

CZECH SPELEOLOGICAL SOCIETY

1989 - 1993



Cover:

Drawing by KÁJA SAUDEK from the plakat for 3. Congress of ČSS, 1993

**THE
CZECH
SPELEOLOGICAL
SOCIETY
1989 - 1993**



Praha 1993

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EDITORIAL

Four years since the last 10th International Speleological Congress in Budapest (1989) had passed very quickly in the age of transformation of societies and states. Also the activity and structure of the Czech Speleological Society was influenced by social and economic changes in past Czechoslovakia and by its separation to two independent states. The Czech Republic has one speleological society, enclosing nearly all speleologists active in karst, pseudokarst and artificial cavities (historical underground). Some independent individuals or small groups operate not including in the structure of the Czech Speleological Society. We have to admit, that nothing is known on their activities to us, because no published results are available.

We prepared for you the third memorial volume Czech Speleological Society in 1989 - 1993. The first one was published on the occasion of 9th International Speleological Congress in Barcelona, Spain (1986) on which appeared first larger group of Czech speleologists. The second volume was issued in 1989 on the occasion of the 10th International Congress of Speleology held in Budapest, Hungary, in historical year of massive changes in eastern and central Europe.

Now, on the occasion of the 11th International Congress of Speleology, Beijing, People's Republic of China, we tried to prepare the third memorial volume concerning the activity of the Czech Speleological Society at home and abroad, with abstracts of papers presented on the Congress and with more detailed information on the most successful foreign expeditions and a review of principal discoveries in Czech, Moravian and Silesian caves. For the first time, there is published list of contact addresses of all speleogroups, central commissions and the CSS bureau members.

The Czech Republic, a state of polite and friendly people, welcome you to come caving in numerous karst and pseudokarst regions and historical artificial cavities.

Pavel Bosák
Editor

PREFACE

The members of the Czech Speleological Society cordially salute the international speleological community attending the world meeting celebrated for the first time on the Asian continent.

It seems to be convenient to use this rare occasion and to remind the participants of this meeting of a fact that the ancient precursors of the Czech speleologists helped to lay foundations of speleology and karstology during the past four centuries. A long history of an enthusiastic interest in karst caves and other karst phenomena is branded by the names of such Bohemian and Moravian worldknown pioneers as e.g. Schopper, Schmidl, Wankel, Hanke, Putick, Kříž, Absolon, Grund, Daneš, Král, Kettner, Vitásek, Kunský, Petrbok and others.

The followers of these giants attended in 1965 at the foundation of the International Union of Speleology and contributed to its successful development as members of the Bureau or Presidents of its Commissions. They organized the 6th International Congress of Speleology 1973 in Olomouc and became founders of a modern national speleological organization that represented the former Czechoslovakia as a member-country of the UIS.

The Czech Speleological Society may take pride also in the recapitulation of activities developed during the past four years after the preceding Congress in Budapest. The Czech cavers worked inflamely not only in karsts of their native country but realized also several valuable expeditions to the karst regions on both hemispheres. They remarkably contributed to new discoveries in several branches of speleology and karstology, especially in karst glaciology, hydrogeology, paleokarstology, karst environmental studies, speleotherapy, etc. Also the research of the man-made underground spaces was very effective. The results of investigations were systematically published in national and foreign periodicals and monographs.

After division of former Czechoslovakia at the end of 1992, the Czech Speleological Society became the only representative of the Czech Republic in the international

speleological movement. Due to the origin of the new state in the map of World, the Czech Speleological Society asked for transformation of the former Czechoslovak membership to two regular memberships, i.e. also for the Czech speleology. It is believed that the national delegates at the General Assembly will kindly support this petition.

The Czech speleologists are ready to work hardly for the progress in speleology but also to take the most effective part in positive development of the international speleological movement and the mutual collaboration.

*Vladimír Panoš
Honourary President
of the Czech Speleological Society*

FOREWORD

The Czech Speleological Society is the organization of Czech cavers and speleologists. However it was established as late as in 1978, we have to look for beginning of our speleology into the last century, when cavers begun to explore caves and karst phenomena in our country. In the course of more than one hundreds years old history of our speleology, many speleologists amateurs and professionals as well, explored and investigated our caves. In the beginning they made their karst work as a private persons, later they organized in several speleological clubs.

Foundation of the Czech Speleological Society was the result of the long - lasting efforts of our leading speleologists to build an umbrella for all our cavers and other persons interested in speleology and related activities. The result is quite satisfactory. Now, there are about 1.600 cavers organized in 67 speleoclubs after fifteen years of the Society activity. In the head of the Society, there is the Board elected biannually by the General Assembly of club representatives. Besides these organs, there are nine commissions taking care on solution of problems that are either in general interest of all members or being outside the capability of clubs.

The main activity of our Society is cave research and exploration. It is carried out basically in clubs. Besides there are organized, usually by commissions, activities of

the general interest for all members, e.g. training courses of single rope technique, cave survey, etc. Very popular is annual meeting with foreign participation - *Speleo-forum* - where the results of research and exploration are presented. To inform our members we are publishing bulletin *Speleo*.

Our Society is not active only in our country. Society members take active part at numerous events, as international conferences, congresses, workshops, etc. There are also expeditions organized abroad, some of them with spectacular results (e.g. New Zealand 1990). Two Czech speleologists took part in Adventurous games in Pyrenees. They won the 6th place in speleology.

We are working closely together with the UIS. Our Honourary President Dr. Vladimír Panoš was working in high positions in the UIS since its foundation in 1965. His first position was the President of the Commission of Karst Denudation (1965 - 1973). In the 6th International Congress of Speleology he was elected the member of the UIS Bureau. In 1977 (Sheffield) he became Second Vice-President of the UIS and in 1981 (Bowling Green) he was elected the First Vice-President of the UIS. In this position he served for two periods (confirmed in 1986 in Barcelona). In 1989 (Budapest) he became the Honourary Member of the UIS Bureau. Mr. F. T. Piškula has been the President of the UIS Commission on Speleodiving since it was established in 1973. Mr. P. Bosák has been the President of the Commission on Paleokarst and Speleochronology for two periods since 1986.

Facing new economic and social conditions, the Czech Speleological Society is vital and active organization due to the old tradition of caving and speleology in our country.

*Michal Piškula
President of the Czech
Speleological Society*

THE CZECH SPELEOLOGICAL SOCIETY

some basic information

The Czech Speleological Society was founded in 1978 when Czech and Moravian

speleological clubs decided to become united. Long-lasting evolution of Czech and Moravian speleology and karstology starting at the end of the past Century, was finished. The history of our speleology includes numerous outstanding scientists, e.g. J.A. Nagel, Lazar Schopper, Hugo F. Count of Salm and Reifferscheidt., K. Rudzinsky, J.N. Woldřich, K. Procházka, H. Wankel, J. Kříž, F. Koudelka, J.A. Nagel, K. Absolon, A. Boček, J.V. Daneš, R. Kettner, F. Vitásek, J. Kunský, Z. Roth, J. Petrbok, V. Ložek, V. Panoš, who substantially contributed the speleological science. The first written notes on karst came from Johannes Ferdinand von Todtefeld who described some Moravian caves in *Tartaro-mastix Moraviae* (1669). Numerous descriptions of karst are also in monography of Bohuslav Balbín - *Miscellanea historica regni Bohemiae* (1679). Some short notices came even from the second half of 16th Century.

The Czech Speleological Society now consists of 67 speleological groups in which about 1600 speleologists are organized. Since the economic and political changes in our state have been introduced, also the Czech Speleological Society had transformed. Some complicated bureaucratic norms were cancelled, the management of the Society was simplified by abolition of one step of the structure (former regional committees). The changes took part also on the highest posts in the Society, where younger generation of speleologists appeared.

The present Society is managed by the *CSS Board* consisting of 7 regular and 3 deputy members. The Board activity is ensured by the *Secretariat* in which one lady is employed and another one helps. The control function is ensured by the *Supervisory Committee* (3 regular and 1 deputy members). Subsidiary bodies are *Regional Assembly* (where established), *Speleological Rescue Service* and *Central Commissions*. The Society Board is voted by the *General Assembly*, each two years.

Speleogroups (local organizations) are bodies with full legal independence. They can gain financial support by independent business, which is regulated only by the Czech Business Law, without any regulation from the CSS centre (which was typical for previous era).

Central Commissions are consultation

bodies for the CSS Board. At the present time, following Commissions exist: (1), Central Scientific Commission, (2) Central Commission on Education, (3) Central Commission on Pseudokarst, (4) Central Commission on Artificial Cavities (Historical Underground), (5) Central Commission on Safety, (6) Central Commission on Speleotherapy, (7) Central Commission of Documentation, (8) Central Commission on Speleo Diving, (9) Central Commission on Technique, and (10) Central Commission on Foreign Affairs. In the last period, two Commissions were founded, i.e. Commission on Pseudokarst and Commission on Artificial Cavities. The role of Commissions in the Society life is high, as organize a majority of workshops, symposia, meetings, etc. The biggest change occurred in the Commission on Foreign Affairs, which changes from inofficial Travelling Office of the CSS with very complicated bureaucracy, to body which makes only the evidence of international exchange. The life of Commissions is documented in separate contributions.

Publications

The Czech Speleological Society started to publish information bulletin *Speleo* in 1990. Since the time, 11 numbers have been published and two are prepared in the printing office. *Speleo* brings a broad variety of information from the Society life (organization, information from the Board and its secretariat), reports of last discoveries, rich material on history of speleology and mining, information on artificial cavities (historical underground), reports of investigation and research, review of publications, cartoons, humour and even poetry. Some archive materials which were broadly listed in references but never seen have been published, too.

The *Library of the Czech Speleological Society* has been completed in following volumes since 1989:

Volume 12 - Cave investigation at Březina (1988, published in 1989)

Volume 13 - Proceedings. Scientific Program of the 2nd Congress of the CSS (1989)

Volume 14 - Review of explorations and their results in the history of the Moravian Karst (1989)

Volume 15 - The meeting in Jizerské hory Mts., September 21-24, 1989. Liberec. Excursion Guide (1989)

Volume 16 - D.C. Ford: Characteristics of cave dissolutional systems in carbonate rocks (translation of contribution from Paleokarst, Springer 1988)(1989)

Volume 17 - 4th Symposium on Historical Underground. Mariánské Lázně 1989 (1989)

Volume 18 - Caves in the Moravskoslezské Beskydy Mts. and their surroundings (J. Wagner, Ed., 1990)

Volume 19 - F. Travěnc: Bibliography of Karst of Hranice (1990)

Volume 20 - Manual of Pseudokarst Mapping (1990)

Volume 23 - 4th Pseudokarst Symposium with International Participation, Podolánky in Beskydy. Proceedings (1990).

Annual meeting of speleologists with international participation is very popular among speleologists, as well as proceedings of this meeting - *Speleoforum*. Reports of important expeditions abroad are published as booklets. Result of last great expedition New Zealand 1990 was published by the CSS and Speleoclub Albeřice - R. Tásler (Ed.): *Owen* (1991). Results of joint explorations on the Dolný vrch Plateau (Slovak Karst) were compiled in a monograph published by Hungarian and Czech speleologists - A. Kósa (Ed.): *Alsó-hegy/Dolný vrch Pothole Atlas* (Budapest 1992) and sponsored by the Czech Speleological Society, the Hungarian Speleological Society and the Speleological Institute of the Hungarian Ministry of the Environment and Regional Development. Speleologists of the Czech Speleological Society participated on the preparation of next volume of the *Moravian Karst* (edited by R. Musil), which summarizes main discoveries and research results since first two volumes were published (K. Absolon: *Moravian Karst*, vol. 1 and 2, Academia Praha 1970, compiled by Academician Radim Kettner). One of the best achievements of our Society was the sponsoring of large international monograph - *Paleokarst. A Systematic and Regional Review* - edited by P. Bosák, J. Glazek, I. Horáček and D.C. Ford and published by co-edition of the Elsevier Scientific Publishers, Amsterdam, the Netherlands and the

Academia Publishing House, Praha, Czechoslovakia in late 1989.

In the present time, there are under preparation also other important monographs. Vladimír Panoš and Václav Cílek prepared the translation of basic historic monograph of Trevor Shaw: *History of Speleology*, which will be published in Czech this year in very limited edition prior the financial support for common print will be accumulated. *Multilanguage Vocabulary of Speleology* was finished by V. Panoš. The manuscript is now under preparation for the print. *Bibliography of the North Moravian Karsts* is under preparation, as well as the completed re-edition of very popular *Manual of Speleological Mapping* (J. Hromas and J. Weigel)

The publishing activity of our Society is limited by the lack of financial funds available for this purpose. Therefore, the print of above mentioned titles could be relatively long-lasting achievement.

Symposia, Meetings, Workshops

Meetings, symposia, excursions, workshops and training are organized as so-called the *Central Event* of the CSS. Since 1989, following reunions have taken place:

- Symposium on the Documentation of Root Formations, 1989
- Mapping of Karst, 1989 and 1990
- 4th Symposium on Historical Underground, Mariánské Lázně 1989
- Historical Underground in Pilsen, 1989
- Course of Shooters, 1989, 1992
- 4th International Symposium on Karst in the Krkonoše - Jeseník area, 1989
- 5th Symposium on Historical Underground, Jihlava 1990
- Problems of Industrial Climbing, 1990
- Symposium on Microforms, 1990
- Speleological Criterium, 1990
- 4th International Symposium on Pseudokarst, 1990
- Measurement of Microclimate and Air Dynamics in Pseudokarst Caves, 1992
- Investigation, Documentation and Protection of Root Forms in Pseudokarst Caves, 1992
- 2nd Symposium on Glacier Caves and Karst in Glacier Areas - Poland - Czechoslovakia 1992 and the 11th Speleological School
- Symposium on Works in Heights, 1993.

Another workshops have been organized, e.g. Speleoalpinistic Criterium, Education of technicians of local organizations, Education - industrial climbing, Training of Cave Diving Rescue Service, Course of instructors of industrial climbing, Training on vertical sections in Moravian Karst.

Members of the Czech Speleological Society actively participated on the international conference of International Geographical Union and UIS - *Anthropogenic Impact and Environmental Changes in Karst* - organized on the Moravian and Slovak territories by the former Geographical Institute of the Czechoslovak Academy of Sciences, Brno, and the Museum of Slovak Karsts, Liptovský Mikuláš in 1989.

The meetings of speleologists have a long tradition, for example: *Dr. Burkhardt Memorial* - march through the Moravian Karst, *Speleofórum* - review meeting of home and abroad activities, *March around the Ještěd Holes* - traditional meeting with beer, *Meeting in the Bohemian Karst* - excursions to caves, karst and geology of the Barrandian, *Petrbok's Memorial* - bicycle tour in the Bohemian Karst, *March Krapas* - march in the Javoříčko Karst in northcentral Moravia.

Sponsored International Activities

In spite of limited financial funds, the Czech Speleological Society refunded several important activities. One of the most important is the sponsoring of preparation abstracts for the *Bibliographic Bulletin of Speleology* published annually by R. Bernasconi (UIS). Correspondence of representatives in the UIS Bureau and Commissions is refunded, too, as well as travels of Czech speleologists to international reunions. In the last period, participation on following reunions has been sponsored by the CSS:

- 2nd Symposium on Underground Quarries, Paris 1989
- Meeting of UIS Working Group on Glacier Caves and Karst of Polar Regions, Madrid 1990
- Congress on the 50th Anniversary of the Cuban Speleological Society, Havana 1990
- 6. Spelaeo-Woche, Austria 1990
- 3rd International Symposium on Underground Quarries, Naples 1991
- International Conference of Environmen-

tal Changes in Karst Region, Padova 1991

- All-Austrian Training of Speleological Rescue Services, Ebensee, 1991
- IX.Symposium on Theoretical and Applied Karstology, Baile Herculane 1991
- 25th Anniversary of the Discovery of the Niedzwiedzia Cave, Kletno 1991
- International Speleoescue Conference, Bulgaria, 1991
- Congress of the Slovak Speleological Society, 1992
- Subterranea Britanica, Great Britain, 1992
- International Congress of Speleological Rescue - RESCON, South Wales 1992
- International Congress - Karst and its evolution, Bordeaux 1992
- ISCOBA, Tapolca 1992
- European Conference on Speleology, Helecine 1992
- International Symposium - Time and dating in geomorphology, Tatranská Lomnica 1992,
- Alpine Caves: Alpine Karst Systems and their Environmental Context, Assiago 1992
- ALCADI 1992, Speleohistorical conference, Budapest - Aggtelek 1992
- Conference of Greece Speleologists, 1992
- Karstological Conference in Luxembourg, 1992
- International Conference on Karst Waters, Poland 1992
- Hydrogeological Problems of southwest Poland, 1992
- International Speleological Schools, Poland 1992, 1993
- 2nd International Symposium on Glacier Caves and Karst in Polar Regions, Ladek Zdrój 1993
- Adventurous Pyreneen Games, France-Spain 1993
- Speleomeeting of the Slovak Speleological Society, Svit 1993

Above listed activities of the Czech Speleological Society are only rough cut of real activities to illustrate the Society life, publication activities, foreign exchange in very tight sense. This year, just after the end of the congress in China, we are preparing international workshop with excursions - *Bo-*

hemia Subterranea - to present the state-of-art in exploration, investigation and protection of man-made subterranean spaces, in our country called traditionally historical underground, i.e. artificial cavities in sense of the UIS Commission on Artificial Cave, which cooperated in the workshop in a great deal.

Pavel Bosák
Member of Board

EVIDENCE OF SPELEOLOGICAL OBJECTS IN THE CZECH REPUBLIC

The new Protection Act of Nature and Landscape was passed in 1992. In the comparison with the old Act, the new act protects the whole nature with all its components against damages and overexploitation. All flora and animal species are protected against jeopardy of their being. Also some regions and some species are protected especially (locality even in a specific manner) according to their importance. The conditions of cave protection are changed, too. All caves are basically protected against damages and destruction, except of caves discovered during mineral exploitation. Some caves are protected more intensively according to their importance, e.g. as important landscape element, and natural or national natural monument, or when the cave lies in Reserves, Protected Landscape Area and National Park. Caves are protected also that represent a biotope of especially protected animal species (or flora), e.g. of bats.

The preparation of the **unified evidence** and subsequent successive documentation is the basic requirement of the Nature Protection. Therefore the Nature Protection - i.e. the Institute of Nature Protection - in cooperation with the Czech Speleological Society started professional compilation of evidence of all caves and other speleologically interesting objects, i.e. especially pseudokarst phenomena and artificial cavities (in Czech often called the historic underground).

After the thorough evaluation of previous speleological documentation and evidence manners on our territory and abroad, Jaroslav Hromas compiled in 1985 the "Uni-

form system of evidence and documentation of speleological objects on the territory of the Czech Republic". The compilation had started, but for limited time possibilities and laggard approach of the CSS member, the complete documentation was not finished.

The evidence system was improved and completed in 1992 and 1993 especially for database computed processing. At the present time, thus the **uniform evidence** is based on the precise location of objects and their general characteristic. The data are complemented to **evidence maps** and **evidence card**.

Evidence maps are at the scale of 1 : 50 000 on official state map edition. More detailed cuts are added according to need. Maps contain limits of carbonate rock outcrops and contours of speleological objects according to legend key.

Evidence cards contain location and data characterizing the object. The character of information on card enables to give practically exhausting basic information from all viewpoints, what is not obligatory for the object evidence. The selected location data, if accessible, and several basic data to characterize the object, on the contrary, are obligatory for not mistaken identity of evidenced feature.

The unified processing of data was enabled by the compilation of:

- characterization of individual types of objects (caves and chasms of karstic or pseudokarstic origin, ponors, springs, sinkholes, shelters, etc.),
- new uniform regional categorization of karst, pseudokarst and artificial cavities, the former two based on geomorphological division to regions and new regional geological division of the Czech Republic, the latter one based on historical mining districts. Data are supplemented by detailed litho- and biostratigraphic subdivision of the Precambrian and Phanerozoic of the Bohemian Massif.

The evidence has been compiling in three stages, terminating in 1944 on the whole territory of the Czech Republic.

Jaroslav Hromas, Daniela Bílková
Czech Institute for Nature Protection and
Central Commission for Documentation
and Central Commission on Education

**THE SHORT REVIEW
OF SELECTED ACTIVITIES
IN THE CZECH REPUBLIC
IN 1990-1993**

Speleogroup 1-02 Tetín

On 31st March, 1989, there was found by chance the Buml cave. This cave is rather large for the Bohemian karst. It is 274 m long with denivelation of 30,5 m. The greatest hall is 28 m high. The cave passages show that it will be a part of greater cave system which could be independently drained.

Karst spring Zügo

Speleoclub 1-02 Tetín traditionally cooperates with the regional group of the Slovak Speleological Society in Rožňava on the exploration of Zügo Cave under the Plešivec Plateau in the Slovak Karst. In summer of 1990 they penetrated by the excavation into 100 m long river passage. In 1991 after a half-sump was explored, new passages with width of 8 m and height of up to 10 m were discovered. Another cave levels were surveyed, decorated by the unique speleothems, especially by helictites and draperies. Cave reached about 1.000 m in

the length. In 1992, two camps were realized. The final sump, 11 m deep and 100 m long sump was crawled through. New decorated larger dome (20x10x10 m) was discovered. Possibilities to make new discoveries in dry cave exist.

Speleogroup 1-04 Zlatý kůň

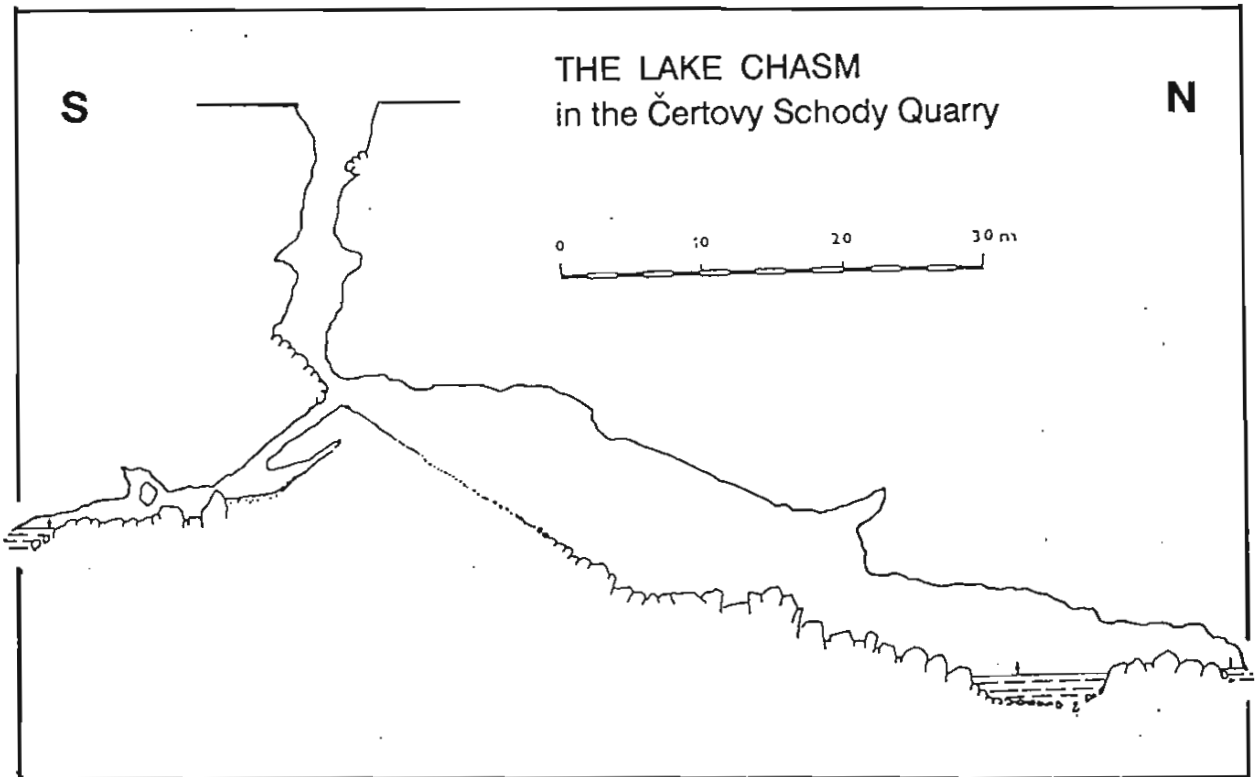
Three new caves were uncovered by quarrying in the Čertovy schody Quarry (Bohemian Karst). The largest one - the Lake Chasm - reached about 40 m depth after 30 m of water was pumped out. It consists of great hall 60x12x10 m with 3 m deep lake and walls covered by calcite crystals as large as 10 cm.

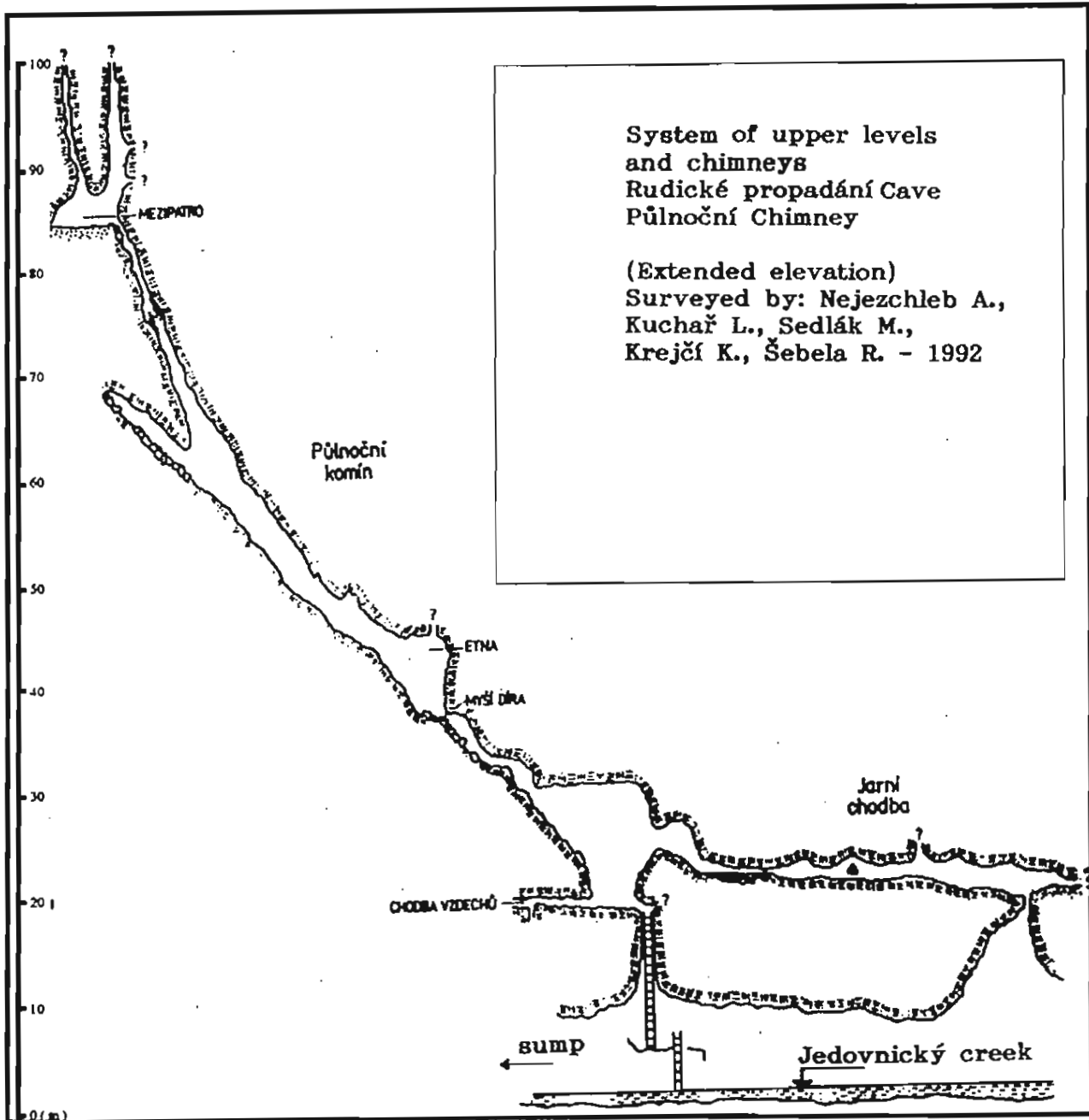
Speleogroup 1-06 Speleologický klub Praha

The new entrance to the Fialová (Purple) Cave was excavated in debris cone after the last blast in the quarry Na Chlumu (Bohemian Karst). The cave depth is now 46 m and length is about 100 m. The cave is known by aragonite decorations.

Speleogroup 1-11 Barrandien

Excavations in the Nad Kačákem Cave (Bohemian Karst) uncovered about 20 m high chimney with 20 m of new galleries. Gypsum, aragonite and opal occur in cave speleothems.





Speleogroup 6-04 Rudice

New galleries were discovered on February 22, 1992 in the system of Rudické propadání - Býčí skála in the Moravian Karst. About 224 m of galleries were surveyed. Exploration in chimneys finished at the level of +104 m above the Jedovnický Creek with 100 m horizontal passages.

Speleogroup 6-07 Tišnovský kras

Králova cave situated in the hill called Květnice near Tišnov was discovered in 1972. In 1898, it was discovered a continuation of the main passage in the up-

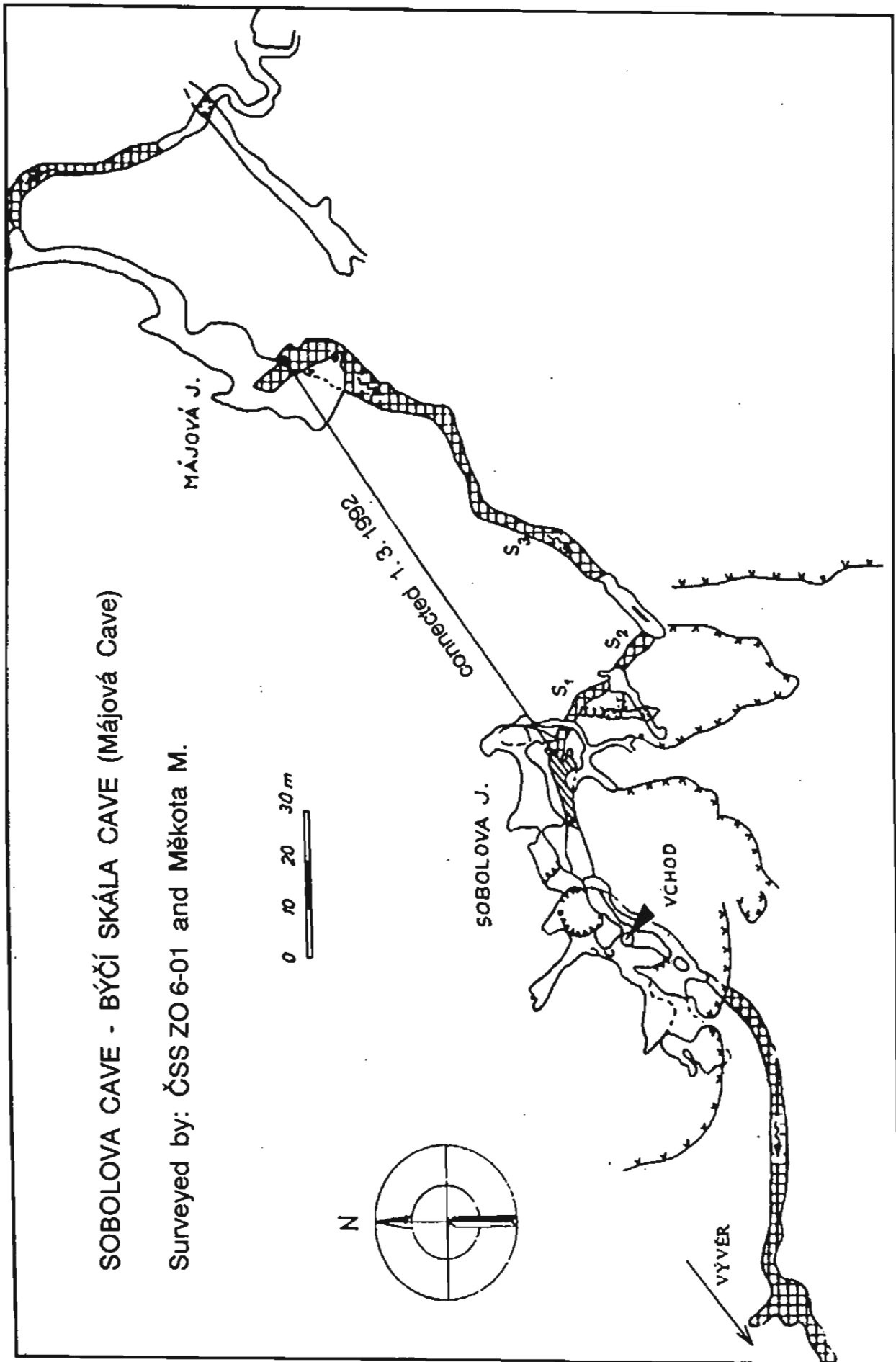
per level, some great halls and a labyrinth of small passages. By overcoming of an abyss of 28 m depth, it was discovered a great Tišnov dome (35x17m) and Hrozivý dome (20x6x12m). Some new chimneys communicating with the upper level were discovered later. Helictites are common speleothems.

Speleogroup 6-08 Dagmar

The Křížovy Caves are largely vertical and they made lower levels of the Kůlna Cave in the Moravian Karst. During the excursion to the Third Shaft in June 1990, ten meters above the bottom

SOBOLOVA CAVE - BÝČÍ SKÁLA CAVE (Májová Cave)

Surveyed by: ČSS ZO 6-01 and Měkota M.



a natural window was explored. 50 m of new corridors was discovered. The passages narrow downwards or they are filled with sediments. The biggest hall is 8 m high and it is rich in dripstone decor. Newly discovered part of the cave is probably a tributary of waters to the Third Shaft.

A new cave system named Sedma Sinkhole has been discovered and surveyed under a sinkhole in the central part of the Moravian Karst. In autumn 1990 the collapse of the sinkhole bottom about 1,5 m lower was noticed. In 1991 after several months of digging the first free cavity with draft appeared. During next months many corridors, shafts, narrows and chimneys were discovered at the site. Some parts of the cave are very nicely decorated. The total length is 250 m, the depth is 80 m.

Speleogroup 6-09 Labyrint

Sloupský Brook is one of the two main tributaries of the underground river Punkva, that formed Amatérská cave, the longest cave system in Czech Republic (over 30 km long). Many cavers and caving clubs tried to find its underground course. There was no substantial progress in downstream explorations. Remarkable discoveries were done by speleologists of the former Geographical Institute of Czechoslovak Academy of Science. In 1978 they have reached a sump, that was not very far from Sloupské caves. Nothing has changed in this region until November 1989, when cave divers of Cave Diving Club Labyrint explored the end sump in Sloupský Corridor in cooperation with G.I. They forced three easy sump (18,28 and 29 m long) and discovered almost 1,2 km of nonflooded caves. The biggest of them is over 8 to 10 m wide and height. The most difficult and demanding part of the operation was the 5 km long transport of cave diving equipment through not easy cave.

Cave diving exploration and survey of the Sobolova and Býčí skála Caves

The last sumps were overcome and surveyed at the outflow part of the Jedovnický Creek in 1992. The discoveries are a result of cooperation with the Býčí skála Club. The longest plunge repre-

sented 195 m and it was complicated by scraping through a tight passage in sediments. The second largest cave system in Moravian Karst was prolonged in more than one kilometre. The 35 years lasting speleodiving explorations of the system were successfully closed.

Active Stream Connection between Caves Spirálka and 13C

The last 30 meters of an active stream gallery between caves 13C and Spirálka was discovered in Summer 1992. After exploring some minor sumps in the Spirálka Cave, two divers M.Měkota and D.Netušil made the connection to the old guide lines, that were brought to the cave in 1980. In the year 1992 cave divers of Labyrint Club explored the upstream sump of 13C Cave. They made a 200 m extension, but they did not find the last few meters. The final connection was done on August the 1, 1992.

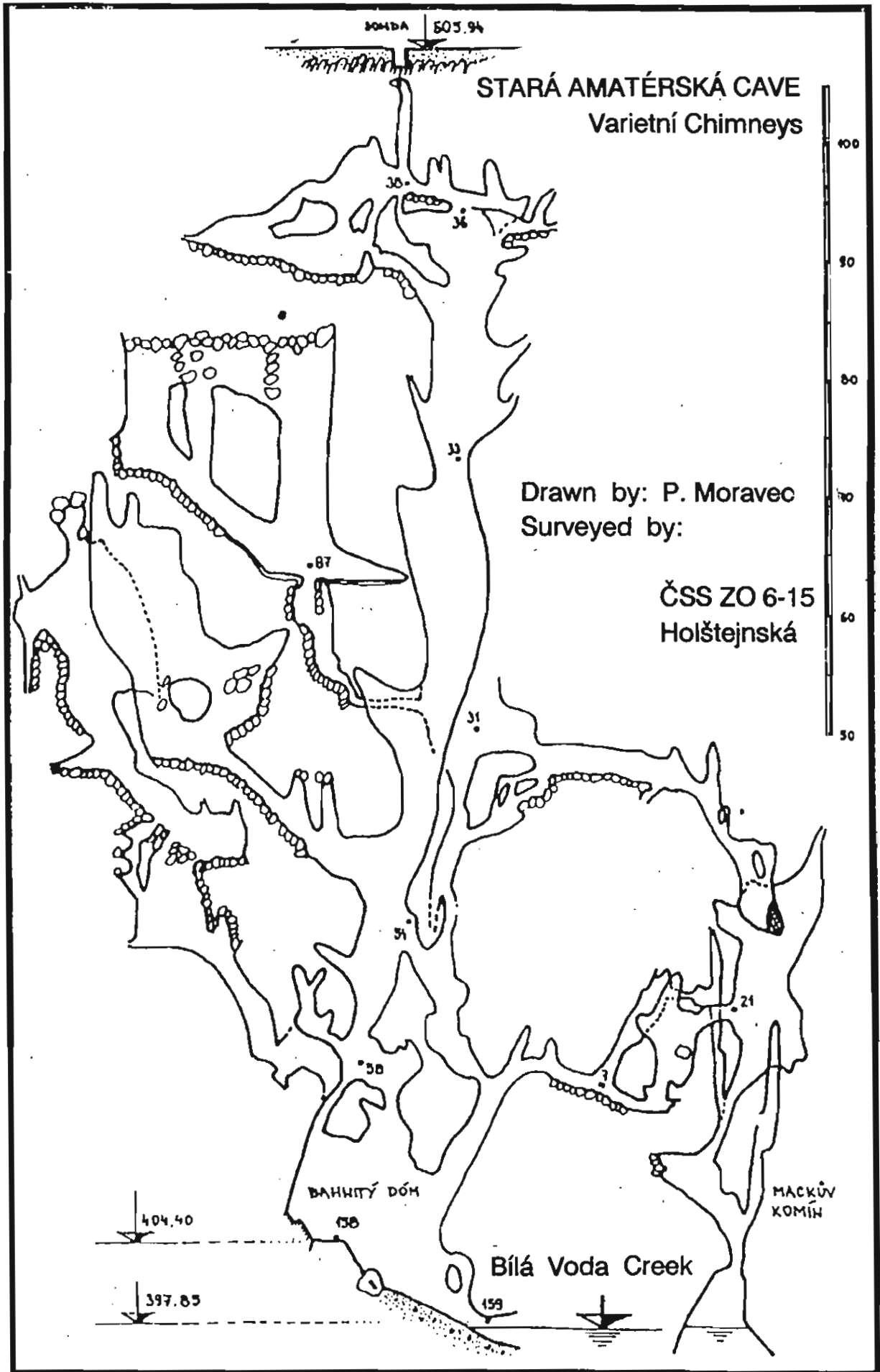
Speleogroup 6-15 Holštejnská

Explorations in the Stará Amatérská Cave (Moravian Karst) resulted in discovery of small new portions from which started diving operation to connect them with 13C Cave. Divers explored 120 m of passages, from which 70 m represent semi-sump. All known chimneys were explored and the complete cave survey was finished in 1992.

The Varietní chimney was discovered and surveyed in 1990. It is a complicated system of parallel shafts (tubes) connected by horizontal corridors and halls. The total length is over 650 m and the total height is 100 m. The whole discovered system ascends up to a level of 3 m below the surface.

Speleogroup 6-17 Topas

The entrance part of the Pytlíková Cave was discovered by digging in 1990. Further extension was motivated by the endeavour to prove the rhabdomancy experiments carried out by many persons at the spot. The discovered extension proved the experiments almost entirely. The corridor is running subparallelly with the surface under the edge of the Pustý žleb Canyon and along the bedding plane of thick bedded limestone. The cave has very rich and varied

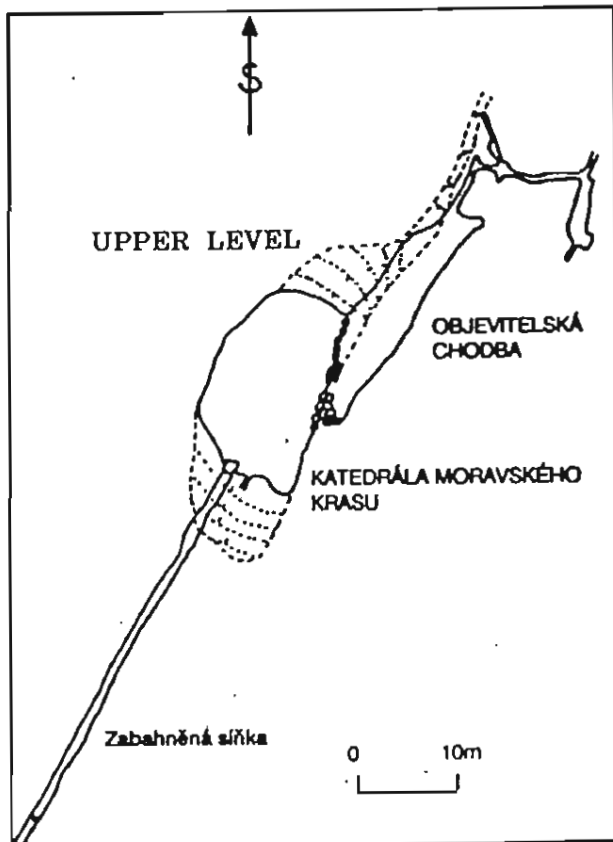


dripstone decoration including stalagmites, stalactites, dripstone dams, cave pearls, straw stalactites etc.

Speleogroup 6-19 Plánivý

New 70 m of passages were discovered in the Piková dáma-Spirálka Cave (Moravian Karst) in Páteční (Friday) Chimney.

Speleogroup 6-20 Moravský kras



Excavations in the Punkva Caves (Moravian Karst) discovered 28 m long passage from the Skleněné (Glass) Domes leading in SSW direction to new cave spaces. Huge dome was discovered (Cathedral of the Moravian Karst) with height of 40 m. Walls are covered by speleothem "waterfall" 20 m high. Four years later (1993), upper cave level 80 m above the Cathedral was discovered. Passages are 500 m long, decorated with rich speleothems and with large domes up to 20x25x35 m. New caves were explored to the level +112 m above the bottom of the Cathedral, i.e. close to the surface.

Speleogroup 6-26 Speleohistorický klub Brno

This group works under the objects of Premonstratensian sacral buildings from

the 1st half of the 18th century (Křtiny, Blansko district).

Ossarium - A crypt unknown since the forties of the 18th century was reopened under the tower of the Virgin Mary Church on 9th Feb.1991. Over 20 m³ of skulls and bones from at least 974 people were found in the crypt. Remarkable findings of a collection of twelve men's skulls marked with black twigs and letters T were performed.

A cellar cut in the rock was found NW from the castle. The cellar was built probably in the 17th century. Its ceiling was broken.

In front of St.Jan and Pavel altar in the Virgin Mary church a shrine of K.J.Matuška, who was a last but one abbot of the Zábřdovice Premonstratensian monastery, was discovered. The findings from the shrine (e.g.silver cross 87x56 mm with seven glass imitations) were explored.

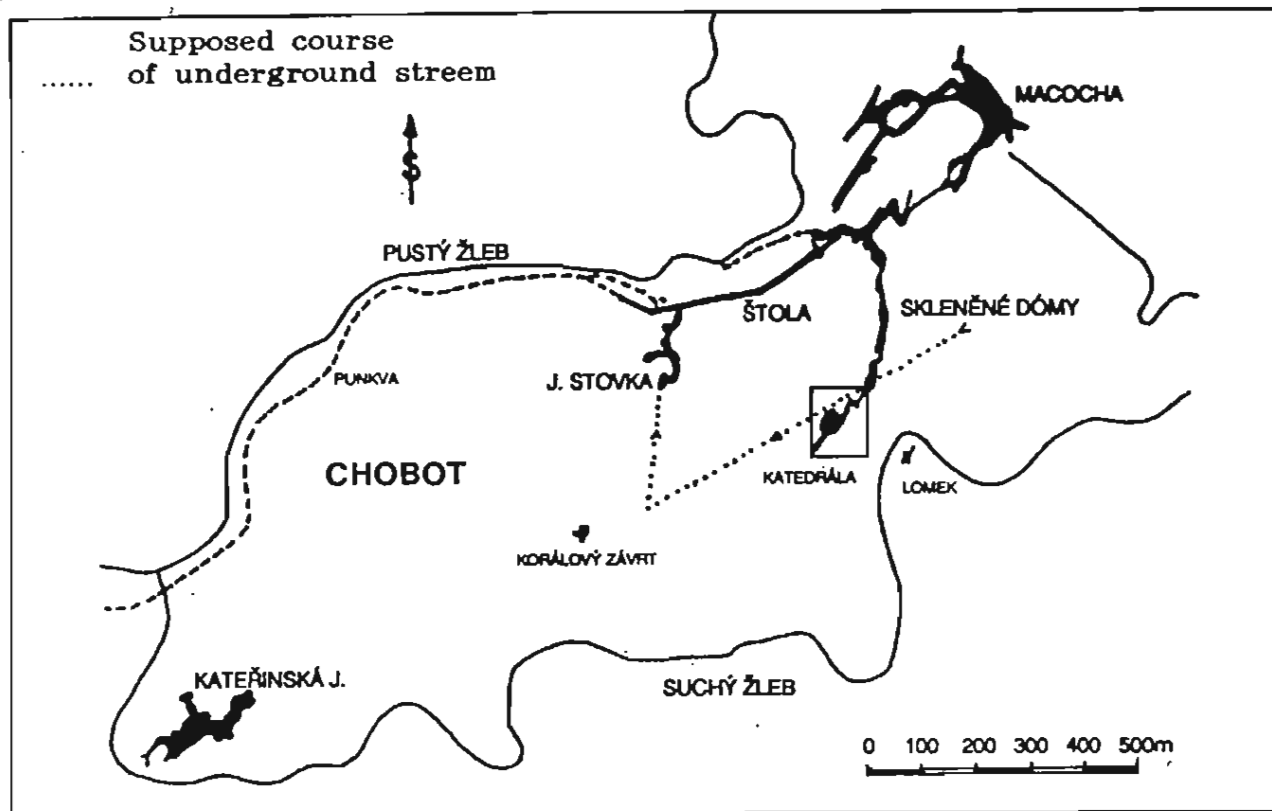
Jiřina Novotná

FOREIGN ACTIVITIES OF THE CZECH SPELEOLOGICAL SOCIETY 1989-1993

Both the Czech society and the Czech Speleological Society underwent substantial changes during the last four years. The changes were accompanied by generation exchange of the Society Bureau. Probably the first steps of the changes were done during the Pre-congress field trip in 1989 organized for speleologists from the U.S.A., Canada, Australia, Japan, Sweden, Greece and from other countries. When you compare the list of the Organizing Committee of the Excursion and the list of the contemporary representatives of the Society, you will find over 90% of the same names.

In spite of the changes which caused a strong reduction of free time to many cavers, the activities abroad continued quite well.

Correspondence with the Albanian Cavers started several years ago and probably the first overview of the Albanian Karst Areas by Suat Brasellari from the Pirogoshi Caving Club. District of Skrapar, was published in the Memorial Volume of Speleofórum '93.



The following overview lists the results achieved by trips and expeditions abroad during the last four years.

Austria

In 1991 seven members of CSS from several clubs took part in the action which was the result of the long term cooperation with the local cavers in the Höhlengebirge Mts. The exploration of the Wildschacht Abyss (last year's discovery) was carried on. The abyss was deepened to -142 m to narrows. The possibilities of communication with the close Hochlecken Grosshöhle System (-907 m) was ascertained.

Several exchange visits were realised between Langenwang Speleoclub (Steiermark) and Suchý žleb Brno clubs focused on the caves of the Eastern Alps and Moravian Karst.

In 1992 thanks to the invitation of Salzburg cavers, several clubs of CSS from Brno took part in the expedition to Tennengebirge Mts. The most meaningful extension was done by our cavers at the earlier known Thorhöhle Cave. The exploration will continue in 1993.

Cuba (and Mexico)

Cavers of the Hranický kras Club, Olomouc, organized an cave-diving expedition to the karst areas of Cuba and Mexico from 28th of July till 10th of December 1989. Altogether 31 caves were surveyed and explored. The most important among them are:

Cuba - Holguín Province - Tanque Azul (over 2 km), El Macío, Aguáda de Álla, Panaderos, Cueva del Agua, El Capitan, Martin Pérez, Los Farallones etc.

Mexico - Cenote Azul, Maco Negro, Cenote del Muerte (Yucatan, Quintana Roo state).

Besides mapping the sampling of Water, sediments, flora and fauna was done for the sake of the Cuban Academy of Science. Cavers made photodocumentation and videodocumentation (Mexico).

Greece

Besides many rather sport descent to the abysses of Astraka Plateau (Provatina, Epos I and II) there were several successful expeditions concentrated both to the underwater and subterranean discoveries. In 1989 the Labyrinth Cave Diving Club from Brno operated at the Metohi Resurgence (Euboea Island) and Selenitsa-Draco system

(Mani peninsula, Peloponesos). An important part of the expedition was dedicated to the cave diving educational program supporting the new cave diving activity of local cavers.

The Labyrinth Club continued in good contacts during the following seasons especially by participation on the Mani Project in cooperation with the Hellenic Republic Ministry of Culture and with the Speleological club Speleo from Athens. Several submarine caves and resurgences were explored at areas of Dyros (Glyfada Cave), Dracos Spring and Stoupa (Peloponesos). Four more important water fresh springs and several caves were documented in this area during the 1991 expedition. The project will continue.

The results of the Suchý žleb Brno Club in cooperation with Speleo Athens Club are presented in a separate contribution.

Italy

By far the most fruitful contacts among cavers of our country and of Italy are performed by cave-divers of three clubs: Speleoaquanaut Prague, Labyrint Brno and Hranický kras Olomouc.

In June and July 1990 members of the Labyrinth Club participated on Timavo Project organized by Societa Adriatica di Speleologia and Commissione Grotte Eugeno Boegan. The main aim of the Project was the exploration of the underground course of the Timavo River. Cave divers explored resurgence area, surveying 1200 m of underwater galleries. They have found out, that it is very probable, the water comes from a deep point near Grotta Timavo, that was dived but not surveyed by Jean Toloumdjean to the depth of 60 m. Divers collected numerous water, rock and plankton samples. One specimen of the *Protheus Anguinus* was observed in the resurgence, too. The work during 30 dives gave a good picture of the underwater situation there, however, generally poor visibility reduced substantially diver's possibilities.

A long lasting tradition (since 1987) represent the cave-diving expeditions to the Sardegna Island. In 1989 the expedition was organized by Speleoaquanaut Club to the Supramonte Mts. The cavers visited Su Gologne, Su Cuanu and Su Ventu Caves at high water level. They carried out a survey

of the other part of the interesting submarine spring Cala Luna. A documentation of submarine tunnels was carried out also at the cape Capo Caccia on the western coast of the island.

The 1990 summer joint expedition of Speleoaquanaut and Hranický kras Clubs dealt with submerged parts of the greatest system (35 km) in the Moon Valley (Codula di Luna) behind the seashore of the Orosei Gulf. The beautiful northeast water passage of the cave Bue Marino was surveyed up to 3,2 km, but the direction was unexpectedly turning to the SW, parallelly to the southern part of the Bue Marino Cave.

Both clubs organised two men miniexpedition performed at Bue Marino system in 1991. The action resulted in discovering of another 300 m of corridors added to the 3200 m from the 1990 action. The dry parts discovered in 1991 between 17th and 19th sumps are very rich in dripstones, helictites, curtains, flowstone dams and other forms of speleothems. The probability of connection with Orcu Cave in earlier stages of development seems to be high. The connection of the second sump in the third branch with a dry, earlier known (inscriptions on the wall) but unidentified cave was proved.

Three joint cave diving expeditions were organized to Sardegna in 1992. Two of them were focused to the Carcaragone Cave in Codula di Luna Valley. Due to extremely high water the previous program was changed to dry research in Ispinigoli Cave during the spring expedition. The second (September) expedition discovered a new submerged tunnel at Carcaragone, close to the underground system of Moon Valley, under very hard conditions.

The main effort of the third joint expedition of Olomouc, Brno and Praha cave-divers was concentrated to the overcoming of the 28th sump of the Bue Marino Cave. The last plunge after careful arrangement was successful. The 520 m long and 300 m deep sump was overcome and 800 m of dry extension (with another sump) was surveyed. The dry part of the cave is interesting not only by very rich dripstone decor but also by selectively weathered pipes hanging from the ceiling. Other interesting phenomenon is the presence of three freshwater and one saltwater (2 km far from the sea!) springs.

Besides cave diving expeditions, there were organized many interesting trips e.g. that of Prague cavers to Mt. Lessini and Dolomite Mts. caves. One expedition of Antroherpon Pardubice Entomospeleological Club to Mt. Lessini Mts. abysses was organized in 1990.

Orcus Club Bohumín, performed an expedition focused on the less known and less explored mountain ridge Monte Musi in the Julian Alps in cooperation with the Italian club San Giusto, Trieste in 1991. The aim of the action was the survey of the northern steeply inclined slopes of Monte Musi at the altitude 1500-1700 m a.s.l. An abyss 400 m deep was discovered there in 1990 by Italian speleologists. The Czech group discovered and surveyed 10 new abysses. The deepest of them was -105 m.

New Zealand

The nine men expedition of CSS organized by Albeřice Club in 1990 was described in many articles and monography. The main discoveries were Acheron Cave 1540 m long and 252 m deep and Bohemia Cave over 3,5 km long and -386 m +7 m deep with a succession of giant halls the total length of which is 810 m with the mean width 65 m.

Norway

Five members of the Osiris Club took part in a joint trip with a group of Norwegian cavers, led by S.E. Lauritzen. The aim of the expedition was the stratigraphic and structural analysis of the caves in Hellemfjord and Sorfjord, Nordland. The sediment sequences and speleothem sampling was done in order to date them with U-series and paleomagnetism. During the first week the Raggejavre-Raige Cave was explored, including the main passage, the upper parts and the connection with the Fjord Cave. Samples were taken in Noraldag Raige. Lauknesfjellgrotta and Osthullet on the north side of the fjord. Despite the fact that Lauknesfjellgrotta is described as a dry cave, a strong stream flowing from Peawistle Passage was found. A 130 m of an inclined rift in Osthullet Cave, named The Big Slide was surveyed. A new 36 m deep cave was explored just by the edge of the plateau. The attempt to get into a wide strip of marble, which is promising for breaking the

depth record of Raggejavre-Raige, was not successful. No serious exploration was achieved on the opposite side of the valley to Salthulene, Sorfjord, where the marble strips proved to be thin. During the following seasons the survey continued.

Poland

The summer speleocamp at Rogazniczanska Polana (the Polish Tatra Mts.) was visited by cavers of many Czech clubs and the most important caves and abysses were visited. Besides a joint expedition of Cracovia Cavers and Czech Cavers from the Pustý žleb Brno, Topas Brno, Tišnov and Cunnacunulus Jihlava Clubs was organized to the Mietusia Cave. Two groups, four cavers each, spent five days in bivouac at the end of the cave. The groups explored, surveyed and photographed the most distant parts of the system. Altogether (chimneys and corridors) about 270 m extension was discovered.

Slovenia

In 1989 the sixth expedition organized by the Albeřice Club to the Krn Area of the Julian Alps resulted in deepening the 452 m deep Eternal Pleasure Cave to a depth of -490 m. The important Ice Madness Cave was found out, which was the main aim of the 1990 explorations. The entrance is at approx. 1600 m a.s.l. and it can be filled by snow. Big shaft with regular cave glacier is at the beginning of the cave. The karst spring of the Lepenica River was dived at the end of the expedition, but big boulders close down the way.

During the 1991 expedition the Ice Madness Cave was explored to the depth of -150 m and the total length of 800 m. In the following season 1992 after strong rains a flood resurgence was found out, probably connected with high entrances under the Krn Mts. The depth potential of the highest entrances versus the resurgence is about 1250 m.

Many successful entomospeleological expeditions especially to the caves of the Dobrovlje Mts. were performed by Antroherpon Pardubice Club. The cavers cooperated mainly with the Črni Galeb Club from Prebold and dr. Drovenik from Ljubljana. The cavers of the Tetín Club visited twice Slovenia caves in 1992. They partly supported the

above mentioned entomospeleological expeditions and they discovered several new caves at the surroundings of S.Katerina in Dobrovlje Mts.

The former Soviet Union

Orcus Club investigated and documented karst phenomena in some little known areas of Northern Caucasus, the ridge of Laganaki, Stone sea, Murzikau, Oshten, Nagoj Tchuk and of the canyon of the Ci-Ce River. There were discovered some abysses here, but their bottoms were filled by chokes and broken stones. Most of the discovered abysses were opened by mining works. The strong water sources give evidence of extensive cave systems, especially in the massif of Murzikau. The opening of these systems from sinkholes of the plateau will nevertheless represent a long-term mining activity.

J.Kyselák from the Osiris Club took part in the expedition of Yekaterinburg Club to the deepest abyss of Asia the Boy-Bulok (+222, -1158 m).

The well known Moscow caver V.Kisselyov visited Speleofórum '92 meeting and presented excellent slides from the Siberian, Caucasian and other caves.

Sweden

During the trip around Scandinavia, six members of the speleogroup Trias, Pardubice took part in a working camp of Swedish Speleological Society in the karst area in the Sotsbäcken Region near överuman Lake. The exploration was concentrated on two ponors which lead to the lower part of the Sotsbäck Cave. The RF 1 ponor was explored 40 m far and 20 m deep. It is ended by rock straits which cannot be crawled through. In the RF 2 ponor, 140 m of corridors were discovered after the half-sump near the entry was excavated. The continuation is very narrow, but possible.

Turkey

In 1989 cavers of the Lancaster University Speleological Society and those from Czech Speleological Society, Geospeleos Club implemented an expedition to the karst regions of the western part of the Taurus Mts. The first attempt was to find connection between caves in the Kembos Polje with the discharge cave of Altinbesik. The results of

the investigation did not confirm the possibility of such connection. Cavers tried to get in the interconnection between caves Tinas Tepe Düden and Guvercin Tasi Deligi but from the closing sump of the first cave it was not possible. The sump in the western corridor of the Guvercin Tasi Deligi Cave was swam through. The sump is 125 m long with a 380 m long corridor over it. The corridor is closed by further sump.

The second expedition organized by Geospeleos Club in cooperation with the Turkish geological institute, namely dr.N.Güldali. The first explored area is situated in the vicinity of the seaside town of Finike. The divers penetrated to a depth of 65 m and distance of 115 m at the water cave of Suluin. Another cave called Asaronu was surveyed to a depth of 82 m. In the area of Mt. Kizlarsivrisi, the huge Karagol Düdeni ponor located near the Elmali polje was surveyed. The cave was dry in summertime, started by a large passage which was after 100 m divided into numerous crevices most of which were unpenetrable. Further surveyed localities were Gürlevik Cave, Akpinar Resurgence and Fasih Resurgence.

Eight members of the Geospeleos Club realised an expedition in the resurgence cave Altin Besik situated 150 m above the bottom of the Manavgat River. The expedition succeeded in penetration through the 100 m long sump behind the VIII. lake and the divers reached new dry caves. The extension of total length 2000 m was surveyed. The total length of the cave was changed from 2,5 km known till 1992 to 4,5 km.

An interesting study trip to the karst region of Gümüşhane, NE Turkey was realised by Sovinec Caving Club in cooperation with dr.N.Güldali and MTA Institute, Ankara.

The United States of America

Six cavers of CSS passed 30 states of the U.S.A., they travelled about 20000 km and visited 29 caves and 3 factories (PMI, Bluewater and Skedco) manufacturing ropes and other speleological equipment. They took part in the All-American meeting of cavers "Convention 89" and in the meeting of cavers of the Eastern Coast "Old Timers". They visited several lava caves in Idaho and California. The discovery of the

Czech Hole (Tennessee) in cooperation with Mr. A.E.Ogden, Prof. of Hydrology in Cookville had to be mentioned. The Czech Hole is situated in the limestones of Cumberland Plateau, it is 2 km long with denivelation of 55 m.

Two members of the Trias Club, Pardubice together with C.Metzler (Glacier Grotto Anchorage) took part in speleological exploration in the region of Kougarc Mts. and the Chitstones in the region of the Wrangell Mts., Alaska. Several short karst caves were discovered and surveyed there. Czech ca-

vers also took part in the Prince of Wales Island Expedition (POWIE) organized by NSS. 44 new caves of total length 4840 m were discovered and surveyed during the action.

The above outline is mostly derived from the Memorial Volumes of Speleofórum' 90, 91, 92 and 93 which summarised most of the activities of our cavers abroad. The Volumes are available at the Secretariat of Czech Speleological Society, Prague.

Jiří Robert Otava

II.

CENTRAL SCIENTIFIC COMMISSION

Central Scientific Commission, like other Central Commissions of the Czech Speleological Society, represents a consultative body of the CSS Bureau. Its activity, since founded, is focused mostly on coordination of activities among individual speleogroups (local organizations) and on consultative activities. It has not definite structure and consists of only several stable members who cover individual branches of karstology and speleology, and some related sciences, too. Commission activity covers especially following topics: cave sediments, speleopaleontology, cave flora and fauna, speleochronology, paleokarst, karst geology, karst geomorphology, geophysics in karst, mineralogy, speleogenesis, speleoarcheology and environmental sciences. Speleogroups can contact each of the Commission members for consultation or help in the field or for recommendation of equal and proper methodology.

The basic scientific program of the Commission continues since 80ties with the main title: The role of the karst in the formation and development of the landscape and the environment. Last periods were specialized to study of Cenozoic evolution of karst regions in Bohemia and Moravia. Research was connected with IGCP and IGBP Programs, special projects of the Czech Speleological Survey, the Geological Insti-

tute of the Czech Academy of Sciences and some practical activities of geological companies, and, in last two years, also of private consultants and private companies active in geology and environmental studies. Very successful is the cooperation with IGCP Project 287: *Correlation of Mesozoic/Tertiary Bauxites and Related Paleokarst in Tethyan Realms* where correlation of mainland karstification periods and phases and Tethyan karstification was elaborated. IGCP Project 299: *Geology, Climate, Hydrology and Karst Formation* covers by its theme the whole research in our karst regions. Cooperation with IGCP Project 325: *Correlation of Palaeogeography with Phosphorites and Associated Authigenic Minerals* is also very useful. Mineralogical, geochemical, paleontological and geomorphological studies were summarised in IGBP Project *Past Global Change*, sub-project: *Climatic oscillations and environmental changes of the Cenozoic of the Bohemian Massif and West Carpathians*. Now, the research continues by the project named: *Karst sediments: Fossil record of climate oscillations and environmental changes* (sponsored by the Czech Grant Committee) and project named: *Stable isotope climatic record in the Quaternary sediments of the Bohemian Massif* (sponsored by the IAEA, Vienna). Intensive studies in Quaternary karst geology, pedology, paleontology and sedimentology is concentrated in the frame of the IGCP Project 253: *Termination of*

Pleistocene. Some cooperation can be noted with the U.S. Cooperative Science Programme in the frame of project: *Quaternary loess deposits of the U.S. and Czechoslovakia*.

Although research activities are performed by professional carrier specialists from numerous institutions and companies, the role of the Czech Speleological Society and its Scientific Commission is very important, because the CSS members take part in excavations and/or their own excavations in caves or cave entrances are the source of the material for scientists. The detailed knowledge of karst is a useful tool for detailed evaluation.

The basic problem of the organized research in the CSS is the lack of financial sources I wrote four years ago in the CSS booklet for the 10th International Congress of Speleology in Budapest (1989). The problem remained very actual, even after changes in our political orientation and economic system. Prices of all are growing, the possibility to perform analytical procedures without payment is now nearly impossible. Although the Grant Committee of the Czech Academy of Sciences started its funding, the access of non-academic organizations and individual (private) researchers has not been solved yet. Therefore, all activities are connected with above mentioned institutions and companies, allowing to perform specialized analytics and detections in the frame of their projects.

The next big problem appearing only in last two years is the limited possibility to publish regional notes, finds or evaluations in specialized Czech periodicals. Owing to financial problems, some ceased its publishing, or limited the periodicity and extent. This is partly also problem inside the Czech Speleological Society by interruption in publishing of the Library of the Czech Speleological Society, except of granted volumes, etc.

Our Commission has very good contacts to international organizations. The collaboration with the UIS of the IGU can be considered as successful in numerous directions. Cooperation with specialized UIS Commissions is worth of mentioning. In spite of financial problems, the Commission members took part in several important symposia and congresses referring on

actual achievements in the karst science and environmental problems.

RNDr. Pavel Bosák
Vice-Chairman
Central Scientific Commission

CENTRAL COMMISSION ON PSEUDOKARST

Pseudokarst caves and shafts, as well surface pseudokarst features, occur on the whole territory of the Czech Republic, sometimes in the form dispersed localities, on other places densely clustered even on relatively extensive areas. The latter case is special for pseudokarst in quartz sandstones and marls of the Bohemian Cretaceous Basin particularly in Krušné hory (Ore) Mountains and in Sudetes, as well in central Bohemia. One of regions with the densest pseudokarst in upper Cretaceous rocks is the Police Upland with more than 100 pseudokarst caves with the longest Czech pseudokarst cave (Teplická Cave with 1 065 m of passages). The other important pseudokarst area is represented by upper Mesozoic - lower Tertiary flysch of the West Carpathians, especially the Moravsko-slezské Beskydy Mts. with abundant chasm, e.g. Kněhyňská Cave with -57.5 m. The occurrence of other, less numerous localities is connected with other sedimentary, volcanic and metamorphic rocks. Paledové sluje Caves (Pseudoice Caves) in the Znojmo Upland (southern Moravia) are especially important within this group of features. They are a large system of fissure - debris caves located in unstable slope of deeply entrenched meander of the Dyje (Thaya) River. Individual complicated and multi-level systems are over 300 m long with the altitudinal difference over 30 m.

The investigation of pseudokarst forms was at the margin of the speleological interest for long time. Only in eighties, some of speleological groups started study pseudokarst more intensively, sometimes as prevailing of completely dominant activity. Low coordinated activities covered extensive non karst regions with broad variety of all forms of pseudokarst relief. It was focused on research, evidence and documentation of surface and subsurface forms, especially

of caves. Their special mineral or biological fills, physical, hydrological, hydrochemical and geochemical characteristics can be assumed as a individual speleological discipline. Biospeleological problematics have a extraordinary position. i.e. the study of root stalagmites and stalagnates. This form of cave mycorrhiza was firstly identified in 1979 in one of sandstone pseudokarst cave in Teplice Rocks (NE Bohemia). Since this date, root stalagmites and stalagnates have been known as up to 60 cm high forms in about 50 sandstone caves in the Czech Republic, Germany and Poland. The international coordination of research, documentation and protection of these phenomenon, which is unknown in other pseudokarst region, is directed by the Speleogroup 5-03 Broumov of the Czech Speleological Society.

The increasing intensity, diversification and level of pseudokarst research within the Czech Speleological Society was substantially supported also by International Symposia and Workshops (Janovičky 1982 and 1985, Beskydes 1990) on which scientists and speleologists interested in pseudokarst met. Contacts with partners interested in the same problems abroad were important as well as participation on numerous research and study activities of Czech cavers in foreign pseudokarsts. This situation enforced the constitution of specialized body within the Czech Speleological Society. The Central Commission on Pseudokarst was established in 1990 with the aim to ensure the necessary coordination of investigations, explorations, evidence, documentation of pseudokarst caves and chasms, together with surface pseudokarsts. The Commission supports the investigation and documentation of geomorphic, hydrological, geophysical, geochemical, biospeleological and other phenomena of pseudokarst. The Commission ensures also the unification of the speleological activity and interests of the State Protection of Nature. Therefore, the Commission organizes specialized symposia, colloquia, conferences and workshops and participates on publishing of methodical materials and proceedings of reunions. The bibliography of pseudokarst has been compiling by the Commission members from the whole territory of the former Czechoslovakia.

The tasks for the near future could be summarized as follows:

- to continue in coordination of investigation, evidence and documentation of surface and subsurface pseudokarst phenomena,
- to study geomorphic, geobotanical, micro- and mesoclimatic processes forming the pseudokarst relief,
- to study biospeleological problems of pseudokarst sites and regions including the coordination of investigation, evidence and documentation, and protection of cave mycorrhiza on localities in Czech Republic, Germany and Poland,
- to process the complex inventory of documentation material with pseudokarst thematics in archives on the Czech territory,
- to compile the list of longest and deepest pseudokarst caves of the Czech Republic,
- to publish next volume of "Bibliography of pseudokarst in Czechoslovakia for 1986 - 1990",
- to publish Symposia Proceedings from 1992 reunions (*Investigation of microclimate in pseudokarst caves and inversion gorges of sandstone rock cities and Investigation, documentation and protection of pseudokarst sites with cave mycorrhiza*),
- to coordinate investigation and documentation of pseudokarst caves on site of Paledové sluje in National Park of Dyje (Thaya) with the participation of more Czech and Moravian speleoclubs,
- to compile special map key for speleological mapping reflecting complex bounds between subsurface and surface geomorphology, and
- to participate in the preparation and organization of the 5th International Symposium on Pseudokarst which will held in 1994 in Poland.

The Central Commission on Pseudokarst of the Czech Speleological Society has been searching contacts within the structure of the International Union of Speleology, with the aim to obtain new knowledge for its activity and to help to international cooperation in all branches where necessary.

Jiří Kopecký, Chairman Central Commission on Pseudokarst

THE SPELEOLOGICAL RESEARCH OF ARTIFICIAL CAVITIES IN THE CZECH REPUBLIC

Organization

The Czech speleology consist of three principal sources: 1-classic karst speleology, 2-speleology in artificial cavities and 3-sandstone pseudokarst speleology. Due to the lack of limestone caves, most of the groups are mixed and they take part in all three activities. About one third of all members is basically interested in man-made underground spaces. We try to keep all the speleological activities under one roof of Czech Speleological Society to provide the unified system of information and documentation and to keep the archives together. Few isolated groups stand apart from the speleological mainstream but their activities are negligible and no results were published. The activity is coordinated by the Central Commission on Artificial Cavities - chairman - Dr. Václav Cílek.

Prehistoric overture

The white crystalline limestone was mined on the eve of Neolithic by deep pits to obtain material for bracelet production in Sázava. Somewhat younger are Tušimice silex mines and probable Celtic mining of bituminous coal shale as jewel stone. The Celts were probably the first miners on the area of Bohemia (even the name Bohemia is derived from the Boiohemum, the land of celtic tribe Bois) - their oppida are frequently found nearby gold and iron deposits but still we lack the underground evidence since mines were often several times reworked. The original Slav tribes were peasants and nomads and they had to learn the art of underground mining mostly from Saxons.

Ore mining

The open pits prevailed up to the last third of 13th century but then the mining boom had started. Several hundreds of small deposits were opened and mined but few of them were important in the European scale. Kutná Hora became famous during 14th century as important silver deposit. The depth od 500 m was for the first time reached in this locality at the end of 14th century. The Cínovec (Zinnwald) and Krup-

ka were famous tin localities before the Cornwall mines started its massive production. Jáchymov (Joachimsthal) represented the last rich silver European deposit. Then the silver flood from New World almost finished the silver mining in Europe. Marie Curie-Sklodowska revealed radium in Jáchymov's pitchblende. Příbram was the only Czech economically working polymetallic deposit during 19th century. The depth of 1000 m was worldwide for the first time reached in St. Vojtěch (St. Adalbert) mine in Příbram in 1875. During the last two years all ore mines were closed but numerous small shafts and adits are scattered on the whole area of the Czech republic. The longest accessible object seems to be 23 km long Příbram water adit.

Other underground objects

The brief description of various man-made underground objects of the Czech republic is due to the variety of objects almost impossible. Various cellars, ice-cellars, catacombs, grottoes, water adits and historical canalization, rock castles, underground quarries, kaolinite, shale and graphite mines, military underground objects, sanctuaries and troglodyte hideouts may be found on many places. Typically you can expect a rich variety of interesting objects but a few of really large, breath-taking man-made caverns or really long passages and deep shafts.

Nowadays Bohemian underground seems to be more a matter for cannoniseur than for a recordman. Still you can walk through almost 50 km of military passages under Josefov Citadel or visit 1 km long water edith of emperor Rudolf II. almost in the centre of Prague. Most of the ore-mining objects are problematically accessible but local groups usually find the solution concerning not only technical side of the problem but legislative one as well.

*RNDr. Václav Cílek
Vice-Chairman Central Commission
on Artificial Cavities*

CENTRAL COMMISSION ON EDUCATION

The educational activity of the Commission prior 1990 was focused on *Instructions*

of the *speleological minimum* which have to be passed by all members of the Czech Speleological Society together with information on safety of the speleological activity. The second step in speleological education was represented by the Instructions of speleologists of the first degree and of speleologists - specialists. After 1990, when appeared that the former style of education of our members became out-dated, the system of new education has been preparing, but not yet finished. As the Commission is one of the most active in our Society, it participated in the organization of numerous workshops, symposia and so-called Central Meetings of the Czech Speleological Society focused on specialized topics. The Commission participated also on publication activity of the Society, as the former President, Prof. J. Demek was the Head of the CSS Editorial Board.

The Commission activity consisted not only of education and training, but also of the research. It is the main coordinator of long-lasting international project - *Investigation of Karst in Sudetes* - in collaboration with Polish academic institutions and universities with spectacular results. The other project - *Speleoterapeutical Research* - is in progress. Commission members developed also techniques of caving in glaciers and participated in glaciological expeditions on Spitsbergen. During the Congress activity, next 3 men-strong glaciological expedition will be in progress studying caves in glaciers, glacier karst hydrogeology and hydrochemistry. The Commission participates also on *Evidence of speleological objects* and on very extensive project - *Investigation of the Amatérská Cave* - the longest cave system of our country.

Josef Řehák
Chairman Central
Commission on Education

Daniela Bílková
Secretariat
of the CSS

CENTRAL COMMISSION FOR SAFETY

The Central Commission for Safety, health protection and speleoescue was founded shortly after establishment of the CSS as a consultative body and coordinator

of speleoescue in different karst regions. The main activity, since 1989, was focused on:

- 1) compilation, concentration and exchange of information concerning speleological technique and speleoescue,
- 2) arrangement of continuous activity and training of the Speleological Rescue Service,
- 3) education of speleologists, and
- 4) technical and expert assistance on speleological localities, especially in vertical sections.

The main problem can be seen in the decline of activity of members resulting from changes in social and economic life of our society. The lack of free time and inflation are roots of this decline. In spite of this evolution, the activity was maintained and in some branches improved. Cooperation with the Central Commission for Technique resulted in new activities, e.g. in preparation of new Czech standards. This allowed to obtain permissions for works using speleo-technique. Some members of the CSS are using this permission for private activities in business. Education in this branch is ensured.

The Speleological Rescue Service is coordinated by headquarters composed of chiefs of regional Rescue Services, e.g. for the Bohemian Karst, for West Bohemia, for the Moravian Karst, for North Moravia, etc. The activity and equipment is sponsored by the Bureau of the CSS. The speleoescue in flooded caves represents somewhat individual portion of the Rescue Service and is ensured by members of the Central Commission for Speleodiving. Several practices were performed to prove and improve rescue operation in different kinds of caves. Several rescue operations were performed, but no fatal injuries were noted.

In spite of limited possibilities in financial sphere, individual commission members attend several camps and specialized symposia abroad. Owing to the lack of finances, the complete presentation of techniques used by the Czech speleoescue could not be performed abroad.

Bohuslav Koutecký
Chairman Central Commission for Safety

CENTRAL TECHNICAL COMMISSION

Central Technical Commission of the Czech Speleological Society, the consultative body, has an important role in speleological activities, focused to secure technical level of speleological activities, not only underground. The activity included the technique of motion in underground and other branches of techniques utilized in subsurface, generally.

The transition to market economy was imprinted in the growth of production of technical equipment for speleology by private producers. The Commission member try to help them on consultative level.

The biggest success of the Commission can be seen in the fact, that speleological techniques were approved in juridical precepts as safe for construction operations in heights from the view point of personal protection against fall. Technical equipment used for this activity have to be tested by the State, which represents fluent problems owing to the lack of standards, regulation or recommendation of the UIS. Therefore, the Commission prepared proposals of the State Standards for bloccants and other speleological equipment, including ropes. Owing to bureaucratic procedures, the standards have not been adopted, partly owing to expected transition of Czech State Standards to Eurostandards or DIN standards.

The approval of speleological techniques was reflected in its popularization among different kinds of Rescue Services (including firemen). We are expecting, that the speleotechnique will be extended and will complement used climbing techniques.

The traditional activity of the Commission is the training and education of the CSS members. Annual meetings of the Commission in the Moravian Karst include the demonstration of new techniques and equipment of Czech made or foreign provenience, the exchange of information and excursions to caves. The rope trainer was erected in old quarry building. It can be used without the respect to weather for training of all situations moving on rope in caves. The trainer is 12 m. Training of instructors for speleological techniques used in construction operations was performed here.

Our Commission actively cooperates with the Technical Commission of the Slovak Speleological Society and with Vertical Section of the National Speleological Society (U.S.A.).

Radomil Matýsek
Chairman Cental Technical Commission

CENTRAL COMMISSION ON CAVE DIVING

The main effort of our Commission was focused to contribute to the development of safe cave diving in our society, which was based on gathering of world wide experience in this field. On behalf of this information using our own experience we have outlined basic rules of safe cave diving and cave diving training.

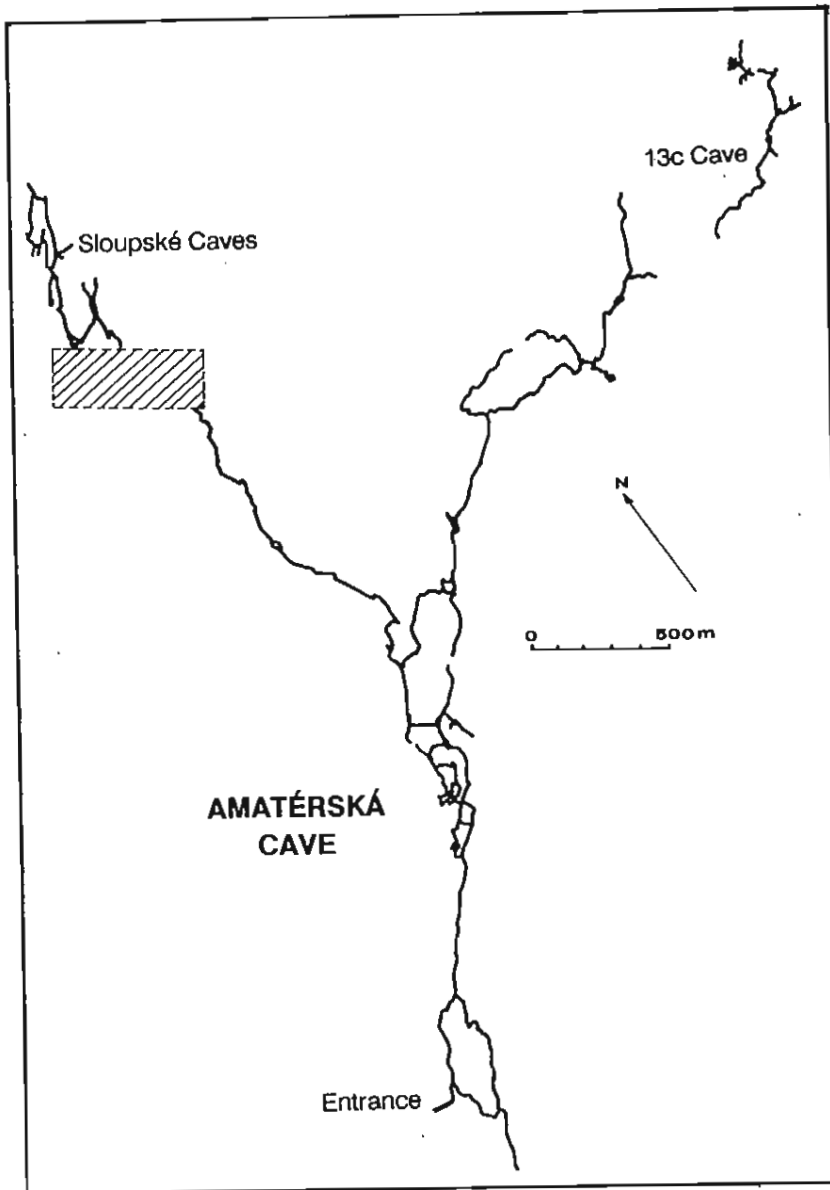
The Commission organized also training and education of cave divers in the country and cared for the qualification of cave divers. Now it is possible to qualify for two degrees - cave diver and advanced cave diver.

Our Commission took also active part in international cooperation. We participated on international meeting of cave divers, as well as on other cave diving activities (e.g. the Timavo Project in Italy). Central Commission on Cave Diving plays an important role also in the cave diving rescue.

Michal Piškula
*Chairman Cental Commission
on Cave Diving*

NEW DISCOVERIES IN AMATÉRSKÁ CAVE

The longest cave system of the Czech Republic is Amaterská Cave in the northern part of the Moravian Karst. This cave system is very complex and it has still not been fully explored. It was discovered by amateur cavers in the years 1969, 1970. A new upstream way in Sloupský Corridor was discovered. Further way was stopped by an upstream sump, at that time five kilometres from the entrance of the cave. One of the projects was also an upstream sump in the Sloupská branch. Cave divers of Brno Cave Diving Club Labyrinth were to make the ex-



plorations. This joint venture resulted in spectacular discoveries by cave divers in the most remote part of the cave. They discovered over one kilometre of huge galleries whose dimensions surprised everybody, as muddy, shallow and water filled passages were expected according to some theories.

We intended to explore this remote part of the cave many years ago. But usually a sudden rise of water level prevented us from reaching the end sump. Sometimes it takes years before it is accessible again. 1989 was exceptionally dry in our country. So the whole story started on November 11th, 1989. The first trip was without diving equipment, just to see, what we needed to get through five kilometres of the cave, mostly dry, but with several lakes and

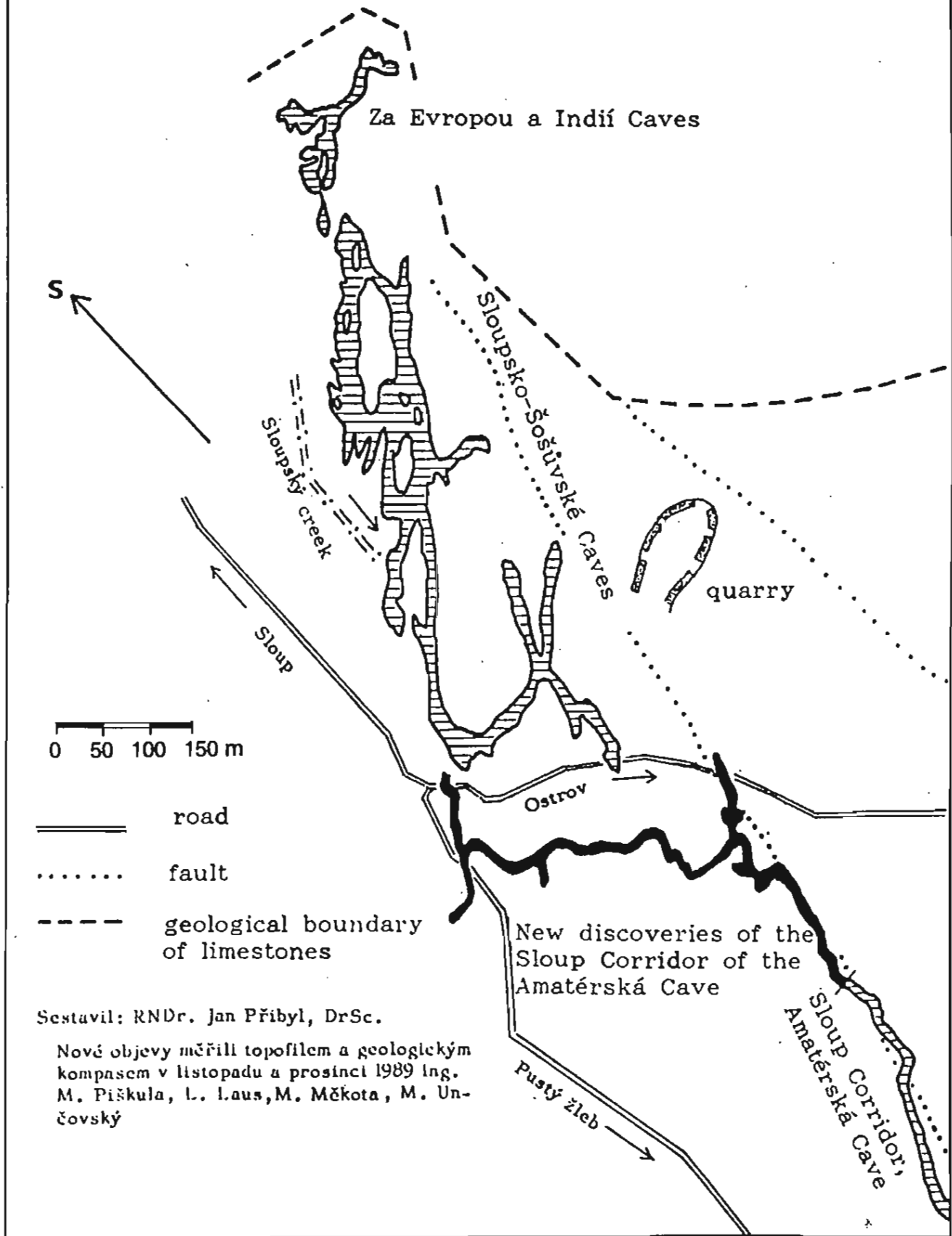
muddy passages. Nothing special. It seemed to be sufficient to use wet suits for the second half of the trip. We decided to use only small, double seven litre tanks.

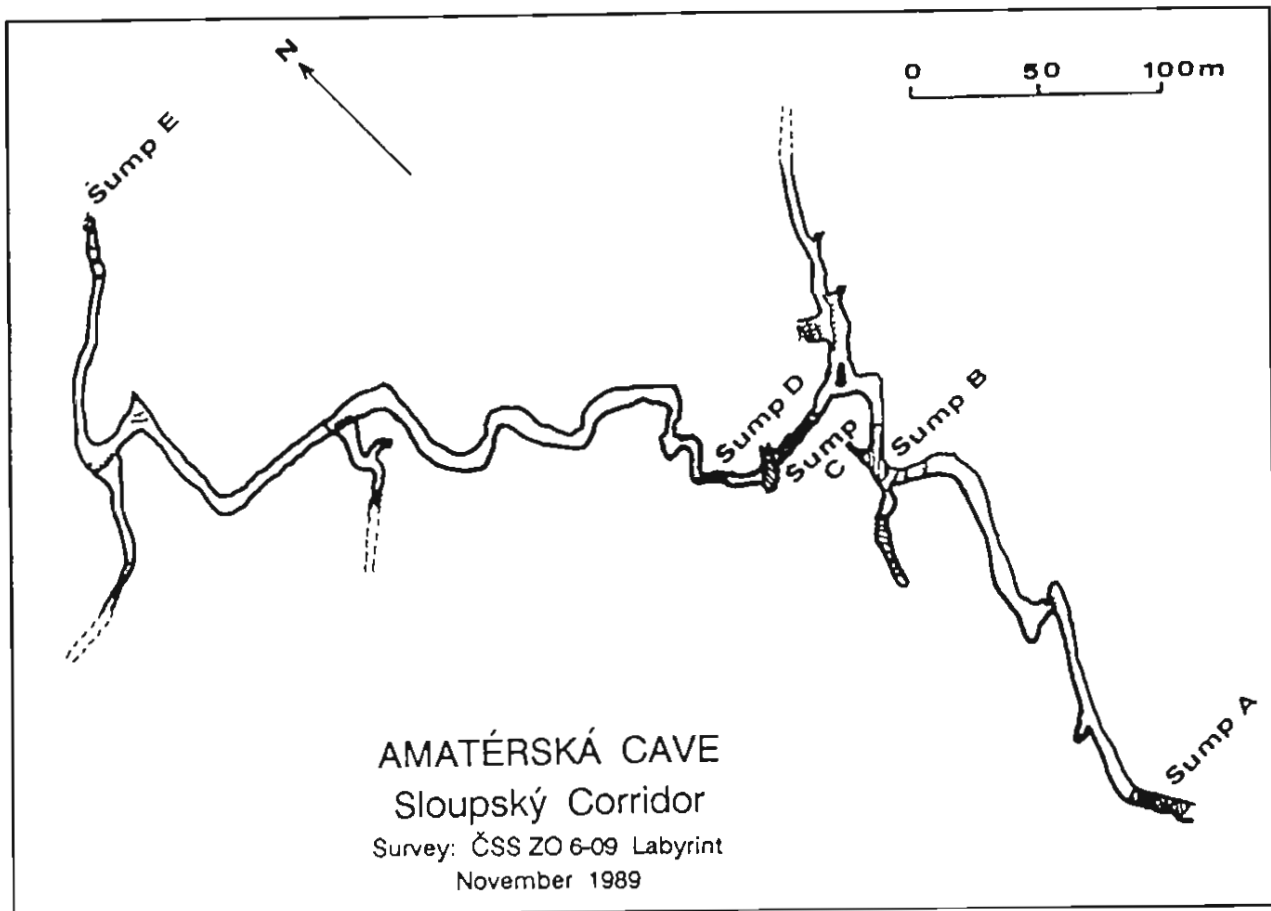
Divers Mirek Měkota and Ivo Kovář, together with five sherpas, entered Amatérská Cave on Nov. 18th, 1989. They reached the upstream sump in three hours. Divers dressed completely and Ivo entered the sump. It was a very easy one. After twenty meters he faced a long gallery, about two meters wide.

He turned back and told Mirek to join him for exploration behind the sump. They went on. Passing through half dry sump, which they forced as well, but they did not find further way from the lake behind the sump. Also right hand branch, with enormous room and chimney with three coloured dripstone waterfall, seemed to be very promising. Over 400 meters of a new cave. It was enough for that time, as only about two hundred meters were expected to be separating Amatérská Cave from Sloupsko-Šošův-

ské Caves. The two divers turned back. On the next weekend two diving teams went to the new cave. Two of us (M. Piškula, L. Laus) worked on a survey and photo documentation of the new part, the other two (M. Měkota and I. Kovář) went further on. They passed sump C. This time they discovered a small gallery hidden behind a rock projection. After 15 meters walk, through a clean washed tube, they reached sump D. Forcing this sump, they entered a narrow tube, decorated with scallops only. But after 80 meters they found one of the most spectacular tunnels of the Moravian Karst. Ten to twelve meters wide, six to eight meters high tunnel disappeared in a dark meander. They moved forward. Cave walking is an insufficient expression for what they found. Before they reached sump E, they passed almost 400 meters. They hurried up to look also at

Northwestern sector of the Amatérská Cave and Sloupské Caves after new discoveries





two major side passages. They had to do as much work as possible. Because if the weather changed it could even take years before one could reach this part of the cave again. When summarising results it was obvious that the second trip was even more successful than the first one.

After coming back to the base near the entrance of the cave, many questions were asked. No one could believe our story. The biggest question was, where does it go, this part of the cave. A survey was of essential importance. So we went once more five kilometres through Amatérská cave, again loaded with diving and photographic equipment, to sump A, on the next weekend. We were to make a survey and documentation. We already knew the way well. Only M. Unčovský replaced L. Laus in our team. We passed sump D in three quarters of an hour, even though we were putting telephone line behind that sump. We worked behind it for seven hours. We made the survey and over one hundred photographs. The weather was good. It was freezing outside for the whole time, when we did the exploration. But the weather forecast was

not so good. So we decided to take all material out of the cave. After all those trips, there was enough also for sherpas from another caving club, who came to help us. After we have drawn the survey and put it into the maps, it became evident, that we are very close to the Sloupsko-Šošůvské Caves. Maybe sump E is the last one.

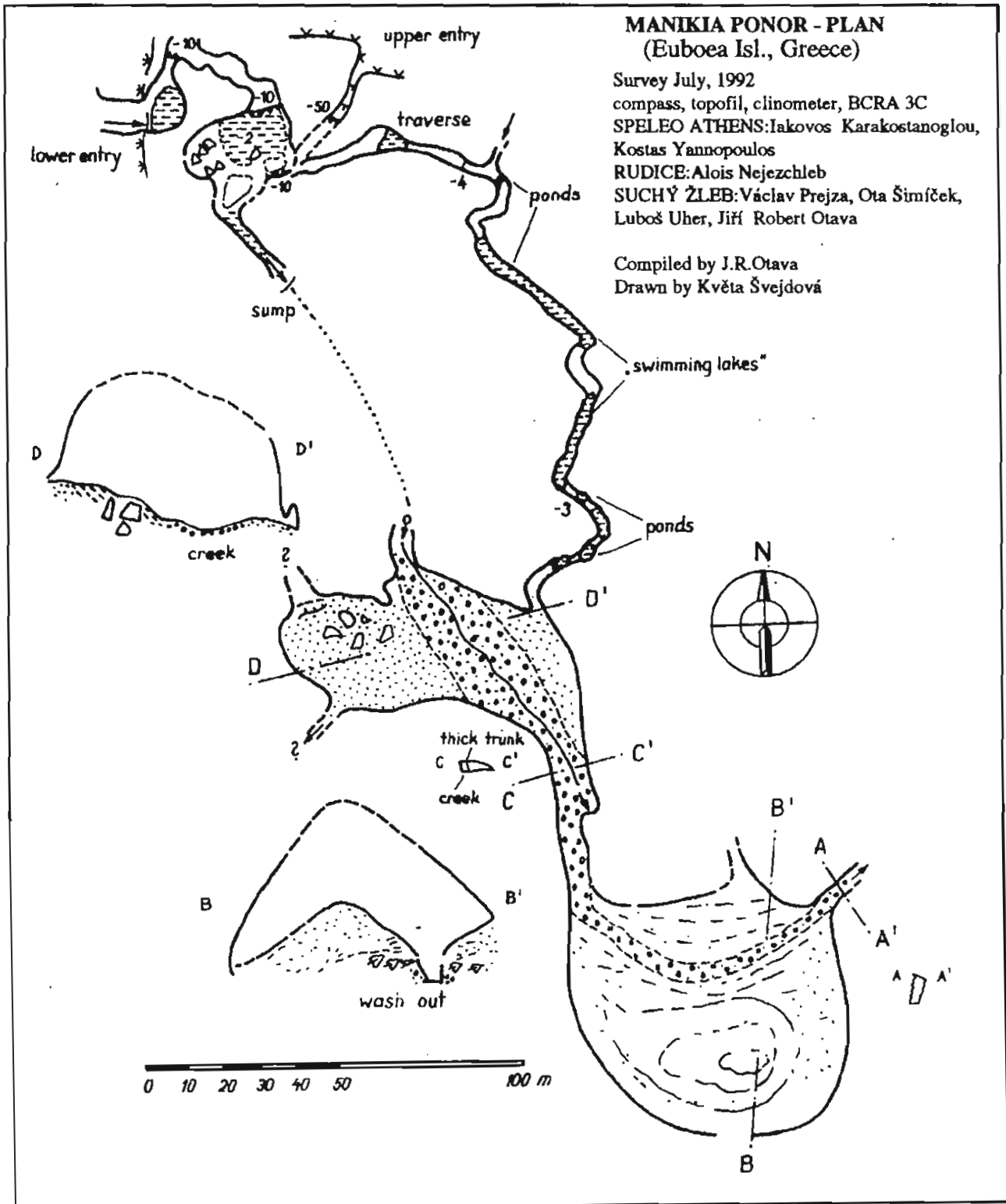
Caves were discovered between the Sloupsko-Šošůvské Caves and Amatérská Cave that no one expected. The dimensions and extension of the galleries were in sharp contrast to the theories. It is supposed that caves of an older age than most of the Sloupský Corridor were discovered. It is possible that they exist in more places of the Moravian Karst, but they are mostly filled with sediments. The sediments were washed away by the Sloupský Brook in this section. So the enormous dimensions of the cave passages are visible there.

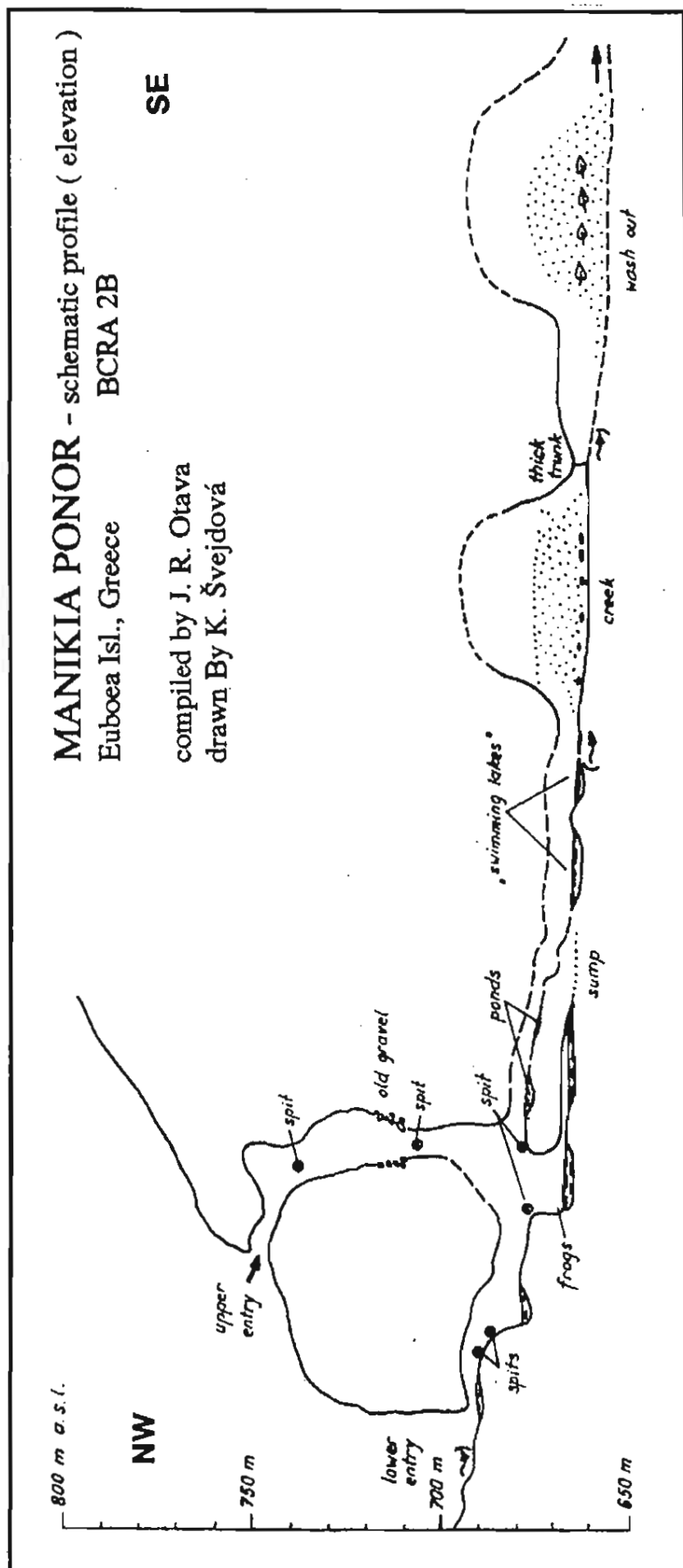
More than one kilometre of new galleries has been added to the total length of Amatérská Cave. It reached 34,9 kilometres, being by far the longest cave system of the Czech Republic. Caves between Amatérská and Sloupsko-Šošůvské Caves were the

last unknown part of the underground course of the right hand tributary of the Punkva River, the biggest underground river of the Moravian Karst. Cave divers of Brno Labyrinth Cave Diving Club closed in Novem-

ber 1989 one of the important chapters of the exploration of the Moravian Karst.

Michal Piškula
Speleogroup 6-09





III.

GREECE - EUBOA KARST

Two joint expeditions of the Czech Speleological Society, Suchý žleb Brno Club and the Greek Cavers, Club Speleo, Athens, were organized in 1991 and 1992. Interest was focused to the mountainous area of the NE part of the Euboea Island east of Athens. The results of both actions are published in detail in the Memorial volume of Speleofórum 92 and 93. Over 700 m new abysses and caves were discovered and surveyed during the first season. The main task of the 1992 season was the survey of the system eroded by the only permanent water course of the area - the Manikia Creek. Approximately one half of the system with huge halls was surveyed and the first map of it was compiled and published.

Entomospeleological collecting was carried on in several caves close to the ponor with promising results. Some petrological studies (transparent heavy mineral assemblages of sands, pebble analyses of gravels) were successfully done in order to confirm or to exclude the connection between the Manikia Ponor and some resurgences.

Finally an index (a table) of cave objects discovered and surveyed in the area during last years by Greek and Czech cavers was compiled and published in Speleofórum 93. The index includes 43 objects with locations, descriptions and references.

Jiří Robert Otava

EUBOA - MANI

Cave Diving Club Labyrint, of the Czech Speleological Society organised in years 1989, 1990 and 1991 three cave diving expeditions to Greece. Those expeditions have been organised in close cooperation with Greek cavers, with agreement and under supervision of the Hellenic Republic Ministry of Culture, Department of Paleoanthropology and Speleology. It was Vassili Giannopoulos of this Ministry, who kindly cared about our activities, and who helped us to solve many administrative problems. Greek cave divers took part in all expeditions. They used this opportunity for the exchange of experience in this activity. They were cavers from the clubs Hellenic Speleological Society and Speleo.

Our expeditions operated in two different regions. In the year 1989 it was mainly on Euboa island. We have explored the Metohi cave, near the village of the same name. The upstream sump has been explored to the distance of 240 meters and depth over 40 meters, where we could not make our way through a break down. We had to stop the explorations due to the lack of time. But the sump is promising, and we believe that it would be possible to go further on there. The main disadvantage of this locality is that after a stormy rainfall in the mountains it can be filled with water within a few minutes.

The other region of our interest was Mani Peninsula on Peloponnesos. In 1989 we have very briefly explored Dracos Spring with no substantial result. However we found a promising lead, which we have to leave for the trip next year. We found out that this gallery finishes in a great collapse, when we went back in 1990.

In the year 1990 we worked only on Mani. We have dived in the tributary branch of the Glyfada-Dyros Cave. However, results were not satisfactory as we did not have documentation of the explorations that were carried out in this cave by the Swiss cave diver J. Bolanz earlier. In the meantime one group explored the Bat's Gallery, where they discovered very beautiful dry as well as water-bearing galleries. The entire cave system belongs to the most spectacular systems in the country and it has still great potential for new discoveries.

There should exist some other resurgences south of Dracos, according to some theoretical studies. We have explored three sea caves, that we found along the coast line within one and half kilometre, south of Dracos. They were not very big. Their length did not exceed one hundred meters. It was possible to identify the presence of freshwater in all of them.

We made the most of the very dry period on Mani, which resulted in the reduction of resurgences discharge. There are several submarine resurgences near the village of Stoupa. Most of them are discharging their waters through sands. Only the biggest one ejects its water from an open hole. We have succeeded overcoming strong current of freshwater and after about ten meters we have entered a big chamber. There were clean washed gravel and sand on the bottom. Freshwater was running in through this flat base. There was absolutely no evidence of further penetration.

In 1991, total eight kilometres of the coastline between Trahila and Itilo were explored. Four more important freshwater springs were documented in this area, none of them exceeding one hundred meters in length. Several other, less important caves were also documented. The penetration was impossible because of narrow passages and or breakdowns in all of the caves. There is a significant freshwater discharge in the cave Trahila One near Cathafygi of Trahila. It would be perhaps possible to get through the boulder chokes with the help of special equipment and with some technical means.

The whole project is by far not finished. It will continue in the future, to bring more complete speleological knowledge of this area.

Michal Piškula

CAVE DIVING EXPLORATION ON SARDEGNA

Our activity on Sardegna island begun in 1987 after the 7th International Camp of Cave Diving at Gorizia, Italy. Almost every year we made excursions and explorations of caves and resurgences in the northern part of Sardegna. The visited object were: Foradada, Nettuno, Nereo, Madonna, Verde, Locoli, Gologone, Guanu, Panteleo,

GLYFADA - DYROS

Galery of Nichteridies

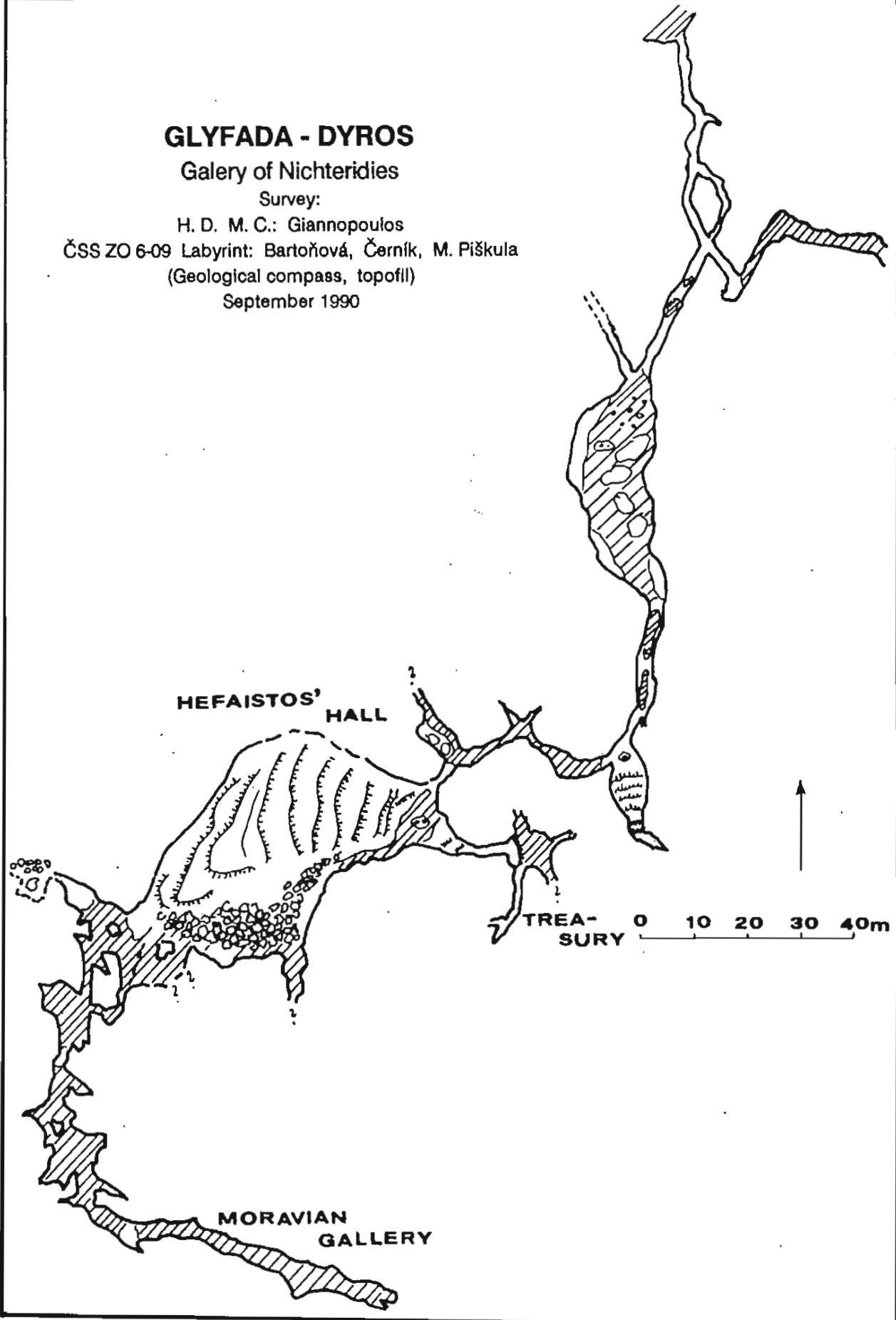
Survey:

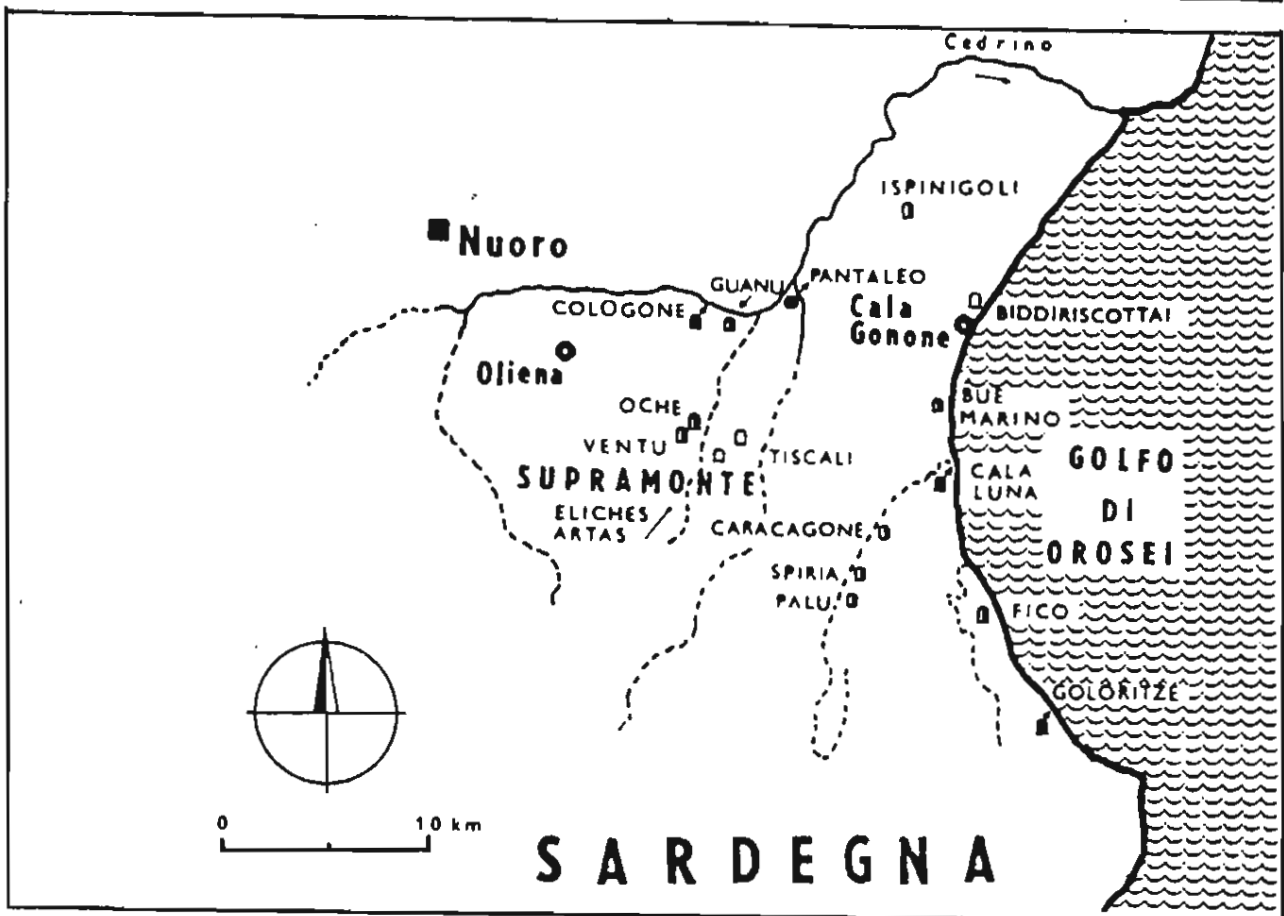
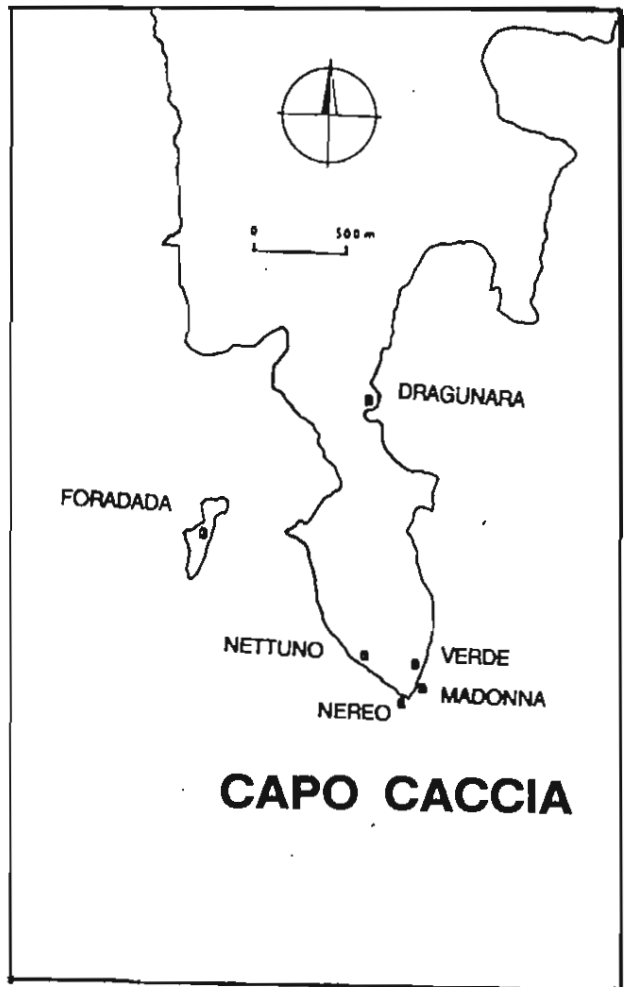
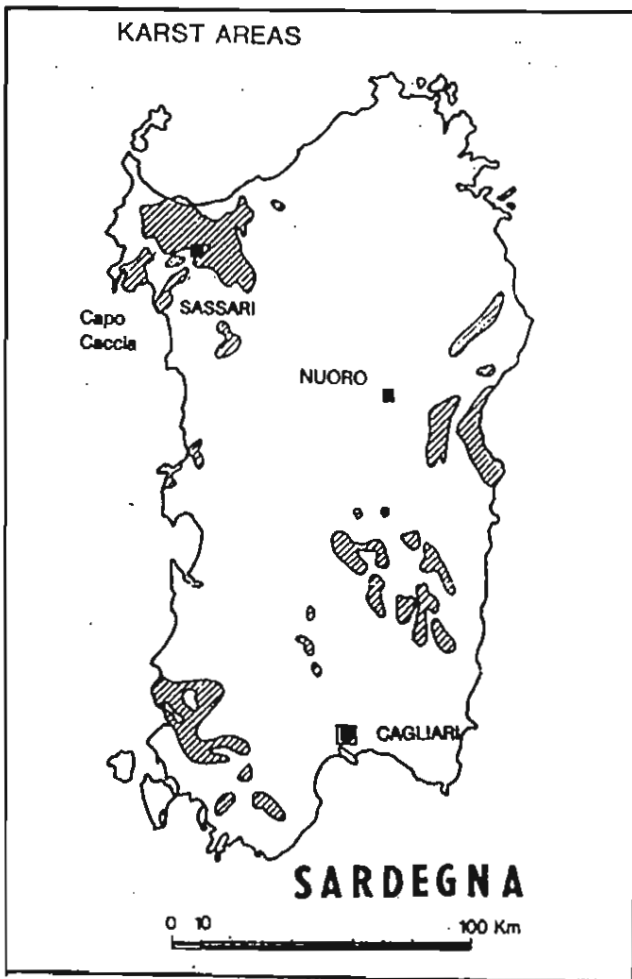
H. D. M. C.: Giannopoulos

ČSS ZO 6-09 Labyrinth: Bartoňová, Černík, M. Piškula

(Geological compass, topofil)

September 1990





Ventu-Oche, Ispinigoli, caves of system of Moon valley (Palu, Spiria, Carcaragone, Orcu, Bue Marino, Cala Luna) and Fico. We made photo/video documentation above/under the water, some maps of old/new passages. We cooperated with local cavers and cave divers from Oliena and Nuoro. During the last years took the most essential part at this researches the cave diving group "Hranický kras" on our common expeditions.

Inland resurgence Su Gologone.

The map, photo and video documentation was made up to -76 m.

Cave Su Vente - Sa Oche (Wind Cave).

At the passage "Ramo dei Caglavartani" we push the sump 1 and sump 2 with

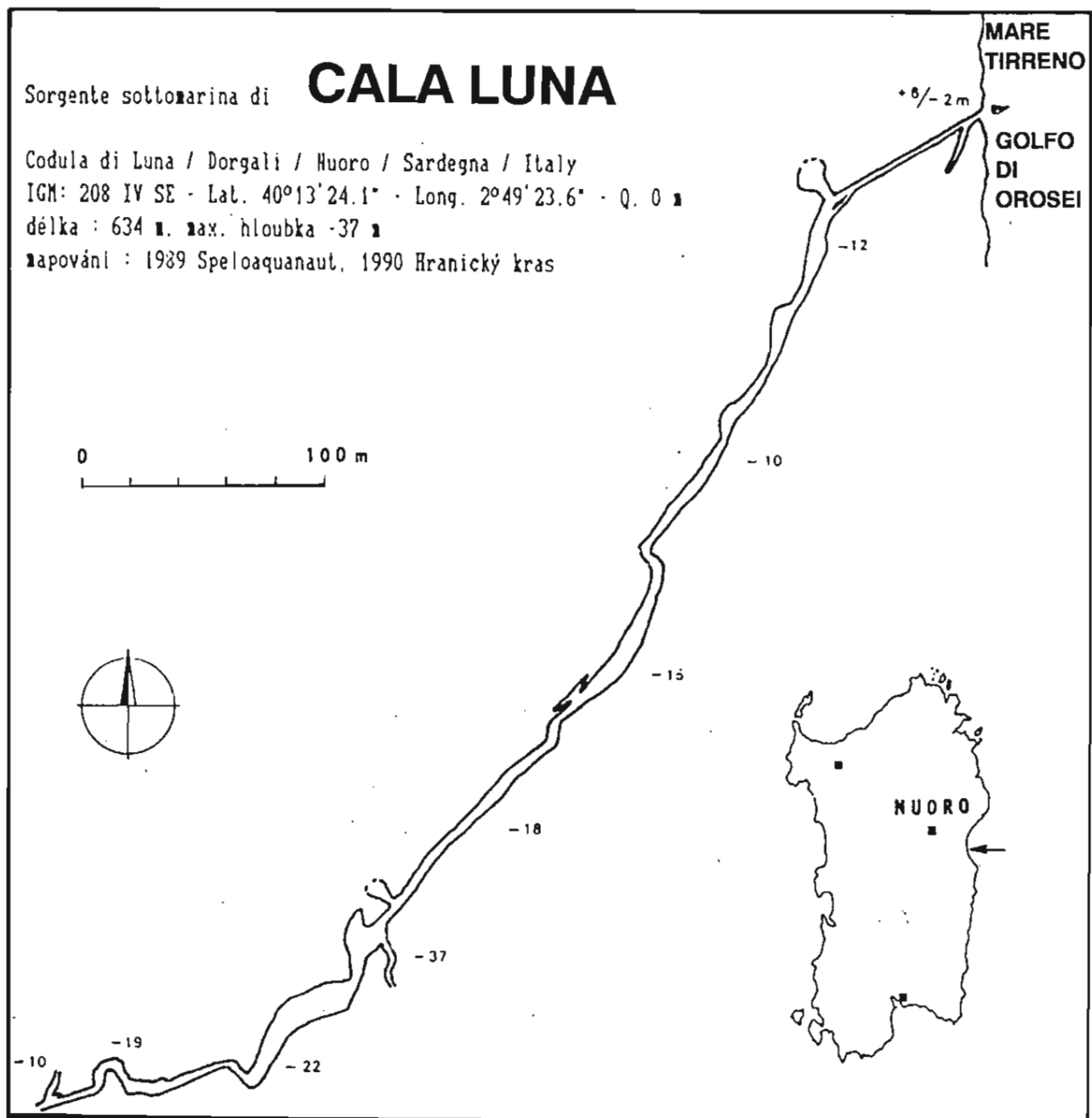
dry parts. 380 m of new passages were discovered, mapped and photodocumented.

Show cave Ispinigoli.

On May 1992 the high water interrupted our activities in water caves. Researches then dealt with the system San Giovanni Su Anzu - Ispinigoli. On the down level side by main passage at Galeria Saracco 280 m of beautiful gallery were discovered and surveyed:

Submarine resurgence Cala Luna (Moon bay).

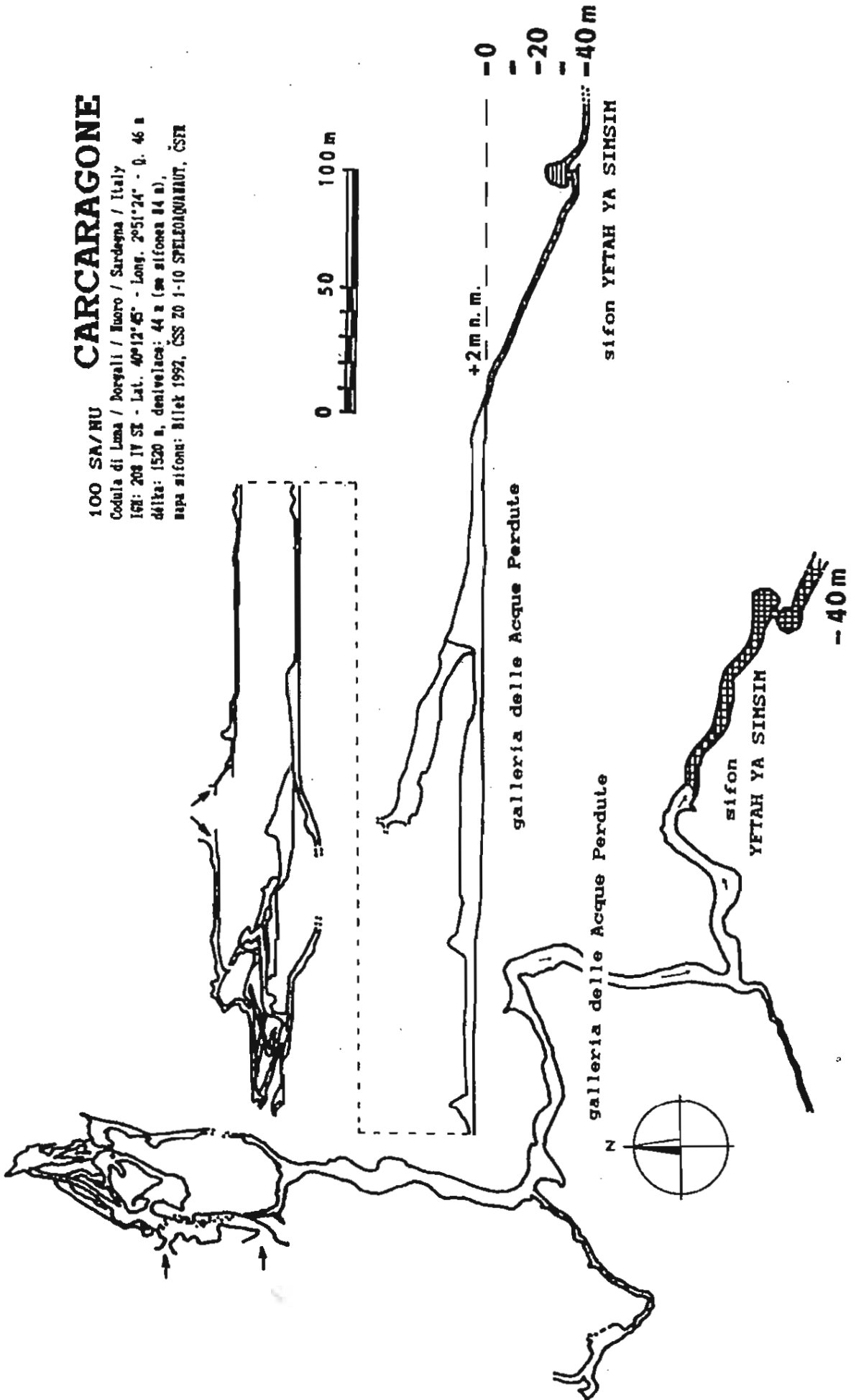
During several visits we made the map of well-known submarine resurgence up to the end, 634 m far from entrance.

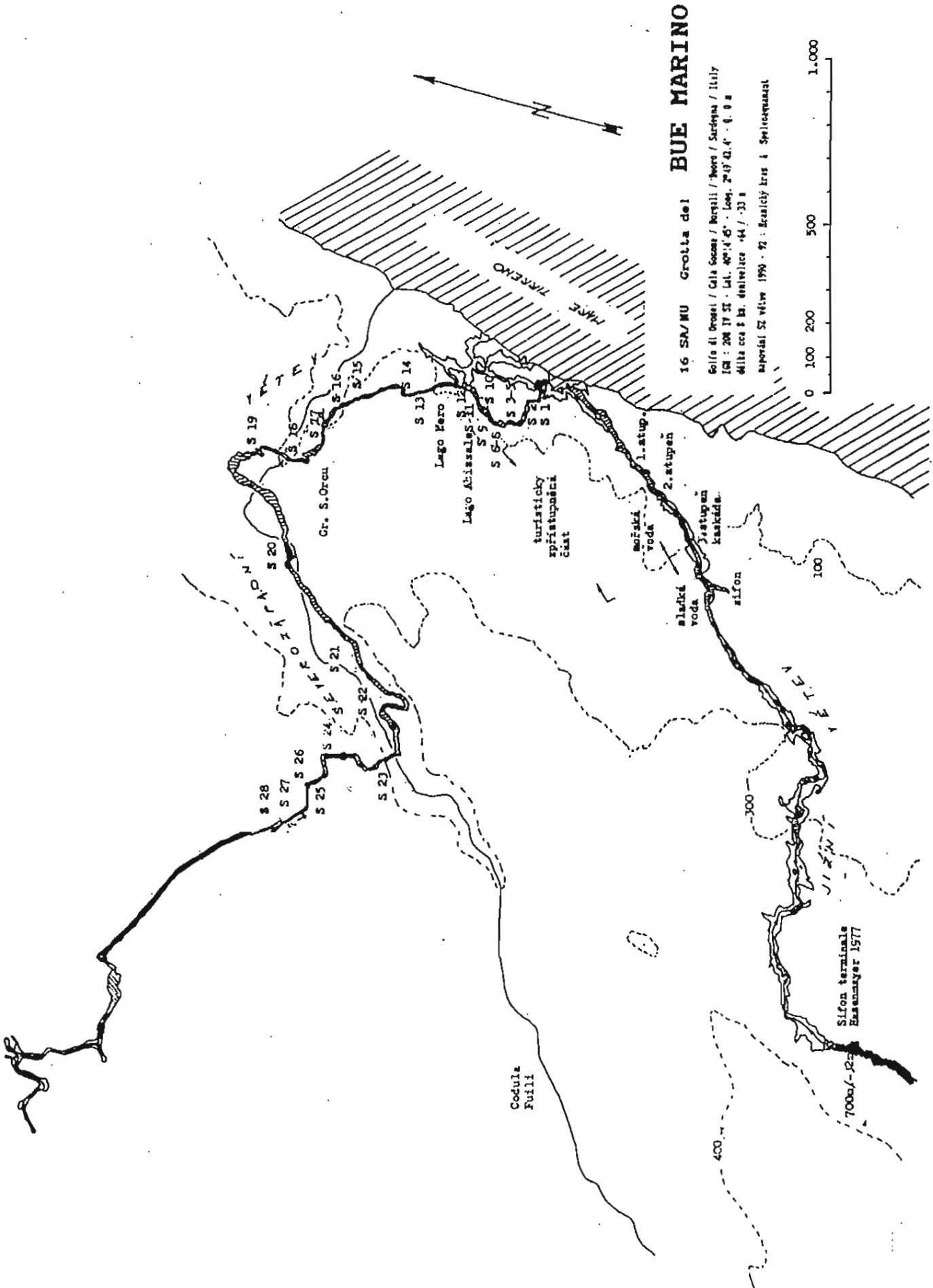


CARCARAGONE

100 SA/HU

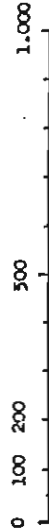
Codula di Luma / Borgallì / Nuoro / Sardegna / Italy
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dàlta: 1520 a, deàlveàlca: 44 a (m sifonea 84 a),
màpà sifone: Bilet 1992, CSS 20 1-10 SPELEOQUANT, CSEI





16 SA/MU Grotta del BUE MARINO

Grotta di Orcesi / Cala Gocce / Nurallì / Nuoro / Sardegna / Italy
 IGM : 208 IV SE - Lat. 40° 4' 5" - Long. 7° 43' 42.4" - 0 - 0 m
 délta cca 8 km, dérivace -44 / -33 m
 zepovadl SE vltve 1990 - 92 : Eranický bris i Splicequasat



Cave Carcaragone.

This is the last inland cave of the significant cave system (total cca 38 km) of Codula di Luna (Moon valley). The new push at the foul downstream sump Yftah Ya Simsim was made to the depth -40 m at the distance 120 m. This discovery enhanced the denivelation of Carcaragone up to 88 m. The entrance in the sump is 2 m above sea level, therefore the bottom is -38 m under the sea level.

Show sea water cave resurgence Bue Marino (Seal cave).

This is very important and monumental cave of Moon valley system. The entrance with ship port is contact of two branches and two brooks from north and southwest. Many guidelines, wires and shell prospectors give evidence about great interest, but nobody made any maps except Hasenmayer's sump at the southwest part. Any reports and distance data were very approximate, no essential documentation was saved.

At the year 1990-92 we made UV photo and video documentation at the North corridor, mapping totally 4800 m, 1720 m of that under the water in 31 sumps, max. depth -33 m, max. height 60 m. Probably the last 2 km of that corridor was never visited. At the 19th sump, dry ascending Bats gallery was discovered with bat skeletons in the loamy collapse 60 m above the water (=sea) level. This place corresponds to the bottom of the dry cave Sa Orcu in the valley Fiuli. Slowly flowing water in sump is divided by halocline into upper fresh and lower salt part. Waves on the sand bottom give evidence about high water during the spring rains. In light limestone are somewhere replaced the basalt boulders. At the end of north corridor can be seen little springs of fresh and brakic water, several kilometres of and several meters above the sea.

Sea cave Fico.

At this sea cave, inhabited by Mediterranean seals, cave divers from group Hranický kras discovered over 300 m long sump and dry passage.

Jiří Hovorka

OWEN 90 - NEW ZEALAND

Speleoclub Albeřice organized in spring 1990 nine-strong expedition into the New Zealand. The expedition explored the southwestern part of the Mt. Owen karst massif (northwestern Nelson, Southern Island).

The area explored is built mainly of metamorphosed carbonates of the Arthur Marble (Upper Ordovician) of the Mount Arthur Group (Upper Ordovician to Lower Silurian). Carbonates are massive, occasionally bedded, bluish grey to black in colour, originally probably biomicrites. They contain 85 to 98 % CaCO₃ and 1.8 to 4 % MgCO₃. Frequent silicified intercalations contain only 26 % of carbonates. In addition, there are abundant quartzites, while sandstones and siltstones occur less often.

There are frequent occurrence of loamy debris at foothills and on depression bottoms. Fragments of sandstones prevail, carbonates are rare and are present as large blocks only. Sinkholes are most common feature. They are developed in non karst rocks as well (subjacent karst). There are also active gulpholes, one ponor and two springs.

The expedition discovered number of small caves and two extensive cavern systems: The Achernar and Bohemia Caves.

The entrance to the Achernar cave lies at altitude of 1200 m a.s.l. Down to the depth of about 50 m, it represents the system of passages, domes, channels and some shallow shafts divided into three main branches. Passages are often colmated with sediments. From the depth of 50 m downwards, the cave continues as meander with several vertical steps and shafts. The meander issues into the roof of an extensive dome. The cave length and depth are 1540 and - 252 m respectively.

The cave developed in massive marbles. Cave is very narrow in marbles intercalated by silicified beds, where passages are combined with vertical joints. Wider passages and domes developed along bedding planes, less frequently along subhorizontal faults in massive rocks. Fossil (phreatic) parts of meanders were generally founded along bedding planes, while lower (vadose) parts usually cut bedding diagonally. The large dome in the lower part of the cave developed along the contact zone

of marbles and greyish black phyllites of the Flora Formation.

The most common fillings are represented by silty clay and silty loam, while semirounded pebbles (dominantly sandstone, quartzite and quartz) occur less frequently. The heavy mineral fraction of the passage filling contains mainly magnetic ilmenite and less common garnet.

While stalactite straws represent the most frequent speleothem, stalactites and stalagnates being rare. In addition, there are flowstone films, curtains, floor flowstones, sinter pools with cave pearls and crystalline calcite forms, remnants of honey-coloured stratified flowstones and helictites, which can be divided into the following groups: 1) anthoditic excrescences and fibres, 2) aragonite - iron blossoms, 3) helictites - combination of first and second types, 4) ochreous worm - like helictites and stalactite straws, 1 to 1.5 cm in diameter, hollow with recrystallized, up to 1 mm thick walls. The helictite speleothems consist of aragonite-calcite mixture.

Phyllite debris contain many tiny crystals of pure gypsum. Hydromagnesite ($MgCO_3 \cdot 0.6H_2O$) constitutes occasional centimetric layers, spheroidal forms on stalactite ends, or flag-like forms ("frost") on their sides.

Weak activities stream flows from 50 m downwards and disappears in two places. Similar stream is found in side branch of the middle cave level, while another with the discharge of about 1 l.s^{-1} (even during long dry periods) appears at -150 m and disappears in narrow channel in the lowest part of the cave.

Strong draught blows toward the entrance. It is less intensive during periods of low atmospheric pressure and relatively warm and humid weather. The temperature in the upper part of the cave varies from 3.75 to 4.5°C.

Three evolution stages have been preserved in the cave: (1) especially the nothephreatic, (2) phreatic with vadose changes, and (3) vadose. The upper part of the cave may be considered as the invasion-type infiltration ponor cave. The pre-Pliocene channel and passage network was subsequently colmated and stratified floor flowstone was formed. The main area uplifted and Pleistocene glaciation resulted in exhumation of

sediments from colmated passages and in rapid development of vadose passages and entrenchments. Injection facies of deposits are probably dated back to Late Pleistocene glacial time and most decorative elements are even younger.

The entrance of the Bohemia Cave lies at altitude of 1250 m a.s.l. The uppermost part of the cave is represented by the system of passages and domes with highly weathered walls. There is significant evolution level underneath consisting of fossil phreatic passages and lateral labyrinth of predominantly phreatic channels and passages. Downwards, there is the system of channels and narrow fossil meanders leading into wider meanders with active stream. Down from -130 m to -386 m, there is the system of giant domes. Their length and average width are 810 m and 65 m respectively. The overall length of the cave system is 3170 m (approx. up to 3500 m when unmapped passage are included), the denivelation is equal to 393 m (-386 m, +7 m).

The cave developed in massive marbles and marbles with silicified interlayers. Passages were founded along bedding planes. Vadose parts of meander cut the bedding diagonally. The giant domes developed along the contact of marbles with non karst lithologies. Black phyllites of the Flora Formation and silver green phyllites of the Piki-kiruna Schists are uncovered here.

Clastic fillings are represented mainly by residual clays to silty loams, loams, loamy debris with some large pebbles (injection facies), congelifraction debris (at the entrance), phyllite and carbonate debris with clayey matrix, and giant-sized blocks (up to 500 m^3) in giant domes, and gravel. Gravel occurs either in relics of terraces or was washed away. Pebbles are built of varied petrologies (very low quantities of carbonates). They are sorted and more or less rounded. Their diameter is up to 10 cm.

Stalactites, stalagmites, stalagnates and helictitic forms, and to a lesser extent stalactite straws, are the most common speleothems. Honey - coloured stratified flowstones, up to 70 cm thick, their remnants and stalagmite trees consisting of small yellowish calcite crystals are rare. The helictitic forms may be subdivided into four main groups, often combined and chaotically intergrown: (1) anthoditic excrescences and

fibres, (2) aragonite - "iron blossoms" (giant-sized tufts with diameter up to 1 m), (3) helictites, and (4) straws growing out in every directions, 1 to 5 cm in diameter and up to 50 cm long. Hydromagnesite balls occur on ends of some straws and stalactites.

The first active stream originates in the uppermost point of the cave, but disappears in sediments of the fossil passage. The main stream is running down the meander in the middle cave level, taking up some tributaries flowing through giant domes or passages parallel to them, takes another right side tributary and continues into unexplored parts.

There have been three evolution stages preserved: (1) phreatic, (2) phreatic-vadose and (3) vadose. The formation of phreatic passages was followed by local drop of the erosion base level and after long period of quiescent tectonic regime by the development of extensive level with phreatic passages (pre-Pliocene). During the main area uplift, the paleostream entrenched non karst underlayer changing its direction from N-S to NE-SW. Water from melting Pleistocene

icecaps accelerated the downcut of meanders, lateral widening of domes and destruction of gravel terraces. The injection facies and congelifraction debris are dated back to Late Pleistocene.

Speleothems are generally young and originated only after gravel was washed away. Stratified flowstones are older and were eroded together with gravel.

Plateaus at altitudes of 1200 to 1250 m a.s.l. are found in broader surroundings of the area of interest. The area proper comprises valley relicts. At that altitude, intense karstification took place (pre-Pliocene). The drainage pattern of the area changed during the evolution from north to south direction into the radial one at present time. The area explored is drained by non karst underlayer to the Fyfe River valley in the southwest direction.

(The expedition report-brochure was published and there are available details of the expedition. Report can be ordered at following address: Dr. Radko Tásler, 542 24 Svoboda nad Úpou, Czech Republic.)

David Havlíček, Radko Tásler

IV.

ABSTRACT OF PAPERS PRESENTED ON THE CONGRESS CAVES OF DOLNÝ VRCH PLATEAU IN THE SLOVAK KARST

The Dolný Vrch (Alsó hegy, in Hungarian "Lower Hill") is located at the easternmost corner of the Aggtelek karst in North Hungary and in the Slovak karst in Slovakia.

In geological structure of Dolný vrch, Triassic carbonates (Pelsonian to Ladinian) are widespread. They are strongly karstified, light and grey in colour. Outcropping on the upper part of the northern slopes of the plateau, on the slopes without vegetation and on the brinks of the depressions. It is possible to find them also as outcrops in the doline walls or on the boundary between dolines. Basal rocks of lower Triassic, so-called Werfen schists, are visible on the surface SE and S of Silická Jablonica

village (Hradecký et al. 1974). Non-karstic rocks are also outcrop on the southern (Hungarian) slopes of Dolný vrch and between Bódvaszilás village and Szádvar Hill. Upper Triassic rocks were found also in the Hungarian territory (Sarváry 1971).

A special type of vertical caves occur in large numbers on the Triassic limestone plateau owned by two nations in a rather confined area of about 3 km². With the term "pothole" those vertical caves are specified in this area that according to the latest understanding, most probably, are made by the solution effect of infiltrating meteoric water along vertical fissures. The potholes do not function as water swallets (sinkholes) and, proven by water tracing, they do not belong to the recharge area of any specific karst resurgence at the foothills, but they conduct water to the main karstic aquifer thus effecting more than one springs. They have no known continuations, most of them

are choked by debris and those pits that do not have any opening directly to the surface have mostly clay fills at their bottoms.

Systematical speleological survey in the Slovak side has continuing since 1962. In the year 1973 the topographic maps of the central part of the plateau with the highest concentration of karst phenomena were drawn. 51 potholes and three caves were registered (Hradecký et.al. 1974). In 1984, 61 potholes and 15 caves were registered (Havlíček and Vojtíš 1984) and now we know about 78 potholes in the Slovak side. Hungarian side has been systematically studied since the fiftieth and the last monography on this topic called "Dolný Vrch Pothole Atlas" was published in 1992 in Budapest.

On the poster, there are depicted the most important potholes of the territory and the results of the speleological investigation from last two years.

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David Havlíček, Luděk Vlk

SALT KARST IN ZAGROS FOLD BELT (SE IRAN)

Zagros Fold Belt represents a conspicuous landscape formed by huge elongated anticlines breached by salt domes (diapirs).

In the region of Bandar Abbas, about 60 such plugs occur. They are formed by Late Precambrian middle Cambrian salt of the Hormoz Complex containing blocks of "exotic" rocks of different sizes (ultrabasic, acid volcanics and volcanoclastics, gypsum, redbeds etc.). Salt domes can be subdivided into three morphological groups, i.e. (1) active domes with positive morphology, sometimes with salt glaciers, (2) passive domes showing hilly landscape highly dissected by erosion, and (3) ruins appearing on the surface in limited relics. Active salt domes are growing at the present time, other types are inactive. Diapirism is caused by several impulses, especially stress of folding, activity on basement faults and halokinetics. The activity of diapirism can be dated back to Lower Cretaceous, at least, with massive appearance of domes on the surface in Miocene - Pliocene times.

Karst forms are developed in a broad variety. The most distinct are surface forms, mostly collapsed sinkholes with diameters of several to several hundreds of metres and depth to 50 m. Very common are different smaller pipe-like vertical channels. On passive plugs, large depressions of the uvala to polje type can be observed. Rugged karstic surface is typical for less active plugs and for uplifted planation surfaces on highly active ones. Subsurface karst forms are abundant, although poorly accessible due to collapsing, high H₂S contents or position in unstable salt walls. The largest caves were discovered in Namakdan salt dome on Qeshm Islands. Low sinuous water cave with entrance 20 m broad and about 12 m high continues several tens of metres into salt representing resurgence of complex system with ponors in large depression above the cave. Caves are decorated by salt speleothems of different morphologies.

Pavel Bosák

V.

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Your support will be appreciated

PRAGA SUBTERRANEA

RNDr. Václav Cílek

Prague the capitol of Bohemian Kingdom evolved in 10th century from dense but diffuse Neolithic, Bronze age and Celtic settlement to Early Medieval town which soon became one of three biggest European Cities in 14th century.

The town was built on Late Pleistocene river terrace so no larger underground cavities could be constructed. Due to the river floods and 3-5 m thick layer of artificial dump the oldest Romanesque buildings were deeply buried so nowadays about 70 such objects gives the unique image of the earliest stage of city development including old Judith's bridge, Romanesque Palace of Czech kings on Castle of Prague and former churches which are now preserved as crypts of Gothic or Baroque churches. The most famous such object - Pre-Romanesque crypt of St.Marguerite Abbey in Břevnov - dates to 993 A.D.

Another important subterranean objects are local water supplies which are associated with number of small bedding springs emerging from Cretaceous Basin. The springs were caught in by the system of water adits during 12th century in Strahov monastery and during 14th century and later on Castle of Prague. For example in Petřín and Strahov hills more than 20 water adits of 2 km of total length still exist. They were many times prolonged to yield higher water capacity so now the longest one is 365 m long. The similar system of water adits in Střešovice, Veleslavín, Bílá Hora established about in 1540 supplied the Castle of Prague.

The Roman emperor Rudolf II. projected in 1582-1593 another strange and in his time unique water adit called Rudolf's passage to bring water from Vltava to his gardens in Stromovka. The 1102 m long, beautiful, hand made adit with 4 shafts still serves its original purpose. Several grottoes appear in Prague. The most famous is Renaissance grotto in Valdstein Palace and Romantic 19th century grotto called Grébovka in Havlíček's gardens.

The Baroque and Anti-Reformational movement produced number of large Baroque churches. Most of them hide larger or lesser crypt such as st.Trinity church in Spálená Street, st.Francis church and st.Havel churches in Old City, but the most strik-

ing crypt with mummies is Carmelitan church of Child Jesus on Lesser Town. Josef II. prohibited the burials inside city walls and ordered the dead bodies to be buried on cemeteries but we believe some crypts were liquidated simply by enclosing in a wall.

Underground quarries represent another specific type of artificial underground. They occur or occurred in Cretaceous sandstones of Strahov, Břevnov, Střešovice hills, in the edges of Prosek and Hloubětín plains. The principal raw material was white soft kaolinitic sandstone used for stucco and casting. The labyrinth of former 5-7 km of passages existed under Prosek but due to the frequent collapses, few isolated max. 500 m long underground quarries still exist. The remains of Cretaceous coal and Ordovician sedimentary iron ore mining can be found in Petřín and Hloubětín (coal) and in Červený vrch, Jenerálka, Trója (iron).

The military underground of Prague developed during the construction of huge brick Baroque fortress encircling the whole Prague. The casemates can be found in Vyšehrad, Hládkov, Strahov, Kračmář's villa. The underground aquifer is hidden in casemats of U Brusnice Street on Prague Castle. Military hideouts were constructed before the 2nd world war and later in 1943-44 under the German rule in Hloubětín, Braník quarry and elsewhere. Some of them were used even later.

The area of Bohemian karst extends into Prague. Some 30 small caves are known to occur in the Prague. The largest one - St.Procopius cave some 120 m long, famous pilgrim's place and ancient man locality, was destroyed by quarrying during last century.

The pseudokarst is represented by narrow gravitationally widened fissures in sandstones. The strange cave 6x2x2 m covered by quartz crystals up to 3,5 kg heavy was discovered and destroyed at 1883 in Šárka valley in Proterozoic graphitic quartzites.

The modern speleological research conducted by Czech Speleological Society is gradually becoming the part of reconstruction plans of old monuments in cooperation with building companies.

STOP



AIDS



The Czech Speleological Society 1989-1993. Vydalo nakladatelství Zlatý Kůň a Česká speleologická společnost (předsednictvo, Slezská 9, 120 00 Praha 2) u příležitosti konání XI. mezinárodního speleologického kongresu 1993 v Číně. Rozsah 4,10 AA textu. Editor: Pavel Bosák. Ilustrace na obálce a na str. 45: Kája Saudek. Vytištěno v Praze v červenci 1993.

ISBN 80-85304-20-1