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Dr. Pavel Bosák
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UIS-BULLETIN

Union Internationale de Spéléologie

1999 **Volume 45** **Number 1/2**

Editor-in-Chief: Pavel Bosák

EDITED IN DECEMBER 1999 * EDITÉ EN DECEMBRE 1999 * AUSGEGEBEN IN DEZEMBER 1999

!To whom who forget to fill the form in UIS Bulletin Vol. 44!
!Do not forget to fill attached form! The last call!

The 13th International Congress of Speleology in Brasilia D.F., Brazil, July-August 2001

SPELEO BRAZIL 2001

SPELEOLOGY IN THE THIRD MILLENIUM: SUSTAINABLE DEVELOPMENT OF KARST ENVIRONMENTS

Promoted by: **Brazilian Speleological Society (SBE)**
Speleological Federation of Latin America and the Caribbean (FEALC)
International Union of Speleology (UIS)
Organized by the Brazilian Speleological Society
Supported by the Ministry of the Environment/IBAMA/CECAV

Pre-Congress Excursions: **July 14-21, 2001**
MAIN EVENT: **July 15-22, 2001**
Post-Congress Excursions: **July 23-August 8, 2001**

Symposia: XVth International Symposium of Biospeleology; IInd International Symposium of Archaeology and Paleontology in Caves; Ist International Symposium of Cave Diving; Lectures and Round Tables; Papers and Posters
Institutional Activities: Assemblies (UIS/FEALC/SBE)
Socio-cultural Activities: Exibits, Speleomedia, Speleoart, 1-day trips

Pre- and Post-Congress Trips in Brazil

1.Touristic Management of Southern Brazilian Caves: 8 days USD 600*
2. Quartenary Registers and Environmental Impacts around Lagoa Santa: 3 days USD 350*
3. Show Caves and Historic Cities of Minas Gerais: 5 days USD 350*
4. National Park of the Serra da Capivara: 7 days USD 400*
5. Speleology and Archaeology in the Valley of the Peruaçu River: 6 days USD 600*
6. Bonito and the Pantanal of Mato Grosso do Sul: 6 days USD 520*
7. Cave Diving in Bonito and a Trip to the Pantanal: 6 days USD 400*
8. Caves of São Domingos: 6 days USD 500*
9. Caves and Karst of the Chapada Diamantina: 8 days USD 600*
10. Cave Diving in the Caves of the Chapada Diamantina: 8 days USD 800*
11. Quartzite Caves in Ibitipoca: 4 days USD 400*
12. Caves of Ibiapaba and the beaches of the Northeast: 6 days USD 520*
13. Caves in the Ribeira River Valley: 7 days USD 380*

Post-Congress Trips to Other Countries

1. Mayan Caves and Culture on the Yucatan Penisula: 7 days USD 700*
2. Caves in the Andes in Argentina: 7 days USD 800*
3. Caves and Pyramids in Central Mexico: 5 days USD 700*
4. Guacharo Cave and the Tepuys of Venezuela: 7 days USD (not stated yet)
*Terrestrial part only

Call for Papers

All contributions are welcome. Papers will be submitted to a committee of referees. Languages: English, French, Spanish, and Portuguese (no simultaneous translation provided)
Deadline for abstracts: July 31, 2000

Registration Fees (Usd)

Date	Full	Partial*	Accompanying Person
Until June 30, 2000	160	100	80
Until December 30, 2000	200	140	110
Until May 30, 2001	220	160	130
After May 30, 2001	250	190	150

* Without Congress proceedings

Contacts

For latest news, registration forms, prices, general information, excursion details, and program update
Visit our site: **http://www.speleobrazil2001.org.br**
Questions, opinions, special requests, and sponsorship: e-mail: **info@speleobrazil2001.org.br**
Brazilian Speleological Society (SBE)
Organizing Committee of Speleo Brazil 2001
CECAV
Ed. Sede IBAMA-SAIN
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Errata and Changes

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COMMISSION ON HYDROGEOLOGY AND SPELEOGENESIS
COMMISSION POUR LE HYDROGÉLOLOGIE ET SPÉLEOGENIE

President: Alexander KLIMCHOUK, Ukraine

PERMANENT COMMISSION ON SPELEOTHERAPY
COMMISSION PERMANENTE DE SPÉLÉOTHERAPIE
Honorary President: Beata SANDRI, Austria
President: Svetozár DLUHOLUCKÝ, Slovakia

CAVE DIVING COMMISSION
COMMISSION DE LA PLONGÉE SOUTERRAINE
President: Jean-Jacques BOLANZ, Switzerland

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Délégue titulaire: Jan Paul van der PAS (NL)
Délégue suppléant: Jasminko MUOLAMEROVIĆ
France-France
Délégué suppléant: DUBOIS Paul
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Délégue suppléant: Ir HANANG SAMODRA
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News from Member-Countries

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Hungary

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E-mail: mkbt@mail.matav.hu
President: László Korpás
Honorary President: György Denés
Secretary General: Péter Börcsöl
Vice Presidents: Tamász Hazslinsky and Miklós Gádoros
and 6 other officials

Spain

New President of the Federacion Española de Espeleología
Juan Carlos López Casas

Italy

New address of the Club Alpinisto Triestino
Via Carnaro 21, I-34145 Trieste, Italy

Venezuela

As far as I know, no caves or karst were damaged, because the floods were in flat Quaternary lowlands and the landslides were mainly on the coastal area, on a metamorphic mountain range. There are some small marble bodies with some nice caves, but I have not been able to go see them, due to work and that the access roads are flooded. But I don't think anything happened there.
Ivan Rubesa, Caracas

Slovakia

The surveyed length of the Demänová Cave system is 27,238 m (by Peter Holúbek, January 9, 2000).

Indonesia

FINSPAC Report on Caving Activities and Karst Science in Indonesia 1994-1997.

1994 – After attending the 11th International Congress at Beijing, the FINSPAC has decided to make a comprehensive report on the differences in karstospeleological activities in Indonesia, compared witth the International status, which can bbe drawn from the UIS reports of the several commissions, published in it´s bulletin.

This extensive report was presented and published at the 10th Ynniversary of the FINSPAC, which tool place at the gajah Mada University at Yogyakarta. Attended by students of several Faculties from the University and other Education Centers in Yogyakarta. Fieldtrip to the classical karst of Gunung Sewu was undertaken, led by scientists from the FINSPAC: geologist, pedologist, biologist, dendrologist and speleologist. The objects of study were karst geomorphology, hydrology, pedology, plant endemism and speleogenesis of the very interesting Suci River system and it´s giant collapse sinkholes.

This report was distributed to all relevant Governmental offices, still ignorant about the diverse values of karst and caves in Indonesia.

Caving expeditions by French and Indonesian teams to Gua Barat in Central Java took place successfully. French biospeleologists went to the Karst of South Sulawesi, without FINSPAS knowledge, but they were assisted by Speleoclub members from Yogyakarta, affiliated with the FINSPAC (ASC Speleoclub).
Further exploration of the Gunung Sewu Karst was undertaken by Yogyaś active speleogroups, which on a regular base organiza informal meetings to discuss speleotechniques, especially cave rescue techniques and cave mapping.

French and the FINSPAC members explored the Gua Barat cave in South Gombong Karst, for the fifth time, and at last found the inlet, 7,5 km away. This cave has the difficulty scale of extreme. Gua Jatijajar, nearby, first cave dived by the Belgian cave divers in 1990, was explored by the FINSPAC and later assisted bdy a French spelunker. We come to the conclussion, that the underground streams of the South Gombong karst forms a giant underground delta.

1995 - Due to kidnapping of several foreign and Indonesian scientists by Irian Jaya insurgents, all speleo-expeditions to this biggest and highest, mostly unexplored karst region of Indonesia, were strictly forbidden. Especially since some caves were used to hide the hostages. This particulary disappointed the British speleoteam, that would continue their exploration of the highland karst and caves around the Carstenz Peak.

The French archaeological team, that has sponsored a postgraduate student of the Technical University of Bandung, recommended by the FINSPAC, turned in their report of the 1994 exedition to the caves of Kalimantan with the cave paintings. According to them; there is a correlation between these cave paintings with those of the Philipine caves, supporting the hypothesis, that Kalimantan was connected with the Phillipines in the past.

The FINSPAC was officially consulted by the Minister of Forestry, to scrutinize the feasibility of an investor, to mine a karst area in Central Java, where the most productive endemic teak forest was located, many trees more than 60 years old. The investor was also planning to use the only available karst spring for the cement factory, while it is used for watersupply by more than 1,000 inhabitants of nearby villages. A multidisciplinary team, working independently from FINSPAC, came to the similar firm conclussion, that this karst area is NOP feasible to be mined. Thus the investor was denied exploiting this karst.

1996 – the FINSPAC organized a National Symposium on Karst, sponsored by the Ministry of Forestry and attended by more than 100 scientists of different disciplines from several Universities and Research and Development centers, with keynote speakers from the Indonesian Science Institute, Ministry of Forestry, Ministry of Environment, Ministry of Mining and Energy, Directorate General of Tourism, National Planning Board.

The main purpose of this Symposium, however, was a strategy to acknowledge the diverse values of kartst, which is being destroyed en masse in Indonesia by cement industrie. Investor was invited and involved in heavy argumentations. Ufortunately, despite strong support of the Minister of Forestry, to protect the very important (hydrological and heomorphological) karst of South Gombong, - agreed by him to be converted as a National Park-the NON-forested part of this karst was deliberately agreed by the Minister of Environment, to be exploited. The letter of UIS, requesting this particular Karst Area to be protected, handed over in 1994 to 5 ministries, was NOT considered as

an important international scientific contribution to utilize this classical karst for hydrology, geomorphology and tourism.

There is now strong evidence that the very unque and classical karst of Gunung Wewu, will also be destroyed, while this internationally famous karst should be considered as WORLD HERITAGE.

A team of British and French cave explorers, jointly surveyed the karst area in East Kalimantan, originally explored by the French in 1982 and 1985. They have found several important caves, which are worth another visit.

The FINSPAC again organizes an important fieldtrip to the GUNUNG SEWU Karst region, this time attended by scientists form the Geographic and Biologic Faculty of the University of Gajah Mada and many students from Yogyakarta, Semarang and Surakarta. It was also taken part by senior teachers in Geography of Semarang, Yogyakarta and Surabaya of East Java.

Sessions on Endemism of Karst Vegetation, Microkarst Forms, and Karst Denudation were held. Geomorphology and Hydrology were discussed at length. Data are being collected to support the decission of the Minister of Forestry to acknowledge it as a National Park. A preliminary step towards recognizing it as world heritage.

The FINSPAC organizes the 28th Course in Speleology, this time attended by representatives of the Maluku Tourism Board that will develop the magnificently decorated Akohi Cave at the Island of Ceram.

1997- A Belgian cave diving and cave exploration team, described the huge andesitic boulder inside Macan Cave. First found by an English-Austrian Indonesian caving team in 1982. They have also cave dived the Macan underground river and Baron Resurgence and Baran Cave. Together with Indonesian Students, they have also mapped the hitherto unexplored Gunung Bolong and Awi-Awi caves. Up till now, about 500 caves are known and mostly explored and mapoed at the Gunung Sewu Karst. But nearly every month, new unexplored caves are still being found by Yogyakarta ardent spelunkers.

A strong caving team of the Catholic University of Yogyakarta; sponsored by the University Rector and the FINSPAC, will go on an expedition to West Kalimantan, near the border with Sarawak, where they have reconnoitered most probably the deepest pit in Indonesia.

Information from the UIS Bureau

Regular sessions of the Bureau of the International Union of Speleology

Jedovnice, Czech Republic, September 8-9, 1999

Present: Julia Mary James (President), Claude Mouret (Vice-President), Aleksander Klimchouk, Robby T.K. Ko, Urs Widmer (Secretaries Adjoint), Pavel Bosák (Secretary General)

Past-Presidents and Honorary Members: Hubert Trimmel, Vladimír Panoš

Appologized: Paolo Forti, Andrew James Eavis, Stephen A. Craven, George Huppert, Jose Ayrton Labegalini, Franco Urbani, Abel Vale, Arrigo A. Cigna, Adolfo Eraso Romero, Derek C. Ford

1. *Finances*. Review of finances after the 12th International Congress of Speleology (after audit), i.e. August 1997 to August 1999.

CZK	*final state:*	*28,080.00*	*USD final state:*	*21,751.02*
income 1997		5,141.00		6,320.71
expenses 1999		1,711.20		3,540.25
income 1998		0,000.00		4,625.52
expenses 1998		338.40		0.44
income 1999		45,619.90		1,089.79
expenses 1999		20,959.00		0.44
CHF	*final state:*	*0.00*	*ATS final state:*	*7,005.04*
income 1997		1,510.00		9,495.04
expenses 1999		0,000.00		2,000.00
income 1998		0,000.00		0,000.00
expenses 1998		0,000.00		0,000.00
income 1999		0,000.00		0,000.00
expenses 1999		1,510.00		490.00
SKK	*final state:*	*2.00*		
income 1999		14,172.00		
expenses 1999		14,170.00		

The control of finances showed that about 3.000 USD could be obtained from debts of annual contributions of member countries in an ideal situation.

The correspondence research to establish the account in EURO (together with USD account) was highly positive. The final decision will be carried out after the question of stable address is solved.

2. *Preparation of the 13th International Congress of Speleology*. J. James and P. Bosák informed on their check visit in Brazil (August 1999) and on state of preparation of the event. The result of discussion resulted in some recommendations to organizers.

3. *Stable address of the UIS*. Following the UIS Bureau decision in 1996 (Salida), the proposal of Prof. Cigna to establish the registration of the UIS as non-profit non-governmental body, together with the main UIS bank account

was fully accepted. Mr. Jean.Claude Thies (Luxembourg) and Urs Widmer (Switzerland) will be asked to make research of possibilities.
4. *Responsibilities of individual members of the UIS Bureau*. The proposal of Julia James was discussed in detail. It was decided, that members of the present UIS Bureau will deal especially with following items:
The role of the President and Secretary-General follows the UIS Constitution (Statute).
Both the Vice-Presidents act for the President and chair the Bureau meetings if the President is unavailable.
James Andrew Eavis - Senior Vice-President - contacts with the Speleological Federation of the European Union and co-ordination of activities.
Claude Mouret - Vice-President - representative of UIS with UNESCO.
Stephen Craven - the translator for our documents that need to be presented in good English, for example the UIS Constitution (Statutes). He will run the UIS prizes for the next congress. Co-ordination of UIS activities and the contact person for Africa.
George Huppert - advisor for UIS on conservation and cave management matters. Co-ordination of UIS activities in conservation, contacts with IUCN and the contact person for North America (USA, Canada, NSS, …).
Alexander Klimchouk - the improvements in the UIS Constitution (Statute) and other principal documents. Organiser of a major publication on karst for the Union. Co-ordinator of contacts with IGU Karst Commission, responsible for fulfilling of Agreement with IGU.
Robby K.T. Ko - responsible for relations within Asia and work on obtaining new members for the Union, incl. affiliated ones.
Franco Urbani - co-ordination of UIS activities and the contact person for South America, contacts to the FEALC, and assistance with the organisation of UIS 2001.
José Ayrton Labegalini - the organisation of UIS 2001.
Abel Vale - assistance to George Huppert with conservation matters and assistance with the organisation of UIS 2001.
Urs Widner - main UIS adviser to the Brazilian group organizing the UIS 2001, responsible for advertisement affairs, etc.
5. *Affiliated members to UIS*. The problem of affiliated membership was deeply discussed. The general conclusion from it is that (1) the height annual contributions should be proposed by the affiliated member; (2) the UIS Bureau expects that the affiliated members are such bodies who want to supply the activity of the UIS by different ways, and not bodies, which solves national problems of mutual communication among caving national bodies.
The demand of the Croatian Mountaneering Association to become the affiliated member was accepted by voting.
6. *Internal Reglement*. It was generaly decided that the Internal Reglement will be completed according to proposals of the UIS Buerau members.
7. *Remission or shortage of annual fees*. The UIS Bureau accepted the demand of Israel (presented in a latter by A. Frumkin) to remit fees before year 1993, as the united caving organisation did not existed before. The UIS Bureau accepted to remit payments of Bosnia and Herzegovina on demand of J.P. van der Pas. The remission is valid until next UIS Bureau decision.
11. *UIS Constitution - changes and translations*. The UIS Bureau stated that there are no principal necessities for another changes of the principal UIS document in a short time. All eventual changes had to be based on translations of the Constitution to other official UIS languages, especially to English. This is the principal task of the Commission on Statute.
12. *Relations to UNESCO*. C. Mouret is responsible for contacts. If necessary, he will ask Mr. Jaques Choppy for consultations, help and/or substitution.
13. *Financial support for UIS Commissions and Working Groups*. The UIS Bureau decided to grant UIS Commissions and Working Groups by max. 200 USD for 2000 based on precise annual report of each Commission and Working Group and detailed requests. The money will be precisely accounted according to conditions stated by the Secretary General in information letter to Commission/Working Group Presidents.
14. *Varia*.
1. proposal of S. Craven for *Chairman, Treasurer*. .... The function of Chairman is not constituted in the UIS principal documents (Statute, Internal Reglement). The role of the Chairman will be served by the President and/or Vice-Presidents. The separate function of the Treasurer is not also mentioned within the UIS Statute. It could be appointed in the connection with future development concerning the establishment of bank account out of place where the Secretary General is living or in connection of necessary investments.
2. The UIS Bureau accepts the information of A. Slagmolen in improvement of structure of the UIS Commission on Cave Rescue.
3. The European Congress on Speleology in Portugal 1999. The Secretary General will travel there, thanks to the offer of A. Eavis. The co-operation with SFEU will be discussed.

Speleological Federation of European Community

Founded in 1990 to (1) establish a council with representatives of the countries of EEC; (2) promote sport and scientific speleology and communicate information teaching, cave rescue, cave protection, karst and water protection,

information and publications; (3) share and communicate information in terms of insurance and access to caves, and (4) encompass speleology in all its forms.
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Andy Eavis (Great Britain)
Vice President
Juan Carlos Lopez (Spain)
General Secretary
Olivier Vidal (France)
Treasurer
Jean-Claude Thies (Luxembourg)

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Austria (member since 1995)
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fax: ++353-65 70 78 195
e-mail: burroec@tinet.ie
Luxembourg (member since 1990]
members 65, clubs 1
Federation: Groupe Spéléologique Luxembourgeois asbl
B.P. 55, L-8001 Strassen
e-mail: speleo.lu@bigfoot.com
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Delegate: Jean-Claude Thies
21, Rue Du Merschgrund, L - 8373 Hobscheid

private fax: ++352-39 77 17
office tel.: ++352-42142 7300
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The Netherlands (member since 1990)
members 400, clubs 1
Federation: Speleo Nederland,
P0 Box 19177, NL-2500 CA Den Haag
e-mail: speleonl@xs4all.nl
web: www.xs4all.nl/~speleonl/index.htm
Delegate: Jean Paul van der Pas
Vauwerhofweg 3, NL-6333 CB Schimmert
tel.: ++31-45 40 41 600
Portugal (member since 1990)
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Federation: Sociedade Portuguesa de Espeleologia
Rua Saraiva de Garvalho, 223, P-1350 Lisboa
tel.: ++351-1-396 62 91
fax: ++351-1-396 62 91
e-mail: spe@ip.pt
web: http:/www.geocities.com/CapeCanaveral/3119/
Delegate: Orlando Cordeiro
Rua Candido Oliveira 23, P-2825 S. Pedro da Trafaria
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office tel.: ++351-1-276 70 63
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Sweden (member since 1997)
members 600
Federation: Sveriges Speleolog-Forbund
P.O. Box 16013, S-72016 Västeras
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web: http:/www.algonet.se/-swecave/
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Finland
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Federation: no existing federation
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From Commissions and Working Groups

UIS Cave Rescue Commission

Expeditions Safety & Rescue

One of the concerns of the UIS and its Cave Rescue Commission is the assistance and rescue to expeditions, taking place or in isolated areas, or during advanced explorations using equipment or techniques not in common use by local cavers.

In this second case, help for assistance has to come from a caving group using equivalent techniques. A solution is to rely on another caving expedition, operating in a rather nearby area. And, indeed, we do often have two expeditions in the same region at the same time. But we must know it first...

The UIS Cave Rescue Commission has mandated one of its members to produce a yearly census of forthcoming expeditions and get the list ready in June, before most expeditions leave.

We kindly ask all countries to :

1. Forward before June the following details on forthcoming expeditions of the year: Country, Region(s) and Place(s), Period(s), Address, telephone, fax and/or e-mail of the organizer in the country of origin, Address, telephone, fax and/or e-mail of a contact officer on site or nearby, Caving and Rescue equipment available, Number and qualification of experienced cavers that could provide assistance.

Information given to the UIS Cave Rescue Commission is for the only use of caving expeditions that may need assistance. No other use of such information will be made.

2. Get informed from the UIS Cave Rescue Commission about possible caving expeditions to the same region and at a similar period.

Please enquiry and forward requested information to:

Bruno DELPRAT
71, rue de Strasbourg
F 94300 VINCENNES, FRANCE
Tel & Fax : ++33-1-49.57.02.05
e-mail: fdelprat@pop3.club-internet.fr

Regional Coordinators

Objective: A network of Regional Coordinators will be set up to promote closer links between the Commission and field rescue organizations.

Selection: The Regional Coordinator is democratically selected by fellow colleagues in the corresponding Region (according to UIS rules, each country appoints a Delegate). He represents the UIS Cave Rescue Commission and regularly reports to it.

Mandate: The mandate is renewable and for a 4 years period. The Commission or its President can suspend or replace any inactive or inadequate Regional Coordinator.

Meetings and Contacts: Distances are the major obstacle to meetings. Any trip or mission, whatever be the motive, will provide an opportunity for contacts between the different members of the Commission. Maximum use of communication means will be made.

Missions of Regional Coordinators: They will exert, in its name and in their respective regions, all the prerogatives of the Cave Rescue Commission; mainly as follows: - to inform and document on existing publications and studies, - to collect these elements in their region, - to help to the training of national cave rescue teams, - to answer information enquiries, - to transmit to the Commission all cases that could not be handled, - provide each semester an activities report, - to create contacts between countries in order to improve cooperation, - in case of accident, and whenever requested, be able to indicate where the specialist(s) or help necessary for a good rescue operation can be found, - to be able to inform foreign expeditions which team(s) would be best indicated to undertake a rescue in the type of cave explored, make sure that adequate transportation means exist and provide a procedure for call in the case of accident.

Report

After having made the review - a very positive one - of the work of the Commission for the past four years, different problems were debated during the first meeting.

The main ones are: - the distance, often very important, existing between the operational base of cave rescue teams and karstic areas, - the lack of rescue equipment (too expensive in many countries).

Considered solutions:

Encourage and intensify contacts and exchanges between neighbouring countries in order to be able to provide mutual assistance in the case of accident. To reach that goal, the problem of fast border crossing for rescue teams and equipment has to be solved.

To adapt equipment and techniques to the cave types of each region, and be at great ease in the use of such equipment (rescue operations must be designed for equipment similar to the one usually used for caving practice).

Overseas expeditions in countries where no cave rescue teams for advanced explorations exist should have a capacity for self-rescue.

Have a maximum circulation of rescue manuals and technical publications.

Decisions approved by the Commission members present during the second meeting:

Decentralization of the Commission in order to allow for a better and faster circulation of information. To that aim, a network of Regional Coordinators will be set up - Regions will be defined and the Commission members in each Region will chose a Coordinator, automatically becoming member of the Bureau of the Cave Rescue Commission.

Member countries of the F.E.A.L.C. (Federación Espeleológica de América Latina y Caribe) have already nominated their Regional Coordinator: **Efraïm MERCADO** (Puerto Rico; http://netdial.caribe.net/~emercado/Home.htm).

To meet an urgent demand from the UIS Bureau, a list as exhaustive as possible of forthcoming expeditions overseas will be compiled. This will reinforce solidarity between expeditions in close areas, and thus increase the intervention speed of rescue teams in the case of accidents. This mission is given to **Bruno DELPRAT** (France), member of the Bureau of the Commission.

The President of the Commission, **André SLAGMOLEN** (Belgium) sees his mandate renewed up to the next UIS Congress in 2001. The Vice-president, **Gyorgy DENÉS** (Hungary), asked to be released from his missions in the Commission. He is replaced by **Trifon DAALIEV** (Bulgaria), and **Grace MATTS** (Australia) is nominated Second Vice-president.

Cave Rescue Seminars:

Four days Cave Rescue Seminar will be organized next spring in the south of Germany - All cavers interested are invited to attend (limited to 5 persons per country).

The New South Wales Cave Rescue Team (Australia) organizes a cave rescue practical exercise during the third week-end of October and welcomes all people wishing to participate.

The Commission, through the voice of its President, wishes to thank **Gyorgy DENÉS** for all of his contributions to the activities of the Commission (in particular during the Symposiums at Aggtelek in 1993 and Budapest in 1989).

André SLAGMOLEN
President of the UIS Cave Rescue Commission

UIS Commission on Glacier Caves and Karst in Polar Regions

Activities summary

During the XII International Congress it was showed the activities balance of this Commission between the Congress: the 11th in Beijing, (China, 1993) and the 12th in La Chaux-de-Fonds (Switzerland, 1997).

Expeditions and Investigations (Summary)

Hohe Tauern 1993, 1994, 1995, 1996; Svalbard 1994, 1995, 1996; Greenland 1993,1994; Karakorum, 1994; Kyrgyzstan 1993; Patagonia 1994, 1995; Antarctica 1994/95, 1995/96, 1997; Iceland 1996, 1997; Gornergletscher 1993, 1994;

Reported by: Austria, delegate: Heinz Slupetzky; Canada, delegate: Jacques Schroeder; Czech-Republic, delegate: Josef Řehák; France, delegate: Madeleine Griselin and Luc Morueau; Italy, delegate: Giovanni Badino and Aldino Bondesan; Netherlands, delegate: J.P. van der Pas; Poland, delegate: Marian Pulina; Russia, delegate: Maxim Moskalevsky and Bulat Mavlyudov; Spain, delegate: Adolfo Eraso; Switzerland, delegate: Remy Wenger.

Proceedings and Books

Book: *Cuevas en Hielo y Rios Bajo los Glaciares*, Authors: Adolfo Eraso and Marian Pulina.1 vol. , 244 pp., Ed. Mc Graw Hill. Madrid, Spain, 1994.

Book: *Franz-Josef-Land*, Co-author: Heinz Slupetzky, volume 8 of the Polar Handbooks of the Norwegian Polar Institute. Ed. Susan Barr. 1995.

Proceedings III International Symposium of Glacier Caves and Karst in Polar Regions, 1994, by Madeleine Griselin. Chamonix, France, 1994.

Proceedings IV International Symposium of Glacier Caves and Karst in Polar Regions, 1996, (In Press). (Including CD-ROM). Responsible: Heinz Slupetzky.

News

External Relations of the Commission

During the 12th International Congress of Speleology, Remy Wenger was elected to take charge of the External Relations of the International Commission of Glacier Caves and Karst in Polar Regions with the following assignments:

To come into contact with people concerning the glacial world like freelance photographs (films, videos,...) and organizers of adventure expeditions, etc., with the purpose of joining with our Commission.

Together with Giovanni Badino, to inventory and catalogue the explored and topographed cavities in three big sections: -the longest ice caves, -the deepest ice caves, -the caves with deeper penetration below the glacier surface,

INTAS call

The information about INTAS project by European Union can be obtained from:

INTAS, 58 Avenue des Arts, box 8, B-1000 Brussels, Belgium.
Fax: 32 2 549 01 56
E-mail: call97@intas.be

The information package is also available on the following INTERNET sites:

http:// www.cordis.lu/intas/home.html
http:// www.ib.be/intas

And a separate information package in Russian can be obtained by e-mail request from:
RFBR, 32 a Leninsky prospect, 117334 Moscow, The Russian Federation

E-mail: mailserv@rfbr.ru

This will also available on INTERNET at:

http:// www.rfbr.ru

Future

Expeditions and Investigations

Circumsvalbard; Hydrogeochemical investigations in Loven East, Svalbard; Klockering Glacier,Torellbren; Radio-echo sounding (Antarctica and Franz Josef Land); Thesis in Eiskapelle (Watzmann east face), and Kviarjokull (monitoring)

Next Symposia

2000-Vth Symposium in Cuneo, Italy, April 14-18, 2000 organized by Giovanni Badino.

2000-VIth Symposium in Iceland (under discussion), early autumn 2000 (together with UIS Volcanic Cave Comission).

Adolfo Eraso
President of International Commission
Glacier Caves and Karst in Polar Regions

UIS Working Group: Survey and Mapping

After a long and laborious work here we are: the official UIS Symbol list is in existence!
Intense pre-work, an interesting session at the UIS congress, followed by endless email exchanges, lead to the final vote from the national delegates. The list in its present form had been approved and can be seen and downloaded at:

http://www.speleo.ch/cgi-bin/cave_symbol.pl

Praezis
Philipp Haeuselmann
Chairman, UIS Working Group Survey & Mapping

UIS Commission on Mineralogy

It has now been almost a year since our Commission on Mineralogy was founded at the International Congress at La Chaux de Fonds, Switzerland. This newsletter is to keep you up-to-date on what is presently happening in the Workong Groups, and it is also a request to the Chairs of the Working Groups to send me an update on your activities and progresswithin your group.

1. UIS MINERALOGY CONSERVATION WORKING GROUP. Philippe Axel, Chair. The entire working group, and other people interested in the aims of this group, can now correspond by sending e-mails to: conservation@axell.org. This working group is presently: A) Preparing a list of caves of mineralogical interest that should be protected/preserved. Please send your list of caves to this conservation e-mail address. B) Trying to help set up Cave Conservation Laws within various countries. If your country is in need of help, write to this E-mail address. Please pass this E-mail address to those in your country who are involved in cave conservation – they should also be members of this group. C) Trying to prevent the sale of speleothems worldwide.

2. SPELEOTHEM REPOSITORY/LIBRARY. Paolo Forti, Chair. A repository for spoleothems/cave mineral samples has been set up with Paolo Forti at the Italian Institute of Speleology in Bologna, Italy. Already one speleothem collection (mine) has been sent to Paolo. This repository will allow researchers working on ”generic” studies to have access to speleothems without collecting them, thus preserving the resource. Also, Paolo Forti is in the process of setting up a Speleological Library at the Italian Institute, and cave mineralogy articles from your country should be sent to him.

3. BIBLIOGRAPHY WORKING GROUP. Katalin Takácsné Bolner, Chair. Katain is trying to compile a complete (as possible) Bibliography of cave mineralogy articles from around the world. If you know of articles from your county NOT included in Cave Minerals of the World, 2nd edition, please send these references to Katalin.

4. MINERALS ONTOGENY WORKING GROUP. Headed by Charlie Self. Members: Vladimir Maltsev, Bogdan Onac, Bill White, Paolo Forti, Silvia Frisca, Andrea Borsato, Carol Hill. This group is presently actively working on trying to integrate Western and Russian ideas of cave mineralogy. One of its goals is to publish our results in an entire issue of Journal of Caves and Karst.

Carol A. Hill

A repository for speleothem/cave mineral samples has been set up with Paolo Forti at the Italian Institute of Speleology, Bologna, Italy. All qualified researchers may apply for samples from the Institute. As a start, I have sent my entire speleothem collection to Paolo. Paolo plans to announce the avvailability of the repository on the WWW. If any of you have speleothem/cave mineral samples you are finished with, don´t let them ”die with you; send to Paolo so that future generations will have access to this resource. Also, please inform other qualified researchers of this repository.

Carol A. Hill

Working Group for the Conservation of Speleothems and Caves of Mineralogical Interest

Following the statutory meeting of the UIS Commission on Cave Mineralogy held during the 12th. International Congress of Speleology last August, Carol A. Hill, President of the Commission, has asked me to set up a Working Group for the Conservation of Speleothems and Caves of Mineralogical Interest.

This Working Group would depend directly from the UIS Commission on Cave Minaralogy and cooperate with other UIS Commissions and Working Groups as well as International and National Conservation Organizations.

The ultimate goal of the Working Group is to promote a worldwide conservation policy for Speleothems and Caves of Mineralogical Interest and to encourrage scientific research and public education in this field. To reach this goal, some immediate actions have been proposed:

1. To start a lobbying campain internationally to ban the trade of speleothems. Each member of the group could work in his area of influence and obtain the help of other local conservation organizations or other groups interested in this action. Documents and data, such as current national related legislation, could be centralized by the Working Group and made available to help in this campain.

2. To publish Guidelines for the conservation of cave minerals, speleothems and caves of mineralogical interest. This could be based on the article written by Patrick Cabrol in CMW2, but would have to be circulated for comments amongst the Working Group.

3. To identify and record caves of mineralogical interest around the World and to establish a classification for the protection of these caves (i.e. the most exceptionnal ones could be recommanded to the UNESCO World Heritage List).

4. To decide on a communication/education policy that would raise public awareness throught the media and throught public places such as show caves. A cooperation with the International Show Cave Association could be established for this purpose.

If you are interested in participating to this Working Group, or know other persons in your country who would be interested, please contact me at: axell@tornado.be.

Recommandations sur la protection des concretions et des cavites d'interet mineralogique

Rappel sur l'interet patrimonial du milieu souterrain

Le milieu souterrain abrite un patrimoine exceptionnel et varié:

- Intérêt archéologique: Le milieu souterrain abrite de nombreux vestiges archéologiques et paléontologiques ainsi que des œuvres pariétales remarquables. Près de 140 cavités ont été ornées par les hommes du paléolithique et de très nombreuses cavités présentent des traces de foyers, des habitats préhistoriques ou historiques, de l'industrie lithique, des sépultures, etc.

- Intérêt faunistique et habitat: Le milieu souterrain abrite une faune bien connue, les chiroptères, mais aussi tout un ensemble d'espèces remarquables, souvent endémiques, parfois très rares et souvent très belles, tel le troglocarys.

- Intérêt minéralogique: Les grottes abritent des concrétionnements qui sont parmi les plus beaux actuellement connus, au moins en Europe. Une vingtaine de cavités méritent de devenir des références de ce point de vue. Pourtant, à côté de ces grottes prestigieuses, chacune des autres abrite des concrétions plus simples mais aucune ne se ressemble et chacune offre au visiteur une particularité qui lui est propre, permettant même au connaisseur de reconnaître le lieu d'origine d'une concrétion qu'il voit devant lui ou même sur une photo.

Les concrétions présentent un ensemble d'intérêt: esthétique bien sûr mais aussi scientifique (minéralogique, géochimique, paléoclimatique etc..). Chaque concrétion enregistre toute une partie des données environnementales qui ont présidé à sa formation puis à sa conservation; on peut donc dire qu'une concrétion est un enregistreur naturel de tout une série de paramètres qu'il faut maintenant conserver et étudier.

Bref rappel des conventions internationales

La résolution VI-5 de la convention de Ramsar permet de prendre en compte les zones humides karstiques souterraines comme type de zone humide dans le système de classification Ramsar pour la protection du patrimoine biologique souterrain.

La faune et les habitats souterrains sont pris en compte par la recommandation du conseil de l'Europe n°36 (1992) sur la conservation des habitats souterrains.

La préservation des vestiges archéologiques contenus dans les grottes est prévue par la convention européenne de Malte (1992) relative à la protection du patrimoine archéologique.

Il n'existe aucune convention, directive ou recommandation internationale concernant directement la protection des concrétions des cavités souterraines (naturelles ou artificielles) comme c'est le cas pour la biologie, avec la recommandation n°36 du Conseil de l'Europe, ou pour l'Archéologie avec la convention de Malte.

Les lignes qui suivent permettent d'apporter une première série de propositions concrètes dans ce sens.

Caracteristiques du milieu souterrain :

Le milieu souterrain présente des caractéristiques qui lui sont propres: c'est un milieu conservateur, il ne se renouvelle pas à l'échelle humaine, il est limité, il est peu connu et est fragile.

- Le milieu souterrain est "**un milieu conservateur"** en raison de la constance des paramètres climatiques; c'est à dire qu'il conserve de façon quasi indéfinie aussi bien des vestiges de nos lointains ancêtres (art pariétal, foyers, habitats...), de la faune de l'ère quaternaire (ours des cavernes, mammouths, bisons...) ou de l'ère tertiaire (phosphorites de Quercy) etc... que la pollution de l'homme moderne: ordures, dégradations, graffitis, inscriptions, traces de pas, etc... le milieu souterrain devrait être considéré comme un musée et souvent même, comme un musée du temps.

- Le milieu souterrain **ne se renouvelle pas à l'échelle humaine**: à la différence du milieu naturel extérieur où la végétation se renouvelle chaque année moyennant des conditions de vie minimum, le milieu souterrain préserve un patrimoine qui ne se constitue que très lentement au court des millénaires (croissances concrétions, accumulation des ossements animaux, vestiges historiques ou préhistoriques, etc...)

- Le milieu souterrain **est limité**: à la différence des autres milieux naturels, le milieu souterrain pénétrable à l'homme est très limité. Le visiteur est obligé de circuler dans les passages obligés que sont les galeries, les salles, les puits, etc... concentrant dans ces espaces toute la pollution due à sa présence que ce soit de façon directe (traces de pas, casse des concrétions...) ou indirecte (effet de son métabolisme).

- Le milieu souterrain est **peu connu**: à la différence des autres milieux naturels où l'ensemble du domaine est accessible à l'homme, le milieu souterrain est difficile d'accès et seule une infime partie, de l'ordre de 1%, est pénétrable directement par l'intermédiaire des grottes et des gouffres. De ce fait, seule une infime partie du karst est connue directement. Par ailleurs l'ensemble de l'étude concernant la faune est loin d'être terminée avec la présence d'espèces souvent endémiques; enfin, ce milieu recèle des concrétions parfois très rares, voire uniques n'ayant pas encore fait l'objet d'investigation.

- Le milieu souterrain est **fragile**: la sur-exploitation des grottes touristiques met en péril la conservation du patrimoine qui s'y trouvait à l'abri; l'exemple de la grotte de Lascaux est là pour nous le rappeler (et d'autres exemples seraient nombreux à citer). Le dérangement des sites d'hibernation ou de reproduction de chauves-souris est gravement préjudiciable à la conservation de ces espèces. Les travaux de désobstruction des spéléologues peuvent modifier les conditions climatiques qui régnaient dans la cavité et provoquer des déséquilibres mettant en péril la conservation des concrétions, des vestiges archéologiques, etc...

Par ailleurs, la conservation du milieu souterrain est intimement liée à ce qui se passe en surface. Les travaux de déboisements, de boisements, de génie civil modifient les conditions environnementales qui règnent à la surface du karst et, de ce fait, peuvent modifier le débit et la chimie des eaux d'infiltration, les teneurs en gaz carbonique. Ces paramètres influent directement sur la conservation de ce patrimoine.

Pour toutes ces raisons et à cause des caractéristiques qui lui sont propres, le milieu souterrain doit être protégé et géré par des moyens qui sont adaptés à sa spécificité.

Ici sera pris en compte le problème de la protection des concrétions des grottes et des anciennes mines.

Rappel sur la formation des concretions

Le principe de la formation des concrétions est bien connu: de l'eau tombe sur les calcaires, se charge en gaz carbonique (ainsi qu'en divers acides organiques), dans le sol; ensuite, elle s'infiltre dans le karst où elle chemine à travers un ensemble organisé de fentes, de fissures, de drains où elle se charge de bicarbonate de calcium. Puis, à la faveur d'une voûte, d'un vide, elle dépose sa charge sous forme de carbonate de calcium : le plus souvent de la calcite, plus rarement de l'aragonite, de l'hydromagnésite, etc ...

Cette description apparemment simple cache en fait des mécanismes physico-chimiques très complexes dont certains sont des équilibres thermodynamiques qui peuvent fonctionner dans les deux sens.

En fait, tous les facteurs environnementaux quels qu'ils soient, jouent le long de cette longue chaîne depuis l'eau de pluie jusqu'à la formation du cristal; tous ont leur importance: débit et caractéristiques physico-chimiques de l'eau de pluie, conditions physico-chimiques de l'horizon pédologique, condition physico-chimique et histoire du karst, caractéristiques physico-chimiques de l'atmosphère des galeries... Cependant, les deux facteurs de base sont l'eau d'infiltration et le gaz carbonique. Lorsque l'un des deux vient à manquer, pour des raisons climatiques et autres, les concrétions ne peuvent se former.

Toute modification d'un seul des paramètres change les conditions qui ont conduit à la formation des concrétions ou à leur conservation; il peut en résulter des modifications du concrétionnement et la remise en cause de sa conservation. Ces changements peuvent avoir pour cause des modifications du climat, de l'horizon pédologique, des circulations d'eau dans le karst, parfois même de la seule présence de l'homme sous terre.

Chaque concrétion est le fruit d'une histoire qui lui est propre: sa position, sa forme, sa nature minéralogique, son évolution minéralogique, etc... sont le résultat d'un ensemble de phénomène qui préside à sa formation, puis à son évolution et à sa conservation ou à son altération, voire sa destruction.

Toutefois, s'il est relativement facile de définir ce qu'est la formation d'une concrétion, il est beaucoup plus difficile de parler de son altération. En effet, lorsqu'une concrétion évolue, par exemple au cours d'une diagenèse aragonite-calcite, doit-on parler d'altération de la concrétion ou d'évolution? A court terme, on pourrait dire que la concrétion subit une altération, alors que si on regarde à long terme, on parle d'une évolution. Dès lors, il vaut sans doute mieux parler d'altération ou de dégradation d'une concrétion, par exemple lorsque tout ou partie d'une concrétion disparaît. Quand on parle de protection des concrétions, il est donc nécessaire de bien rappeler ce dont il s'agit.

Les differents types de concretions

La classification des différents types de concrétions demande de prendre en compte deux aspects: la nature minéralogique de la concrétion et sa morphologie.

Nature minéralogique des concrétions

Par extension avec les espèces animales et végétales on peut parler "espèces minéralogiques" de concrétions.

Les principales espèces minéralogiques de concrétions rencontrées dans les grottes ont été décrites par Carol Hill et Paolo Forti dans l'ouvrage *Cave Minerals of the World* (édité par le National Speleologiocal society aux USA en 1986 et réédité en 1997); plus de 150 espèces minérales ont été rencontrées dans les grottes du monde entier par les auteurs. Pourtant certaines espèces sont beaucoup plus courantes et se retrouvent dans la majorité des cavités, il s'agit principalement des concrétions de carbonate de calcium qui cristallisent sous la forme de calcite (dans le système rhomboédrique) et l'aragonite (dans le système orthorhombique).

Les autres minéraux que l'on rencontre dans les grottes, mais de façon un peu plus rare, sont le gypse et l'hydromagnésite puis, beaucoup plus rares: la pyrite, la galène, la blende, etc... et tous les minéraux présents dans *Cave Minerals of the World*.

Pour mémoire, on peut citer les grandes familles minérales suivantes: - les carbonates avec 10 espèces (dont la calcite et l'aragonite), - les sels avec 4 espèces (dont la halite, la silvite), - les nitrates avec 6 espèces
- les oxydes et hydroxydes avec 16 espèces (dont l'hématite et la magnétite), - les phosphates avec 26 espèces
- les silicates avec 14 espèces (dont le quartz), - les sulfates avec 10 espèces (dont le gypse), - les autres minéraux avec 59 espèces (sans oublier les concrétions de lave, d'argile etc..).

La morphologie des concrétions

La classification morphologique des concrétions est simple et bien connue. Elle dépend, pour nombre de formes, de la position des concrétions dans les galeries: au sol, à la voûte sur les parois, etc... C'est ainsi qu'en résumé, on peut trouver: - *à la voûte*: stalactites, fistuleuses, draperies, disques, hélictites, bulles et boules
- *sur les parois*: draperies, hélictites, disques, bulles et boules, - *au sol*: stalagmites, coulées stalagmitiques, gours, perles des cavernes.

Certaines concrétions sont uniques, bien que se rattachant à la classification ci dessus, les champignons d'argile calcifiée de la grotte du Lauzinas, les symbales de la grotte du TM71 etc....

Bien sûr, la plupart des différents types morphologiques de concrétions peut être en calcite, en aragonite, en gypse, pyrite, galène, etc..., comme nous l'avons vu plus haut, donnant au milieu souterrain la possibilité d'offrir une exceptionnelle variété de concrétionnement.

Interet des concretions

Les deux principaux types d'intérêt des concrétions sont: esthétique et scientifique.

L'intérêt esthétique est très important puisqu'il est souvent en liaison directe avec un développement économique local parfois très important (grottes de Clamouse, aven d'Orgnac, aven Armand en France, grotte de Postjona en Slovénie, Carlsbad Cavern aux Etats-Unis, etc...) Il s'agit de cavités très concrétionnées, soit avec un seul type de concrétions (stalagmite en piles d'assiettes de l'aven Armand) ou présentant de nombreuses formes de concrétions (grottes de la Clamouse, de Postjona...).

Les cavités concrétionnées non ouvertes au public offrent aux spéléologues, aux scientifiques, etc... des instants de calme, de détente, très important pour les loisirs de tout un chacun.

L'intérêt scientifique des concrétions est très vaste. En effet les études réalisées jusqu'alors montrent l'important domaine de recherches qu'offrent les concrétions:

- cristallographie: la première étude importante sur ce sujet est due à Printz (1908 - Les cristallisations des grottes de Belgique). Il s'agit d'un véritable travail de référence, malheureusement les travaux exhaustifs se sont presque arrêtés là et le domaine d'étude à consacrer à ce sujet est très important.

- minéralogie: l'étude de la formation des concrétions en est à ses débuts même si les travaux qui concernent ce sujet sont très importants (voir la bibliographie de " Cave Minerals of the World"). Les études portant sur la morphologie des concrétions sont bien avancées mais celles qui concernent leur genèse, leur croissance cristalline etc.. restent à faire.

- diagenèse: en simplifiant, on peut dire que la diagenèse est l'ensemble des modifications que subit une roche après sa formation. Dans le milieu marin, la diagenèse est largement connue et étudiée. En revanche, dans le milieu karstique, il n'existe qu'une seule étude (Patrick Cabrol) qui demanderait à être poursuivie. En effet, l'étude de la diagenèse dans les grottes est plus simple qu'en mer puisque le milieu naturel et la formation des concrétions étudiées (les stalagmites dans ce cas) y sont plus simples.

- géochimie: l'étude géochimique des concrétions: isotopes, éléments en traces, etc... permet de retrouver les conditions de dépôt et de formation de ces concrétions (origine et qualité des eaux etc).

- paléoclimatologie: les études récentes montrent que chaque couche de croissance ou lamine, dans les concrétions étudiées, correspond à une année. L'étude de chaque lamine permet, avec les techniques actuelles de retrouver les conditions de dépôts année après année; température de l'atmosphère, sa composition isotopique, présence des éléments en traces dans l'atmosphère etc. Les études isotopiques (au carbone 14 ou avec le couple uranium/thorium) permettent de dater ces données. Il est, dès lors, possible de suivre l'évolution du climat en un lieu donné en étudiant finement les concrétions des grottes.

Ces études ont pris une grande importance depuis que de nombreux programmes de recherches dans le monde tentent de reconstituer les variations climatiques, leur cycles, leurs amplitudes, l'effet de serre, le rôle de l'augmentation du gaz carbonique dans cet effet etc... Les concrétions permettent ces études sur les derniers 200 à 300 000 milles ans; il est plus facile de réaliser cette recherche sur des concrétions que sur les glaces polaires.

L'étude des concrétions devient donc de plus en plus un matériel capital pour la compréhension et l'analyse des phénomènes climatiques des derniers millénaires et pour analyser l'effet de serre, ses origines, son évolution.

Causes de la degradation des concretions

S'il est relativement facile de définir ce qu'est la formation d'une concrétion, il est beaucoup plus difficile de parler de son altération, de sa dégradation. En effet, chaque concrétion est le fruit d'une histoire qui lui est propre : une concrétion naît, se développe, sa croissance s'arrête, reprend, sa position, sa forme, sa nature minéralogique, son évolution minéralogique etc... sont le résultat d'un ensemble de phénomènes qui préside à sa formation, puis à son évolution et à sa conservation ou à son altération, voire sa destruction.

Par exemple, lorsqu'une concrétion se transforme au cours d'une diagénèse aragonite-calcite, doit-on parler d'altération de la concrétion ou d'évolution? A court terme, on pourrait dire que la concrétion subit une altération, alors que si on regarde à long terme on parle d'une évolution. C'est pourquoi, lorsqu'on parle d'altération des concrétions il s'agit, la plupart du temps, d'une **vision** anthropomorphique. En effet, on considère certaines transformations comme des dégradations alors qu'il s'agit souvent d'une évolution qui peut être soit naturelle soit provoquée par l'homme.

La conservation des cavités aménagées pour le tourisme est de plus en plus la préoccupation majeure des exploitants de grottes; c'est pourquoi des recommandations de la Commission des Cavités Aménagées de l'Union Internationale de Spéléologie sont en préparation sur ce sujet et plusieurs réunions internationales ont eu pour thème ce sujet: - International Symposium on exploitation and protection of karsts and caves scenic tourist resources (Chine) 1994. - Symposium International des grottes aménagées et contrôle de l'environnement souterraina (Cunco-Italie) 1995. - International Show Caves Association Conference (Sardaigne-Italie) 1998

Le présent document expose l'état actuel des connaissances dans le domaine de la protection des concrétions en présentant tout d'abord les principales caractéristiques de l'environnement karstique puis le rôle des modifications naturelles de cet environnement, l'action de l'homme et les moyens pour protéger les concrétions.

Principales caractéristiques dc l'environnement karstique

Il a été montré que tout ce que l'on peut observer au niveau d'une grotte est intimement lié à l'ensemble des fonctionnements de la zone d'infiltration. Par exemple, les températures observées à grande profondeur et surtout leurs variations, résultent essentiellement des mécanismes de l'infiltration de l'eau une part importante du transfert thermique se fait par l'eau (Mangin 1975).

De même, les apports de gaz carbonique sont liés à l'écoulement diphasique, ou au mélange d'air et d'eau (Bakalowicz 1977). Les échanges entre l'air de la grotte et l'air extérieur sont eux aussi liés en partie aux arrivées d'eau: ces changes d'air se font par les galeries de la cavité mais aussi par l'ensemble de la masse rocheuse.

Ainsi, tous travaux, toute intervention de l'homme en surface, ou sur la zone d'infiltration vont avoir une influence sur les caractéristiques conservatoires du milieu souterrain.

Conclusion

Le monde souterrain est un milieu conservatoire qui ne se renouvelle pas à l'échelle humaine et à la différence des autres milieux naturels, la seule présence de l'homme modifie ses caractéristiques. Le karst et les concrétions ont enregistré toute une série de variations ou d'événements climatiques et, de ce fait, doit être considéré comme un livre, un musée.

Cependant, il ne faut pas oublier qu'une concrétion, le karst, évolue dans le temps. Sa taille s'accrois, ou bien elle subit des altérations et elle est plus ou moins dissoute. Sa nature minéralogique peut aussi évoluer dans le temps, il y a précipitation d'aragonite, puis de calcite, puis à nouveau l'aragonite, permettant à la concrétion de se mettre en permanence en accord avec les nouvelles données de son environnement. C'est pourquoi il peut être parfois difficile de distinguer ce qui est la part de l'altération normale d'une concrétion, dans un cycle, ou de la modification de sa croissance. C'est pourquoi la notion de dégradation d'une concrétion est une vision très anthropomorphe, due à une vision à court terme, même si les causes sont naturelle ou bien dues à l'action directe de l'homme.

La vision que l'on peut avoir sur les problèmes de conservations des concrétions a considérablement évolué depuis une dizaine d'années car la grotte a été replacée dans son contexte global qu'est le karst. Ainsi on est rapidement passé d'une vision anthropomorphique des phénomènes à une vision évolutive, dynamique.

Les études récentes montrent que les problèmes de conservation des grottes et de l'état conservatoire du milieu souterrain passe par l'étude et la résolution des problèmes de transfert de flux thermiques, gazeux, hydriques.

Tous les équilibres que l'on peut observer dans le milieu souterrain et qui sont à l'origine des caractéristiques conservatoires des cavités sont liés à des problèmes d'échanges entre la cavité et la masse rocheuse et l'extérieur. Ces échanges correspondent, en fait, à des phénomènes complexes puisque, par exemple, l'humidité est très élevée (quasiment proche de la saturation), la température de la cavité est liée aux échanges avec l'extérieur, que le concrétionnement carbonaté est aux équilibres calco-carbonés eux-mêmes liés aux échanges entre la masse rocheuse, le réseau fissural et les grands conduits que constituent les galeries.

Tout cet ensemble correspond à des problèmes d'échange et même si les phénomènes sont complexes, on arrive globalement à un comportement relativement simple du karst, à savoir que si les échanges sont trop importants, on déstabilise le milieu, c'est ce qui se produit lorsque l'homme intervient trop fortement, soit par des visites trop importantes, soit par des modifications d'ouvertures etc... ou inversement on peut avoir l'apparition de déséquilibre créé par le fait que la cavité présente des échanges insuffisants avec l'extérieur par exemple : pose d'une porte.

Entre ces deux valeurs, il existe une plage où les échanges paroi-cavité et cavité-extérieur permettent à la propriété conservatoire de la grotte de rester efficace. Il s'agit donc de ne pas dépasser les seuils de stabilité de la grotte; la conservation des concrétions de la grotte peut alors être associée à la capacité conservatoire de la grotte. C'est un milieu tamponné, c'est à dire présentant des variations d'amplitude faible et des échanges énergétiques réduits.

C'est ainsi que l'ensemble des travaux récents mené au laboratoire souterrain du C.N.R.S. de Moulis en France amène à une vision du climat souterrain très différente de ce qui était admis par les travaux de Trombe (1950). Cet auteur considérait que les galeries des cavités se comportaient essentiellement comme des tubes à vent établissant des échanges entre la cavité et l'extérieur, alors que la vision actuelle montre que tout ce qui se passe au niveau de ces tubes est pour l'essentiel lié aux échanges entre la masse rocheuse et ces tubes et entre le réseau fissural et les grandes galeries.

L'ensemble de ces résultats montre bien que toute action de l'homme sur le karst et surtout dans les secteurs richement concrétionnés ne doivent être exécutés qu'après étude par une équipe pluridisciplinaire. L'exploration et la fréquentation du milieu souterrain doivent être faits en connaissance de cause et le développement de la spéléologie de loisirs dans certains pays pose des problèmes de plus en plus important pour la sauvegarde de ce patrimoine.

Sa gestion est l'affaire de tous et nécessite une bonne information et une sensibilisation du public, comme de l'ensemble des participants à ces actions: pratiquants, propriétaires, promoteurs, scientifiques, administrations... Tous les états devraient donc adopter une réglementation adaptée à ce milieu particulier. Ce n'est que par la responsabilisation de tous les acteurs que la protection des concrétions et des autres vestiges contenus dans le karst pourra être efficace. Il en va de la sauvegarde d'une grande partie de notre mémoire et d'un environnement esthétique remarquable. *Le karst et les concrétions qu'il abrite, doit être considéré comme un musée*.

L'Association Internationale pour le Patrimoine Souterrain (AIPS-ISHA), en collaboration avec le Groupe de Travail pour la Protection des Concrétions et des Cavités d'Intérêt Minéralogique de la Commission Minéralogie de l'Union Internationale de Spéléologie (UIS) et le Groupe de Travail pour la Protection des Grottes et du Karst de l'Union Mondiale pour la Nature (UICN),

Rappelant que les cavités sont très riches en concrétions et présentent souvent une grande importance du point de vue patrimonial, scientifique et esthétique car abritant des formes et des espèces minéralogiques caractéristiques du milieu souterrain,

Rappelant que le milieu souterrain présente des caractéristiques qui lui sont propres: c' est un milieu conservateur, qui ne se renouvelle pas à l'échelle humaine, qui est limité et qui est fragile,

Constatant que trop souvent les concrétions, et les grottes qui les abritent, se dégradent, en particulier dans les grottes accessibles, et qu'une partie de ces grottes a atteint un stade de dégradation critique,

Recommandent aux responsables de la gestion des zones karstiques et du patrimoine géologique;

Recensement

1: D'établir les inventaires nationaux des sites souterrains présentant un intérêt minéralogique remarquable en utilisant notamment les critères de sélections mentionnés à l'annexe 1 à la présente recommandation; ces inventaires doivent inclure en particulier:

- tous les types de cavités (naturelles et artificielles),
- des cavités renfermant des concrétions représentatives des diverses formes de concrétions (stalactites, fistuleuses, disques, perles des cavernes...) et des différentes espèces minéralogiques (calcite ou aragonite blanches ou colorées, gypse, hydromagnésite, pyrite, galène, blende...),
- des cavités renfermant une grande variété de concrétions,
- des cavités présentant un nombre exceptionnel de concrétions,
- les cavités qui renferment des formes ou des espèces minéralogiques rares,
- les cavités dont les concrétions sont en danger,

2: De recenser les cavités déjà protégées,

3: D'identifier les cavités, ou tout ou partie des cavités appartenant à un système hydrogéologique, nécessitant des mesures spéciales de conservation et d'établir la liste des formes et des espèces de concrétions à protéger dans ces ensembles,

4: D'établir une liste des sites les plus menacés de chaque pays,

5: D'établir une liste de sites souterrains protégés d'importance internationale et de proposer l'inclusion de ces sites dans un réseau international de réserves minéralogiques souterraines,

Reglementation

6: De mettre en place une réglementation permettant de protéger les concrétions :
Interdiction totale du commerce (achat, vente, échange, transport, importation, exportation) ou de l'utilisation de tout ou partie de concrétions provenant d'une cavité naturelle ou artificielle. Le terme de concrétion est celui définie par la commission de minéralogie de l'Union Internationale de Spéléologie.

7: D'attribuer un statut de protection appropriée à une sélection de sites représentatif des principales localisations de concrétions (morphologie, minéralogie).

8: d'acheter les terrains (sol et sous sol) des cavités retenues à l'alinéa 7 de la présente recommandation et d'en contrôler ou d'en assurer la gestion

Suivi scientifique

9: d'assurer l'étude et le suivi scientifique des principales cavités concrétionnées, ainsi que leur gestion,

10: de faire procéder, avant tout aménagement d'une cavité pour le tourisme, à une étude permettant de déterminer les zones à protéger impérativement; puis de procéder à une étude des caractères environnementaux de la cavité afin de déterminer si les conditions d'aménagement sont compatibles avec la formation des concrétions ainsi qu'à leur conservation,

11: de contrôler les problèmes de pollution, de génie civil, etc... en surface des cavités retenues pour la richesse de leur concrétionnement selon les critères prévus à l'annexe 1.

12: de nommer dans chaque pays ou Etat un coordinateur, responsable du suivi de ces problèmes. Cette personne sera, avant tout, un scientifique (géologue, minéralogiste...), spécialiste des concrétions, connaissant bien la réglementation de son pays.

ANNEXE 1

Critères de sélection des cavités présentant un intérêt minéralogique. Des critères ont été proposés pour sélectionner les cavités souterraines présentant un intérêt patrimonial particulier vis à vis des concrétions.

1 - Présence d'une grande quantité de concrétions. Ces cavités présentent souvent un intérêt esthétique remarquable voire exceptionnel.

2 - Présence d'une grande diversité de concrétions

3 - Présence d'espèces de concrétions fragiles ou rares (morphologie et/ou minéralogie). Sont à prendre en considération, ici, les concrétions fines (fistuleuses, aragonites aciculaires...), les concrétions de gours, ou les concrétions rares telles les stalagmites à section équilatérale; les aiguilles de calcite, de gypse et les concrétions de nature minéralogique rare: gypse, pyrite, galène, blende....

4 - Présence d'espèces de concrétions vulnérables. Cette vulnérabilité peut résulter soit des risques de destruction de la cavité elle même (carrière, mines, aménagements) soit des travaux de génie civil qui ont lieu en surface (boisements, déboisement, infrastructures diverses...), soit de la morphologie de la cavité elle même (cavités étroites....)

5 - Présence de concrétions présentant un intérêt scientifique particulier. Certaines grottes qui ont fait l'objet d'études scientifiques approfondies peuvent, soit servir de référence, soit être utilisés pour suivre à long terme l'évolution des concrétions.

ANNEXE 2

1 - Zone de vulnérabilité potentielle. Les études concertées d'environnement souterrain doivent viser à la définition d'une zone de vulnérabilité potentielle des concrétions.

2 - Les cavités seront gérées en fonction de leur intérêt patrimonial, de leur vulnérabilité et de leur destination.

21: Les cavités aménagées pour le tourisme. Avant d'aménager une cavité pour le tourisme, il sera procédé à l'inventaire des zones à protéger directement, puis à une étude de l'environnement souterrain afin de savoir si les caractéristiques conservatoires de la cavité sont respectées. Pour les cavités présentant un grand intérêt vis-à-vis des concrétions, il sera effectué un suivi en continu des facteurs environnementaux.

22: Les cavités références. Certaines cavités présentant un concrétionnement exceptionnel pourront être considérés comme des références internationales et devront être conservées en l'état.

23: Gestion. Les cavités protégées devront être gérées; c'est à dire, que des fermetures (portes et alarmes) pourront être mis en place, que des cheminements seront précisés, que les visites seront contrôlées, que des guides pourront être nommés et formés.

Philippe Axell

UIS Commision of Bibliography

Report on the Meeting of the 14/08/97 14:00 – 16:00 at La Chaux-de-Fonds

Present delegates of : Australia, France, Germany, Italy, Lebanon, Portugal, Slovenia, Ukraine and P. Matthews (Co. Informatics).

1. **New classification according to proposal of A. Klimchouk**: The general opinion is that the new classification will cause a too big break of the actual classification. A "Working Group Subject Classification" within the Commission of Bibliography has been proposed (Hoffmann, Klimchouk, Uytterhaegen, Jeannin, David, P. Matthews in order to study an informatic – compatible subject classification suitable for Internet WWW; CD-ROM, E-mail access. For the next issues of SA/BBS/CTS ("Speleological Abstracts") the present classification (June 1996) is to be maintained.

2. **Affiliation UIS-Karst Co. of IGU and its impact on SA /BBS/CTS:** An enlarged version of SA/BBS/CTS with Karst Hydrogeology related abstracts will cause some problems:

a. approx. 2000 new titles have to be added to the present approx. 5000 titles of SA/BBS/CTS; the volume of SA/BBS/CTS would be increased to approx. 450 – 500 pages;

b. the interest of speleologists (cavers) readers and reviewers may be affected by the heavy increase of non – speleological subjects reviewed in the enlarged version of the SA/BBS/CTS;

The project has to be studied more profoundly. In particular A. Klimchouk is expected to present

c. a list of available hydrogeologists willing to benevolently and regularly review the specialized literature and to make abstracts utilizing the form proposed by the "Workong Group Subject Classification";

d. a cost – study and new grants in order to cover the more expensive enlarged version of SA/BBS/CTS (grants from IGU ?; grants from FSCE Fédération Spéléologique de la Communauté Européenne);

e. some examples of specialized abstracts with the new classification according the his proposal.

3. **Presidency of UIS Commission of Bibliography.**

The resignation after many years of the present president (R. Bernasconi) is understandingly accepted.

UIS Permanent Commmission on Speleotherapy

Report of Prof. Dr. Hubert Trimmel to the General Assembly of the International Union of Speleology on Saturday, August 17, 1997, in La-Chaux-de Fonds, Switzerland.

The Commission for Speloetherapy held a meeting on August 16, 1997. In absence of the actual active Vice-Chairman of the Commission, Dr. med. Beate Sandri (Graz, Austria), due to last minute familiar problems, the reporter served as chairman of this session.

The report concerning the Commission´s activity in the years from 1993 to 1997 has been published in the number 43/1997 of the **UIS Bulletin**. During the new session, the participants confirmed that in conmsequence of the very different types of speleotherapeutic stations used in the different parts of Europe it will be necessary also in future to realiza in this stations research and mesurage programs concerning the natural historic parameters of caves and mines.

As a result of the discussions, the Commission will concentrate in the next time activities especially to the following points:

1. Elaboration, offer and realisation of compatible programs for collecting basic datas and for medical as well as natural historic research in speleotherapeutic stations in collaboration with the respectivelies administration bodies and with their support;

2. Improvement of the bibliographic Center of the Commisssion;

3. Information and advice of all institutions or administrations planning new spoleotherapeutic stations or planning the extension of existing stations.

The Commission propose to nominate Dr. med. Beate Sandri, who has worked very actif for the Commission since a long time and whho has made the executive management during the last years in a very comprehensive way, as the Honorary President of the Commission.

In regard to the necessity of long-term obyservations and reserches, the Commission proposes to accept the change of the official name to *Permanent Commisssion of Speleotherapy*.

Last not Least, the Commmission propose to accept and to confirm the following composition of the executive board of the Commission for the coming period up to 2001:

Chairman: Univ. Prof. Dr. med. Svétozar Dluholucky (Banská Bystica, Slovakia)
First Vice-Chairman: MUDr. Jaroslav Chonka, CSc. (Solotvino, Ukraina)
Second Vice-Chairman: Dr. med. Pal Narancsik DSc. (Seźana, Slovenia)
Third Vice-Chairman: Univ.Doz.Dr. med. Alfred Falkenbach (Böckstein, Österreich)
Secretary: Dipl. Biol. Vanja Debevec (Seźana, Slovenia)
International bibliographic Center for Speleotherapy: Dr.med.univ.Alfonso Piciocchi (Napoli, Italia);
substitute: MUDr. Pavel Slavík (Ostrov u Macochy, Czech Republic).

Commission for the Archaeological Study of Caves

Minutes of the 14 August 1997 meeting, 12th International Congress of Speleology, La Chaux de Fonds, Switzerland.

The meeting was called to order at 17.20 by Commission Co-Presidents Roman Hapka and Dave Hubbard following the end of the International Symposium on Archaeology and Paleontology in Caves. Also in attendance was Commission Secretary George Veni, and 26 interested people. Vice-President Jerry Johnson was at the Congress and discussed Commission business with the Co-Presidents, but he could not attend the meeting.

Hapka and Hubbard reported on Commission activities since the Commission was created in 1993. In summary:

1994. The Commission sponsored a symposium on Central and North American Cave Archaeology, coordinated by Janet Steele, at the National Speleological Society (NSS) Convention in Texas. The papers were published in early 1997 as a special theme of the Journal for Cave and Karst Studies.

1995. The Commission sponsored a symposium on Cave Archaeology in Virginia, coordinated by Mike Barber and Dave Hubbard, at the NSS Convention in Virginia.

1996. The Commission sponsored a symposium on Cave Archaeology in the Western United States, coordinated by Jerry Johnson, at the NSS Convention in Colorado.

1997. The Commission sponsored the International Symposium on Archaeology and Paleontology in Caves, coordinated by Roman Hapka and Fabienne Rouvinez, at the 12th International Congress of Speleology in Switzerland.

1993-1997. The Commission has generally worked to promote international coordination, cooperation, and exchange of information between archaeologists, and to raise the awareness and need for protection of archaeological resources among cavers.

In light of the often close relationship between archaeology and paleontology, and spurred by the topis of the just-completed symposium, Hapka raised the question if the Commission´s name and scope should be expanded to include paleontology? Most of the remaining portion of the meeting was spent discussing this question. Nearly everyone agreed that greater communication is needed between archaeologists and paleontologists because their work in the field and in the issues they face frequently overlap. One person felt that cooperation from paleontologists may be difficult to get. Most discussion focused on what the Commission could accomplished with this broader scope. The most favored and clearly defined topis was the developing of a register of archaeologists and paleontologists for reference by cavers and other persons for when they find a site that should be examined by a specialist. The register

would provide names, addresses, and areas of interest/expertise of the specialists. General paleontological education of cavers and the public was also favored as a task for the Commission, which is already within its purview for archaeology. Chris Gleed-Owen announced tehat the German Caver Society will meet in 1998 and have a session on paleontology which the Commission might want to be involved with.

John Greer made the motion that the Commission should change its name to the Clommission for the Archaeological and Paleontological Study of Caves, and that the Commissionś scope be expanded as appropriate within it its current language to include paleontological issues. Patrick Munson seconded the motion. The motion was passed by a unanimous vote of the people present.

The officers then accepted volunteers from the group to serve as members of the Commission. Following is a list of Commission members, with the exception of the four officers, all are new members: Roman Hapka, Co-President (CH); Dave Hubbard, Co-President (USA); Jerry Johnson, Vice-President (USA); George Veni, Secretary (USA); Alfred Galik (Austria); Chris Gleed-Owen (GB); Mavis Greer (USA); Heinrich Kusch (Austria); Philippe Morel (CH); Martina Pacher (Austria); Anna Pinto (Spain); Wilfried Rosendahl (Germany); Washington Simoes (Brazil); Ken Tankersley (USA); Patty Jo Watson (USA); Francois Fouzand (France).

Everyone at the meeting signed up by name and Congress registration number, as interested persons or Commission members. Their addresses, and other relevant information will later be downloaded from the Congress computer files.

As the meeting closed, the officers asked for nominations. None were given to replace the current slate. The meeting was adjourned at 18.20. Veni had asked to be replaced by someone with more archaeological credentials and more time tto dedicate to the Commission. Mavis Greer volunteered after the meeting ended and was accepted by the officers. She will assume office upon submission of the Commission´s report to the UIS later during the Congress, and acceptance by the UIS of the proposed change. Veni will stay on as a Commission member.

UIS Cave Diving Commission

1. The Cave Diving Commission met on Friday 15. 8. 1997. It was conveyed (and chaired) by J-J. Bolanz (Switzerland), at the request of M. Piškula (Czech Republic). There was no news from A. Fabricatore, its President who was not present.

2. The commission analysed the disfunctioning of the commision´s work during the past years and agreed that it was not only the responsibility of the presidency, but also due to some organisational weaknesses. The commission decided to **improve its own organisation**, in particular to find a working procedure alllowing active commission members to supply to a defective presidency, premitting the continuity of the commission´s work. Internal rules will be worked out in that direction.

3. The commission will first of all improve the circulation of i**nformation**, first among members, reviving the tradition of low cost UIS diving seminars.j

The second task of the commission will be to promote **diving activities** among members, reviving the tradition of low cost UIS diving seminars.

No need to mention the **co-ordination** of diving activities of member countries

The commission wants to be composed of a majority of **active divers** who are in touch with the reality of to-day´s diving situation in their respective countries.

The commission will try its best to **integrate divers of prominent countries** that do not actually participate to the commission (France, USA, GB, Australia)

The work will also include accidents statistical research and the information and elements of **co-ordination of cave diving rescue**.

Brevet/**licences** controversial discussion is also going to be tackled again.

4. The commission has chosen a new president for the coming four years. **Jean- Jacques Bolanz**, chairman of the Swiss Cave Diving commission **is proposed for election by the UIS General Assembly as the next UIS Cave Diving Commission Chairman.**

Jean-Jaques Bolanz
Commisssion President

UIS Commission on Karst Hydrogeology and Speleogenesis

The UIS Working Group on Karst Hydrogeology and Speleogenesis has held its Session during the Congress on August 12. Some 18 persons have participated to the Session, some 9 other mambers who were not able to attend, supplied their opinions on the main points of an agenda. The main decisions made by the Session to be reported to the Assembly General, are as follows:

1. Considering great importance of the topic for karst and cave science, outstinding expertise of the group members, and their willingness to cooperate in performing some concrete research projects, the group suggests to the Assembly General to establish the UIS Commission on Karst Hydrogeology and Speleogenesis for the period of 1997-2001 (to rise the statute of the previous Working Group).

2. All members of the previous Working Group have agreed to be members of the new Commission, and some 8 new colleagues have joined the group during the Congress, all together 46 members from 21 countries.

3. Dr. Alexander Klimchouk is elected as a president for the new Commission.
4. The new projects have been adopted to focuse research efforts during the period

Alexander Klimchouk

Commission on Volcanic Caves

Mission statement

The Commission on Volcanic Caves is an integral unit of the International Union of Speleology and upholds the high standards of its parent organization. It meets during international congresses of speleology, during international and regional symposia and all appropriate occasions. It solicits and approves sites for such symposia, held to date in the USA (2x), USA-Hawaii, Italy (3x), Japan, Spain (Canary Islands) and Kenya.

The basic mission of the Commission is to advance the scientific exploration, study, and preservation of lava tube caves and related features in volcanic rock, throughout the world. DIt seeks to bring together all persons, organizations, and agencies with legitimate concerns with volcanic caves, their features, and their environments. Its members are leading vulcanospeleologists from each country or area with especially important lava tube caves or related features. Members are expected to keep the Commission informed about progress and problems in vulcanospeleology and to disseminate vulcanospeleological information to othe speleogists in their county or study area.

The Commission collects and disseminates information through the *Newsletter*, through sponsorship of internal symposia and conferences and through exchange visits, through meetins of its Chairman/ President with individual Commission members and cooperators, and through data compilation in a world data base on lava tub caves at Arizona State University (USA). Currently this world data basecontains information on more than 2000 lava tube caves in 40 countries. Further, the Commission provides reports and recommendations to national and regional organizations as the American Geological Institute. Its Newsletter is published at least two or three times each year. In addition to current information it contains reports and abstracts. It is archived at two U.S. Geological Survey libraries, in the UIS library (Switzerland) and is abstracted in Volcano Qarterly.

The Commission intends to continue and expand all current projects. Especially it intends to expand its cooperation (as requested by the UIS Committee during the 12th International Congress of Speleology in Switzerland – 1997) with other Commisions and Working Groups of the International Union of Speleology and with national and regional speleological organizations working in the field of vulcanospeleology.

Report on 1998 Commisson Meeting in Nairobi, Kanya

A regularly schduled Commission meeting was held at the Panafric Hotel in Nairobi, Kenya on 8 February 1998, lasting two hours. Present were Commission members Jim Simons (Kenya), Takanori Ogawa (Japan), Greg Middleton (Australia), Jan Paul van der Pas (Nederland) and William R. Halliday (U.S.A. – outgoing President). Guests included Dr. S. Ronald Greeley (U.S.A.) and Paojlo Forti (Italy).

Special reports incloded initial contacts with a speleological group in La Réunion, Italo-Argentine liaison, two Japanese publications on basalt tree molds, and progress toward the 9th International Symposium on Vulcanospeleology in Italy in 1999. Further efforts to open caves of Chejudo (Korea) for vulcanospeleological research were discussed at length, with a consensus that input from academia was needed.

Nomenclature issues were discussed at length. Results of the August 1997 discussion on pseudokarst will be published soon in the final volume of the 12th International Congress of Speleology.
Charlie Larson is agreeable to expanding his illustrated glossary was agreed unanimously that the term lava speleothem was acceptible, and the new president of the Commission is to write Charlie accordingly, with copies to several interested parties. It also was agreed that the outgoing president should write the American Geological Institute abou the current definition of lava tumulus; Paolo Forti stressed the occurrence of gypsum tumuli also.

Options for publication of the Proceedings of the 8th International Symposium on Vulcanospeleology also were discussed at length. Paolo Forti will investigate use of a special issue of International Journal of Speleology. Greg Middleton will explore publication by the Sydney Speleological Society (Australia) and the outgoing president will explored publication by the National Speleological Society (U.S.A). The final decision is to be made jointly by the symposium chairman and new Commission president.

Among other items of business, no proposal for a 10th International Symposium of Vulcanospeleology has been received yet; several possibilities and potential dates were discussed: 2002 or later. Adolfo Eraso is understood to be considering organizing a joint symposium of vulcanospeleology and glaciospeleology in Iceland. The incoming president plans to maintain close liaison with the IUS glaciospeleological commission and the new Commission on Pseudokarst. Defining the role of the vulcanospeleological commission in vertical vulcanic cavities was deferred, as was the concept of adding more structure to the Commission. The incoming President will provide liaison with the IUS Bibliographic Commission.

Regarding inactive members of the Commission, the incoming president will write them, and replace those who do no respond. He also will proceed to appoint corresponding members.

At the end of the meeting the outgoing president thanked the members of the Commission for their service during his presidency and Jan Paul van der Pas was formally installed as the new president of the commission.

William R. Halliday
Outgoing President

Report on the 9th International Symposium on Vulcanospeleology

The 9th International Symposium on Vulcanospeleology convened as scheduled in Catania (Sicily) on September 13, 1999 under the sposorship of the Centro Speleologico Etneo. About 45 registered and attended.

On the previous evening, a formal reception honored publication of "Dentro il Vulcano: le Grotte dell´Etna". This book was prepared by CSE and the Parco dell´Etna. It is to be used as a reference tool by members of CSE and park staff and a few others, and is not available to the public. The book is beautifully done and lavishly illustrated. I received an authors´copy andwill try to obtain copies for the NSS library and that of the Hawaiian Volcano Observaoty.

On September 13, 14 and 16 were 9 sessions and one "roundtable". On September 15 was a field excursion to the actively-erupting summit area of Mt. Etna. Sessions were chaired by Hubert Trimmel (past president of IUS), Harry Penkerton (British volcanologist acitve in Etnean lava tube caves), Renato Cristofolini, Jan Paul van de Pas (president, UIS Commission on Volcanic Caves) and myself. Paolo Forti (immediate past president of the IUS) chaired the round table; it included Francesco Vinci (Director of the Parco dell´´etna, Nicola Barone (President of CSE), Dr. Alfonso Piciocchi (president of the leading speleological group of Naples and a director of Vesuvius National Park, Chris Wood (British professor of environmental studies and a former Hawaiian caver) and myself. Simultaneous translation was excellent Italian to English and vice versa).

Several official pre-and post-symposium excursions visited major caves and other geological features on and around Mt. Etna and nearby volcanic islands. For these, a 46-page guidebook was available in English and Italian versions Independent excursions also were easy, to Siracusa for the Ear of Dionysus and to Vesuvius (I made both of these, as well as a side trip to Santa Maria di Leuca where there are karstic caves at sea level with very complex speleogenetic histories).

Participants were well supplied with an abundance of good maps and professional and touristic literature. One especially important reprint (though slightly outside the mainstream of vulcanospeleology) was: Calvari, C. and H. Pinkerton. 1999. Lava tube morphology on Etna and evidence for lava flow emplacement mechanisms. *J. Volcanol. Geothermal Res., 90: 263-280*. No publication date was anouced for the Symposium proceedings.

By request, I spoke on Volcanic Show Caves of the World, identifying more than 100. Most are in national forests and national parks of the western USA and are ninimally developed. I also spoke on flood pulses and steady state conduit flow of water in lava tube caves and its public health implications. My assigned topis in the round table discussion was Speleology in Volcanic Parks.

For this I drew heavily on American national parks and monuments plus my 1980 proposal for an international peace park in the Karst. I suggested that the administrative plan of Parco dell´Etna could be a model for such a park.

In addition to the round table, approximately 40 papers were presented. For those wishing datailed information on some or all, I have notes on most plus some questions and answers. Some highlights:

Many major caves of Mt. Etna are within (or at least beneath) aa flows rather than pahoehoe flows; most Etnean eruptions begin vith aa flows and switch to pahoehoe.

CSE is monitoring human impact on the ice in Grotta de Gelo, high on Mt. Etna, and other impacts in other caves.

On Mt. Etna, spohisticated studies of current eruptions seem to be more directly related to lava tubes than in Hawaii, or else are described much more fully. Those of fresh lava include remote intra-tubal flow studies. Studies of still-fuming lava tube caves were impressive.

Some small lava tube caves have been found in Pliocene flows in Sardinia, and some small syngenetic volcanic caves in the West Carpathian Moutains of central Europe. On Iceland´s Mt. Hekla, a lava tube cave 200-300 m long was formed in andesite, but it has been destroyed in later eruptions.

According to Paolo Forti, mineralogy of volcanic caves is more varied and more important than that of karstic caves. In Kenya in 1998 he found 17 mineral species, 3 of them new to caves. Volborthite (copper vanadlite) has been found in an Icelandic cave; mirabilite crusts are common there.

On Grand Comoro Island, Greg Middleton has found more than 4 km of lava tube caves to date, in a total of 30 caves. Tree cast caves are increasingly studied in Japan, with speleogenetic details now emerging. One now is a show cave.

Jon Stephenson has altered some earlier views and now views the Undara caves/wall complex as basically an inflation feature involving preferred subcrustal pathways.

Some fracture caves on Mt. Etna are more complex than those previoously reported in Japan, with brittle multiple linings and benches. Characteristically they are 2 m wide and 100 m deep.

Tenerife´s Cueva del Viento now is 19 km long, with nearby C. de Filipe Reventon at 2 km. 40 troglobites have been identified here to date. It has a 3-dimesional network, and a vertical extent of 500 m. A natural reserve has been proposed for this cave and probably will be enacted this year. However 2 km had to be written off because of damage by urbanization.

Italian cave diggers are active in modern lava flows. In one such project they dug down to a historic church and found much of it still open in the form of "an artificial cave".

Some of the secondary minerals in new Mt. Etna caves clearly were deposited from aerosols.

The round table presentations demonstrated a clear trend toward cooperation between caver organizations and land administrators. Forti and Wood urged administrators to go farther and coerce cavers to assume responsibility for protection of caves. Some saw lava tube caves as more fragile than karstic caves.

Chris Wood stressed the importance of environmental impact studie and the concept of carryng capacity (but did not mention the associated concept of maximum acceptible change). Many speakers stressed the need to protect cave resources and values.

Housing is being eliminated on at least the middle slopes of Vesuvius, now that there is a national park there. Caves of that volcano were described as being small and insignifican, but in a gallery exhibit, a 1917 publication included the map of a sizeable one.

All in all, an excellent meeting. Publication of the Proceedings will be awaited eagerly.

William Halliday
bnawrh@webtv.net

Call for historical study of the UIS organisation

Younger generations have a scarce knowledge of the early history of the UIS and every day are less alive witnesses of the foundation and development of the national speleological societies. I am proposing to the editors of the **UIS Bulletin** or **International Journal of Speleology** to stimulate the historical study on the main development stages, which are according to my opinion as follows.

1. Organisation of the first International speleological Congress in France in the year 1952. Who has given the initiative for it and which bodies of the French speleological Society have carried out the real organisation? The names of the official organisation committees and their representatives are usually published in the proceedings of the congresses, but the real initiators and organizers remanin sometimes in their shadow.

2. Foundation of the UIS in 1965 at Ljubljana. In the Proceedings of the 4th International Congress of Speleology in Yugoslavia (September 12-26, 1965), volume 1-2, published in 1973 in Ljubljana, on its pages 8-9 and 36-40 names of the Honourable and Organisation Committees with their members from all Yugoslav Republics and of the Secretariat in Ljubljana, composed by Slovenian speleologs are listed. This secretariat in Ljubljana carried out all the organisation work, In the beginning of the year 1965 on the initiative of the secretary of the programme commission it sent to the national speleological associations in the world a letter with explanation why the foundation of the steady organisation of the UIS and its bureau is necessary. As earlier the French speleological association promised to prepare the proposal of the statute of the planned UIS on the base of suggestions of the national associations, the Ljubljana secretariat in the same letter asked also to send their proposals for statute to France. On the final session in Ljubljana delegations of 22 countries voted for the foundation and statute. Only Austrian delegation declared not to be competent for voting. *The birthday of the UIS is so September 16, 1965*. Owing to help of French association with preparation of the proposal for statute and since professor Bernard Gèze was elected for the first president of the UIS impressions arose that initiative for the foundation of the UIS came from the oldest national speleological association in the world. In Ljubljana founded bureau and the adopted statute some participants declared to be preliminary but this connotation was later forgotten. More details on the organisation of the 4th Congress is at disposal at the organising secretary of the 4th International Congress Dr. Peter Habič at Postojna, Slovenia.

3. Development of the organisation of the UIS in the following decades. The most qualified person for this review is Prof. Dr. Hubert Trimmel as the long lasting Secretary General and past-President of the UIS.

4. General data on the foundation of the national speleological unions. In many countries the foundation and initial stages of their old union and its contribution to the development of the UIS is not known to the young generations. A better knowledge of the history of the UIS and its members gives a better insight into the huge work done by predecessors for their professional association.

Ivan Gams
Ul. Pohorskega bat. 185, Ljubljana, Slovenia, tel. 341-846

Höhlenkundliche Monographien des deutschen Sprachraumes

Seit ich im Mai 1998 die ehrenamtliche Arbeit als Bibliothekar des Verbandes der deutschen Hoehlen- und Karstforscher abgegeben habe, kann ich endlich einen jahrelangen Traum verwirklichen. Ich möchte eine *Bibliographie der höhlen- und karstkundlichen Monographien des deutschen Sprachraumes von 1XXX bis 2000* (Arbeitstitel) erarbeiten und publizieren. Diese Arbeit soll sich an die Bibliographie von J.-M. Mattlet anlehnen.

Mit meinem Co-Autor Elmar Hammerschmidt bin ich auf der Suche nach Literaturhinweisen und Mitarbeitern. Derzeitig haben wir schon etwa 800 Titel in unserer Datenbank. Dieser Datenbestand ergibt sich aus meiner SPELIS-Datenbank der Verbandsbibliothek und unserem eigenen Literaturbesitz. Dieses Projekt wird sich aufgrund seines Umfangs natuerlich bis zur Fertigstellung noch einige Jahre hinziehen.

Wir wünschen uns in erster Linie Titelmeldungen von sog. Grauer Literatur, die ausserhalb des Buchhandels und abseits der höhlenkundlichen Vereine und Verbaende publiziert wird (auch Diplomarbeiten u. Dissertationen). Diese ist in Allgemeinbibliographien und auch oft in Spezialbibliographien nicht verzeichnet. Desweiteren suchen wir natürlich alte Höhlen- und karstkundliche Literatur.

Da wir die Bibliographie in Anlehnung der DIN 1505 und der Regeln der Alphabetischen Katalogisierung und weitgehend in Autopsie erstellen wollen, haben wir bezüglich der Titelmeldungen eine vielleicht aussergewoehnliche Bitte:

Um die Richtigkeit der Literaturzitate zu gewährleisten, wünschen wir uns ein Freiexemplar jeder Arbeit (das gilt natuerlich nur fuer Neuerscheinungen oder noch vorhandene Exemplare).

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Bei Bedarf würden wir einen systematischen und geographischen Thesaurus (Liste) als Ausdruck, ASCII-File oder HTML-Dokument zusenden oder auf einer Internet-Homepage zum Download zur Verfügung stellen. Bei weitergehenden Fragen stehe ich natürlich zur Verfügung. Bevorzugen würde ich dann allerdings E-Mail: g.hoffmann@ghspelis.ruhr.de.

Vielen Dank für Ihre Bemühungen!

Glück Tief !
Guido Hoffmann
Begonienstrasse 58, D - 44289 Dortmund

Addresses of Web Pages

Integrated Web Information on Karst

On behalf of: IAH Karst Commission, IGU Commission "Sustainable Development & Management of Karst Terrain", UIS Commission on Karst Hydrogeology and Speleogenesis

Acknowledging a growing interrelationship and integration of international karst researches and intending to facilitate the search for relevant karst information on the Web, the three international commissions have established a single joint Web page. From this page links lead to the particular sites of each body, as well as to a common Info-Board that provide details of meetings, publications and other news directed to a wide karst community. We hope this will make it easier for our members to use information resources and will also facilitate the further integration of our activities and avoid duplication of efforts.

The joint Karst Page can be accessed by using one of the following URLs:
http://www.karst-hydrogeology.de/
http://happy.carrier.kiev.ua/~klim/UIS_KHS/

John Gunn, Heinz Hoetzl and Alexander Klimchouk

Bulletin Bibliographique de Spéléologie
http://www.isska.ch/bbs/

Verband österreichischer Höhlenforscher
http://www.clubs.privateweb.at/speleoautria

Swiss Speleological Society
http://www.speleo.ch/
SSS Calendar of Events
huttp://www.earthsci.unibe.ch/people/praezis/calendar.html

Grupo Espeleologico Argentino
http://www.servicenet.com.ar/mpetter/gea

South Africa Speleological Association
http://sasa.caving.org.za

Czech Speleological Society
http:www.speleo.cz

Vladimir A. Maltsev (vl@maltsev.mian.su>)
Just visit a new site on caves:
http://fadr.msu.ru/~vvkor/maltsev/kugitang_caves.htm

UIS Map Symbol List
http://www.speleo.ch/cgi-bin/cave_symbol.pl

Cavers Multi-Lingual Directory
http://rubens.its.unimelb.edu.au/~pgm/uisic/lexintro.html

International Speleological Heritage Association
http://www.microresearch.be/isha/

IGU Commission on Sustainable Development and Management of Karst Terrains
http://www.hud.ac.uk/schools/applied-sciences/LRG/igu/karst.htm

Karst Water Institute
http://www.karstwaters.org/
KWI Conduit
http://www.karstwaters.org/kwiconduit.htm

Book Revies

Wiśniewski Wojciech W. (1997): Grotolaz (1950-1957). Pierwsze polskie czasopismo jaskiniowe. Bibliografia. - Sekcja Speleologiczna Polskiego Towarzystwa Przyrodników im. Kopernika. Kraków. 80 pp., 7 figs. of fascimile, indexes of article names, names of authors, regions and caves, ISBN 83-85222-76-6. Foreword of Kazimierz Kowalski. The first Polish caving journal, Grotolaz, was issued in 21 numbers in 1950 to 1957. The bibliography is divided into three principal parts: general problems, regional part and iconography. The bibliography consists of totally 394 positions.

Wiśniewski Wojciech W. (1996): Kazimierz Kowalski. Bibliografia speleologiczna za okres 1946-1996. - Sekcja Speleologiczna Polskiego Towarzystwa Przyrodników im. Kopernika. Kraków. 48 pp. indexes of article names, journals, names and refercences on Kowalski, ISBN 83-85222-86-3.

Prof. Dr. Kazmierz Kowalski is leading specialist on Cenozoic small mammal faunas. He is dealing not only by faunistical aspects of karst and caves, but also by general problems. To cavers he is known especially as author of monography Polish Caves (1951, 1953, 1954) and of bibliography of Polish speleological literature (1953-1956). The complete bibliography of prof. Kowalski from 1946 to 1996 consists of 283 positions published in Poland and abroad.

Pavel Bosák

New Books Available

Proceedings of the 2nd International Subterraneology Congress (Mons, Belgium, August 2-4, 1999)

31 comminications in Subterranean Archaeology and History
320 pp. A4, four-colour print cover, 153 photos, 16 maps, 59 plans, 69 original figs., 800 g.
Order from: SOBERES, c/o Maison des Arts, Chaussée de Haecht 147, B-1030 Bruxelles, Belgium
Costs: Belgium - 850 BEF, EU - 950 BEF, Europe other than EU - 975 BEF, Other countries 1,045 BEF.

Max H. Fink: Karstverbreitungs- und Karstgefährdungskarten Österreichs, 1:50,000, Blatt 73-Türnitz

64 pp., Costs: 150 ATS.
Order from: Verband österr. Höhlenforscher, Obere Donaustrasse 97/1/61, A-1020 Wien. Austria.

Zdeněk Motyčka (Ed.): Amatérská Cave. 30 years since the discovery of the largest cave system in the Czech Republic)

about 150 pp., 150 photos and drawings, 5 maps, cost about 30 USD
Order from: Czech Speleological Society, ZO 6-25 Pustý žleb, Svatopetrská 7, CZ-617 00 Brno, Czech Republic, e-mail: mediform@iol.cz or vit@cgu.cz.

Obituaries

Prof. Dr. France Habe (1908 - 1999)

Tschus mein lieber Kaiser

Last 12 October 1999 France Habe died in Postojna, Slovenia, just three months before his 92 birthday. He was born in Vrhnika, which is near to the karst springs of the Ljubljanica River and, at that time the region was part of the austrian-hungarian monarchy. Successively he studied history und geography at the University of Ljubljana finishing in 1932 and becoming a teacher in different highschools. During the 2nd World War he was taken into the Dachau concentration camp. After the war he resumed his activity as a teacher. He started as a caver in 1926 in Vrhnika under the guide of Ivan Michler and in 1952 he founded the Caving Club of Postojna. From 1967 to 1971 he was President of Caving Association of Slovenia; from 1970 to 1976 he was President of Speleological Association of Yugoslavia and Vice-president from 1976 to 1980. From 1972 to 1982 he was Chairman of the Commission for Cave Protection and Cave Tourism of the Speleological Association of Yugoslavia. From 1977 to 1986 he was member of the UIS Bureau and, from 1984 to 1996, Chairman of the UIS-Commisssion for the Protection of Karst and Caves. During his speleological career he
performed 184 first explorations of caves, published about 200 papers and got 15,000 pictures concerning the karst phenomenon. In 1964 he got his doctorship at the University of Ljubljana with a thesis entitled: *Morphological, hydrological and speleological development of the Northern part of the Pivka basin with special emphasis on the karst system of Predjama*. In 1965 he became scientific collaborator of the Karst Research Institute in Postojna, and in 1975 he was promoted higher scientific collaborator; two years later, in 1977, he retired. His career confirm that he was not only one of the most outstanding persons of the Slovene speleology but he had also an important role in an international framework. Among many peculiar characteristics he was particularly independent from any constraint either political or due to other reasons and therefore he was a real friend much appreciated by everyone. During his career he produced a lot of work and published, also in the very last years, papers quite relevant and with a great interest. Still few years ago, when he was over eigthy years old, he was quite fit and during a visit to a karst site the students he was leading were amazed by professor Habe who climbed a fence since he forgot the key of the gate !

Beyond the scientist and the caver, we must remember his qualities. France knew a somewhat large number of languages that used fluently: sometimes he switched abruptly from one to another without getting aware of the Change and his friends had hard efforts to stop him and bring again to the previous language.

In September 1979 in Wien, Austria, an International Symposium was oraganized.to celebrate the first centennia of the first caving club in the world, the *Verein für Höhlenkunde*, which was active in many parts of the Austrian-Hungarian Empire. At that time a group of old cavers gathered in Wien and one evening the atmosphere of a pub together with some pints of beer were instrumental in the foundation of the *Imperial Royal Habsburgical Speleological Society*; obviously only persons belonging to the territories of the Empire, or in some way connected to it, could be admitted as members. Consequently Hubert Trimmel entered the Society with the title of Prince Metternich, Frits Oeld as Archbishop of Salzburg, Victor Caumartin (since his name was not Louis !) as Victor XIV and me as Prinz Eugen of Savoy. Of course such a Society had to be managed by a "Kaiser" and not by a president, as usually happens, and therefore our unforgettable France Habe was elected Kaiser by one consent since he was the only one to be born under the Austrian Empire! Afterwards we always addressed France as Kaiser: for each of us it was a way to acknowledge his great qualities and express our appreciation.

During the 13 International Congress of Speleology in La Chaux-de-Fonds, Switzerland, a more serious recognition was attributed to him (who was unable to participate for health reasons) when he was elected Honorary President of the UIS Commission for the Protection of Karst and Caves. But he received also a large number of awards and honours: the last and the highest was the *Silver Honour Award of Freedom* delivered to him on January 29, 1999 by the President of the Republic of Slovenia.

On behalf of many colleagues within the UIS we express our heartfelt sympathy with his Wife and the whole Family.

Arrigo A. Cigna

Note of Editor

Dear readers,

As the **UIS Bulletin** is available on INTERNET on the UIS WEB SITE at the end of 1999: **http://rubens.its.unimelb.edu.au/~pgm/uis.html**, I would like to ask you:

(1) to send me actualised data on your address, phone/fax, e-mail, personal web page, and information

(2) if you wish to obtain the* UIS Bulletin *as a hard copy or you will use an electronic form via out web pages.

The form you can kindly find on the 2nd page of the **UIS Bulletin** cover. Those, who will not send us the filled form up to the end of 1999, they will not obtain printed hard copy of the **UIS Bulletin** starting with Vol. 46,

2000. I would like to ask all, not only those interesting to obtain hard copy, to fill the attached form (return card) for the actualisation of our databases.

The reason of such research is to decrease the cost of the publishing, as the price of mail and print is growing year by year, more a lot of **UIS Bulletins** are returning owing to not announced changes of addresses.

Pavel Bosák
UIS Bulletin *Editor-in-Chief*

!VALID BANK ACCOUNT NUMBER!VALID BANK ACCOUNT NUMBER!VALID BANK! All payments for the UIS should be directed to (money transfer, cheques, bank transfer):
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ANNUAL CONTRIBUTIONS

The UIS General Assembly decided to rise annual contributions of the UIS member countries. Beginning with 1994, the annual contributions will be as follows:

Category A	300 USD
Category B	200 USD
Category C	50 USD

Each UIS member country has the free choice of the category in accordance with its own financial possibilities and with the number of speleologists or speleological societies/ associations/ federations/ clubs/ institutions

The UIS Bureau is authorized to reduce or to remit the contributions, if the UIS member-country makes a respectively written demand. If the UIS Bureau requires, the UIS member country has to give reasons for the difficulties of a payment.

The authorization of the UIS Bureau to reduce or remit the contributions confirms that the impossibility of a payment by actual political problems or difficulties will not be an argument to exclude any member country from the international collaboration within the structure of the UIS.

Older numbers of the **UIS-Bulletin**

The volume 38 of the **UIS-Bulletin** as well as earlier volumes are available on the request by the UIS Past-President Univ. Prof. Dr. Mag Hubert Trimmel (Draschestrasse 77, A-1230 Wien, Austria). The volumes 39 to 45 are available on the request by the UIS Secretary General Dr. Pavel Bosák (Vol. 43 was not distributed by mail!).

INTERNATIONAL JOURNAL OF SPELEOLOGY

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SPELEOLOGICAL EVENTS IN 2000

For national events in the U.S.A. see, please, the Calendar in each number of the NSS News, the updated event calendar can be found on the UIS Speleo Calendar at
http://rubens.its.unimelb.edu.au/~pgm/uis/events.html

N	I Congreso Nacional Argentino de Espeleologia	2000 01.29. - 02.06.	Malargüe, Argentina	Inst.Argent.Invest.Espeleol.	Instituto Argentino de Investigaciones Espeleológicas, Tomasa de San Martín 752, Barrio Parque, (5613) Malargüe-Mendoza, Argentina, fax:++54-2627-470455, t.: ++54-2627-583830 fee: 70 USD
N	2nd Czech-Polish Workshop On recent geodynamics of the East Sudety and adjacent areas	2000 04.06 - 04.08	Boleslawow, south Poland, exc. to Bear Cave	Agricultural Univ. Wroclaw, Inst.Rock Struct.Mechan.Acad.Sci. Czech.Rep., PAN	Agricultural University of Wroclaw, Dept. Geodesy, Grunwaldzka 53, PL-50-357 Wroclaw, Poland Fee: 150 USD
I	5th International Symposium on Glacier Caves and Cryokarst in Polar and High Mountain Regions	2000 04.14 - 04.18	Courmayer,Italy	UIS Comm. on Glac. Caves and Karts in Polar Reg.	Dr. G. Badino, Via Cignaroli 8, I-10152 Torino, t.: ++39-11-4361266, e-mail: badino@to.infn.it, fee: 250 EUR
N	Speleoforum´2000 (19th)	2000 04.14. - 04.16.	Rudice, Moravian Karst, Czech Republic	Czech. Speleol. Soc.	P. Bosak, Czech Speleological Soc., Kalisnicka 4-6, CZ-13000 Praha 3, t.: ++420-2-20922392, fax: ++420-2-20922670, e-mail: bosak@gli.cas.cz
I	National Congress of Speleology of the Cuban Speleological Society on 60th Anniversary of the Foundation - Speleology for the new Millenium	2000 04.16. - 04.22.	Camagüey, Cuba	SEC	Dr. Angel Gra_a Gonzales, 5ta B. No. 6611, Entre 66 y 70, Miramar, Playa, La Habana, Cuba, T.: (537)-292885Fax: (537)-240438, e-mail: funat@artsoft.cult.cu or Biokarst@cidea.unepnet.inf.cu
I	Safety, Stop Program and Rescue in Caving Diving	2000 04.22. - 04.24.	France	SSF	Jaques Michel, 30 rue Clément Janin, F-21000 Dijon, T.: 0033-3-80638163, Christian Thomas, 27 cours de Vincennes, F-75020 Paris, T.: 0033-1-43736929, e-mail: couturier.pla@sni-de or ffs@ffspeleo.fr web: http://www.ffspeleo.fr
N	42. Jahrestagung der Hugo-Obermaier-Gesellschaft	2000 04.25. - 04.29.	Tübingen, FRG	Hugo-Obermaier-Gess.	H.-O.-Geselschaft, Institut für Ur- und Frügeschichte, Universität, Kochstrasse 4/18, D-91054 Erlangen, FRG
I	EXPLO 2000-4th European Caving Expedition Symposium	2000 04.29. - 05.01	Profondeville, Belgium	Explo.Commis.of UBS	Comex, Explo 2000, Chausseé de Wavre 300, B-1390 Grez-Doiceau, Belgium, t.: ++32-4-3426142, fax: ++32-4-3421156, e-mail: ubs@speleo.be, web: http://www.speleo.be/explo2000, fee: 10 EUR

I	ALCADI 2000-5th International Symposium	2000 05.23 - 05.28.	Zadar, Croatia	Croat.Speleol.Feder.	Croatian Speleological Federation, Nova Ves 66, HR-10000 Zagreb, Croatia, t./fax: ++385-1-4666586, e-mail: mgarasic@public.srce.hr; http://jagor.srce.hr/~mgarasic/alcadi/htm; Fee: 250 DEM
I	Mulu Eorld Heritage Conference	2000 06,20, - 06,21,	Royal Mulu Resort, Sarawak, Malysia	Sarawak Development Inst., Malysis	Ms. Zabariah Matali/Mr. Eric Sim, Sarawak Development Institute (SDI), Rumah Laksmana Muda, Jalan Roadway, 93000 Kuching, Sarawak, Malaysia, t.: ++60-82-411799, fax: ++60-82-412799, e-mail: sdi@po.jaring.my, http://www.sdi.com.my
I	International Conference: Potential World Heritage Sites in the Alpine Region	2000 06.21. - 06.25.	Hallstatt, Austria		Umweltdachverband ÖGNU, Alserstrasse 21, A-1080 Wien, Austria, Fax: ++43-1-4011350
I	8th International Karstological School-Classical Karst: Collapse Dolines	2000 06.26 - 06.29	Postojna, Slovenia	Karst Res. Inst. SAZU, Speleol.Assoc.Slovenia	Karst Res. Institute ZRC SAZU, Titov trg 2, SLO-6230 Postojna, Slovenia, t.: ++386-67-7001900, fax: ++386-67-7001999, e-mail: IZRK@ZRC-SAZU.SI Fee: 100 DEM
N	NSS Convention 2000	2000 06.26. - 06.30.	Elkins, W. Virginia, USA	NSS	Kelley L. Deem,167 Blue Ridge Acres, Harpers Ferry, WV 25425, USA, Tel.: (304) 7259812, e-mail: deem@mammoth-geo.com
I	Karst Studies and Problems: 2000 and beyond post-Conference trip (see Climate Changes)	2000 07.20. - 07.26.	Cluj, Romania	Speleological Institute in Cluj	Dr. Bogdan Petroniu Onac, Speleological Institute in Cluj, Faculty of Biology and Geology, Cluj University, e-mail: bonac@bioge.ubbcluj.ro, web: http://www.uib.no/People/nglbn/karst2000.htm or www.geocities.com/Yosemite/Geyser/3479/index.html
I	Climate Changes-the Karst Record II pre-Conference trip Conference (Kraków) post-Conference trip	2000 07.27. - 08.09. 07.27. - 07.30. 07.31. - 08.04. 08.05. - 08.09.	Moravian Karst, Kraków, Polish and Slovak Tatras Mts., Czech Republic, Poland, Slovakia	Inst.Geol.Sci., Polish Acad. Sci., Inst. Geol.Acad.Sci.Czech Rep., Management of Slovak Caves	Dr. Helena Hercman, Institute of Geological Sciences, PAN, ul. Twarda 51/55, PL-00-818 Warszawa, Poland, e-mail: kras2000@twarda.pan.pl, web: http://www.ing.pan.pl/kras2000 Fee: 300 USD Exc. pre: 350 USD Exc. post:150 USD

I	1st International Conference on the karst and caves of Guizhou	2000 07.31. - 08.14.	Guizhou, China	Guizhou Sci.Technol.Comm.	Ms. Wu Jie, Foreig Affairs Dept., Guizhou Sci.Technol.Comm., Guiyang 550002, Guizhou, China, t.: ++86-851-5815263, fax: ++86-851-5827452, e-mail: wujie@kwmail.gz.cnifo.net, fee: 25-30 USD per day
I	31st International Geological Congress *pre-Congress excursion* Bft 17-Karst Geomorphology and Geospeleology of the Chapada Diamantina Region, Center of Bahia State, Brazil (Dr. I. Karman, 5 days, 600 USD) *during-Congress field trip* Dft 11-Environmental Protection-Area Karst of the Lagoa Santa (Minas Gerais State, Eastern Brazil)(J.A. de L. Cabral et al., 2 days, 450 USD) *post-Congress excursions* Aft 07-Surface Karst, Caves and General Geomorphology of the Upper Ribeira River Valley, South of Sao Paulo State, Brazil (Dr. I. Karman, 4 days, 500 USD) Aft 16-Quartzitic Caves from the Ibitipoca Range, Southern Minas Gerais State, Eastern Brazil (A.V. Correa Neto, 450 USD)	2000 08.06. - 08.17.	Rio de Janeiro, Brazil	IUGS	31st International Geological Congress, Secretariat Bureau, Av. Pasteur, 404-Casa Brazil 2000-Urca, Rio de Janeiro-RJ-Brazil, CEP 22.290-240, T.: 0055-21-2955847, Fax: 0055-21-2958094, e-mail: 31igc@31igc.org, web: http://www.31igc.org fee: 100-350 USD
I	IGU Karst Commission field trip and meeting	2000 08.06. - 08.12.	Indonesia	IGU	
I	29th International Geographical Congress - S2: Karst Geoecosystems and Environmental Management	2000 08.14. - 08.18.	Seoul, South Korea	IGU	web: http://www.geog.snu.ac.kr/igc2000 e-mail: igcseoul@plaza.snu.ac.kr fee: 350 USD

N	Jahrestagung des Verbandes österr. Höhlenforscher	2000 08.25. - 08.27.	Pielach, Austria	Verban österr. Höhlenforscher,	Verband österr. Höhlenforscher, Obere Donaustrasse 97/1/61, A-1020 Wien, Austria, Fax: ++43-1-2144844, e-mail: cave_vienna@compuserve.com
I	XXth Conference of the Danubian Countries on Hydrological Forecasting	2000 09.04. - 09.08.	Bratislava, Slovak Rep.	Slovak Hydrometeorological Institute,	Dr. Gabriela Babiaková, Slovak Hydrometeorological Institute, Jeseniova 7, SK-833 15 Bratislava, Slovakia, tel.: ++421-7-54771192, Fax: ++421-7-54776562, e-mail: Gabriela.Babiakova@mail.shmu.sk
I	Workshop: Karst genesis in the Alpine Belt	2000 09.10. - 09.13.	Habkern (Bern), CH	Univ. Freiburg	Ph. Häuselmann, Geographical Institute, University of Freiburg, Peyrolles, CH-1700 Fribourg, Swiss, e-mail: praezis@mpi.unibe.ch
I	3rd International Symposium on Souterrains	2000 09.15 - 09.19.	Paklenica, Croatia	Croatian Mountaneering Assoc.	Marko Andreis, Prilaz Ivana Visina, HR-10020 Zagreb, Croatia, t.: ++385-1-6551543, e-mail: marko.andreis@zg.tel.hr
I	International Symposium and Field Seminar: Karst 2000: Present and future trends in karst studies	2000 09.17. - 09.26.	Marmaris, Turkey	Hacettepe Univ.	UKAM, Hacettepe University, TR-06532 Beytepe, Ankara, Turkey, Fax: 0090-312-299236, e-mail: karst@eti.cc.hun.edu.tr. web: http://www.karst.hun.edu.tr
I	Show Caves Protection and Restoration Symposium	2000 10,20, - 10,24,	Yaolin Cave, Zheijang, Peoples Rep. of China	ISCA, Inst. Geogr. Acad. Sci., Yaolin Cave Adm.	Prof. Song Linhua, Inst. of Geofraphy, Chinese Acad. Sci., 917 Building, Datun Rd., Beijing 100101 China, t.: ++86-1064889333/64889287, fax: ++86-10-68515544, e-mail: Songjyn@public.sti.ac.cn
I	International Conference on Cavelighting	2000 11.14. - 11.19.	Budapest, Hungary	MKBT	Hungarian Speleological Society, Pusztaszeri út 35, H-1025 Budapest, Hungary, t.: ++36-1-3460494, fax: ++36-1-3460495, e-mail: mkbt@mail.matav.hu, fee: 155-170 USD, trips: pre 50 USD, post 100 USD
N	Gongreso Andaluz de Espeleologia: Ronda 2000	2000 12.06 - 12.10.	Ronda (Málaga), Spain	Feder.Andal.Espeleol.	Federación Andaluza de Espeleologia, C/Ronda de Pío XII, 1A-2^{o}-15, E-41008 Sevilla, Spain, t.:954358180, Fax: 954358760, e-mail: faespe97@arrakis.es or ronda2000@arrakis.es, web: arrakis/~faespe97
I	13th International Congress of Speleology + 4th Speleological Congress of Latin	2001 07.01. - 08.06.	Brasilia, DF., Brazil	UIS + FBS	Jose Ayrton Labegalini, e-mail: jal@sulminas.com.br

	America and Carribean Countries (CEALC) + 26th Brasilian Speleological Congress (FEB) pre-Congres program Congress post-Congres program	 07.01. - 07.14. 07.15. - 07.11. 07.23. - 08.06.			
I	Conference on Sustainable Development in Karst Regions	2001 08.24. - 08.27.	Beijing, China The Geological Society of China Mr. Wang Wei, Miss Wang Yanjun, The Geological Society of China, No. 26 Baiwanzhuang, Beijing 100037, China, T.: ++86-10-68311539, Fax: 0086-10-68311324, e-mail: cagsdic@public.bta.net.cn		
N-I	8º Congreso Espanol de Espeleología	2001 10.12. - 10.14.	Alcalá de Henares, Madrid, Spain	FEE	Federación Madrilena de Espeleología, Estadio de la Comunidad de Madríd, Avda. de Arcentales s/n, E-28020 Madríd, Spain, t.: 91-3203702, fax: 91-3203734, e-mail: fmespeleo@mx3.redestb.es

Note:I-International event, R - Regional event, N - National event In the table, we mention only such events which are announced to the UIS Secretary General, the dead-line for acceptation for the print is **March 15** each year, except years in which the International Congress of Speleology is held (dead-line for winter and spring - February 15, dead-line for summer, autumn and winter - June 15)

IMPORTANT NOTE

to all organizers of the speleological events. The use of the name and/or logo of the International Union of Speleology (UIS) in the title or subtitle of the event brings some duties:

(1) the use of the name and/or logo have to be confirmed by some of the UIS Bureau membbers, and

(2) the use of the name and/or logo is against the payment. According to the motion of the Assembly General of the 9th International Congress of Speleology, Bowling Green, USA, July 22, 1981, point 4, the payment per capita in the UIS events are set ***at 5% of the event registration fee, with a minimum of 3 USD*** (see UIS Bull., 22, 1/2, p. 28).