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Founded in Postojna, Slovenia, 1965

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COVER:

World map highlighting in yellow the UIS member countries.

Art by Nivaldo Colzato

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**REMEMBER
SAVE A TREE; DO NOT
PRINT IF UNNECESSARY**

Editorial

GOOD NEWS DESPITE SAD LOSSES

By Nivaldo Colzato (Brazil)

UIS Adjunct Secretary / UIS Bulletin Editor

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Dear reader, here we are together in one more issue of the UIS Bulletin. Unfortunately, the experience of the COVID-19 pandemic is still hard and sad. After all, there are about four million deaths in the world, more than 500,000 in my country, Brazil.

There is no one who is not heartbroken, no one who does not feel like crying, no one who is unaware of this tragedy. The UIS is no different. We are saddened by this situation and also by the loss of two great names in UIS history, and great friends too. They were not victims of this damn virus. Both left us in May from different diseases, and we miss them a lot.

The oldest, the Spaniard Adolfo Eraso Romero, past President of the UIS, aged 91, leaves a legacy of teachings and dedication for science, the UIS, and speleology. The Frenchman Christian Dodelin, past UIS Adjunct Secretary and UIS Vice-President of Operations, at the age 73, also leaves a long list of good services rendered to the UIS and speleology.

While Eraso was best known for his research in glacial regions, Dodelin devoted most of his life to cave rescue to save and help others. Both were humble, a trait common to many great leaders.

I lost two great friends, and the UIS will be eternally grateful for all they have done for the Union and for speleology. The life trajectory of these two great men is summarized on [page 26](#) (Dodelin) and [page 32](#) (Eraso).

As this issue of the UIS Bulletin is published, normally speleologists and cavers around the world would be preparing themselves to travel to France for the 18th International Congress of Speleology (ICS). The pandemic, however, forced its postponement to 2022. Due to this, the International Year of Caves and Karst 2021 (IYCK) <http://iyck2021.org/> was extended through 2022, as you may know.

Despite the difficulty for in-person events, the world has been embracing this cause and continues promoting virtual activities of all types. In the article on [page 5](#), George Veni, UIS President, shows, among other good results, that the IYCK has 203 official supporting organizations from 51 countries, and 187 events held so far. These numbers are growing daily and will be highlighted at the IYCK celebration scheduled for UNESCO Headquarters, in Paris, on September 14th.

Another important and good announcement

made on June 18th by the Secretary General of the UIS, Fadi Nader, was the choice of the country to host the 19th ICS in 2025. As the 18th ICS was postponed to 2022 and the next regular General Assembly was hence postponed one year, an Extraordinary General Assembly was set exclusively to approve, or not, the only bid submitted, that of Brazil. As a result, 35 of the UIS voting Delegates voted “YES.” There was no abstention or vote against; all voted for Brazil.

On [page 13](#) you will see a brief retrospective on Brazil’s bid. The idea was first discussed in 2013, at the 16th ICS, in Brno, Czech Republic. Basic information about what will be the 19th Congress, the host city of Belo Horizonte, and the preliminary list of excursions complete the article. It is the first official communication from Brazil about the 19th ICS. From now on, all issues of the UIS Bulletin will bring news of this Congress until we hope to see you in Brazil in 2025.

As you can see, the UIS and worldwide speleology remain very active. Despite the sadness of the loss of loved ones, good achievements are everywhere. You will appreciate, for instance, on [page 19](#), the awesome results of the international program led by the UIS Commission on Physical Chemistry and Hydrogeology of Karst on using thermal and UV-imaging techniques for remote location of unknown caves.

In the field of biospeleology, Brazil has just joined the group of countries that promote the Cave Animal of the Year campaign as part of the activities for the IYCK ([page 8](#)).

Such initiatives, together with hundreds more, state that the IYCK is changing the way that people see caves and karst. In addition to moving speleology and promoting the importance of these natural heritages, this project of the UIS has achieved an even greater good on uniting people around the world for the same cause: the pursuit of everyone’s well-being through companionship, unity, ecological awareness, and friendship—which is the greatest asset anyone can hold.

Adolfo Eraso and Christian Dodelin must be very pleased about it because what they did in life was exactly that: to promote friendship and strengthen relationships between people and associations to make the world better.

Enjoy the reading.



The President's Column

IMPORTANT UIS CHANGES AND UPDATES

By Dr. George Veni (USA)

UIS President

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I hope all of you know by now that the 18th International Congress of Speleology has been postponed by the COVID-19 pandemic one year to 24-31 July 2022, at the same location in Savoie-Mont Blanc, France. You'll find information about it on [pages 38-39](#) of this Bulletin. This delay has resulted in several changes for the UIS. I'll inform you here about those changes and on other UIS news.

The first change is that the International Year of Caves and Karst is now extended through 2022. This extension gives us all an excellent opportunity to continue teaching the world about the many benefits of caves and karst. Please read my report on the International Year on the next page for more information.

Many UIS activities occur at each International Congress. The presentations, commission meetings, parties, and other events are easily postponed until next year. But there are four items of UIS business that need to be addressed.

First, at the start of each Congress and before the first General Assembly, the delegates from the member countries are confirmed. Secretary General Fadi Nader has done that and the list of delegates and their contact information is now updated on the UIS website.

Second, the delegates pay the dues for their member countries. Many countries pay for the past four years at the Congress, and if a country does not pay for 5 years it loses its membership. To prevent loss of membership, the UIS Bureau decided that no country will lose its membership if its fees are paid at the 18th International Congress in France.

Third, because the Congress is postponed a year, the General Assembly is also postponed until July 2022. One action of the General Assembly is the election of the next Bureau. The UIS Internal Regulations state that the Bureau is elected at the regular General Assembly held at each Congress. Therefore, as happened when the 9th International Congress was postponed from 1985 to 1986, the term of the current Bureau is extended until the Congress next year. The General Assembly will then elect a new Bureau which will serve only three years to put the congresses and Bureau back on their normal schedule.

Forth, there is one decision that the General Assembly must make that cannot be delayed a year. Each General Assembly votes to select the next International Congress. Organizing a Congress takes a full four years, and so an Extraordinary General Assembly was called to select the next Congress and give that Congress four years to prepare. Everyone agreed that the 19th International Congress of Speleology will be held in Belo Horizonte, Brazil, in 2025. See the announcement on [pages 13-18](#) for more information.

On other news, the UIS has expanded its social media presence. UIS has had a [Facebook](#) page for several years. Now, thanks to Satoshi Goto, Anja Hajna, Ayumi Okouchi, and Jasmina Rijavec, we now have [Facebook](#), [Instagram](#), [Twitter](#), and [YouTube](#) accounts. I hope you visit and support them.

Sadly, I must report that you will find two major obituaries in this issue. The UIS lost two dear friends: Adolfo Eraso Romero and Christian Dodelin. Adolfo was President of the UIS from 1981-1986. Christian was UIS Vice President of Operations from 2009-2013 and Bureau Adjunct Secretary from 2013-2017. Both served speleology in many ways, which are described later in this issue. I am honored to have known Eraso and to have served with Christian. Their contributions to speleology will live on for many years.

Luckily, looking back is not always painful but can be a celebration. Boris Watz created a video on the first 50 years of the UIS that was shown in 2015 at the UIS 50th Anniversary Celebration in Postojna, Slovenia. For the International Year of Caves and Karst, he has improved and re-released that video. It is now posted on the [UIS](#) and [International Year](#) websites. On behalf of the UIS Bureau, I thank Boris for his important work in documenting the history of the UIS in a video. He spent hundreds of hours collecting rare images and information and put them together beautifully for everyone to enjoy.

I'm happy that the COVID pandemic is lessening in some parts of the world, and hope it disappears everywhere soon. I wish you all good health and I hope to see you next year in France.



*You will not see one very important person in the UIS History video, **Boris Watz**, from Croatia, who produced the video! Therefore, we are happy to share this photo of our good friend as he works to preserve spelean history.*

THE INTERNATIONAL YEAR OF CAVES AND KARST 2021 AND 2022

By Dr. George Veni (USA)
 UIS President
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A Year Like No Other

The past year was tragically like no other. The world closed many of its businesses. People stayed indoors and away from others. Millions died and suffered. As the COVID-19 pandemic continued into 2021, the UIS and its partners continued with our plans for the International Year of Caves and Karst, but I admit that I was nervous, and wondered if we would succeed.

Many people simply were not certain how to organize virtual events for the International Year. The many uncertainties of the pandemic made planning even more difficult. At the end of 2020, only eight events were announced on the [International Year of Caves and Karst website](#) and we had only a couple dozen partners. But on the first Monday of 2021, a flood of messages began to arrive. By the end of the month, I saw over 2,000 messages from people wanting to participate in the International Year!

As I write now in early June 2021, we have 203 partner organizations from 51 countries.

We have had 187 events so far and 124 are listed as still to come. Many of those are series of events with multiple activities planned. More partners and events continue to join us. Our [website list of completed events](#) is now the most extensive collection of cave and karst video lectures ever. The International Year of Caves and Karst is triumphantly a year like no other. And we are not halfway through the year but just starting.

The main event for the International Year is the [18th International Congress of Speleology](#). In March 2021, it was postponed a year to 24-31 July 2022, still in Savoie-Mont Blanc, France. With this delay, the UIS Bureau agreed that the International Year will be extended through 2022. So, what does that mean for you?

Virtual Year, In-Person Year

Virtual and in-person events will occur in both 2021 and 2022. As the world recovers slowly from the pandemic, 2021 is the virtual International Year. Video lectures, and online meetings and activities are and will continue to be the most common events. 2022 will be the in-person International Year when more people are able to safely gather, including at the International Congress.

One lesson we are learning from this year is the importance of virtual events. Many organizations are now planning their meetings to occur both physically and virtually. This is excellent. The virtual meetings we've had over the past year have included people from around the world. In many ways, the virtually meetings have brought us closer together while we have been forced to stay physically apart. Please plan your in-person activities as hybrid events, to include a virtual audience. This not only keeps us together as an international community, but creates a virtual record that can be posted on the [International Year website](#) and can be watched and used for years.

As we plan for the rest of 2021 and all of 2022, remember the Download page on the [International Year website](#) has posters, leaflets, the logo, and other information you can use, including a guide for planning activities and a guide for planning virtual activities. Look at them both! Each can give you ideas, even if you plan only a virtual or in-person event. For example, the governors of the Canadian Province of British Columbia and the US State of New Mexico signed proclamations recognizing the importance of caves and karst. Proclamations like these are recommended in the virtual event guide and can be highly important for public education. In the next few days, I'll be working to publicize this news in the media across the US, with the goals of reaching millions of people. You can do the same in your city, region, and country.

Keep Sending Event Announcements and Results!

The extension of the International Year through 2022 is an opportunity to reach and teach more people about caves and karst. To do that, we all must continue to develop new and more events.

When you plan events for the International Year, no matter how small, please send them in the format shown on the [Event Announcements Page](#) to the address at the top of the page so they can be announced on the website.

The format is simple:

- Date
- Location
- Event name
- Event description
- For more information

It should take you no more than 5 minutes to prepare and send your event announcement.

After you have finished your event, please send a report for the [Event Results Page](#). It is the same as the event announcement, except that “For more information” is replaced by “Event report” which can be a simple link to a video of lectures, links to news media reports or to a website, PDF, or PowerPoint with the results of the event.

The events we organize for the International Year are to teach people about caves and karst today, so they will understand and care about them in the future. The event reports are especially important for the future. At the end of the International Year, we will compile the results of all the events into one document that you and everyone can use to demonstrate the importance of caves and karst in your area and globally. We hope this document will help people find funding and other support for more exploration, research, and protection.

Use the International Year Website!

Have you looked the [International Year website](#) carefully? It is not just a list of events and partners. It has great information on caves and karst. The website

is a fabulous tool to teach about caves and karst. Please encourage teachers, land managers, lawmakers, family, friends, everyone, to go there and learn about these resources and landscapes that we love so much.

Now for yourself, look closely at the events. You will find much of what you expect, such as excellent lectures about caves and karst from experts around the world. You will also find programs and exhibits for the public and children. We need more of those. Please consider planning such events.

Remember that we use “event” loosely and any activity that teaches people about caves and karst can be an event. A great example are some cave and karst reports and cartoons written by a student who was inspired by the International Year. Are you a student or do you know a student, who has written papers about the International Year? If so, please send those for posting on the website!

You will see many partner organizations on the website which are not speleological groups. This is important. It shows that the world is starting to understand the value of caves and karst. It also shows that we are making an impact. We must continue and gain new friends and new partners. We now have an extra year to do even more. And as speleologists, we need to lead the way.

Please join the UIS as part of the International Year of Caves and Karst. We are working to reach the world and need your help. If you have any questions, contact me (gveni@nckri.org).

Examples of events organized for the IYCK around the world

Country: Poland

Event: Exhibition of posters promoting the most beautiful caves in Poland and the world

Details: <https://www.artsteps.com/>



Country: Mexico

Event: Cleaning of Cenotes in the State of Yucatan

Details: Click on the image above to watch the video



Country: Russian Federation

Event: Environmental Action “Pure Ice”

Details: <https://www.kungurcave.ru/>



Country: USA

Event: City of Carlsbad proclamation recognizing the International Year

Details: <https://eu.currentargus.com/>

George Veni, left, and Carlsbad Mayor Dale Janway pose on January 21, 2021.

Examples of events organized for the IYCK around the world



Country: Malaysia
Event: Public webinar *"Malaysia's Threatened Treasure–The threat and conservation issues of Malaysian caves and karst."*
Details: <https://youtu.be/wDvqYuTOTgA>



Country: Cuba
Event: A lecture on the mysteries and wonders of caves.
Details: <https://www.facebook.com/>



Country: Slovenia
Event: Because of the International Year of Caves and Karst 2021, the abyss Rupa pod Pergovnikom is clean again.
Details: <https://zrsvn-varstvonarave.si/4147/>



Country: Brazil
Event: Series of videos about karst and caves in celebration of the IYCK.
Details:
<https://youtu.be/wDvqYuTOTgA>
<https://youtu.be/MfOmY2R-wTc>
<https://youtu.be/f9PVamVqhyc>



Country: Italy
Event: The 1st season of "Boegan live" consists of six online appointments specifically dedicated on historical and scientific macro themes.
Details:
<https://youtu.be/Y2TC2g9NqiM>
<https://youtu.be/W5Z1QSGbs5U>
<https://youtu.be/Y2TC2g9NqiM>
<https://youtu.be/-32A1FiluCM>
<https://youtu.be/MftG0cCFNIA>
https://youtu.be/uDP_QCm6HaQ
<https://youtu.be/8eGRHhRz0tg>



Country: India
Event: 14th Young Researchers of Natural Sciences (YRoNS).
Details: <https://youtu.be/LqEUhajMXqQ>



Country: Spain
Event: Children's Drawing Contest about bats and their conservation.
Details: <https://murcielagosamigos>.



Country: Puerto Rico
Event: Monthly talks on a variety of topics related to the karst of Puerto Rico by Puerto Rican scientists.
Details: https://fb.watch/v/1S_ltiVay/



Country: Indonesia
Event: Why We Should Protect Karst Landscapes
Details: <https://th.boell.org/en/>



Country: Greece
Event: Speleology in Greece. People and facts.
Details: <https://youtu.be/aPIYHmEBS6M>



Country: Austria
Event: The bats' world.
Details: <https://youtu.be/cVeIVROZZhY>

PROTECTION OF CAVE FAUNA

CAVE ANIMAL OF THE YEAR

Brazilian Campaign in the IYCK



By

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OE observatório
espeleológico
CONNECTING PEOPLE,
IDEAS AND ACTIONS

The commemoration of the International Year of Caves and Karst (IYCK) <http://iyck2021.org/> was planned to alert society to the importance of protecting these singular landscapes and ecosystems via a series of campaigns conducted around the world. One of the strategies used consists of selecting a species to represent the cave fauna of each country (Cave Animal of the Year) in order to disseminate information about the subterranean biodiversity associated with these magnificent ecosystems.

This initiative was first adopted in Germany in 2009, when the amphipods of the genus *Niphargus* were chosen to represent the cave fauna that year. Later, other countries joined the world-wide campaign to disseminate information about the cave fauna, among them Spain (2014), Australia (2019), Italy (2019), Switzerland (2019), the United States (2020), and Austria, Greece, and Portugal (2021). For 2021, cave beetles have been selected by the UIS as the thematic group to be focused on by the campaign.

This year, for the first time, Brazil, via its national association—the Brazilian Speleological Society (SBE)—will participate in this campaign in support of the IYCK, and it has selected a Cave Animal of the Year. As the symbol of the Brazilian cave fauna we have chosen the beetle *Coarazuphium cessaima*. Among the criteria considered for its selection were the status of the species as threatened by extinction, the fact that the species is the most troglobitic of the genus that today is represented by the greatest diversity in troglobitic beetles in Brazil, and the fact that it was one of the first species described by one of the national pioneers of subterranean biology, Pedro Gnaspini.

Cave Beetles

In the history of underground biology, the beetles are iconic. The first subterranean animal in the world

described and scientifically recognized was a beetle. This brownish blind beetle with elongated legs was first found in 1831 by Luka Čeč, an assistant light keeper in the Postojna Cave system in southwestern Slovenia, when exploring new inner cave portions discovered some years before. He gave it to Count Franc Hohenwart. It was then examined by the naturalist Ferdinand Schmidt (Slovenia), who in 1832 gave it the name of *Leptodirus hochenwartii*. Since then, various species of cave beetles have been described. The beetles, or the order Coleoptera, constitute the most diverse group of troglobite species in the world. In the underwater cave environment, the family of Dytiscidae stands out as the most frequent, whereas for subterranean terrestrial beetles. It is the Leiodidae and Carabidae families which are more prevalent.

In general, the beetles constitute the largest number of species of the living fauna of the planet, with approximately 400 thousand species known. In caves, they are also one of the most abundant—and diversified—groups, with species in a number of different families being especially prevalent in Brazil, including Carabidae, Staphylinidae, Tenebrionidae, Dermestidae, Curculionidae, Scydmaenidae, and Leiodidae. In Brazil today, 18 species of troglobitic beetles (species which live only in subterranean environments, including caves) have been described, with 13 from the Carabidae family, four from the Staphylinidae family, and one from the Dytiscidae family.

Despite the elevated endemic nature of most of these 18 troglobitic species, only 10 are found on official lists of species threatened by extinction. The most typical group of troglobitic beetles already described includes the species selected for the first Brazilian participation in the campaign of “Cave Animal of the Year.” This is the genus *Coarazuphium* Gnaspini, Vanin & Godoy, 1998, which was first described in 1991, and

which today has 11 subterranean species described. Pedro Gnaspini, who first found *Coarazuphium cessaima* in 1991, is one of the pioneers in research on Brazilian cave fauna; he made important contributions to the field during the 1990's and is responsible for the formation of other renowned specialists.

In the past few years, the advance of studies of troglobitic coleopteras in Brazil has considerably expanded our knowledge of the distribution of this group in Brazilian caves. A decade ago, species had been found in four Brazilian states: São Paulo, Goiás, Bahia, and Minas Gerais. Today, they have been found in eight states, with the addition of Tocantins, Pará, Paraná and Mato Grosso (the one in this last state being in the process of description).

A database compiled from the material found in the main collections of cave fauna in the country suggests that two regions of the national territory stand out in relation to the diversity of troglobitic coleopteran. The first is the iron ore caves in the Eastern Amazon basin in the Carajás Mountain range in the state of Pará (nine species, three new for science), and the second is in the southeastern part of the country, in the state of Minas Gerais (five species, with three not yet described). In addition of the expressive diversity of troglobitic species, these two regions have in common the fact that they are important centers of mining in Brazil, which implies a threat to the subterranean biodiversity of the region and means that special attention must be given to its protection. Moreover, there are hundreds or even thousands of species yet to be discovered and described by science, both troglobites and non-troglobites.

Although the number of species described has increased in the past few years, the process of description is slow, and many troglobitic species have accumulated in biological collections without a formal description. This is due largely to the scarcity of human and financial resources destined for the training of formation of taxonomists and the limited absorption of these professionals in the national marketplace.

Not only the delay in description, but also the

absence of an evaluation of the state of conservation of species, are extremely troublesome. Unfortunately, the discovery of new species, even troglobites, does not necessarily guarantee the preservation of their habitat (caves), unless that species is officially labeled as endemic (of restricted distribution), rare, or on an official list of species threatened by extinction. However, such an evaluation will only be possible after specific studies have been conducted to make possible the effective analysis of their pattern of distribution in underground environments.

It is hoped that the campaign "Cave Animal of the Year" in Brazil will shed some light on the importance of protecting caves, karst, and their fragile ecosystems, as well as the development of biospeleological science itself.

The official website of the Brazilian campaign is <https://www.cavernicola.cavernas.org.br/>, where the full article about the beetle *Coarazuphium cessaima* can be found, including the map of where it is found in Brazil, as well as a table of the 18 Brazilian troglobitic beetles already described and a photo gallery of the other Brazilian cave beetles. The promotional materials available for free download and distribution were elaborated by the Observatório Espeleológico Speleo Team.

For more information about the campaign of "Cave Animal of the Year" in other countries, consult the links below:

Australia: <https://www.caveanimaloftheyear.org.au/>

Austria: <https://hoehle.org/hoehlentier>

Germany: <https://hoehlentier.de/>

Greece: <https://www.inaturalist.org/projects/cave-animal-of-the-year-2021-greece>; <https://www.facebook.com/CaveAnimalOfTheYearGreece.gr/>

Italy: <https://animalidigrotta.speleo.it/>

Portugal: <https://ce3c.ciencias.ulisboa.pt/outreach/press&events/ver.php?id=1311>

Spain: <https://bioespeleologia.blogspot.com/2020/12/invertebrado-cavernicola-jiennense-del.html>

Switzerland: <https://cavernicola.ch/>

USA: <https://caves.org/conservation/caveanimaloftheyear.shtm>



Beetle *Coarazuphium cessaima* Gnaspini, Vanin & Godoy, 1998

Coarazuphium cessaima is one of the cave species found on the national list of species threatened by extinction.

It is special because it has the most evident troglomorphic characteristics of the beetles in the family (Carabidae) in Brazil. The name "*cessaima*" comes from the indigenous Tupi language and means "blind."

The species was described in 1998 from specimens collected from the Lapa do Bode (Itaetê, Bahia). Only recently (22 years afterwards), have new specimens been found in the Gruta do Poço Encantado, another cave in Itaetê, approximately five kilometers from the original location. These are the only two locations where the species is known to exist.

HOMAGE

THE ROYAL FOUNDER'S GOLD MEDAL

**Andy Eavis (UK), UIS Past President,
honored by the Britain's Royal Geographical Society**

By Nivaldo Colzato

UIS Adjunct Secretary/Editor of the UIS Bulletin
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Sources:

Britain's Royal Geographical Society
<https://www.rgs.org/geography/>

Forum UK Caving
<https://ukcaving.com/>

The UIS family is proud to announce that our Past-President Andy Eavis (UK) was recognized by Britain's Royal Geographical Society (RGS) with the 2021 Royal Founder's Gold Medal, "for his significant contribution in leading speleological expeditions, exploring and recording some of the largest caves in the world for over 50 years."

The Royal Medals are approved by Her Majesty the Queen and are among the highest honors of their kind in the world. They have been presented since the 1830s to award people or organizations for their outstanding contributions to geographical research, fieldwork and teaching, and public engagement.

Among the recipients are figures such as David Livingstone of Africa fame, the Arctic pioneer Sir John Ross; Sir James Clark Ross, discoverer of the Antarctic continent; the Duke of Abruzzi, who lent his name to the first route up K2 mountain; Douglas Freshfield, of Caucasus Mountains fame; Col. Howard Bury, leader of the first trips to Mount Everest; the great climber and sailor H.W. Tilman; Sir John Hunt, leader of the successful 1953 Everest expedition, and Jacques Cousteau, explorer of the undersea world. [Click here](#) to access the list of past winners.

Andy Eavis was announced as a new member of this prestigious list on May 4, 2021, at the Royal Geographical Society in Kensington, London. During the ceremony, Baroness Lynda Chalker, President of the Society, said: "Andy's caving discoveries are recognized worldwide and his sustained scientific exploration has pushed the boundaries of technology and endurance. As one of the world's foremost cave explorers, his international career exploring major cave systems, from Malaysia to China to Indonesia, has led to him discovering more new terrain than almost any other



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Founder's Medal 2021 recipient Andy Eavis



GAVIN NEWMAN

2003: Andy descending a pitch in Benerat Caverns in Mulu, Borneo Island, Malaysia.

individual. And, as this year is the International Year of Caves and Karst, it is fitting to recognise his outstanding accomplishments. He whole heartedly deserves the Society's highest recognition."

At the occasion, Andy said: "I am delighted to receive this award. I feel it is the result of working hard for over 50 years organising caving expeditions, being lucky enough to keep good health, and be supported by wonderful friends, family and colleagues."

Andy initiated his career through studies at the University of Leicester in General Engineering. He was offered many opportunities to join clubs and societies, including the Exploration Society and Caving Club. His love of exploration started one year later when he explored a cave underneath a glacier in arctic Norway with the Leicester University Expedition Society.

On graduating he was offered a second degree in Mining Engineering at Leeds University sponsored by the National Coal Board. At that time Leeds University had a wonderful caving club. On graduating a couple of years later, having explored a lot of caves in Britain, he spent seven years with the National Coal Board becoming Colliery Manager grade.

Andy has led more than 40 caving expeditions all over the world, particularly to South East Asia. The teams mapping over 500 kilometers of some of the largest cave passages on earth.

In 1984 they discovered and surveyed Sarawak Chamber, the largest cave chamber in the world by floor area on the island of Borneo, Malaysia. During the last decade in addition he and the team have been dedicating efforts to laser scanning the largest cave chambers in the world.

In the video recorded for Britain's Royal Geographical Society, when he was asked what he would say to young cavers starting out today, Andy said: "I have to say that a long time ago I moved from just sort of recreational caving, into what I found more interesting areas of cave explorations, such as organizing the expeditions, which of course involves a huge number of different facets, may of them political and financial and so on. And all that became part of the scenario of exploring caves in a modern world. If you like challenges, if you like original exploration, there are still 90% of the caves of the world to explore, get going, get organizing, go for it." The video can be seen by [clicking here](#).

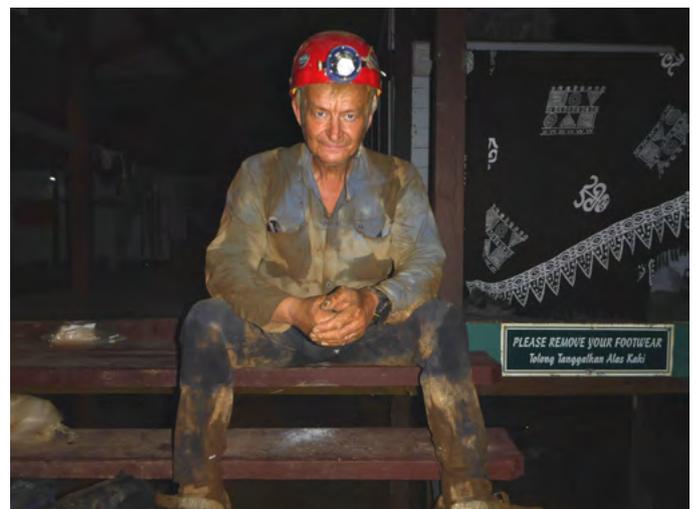
In the field of institutional speleology, besides having been Chairman of the British Caving Association for nine years, in the UIS Andy was Adjunct Secretary (1989-1997), Vice-President (1997-2005), and President (2005-2013), and since then Honorary President.

In his early 70s, Andy is still active and planning to lead a trip to Mulu later this year or early 2022 when Covid rules permit.



© ANDY EAVIS

2009: Back from a caving trip in a hotel in China.



© ANDY EAVIS

2013: After a serious caving trip in Mulu, Borneu Island, Malaysia.



© ANDY EAVIS

2013: Laser scanning close to Api Chamber, Mulu, currently the 9th largest cave chamber in the world.

When notified about Andy's award, the UIS President George Veni (USA), wrote to him the following message: "Congratulations, Andy! Very well deserved! This is a reason to celebrate, not just because of your accomplishments but because this great recognition of your accomplishments elevates all of speleology—especially during the International Year of Caves and Karst."

Not only the UIS but the whole international speleological community is celebrating this award. After all, it recognizes the efforts and contribution of all cavers and cave exploration to the understanding of our planet and its underground.



CARSTEN PETER

2014: Traversing upstream Di Feng Cave in China, around the corner was a waterfall with a canal at the top, currently the limit of exploration.



GAVIN NEWMAN

2017: Andy Eavis after a particularly gruelling caving trip in Mulu.

UIS PRIZES 2021

NEW DEADLINE FOR NOMINATION

Dear cavers, speleologists, and cave lovers around the world, as the 18th ICS was postponed to the next year, you are given extra time to submit nominations for the UIS PRIZES 2021.

The new deadline is APRIL 30, 2022.

Categories:

- 1- The Most Significant
Cave Discovery/Exploration
- 2- The Most Significant
Publication About Caves or Karst
- 3- The Best Special Book
- 4- Poster Prize
- 5- Greatest Scientific Achievement

The prize committee members and their addresses are as follows:

- **Nivaldo Colzato (Brazil)** – UIS Adjunct Secretary
nivaldo@karinaetiquetas.com.br
- **José Ayrton Labegalini (Brazil)** – UIS Past President
ja.labegalini@uol.com.br
- **Jean-Pierre Bartholeyns (Belgium)** - President of the UIS Commission on Karst and Cave Protection
jp.bartholeyns@gmail.com
- **General address:** uisprizes2021@uis-speleo.org.

Before nominating, check the regulations at:
<http://uis-speleo.org/wp-content/uploads/2020/10/UIS-Prizes-2021-Call-for-Nominations.pdf>.

For all questions concerning the UIS PRIZES 2021, email the committee members.

Welcome to Brazil for the

19th INTERNATIONAL CONGRESS OF SPELEOLOGY

July 2025 - BELO HORIZONTE - MG - BRAZIL



By

José Ayrton Labegalini (Brazil)
UIS Past President / Brazilian Delegate of the UIS
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Dear cavers and speleologists around the world, we are proud and happy to announce that Brazil will organize the 19th International Congress of Speleology (ICS) in 2025, at which time the 60th anniversary of the founding of the UIS will also be celebrated.

On April 11, the UIS Bureau unanimously accepted Brazil's proposal to host the 2025 ICS. However, the final approval had to be given by the Delegates. So, for the first time in the history of the UIS, such a decision was taken virtually by an Extraordinary General Assembly (EGA), convened exclusively for this purpose. Why?

Since the 18th ICS (Savoie, France) had been postponed to 2022 due to the COVID-19 pandemic, the regular General Assembly (GA) was also postponed until that time (since it will be held at the 18th ICS, as is common practice). But this meant that a decision about proposals for hosting the 19th ICS would also be postponed.

Since it was the only candidate requesting to host the 19th ICS, Brazil asked the UIS Bureau to officially make a decision about its candidacy before the GA by convening an Extraordinary General Assembly (EGA)

for this purpose. This request was based on the need for the full four years to organize the event. Waiting a year for the decision would have meant having only three years to organize the most important speleological event in the world.

The UIS Bureau recognized the difficulty, and an EGA was convened, with remote voting on the Brazilian bid for hosting the 19th ICS taking place from June 5 to June 13. The Delegates were informed of the details of the Brazilian candidacy in a letter sent by the Brazilian Speleological Society (SBE), including information about the city where the event would be held, and outlining some of the possibilities for one-day excursions and both pre- and post congress excursions. During the EGA, a special institutional video introducing the delegates to the Brazilian underworld was also presented. This provided sufficient information for the Delegates to make their decisions.

The results of the EGA were announced by the Secretary General of the UIS, Fadi Nader, on June 18, after 35 UIS voting Delegates had unanimously voted "YES" for holding the 2025 congress in Brazil.

History of the Brazilian candidacy

The idea of hosting a second ICS in Brazil arose in 2013 at the 17th ICS (Brno, Czech Republic). The original idea was to organize the 18th ICS in Brazil in 2021, using the slogan SPELEO-BRAZIL+20 (an allusion to the Rio+20 of the 2012 Conference for Sustainable Development of the United Nations organized in Rio de Janeiro twenty years after the initial conference in Rio of 1992. The allusion also referred to SPELEO-BRAZIL 2001, the ICS held in Brasília twenty years prior to the proposal for the 18th ICS.

In 2015, a formal proposal was then presented by the Brazilian Speleological Society (SBE) at the meeting of the UIS Bureau in Postojna, Slovenia, during the celebration of 50 years of the UIS. However, France also presented a formal proposal at that same meeting. Given the tradition of the UIS of alternating the organization of the ICSs, one in Europe and one on a different continent, and the fact that France had already bid to host the 14th ICS in 2001 in Brazil (when Greece was selected), the Brazilian candidacy was withdrawn in favor of France.

But the seed for a second ICS in Brazil had been planted. For the 19th ICS of 2025, the seed planted by Brazil in 2013 and 2015 was again on the table, along with interest from China and Mexico. As is general practice, these proposals for the organization of an ICS are presented a year before the General Assembly which will define the seat of the next ICS. In November of 2019, the President of the UIS, George Veni, sent a circular to the delegates officially requesting proposals. At this time, the UIS President also sent an e-mail to José Ayrton Labegalini (UIS Past President and the Brazilian Delegate of the UIS), with a copy to Nivaldo Colzato (present Adjunct Secretary of the UIS), to check whether Brazil was still interested in hosting the 19th ICS, since China and later Mexico decided to not send bids.

Allan Calux, President of the SBE, and Jocy Brandão, Head of the Brazilian National Center for Research and Conservation of Caves (ICMBio/CECAV), a governmental organization concerned with the preservation of caves and karst, who were aware of the whole process involving Brazil's bid, were contacted again. As a result, the answer to George Veni was an emphatic yes!

On July 1, 2020, the deadline established for the

submission of a formal proposal, a letter to the President of the UIS confirmed the continuing interest of Brazil in hosting the 19th ICS, although two months would be required for the preparation of the full proposal. It was agreed that this would be delivered in person by Labegalini and Colzato at the meeting of the UIS Bureau in September 2020 in Slovakia.

Given the pandemic of COVID-19, however, the face-to-face meeting had to be delayed, and was finally cancelled in favor of a virtual venue. The full proposal of Brazil was thus delayed, and Labegalini and Colzato were only able to confirm Brazil's interest verbally. The full proposal was left until the beginning of 2021.

With the worsening of the pandemic and the restrictions on the circulation of people in many countries, another problem had become the priority. In January of 2021, the UIS Bureau met with the organizers of the 18th ICS to decide whether the proposed date for the event should be maintained. With the increase in the number of cases of Covid-19 around the world, the UIS was encouraging the organizers of the event to delay it a year. The initial reaction was to maintain the 2021 date, but after a two-month period to study the situation, the decision was taken to delay the 18th ICS until 2022. This was no time to think about the 19th ICS.

Independent of these official discussions, however, it was highly probably that the Brazilian candidacy would be approved. Therefore, on February 8, 2021, Representatives of the SBE and ICMBio/CECAV met in Brasília to consolidate the Brazilian proposal and start organizing the 19th ICS. This meeting was attended by José Ayrton Labegalini, Nivaldo Colzato (also Chairman of the Section of International Relations of the SBE), Allan Calux, (President of the SBE), Paulo Arenas (Treasurer of the SBE and President of the Organizing Committee of the 36th Brazilian Speleological Congress which will be held in April 2022), Edvard Dias Magalhães (Past President of the SBE), and Jocy Brandão Cruz.

This preliminary committee elaborated the documentation for the candidacy of Brazil and forwarded it to the President of the UIS. In addition to the detailed proposal sent to the Bureau of the UIS and later to the delegates, the committee designed a logo for the event and produced a promotional video. The documents were translated into English by



Location of Belo Horizonte, capital of the state of Minas Gerais, in the southeastern part of Brazil.

Linda El-Dash, Brazilian Substitute Delegate to the UIS, an American who had been on the Organizing Committee of SPELEO-BRAZIL 2001 and had helped with the translations for that event.

The link for access to the promotional video is : <https://www.youtube.com/watch?v=gwjhHEKEDUQ>.

The 19th ICS In Brazil – First presentation

In this, our first communication to the international speleological community, we would like to share with you the information we provided to the UIS Bureau and the UIS Delegates about our plans for the 19th ICS.

The event will be organized by the SBE with the institutional partnership and co-organization of the ICMBio/CECAV.

Location and date

The congress will be held in Belo Horizonte, the capital of the state of Minas Gerais, probably at the end of July 2025. The State of Minas Gerais has more than 10,000 known caves, a remarkable natural and cultural heritage and a thriving economy. The metropolitan region of Belo Horizonte, or BH as it is affectionately known, has various specialized spaces available for congresses and events with sufficient capacity to host the 19th ICS and the celebration of the 60th anniversary of the UIS. Contacts are being made and proposals analyzed, and we expect to have a final decision as to venue in a couple of months. The final selection will, of course, consider the directives of the UIS Congress Guidelines.

Characteristics of the city

Belo Horizonte is located 852 m above sea level (Latitude 19° 54' 46.7928" S; Longitude 45° 56' 27.3588" W). The city is surrounded by mountains and has a hot, yet temperate, climate, with annual temperatures varying from 13 °C to 29 °C, and rarely dropping below 10 °C or rising above 32 °C. During the period proposed for the congress (end of July and beginning of August), the

following conditions can be expected:

- Average temperature: 18 °C
- Minimum temperature: 13 °C
- Maximum temperature: 25 °C
- Rainfall: 9 mm (the driest period of the year in BH)
- UV index: 2
- Hours of sun per day: 9

The metropolitan region of Belo Horizonte, a conglomerate of 34 municipalities with more than five million inhabitants, is the political, financial, commercial, educational, and cultural center of the state of Minas Gerais, which is located in the southeast of Brazil. The region accounts for some 40% of the economy and 25% of the population of the state, with BH being the first Brazilian city to be a member of the World Tourism Cities Federation (WTTCF).

Belo Horizonte is served by two airports, the International Airport of Tancredo Neves, best known as the Confins Airport, and the domestic airport of Carlos Drummond de Andrade, known as the airport of Pampulha. The latter is actually inside the city limits, while the international airport is situated some 40 km away. It is, however, linked to the center of the city by express highways and regular bus lines running at various times throughout the day. In BH, public transport is by surface metro, as well as an extensive network of circulating buses. The services of taxis and transport by *app* (UBER, 99, etc.) is also available at any time of the day or night.

The region has established itself as a center for entertainment and gastronomy, as well as being the stage for numerous cultural and leisure events and center for the development and practice of sports. BH is perhaps best known for its enormous soccer stadium, the Mineirão, which is located near the Pampulha Lagoon and the modern Pampulha Complex. This complex is marked by significant work in architecture and the arts by important names such as Oscar Niemeyer, Roberto Burle Marx and Cândido Portinari. In July 2016, it was designated a World Cultural Heritage site by UNESCO.



Museum of Natural History of the Federal University of Minas Gerais (UFMG).



Liberty Square, in the center of the city, surrounded by various museums.



© [HTTPS://WWW.INSTAGRAM.COM/CIRCUITOGASTROPAMPULHA/](https://www.instagram.com/circuitoGASTROPAMPULHA/)



BRENO PATARO / ACERVO PBH

Pampulha Lagoon is one of the most attractive regions of Belo Horizonte.

ON THE LEFT: *Complex of the Mineirão and the Soccer museum.*

ABOVE: *The San Francisco de Assis Church (Igrejinha da Pampulha). This church is one of the symbols of the city and was used as one of the elements of the 19th ICS logo.*

It houses the buildings and gardens of the San Francisco de Assis Church (Igrejinha da Pampulha), the Pampulha Art Museum, the Casa do Baile, and the Yacht Tennis Club. The buildings were erected almost simultaneously between 1942 and 1943 beside the mirror provided by the water at the edge of the lagoon.

For accommodation and dining, the city has an extensive network of hotels of all categories, as well as numerous restaurants and bars. BH has more than 14,000 establishments specializing in craft beers and typical appetizers (known as “botecos”); this is a concentration greater than that found anywhere else in Brazil. BH also has various sports clubs, with that of the Clube Atlético Mineiro and the Cruzeiro Esporte Clube being the best known for soccer. For recreation there is an ample network of parks and gardens.

Numerous attractions are available for visitation by congress members and/or their accompanying family members; visits can be booked by tourist agencies or privately:

- Museum of Natural Sciences of the Pontifical Catholic University of Minas Gerais (PUC Minas)
- Museum of Natural History and Botanical Garden of the Federal University of Minas Gerais (UFMG)
- Liberty Square and various surrounding museums (including that of MM Gerdau), the cultural center of the Bank of Brazil, and the Vale Mining Company Memorial of Minas Gerais
- Central market of BH
- Complex of the Mineirão and the Soccer museum

- Pampulha Lagoon and Art Museum
- Municipal Park Amerigo Renne Giannetti
- Municipal Park of Mangabeiras
- Zoo and Botanical Garden

But there are dozens more.

Programs for Wednesday

Traditionally, Wednesdays of the ICS are dedicated to one-day excursions, which are arranged to visit special attractions in the vicinity of the venue of the congress, or that can feasibly be reached by land transportation in a single day. For the Wednesday of the congress the following options have been planned:



RICARDO LAF / ACERVO PBH

Pampulha Art Museum.

- City tour of Belo Horizonte
- Liberty Square and the Museum of Mineralogy (and others) in BH
- Architectural complex of Pampulha and the complex of the Mineirão in BH
- Trip through the outlying Curral Mountain Range and a visit to the Park of Mangabeiras in BH
- Caves in the ferruginous rock of the Quadrilátero Ferrífero
- Caves of Lapinha (a show cave) and that of the Sumidouro Lagoon in Lagoa Santa (40 km)
- Nhotim, the largest open-air museum in the world, in Brumadinho (60 km)
- The open-air sculptures of the twelve apostles by Aleijadinho in Congonhas (80 km)
- The art and culture of the baroque period in Ouro Preto (100 km)
- City tour of Ouro Preto (World Cultural Heritage site of UNESCO), with its museums and the Mine of Chico Rei (100 km)
- Gold mine of Passagem in Mariana (120 km)
- Show caves of Rei do Mato in Sete Lagoas and of Maquiné in Cordisburgo (120 km)

Pre- and Post Excursions

Considering the immense territorial extension of Brazil and its diverse regional characteristics, caves are found in numerous different lithologies distributed in 6 different biomes. The following pre-and post-congress excursions are being considered:

- The canyons of Aparados da Serra and the **paleo hollows** in the state of Santa Catarina (RS and SC)
- Sandstone formations of Vila Velha (PR)
- Iguazu Falls National Park and the Itaipu Dam (PR)
- Touristic management of the caves in the South of Brazil (PR and SP)
- Ecotourism in the Valley of the Ribeira River (SP)
- Quaternary registers and environmental impacts in the region of Lagoa Santa (MG)
- Touristic caves and historical cities of Minas Gerais (MG)
- National Park of the Serra da Capivara (PI)
- Speleology and archeology in the Peruaçu Caves National Park Valley of the Peruaçu River (MG)
- Bodoquena mountain range and the Pantanal (MS)
- Diving in the caves of Bonito and trip to the Pantanal (MS)
- Complex of Terra Ronca and the caves of Goiás (GO)
- Karst and caves of the Chapada Diamantina (BA)
- Quartzite caves in Ibitipoca (MG)
- The National Forest of Carajás and the ferruginous rock caves in Carajás (PA)
- Sandstone caves, Igapós and Igarapés of the Amazon (AM)
- National Parks of Jericoacoara, Ubajara, and Sete Cidades (CE and PI)

- São Luiz, capital of the state of Maranhão, and the Lençóis Maranhenses National Park (MA)
- Manaus and an Amazon River Cruise (AM)
- Springs of the Rio Vermelho (Area of Environmental Protection) in Mambai (GO)
- Toca da Boa Vista and Barriguda caves in Campo Formoso (BA)

Organizing Committee

The event in 2025 will combine the 19th ICS with the 38th Brazilian Congress of Speleology (CBE) in a single event, promoted by the UIS and the SBE, with the responsibility for the organization residing in the SBE and CECAV. A preliminary Organizing Committee has been formed to promote Brazil's candidacy and undertake some of the initial organization. The next step will be the composition of the official committee, which will have an ample network of collaborators; these will be organized in a variety of subcommittees to provide support in specific areas.

The Organizing Committee will have the following organizational structure. Some of those who will be responsible for specific jobs have already been selected, although final appointment will depend on the outcome of the special meeting of the SBE to be held now that the proposal has been approved by the General Assembly of the UIS.

- President
- Vice-President
- Chairman
- Secretary General
- Treasurer
- Scientific Coordinator
- Excursions Coordinator
- Representative of the UIS

On behalf of the SBE and the whole Brazilian speleological community, we would like to thank the UIS Bureau and the Delegates for their trust in Brazil as the host for the 19th ICS.

As in 2001, we will do our best to organize another memorable congress and provide the international speleological community and all participants with unforgettable moments in our country.



Belo Horizonte has numerous good restaurants and bars offering a variety of delicious dishes.

ON THE LEFT: Typical food of Minas Gerais.

ON THE RIGHT: Minas cheesebread (Pão de Queijo Mineiro), one of the culinary traditions of the state.

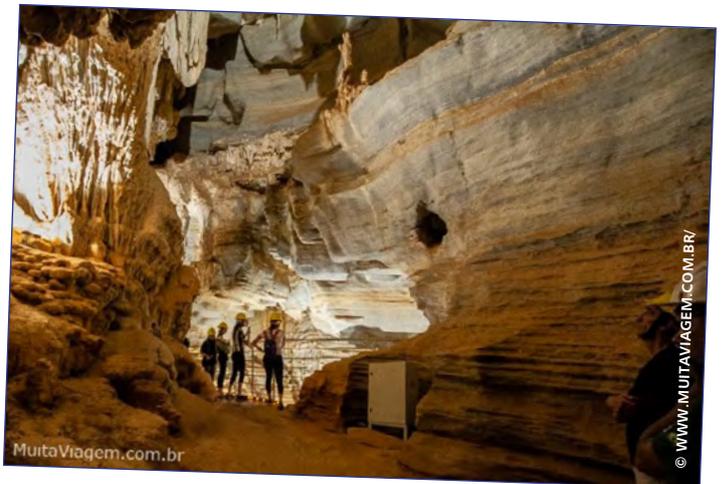


Show cave of Maquiné in Cordisburgo (122 km from BH).

Three Show caves in the Belo Horizonte region for one-day excursions, and their distance from the congress venue.



Show cave of Rei do Mato in Sete Lagoas (75 km from BH)



Show cave of Lapinha, in Lagoa Santa (50 km from BH).



The Brazilian Speleological Society will have as the main institutional partner in the organization of the 19th ICS the National Center for Research and Conservation of Caves (ICMBio/CECAV).

This institution was created in 1997 as a specialized center of the Brazilian Institute of the Environment (IBAMA) and was designed to undertake the study, conservation and protection of Brazilian caves and the species associated with them, as well as their management. At present, it constitutes part of the organizational structure of the Instituto Chico Mendes for the Conservation of Biodiversity (ICMBio), which is linked to the Ministry of the Environment.

Throughout the years of its existence, CECAV has created ties with the most diverse segments of society and the government, serving as a bridge between them and the area of speleology.



Brasilia, February 8th, 2021: First meeting for the elaboration of the Brazilian proposal for the 19th ICS and the initial planning for the event.

From left to right: Paulo Arenas (in foreground, author of the photo), Edvard Dias Magalhães, Nivaldo Colzato, José Ayrton Labegalini, Jocy Brandão Cruz, and Allan Silas Calux.



ACTIVITY OF COMMISSION

PROGRESS REPORT OF THE INTERNATIONAL PROGRAMME FOR TECHNIQUES FOR REMOTE LOCATION OF CAVES (RLC)

By Yavor Shopov*¹, Krisia Petkova¹, Ognian Ognianov²

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President of UIS Commission on Physical Chemistry and Hydrogeology of Karst

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The aim of the International Programme for Techniques for Remote Location of Caves (RLC) of the UIS Commission on Physical Chemistry and Hydrogeology of Karst is using thermal vision and ultraviolet (UV) imaging techniques for remote location of unknown caves. This programme is very promising, because it has the potential to create much better links between the scientific and caving activities of the UIS. It aims to detect and locate new unknown caves and is extremely helpful for expanding cave exploration in new regions. This is a way that science can help the development of the cave exploration. It will be very helpful to find new caves in inaccessible regions and even on other planets (Shopov, 2017, 2019b).

Operation of the RLC program needs highly specific, rare and expensive equipment, which was not available within UIS, any of its members or any of the

programme members. So efforts of the commission were focused on obtaining funding to purchase and build proper equipment for the operation of the RLC programme. After four attempts to gain funding from various national and international programs to buy a proper thermal camera we finally got funding from a Bulgarian national grant. So recently we were able to acquire the necessary thermal cameras and an unmanned aerial system (UAS) to start the RLC programme.

The programme was performed on several cave regions in Bulgaria and Ukraine. The initial results of the programme were presented during the EuroSpeleo forum 2019 (Shopov, 2019a,b; Shopov & Ognianov, 2019; Shopov et al., 2019b). So finally we are able to start the international component of the programme and are preparing to undertake work in other countries.

The 18th International Congress of Speleology in



Fig.1. - Entrance to an unknown cave, localized with a thermal infrared camera (Shopov et al., 2019a).

Fig.1. (left) - Thermal infrared and visible images of the entrance of an unknown cave in the Bosnek Karst region, Bulgaria, integrated in situ by the radiometric thermal camera. In the upper left corner are given the temperature values in the respective places (Sp 1-3) of the terrain, marked with crosses and the respective areas included in circles (Bx 1-3) and squares (EI 1-3);

Fig.1. (middle) - Visible image of the same entrance of the cave, captured simultaneously with the thermal image in Fig.1. (left).

Fig.1. (right) - Overlapping the images from Fig.1 (left), and Fig.1 (middle) by subsequent software processing of the resulting image pair.

France will include a Special Session on “Geophysical Methods & Location of Unknown Caves” (including Remote Location of Caves) within Symposium 9 “Topography, Mapping, 3D, Documentation.” It will be the best place to get familiar with the results and potential of this programme and to establish collaborations to expand its field work in other countries

Recently we made the most successful survey to date for remote detection of unknown caves. On 10th and 11th April 2021, we captured 3436 images from seven flights over four different polygons located in the “Sboryanovo” National Historical-Archaeological Reserve—the territory of the World Heritage Sveshtari tomb, Bulgaria (Shopov *et al.*, 2021). We captured simultaneously the same part of the terrain in the visible and the thermal infrared area of the spectrum from a UAS. This UAS has integrated aligned visible and thermal cameras recording the same area of the surface. Half of the obtained images are in the visible and half in the thermal infrared (TIR) area of the spectrum. This allows superposition of the visible and TIR images (Fig.1), allowing obtaining of integrated images with the high resolution of the images from the visible camera (Fig.1. middle), containing important data from the much lower resolution thermal camera (fig.1.left, fig.4).

Such integrated images (Fig.1. right) are extremely

helpful and important for detection and location of new unknown caves if environmental temperatures are significantly different from the temperature of the cave air coming out of cave entrances. For the purposes of this program, we used:

- Terrain mapping from UAS in visual band for 3D reconstruction

Small pixel size (2.91 centimeters) gave us very detailed reconstructions. With such a model we can find even the smallest positive and negative landforms (cave entrances). Detailed visual orthophotos (like this on fig. 2.b) produced from this mapping is a valuable information source to check suspicious thermal images against detailed visual images for potential cave entrances.

Fig. 2.a and 2.b represent almost the same terrain. In the range of the instrumental error of the GPS device used, the entrances of six caves (1036, 1020, 1035, 441, “нова вявю” and 442) coincide with the corresponding remotely located entrances 11.8, 10, 11.4, 11.2, 11 and 11.1.

For maximum precision of the digital models, we made a series of images of the nadir with a high degree of overlap in the horizontal (80%) and vertical (70%) directions, covering the entire area surveyed. Acquired images serve as inputs to “computer vision” software

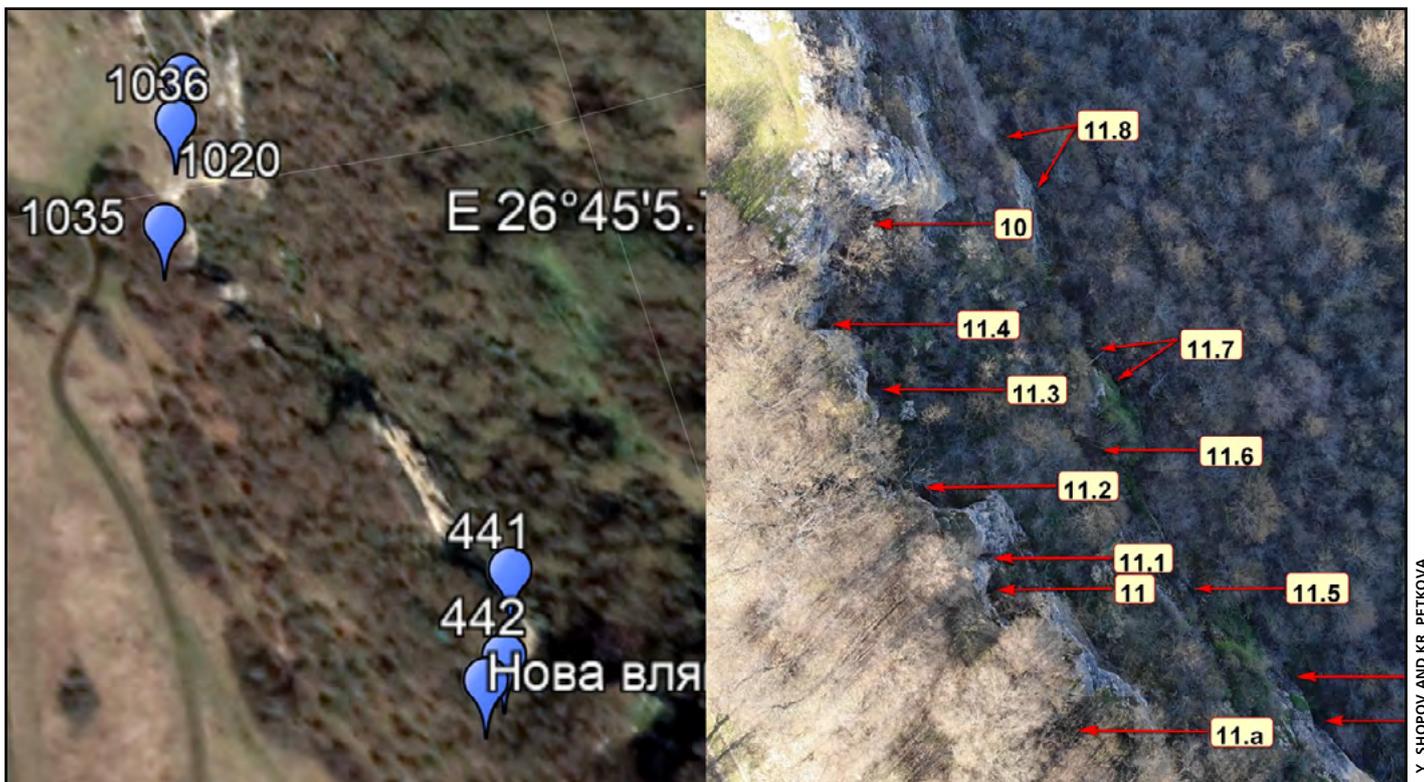


Fig. 2. - Caves and entrances of unknown caves, localized with a thermal infrared camera.

Fig. 2.a. (left) - Entrances of the known caves in polygon 1 located on the Google map from March 2019 using GPS coordinates of the cave entrances taken by Alexey Jalov. Uncertainty of measurement of these GPS coordinates is greater than 20 m. In fact, all these cave entrances are under the escarpment and are shifted over 20 m to the left on the image;

Fig. 2.b. (right) - A small part of the entrances of underground cavities and deep-seated rockslides located by thermal camera from UAS on 10 April 2021.

and generate a point cloud of x, y, z coordinates to generate Digital Surface Model (DSM), digital orthophoto and 3-D surface models (Fig. 3).

- Thermal imaging from UAS

Aerial thermal images (like this on Fig. 4, 5) are the primary source of information for remote cave location (Baroň et al. 2013; Shopov 2013; Shopov & Ognianov, 2019; Shopov et al., 2019a, b). The main benefit from UAS usage is the ability to move onto a strict programmed trajectory and make pictures with equal intervals and programmed camera orientation. These options are the most important requirements for processing with photogrammetry software.

The ground resolution used allows us to distinguish objects only several tens of centimeters in size from an altitude of 95 m. The temperature difference of the target from the surrounding landscape is visualized on obtained thermal images (fig.4). In addition, our UAS with the thermal camera is equipped with GPS, so every picture stores coordinates in the file.

Cave location was done by manual detection and comparison of hot spots on the thermal images with the

corresponding ground features on the visible orthophoto images of the same part of the ground.

Our UAS has two coaxial cameras with the same field of view. One of them is thermal, while the other is high resolution Hasselblad visible camera build-in a common housing. This ensures simultaneous capturing of equivalent thermal and visible images.

However, during the thermal survey of the terrain (6:01-6:11 a.m.) it was too dark to allow for sharp visible photos to be obtained. Instead, we made a second survey of the same terrain from the same height latter in the same day in order to obtain good visible images for preparation of the DSM digital orthophoto and 3-D surface models (Fig.3).

Luckily during both flights we had excellent flight conditions, which allowed us to produce fine sets of thermal and visible orthophotos like those on fig. 2.b, and fig. 4.

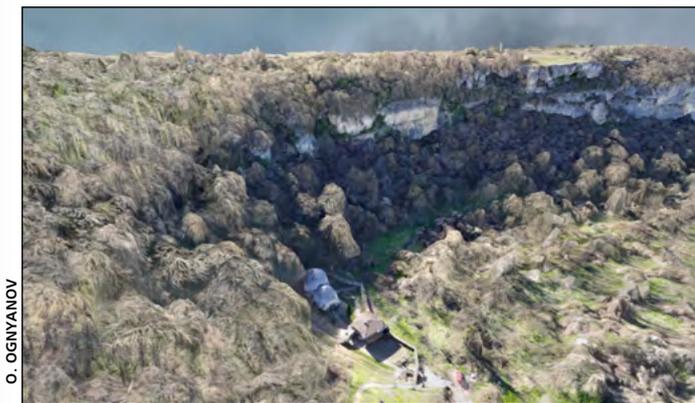


Fig. 3. - 3D visual model of the region.

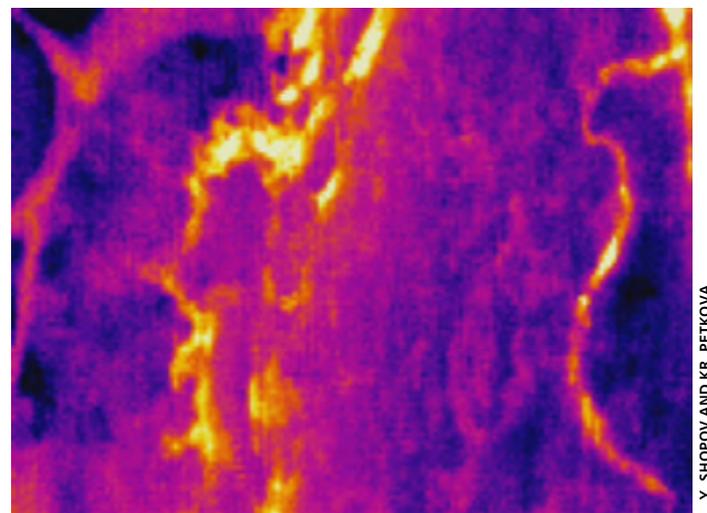


Fig. 4. - Thermal image of cave entrances (orange and yellow) taken from UAS flying 95 meters above the ground. Artificial color temperature scale is similar to this on Fig.1.

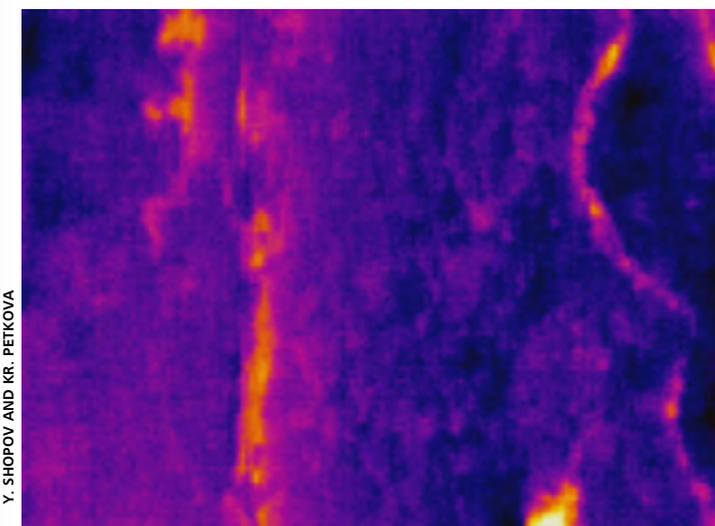


Fig. 5 - Thermal images of rockslides and cave entrances aligned along rockslides.

Fig. 5.a (left) - Thermal image of rockslides (orange). Artificial color temperature scale is similar to fig.1.

Fig. 5.b (right) - Thermal image of cave entrances aligned along rockslides (yellow) taken from UAS flying 95 meters above the ground.

From 13 entrances remotely located with the thermal camera in the orthophoto on fig.2.b, only six correspond to known caves (fig. 2.a). Only eight caves are known so far in the studied polygon 1 “Demir baba teke” territory. Our thermal survey located 57 entrances of underground cavities and deep-seated rockslides (fig. 2.a, b) in the same terrain.

We expect that some of them are entrances of deep-seated rockslides because their shape is prolonged and very narrow (Fig.5) unlike the form of cave entrances, which are always more or less round and do not extend to a significant length on the ground. Indeed, several large fractures have openings on the ground of the studied terrain. Results obtained require further extensive ground survey to locate thermal anomalies on the ground and to check their character: are they cave entrances or just outlets of the air coming from large, closed underground cavities?

In both cases it is necessary to measure their precise GPS coordinates on the ground to locate them precisely on topographic maps.

The International Programme on Techniques for Remote Location of Caves (RLC) consists of the following stages:

1. To optimize techniques on the surface and calibrate them with mapped caves.
2. To use the techniques to locate new unknown caves (fig.1).
3. To put observational instruments on airplanes and heli-

copters or UAS to locate unknown caves from the sky (fig.2, 4).

4. To put observational instruments on microsattellites.

5. To propose to NASA to use this techniques for location of caves on Mars.

Caves on Mars are of vital importance for future exploration of Mars (Boston, 2010). They can be used as shelters of astronauts from the deadly radiation of cosmic rays at the first stages of the planets exploration (Shopov, 2013, 2017, 2019b).

The RLC programme has already achieved stages 1-3 (Shopov et al., 2019a, b, 2021) and is ready to start stages 4 and 5 depending on the availability of financial resources.

The integration achieved for the TIR observational equipment on UAS allows the expansion of the RLC programme to many countries and geographical regions. To do so, please send this information to your colleagues or friends from the speleological community who may be interested in such collaboration.

Anybody interested to collaborate in this large-scale international effort should write to vyshopov@yahoo.com to become member of the research team and to receive details regarding the research plan of the RLC programme.

Additional progress of the programme is the development of an architectural project for settlements in caves on Mars. Due to the fast development of projects for manned space flights to Mars after the start of the RLC programme, there arose an urgent demand for the

development of projects to establish settlements for astronauts in caves on Mars (Shopov, 2017). This intensive demand required us to start work on an additional

stage of the RLC programme:

6. Development of an architectural project for settlements in caves on Mars.

Due to the importance, independence and urgency of this prolonged task it started simultaneously with the development of earlier stages 2 and 3 of the programme. For this purpose, within the RLC programme a working group was formed and chaired by architect Kalina Kalcheva, Bulgaria.

The idea is to use some Martian caves to host large inflatable shells filled with artificial air for an initial human habitat. It is the best way for the fastest hosting of the first humans arriving on other planets. Latter, it would be possible to build alloy structures with an inflatable shell to be inflated in caves there.

Projected settlement on Mars is expected to be a modular structure of alloys in an inflatable shell (fig. 6).

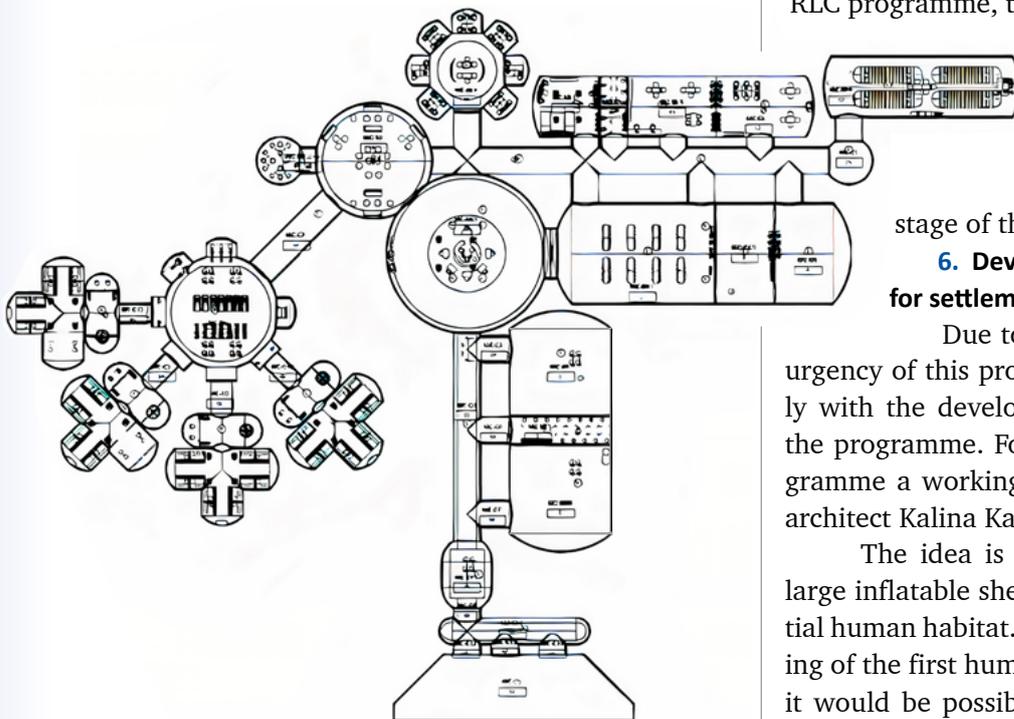


Fig. 6. - Project of a cave settlement on Mars of modular structure of alloys in an inflatable shell.
Project by Kalina Kalcheva.

The whole facility will be built in caves on Mars, and will be surrounded by an artificial ecosystem. The modular structure is designed to be able to adapt to growing needs of such a settlement.

With this project, Kalina applied for the International Space Settlement Contest 2020 of NASA and the National Space Society and was chosen as a semifinalist among hundreds of projects from around the world. So, this way the RLC UIS programme achieved a good position even in the space exploration community.

Conclusions

Here we first demonstrated that aerial surveys for detecting the remote location of caves with a coaxial pair of thermal and visible cameras mounted on a UAS can detect a much greater number of entrances of underground cavities than detailed systematic ground survey by experienced cavers.

Studied polygon 1 “Demir baba teke” along the Krapinets river valley, has been the subject of detailed

systematic ground survey by the Bulgarian Speleological Society for several years, although this aerial survey detected several times greater number of cave entrances within hours.

It demonstrates that using UAS integrated with coaxial TIR and visible cameras is extremely effective and reveals great possibilities to raise the level and sophistication of techniques for location of unknown caves to a level higher than ever imagined before.

The results obtained are a significant step forward in the-state-of-the art location of unknown caves.

Acknowledgements

This research was funded by National Science Fund of Bulgarian Ministry of Education and Science with research grant DN14/4 from 2017 to Yavor Shopov.

We thank Alexey Jalov for providing GPS coordinates of the cave entrances and useful discussions and Kalina Kalcheva for providing the outline of her project for cave settlement on Mars.

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IN MEMORIAM

JEAN NICOD

France, 1923-2021

Fondateur de la karstologie française Founder of French karstology

 By Richard Maire (France)
Richard.maire49@gmail.com

Abstract

Jean Nicod passed away on April 2, 2021, at the age of 98. His disappearance is a shock for all those who knew him and appreciated his great human qualities and his encyclopedic knowledge. He is the founder of French karstology following the creation in 1971 of the CNRS team of karstology in Aix-en-Provence University. To explore Jean Nicod's scientific career, we invite everybody to read the book published in Bordeaux in 1992 for his tribute: **"Karst et Évolution Climatique"**. In 2015, he still published an original work entitled **"Memories of Remarkable Geomorphological Sites"** with a collection of examples taken from around the world.

Jean Nicod s'est éteint le 2 avril 2021 à l'âge de 98 ans. Professeur des universités à la retraite depuis 1989, il continuait à être présent dans les différentes rencontres et excursions scientifiques jusqu'à l'âge de 90 ans et plus. Il faisait partie du paysage scientifique, son image ne changeait pas. Sa disparition constitue un choc pour toutes celles et tous ceux qui l'ont connu et qui ont apprécié ses grandes qualités humaines et ses connaissances encyclopédiques.

L'auteur de ces lignes ne peut oublier qu'il lui doit son poste de chercheur au Centre National de la recherche Scientifique (CNRS). En effet Jean Nicod a toujours été tourné vers les autres et notamment vers les jeunes scientifiques passionnés par la géomorphologie karstique et la spéléologie. Il poussait les doctorants et jeunes docteurs à se faire connaître, à présenter leurs travaux lors des colloques, congrès et autres rencontres. Encouragé par sa recommandation, en mars 1979, j'ai présenté une communication sur les karsts de Papouasie Nouvelle Guinée lors des Journées Géographiques de Lyon; il y avait dans l'assistance l'élite de la géographie et géomorphologie françaises, et notamment le professeur André Guilcher qui était responsable du comité de recrutement des nouveaux chercheurs au CNRS et qui en outre connaissait la Nouvelle Guinée.

Jean Nicod est le fondateur de la karstologie française avec Jean Corbel. Les circonstances ont voulu qu'il prenne la relève imprévue de Jean Corbel décédée brutalement à l'âge de 50 ans le 22 février 1970 lors d'un accident de voiture en Espagne. Le CNRS a donc demandé à Jean Nicod de régler le problème



J. CHOPPY

1987:

Nicod à la Pierre Saint-Martin (Pyrénées).
 Nicod in Pierre Saint-Martin (Pyrenees).

du laboratoire de karstologie et de géohydrologie de Lyon qui était dirigé par Corbel (ER n° 29 du CNRS). La nouvelle équipe de karstologie d'Aix-en-Provence, dénommée ERA n° 282 (= Equipe de Recherche Associée CNRS-Université), a donc été créée en 1971. Elle a duré 27 ans, de 1971 à 1998. Jean Nicod en a été le directeur de 1971 à 1983, suivi par Jean Vaudour, puis Claude Martin.

Jean Nicod est né le 25 mars 1923 à Vesoul dans l'Est de la France (Haute-Saône). Il a épousé Madeleine Berge le 2 août 1946 à Nancy. Il a réussi son agrégation en 1947 à l'Université de Nancy. Puis, la même année, il a décidé de débiter les recherches dans le cadre d'une future thèse d'Etat sur la géomorphologie de la Basse Provence calcaire sous la direction de son maître Jules Blache. Il s'installe à Marseille en 1955 où il est professeur de lycée pendant plusieurs années.

La soutenance de sa thèse a lieu en 1967 après vingt ans de recherche. Aujourd'hui, les doctorats d'Etat ont disparu en France. Le cursus universitaire français s'est calqué sur le modèle anglo-saxon avec un Master suivi d'un PHD. Mais les thèses d'Etat avait une grande qualité : pouvoir traiter un sujet sur le temps long, donc prendre du recul, ce qui est devenu quasi impossible aujourd'hui. C'était aussi l'époque des thèses "régionales", contrairement aux thèses thématiques actuelles beaucoup plus spécialisées. Or la dimension régionale permettait d'étudier de nombreux cas d'espèces et de



R. MAIRE

1985: Nicod (au centre) avec Pulina (à sa gauche) en Pologne (grotte de Wierzchowska, Sudètes).
Nicod (center) with Pulina (on his left) in Poland (Wierzchowska cave, Sudetenland)

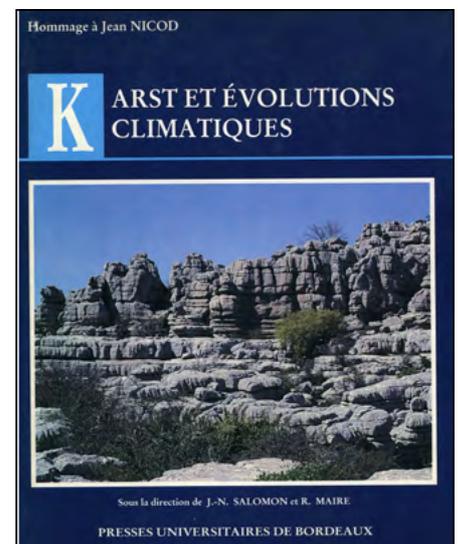


R. MAIRE

1995: Nicod (avec casquette) au Portugal.
Nicod (with cap) in Portugal.

les comparer. C'est ce qu'a réalisé Jean Nicod dans l'examen minutieux de l'évolution géomorphologique des reliefs de la Basse Provence calcaire, notamment les massifs de Sainte-Victoire et de Sainte-Baume, le plateau de Canjuers, le canyon du Verdon et les Calanques de Marseille. Mais l'aspect thématique n'est pas oublié et représente plus d'un tiers de la publication. L'ouvrage se termine par un souhait: **"notre vœux le plus cher est de montrer combien la communication entre chercheurs est souhaitable, et pourrait être fructueuse demain, si un institut du karst à vocation interdisciplinaire pouvait être créé"** (p. 537). Le laboratoire souterrain du CNRS de Moulis en Ariège jouait en partie ce rôle, mais il était à dominante biospéologique et hydrologique. La création de l'équipe de karstologie aixoise a rempli en partie cette fonction, mais finalement aucun institut du karst n'a été créé en France contrairement à la Slovénie avec son célèbre Karst Research Institute avec lequel Jean Nicod a eu des relations étroites. Pour parcourir la carrière scientifique de Jean Nicod, nous invitons le lecteur à lire le livre publié à Bordeaux en 1992 en son hommage.

En 2015, à 92 ans, il publie encore un ouvrage très original intitulé "souvenirs de sites géomorphologiques remarquables". Ce recueil d'exemples pris à travers le monde (Mexique, Inde, Europe, Caucase, Moyen Orient) souligne la curiosité de l'auteur et sa conscience aigüe de la "flèche du temps" à différentes échelles qui commande l'évolution des paysages et des civilisations. Cette invitation prend un relief particulier aujourd'hui : poursuivre avec passion et détermination les recherches dans le domaine de la géomorphologie et des paysages qui conduisent à une connaissance réelle de la relation Homme-Milieu.



1992 : Ouvrage en hommage à Nicod.

Work in tribute to Nicod.

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HOMMAGE A

CHRISTIAN DODELIN

France, 1948-2021

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To be as close as possible to what Christian Dodelin was and what he achieved, we divided up the task by describing the essentials of his life according to what each of us knew best about him, while fully aware that we would leave gaps.

This tribute addresses the life of Christian, a caving enthusiast, in our speleological community under three aspects: the cave, the field teammate, and as the first aid technician and person in charge of French caving rescue and his international investment.

Pour être au plus près de ce qu'était et de ce qu'a fait et réalisé Christian Dodelin, nous nous sommes répartis la tâche en décrivant l'essentiel de tout cela en fonction de ce que chacun de nous connaissions le mieux de lui et parfaitement conscients que nous laissons des lacunes.

Cet hommage aborde la vie passionnée de Christian dans notre communauté spéléo sous trois aspects: Le spéléo, le coéquipier de terrain; le responsable et technicien du Spéléo secours français et son investissement à l'international.

LE SPÉLÉO, LE COÉQUIPIER DE TERRAIN

Le Spéléo club de Savoie, le Comité Départemental de Savoie et tous ses amis sont aujourd'hui orphelins.

Par Jacques NANT (France) - cjnant@free.fr

Un grand spéléo français et un ami, Christian Dodelin nous a quitté en ce début mai 2021.

Né en 1948 et originaire de Normandie Christian résidait tout près de Rouen, éducateur spécialisé de formation il entre au début des années 70 dans un club spéléo local, le Groupe Spéléologique Universitaire. Cinq ans plus tard il est déjà au poste de Conseiller technique départemental. En 1976 il devient moniteur fédéral à Font d'Urle dans le Vercors. Dès lors, il sillonne la France dans tous les sens, des Pyrénées au Jura, des Alpes aux Causses, visitant la plupart des "classiques" de l'époque.



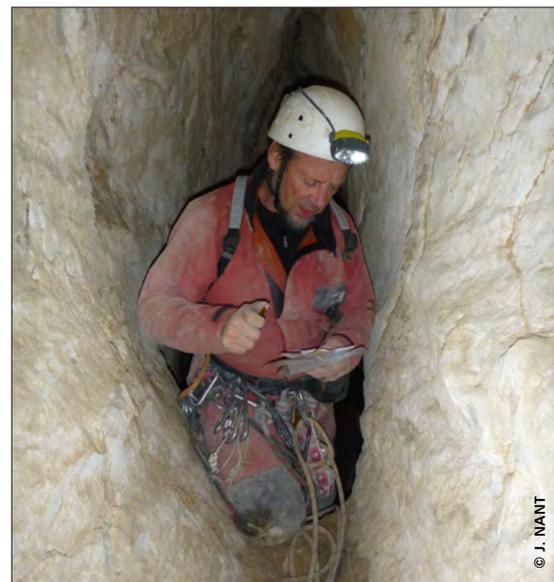
JOSÉ AVRTON LABEGALINI

2016: Lors de la Réunion du Bureau de l'UIS en GB.

At the UIS Bureau Meeting in the UK.

En avril 1978, en tant qu'instructeur, grade nouvellement créé par l'Ecole française de spéléologie, il prend la direction d'un stage moniteur à Meyrueis, la pédagogie insufflée par Christian lors de ce stage révolutionne l'approche du monde souterrain au sein de cette formation.

Cette même année, Christian décide de quitter sa Normandie natale pour se rapprocher des grands secteurs karstiques. Il s'installe en Savoie avec sa famille dans les Préalpes, vers Chambéry puis au cœur du massif des Bauges. C'est là aussi sa première apparition au Spéléo club de Savoie où il adhère en 1979, apportant son expérience technique, sa sagesse, son analyse et sa motivation inébranlable, intégrant bien évidemment les équipes d'exploration en pleine orgie de première



© J. NANT

2012: Prise de note à la grotte du Mort Rû en Chartreuse, France.
 Taking notes at the Cave of Mort Rû in Chartreuse, France.

dans les entrailles du Margeriaz ou d'autres montagnes alentours comme le Revard-Féclaz ou les montagnes de Prépoullain et de Bange.

Cette année-là, il était de ceux qui touchèrent le fond de la tanne aux Cochons à – 650 m, devenant la plus profonde cavité de Savoie. Quelques temps plus tard c'est par la tanne Froide que le record passait à – 817 m. En 1981 après la découverte du réseau ouest dans le creux de la Litorne c'est tout un ensemble de galeries actives qui fut exploré, topographié, dessiné.

De nombreuses autres cavités souvent difficiles furent découvertes tout particulièrement dans les Bauges mais parfois aussi dans le massif voisin de la Chartreuse. Explorateur complet il profitait aussi de chaque sortie pour photographier ou filmer.

En plus d'être un spéléologue de terrain, Christian était président du Comité départemental de Savoie. Il trouvait toujours par sa pédagogie la bonne façon d'avoir des relations fructueuses avec les instances dirigeantes comme la Protection civile, le Service départemental d'incendies et de secours, le Géo-Parc des Bauges ou celui de Chartreuse mais aussi les Maires ou les propriétaires.

Conseiller technique national pendant 35 ans, président du Spéléo secours français durant deux mandats, président de la Commission secours de l'Union Internationale de Spéléologie (UIS) et la Fédération Spéléologique Européenne (FSE), son engagement au sein de la communauté spéléo internationale était total. On ne compte plus le nombre de stages qu'il a encadré au niveau national mais également au niveau international après avoir pour cela appris l'anglais et l'espagnol.

Il était aussi très engagé dans la Commission scientifique fédérale; la seule fonction qu'il n'a pas embrassé a été celle de président de son club, c'est pourtant à l'unanimité et sans abstention que nous l'aurions élu.

Christian était altruiste et une force de la nature : en juillet 2015 à l'aube de ses 67 ans il effectuait encore une belle sortie pour terminer l'équipement du collecteur d'accès à la salle Fitoja dans le creux de la Litorne. Treize heures sous terre, très engagées, et simplement pour que d'autres puissent visiter cette cavité et son immense salle concrétionnée, et cela quelques mois avant qu'un autre club n'apporte une liaison par un gouffre plus facile et beaucoup plus proche de cette salle.

Naturaliste et biologiste accompli, il menait en parallèle et même durant ses explorations, des collectes

pour enrichir les données très lacunaires avant sa venue en Savoie. Il se spécialisa pour les chiroptères, organisant, expertisant et gérant une collection des restes osseux découverts dans nos cavités. Le résultat en fut un manuel rédigé par son fils Benoit, un ouvrage clé, pour l'identification des chiroptères de France par mesure comparative des ossements. Plus tard il prouva la "thermo-préférence" pour expliquer la situation en cavité propre à chaque espèce.

Christian était un homme qui savait transmettre bien plus que la spéléologie. Il fonda une association pour faire découvrir la spéléo mais également d'autres sports comme l'escalade, le canoë. Encadrant dès le printemps des "classes vertes" organisées par les écoles puis l'été venu, pour les colonies et les centres de vacances. C'est dans ces années-là qu'il avait pris l'habitude de

parcourir entre autres mais très souvent, la grotte de Prér rouge située à proximité de chez lui. Cette exurgence d'un ensemble de cavités développant plus de 54 kilomètres aura désormais une grande galerie de presque 450 mètres qui portera son nom, en hommage, pour cet homme d'exception, cet homme qui savait positiver dans toutes les situations, cet équipier avec qui nous explorions toujours en toute sérénité.

Et c'est sur une de tes maximes, si positive, toi le jovial chanteur s'accompagnant de sa guitare que nous terminerons cet hommage, toi pour qui "tant que l'on chante tout va bien!"

Nous te disons au revoir Christian, nous ne t'oublierons jamais et nous savons que de là où tu es, tu nous regardes et tu attends

impatiemment notre prochain compte rendu de sortie pour déjà imaginer la suite et nous la soumettre.

Parmi tes nombreux amis Anne Gallez et Gérard Fanuel de la Société spéléologique de Namur, Patrick Lesaulnier et Jacques Nant du Spéléo club de Savoie.

LE RESPONSABLE ET TECHNICIEN DU SPÉLÉO SECOURS FRANÇAIS

Par Bernard TOURTE (France)

par le Spéléo secours français, juin 2021

btourte@wanadoo.fr

Après avoir découvert la spéléologie en 1970, Christian Dodelin s'engage très tôt dans le Spéléo



2011: Exploration dans le golet de l'Agneau au Margérian, France.

Exploration in the golet de l'Agneau in Margérian.

secours français alors qu'il vient juste d'être élu président du Groupe spéléo normand universitaire de Rouen. Il est en effet nommé Conseiller technique départemental secours de la Seine Maritime en 1975, poste qu'il occupera jusqu'en 1978. En 1979, Christian Dodelin décide de quitter sa Normandie natale pour se rapprocher des grands plateaux karstiques alpins. Il s'installe sur le Bassin chambérien avec sa petite famille, puis au plein cœur du massif des Bauges, et il adhère cette année-là au Spéléo club de Savoie. En 1984, à la demande de Robert Durand, il est nommé Conseiller technique départemental secours de la Savoie. En 1986, il intègre le Comité Directeur du SSF avec le titre de Conseiller technique national pour prendre en charge l'organisation des formations.

Sur cette période de 1987 à 1995, il participera à l'organisation de cinq stages nationaux secours équipier-chef d'équipe, et de 1991 à 1995, à l'organisation et l'encadrement de deux stages nationaux de conseiller technique en spéléo-secours, deux stages de gestion de sauvetage en 1996 et 1998 ainsi qu'à la mise en place et à l'encadrement de plusieurs sessions internationales de formations techniques en 1997 et 1999. En 1996, il succède à Pierre-Henri Fontespis-Loste à la présidence du Spéléo secours français qu'il assurera pendant 8 ans jusqu'en 2004. C'est sous la présidence de Christian Dodelin que des grosses opérations de secours spéléologiques très médiatisées en France et parfois même vers l'étranger ont lieu: gouffre des Vitarelles (1999), tanne des Crolleurs (2000), exurgence des Fontanilles (2001).

Début 2000, alors même que l'opération de secours des Vitarelles qui à durée plus de 10 jours est encore très présente dans tous les esprits, la Sécurité civile française dénonce, des suites de cette opération, la convention qui lie ses services à la Fédération française de spéléologie. Cette période est politiquement, très tendue pour le Spéléo secours français que conduit Christian Dodelin. Des suites de cette dénonciation de convention, une période de flottement s'instaure pour le SSF sur le territoire français, avec une réglementation du moment qui incite à faire intervenir les personnels du Spéléo secours français à titre individuel et de façon bénévole, dans le cadre d'une réquisi-

tion de droit commun, ce qui est inacceptable pour la communauté spéléo française.

Christian Dodelin, avec l'aide de la direction du Spéléo secours français poussée à bout, initie alors la plus forte action de lobbying de l'histoire du SSF. Soit l'activation de nombreuses démarches auprès des députés, sénateurs, présidents de Conseils Généraux et préfets afin qu'ils interviennent auprès du Ministre de l'Intérieur pour influencer sur la rédaction de la future loi de modernisation de la Sécurité civile en cours d'élaboration sur cette période. C'est au moyen de cette pression politique, que le Spéléo secours français obtient alors d'être associé à la rédaction des textes de la nouvelle loi de modernisation de la Sécurité civile française. Une loi qui se voit promulguée en 2004, et remet clairement le Spéléo secours français en première ligne d'action aux cotés des services étatiques de secours français.

En 2005, Christian Dodelin devient Président de la Commission spéléo-secours de l'Union International de Spéléologie (UIS), et œuvre également à la création d'une commission secours au sein de la Fédération Européenne de Spéléologie (FSE) dont il assure la première mandature avant de passer la main en 2015. C'est avec ce haut niveau d'engagement à l'international et une volonté sans fin à partager former, structurer et encadrer que Christian tisse, dans le temps, un lien d'union entre de très nombreuses entités de secours spéléo, européennes émergentes ou déjà structurées.

Sur le terrain cette politique du partage de la connaissance très chère à Christian, se traduit par la multiplication d'échanges et rencontres. Soit un engagement novateur sur la scène spéléologique internationale qui conduit à la naissance de synergies fortes dans le temps et profitables à

toute la communauté spéléologique. Tout comme, par exemple, celle timidement initiée par Christian dans les années 2000 avec une première rencontre des organisations de secours spéléo, entre quelques entités de pays de l'Arc alpin. Une action partie de rien qui aujourd'hui s'est pérennisée dans la durée et rassemble une très grande majorité des organisations secours européennes.

Au fil du temps, la mise en place de formations collaboratives avec des pays tiers ou encore l'encadrement de stages à l'étranger sont devenus deux axes de



1997: Christian en séquence d'essai technique de la civière italienne Steinberg, au coté, son concepteur (Congrès Hauteville, France).

Christian in technical test sequence of the Italian Steinberg stretcher, alongside its designer (Hauteville Congress, France).

BERNARD TOURTE



2006: Christian présent sur un exercice d'entraînement secours à Rocha, Ardèche, France, au côté du Président du spéléo secours Français du moment, Eric Zipper.

Christian presenting on a rescue training exercise in Rocha, Ardèche, France, along with the President of the French Speleo Rescue at the time, Eric Zipper.

conduite et de développement essentiels aux yeux de Christian dans la perspective d'une pratique secours mieux unifiée dans le monde entre tous les pratiquants. Ces valeurs portées au quotidien par Christian constituent aujourd'hui une valeur ajoutée certaine au rayonnement de la spéléologie française à travers le monde. De 1997 à 2011, Christian Dodelin sera organisateur, coorganisateur ou cadre de sept stages internationaux de spéléo-secours en France, mais également de stages spéléo-secours en Bulgarie, Slovaquie, Roumanie, Brésil, Mexique, Turquie, République tchèque, Chine, Iran, et Liban.

Par cet écrit, le Spéléo secours français, tient une nouvelle fois à remercier Christian Dodelin pour l'engagement d'une très grande partie de sa vie, au service de la Spéléo, des spéléos et du Spéléo Secours Français, sans jamais faillir à sa ligne de conduite ou ses engagements.

SON INVESTISSEMENT À L'INTERNATIONAL

Par Jean-Pierre BARTHOLEYNS (Belgium)
Président de la commission de protection du karst et des grottes de l'UIS.
jp.bartholeyns@gmail.com

Le passage de Christian au Bureau de l'UIS a été assez inhabituel. Christian a présenté sa candidature au Bureau l'UIS en 2009 lors du 15e Congrès international de spéléologie à Kerville (USA) et fût élu comme vice-président des opérations pour un mandat de 4 ans (2009-2013). Aux élections suivantes, tenues à Brno (République tchèque) lors du 16e ICS, il retira sa candidature à un second mandat



BERNARD TOURTE

2007: Poignée de main entre Bernard Lips, président de la Fédération française de spéléologie et Christian, au cours de la commémoration des 30 ans du Spéléo secours français (Drôme).

Handshake between Bernard Lips, President of the French Federation of Speleology and Christian, during the celebration of the 30th Anniversary of the French Speleo Rescue (Drôme).

de 4 ans (2013-2017) comme vice-président pour postuler comme secrétaire adjoint permettant ainsi à Efrain Mercado qui avait terminé ses deux mandats de Secrétaire Adjoint de poursuivre son travail au sein du Bureau. Un unique et véritable témoignage d'amitié, de compréhension et d'humilité.

En 2017, le début de ses problèmes de santé l'ont empêché de se représenter aux élections comme membre du Bureau UIS.

Homme de dialogue toujours très calme et discret lors des réunions, connaissant les vertus de l'écoute, Christian savait attendre son tour pour prendre la parole et se faire écouter. Lors des discussions, grâce à son esprit fédérateur inné, Christian a, plus d'une fois, su trouver la bonne formule pour concilier plusieurs avis différents si pas totalement divergents entre les membres et invités présents aux réunions de Bureau de l'UIS.

Il est évident que l'investissement consenti par Christian dans le Spéléo secours français l'ait rapidement amené à participer aux réunions de la Commission secours de l'UIS.

Logique que les rôles qu'il a tenus et les nombreuses actions qu'il a menées et développées comme expliqué dans le précédent chapitre au sein du Spéléo secours français, considéré par tous comme modèle du genre, l'aient finalement amené à aussi assumer la présidence de la Commission secours de l'UIS.

C'était en 2005, lors du 14e Congrès International de Spéléologie tenu à Kalamos (Grèce), qu'André Slagmolen (Belgique), après 16 ans de présidence lui transmet, avec beaucoup d'émotion, le flambeau de la Commission Internationale de Secours.

Le bilan que nous lègue Christian est impressionnant, constructif et fédérateur. Tourné vers l'avenir il

JOSE AYRTON LABEGALINI



2016: Christian (*premier à droite*) lors de la réunion annuelle du Bureau de l'UIS à Dalesbridge, GB.

Christian (first on the right) during the annual UIS Bureau Meeting, Dalesbridge, UK.

s'inscrit dans la durée et toujours dédié au bénéfice des spéléos. Où qu'il soit, Christian était animé de cet esprit d'équipe réel, propre à la communauté spéléologique dont il se considérait comme un humble maillon.

Nous regretteront aussi ses qualités humaines. Toujours souriants, Christian et Doumette formaient un couple jovial, tourné vers les autres et très hospitaliers. Ceux d'entre-nous qui leur ont rendu visite ou séjournés chez eux en gardent les meilleurs souvenirs.

La dernière participation de Christian à un congrès de l'UIS c'était au 16e ICS (Brno, République tchèque). Sa dernière présence en réunion du Bureau de l'UIS remonte à 2016 (Dalesbridge, Royaume-Uni).

UN GRAND SPÉLÉO FRANÇAIS ET UN AMI

Par Gérald FANUEL (Belgium)

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Un grand spéléo français et un ami, Christian Dodelin, nous a quitté ce matin. Il avait 73 ans. C'est une terrible maladie qui a eu raison de cette force de la nature! Christian était bien connu en Belgique où il venait très souvent.

Jeune, il a participé à beaucoup de grandes explos du Spéléo-club de Savoie. Il a oeuvré au sein de l'Ecole française de spéléo, puis surtout et longtemps dans le Spéléo-secours. Il a présidé le Spéléo secours Français et la Commission secours de l'Union internationale de spéléologie.

Il a été très actif à tous les niveaux en Savoie et dans les relations entre les spéléos et le Geo-Parc des Bauges. La liste est longue et nous ne savons certainement pas tout...

On l'a beaucoup vu à la Société spéléologique de Namur et il nous a accueilli plus d'une fois en activité spéléo dans les Bauges. Christian suivait aussi de près les entraînements et les réalisations du Spéléo-secours



GYULA HEGEDUS

2005: Christian Dodelin (au milieu) avec à sa droite André Slagmolen, préside la réunion de la Commission spéléo secours de l'UIS.

Christian Dodelin (center) with André Slagmolen to his right chairing the meeting of the UIS Cave Rescue Commission.

belge. Il aimait nous rencontrer lors d'entraînement et même de réunions.

Et puis en 2013, spécialement pour nous, il a organisé un exercice franco-belge dans le Réseau de Garde-Cavale dans les Bauges (Savoie) qui restera dans les mémoires de tous ceux d'entre nous qui y ont participé. Il était aussi un grand spécialiste des chauves-souris qui a initié des tas de spéléos à la découverte et à l'identification des "bestioles" comme il les appelait souvent.

Chaque hiver, il venait à Namur pour référencer les quelques dizaines de chauves-souris qui hibernent dans la carrière souterraine des Grands Malades... entre deux comptages de centaines de bestioles en Savoie ou ailleurs en France.

Christian était très présent dans les congrès et colloques français et internationaux. C'est là que beaucoup d'entre nous l'ont sans doute rencontré et ont pu apprécier son écoute et sa jovialité.

A Doumette, à sa famille, ses proches et amis, au Spéléo-club de Savoie et à tous ceux qui l'ont bien connu, nous adressons nos plus amicales condoléances.

Christian, nous ne t'oublierons jamais...



BERNARD URMAIN

JANVIER 2008 (de gauche à droite): Gérald Fanuel, Anne Gallez et Christian Dodelin vont descendre dans le Système Garde-Cavale.

JANUARY 2008 (from left to right): Gérald Fanuel, Anne Gallez and Christian Dodelin in preparation to descend into the Garde-Cavale System.



OCTOBER 2020: Tour in Bauges Mountain with Christian Dodelin (wearing green jacket) in his wheelchair, his wife Doumette (on his left), family and friends. © Spéléo club de Savoie

SPELEOLOGICAL POSITIONS HELD BY CHRISTIAN DODELIN

- President of the Savoie Departmental Caving Committee.
- Responsible for instructor and instructor training of the French School of Speleology.
- Technical Advisor of the Savoie Departmental Caving.
- National Technical Advisor of the French Spéléo Secours.
- President of the French Caving Rescue.
- President of the Cave Rescue Commission of the European Speleological Federation.
- President of the Cave Rescue Commission of the UIS.
- Delegate of the French Federation of Speleology to the UIS.
- Vice President (2009-2013) and Adjunct Secretary (2013-2017) of the UIS.



P. GEDEI

JUNE 2015: Christian signing the Attendance Book at the 50th Anniversary of the UIS, in Postojna, Slovenia. It was his last time at an UIS event.

“Christian was an important member of the UIS family. More importantly, he was a good man, which was clear in his dedication to cave rescue to save and help others. Many lives will be saved through his training programs, which will keep his spirit alive far into the future.”

George Veni (USA)
UIS President

IN MEMORIAM

WHO WAS ADOLFO ERASO ROMERO?

Spain, 1930-2021

by José Ayrton Labegalini (Brazil)
UIS Past President
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English Version: Linda Gentry El-Dash (USA/Brazil)
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He was known as Adolfo by some, but as Eraso by the majority. He was born on August 8, 1930, in the city of Pamplona, Navarra, in Spain. He had an athletic build, with light blue eyes, and a white beard. He wore plain clothes and was usually found with his pipe either in his hands or in his mouth. He was always willing to work, and available to provide support for worthy causes. He was a master caver, but above all, a friend.

I first met him in the Spanish Pyrenees Mountains in 1986, where he was springing from one place to another across the broken karst of that region, almost like a mountain goat. He wore a hat weighted down with dozens of colorful pins, reminiscent of his speleological travels, and he traveled from place to place in his Land Rover, also replete with similarly-themed stickers. This same description could be made by someone who knew him behind the scene of some speleological event in some parts of the world.

The visible signs of blue eyes, white beard, pipe, simplicity and disposition hid well the fact that this man had a doctorate in geology with several areas of specialization (Perforation of Oil Wells, Applied Geology, Geotechnics, Applied Hydrology, Environment, as well as Glaciology); his studies of glaciers were internationally renowned. As a scholar he received numerous awards and prizes and was recognized by many scientific institutions in various countries. He was the author of more than 200 articles and dozens of books. He was invited by many universities and research institutes to participate in scientific investigations and technical collaboration. He organized international scientific expeditions and directed various organizations and/or projects. He was a polyglot who spoke six languages (Spanish, Portuguese, French, Italian, English, German, and a bit of Russian). He



Adolfo Eraso in 2009, with his ever-present pipe.

spoke well and was welcome in almost all of the countries of the world, but most of all, he was a friend.

An abbreviated curriculum vitae of Eraso would occupy several pages, and a detailed one would be a book. Dr. Adolfo Eraso Romero retired as a Full Professor of the Polytechnical University of Madrid, and held the title of Scholar of the Academy of Sciences of New York since 1994. For many years, he was the president of the international committee of “Glacier Caves and Karst in Polar Regions” of the International Union of Speleology (UIS), and was awarded the title of Scholar by the Russian Academy of Natural Sciences in Moscow on May 16, 2002, for his work in Siberia and the Ural Mountains (regions of that country) and his research

with Russian scientists at the poles. In 2010, in conjunction with Maria del Carmen Dominguez, he developed the GLACKMA Project (Glaciers, Criokarst y Medio Ambiente in Spanish) to study climate change. This project organized more than 80 polar expeditions to various places in the Arctic and Antarctic from its inception in 2001 until the final years of his life. In 2014, he received an Honorary Doctorate from the Public University of Navarra (UPNA). In 2018, he was awarded the “Francisco de Javier” award from the government of the province of Navarra, Spain, for his “dedication to research, teaching, and the discovery of the problems related to the global warming of the world.”

Not only were many of his technical and scientific activities



1981: Adolfo ERASO with his hat replete with colorful pins commemorating his participation in speleological events around the world, during the 8th ICS in Bowling Green, USA, when he was elected President of the UIS.

related to the development of speleology, but his speleological curriculum as such is also vast and rich in details. In 1954, he received the first of numerous prizes and awards: the Spanish National Prize for University Sports; in 1957 he received the Adán de Yarza award for speleological investigation. Throughout the forthcoming years, he also received various other awards and prizes from speleological groups and federations, both in Spain and abroad.

His work in the development of international speleology led to his election as Adjunct Secretary of the UIS for the period of 1977 to 1981, and at the General Assembly in 1981 in Bowling Green, USA, he was elected President of the UIS for the period of 1981 to 1986. As an Ex-President of the UIS, he has participated actively and effectively in the Bureau, and since 1997 he has been an Honorary Member of the Bureau of the UIS. In the UIS, he occupied the following offices: President of the Committee of Physics, Chemistry, and Hydrogeology of Karst (1973-1977), Director of the Scientific Department of the UIS (1977-1981), and President of the International Committee of Ice Caves and Karst in Polar Regions (1989-2013).

During his stint as Adjunct Secretary of the UIS, he supported the creation of the Speleological Federation of Latin America and the Caribbean (FEALC), and as President of the UIS was present at the foundation of this regional federation (in 1982 in Cuba); ever since, he has supported it. The General Assembly of the FEALC, meeting in 1997 in Argentina during the III Congress of Speleology of Latin America and the Caribbean (CEALC) invited him to join the Advisory Council in recognition of the relevant support which he had provided for the organization and the development of international speleology.

During the I CEALC, in 1988 in Belo Horizonte, Brazil, organized by the Brazilian Speleological Society (SBE), at that time known to me only two years but he became a true friend and also the newest member of the SBE. On



GYULA HEGEDŰS

1983: President of the UIS, Adolfo ERASO lights the cigarette of the Adjunct Secretary Jerzy GLAZEK (Poland), during the annual meeting of the UIS Bureau, organized in Trieste, Italy, during the 7th Meeting of the Committee for Education of the UIS. Behind them is the UIS General Secretary Hubert TRIMMEL (Austria).

July 10, 1988, Adolfo Eraso became member number 0334 of the largest organization for speleology in Brazil.

Many countries owe part of their speleological development to this Honorary Member of International Speleology, not only in Spain and Europe, but also in the countries of the FEALC

At the 11th International Congress of Speleology in 1993 in China, Eraso presented me to the community of the UIS and recommended me for the post of Vice-President; at the Congress in Switzerland in 1997, his support was fundamental in gaining support for the Brazilian proposal to organize SPELEO-BRAZIL 2001, acting to contact his numerous friends who were delegates of the UIS. At the congress in Brazil in 2001, he was one of the supporters of my candidacy for the presidency of the UIS.

We met personally only a few times, but the result was a strong friendship. He visited my home in Monte Sião in the state of Minas Gerais a few times, and in 2008, during one of his innumerable visits to the Antarctic continent, accepted an invitation to get to know the headquarters of the SBE. In July, 2011, after participating in the 31st Brazilian Congress of Speleology in Ponta Grossa in the state of Paraná, in the south of Brazil, he accompanied me to visit the archaeological sites in the National Park of the Valley of the Peuaçu River in the state of Minas Gerais.

His last participation in an official event of the UIS was in 2015, in Slovenia, for the launching of the book FIFTY YEARS OF THE UIS 1965-2015, for which he was a coauthor of one of the chapters, and for the celebration of 50 years of the UIS. At that time, he received a diploma for having served as President of the UIS.

On May 29, 2012, Eraso made his final trip, this time to explore the caves of Paradise, certainly in the company of many friends who awaited him there. His blue eyes, white beard, pipe, simplicity and disposition will remain in the memory of those who knew him, especially those who had the privilege of calling him friend.



PÉTER BORZSÁK

1989: ERASO animating the festivities of a social event of the 19th International Congress of Speleology in Budapest, Hungary.



© J. A. LABEGALINI

2011: Visit to the archeological site of Lapa dos Desenhos in the National Park of the Valley of Peruaçu River, during his final visit to Brazil. **From left to right:** Nivaldo COLZATO (Brazil, Adjunct Secretary of the UIS elected in 2013 and ever since editor of the UIS Bulletin), Efrain MERCADO (Puerto Rico, Vice-President of Operations of the UIS), Arrigo CIGNA (Italy, Past-President of the UIS), Adolfo ERASO (Spain, Past-President of the UIS), José Ayrton LABEGALINI (Brazil, Past-President of the UIS), and Jean-Pierre BARTHOLEYNS (Belgium, President of the Commission for the Protection for Caves and Karst of the UIS).



NIVALDO COLZATO

2015: Three Past-Presidents of the UIS at the Launching of the book FIFTY YEARS OF THE UIS 1965-2015. **From left to right:** the author José Ayrton LABEGALINI (Brazil) and the coauthors Adolfo ERASO (Spain), and Arrigo CIGNA (Italy).



P. GEDEI

2015: ERASO signing the list of attendance at the 50th anniversary of the UIS in July of 2015 in Postojna, Slovenia, at which time he received a Diploma as President of the UIS for the period of 1981 to 1986; this was his final public appearance at an event of the UIS.

“The early 1980s was a critical period for the UIS. We were trying to grow our relationship with UNESCO, our International Congress was delayed a year, we helped bring together and create the Federation of Latin American and Caribbean Speleological Associations while international tensions threatened to break apart some countries (and did a few years later). Adolfo Eraso Romero was the right man at the right time as UIS President who safely and successful guided us through those times.”

George Veni (USA) - UIS President

A tribute to ADOLFO ERASO ROMERO

by Arrigo Cigna (Italy)

UIS Past President

arrigocigna@gmail.com

During my first term as President of the UIS (1973-1977), the UIS was admitted to UNESCO as an international non-governmental organization (NGO). We were classified as Category C, which only gave UIS the right to exchange information with UNESCO.

At the end of the second term of my presidency (1977-1981), we were engaged in the procedure to be formally acknowledged by UNESCO as Category B, a Consultative Entity.

I proposed then that Adolfo Eraso should stand as a candidate for UIS president. He accepted and was elected by the General Assembly of the UIS at the 8th International Congress of Speleology (ICS), in Bowling Green, USA, in 1981.

We then passed the documentation already amassed on to Eraso, who took the UNESCO proposal forward. On August 23, 1983, therefore, during his mandate, the UIS received the communication in a letter from the Director-General of UNESCO stating that the UIS was indeed granted the status of Category B.

Eraso would be proud to know that 38 years later, the UIS will be hosted by UNESCO at its Headquarters,



LAST MEETING: Eraso (left) talking to Arrigo, in Postojna, Slovenia, in June 2015, during the 50th Anniversary of the UIS.

in Paris, on September 14th, to celebrate the International Year of Caves and Karst. This represents a great achievement of the UIS with UNESCO, confirming the good relationship between the two organizations.

I had the chance to meet Eraso many times in different parts of the world for congresses and various meetings, and we could speak both Spanish and Italian, each in our native language.

The most important qualities of Adolfo were as a scientist and his great capacity of contacts in many languages. In addition to Spanish, his native language, he spoke Portuguese, French, Italian, English, German, and some Russian. His contribution to the development of the UIS was therefore quite relevant.

But Adolfo must also be remembered by us all for his personal characteristics, not only as an excellent scientist but particularly as a good man and a good friend.

UIS is fully grateful to him, and we all keep him in our minds as a great friend we will never forget.



From left to right: ???, Antonio Nuñez Jiménez (Cuba), Arrigo Cigna (Italy, center), Hubert Trimmel (Austria), and Adolfo Eraso (Spain) with his ever-present pipe, at the 8th International Congress of Speleology, Bowling Green, USA, 1981.

Calendar of Events

2021
2022

If you are interested in any of the following events, contact them directly to learn if they are still planned as announced below

National Speleological Society Convention

26-30 July 2021 (virtual conference) - <http://nss2021.caves.org/>

34th International Geographical Congress

Karst sessions: Global Karst Critical Zone and Land Use Planning in Karst

16-20 August 2021 (Istanbul, Turkey)

<https://www.igc2020.org/en/KARST%20COMMISSION.html>

International Association of Hydrogeologists 47th Congress

22-27 August 2021 (São Paulo, Brazil) - <https://iah2021brazil.org/en/>

19th International Symposium on Vulcanospeleology

28 August - 4 September 2021 (Catania, Italy) - <http://www.19isvetna.com/>

ALCADI 2020: International Symposium on History of Speleology and Karstology (ALps, Carpathians and Dinarides)

3-5 September 2021 (Gorizia, Italy) - Contact: seppenhofer@libero.it

International Association of Hydrogeologists 48th Congress

6-10 September 2021 (Brussels, Belgium) - <https://iah2021belgium.org/>

Fort Stanton Cave Science Conference

16-18 September 2021 (Macey Center, New Mexico Tech, Socorro, New Mexico, USA)

<https://geoinfo.nmt.edu/FtStanton/home.cfm>

26th International Cave Bear Symposium

30 September - 3 October 202 (Reiss-Engelhorn-Museen, Mannheim, Germany)

Contact: doris.doeppes@mannheim.de

US Geological Survey Karst Interest Group Meeting

19-21 October 2021 (Nashville, Tennessee, USA) - <https://www.usgs.gov/mission-areas/>

Australian Cave and Karst Management Association Conference

18-22 October 2021 (Wellington Caves, New South Wales, Australia)

For more information: enquiries@wellingtoncaves.com.au

6th EuroSpeleo Protection Symposium

26-30 October 2021 (Isle of Vilm, Germany) - Contact: symposium@eurospeleo.org

European Cave Rescue Association Meeting

Postponed to late spring or November 2021 (Cantabria, Spain)

<https://caverescue.eu/ecra-meeting-2020-cantabria-spain/>

Calendar of Events

2021
2022

Speleo Kamaraton 2021

29 October – 1 November 2021 (Marina di Camerota, Salerno, Italy)

<http://www.speleokamaraton.eu/>

23rd National Cave and Karst Management Symposium

1-5 November 2021 (San Marcos, Texas, USA)

<https://symposium2021.nckms.org/>

XV Mexican National Congress of Speleology

29 October to 2 November 2021 (Playa del Carmen, Quintana Roo, Mexico)

<https://umae.org/congreso2021/>

Conference of the Arabian Journal of Geosciences - Cave and Karst Session

25-28 November 2021 (Istanbul, Turkey)

<https://www.cajg.org/>

Karst Record IX (KR9) Conference

Postponed to 2022 (Innsbruck, Austria)

<https://www.uibk.ac.at/congress/kr9/>

36th Brazilian Congress of Speleology

20-23 April 2022 (Brasilia, Brazil)

<http://36cbe.org.br/>

14th International Symposium on Pseudokarst

Postponed to Spring 2022

<https://14pseudokarst.wonders4you.com/>

EuroKarst 2022: The European Congress on Karst Hydrogeology and Carbonate Reservoirs

Probably June 2022 (Málaga, Spain)

<http://www.eurokarst.org/>

18th International Congress of Speleology

24-31 July 2022 (Savoie Technolac, Le Bourget du Lac, Savoie, Chambéry, France)

<http://uis2021.speleos.fr/>

19th International Congress of Speleology

July 2025 (Belo Horizonte, Minas Gerais, Brazil)

[Preliminary information on pages 13-18 on this issue](#)

18TH INTERNATIONAL CONGRESS **SPELEOLOGY**



JULY 24-31, 2022 - SAVOIE TECHNOLAC

KARST HERITAGE AND RESOURCES



Fédération Française
de Spéléologie



Organisation
des Nations Unies
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Commission
nationale française
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18th INTERNATIONAL CONGRESS
SPELEOLOGY



Congress Partners



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**UNIVERSITÉ
SAVOIE
MONT BLANC**



**AIX LES BAINS
RIVIERA
DES ALPES**

**GRAND CHAMBÉRY
ALPES TOURISME**
— Bauges – Challes-les-Eaux – Chambéry —

Crédit Mutuel



UIS BUREAU 2017/2021

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Efraín Mercado (*Puerto Rico*)

Vice-President of Administration:

Zdeněk MOTYČKA (*Czech Republic*)

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Andrew EAVIS (*United Kingdom*) - 2005-2013

Kyung Sik WOO (*Republic of Korea*) - 2013-2017



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UIS BUREAU 2017/2021 in Bohol, Philippines, September 12, 2019.

Left to right: George VENI (*President/USA*); Satoshi GOTO (*Adjunct Secretary/Japan*); Efraín MERCADO (*Vice-President of Operations/Puerto Rico*); Nadja ZUPAN HAJNA (*Treasurer/Slovenia*); Mladen GARAŠIĆ (*Adjunct Secretary/Croatia*); Gyula HEGEDUS (*Adjunct Secretary/Hungary*); Tim MOULDS (*Adjunct Secretary/Australia*); Zdeněk MOTYČKA (*Vice-President of Administration/Czech Republic*); Bernard CHIROL (*Adjunct Secretary/France*), and Nivaldo COLZATO (*Adjunct Secretary/Brazil*).
Inset photos above: Bärbel VOGEL (*Adjunct Secretary/Germany*); and Fadi NADER (*Secretary General/Lebanon*).

LIST OF MEMBER NATIONS as reported by the UIS Treasurer

56 Member Nations

UIS FEES - JUNE 2021

Paid through

Australia (2024)	France (2019)	Netherlands (2021)	Spain (2020)
Austria (2020)	Germany (2020)	New Zealand (2020)	Sweden (2019)
Belgium (2020)	Greece (2020)	Poland (2019)	Switzerland (2020)
Bosnia and Herzegovina (2021)	Hungary (2020)	Portugal (2021)	Turkey (2020)
Brazil (2021)	Iran IR (2020)	Puerto Rico (2020)	Ukraine (2021)
Canada (2021)	Italy (2021)	Romania (2020)	United Kingdom (2020)
China (2019)	Lithuania (2021)	Serbia (2022)	USA (2020)
Colombia (2020)	Luxembourg (2020)	Slovakia (2019)	Venezuela (<i>not paying until 2021 due to economic crisis</i>)
Croatia (2019)	Mexico (Half for 2023)	Slovenia (2020)	
Czech Republic (2020)	Norway (2021)	South Korea (2020)	

UIS members with debts for 2019 or more (last payment):

Algeria (2013; <i>at next Congress</i>)	Indonesia (2017)	Philippines (2017)
Argentina (2017; <i>at next Congress</i>)	Israel (2017; <i>at next Congress</i>)	Russia (2017)
Bulgaria (2018)	Japan (2018; <i>at next Congress</i>)	South Africa (2017)
Costa Rica (2018)	Kyrgyzstan (2018)	Vietnam (2017)
Cuba (2017)	Lebanon (2017; <i>at next Congress</i>)	
Honduras (2013)	Mongolia (2017; <i>paid 4 years in 2018</i>)	

On the way to lose membership in 2021 if they don't pay their fees:

Algeria and Honduras

Please indicate WHO is paying for your country - especially if there are two or more speleological associations in your country. The UIS Bureau can't select the payer for your country and we don't return money!!!

If you have a new treasurer or responsible person for payments, please send the new name and e-mail address to zupan@zrc-sazu.si.

We do not know who to contact in some countries or we do not have their proper address.

UPDATE your status now!

CONTACT UIS

UNION INTERNATIONALE DE SPÉLÉOLOGIE
Titov trg 2, 6230 Postona, Slovenia
www.uis-speleo.org

If there are any irregularities, or if you have not found your country in this list, please, [ask the UIS Treasurer](#)

FINANCE

ANNUAL CONTRIBUTIONS

By Nadja ZUPAN HAJNA (Slovenia), *UIS Treasurer* - zupan@zrc-sazu.si



© NADJA ZUPAN HAJNA

Prof. Dr. Nadja ZUPAN HAJNA (Slovenia), *UIS Treasurer*.



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Headquarters of the Karst Research Institute in Postojna, Slovenia, where the offices of the UIS are located. In the detail, the bronze plaque with the emblem of the UIS affixed below the name of the institute.

The UIS General Assembly at the 17th International Congress of Speleology (*Sydney, Australia, 2017*), approved the amended fee categories of member countries, which are based on the number of speleologists in the national organization or organizations that represent the country to the UIS.

The new annual contributions are as follows, starting after the 17th ICS, Sydney, Australia:

Category A: 2,000 speleologists or more	480 Euros
Category B: at least 1,000 but fewer than 2,000	360 Euros
Category C: at least 100 but fewer than 1,000	240 Euros
Category D: less than 100	60 Euros

If the fees are not paid for more than five years, the Member Country will lose its membership in the UIS.

The UIS Bureau may reduce or waive the fee of a Member Country if the Member Country makes a written request describing the reasons why it is having difficulties making its payments and how long those difficulties are expected to continue. All fee payments and related communications are conducted between the UIS Treasurer and the Member Countries.

UIS BANK ACCOUNT

Account name Mednarodna speleološka zveza-UIS Titov trg 2 6230 Postojna - Slovenia	Account N° IBAN SI56 1010 0003 7861 520 SWIFT Code: BAKOSI2X
Bank (name and address) Intesa Sanpaolo Bank d.d. Traška 2 - 6230 Postojna - Slovenia	Accepted Currencies: EUR (Euros)

STATE OF UIS BANK ACCOUNT ON JUNE 30th, 2020

EUR - Account balance = 38,767.57

USD - Account balance = 48,527.45

Major estimated costs: organization and realization of the IYCK 2021 event at the UNESCO Headquarters on September 14th 2021.

EDITOR'S DISCLOSURE

Before submitting articles, please, refer to the
Guide for Submitting and Publishing Articles in the UIS Bulletin

[CLICK HERE TO DOWNLOAD THE FILE](#)

UIS Bulletin, nor its editors are responsible for:

- misspellings
- wrongly written names
- incorrect articles
- typographical mistakes

Every effort possible has been made to keep all articles as close to the original version.

In some cases, the editors review the structure in order to present the article in a clear and consistent manner and obvious errors are corrected if found.

We appreciate your understanding.

Should you have any question or comments, please send them to:

uisbulletin@uis-speleo.org



UIS BULLETIN



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