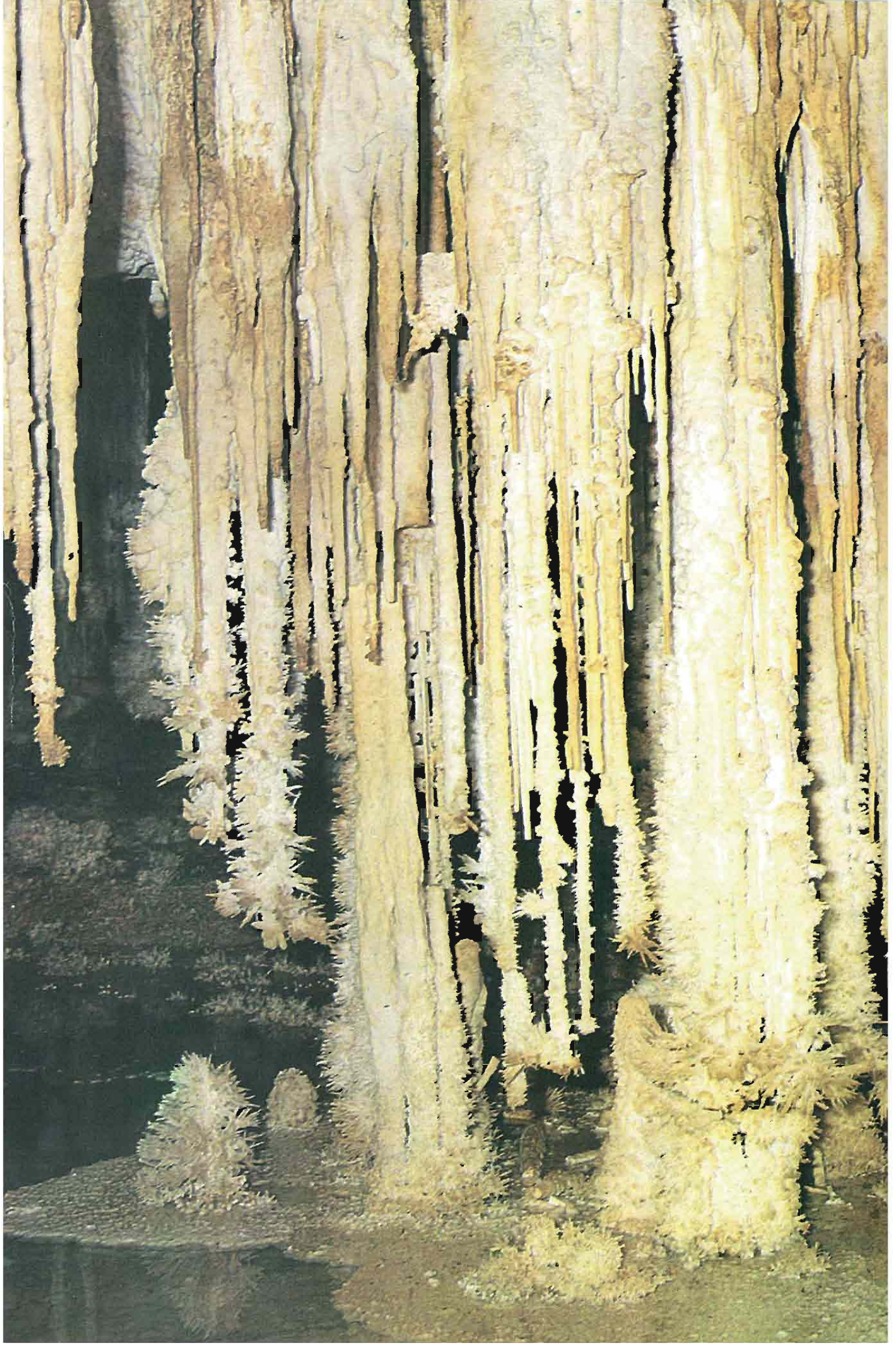


CZECH
SPELEOLOGICAL
SOCIETY

1982-86







1968

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Česká speleologická společnost
Praha, Ústřední úřad

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**Czech Speleological Society
1982 – 1986**

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**Česká speleologická společnost
Czech Speleological Society
Praha 1986**

The Preface.

Czechoslovakia is a founding member of the International Speleological Union. Czech karsologists and speleologists associated in the Czech Speleological Society try to be in the foreground of efforts of development karst sciences and amateur speleological movement.

The Czech Speleological Society works in the harmony with tendencies put through by the International Speleological Union. Scientific and special work is concentrated in commissions of the Society which are organized according to the system of I.S.U. Members of the Czech Speleological Society work as experts in scientific institutes, as pedagogues on universities of all kinds, and as experts in technical and research organizations. They perform functions in international non governmental organizations — except ISU they work in IGU, AIH and others as well, they are in inland and foreign scientific and editorial councils, honour members of foreign scientific societies. Amateur members of the Czech Speleological Society come out of various social ranks, being the workers mostly.

Special activity of the Czech Speleological Society is run by commissions which are organized according to the system of commissions determine main directions of basic organizations, arrange special symposiums, conferences, camps and courses, and numerous expeditions abroad.

Members of the Society deserved well of large number of important discoveries and knowledge of cave systems both inland and abroad. The whole Czech public is interested in karst and karst problems. 22 show caves which are visited per year by hundred thousands of Czechoslovak and foreign visitors prove it. There are working speleotherapeutical stations in four caves.

In Czechoslovak Socialist Republic are karst phenomena protected by the state.

In Czechoslovakia 6th International Speleological Congress took place in 1973 in Olomouc.

Czech speleologists present this publication to inform you about their activity, they are sending you many greetings and wish you and 9th International Speleological Congress 1986 successful proceeding.

*Vladimír Panoš
Chairman of the Czech Speleological Society,
Vicepresident of ISU*

The Czech Speleological Society

The Czech Speleological Society is an organization ideally connecting the enthusiasm of amateur speleologists with the sobriety of natural historians whose objective of research are the karst and the caves. Thus the Society unites scientists and laymen, active sportsmen and those who are only interested in the results offered to the public. The Czech Speleological Society has 1,400 members working in 50 basic organizations. Most members are organized in Prague, Brno and Olomouc. The Society is controlled by an 11-member Central Committee whose chairman since the very beginning has been University Associate Professor Dr. Vladimír Panoš. The Czech Speleological Society was founded in 1978 and in its activity it has continued regional speleological organizations in Prague and Brno, established in 1945, shortly after the liberation.

The principal task of the Society is speleological research activity. It is centered at searching for unknown caves, their scientific research and utilization for theory and practice. It develops the technique of penetrating into underground spaces, speleoalpinism and diving in cave waters. The science of the karst and caves concentrates on geological, geomorphological, geophysical, paleontological, archeological research as well as research of biological and medical character. The results are utilized for developing theory and a manysided utilization of the karst and caves as a natural resource. The fundamental principle of the access toward reconnaissance, research and any study of the underground and the surface is the protection of nature and environment. The principle of preserving natural values is inherent in all activities of the Czech Speleological Society and is obligatory for all its members. The social and ideological mission of speleologists organized in the Society is also presented by its being included among organizations whose tasks it fully backs and among whom it develops its political and ideological activity among the broad public.

Another fundamental mission of the Society is education. It is aimed on the one hand at courses of fundamental speleological knowledge, on the other hand at specialized teaching oriented at documentation, research and reconnaissance methods, increasing technical qualification and specialization. The documentation activity is the basic means for preserving the results of reconnaissance, scientific and research activities and it is a source of knowledge and information for further work and for solving practical tasks ordered by state bodies and organizations for geological prospecting, production of mineral raw materials, water management, building industry, tourism, and other economic activities.

An important role in the Speleological Society is played by popularization and publishing activities. Lectures are organized, a Society bulletin is published as well as a number of proceedings and specialized publications. There are regular thematic seminars, conferences and meetings, the most popular being the annual „Meeting in the Czech Karst“, further „Speleoforum“ in the Moravian Karst, „Seminars about New Trends in Speleology“, seminars on historical underground and dozens of further, mostly organized with foreign participation.

Of a great extent is also the foreign activity of the Czech Speleological Society. It takes an important part in the work of the International Speleological Union and organizes specialized expeditions. The best known of them were expeditions to the Caucasus, Cuba, French and Alpine abysses, Yugoslavia, developing countries of Africa and the Himalayas.

For the unified coordination of such extensive activity there are – besides the basic organizations – technical committee, rescue and safety committee scientific committee and the committee for documentation.

Practical speleological activity covers all karst regions of the territory of Bohemia and Moravia and the sites of historical underground and pseudo-karst. Among the most important successful actions achieved by the members of the Society is the discovery of the Amateur Cave in the Moravian Karst and a gradual connection of caves on the underground river Punkva and its tributaries. The length of this system of caves has reached 32 km. Another sensational discovery is the connection of the caves of the Rudice ponor with the caves of Býčí Skála (Bull's Rock) in the central part of the Moravian Karst. This cave system amounts nowadays to 12 km uninterrupted length of tunnel-like galleries and domes through which the subterranean stream flows. In the thermal karst near Hranice in North Moravia the depth of 175 m was measured in a lake of mineralized water in a Karst abyss which thus reaches the depth of 244 metres. Of no less importance are the results of integrated research at the Czech-Polish frontier. There, in a close bilateral cooperation with Polish speleologists communications of water through the karst between the two states were found.

At the beginning of 1986 the Czech Speleological Society prepares its second Congress. It will thus culminated eight years of successful activity marked not only by important discoveries, but by strengthening the unity of its organization and of assistance to national economy as well as the protection of the beauty and values concentrated in the nature of the Karst and caves.

RNDr. František Skřivánek,
vice-president,
Czech Speleological Society



Karst and Caves in the Czech Socialist Republic

The Czech Socialist Republic is situated on the territories of three historical lands, Bohemia, Moravia and a part of Silesia. In the geological structure it represents a substantial part of the Bohemian Massif wedged in between the Alps and the Carpathians and steeply rising from the South-German platform and the Saxonia-Thuringia zone. Only the east part of the Czech Socialist Republic is formed by the Carpathian system. The core of the Bohemian Massif is built of plutonic igneous rocks, continued with metamorphic rocks, accompanied by nonmetamorphic Algonkian and covered with sedimentary formations of the Paleozoic. This Proterozoic-Paleozoic formation was subject to intense Asynthetic, Caledonian and in the end Hercynian orogenies. Mesozoic and younger formations represent non-folded complexes of pre-vaillingly clastic sediments subject to almost exclusively radial tectonics in places connected with intrusions and effusions of prevaillingly basic rocks.

Geomorphologically the Czech Socialist Republic includes the so-called Czech Highlands characterized by a system of hilly lands, highlands and denudation plateaus in the centre, surrounded by a circle of frontier mountains. Only in the east and east-west it either plunges below the Alpine-Carpathians foredeeps or ranges of the Carpathian arc are shifted on it. The basis of the forms the surface was given by tectonic movements in the Tertiary, which are summarily denoted as Saxonian tectonics. The modelling developing from the gradual deepening of the network of rivers in the Quaternary has resulted in the dissection through upheavals and downward movements of the surface affected into a system of the present orographical distribution. The basis of the river network oscillating in dependence on the alternation of in glacial and interglacial periods in Bohemia is the Vltava-Elbe system belonging to the Baltic, in Moravia it is the Morava-Dyje system belonging to the Black Sea.

Limestones, bearers of karst forms and thus also caves, are an integral part of the geological structure of the Bohemian Massif built for the most part of insoluble rocks. They were affected by the same tectonics as the associated metamorphic and igneous rocks as well as sediments and were subject to denudation as their integral part.

Extensive karst regions are situated in those parts where particularly in the Quaternary thick and extensive limestone formations got to the surface. Those territories are two, the Bohemian and the Moravian Karsts.

The Bohemian Karst is situated in almost the very centre of Bohemia. It forms the core of a synclorium built of metamorphic rocks of Early and Middle Paleozoic. This territory became known as the Barrandien zone. A varied succession of Silurian and Devonian limestones is underlain by shales. It is intensely folded and it is divided into isolated parts separated from each other either by tectonics or by non-karst layers and/or denudation down to the insoluble bedrock. There are about 12 kinds of limestone with different degrees of purity. The development of caves is connected with the gradual cutting down of the river Berounka flowing approximately through central part of the territory. The development of the karst proces can be traced back to Pliocene — the last period of the Tertiary. There we can, however come across still earlier remnants of a karst which can be of even pre-Cretaceous age, because the denudation remnants of Cretaceous sandstones appear already in karst pockets penetrating into limestones.

Conspicuous remnants of pre-Quaternary karst processes are documented above all by quartz opal relics on the walls of the oldest spaces of the Caves of Koněprusy. They originated by metasomatic processes of the dripstone

decoration affected by the penetration of SiO_2 during tropic weathering which prevailed on the surface. The oldest remnants of the karst process are also considered peculiar types of stalk-like and scalenoedrically recrystallized sinters occurring predominantly in vertical karst cavities filled above all with loam-clay and sandy weathered materials.

The karst process in the Quaternary did not go on with the same intensity in the Bohemian Karst. It depended fully on local conditions, limited locally by the extent of the limestone formations, their structure, chemical properties and position, which also corresponded to the progress of denudation.

The most extensive caves are therefore in that site where thick layers of pure limestones occur, whose position towards gradually deepening valleys permitted the circulation of karst waters. Caves with water flowing through them did not form. Ponor, are missing, are not developed properly and Karst springs are not conspicuous and little intense. The karsting of limestones developed along tectonic faults on the interface of different types of limestones practically only through corrosion. On residual remnants after dissolved limestones and loam-clay sediments shifting from the surface to the underground there remained stagnant and only moderately running waters which by etching broadened the spaces of cavities. The cavities were further enlarged by the ceiling parts falling down. Depending on the alternation of glacial and interglacial and interglacial periods they passed through stages of filling and emptying, or rather of transport of cave fillings into lower positioned cavities at the same time enlarged in reviving the karst process. The dependence on the deepening of the valley of the Berounka is evident in this case, the same as a certain agreement of cave levels with the steps of terraces formed by the river from the Pliocene to the Holocene. Besides, a system of deep cracks independent on the Quaternary network of rivers has been formed. The cracks filled mostly with old weathered material and terrace gravels extend deep below the latest erosion base. They follow the tectonic lines and evidently belong to earlier Quaternary processes without any specified date. Many of them were emptied in the Quaternary, so that interestingly remodelled karst cavities are formed.

In agreement with local geological conditions characterized by great thickness and extent of pure limestones the largest isolated karst territory of the Bohemian karst is the region of Koněprusy. In the first place there are the Caves of Koněprusy. The cave system forms 3 storeys of galleries and domes whose total length is more than 2 km and depth of more than 70 m. The upper storey penetrates well bedded marbles. The most extensive middle storey follows the interface of these marbles with massive very pure cliff limestones without a perceptible system of layers. The lowest storey is all situated in these limestones. The two types of limestones (the upper are called the limestones of Suchomasty, the lower the limestones of Koněprusy) are of Devonian age. The modelling of the walls is conspicuously of the corrosion type and the course is bound to the interface of limestones and tectonic faults and/or fold structures.

Sediments from these caves and those from karst pockets that are in connection with them yielded the fossil fauna of the earliest Quaternary (apes, mastodont), further of lower and young Pleistocene (mammoth, big mammals, carnivora, rodents and molluscs). As the most important find can be considered a part of the skull and some other bones of primitive man of the form *Homo sapiens fossilis* with signs of Neandertal man who, according to accompanying tools can be ranked into the Szeletien. The cultural and historical importance of the caves of Koněprusy is further completed by the function of their upper storey as a workshop of money forgers which operated

between 1460 – 1470. The caves have a conspicuous stalagmite and stalactite decoration and are accessible for the public.

Another region of the Bohemian karst characterized by a limited extent of limestones is the territory roughly between Karlštejn Castle and the valley of the Kačák brook on the left bank of the Berounka. The best developed karst is bound to the Devonian limestones of the hill Chlum which falls in vertical walls to the river Berounka. From among dozens of caves in these rocks the most conspicuous is Barrande's Cave and near it a system of the so-called Chlum Caves was discovered in the operation of the quarry. It consists of galleries and spacious domes formed on the interface of Silurian and Devonian limestones. In one part a burial place of extinct fauna was found where in the screen bones of hundreds of specimens of cave bears, rhinoceroses, hyenas, stags, horses and tigers are found. Not far from Karlštejn Castle two vertical caves are found in the pit quarry called Čeřinka. Arnoldka is 111 m deep and the abyss Na Čeřince 81 m. The course of the abysses is conditioned by the karsting along the bedding joints of Devonian limestones constituting the wings of the syncline.

The right bank of the Berounka river, where at present there is the natural reserve Koda, is dissected by three karst valeys. Short joint caves are bound to the Tetín gully. The Císařská and Kodská gulleys are flown through by torrents from karst springs. They exhibit cascade-ordered travertines. From among the caves of that territory a conspicuous cave is Martina with spacious domes and dripstone decoration which was continuously inhabited from the Neolithic up to the historic time. Several small caves are characterized by the occurrence of aragonite. In rocky scarps of the river Berounka there are dozens of caves, the most conspicuous of which is Tomášek's light hole, 90 m deep with lakes at the bottom.

The Bohemian karst reaches as far as the territory of the capital, Prague. From among caves the joint cave above the swimming pool at Klukovice can be mentioned and the Procopian cave known already in the Middle Ages. At present it has been destroyed by the operation of the quarry. Besides bones of pleistocene mammals a paleolithic skull of man had been found in it.

The territory of Devonian limestones north of the capital of Moravia, Brno, represents the largest karst territory of the Bohemian Massif. In the east the karst borders on a hilly land consisting of shales of the Culm and in the west by plutonic igneous rocks of granitic character. It is thus wedged in between non-karst surroundings. After Hercynian orogeny the territory of the Moravian karst was flooded by the sea four times: in Carbor, in Jurassic, Cretaceous and Neogene.

The development of karst processes was most conspicuous in the Jurassic Period, when deep gully-like fissures were formed near the village of Rudice, filled with sediments accompanied by iron ores. The fundament of karst processes going on in the Quaternary was laid in Tortonian. Deep valleys originated in limestones (such as the Lažánky valley) and sink holes and a network of underground circulation of karst waters were formed. The Quaternary Period is marked by the development of the river Svitava which by erosion cut its river bed along a tectonic line going from the north to the south parallel to the interface of limestones and plutonic igneous rock. Across the limestones constituting a band 25 km long and 2–5 km wide and the streams flowing down from the Drahany hilly land gradually cut their ways to the valley of the river Svitava through the caves. According to hydrographic into three parts. The northern part belongs to the drainage area of the subterranean course of the river Punkva. The territory begins

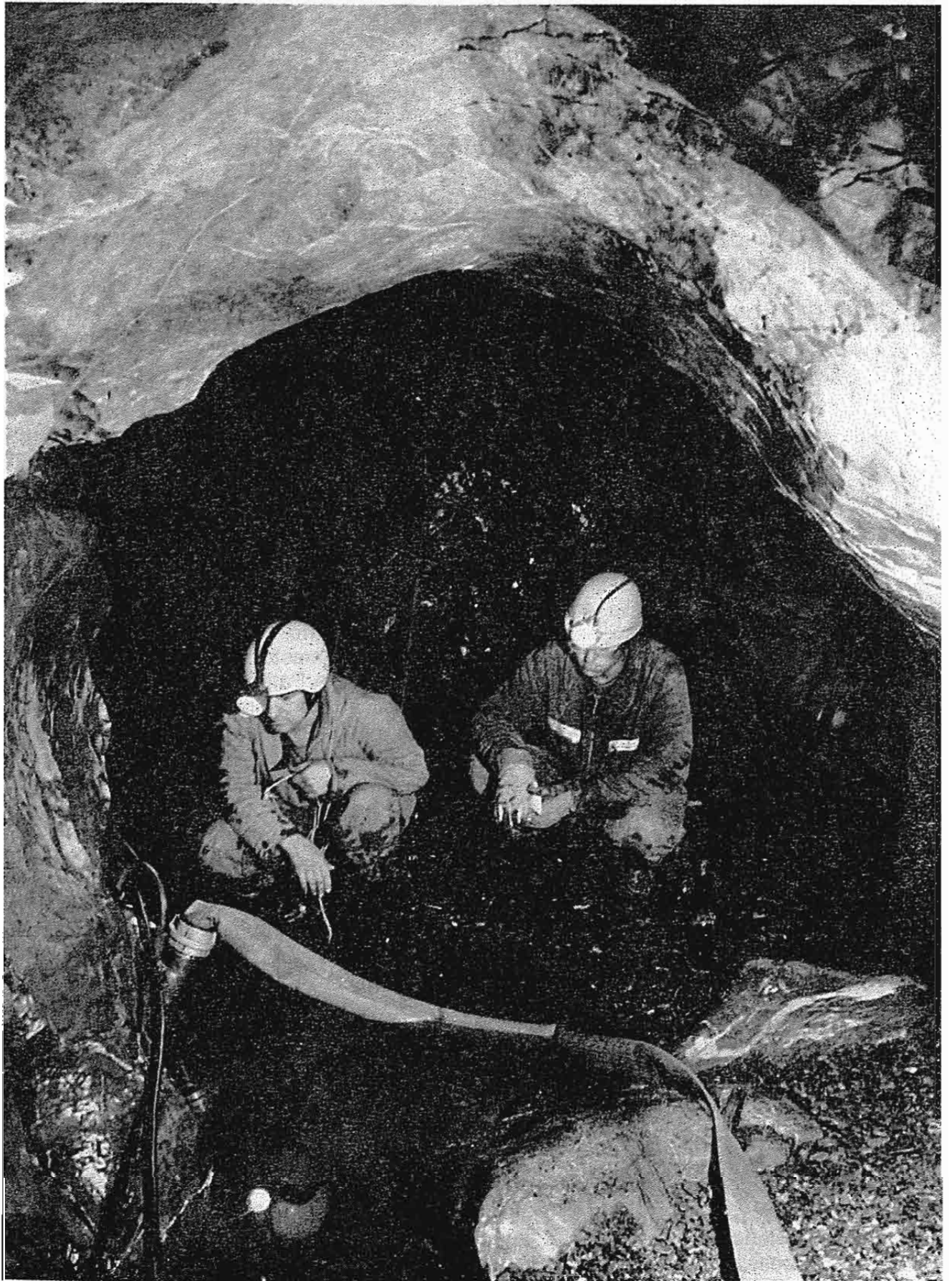
at the border between the Culm shales and limestones by the ponors of the Sloupský potok brook, the Bílá voda, the Lopač and the Krasovský potok brook. These streams, together with some small and temporary rivulets from Plánivý, Jedlí, Domínka, Suchdol and Vavřinec join in the underground to the river Punkva. The middle part belongs to the drainage area of the Křtinský potok brook. It also begins near the frontier with Culm shales by the ponors of the Jedovnický potok brook in the underground. The Křtinský potok brook includes further cave systems due to the ponors of the waters in the surroundings of the of Křtiny and Babice. The southern part belongs to the drainage area of the brook Říčka, which also includes ponors of waters coming from the non-karst neighbourhood.

The most extensive cave system is situated in the northern part of the Moravian karst. It is bound to the subterranean flow of the small river Punkva and its two chief tributaries, the Luha and the Bílá voda. These join in the underground and emerge to the surface under the name of Punkva. This cave system has not yet a fixed name. It originated by the connection of extensive caves near the ponors with those near the karst spring in 1969. This connecting part is the most extensive and is called the Amateur Cave in honour of voluntary speleologists from the former Speleological Club in Brno. Three of the discoverers sacrificed there their lives in the reconnaissance of the underground. They were Marko Zahradníček and the brothers Milan and Jiří Šlechta. By its overall length amounting to 25 km this system is at the same time the largest in Czechoslovakia. Near the ponors of the brook Luha, where there is one of the beginnings of this system, besides dozens of small man hole Caves there extend the Caves Sloup and Šošůvka, accessible for tourists. Their length is 6.5 km. They are characterized by an upper ponor and an subterranean river bed connecting several shafts as deep as 70 m. The underground stream flows from there to the Amateur Cave. The second beginning of the system is near the ponors of the Bílá voda brook near the village of Holštejn. Shafts and water caves called Rasovna, Plánivý, Spirálka, Piková dáma and Třináctka correspond with the Amateur Cave. The length of their galleries unexplored so far is 17 km. It is flown through by the subterranean river Punkva which appears on daylight on the bottom of a gigantic abyss Macocha, 138 m deep. From there the Punkva Caves, discovered in 1909 to 1933 by Prof. Dr. Karel Absolon and made accessible for tourists, continue in the length of 3.5 km. They have two branches. The „dry branch“ consists of domes and galleries with a rich dripstone decoration. The „wet branch“ consists of a tunnel-like river bed of the Punkva, where tourists are transported on boats up to the surface through the karst spring into a valley called Pustý žleb. From among many further caves of the northern part of the Moravian Karst the cave of Ostrov with water domes is of importance, as well as Balcarka with a rich dripstone decoration.

Pustý žleb valley flown through by the Punkva from the spring at a place called Skalní mlýn joins with a permanently dry Karst canyon called Suchý žleb. In it there is another show cave, Kateřinská. It consists of a gigantic dome, the dimensions of which are 97 by 44 m and further spaces decorated with particular pillar-like dropstones.

A varied and rich dripstone decoration is that of the cave Balcarka. It is situated near the ponors of the Krasovský potok brook whose waters pass through an unknown river bed to the Punkva.

The axis of the central part of the Moravian Karst is a cave system in the length of 12,3 km, beginning below the village of Rudice by the ponor



of the Jedovnický potok brook. Its waters disappear in the underground in a blind valley by a multiple abyss to the depth of 85 m. From there it drains through tunnel-like galleries interrupted by big domes, the biggest of them being the domes called Rudický and Balvanitý. After several kilometres it appears in the cave called Býčí skála, (Bull Rock) whose entrance portion belongs to the most famous caves in Europe. It opens below the rocky walls in the side of the valley of Křtiny. In an extensive space remnants of a ritual burial with skeletons were discovered in 1869, as well as with worship objects and utensils made of bronze and containing grains. The drama dates back to the 5th century before our Era and belongs to the Hallstatt period.

The southern part of the Moravian Karst is bound to the valley of the Řička brook. Besides a number of caves of prevaillingly archeological importance, such as Pekárna, Švédův stůl and Žitného jeskyně, with paleontological and Neolithical finds, the largest cave system is the Ochozská cave. It begins below the village of Hostěnice by the ponor of the brook coming from a near neighbourhood. After 1.5 km of galleries it appears in karst spring in the valley of the Řička. It consists of close snake-like winding tunnel galleries and spacious galleries and domes. It has a conspicuous dripstone decoration, particularly in the so-called Taneční sál (Dancing Hall), where the ceiling is covered with thousands of stalagmites.

Besides the Bohemian Karst there are lesser islands of limestones affected by Karst processes. Thus, in central Bohemia built of a granitic system and crystalline schists there appear Silurian limestones in the drainage areas of the rivers Sázava and Želivka. From among major caves they are the cave Pod Šeptouchovem near the town of Ledec and Čertovy díry in the rocks above the river Želivka. A band of Silurian limestones passes through the Železné hory Mts., where the largest caves are Páterova and Podolská, both discovered in the operation of the quarries near the small town of Prácheň.

Of much greater importance are karst territories in the northern border area of Bohemia. In the mountain range of Ještěd above the town of Liberec an intermittent band of metamorphic Silurian limestones crops out with the caves Hanychovská and Západní near the village of Jitrava. They are fissure caves formed by corrosion processes. The piedmont area of the highest mountains of Bohemia, the Krkonoše, comprises an extensive system of metamorphic Dolomite limestones between Bozkov and Jesenný. They are of Silurian age, being situated in phyllites. Near the of Semily are extensive Caves of Bozkov. They are accessible for tourists. The caves were made by corrosion in rock strongly interspersed with quartz. The caves are of irregular shape, being characterized by the occurrence of large lakes. Similar caves are near the villages of Poniklá and Horní Albeřice. They belong to corrosion caves bound to metamorphic limestones and dolomites.

In south Bohemia there are intensely metamorphed crystalline schists in the geologic structure, called Moldanubicum. They include marbles in gneisses and/or mica schists. In some of them there are caves. The largest territory of that type is Pacova hora near the town of Chýnov. Proterozoic marbles alternating with laminae of amphibolite penetrate the so-called Caves of Chýnov. It is a system of erosion-corrosional cavities of fissure and tunnel character. They are flown through by subterranean stream which can be followed in the length of 3 km. The caves alone have galleries 500 m long and are accessible for tourists. Their walls are characterized by the coloration given by the alternation of amphibolites with crystalline limestones and dolomites.

Similar, but much smaller caves are found near the village of Strašín. They contain fillings consisting of ferric ochre.

There are more extensive karst territories in north Moravia. Limestones of Devonian age crop out of Culm shales in the territory around the town of Litovel. Karst rocks submerge below overlying shales, underground waters in karst cavities communicate for considerable distances. The outcrops of limestones with Caves are greatest above the villages of Javoříčko and of Mladeč.

The Caves of Javoříčko are characterized by their size as well as a rich dripstone decoration. They are situated inside the hill called Špraněk, consisting of Devonian limestones. These limestones crop out between the towns of Konice and Litovel and jut out above the surroundings built of Culm greywackes. The entrance is situated in a building adjoining the rock gate into the abyss of Zátvořice. That is a system of 3.5 km in length consisting of two storeys. The upper storey is more extensive, accompanied by large spaces, whereas the lower one is smaller and to a great extent filled with loamy deposits. Both storeys are deserted river beds of an subterranean stream which at the present time is found still lower in quite inaccessible narrow cavities. The spaces are of considerable age. The finds of quartz deposits consisting of the mineral opal, covering in remnants small irregularities of the walls, have revealed the fact that they were created in that form as early as at the lower Tertiary Period. Opal sinters come from the deposit of SiO_2 , which is the result of tropical weathering on the surface which ruled there for the last time in the Neogene. In the decoration of spaces hundreds long and as much as 10 m high young dripstone decoration is conspicuous. They are sinter waterfalls, stalagnats, cauliflower-shaped dripstones, calcite shrub-shaped formations and a number of others.

The hill Třesín is only a few kilometres away from Špraněk with the Javoříčko Caves. It is located above the of Mladeč and hydrographically it is connected with the former. Waters flowing away from the Javoříčko Caves appear in the springs below the Caves of Mladeč. The entrance to them was discovered between 1826–1828 in quarrying stone for building a road. At that time nobody cared about the caves and so their rich dripstone decoration was subject to destruction. Only in 1881 the archeologist J. Szombathy found there several human skulls with a great amount of bones of grown-ups and children bearing traces of cannibalism. The finds belong to the Paleolithicum and according to stone and bone tools to the Aurignacien culture. Besides human bones the cave deposits yielded further bones belonging to big extinct mammals, such as the mammoth, the beaver, the horse, the cave lion, the hyena, the cave bear, the reindeer, the bison, etc. The colonization in the caves and in their surroundings continued in the Neolith as well. Remnants of skeletons are accompanied by utility earthenware of the Bronze Period, the Unětice culture and the Lausatian culture. Later still the caves were inhabited by pre-historical Slavs. From the Middle Ages some queer graves were preserved concealing damaged skeletons of people who lost their lives by force. These may be remnants of battles or a place of execution. Frequent finds of human skulls brought the Caves of Mladeč into the interest of folk tales. The most frequently recorded legends are storeys of robbers, always culminating in tragic bloodshed.

The caves themselves are a very complex maze of galleries and domes, seemingly chaotically arranged. They are both horizontally and vertically dissected, three storeys being connected through light holes and slanting galleries. In the modelation of cave spaces the activity of water erosion through caves is reflected as well as ample tumbling down of etched and eroded parts of Devonian limestones in which they are formed. There are many traces of dripstone decoration which, however, was broken off by accidental visitors, with the exception of small remnants.

In connection with the Caves of Mladeč it is necessary to mention the so-called Cave „Ve štolé“. It was discovered when a corridor was being made to find out the thickness of Devonian limestones of Třešín hill. Its caves are quite isolated and situated very far in the inside of the hill. They have a constant microclimate with high humidity, constant temperature and an optimum Ca^{2+} content in the cave atmosphere. The hospital in Olomouc installed in them a cave sanatorium. By means of the speleotherapy consequences of heart diseases and upper breathing pathways are cured there.

The caves occur frequently also in the limestones of north Moravian mountains. We come across them in metamorphic limestones of again Devonian age in the Králický Sněžník Mount and the Jeseníky Mountains. Thus, Tvarožné díry near the springs of the river Morava are a system of tunnel-shaped galleries flown through by an underground brook. The waters communicate with caves lying behind the frontier in Poland. The most extensive are, however, caves called Na Pomězí, accessible for the public. They are situated near Lázně Jeseník Spa. Caves in the length of about 1 km penetrate clean white crystalline marbles surrounded by quartzites, mica schists and phyllites. The galleries follow tectonical faults in the rock, so that they have irregular shapes. In many places they extend to domes. They are characterized by a rich dripstone decoration.

Not far from these caves there are others made accessible for the public. They are Caves Na Špičáku. They have formed a system of tunnel-like galleries crossing at right angles in crystalline metamorphic marble. The caves have been known since 1430. On the walls there are numerous inscriptions, the oldest dating back to 1545.

Quite a particular territory is that of the Karst of Hranice. It is bound to Devonian limestones cropping out in the form of conic hills from thick beds of Tertiary gravels. The river Bečva flows across this territory which involves hydrothermal springs. The most typical Cave is Zbrašovská at the spa Teplice nad Bečvou. Its uniqueness consists in the fact that it is the result of karsting under the influence of those mineral waters. There are gas lakes in it which originated by the accumulation of CO_2 as well as the mineral aragonite. The caves are accessible for the public. A system of considerably irregular chaotically cavities is characterized by the alternation of fissure galleries, light holes and domes. The greatest thing of interest are geyser-like dripstones. These are hollow cones of sinter precipitated in places of mineral water eruptions.

On the opposite bank of the Bečva river to that containing the caves of Zbrašov, in the reserve Hůrka is the so called abyss of Hranice. That is a deep karst fissure whose bottom has not yet been reached. In the depth of 70 m there is a lake penetrated by divers to the depth of 100 m. The lowest depth measured was 244 m without the bottom being reached.

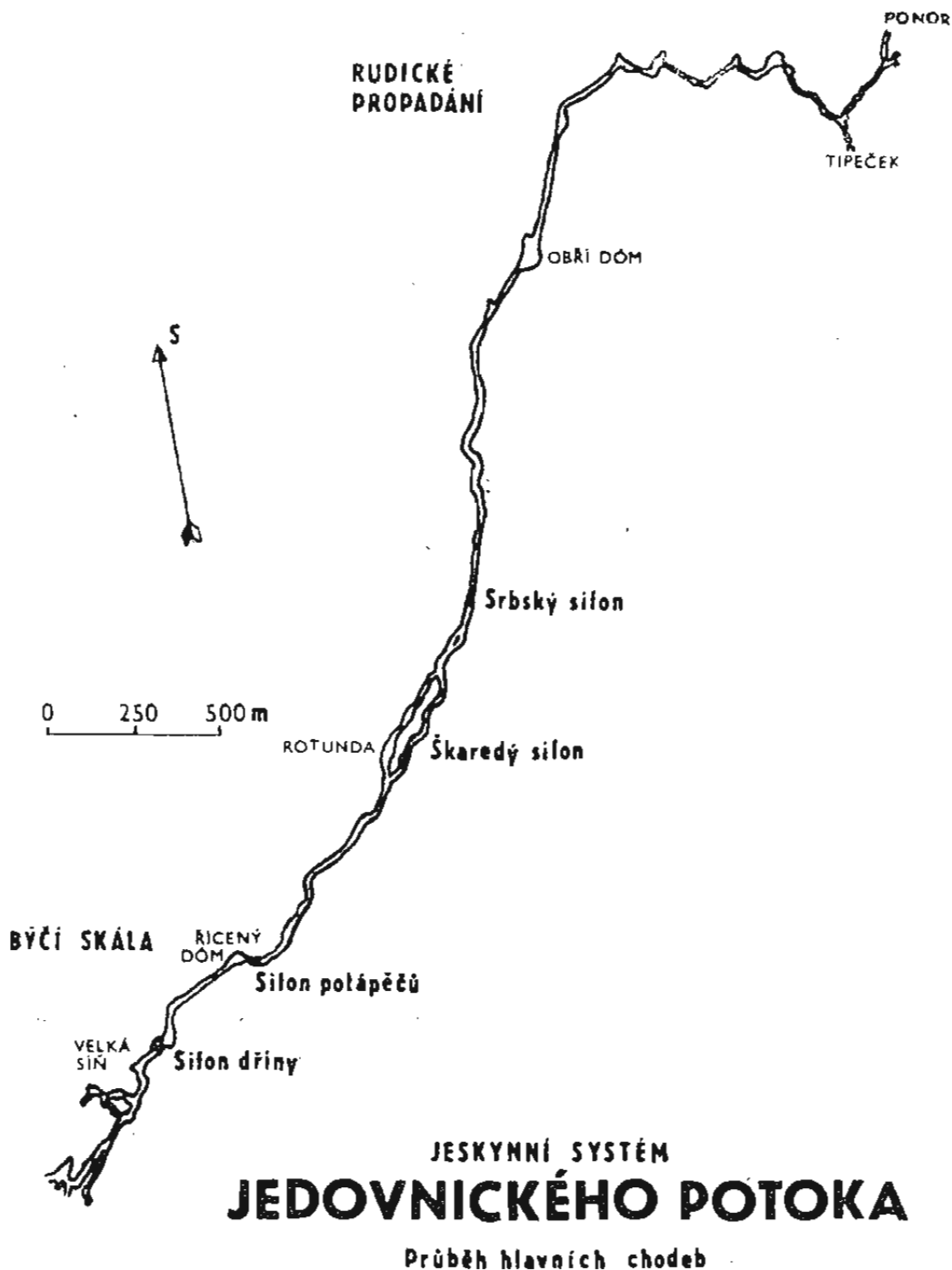
On the territory of the CSR there is also a karst belonging to the Carpathian system, prevailing in Slovakia. It is the Karst of the Pavlovské vrchy Hills near the town of Mikulov and Kotouč near the town of Štramberk. The age of the limestones is Jurassic – Tithonian. In the Pavlovské vrchy Hills the biggest is the cave in Túrold hill. It is a corrosional fissure cave with numerous slides on the bottom with a stagnant lake. Near Štramberk it is cave Šipka famous by the finds of Neanderthal man and a fissure precipice below the castle of Štramberk.

RNDr. František Skřivánek
Vice-President
Czech Speleological Society

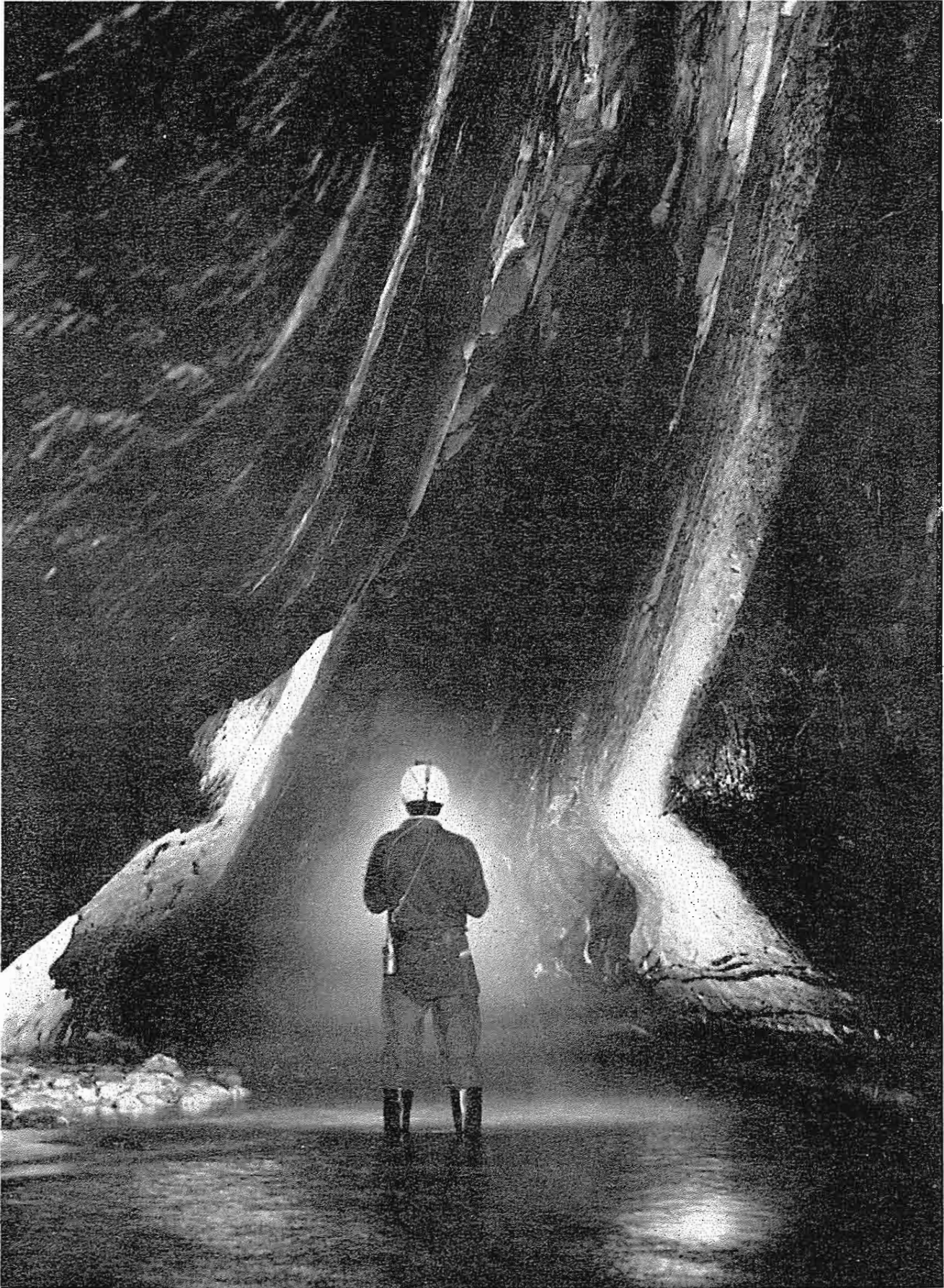
New discoveries in Bull Rock Cave (Moravian Karst)

Bull Rock is situated in the central part of the Moravian Karst in the surroundings of karst springs of the Jedovnický potok Brook. The Bull Rock Cave is known all world around due to archeological site, especially of the Hallstatt Culture. Bull Rock Cave is studied by speleologists since the end of the last century. In the year 1920 so called New Bull Rock Cave was discovered.

The new epoch of the speleological research of the Bull Rock Cave started 1976. Members of the Basic Group, Czech Speleological Society 6-01 Bull



Bull Rock Cave System — main galleries of the Jedovnický potok Brook

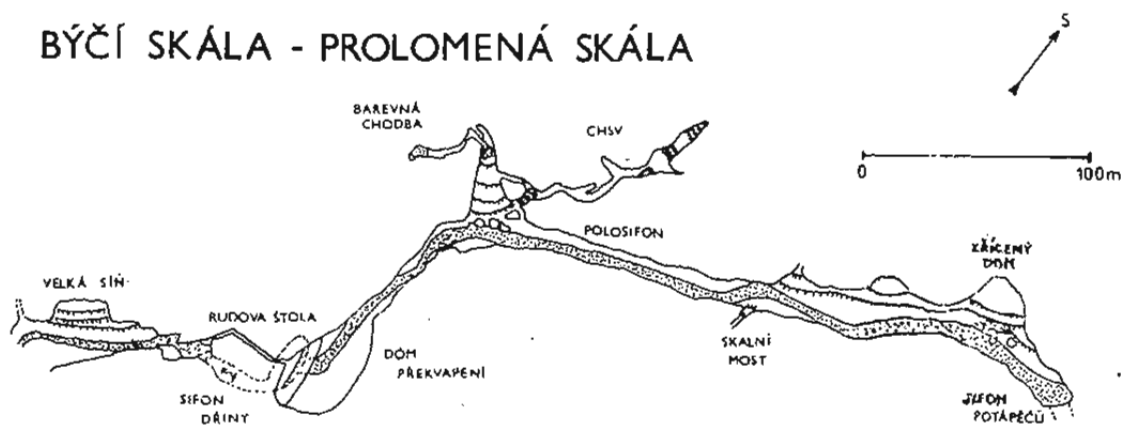


Bull Rock Cave – Gothic Gallery in Dived Rock

Rock and 6–09 Labyrinth studied the Siphon of Drudgerý. Cave divers mapped 38 m long part of the siphon. The map of siphon was than base for the project of the exploration gallery. The exploration gallery behind the siphon was blasted during 8 years. The prolongation of electricity circuit, telephone line, access way etc. was necessary.

In January 1984 speleologists approached a 3 meters deep well in the bottom of the exploration gallery. This well was mapped by cave divers 1976. January 21th, 1984 speleologists lowered the water niveau by pumping at about 2 meters. The way into new caves was opened. New part was named Break Rock. Up to October, 1984 following part of the exploration gallery was blasted 14 m long. The exploration gallery through the Siphon of Drudgerý was called Ruda's Gallery. The Ruda's Gallery is opening into the Hall of Surprise (50 m long, 25 m wide and up to 10 m high). Prolongation of the Hall upstreams is the gallery 10 m wide and 6 m high. Than follows a demi-siphon

BÝČÍ SKÁLA - PROLOMENÁ SKÁLA



Bull Rock Cave System – Break Rock Situation December 31th, 1984 Mapped by Bartoň, Khul, Koukal, Ševčík Compiled by Bartoň



BÝČÍ SKÁLA, část PROPLAVANÁ SKÁLA

Bull Rock Cave (Moravian Karst, Czechoslovakia)

1 m high. Further upstream is again a gallery. At the end of this part 380 meters long is siphon. Chimneys were studied with good result. Near to the Sinter cascade the chimney 95 m high was discovered. In the 45 meters long Coloured gallery begins a dripstone cascade 60 m long. But the search for galleries around the upstream siphon was not successful.

Further research was therefore organized with the help of cave divers from the Basic Group 6-09 Labyrinth at the end of 1984. The research in the January, 1984 has shown, that the prolongation is possible with oxygen ballons on sides of divers. Already during first research at the end 1984 divers were successful and after about 100 m they came to the underground lake (dimension 15 × 10 m) in the hall (dimensions 10 × 30 m). During the continuation of diving in January 5th and 6th, 1985 new caves were mapped. Direct distance between a point at the beginning and at the end is 1160 meters. The lengths of the main gallery is more than 1250 m. There is only slight meandering. The width of the gallery is from 6 to 12 m, the height from 2 to 10 m. In first two thirds of the gallery are dripstones, sometimes very rich. The new caves were named Hall of Divers. There is one place — demi — siphon — only 0,4 m high. But the bed of the Jedovnický potok Brook can be followed about 750 meters to the next upstream siphon. This siphon was passed by Flood gallery about 300 meters long with nice accumulation river terraces. In the frame of Flood gallery is the largest cave of the Dived Rock so-called Rotonda Cave (hall 30 × 40 m in the groundplan and 12 m high). There are many manholes in this part, but no lateral caves.

On February 16th was the siphon passed by 7 divers. They used special containers for supply. Divers spent 20 hours in caves and fixed triangulation polygon for mapping. The whole new parts were mapped. Divers also passed the upstream siphon and came to the Rudické propadání sinkhole.

Due to the connection of the cave system of Rudické propadání sinkhole and the Bull Rock cave system formed by the Jedovnický potok brook the whole system is 12300 meters long. It is the third longest cave system in Czechoslovakia (first Amatérská jeskyně cave 32,5 km) second Stratenská jaskyně cave 16,7 km). Due to the research one of the important speleological problem of the Moravian Karst was solved. The whole cave system will be studied by speleologists for many years. Now in projection is the exploration gallery at the Siphon of divers opening in the Dived Rock (Hall of Divers) Than not only cave divers but also other speleologists shall see the beauty of new parts of Bull Rock Cave System.

Emil Bartoň, Basic Group 6-01
Michal Piškula, Basic Group 6-09



Professional Speleological Training System in the Czech Speleological Society

After the foundation of the Czech Speleological Society in December 1978 the conditions were created for the formation of the system of professional speleological training in the Czech Socialist Republic. The Commission of Speleological Education at the Central Committee of the Czech Speleological Society was formed. This Commission developed the system of speleological training in four levels.

The first level of the professional speleological training is called „Speleological Minimum“. This level of training is Basic groups of the Czech Speleological Society. The Commission of Education organises special courses for instructors of Basic groups. The Speleological Minimum is designed for young and new members of the Society. The courses consist of the sequence of lectures and practical exercises as follows:

1. Karst and karst processes, karst geology and geomorphology, basic terms used in karstology and speleology,
2. Distribution of karst in Czechoslovakia, Europe and other World,
3. Karst as natural reserve, environmental problems in karst regions, protection of karst areas,
4. Speleology and its development in Czechoslovakia and in the World,
5. Techniques of karst research, preparation and organisation of the karst research, personal equipment, group equipment for karst research, special

- techniques used in swallow-holes, water caves etc.
6. Geodetic work and mapping in caves, documentation of profiles, paleontological and archeological funds, etc.
 7. Security of karst research. basic medical training, prevention of accidents in caves etc.
 8. History of karst research, structure and aims of the Czech Speleological Society, activities of the International Speleological Union.

The Manual of Speleological Minimum was published by the Society as a Supplement to the journal *Stalagmite*.

New course called *Speleologist of the First Range* was started by the Society 1983. Participants of the course are Society Members with some experiences in karst research. The duration of the course is 10 days (6 days lectures, 4 days practical training, excursions, exams). The structure of the course is nearly the same as in the case of the *Speleological Minimum*, but on the higher level. The text book *Practical Speleology* published by the Slovak Speleological Society is used in this courses. The Czech Speleological Society published 1984 and 1985 special material for the participants in these courses (*Speleologist of the I. range – part I. and part II*). The course will be repeated every year since 1986.

The training of the third level (so-called *Speleologist-Specialist*) is organised by specialised commission of the Society. For instance

- the Technical Commission organised the course of speleoalpinismus, technical innovations in speleological research etc.
- the Commission of Speleological Security the course *Security in Caves*,
- the Commission of diving the course *Diving in Caves*
- the Commission of Education courses *Geodetical Methods in Caves*, *Research of Anthropogenic Caves*, *Photography in Caves*, etc.

The fourth – the highest level of training – is represented by scientific symposia organized by the Society. In the years 1982–1986 our Society organized several symposia, partly with international participation). There were symposia like *Karst of Sudetic Mountains* (1982, 1984), *Pseudokarst* (1982, 1985), *Environmental Problems in karst areas*, *New methods in Speleology*, etc. Papers presented on this symposia were published in volumes of collected papers and distributed among members of the Society. For the period 1986–1990 following symposia are in preparation:

3rd Symposium on Karst in Sudetic Mts. (1987),

3rd Symposium on Pseudokarst (1988)

4th Symposium on karst in Sudetic Mts. (1989)

3rd Symposium on Anthropogenic Caves (1988), etc.

Some Basic Organisations, Czech Speleological Society are organizing their special courses. E. g. Basic Group 6–11 in Brno organized *Speleological School*.

Commission of Speleological Education, Czech Speleological Society established contacts with the Commission of Speleological Education of UIS., Members of the Commission took part in meetings of UIS Commission in Trieste, Maletín and St. Martin en Vercors. Members of the Commission visited also *Ecole Francaise do Spéléologie*, *Federation Francaise de Spéléologie* in Lyon. Contacts are very useful.

The system of professional speleological training in the Czech Speleological Society will be further developed and improved.

Ass. Professor Dr. Jaromír Demek DSc.
vice-president, Czech Speleological
Society and chairman, Commission of Education

Foreign Contacts of the Czech Speleological Society 1982 – 1985

A picture of the developing activity of the Czech Speleological Society are also broadening contacts with foreign countries.

Members of the Society have important functions in bodies and committees of the International Speleological Union, they participate regularly in the sessions of those bodies and they contribute greatly to the materialization of important actions of the UIS in Czechoslovakia.

In 1973 the Commission of Speleodiving, entrusted by the International Speleological Union, and supported by the Ministry of Culture, the Czech Socialist Republic, the 6th International Camp of cave diving in the Moravian karst with the participation of a number of speleodivers both from Czechoslovakia and from abroad. At the same time a session was held of the Commission for Speleodiving of the UIS. In 1984, the Central Committee of the CSS, entrusted by the UIS and supported by the MC, CSR, organized a session of the Bureau of the UIS at Javoří near Maletín, and on the same occasion the session of the commission for Education of the UIS. In 1986 another action was organized in the CSSR on the initiation of the UIS – a symposium on Speleo-therapy.

Besides actions organized by the entrustment of the UIS, the Czech Speleological Society organized a number of actions in the CSR with international participation in 1982 – 1985. Every year, at the end of May and the beginning of June, there is a traditional meeting of speleologists in the Bohemian karst, where speleologists from Poland, GDR, Hungary, Romania, Bulgaria, USSR, Italy, France, Austria, FRG and Finland participate, there have been two specialized symposia on the Karst of the Krkonoše – Jeseníky system, in which, besides Czechoslovak experts, also our colleagues from Poland and the GDR were present. A successful action was also the Symposium on the Pseudo karst at Janovičky near Broumov, two seminars „New Trends in Speleology“ and, last but not least, also the meeting of speleologists in the Moravian Karst on the occasion of the 40th anniversary of the establishment of the Speleological Club in Brno in 1985.

If we want to enumerate all important actions with foreign participation in Czechoslovakia, we must not forget exchange contacts of Basic organizations of the CSS with similar organizations of national federations. Only in 1984 Basic organizations of the CSS invited altogether 145 speleologists from 9 European countries. The programmes of the stays of guests from abroad were usually visits to important karst localities and excursions into selected caves. A considerable portion of their time was always devoted to their getting acquainted with natural and cultural places of interest of this country and the work of people in Czechoslovakia. In an absolute majority of cases the guests were satisfied with their stay, which was reflected in further broadening the cooperation of the partner organizations.

Besides the participation of UIS functionaries at the sessions of the presidium and the committees, specialists from the Czech Speleological Society took part in several specialized conferences and symposia abroad:

- in 1983 International Speleosaving Conference (Aggtelek, Hungary)
- in 1984 International Geological Congress (Moscow, USSR)
International Symposium on Applied Karstology (Liege, Belgium)
- in 1985 Seminar on Speleotopography and Utilization of Computer Technology in Speleologic Mapping (Vienna, Austria)
International Conference on Bats (Aberdeen, Scotland)
Conference on Karst Hydrology (Gorizia, Italy)

The compensation of the stays of guests from abroad in Czechoslovakia, dealt with in the paragraphs on domestic actions with foreign participation were stays of Czech speleologists abroad, usually on the invitation of some foreign organization. The forms of such trips were either expeditions with an important sports or special objective or study trips or excursions aimed at getting acquainted with the work of the partner organization in different karst regions. Since the enumeration of all trips abroad of the members of the CSS would be beyond the scope of this chapt, we summarized only the most important data for each country visited into several paragraphs.

AUSTRIA

Austria was visited by a group of north Moravian speleologists in 1984, on the invitation by the Dornbirn Museum. The trip was of excursion character, the group visiting successively the localities of Semriach, Pegau, Eishöhle, Eisreiswelt, Vorarlberg, Schneckenloch, Löwenhöhle and others.

BELGIUM

In 1984 a Symposium on Applied Karsology was held in Belgium, in which a representative of the CSS participated. Another member of the CSS visited Belgium in autumn 1984 on the invitation of the Flemish Speleological Federation and took part in the celebration of the 10th anniversary of the establishment of the Flemish Speleological Federation. Besides he visited the localities of Nou Moulin, Eprave, Grotte de Han and others.

BULGARIA

Bulgaria is a country where Czech speleologists often spend their holidays. In recent years their interest has been concentrated on the karsts of the western and northern parts of Stara Planina and regions near the seacoast.

CUBA (MEXICO)

Speleodiving expeditions to Cuba have been organized by Czech speleodivers since 1980. Altogether 2 important expeditions have been organized. The first one dealt with the region of the peninsula Zapata, where but for small exceptions first descents into deep joint caves with brine and brackish water were made. From the most important ones one can name Casimba XXXV Aniversario, Brinco, Ilona, Cuba-Checoslovakia and others. Maps and photo-documentation were made of the caves explored and connections of the cave systems and their communication with the sea were searched for. Another part took place on the northern coast (Ojo de mégano – a cave of the Blue-hole type in the sea, further caves in the region of Varadero and Batabano – caves of the Aston type); the most interesting locality with fresh water and exceptionally rich dripstone decoration was the cave Juanelo Piedra.

The second expedition, during a short stay in Mexico concentrated on the cenotes of the peninsula Yucatan – a 100 m deep cave of bell to cylindrical shape with fresh water. The main programme in Cuba was held in the cave Juanelo Piedra, where a half-hour film was made for TV on the reconnaissance of the cave, the further part took place in the east of Cuba in the province Oriente near the small town of Gibara. The most essential parts were: the mapping of the so far most extensive underwater labyrinth in Cuba – Cristalito de Papaya, the caves of Caoba, El Capitan and above all El Macio, again with an extremely rich dripstone decoration and with fresh water. There a hitherto undescribed species of a blind cave fish was caught and subsequently named *Lucifuga oculata*. The last part took place at the abrasion terraces of submerged marine Sigua near Santiago.

FEDERAL REPUBLIC OF GERMANY

In 1985 a group of Moravian speleologists with a group of speleodivers from Prague visited the FRG. The objective of the visit was a study in the regions Fränkische Alb and Harz. On the occasion of the Symposium on Applied Karsplogy in which one member of the CSS participated there was also a field excursion into selected Karst regions of the FRG.

FRANCE

Thanks to a richness of Karst phenomena and a great number of very deep caves every year since 1983 several groups of Czech speleologists stayed in France. During their visits caves in the Pyrenees were visited as well as those in the region Serrane (Hérault) north of Montpelliere, on the plain vercors and the Savoy Alps. Besides, in 1983 and 1984 descents were carried out into a 245 km long labyrinth of the Paris historical underground. Two of the above actions had an expedition character; we bring their brief characteristics in the following paragraph.

Expedition in the Trombé-Loubens system 83.

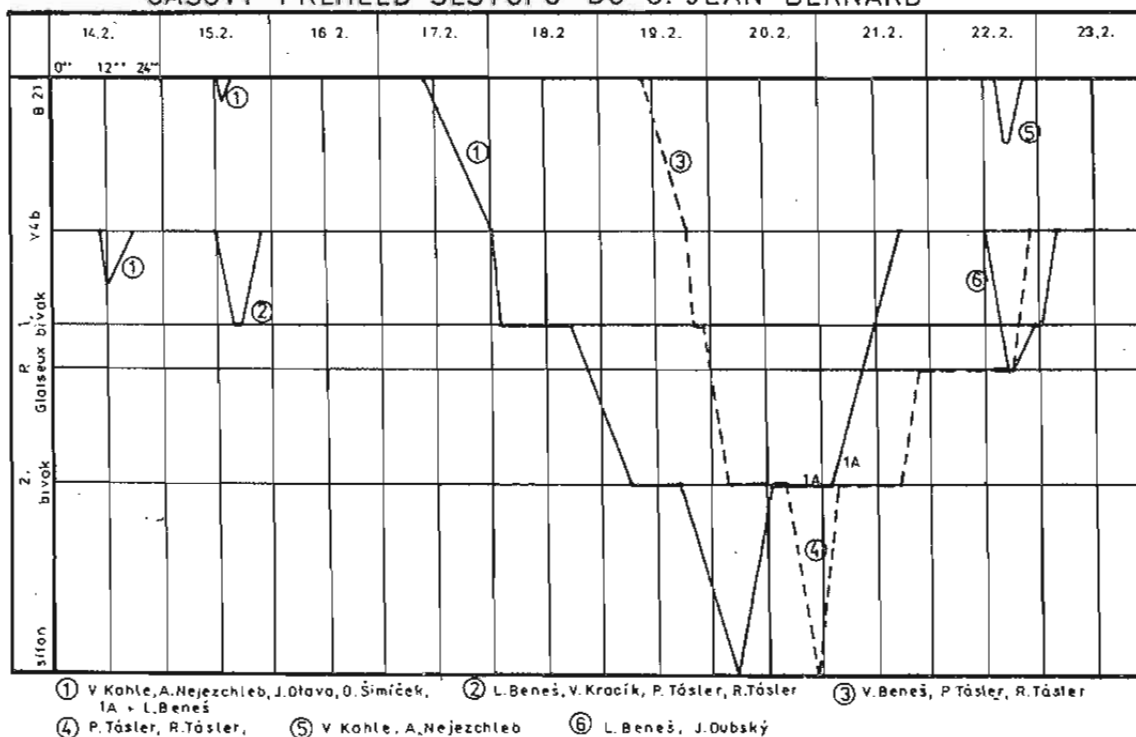
8 members of expedition in the French Pyrenees overcame in two groups part of the Trombé-Loubens system. They entered the system through the part Henne Morte.

The whole action took 36 hours and the deepest point was reached by 4 cavers. Single rope technic with Czech ropes of diameter 9 and 11 mm was used for the descent.

Expedition Jean Bernard 84:

9 members took part in the expedition whose objective was a sports passage of the whole system from the entrance B 21 up to the siphon. After waiting a week before the new snow settled down and avalanches fell, the group carried material to the challet Folly in three days. After two entrances into the cave through entrances V4b the material was moved to the first bivouac

ČASOVÝ PŘEHLED SESTUPU DO G. JEAN-BERNARD



and a pathway marked in the horizontal parts towards the river Excentric. The descent proper was carried out in two groups with a delay of two days, only two members of the second reaching the bottom, the third member of the second bivouac reached the surface with the first group. The first group equipped the abyss, the second removing the equipment. It took 4 days to both groups to pass through the whole system. They reached the surface through entrance V4b. The activity of the teams in the cave can be seen from the graph where the vertical axis expresses time, the horizontal one time. The numbers in circles mark the individual teams whose composition changed during their activity. In the descent Czechoslovak ropes were used whose diameters were 8 mm, they were supplied in pieces 300 m long and cut on the spot to proper length. Altogether about 1,000 m ropes were used. For fastening anchoring plates were used in which no spring hook is necessary. In the bivouacs suspended heated beds of our design were tested in which one can sleep without sleeping bags. By the descent into the cave Jean Bernard a new Czechoslovak record in depth was created.

Expedition Pierre St. Martin 1985:

13 members of the Czech Speleological Society took part in the action as well as 2 members of the Slovak Speleological Society. The objective of the action was the passage of the whole system from entrance SC 3 to the bottom (1321 m) and in the further part of the expedition the fundamental speleological exploration of the plain les Orgues de Camplong including the making of documentation. In the course of several days SC 3 was equipped (Gouffre Beffroi) to the depth of 350 m, the path was marked from tunnel EDF to the Windy tunnel where a bivouac was installed. Ropes were transported through the gallery Aranzadi and through the meander Martin to the hall Montpellier. The following day the first team of four members started the descent, while another team was finishing the equipment of the abysses from the hall Montpellier to the bottom. In the abyss Beson there was a tragic accident in the depth of about 1250 m in which Czech speleologist Jiří Kubálek lost his life. Further teams did no longer descend into the cave, the first team alighted to the surface through tunnel EDF, the material was transported back and the activity in Pierree St. Martin stopped. Then the group shifted to the region les Orgues de Camplong, where they continued their original programme. The results obtained were handed over to ARSIP.

GERMAN DEMOCRATIC REPUBLIC

Several Czech speleologists go every year also to the German Democratic Republic. In 1984 a group of four members set out to get acquainted with caves in the region of the Thüringen basin and in an excursion way they visited the caves Drachenhöhle, Marienglashöhle and others.

GREAT BRITAIN

A group of Czech speleologists visited karst regions of England and Wales in 1983. During their stay they got acquainted with important karst regions and visited numerous caves (Sedcote Swalte, Goatchurch Cavern, White Scar Cave, Long Churn Cave, Ingleborough, Bar Pot, Lancaster Hole, Peak Cavern, Thirst House Cave, Ogof Fynnon Do, Wookey Hole, Lamb Lea and others). In 1985 one Czech specialist participated in the International Conference on Bats in Aberdeen.

HUNGARY

Hungary is also a country of many excursions of Czech speleologists.

Among the most frequently visited regions belonge the Hungarian part of the Slovak karst, the Beech Moutains and caves in-Budapest. Every year those region are visited by a number of speleologists. The exploratory and documentation work is carried out by the members of the CSS on the Hungarian side of the Dolný vrch hill, thus continuing the exploration carried out from the Slovak side.

ITALY

In 1984 and 1985 two groups set out to the karst regions in Italy. The first one worked in 1984 in the region Auburni, the Apuan Alps and the Dolomites, making a descent to the cave Antro del Corchia. The second group stayed in the region of Monte Canin in 1985.

NEPAL

In August 1985 an expedition of the Czech Speleological Society left for the karst region of the Pokhar Valley in Central Nepal. Up to the close of the Proceedings the expedition has not returned, so that the results cannot be published here.

POLAND

The aim of numerous visits of Czech speleologists in Poland are sports descents into deep caves in the Polish part of the Tatras. Besides, Czech speleologist participate regularly in the Speleological schools organized every year by Polish speleologists.

ROMANIA

Like in Bulgaria, many Czech speleologists spend their holidays in extensive karst regions of Romania. Expeditions of Brno speleodivers in 1982, 1983 and 1984 have contributed to important discoveries.

In 1984 the club of speleodivers, Labyrinth, from Brno established cooperation with Romanian speleodivers. As the most suitable form of cooperation organizing common actions in Romanian karst regions was chosen. In these expeditions different exploratory and documentation actions were organized according to the interests of Romanian colleagues. The first meeting had a rather informative character. During it a number of karst regions were visited and the possibility of carrying out speleodiving work studied. Further actions were aimed at solving actual problems. In 1983 works were performed in the region of Banat. In them two sifons were overcome in the cave Buhui. The overall length of the prolongation was 165 m. The larger of the two sifons was 135 m long and 28 m deep. The corridor continues by another sifon which was not explored due to lack of time. In this action also several preliminary descents were carried out in the neighbouring caves. In one of such descents two divers overcame an 80 m entrance sifon in the cave Susara.

In 1984 Brno divers cooperated with their Romanian colleagues in exploring the cave Polovragi in the range Capatinei. In that relatively extensive cave system an access at the level of the water stream had been discovered only shortly before. The main task of the Czechoslovak group was to find connection between the point of issue and this level. After exploratory penetrations of Romanian speleologists in the point of issue a sifon was overcome in the newly discovered part of the cave Pesteră cu Apa din Cheile Oltetului and finally the cave Polovragi was reached. This connection means the extension of the cave Polovragi by 400 m. On this occasion flooded underground corridors were mapped in the region of the point of issue. Preliminary exploration was carried out in the region of Tismana where our divers, by a detailed

finding of the course of corridors, contributed to the recognition of the cave Pestera de la Pastravaria.

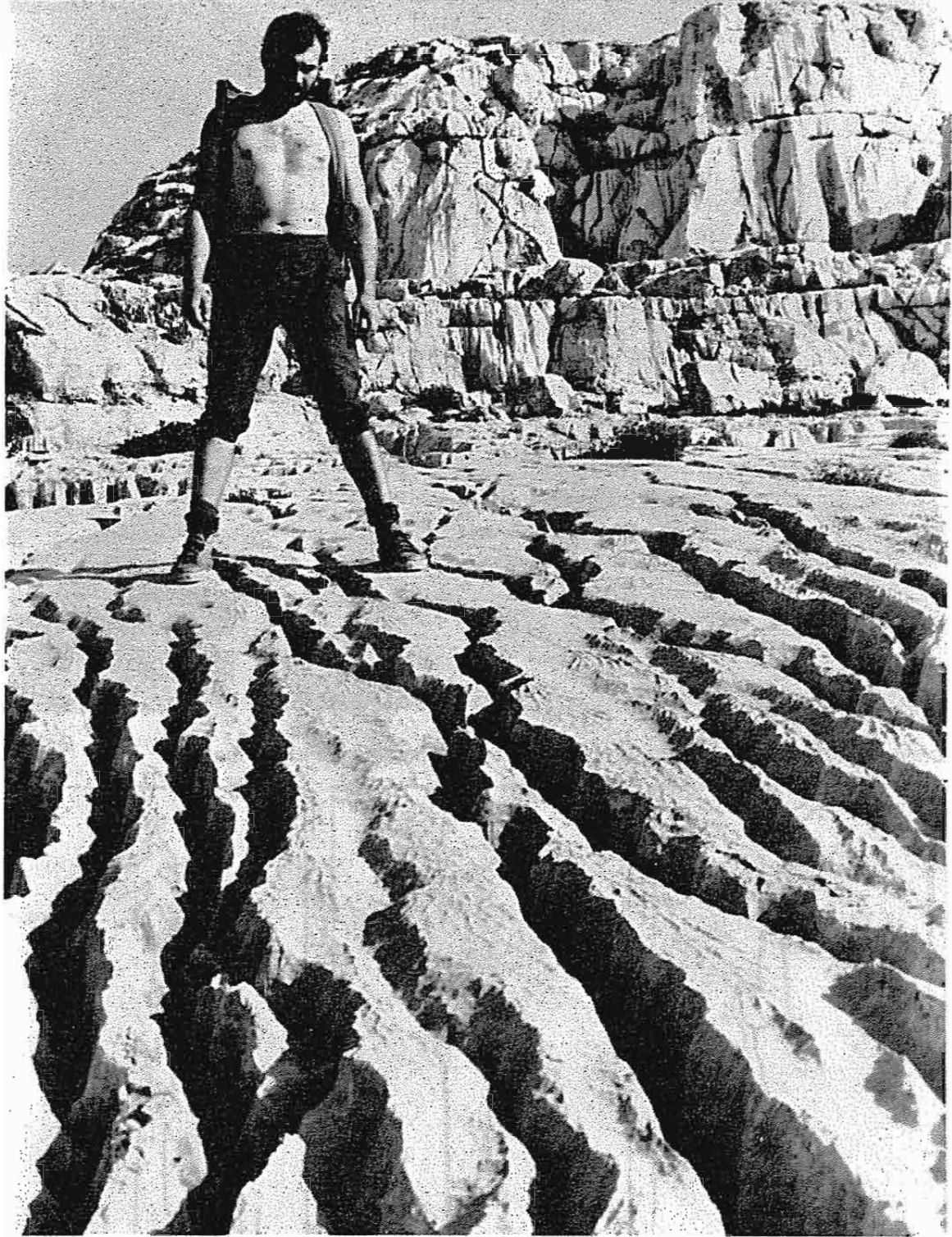
SOVIET UNION

In 1982 – 1985 several expeditions travelled to the Soviet Union, their aims being different karst regions in the USSR. Thus, Czech speleologists worked in the regions of the Crimea, the Caucasus, its southern promontories and in the region of Kirgisia. Fundamental speleological exploration was systematically carried out particularly in the Crimea and in the Western Caucasus.



Sink holes on Bzyb – Gagry Anticline, Bzyb Ridge, Caucasus, USSR

One of the most successful Czechoslovak actions in the region of the Crimea was a complete exploration, prolongation and documentation of the newly discovered system Emine-Bojir-Chasar Nižnyj on the plateau Čatyr Dag. During a one week stay in the underground the members of the expedition documented in detail a system more than 2 km long, rich in an unheard of amount of secondary forms (particularly helictites and druses of calcite crystals covering almost all secondary forms). In 1982, in the water system Kizil koba, 14.1 km long on the plateau of Dolgoruky in a five-day camp behind the 3rd siphon the expedition explored and prolonged the final points of the cave with an attempt of overcoming the 6th siphon. The expedition



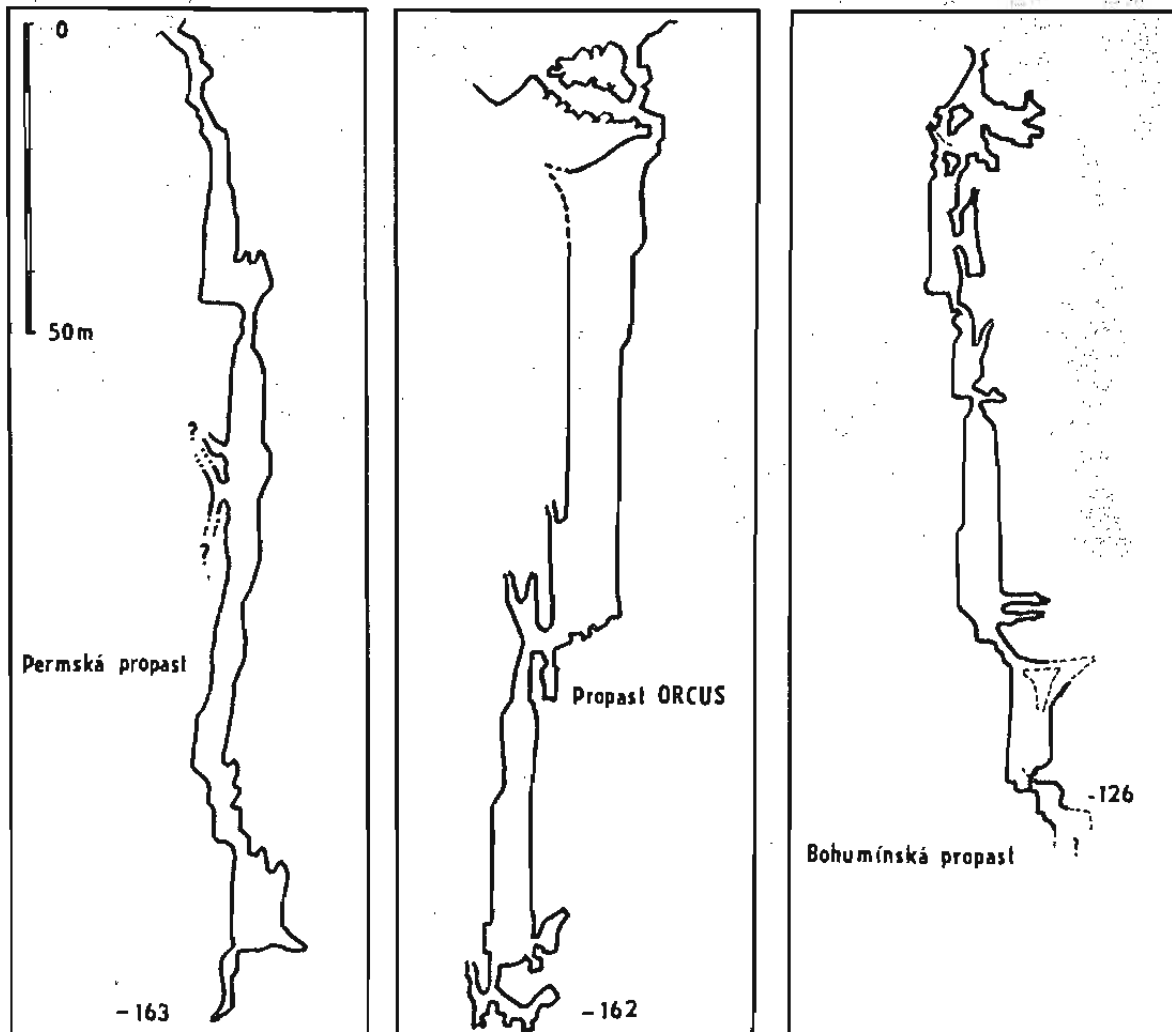
Rill lapies on rock flat, Bzyb Ridge, Caucasus, USSR

processed topographically 300 m of new corridors. In 1984 an expedition of north Moravian speleologists worked at a little explored range of Karabi, discovering and documenting more than 10 discovered abysses up to 100 m deep.

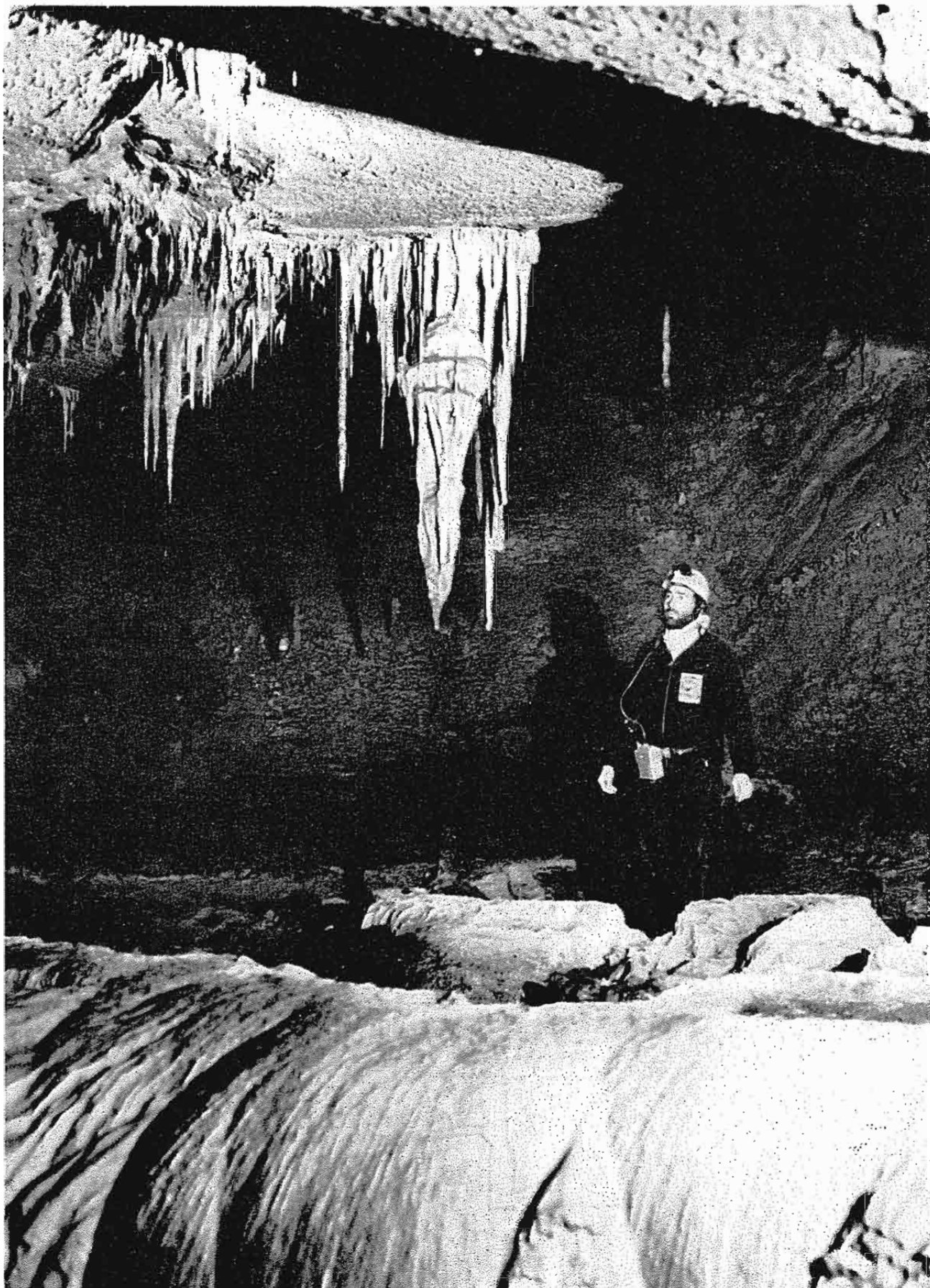
In the high-mountain Karst of the Western Caucasus expeditions of north Moravian speleologists worked in 1982 and 1983 at the western fringe of the range of Bzyb. The result of exploratory, opening and prolongation works were the discoveries of abyss systems „K 1“ of Slava Pantyukhin (–650 m), the abyss ORCUS (– 162 m), the abyss Permskaya (– 163 m), the abyss „K 16“ (– 170 m) and further abysses with depths up to 100 m were discovered. In all localities map and geomorphological documentations were performed.



Crimea, USSR water transport of material in the 1st siphon in cave Kizil Koba



The maps of discovered abysses on the Bzyb Ringe (Western Caucasus)



Crimea, USSR — secondary forms in cave Kizyl Koba

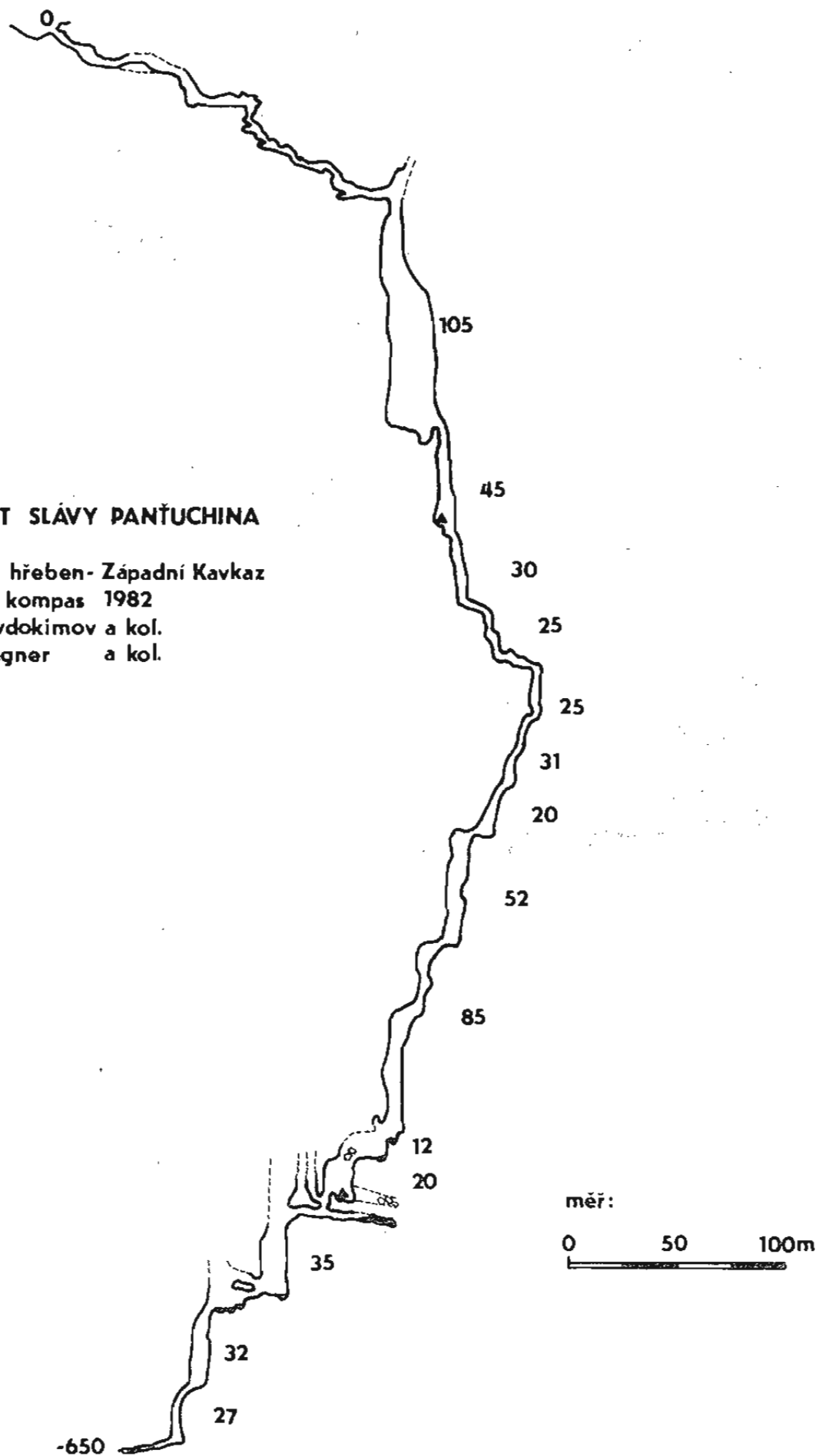
PROPAST SLÁVY PANŤUCHINA

Bzybský hřeben- Západní Kavkaz

Geolog kompas 1982

Map. Jevdokimov a kol.

Wagner a kol.



SPAIN

An expedition of Czechoslovak speleologists to the Pyrenees in 1983 visited also localities on the Spanish side of this mountain range. During the action sports descents were carried out into numerous caves.

SWEDEN

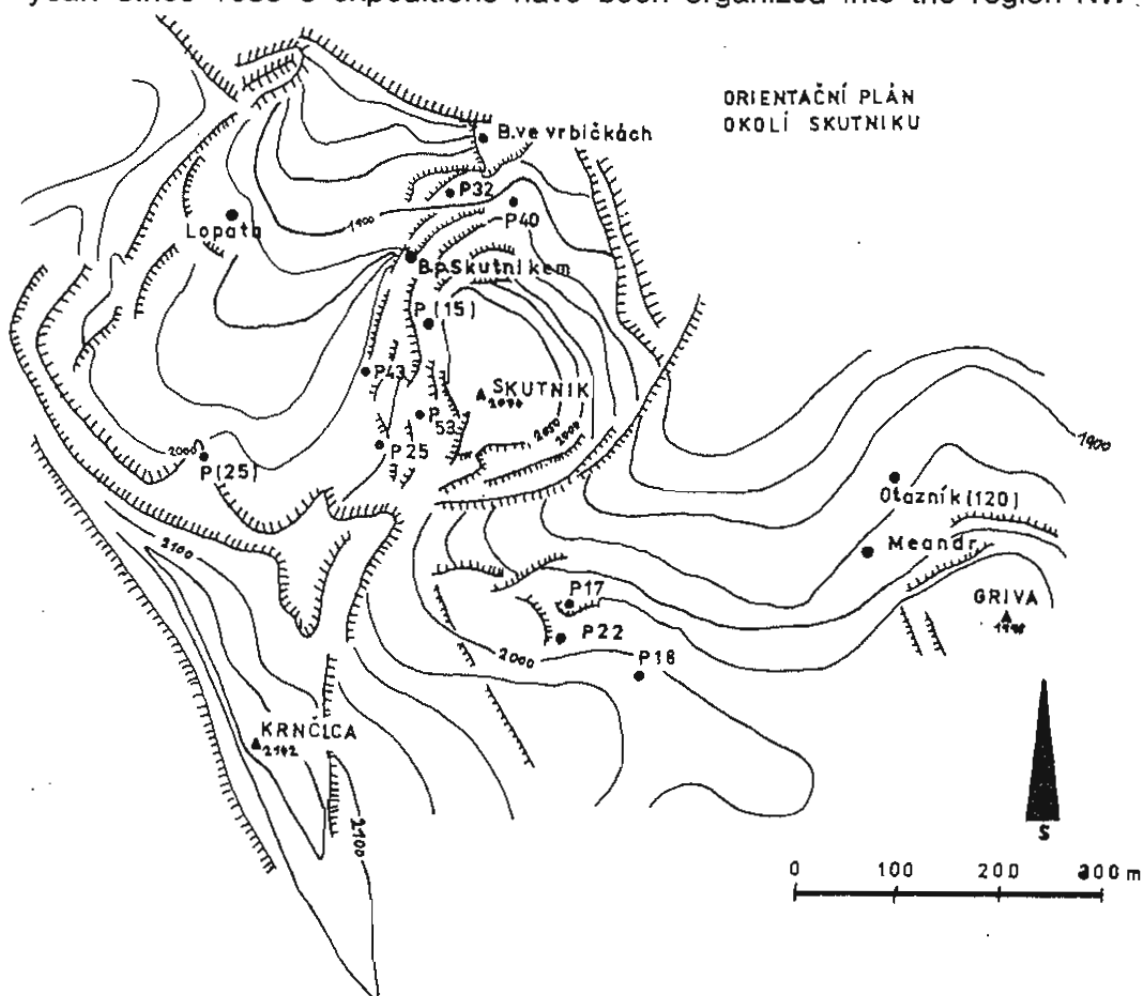
In 1984 north Moravian speleologists organized a study trip to the largest pseudo Karst systems of the world lying in Sweden. During the action they visited the localities Bodagrottorna, the national park Skuleskogen, the national reserve Skuleberget, the localities Skallbergsgrottan, Ruckebergsskyrhan and many others.

SWITZERLAND

The aim of the expedition of Moravian speleologist to Switzerland in 1984 was the karst region Hoř gant and cave systems in the Bern Alps. The speleologists visited the localities Fitzlischacht, Bärenschaft, Faustloch, K-2, the water save St. Beatushöhle and one of in largest cave systems ok the world, Hölloch.

YUGOSLAVIA

Several groups of speleologists from the Czech Speleological Society go to Yugoslavia every year. The most frequently visited regions are the Julian Alps, Durmitor, seaside regions and the region of Popovo Polje. Considerable success was achieved by Czech speleologists particularly in the region of the Julian Alps, where speleologists from east Bohemia organize expeditions every year. Since 1983 3 expeditions have been organized into the region NW of



the mountain Krn. Greatest attention has so far been paid to the terrain in the surroundings of Skutnik and Griva. The terrain is situated at the height above sea level of 1850–2000 m and it is a typical high mountain plain, glacially remodelled. During the exploration a number of abysses were discovered. Documented were only those appearing very important in the first estimate or such whose depth, according to the first estimate, exceeded 50 m. The deepest abyss discovered so far is Brezno below Skutnik.

Its denivelation is 234 m (– 214, + 20) and the length of all spaces reaches 380 m. The cave has about two parts, a mighty sinking meander-like corridor and at the end a shaft 110 m deep.

Two further abysses (Lopata, – 62 m and Brezno ve vrbičkach (– 41 m) have the hope of being prolonged. In the former the end shaft is blocked with ice, but there is draft there, in the latter is necessary to broaden a narrow place.

The most hopeful abyss and the aim of another planned expedition is Otaznik below Griva. So far the depth of 120 m has been reached, but further continuation is open. In the slope above the abyss there is a fossil meander with two entrances is found. It is several tens of metres long and at its end there is an unexplored shaft with intense draught.

In the plan of the region a number of abysses are marked with symbols. They number always the depth of the abyss, the depth in brackets means that abyss has not yet been documented.

ZAIRE (TANZANIA)

The aim of the expedition going to Tanzania and Zaire in 1985 was to get acquainted with the karst region of those countries and to search for lava caves in the region of the mountain range Virunga. Minor lava caves were found in Lake Kivu, but, as far as their extent is concerned, they are unimportant. Small pseudokarst caves were also found in the surroundings of Lake Tanganyika. The most important locality can be considered the Isle of Mafia with extraordinarily developed clint fields, surf caves and, above all, a submerged marine canyon in the channel between the Isle of Mafia and Juani, near whose bottom there is a number of caves through which water flows; some of them are quite extensive. Due to the shipwreck of the hired vessel it was not possible to finish the exploration.

As follows from the above, the activity of Czech speleologists abroad is rich and altogether successful. A great development of this activity has been in the last three years, which is primarily due to the Ministry of Culture of the Czech Socialist Republic, which considered the expedition activity of the CSS with great understanding. Thanks to that, Czech speleology has built a good position on the worldwide scale, thus contributing to political propagation of Czechoslovakia abroad. The development of foreign contacts of the CSS since 1982 is expressed in a comparison table of the number of actions in 1983 and 1984. The tables do not include participants in conferences, symposia and meetings organized in Czechoslovakia.



Protection of Karst Regions in the CSR

In the Czech Socialist Republic karst regions occupy the area of about 288 km², i.e. about 1.2 % of the total area. They occur in two fundamental forms, on the one hand as small isolated karst islands, and on the other hand as major karst regions. From this follow some of their different properties, controlling in turn their protection.

Czechoslovak legal standards entrust different authorities with the care of the individual spheres of the environment entrusted to them (protection of the soil, the water, forests, the atmosphere, etc.). The protection of nature belongs to the Ministry of Culture which is assisted in its performance by the Departments of Culture of the respective National Committees. For elaborating technical points of view technical bodies are established. A body of the Ministry of Culture is the State Institute of the Care for Historical Monuments and Nature Protection, who also sponsors the Czech Speleological Society.

The fundamental legal standard from which one starts in solving the problems of the protection of Karst regions is Legal, Act No. 40 of 1956 about the State protection of nature. This act distinguishes 3 ways of protection:

The first of them is the proclamation of large areas of Karst units to be protected landscape regions and national parks. Act No. 40 defines them as preserved typical landscape regions with dispersed outstanding natural creations. In the regions there are specified conditions of the protection of the individual components and of handling them. The population of the landscape, the way of exploiting the deposits, organizing industry and agriculture, management of forests and water and, last but not least, recreational exploitation of the region are controlled. The fundamental régime is stated by the proclamation of the protected landscape region which is commented by the other resorts in question. The protection in the technical aspect, i.e. in the aspect of the individual interventions is followed by the Management of the protected landscape region. This body comments the planned interventions and its comments serve as a basis for issuing a positive or a negative decision of the Ministry of Culture. Further, every region has its own regulations for visitors which is obligatory for all visitors to it who must obey them. It directs their movement to marked tourist roads, it forbids plucking plants, putting up tents, parking vehicles, etc.

Large-sized protected landscape areas with a karst as their basis are three on the territory of the CSR. They are the Bohemian Karst (area of 132 km²), the Moravian Karst (120 km²) and Pálava (70 km²). There are no further largesized of karst character in the CSR.

In the CSR there are a number of small and isolated karst islands. Most of them are protected in accordance with Act No. 40 in such a way that they are declared small-sized protected territories. A specific strict regime of their utilization is proclaimed in each of them. They are proclaimed above all as State Natural Reserves (i.e. the original or little affected by human activity minor natural areas important mostly scientific or research points of view), protected creations of nature, and/or protected finding places or protected study areas. In those territories there are foremost interests of the state protection of nature. Their proclamation is carried out by the Ministry of Culture of the CSR which then allows or forbids the prepared intervention into the territory as well as entrance into them. Those protected territories are altogether 38 in the CSR, 20 of which are proclaimed as parts of some of the protected landscape territories. (areas).

Small karst islands that are not subject to any of the above ways of protection can, under certain conditions, also enjoy protection of Act No. 40

of 1956 about the State protection of nature. It is in the case of a „serious intervention into natural conditions“. This intervention represents irreversible changes in nature when no future intervention can achieve the initial state (such as opening a quarry). For those the Ministry of Culture, CSR gives its comment with specifying the conditions of nature protection.

Another legal standard concerning the protection of Karst regions is Act No. 22 of 1958 about cultural monuments. That act states that all archeological finds are the property of the State. The activity during which an archeological find was made must be always stopped and the find reported to the Archeological Institute which then specifies the progress of further activity at the locality.

At present the Czech Speleological Society and the State Institute of the Care for Historical Monuments and Nature Protection in Prague have solved the problem of the right of recovery for the damage done in karst territories. A draft of a tariff of rates has been elaborated specifying the determination of the damage in all types of caves. Thus, the value of 1 g of a stalk stalactite of stalagmit up to 0.5 m in length is 50,— Kčs, the minimum height of damage being always 200,— Kčs; above 0.5 m the value of 1 g is 100,— Kčs, the minimum damage being always 500,— Kčs. 1 g of cave pearl is evaluated at 200,— Kčs, 1 g of sinter curtain at 6,— Kčs and 1 g of a stalagnat up to 10 cm in diameter 1,— Kčs. This is always the minimum value of the damage. For breaking into one of the caves accessible for tourists and for destroying dripstone decoration 2 people have been sentenced to 2 and 3 years of imprisonment on the basic of this tariff rate for estimating the value of the damage.

The needs of protection of karst territories based on hitherto achieved results of research very often conflict with economic needs. In the first place these are needs of rock exploitation, because Karst regions are a valuable source of limestone, raw materials for the production of marble and other indispensable raw materials. By opening quarries not only the relief of the landscape is changed, but often subterranean cave forms disappear and the régime of ground waters is changed. That is why the State Protection of Nature gives its opinion for the operation spaces of quarries, their extent, the plan of opening, preparation and exploitation of materials. In the conditions it also imposes the duty of reporting the discovery of important Karst phenomena. Further, the Protection of Nature tries to concentrate the exploitation into selected places—large-scale quarries whose surroundings are better protected against seismic effects, the transport connected with the operation is simpler, etc. Then small dispersed exploitation is liquidated. In this way it succeeds in actively protecting the most valuable parts of the karst.

With respect to the growing needs of the society it is not possible to exclude karst territories from intense agricultural operation whose present performance devastates both the superficial and the subterranean parts of the karst. That is why the management of the Protected Landscape Region Moravian Karst, on the basic of research results has discussed a number of fundamental changes in farming with the corresponding organizations; this concens particularly the structure of plant production, the use of fertilizers and chemicals of protection and the employment of suitable antierosion measures. The solution of conflicts between nature protection and farming has not so far been solved systematically, nature protection yields to the interests of securing the nourishment of the population of the CSR. Supported by water managers problems of ground water pollution and its collection are being discussed. Karst territories, however, have not had a sufficient network of sewage treatment plants.

At present a number of partial research actions into karst territories are going on. They are carried out by a number of organizations, such as

the Czech Speleological Society, the State Institute of the Care for Historical Monument and Nature Protection, the Geographical Institute Brno, Geoindustria, etc. This is, however, not overall research, it is not controlled systematically so as to evaluate and utilize the results in the widest possible variety of spheres. Nature protection in these cases only evaluates and consents to such methods of research as do not represent excessive karst devastation.

The State Protection of Nature tries to control also the utilization of karst phenomena. Such utilization is making the caves accessible. At present there are 12 show caves on the territory of the CSR. This number is considered sufficient, representing selected and attractive specimens of Karst phenomena. Another way of utilization is speleotherapy which is carried out experimentally in 3 caves in accordance with the interests of nature protection. Unadvisable is the utilization of some caves as store-rooms.

The educational activity for the broad public is carried out by Nature Protection particularly in the form of lectures, diaphones and films, by organizing excursions and building instruction paths. Education is to contribute to the understanding of the importance of the karst as an extremely sensitive ecosystem.

Speleological exploration and discovery activity is in full control of the State Protection of Nature in the karst regions. It has its say in the choice of localities, in the working methods and technology of opening, particularly technical mining operations. A number of speleologists belong to voluntary nature conservationists.

Caves have their visiting and operating regulations set up on the basis of requirements of Nature Protection.

The present protection of karst regions and karst phenomena is very complicated, affecting the interests of our national economy, scientific research and utilization by the public. Very briefly problems have been enumerated here that are to be solved even more consequently.

D. Bilková
Secretary general,
Czech Speleological
Society



Karst Types of East Cuba

During the karst land use mapping of the East Cuba, realized by the author within 1980–1981, various karst types were distinguished in three anticlinal and two synclinal mega-morphostructures of pre-Laramic, Laramic and post-Laramicage that build the region (Anticlinorium Camagüey-Tunas-Holgüín, Anticlinorium Sierra Maestra, Anticlinorium Nipe-Cristal-Baracoa, Synclinorium Guacanayabo-Nipe, Valle Central):

The anticlinal units consist mainly of Mesozoic-Lower Eocene vulcano-sedimentary formations with large intrusive bodies and numerous thick layers of partly metamorphed limestones. Besides of it non-folded Miocene and Quarternary limestone beds cover the flanks of the units. While the blocks of limestones, exposed by differential erosion, build outstanding karst inselbergs or isoclinal ridges, the larger outcrops are transformed into high plateaus with intricate cone or tower karst surface with systems of valley-poljes. The limestones of younger sedimentary mantles build high tilted plateaus with deep canyons, some of which are bordered seawards by numerous fossil marine terraces. The most interesting karst types appear to be the lithologically directed doline karst on the high erosional plain of Gran Tierra, developed in the Jurassic (pre-Jurassic?) heterogeneous carbonate and silicate series of strata and a very complicated karst landscape on high erosional surfaces developed in Mesozoic serpentized peridotites of the Anticlinorium Nipe-Cristal-Baracoa.

The synclinal morphostructures, representing Tertiary troughs, are bedded with Eocene limestones and filled by heterogenous (mainly carbonatic) Neogene-Quarternary formations. All carbonatic members are intensely karstified and represent either a well developed lowland karst or a very active interstratal karst with enormous resources of artesian karst water. The uplifted flanks of those synclinal morphostructures are transformed into cuestras with conical or coupola karst landscape, whereas the seaward margins are bordered by Quarternary (Sangamonian) reefs with intricate coastal karst features and numerous submarine karst springs.

Individual karst types originated in various phases of the pre-Eocene, Oligocene, Pliocene and Quarternary geomorphological development, always under distinctive control of structural and textural properties of the rocks, so that completely different types of the karst landscape are situated close together in the same area. Some of them were fossilized by folding or uplifts, by sedimentation to younger marine deposits, by redeposition of allogene weathering covers or by the sea transgression, others became part of younger karst systems.

Karst Land Use Mapping in Cuba

In 1980 a karst land use mapping and pertaining research activities started in Cuba in frame of an agreement between the Institutes of Geography of the Czechoslovak and Cuban Academies of Sciences.

The author, as a head of the working teams from both institutes, elaborated a project of the entire work as well as the legend of the final map. Within the field work the original author sheets of the karst regions have been compiled in the scale 1 : 50 000, whereas the neighbouring non-karstic areas have been mapped in the scale 1 : 100 000. The final cartographic document will be compiled in the scale 1 : 250 000. Together with an accompanying text it will give detailed informations on litological, geomorphological

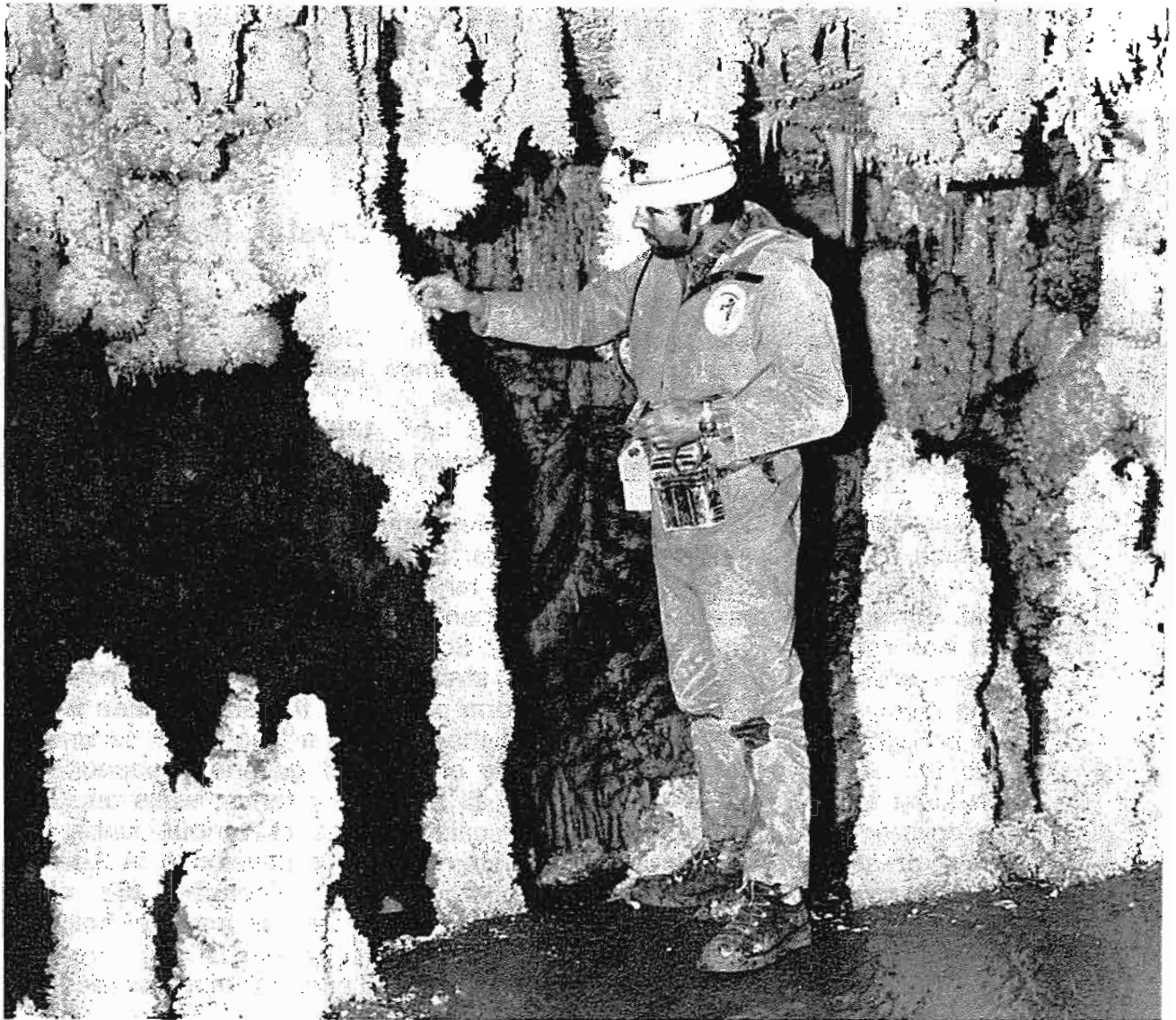
(typological) and hydrological properties as well as on sedimentary, weathering and soil covers of the karst regions mapped.

Within 1980–1981 the author compiled the map of the East Cuba, whereas the mapping of the Central Cuba was realized by the working teams within 1982–1984. Actually the western part of Cuba has been mapped.

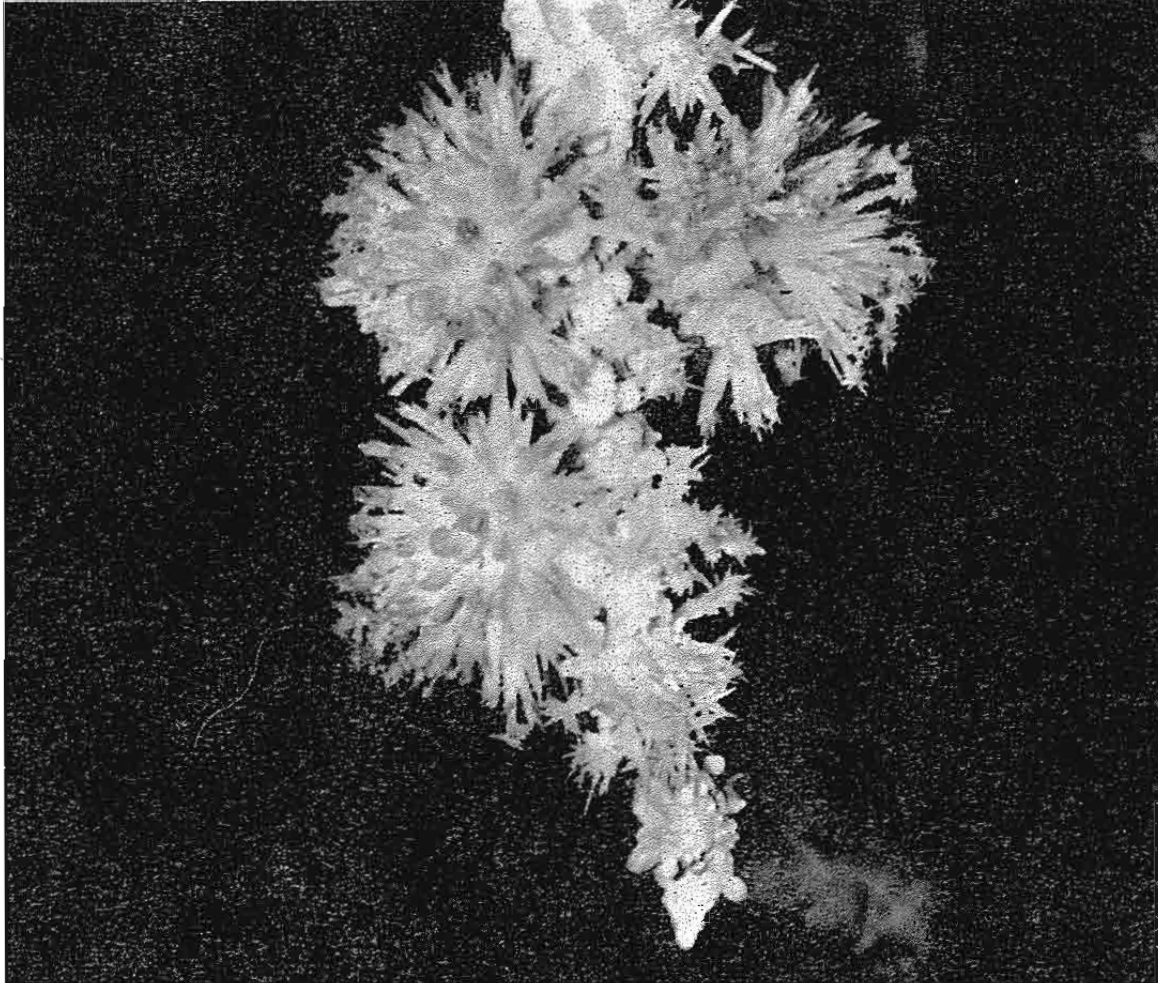
The results of the mapping realized in the East Cuba were elaborated on a model sheet (Santiago de Cuba), printed in colours and submitted to the pertaining Cuban authorities for a general discussion. According to received remarks it was modified slightly.

The entire work will be concluded within 1987–1988, when the karst land use map of the Cuban state territory with accompanying text will be published and distributed for a practical use, especially for the purposes of planning, agriculture and water supply.

Vladimír Panoš



Crimea, USSR -- secondary forms covered by calcite crystals in cave Emine Bojir Chasar Nyzhnyy



Discoveries of caves with unusual crystal forms in the Crimea karst

The Čatyr-Dag karstic area amounts 43 km², 136 caves and chasms are known there. The plateau lies in the centre of the Crimea Mountains and its highest point is Angar-Burun 1543 m above sea level.

The Čatyr-Dag karstic area amounts 43 km², 136 caves and shafts are known there and represent the largest karsting created on the Crimea (3,2 per 1 km²).

At the northern margin of the plateau lies famous cave Emine-Bojir-Chasar in which was discovered in 1970 new part called Emine-Bojir-Chasar-Nižnyj. (more than 1 km of new corridors with large number of crystal forms). The small entrance was sealed then by a concrete stopper. Only in 1981 new part was reopened and documented by Soviet-Czech expedition. The whole system arose as the result of surface stream absorption. The extinction of some feeding sources caused the uniform outflow of the subteranean waters and brought about an accumulation of the sintered and weathered sediments. Thus the cave was divided into a row of isolated galleries flooded often with karst water for long time. Almost all secondary forms, walls and floor are covered with unusual number of calcite forms of various kinds. The crystal druses in some parts of the system (which is developed in 3 levels) cover everything. For example in the largest dome „Nocturno“ (80 × 40, 30 m length). Numerous and great are in the cave various forms of helictites (length up to 80 cm) and eccentricities. The whole system is really treasure of secondary forms and therefore was again closed after finishing of expedition.

Josef Wagner

APPLICATION OF CONTROLLED SOURCE AFMAG METHOD TO SPELEOLOGY

ŠTĚTINA J., ING., CSc.

ČESKÁ SPELEOLOGICKÁ SPOLEČNOST

Commercially available AFMG apparatus was successfully applied for dip angle measurement of the electromagnetic field generated by controlled source placed underground for the purpose of localization of the cave systems in the Moravian Karst region. Instrumentation, interpretation of the results, ambient field effect and noise problem as well as conductive inhomogenities influence discussed.

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Štětina J., Ing., CSc., Čs-621 00 Brno, Ovocná 10, tel. Brno 77 42 30

KARST OF THE KARZHANTAU RIDGE (WESTERN TCHIEN-SHAN, USSR)

BOSÁK, P.

The Karzhantau Ridge, a marginal ridge of the Western Tchien-Shan in the southern Kazakhstan, USSR, is built of highly faulted Lower Carboniferous carbonate sequence. Its relief is morphologically diversified, 2,600 to 3,000 m a. s. l. with numerous sinkholes, karst depressions, ridges and a polje-like form dissected by deep canyon. Horizontal caves are rare, shafts are common (Uluchurskaya – 350 m). The karst features are results of at least three karstification phases: (1)? Cretaceous with the origin of cuppola-shaped relief, (2) Miocene to Pliocene with the slow and continual uplift and origin of polje, horizontal cave system, etc. and (3) Quaternary during the quick uplift, neotectonic movements and glaciations with the origin of vertical deep karst circulation. The karstification phases are closely connected with geotectonic and geomorphological development of the area.

HYDROTHERMAL AND SUPERFICIAL PALEOKARST OF THE OSHSKIYE GORKI AREA (KIRGHIZIA, USSR)

BOSÁK, P.

Highly folded and faulted Lower Carboniferous limestones are recently dissected into several separate blocks (e.g. Chilmayram, Chiulustun, Tyuya Muyun, Takhti-i-Suleyman, Algyzarcha) which represent fossil mogotes of Lower Jurassic age exhumed from Jurassic to Quaternary continental and marine cover. Individual hills are up to several km long and max. 500 m high. Caves uncovered in hills are (1) hydrothermal and (2) „cold“. Hydrothermal activity

is connected here with Permo-Triassic period. Relatively small cave labyrinths as well as cuppola-shaped cavern were formed and subsequently filled with complex barite-calcite fills. Normal, „cold“ caves are partly fossilized by Lower Cretaceous continental clastics, partly they are filled with terra rossa-like deposits or by young, Quaternary fill. World known Tyuya Muyun copper and uranium vandate deposit is located here, Economic deposits of uranium was originated during infiltration of weathering solutions transporting U, Cu, V etc. Irachted from uderlying black shales during intensive weathering in hot-wet climate.

Bosák, P. CS – 141 00 Praha 4, Jivenská 1066/7, Czechoslovakia Czech Speleological Society, Central Scientific Commission

THERMOKARST IN SIBERIA (USSR)

DEMEK, J.

Thermokarst is the process of melting of the ground ice accompanied by local collapse of the ground and the formation of depressions and cavities. The term thermokarst was induced by M. M. Yermolayev in the USSR 1932 and is now widely used in geology, geomorphology and karstology. In thermokarst regions, subterrean and subaerial forms develop such as caves, tunnels, funnel-shaped pits, dry valleys etc. Thermokarst occurs in regions having an considerable contents of ice in the ground. The author describes caves in loess deposits originating due to the melting of ice veins. Tunnel-like hollows are described developed is silty loams forming complex system. Cavities are further developing due to the suffosion (piping). Thermokarst forms can be classified as forms situated between glacial karst (originating due to melting of glacial ice) and pseudokarst forms (originating due to suffosion).

Demek, J. Czech Speleological Society, CS-118-01, Praha, Valdštejnské náměstí 1, Czechoslovakia

PSEUDOKARST IN VOLCANIC TUFFS OF THE PAEKTUSAN MT., PEOPLE'S REPUBLIC OF KOREA

DEMEK, J.

The author presents observation of pseudokarst phenomena in the highest part of the Changbai-han Mts, a Plio-Pleistocene volcanic mountains area in the north-west of the People's Republic of Korea. In volcanic tuffs due to the suffosion (piping) developed pseudokarst phenomena, mainly caves. In the paper are described suffosion caves in barrancas on volcanoes Soyonzibon and Peyonzibon. Cave are several dozen of meters long. Common are also ponors, dolines and abysses originated due to suffosion.

Demek, J., Czech Speleological Society, CS-118-01 Praha, Valdštejnské náměstí 1, Czechoslovakia.

THE UTILIZATION OF REMOTE SENSING IN THE BOHEMIAN KARST LYSENKO VLADIMÍR

The article is the summary of results of works by Lysenko (1983) and Jančařík, Lysenko (1984) and to their correlation with main directions of the karstification. The basement for these correlations is supposition that photolineations presented the course of some faults, system of faults or frequently systems of associated joint above tectonically active space. We can hardly state this joints of current methods of geologic mapping, but they are outstanding like the linear morphostructures.

Selective collection of photolineations acquired from analysis of the cosmic photos by Kosmos and Landsat is correlation with known tectonik frame, geophysical demonstration of structural-geological deformations, geophysical anomalies, directions of sections of valley network and main directions of the karstification. The test of conformity demonstrate the correspondence especially among the system of joints, valley network and karstification. This indicate important role of joints in highly jointed limestones. Sections of walley network (steps 2 and 5 km) and caves formed along systems of joints, which has high permeability.

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LAS CUEVAS DE FISURAS EN LAS MARGAS ARCILLOSAS DE LA PARTE ORIENTAL DE LA CHECA CUENCA CRETÁCICA, CHECOSLOVAQUIA MUSIL, J.

En las margas arcillosas de Turoniano en la parte oriental de la Checa Cretácea se por los movimientos de las pendientes muchas „cuevas de fisuras“. A pesar de las investigaciones anteriores (sobre todo Vitek/1977, etc./) no es posible considerar la problemática del pseudocarso de esta región como concluida. Eso documentan los descubrimientos de las nuevas cuevas de fisuras (la cueva en Brněnec – 60 metros de largo) y prolongación de los conocidos sistemas de las cuevas (la cueva en Rozhraní – más de 200 metros de largo) que aquí están realizando los miembros de la Organización 5-04 OSIRIS de la Societ Checa de Espeleología.

La espeleogénesis fue hasta hoy detalladamente estudiada en las cuevas conocidas „Čertovy díry (Agujeros del Diablo)“ en Bělá (Musil 1984). Las cuevas se originaban por los movimientos de bloques, cuyos causas se examinan. El autor presupone la existencia de una zona plástica, en que se produce „creep“, la que se originó por causa de las transformaciones geoquímicas entre la glauconita (Záruba 1961), involucrada en las areniscas del Cenomaniano marino y de la base del Turoniano inferior, el componente del carbonato en las margas arcillosas del Turonian inferior y el agua subterránea que se acumula en las areniscas y su manto superior. La zona plástica es, puesta a la base de las margas arcillosas. Después del erosivo ahondamiento de arroyo „Bělá“ bajo el nivel de la superficie del agua subterránea,

que es constante vista la situación de la estructura, se originó la pendiente inestable, cuyo equilibrio principió a igualarse por el hundimiento y el movimiento de los bloques de las margas arcillosas del pendiente a la zona plástica hacia el valle del arroyo. Entre los bloques se formaron las cuevas de fisuras. También en caso de las otras localidades hay situación análoga.

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A STUDY OF DYNAMIC BEHAVIOR OF ROPES

ŠMIKMÁTOR, FRANTIŠEK

One of the most important problems of vertical caving is a question of reliability of ropes being used. We witness rapid development of completely new types of ropes during latest years. The ropes exhibit trend towards improvement of mechanical and utilization properties. This situation is not accompanied by appropriate use of testing procedures, that would comply with contemporary requirements and available testing technology. Testing methods, currently in use, do have only a limited information value from the viewpoint of practical caver as far as rope stress, fatigue and degradation concerns. Moreover practical use of results is questionable.

Czechoslovak cavers are attempting to initialize improved procedures to study processes occurring in the ropes under practical use. It is not by a chance that this initiative comes from Czechoslovakia because Czech cavers are forced to use mountain climbing ropes of local production properties of which do not conform to UIS Standards for Caving Ropes. To solve this important problem a volunteer team of members of various professions was established. Some first results give certainty that the work of team will contribute to more thorough knowledge of caving rope and to safer practice of vertical caving.

Šmikmátor, F., Čs -- 616 00 Brno, Vrázova 13
ČSSR, Česká speleologická společnost, Praha, ČSSR

SPELEOFORUM

Central event of Czech Speleological Society

It was already the fourth meeting of Czechoslovak cavers, named SPELEOFORUM, that was held in April 1985. The meeting takes place every year in the spring, and its organizers set themselves the goal to sum up and publish the results achieved by Czechoslovak cavers at home and abroad in the previous year. The main program of SPELEOFORUM is the projection of slide series and films. SPELEOFORUM alies facilitates friendly meetings

of cavers, establishing contacts between them, and exchange of experience. All the four meetings of SPELEOFÓRUM realized up to now took place in the Moravian karst, the karst region with an area of about 100 km² situated north of the city of Brno.

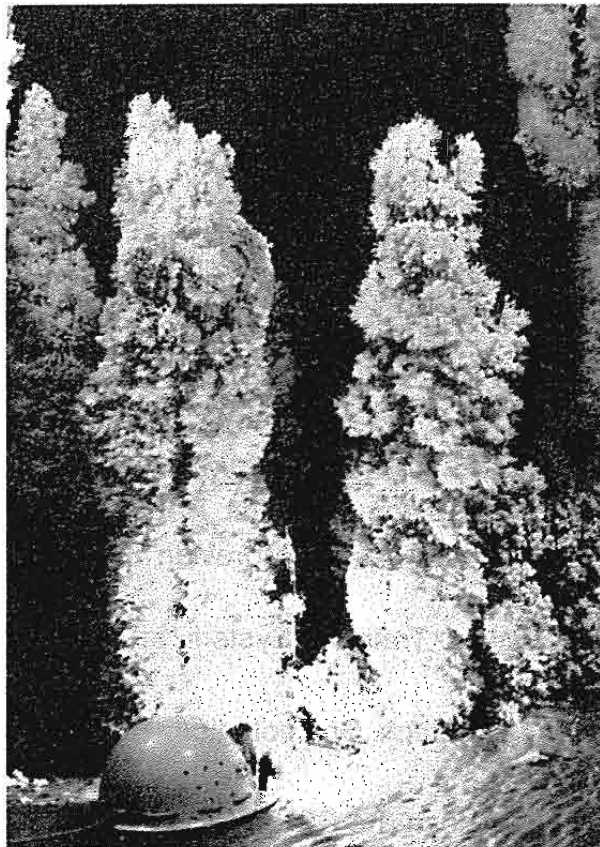
A memorial volume appears on the occasion every meeting of SPELEOFÓRUM consisting of the contributions of the individual caving clubs; the contributions include reports on the important discoveries in the karst areas of Czechoslovakia and on speleological expeditions abroad. The volume is supplied with English translations of all its parts.

The memorial volume of SPELEOFÓRUM 85 contains the following contributions:

The volume also includes the chapter „Speleology in the East European countries“, which was compiled with the help of our correspondents.

You may obtain the memorial volume in exchange for speleological literature.

Adress SPELEOFORUM
 Czechoslovakia
 616 00 Brno
 Horova 68





CONTENT

- Preface (*Vladimír Panoš*)
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- Karst and Caves in the Czech Socialist Republic (*František Skřivánek*)
- New Discoveries in Bull Rock Cave, Moravian Karst (*Emil Bartoň, Michal Piškula*)
- Professional Speleological Training System in the Czech Speleological Society *Jaromír Demek*
- Foreign Contacts of the Czech Speleological Society 1982 – 1985 *David Havlíček*
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- Abstracts of papers written by Members of the Czech Speleological Society prepared for the 9th International Speleological Congress Spain 1986

