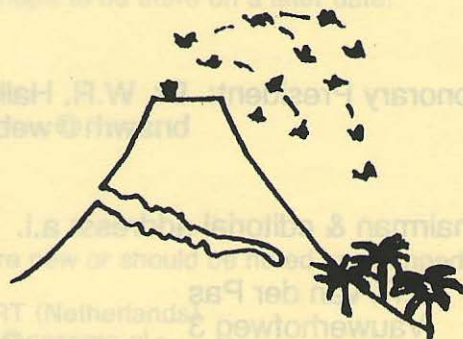


International Union of Speleology  
Union Internationale de Spéléologie

*Commission on Volcanic Caves*



*Lava Tube  
Symposium  
July 2006  
MEXICO*

*June 2005*

**44**

*The Newsletter is sent free to members of the Commission. It is not possible to subscribe - but will be send to all interested in lava-tube caves. However: News and information is always appreciated !!*

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Chairman & editorial address: a.i.

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Latest NEWS:

Due to circumstances the coming symposium on lava tubes (Korea 2006) is delayed.

By sheer incident another option came available:

MEXICO 2006!

The forces behind this are (starting the whole project .... ) John PINT and the man who is going to realize this:

Dr. Ramón Espinasa

Date would be July 2006, see pages 4 - 6 for the initial data.

More as soon as possible.

Dr. Kyung Sik WOO (Korea) has to be thanked for all the work he did already and we just hope to be there on a later date!

This addresses are new or should be noted as changed:

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RWANDA

To the address of Giuseppe LICITRA should be added as institute:  
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"caves"

" mexican adventures"

Rámone Espinasa - organizer for 'Mexico 2006':

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*Around May this year it became clear that the Korea 2006 Lava Tube Symposium had to be shifted to another year due to lack of local co-operation.*

*At the same moment a suggestion came for a symposium in Mexico in July 2006.*

*Suggestions came from John Pint and Chris Lloyd (Mexican cavers), realization now by Dr. Ramón Espinasa.*

*Here follows a tentative schedule by Ramon, the text in capitals are notes added by John Pint (who twice participated in lava tube symposia).*

## MEXICO 2006

Here is a tentative schedule:

- Day 1. Registering, Opening Ceremony, Icebreaker Brindis.
- Day 2. Geological field trip to the Sierra Chichinautzin, with several stops along the Federal road between Tepoztlán and México City to see volcanic structures, most related to tube forming processes. This would be on a bus(es), although some of the stops would involve walks of up to 2-3 km.

WOULD BE GOOD IF AT LEAST ONE CAVE COULD BE INCLUDED. THESE ARE CAVERS, NOT GEOLOGISTS, DON'T FORGET. I THINK THEY WOULD WALK 3 KMS FOR A CAVE, BUT MAYBE NOT FOR A GEOLOGICAL FORMATION.

The last stop would be on Cueva del Diablo, where we would make the traverse between the two entrances and see interesting structures canyon and superposed passages, levees, etc. This is the lowermost and the most easily accessible cave in the Suchiooc lava flow.

The stop which would involve the 3 km walk is to a series of small vents or spatter cones (the highest only 20 meters tall) called Los Cuescomates. Some of the lava flows emitted by this vents have small lava tubes and tree-trunk molds (minor caves). Charcoal from one of this molds gave an age of only 730 years, making it the youngest eruption in the Sierra Chichinautzin. Some of this vents have vertical craters up to

15 meters deep, and a very narrow fracture passage connects three of them. I believe the speleological content of the field trip is critical, although I think any caver interested in lava tubes is also partly interested in their geology and processes of formation.

-Day 3. Presentations, probably in the morning, for which I would have available slide projector(s) and a computer with a powerpoint projector. After a break for lunch, we would continue in the afternoon with presentations, including one of mine about the lava tubes of Suchiooc and probably one on the archeological stuff, and/or poster presentations.

WE'D NEED DIGITAL PROJECTOR FOR SURE. ALSO, OVERHEAD PROJECTOR.

I'm sure if we can't get them personally, we could easily get them as a loan or rent them.

-Day 4. Field trip to Iglesia lava tube (almost 6 km long), spending all day inside the cave looking at primary structures and discussing their interpretation. This involves a few crawls, but is mostly in walking passage, of a complex, anastomosing nature.

SOUNDS GREAT! THERE WAS LOTS OF CRAWLING IN ICELAND AND AZORES CAVES... DIDN'T BOTHER ANYONE.

This is the bigger portion of Sistema Tlacotenco, with over 6 km of surveyed passages in a complex, anastomosing pattern. Almost no breakdown and with most of the primary structures perfectly preserved make this probably the best cave in the area. Also, secondary stalactitic deposits of possibly calcite or opal (?) decorate one section.

-Day 5. More presentations. UIS meeting or whatever.



-Day 6. Field trip 1, to Cueva del Árbol or Chimalacatepec, the major Master tube of the Suchiooc, with superposed levels, hanging levees, canyon shaped passages eroded down by remelt and a late A'a lava flow reoccupying the tube. Involves a ladder descent of 15 meters.

-Day 6, at night: Closing of Symposium, party

-Day 7. Post-convention field trip 2, to Cueva de Tecolotlan, a stream cave eroded in volcanic lahars and conglomerates. Involves several abseils of up to 15 meters, and a long section of canyoneering after the cave.

WELL, FOR SURE YOU'LL GET CHRIS FOR THE CANYONEERING. JUST WONDER IF YOU HAVE SOME OTHER VOLCANIC SITE, PERHAPS QUITE A DISTANCE AWAY, THAT MIGHT BE POSSIBLE, HOPEFULLY WITH A CAVE. AT PREVIOUS SYMPOSIUMS THEY TOOK FIELD TRIPS TO VERY DISTANT PLACES.

-Days 8, 9. Post-convention field trip 3, to El Volcancillo, Perote, Veracruz. This involves a long bus trip to Perote, in the state of Veracruz, making field stops along the road at the base of volcanoes Popocatepetl (5,450 masl, presently active), Malinche (4,700), Citlaltépetl (5,690, México's highest mountain) and at the Alchichica maar, and possibly visiting an archeological site on the way (if there is interest). We will spend the night at a hotel in Perote and the following day we will visit the craters and lava tubes of El Volcancillo, a small 1,200 years old volcano which emmitted very long A'a lava flows. The tubes we will visit are developed starting right from the crater, which has vertical walls over 100 meters deep and is about 200 meters in diameter. They contain beautiful wall levees and superposed tubes, and an inner ladder pitch 8 meters deep. From here, participants can continue on their own towards Jalapa, Veracruz and other touristic places, or return to México City on the bus.



Well! It arrived!  
Here it is, the CD with the lectures of the Symposium of Catania '1999'.  
Some 800 pages, but half of this are Italian translations.  
From the letter accompanying this CD here some lines:

... The IX International Symposium on Vulcanospeleology was held in Catania from 11<sup>th</sup> until the 19<sup>th</sup> of September 1999 ...

... Two additional and very important events were performed in connection with the main Symposium event: an exhibition and the publication of a volume, both titled "*Inside the Volcano - The Caves of Etna*" .....

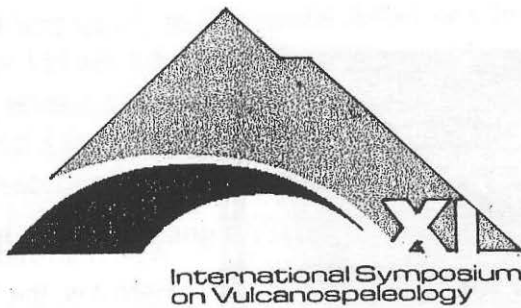
... The scientific sessions were preceded and followed by several pre- and post-Symposium excursions ..... the general Assembly of the UIS Commission for Vulcanospeleology .....

... In conclusion, it was an event at very high level .....  
... Alas its follow-up was not at the same level, due to the heavy delay in Proceedings fulfilment ... .. and trust that this CD-ROM can at least smoothen the long wait ... .. as well as we hope that the CD-ROM will be followed as soon as possible by its cartaceous version ...

... a few notes from a long description of the CD by

Nicola Barone  
Chairman of the Organizing Committee  
of the IX<sup>th</sup> International Symposium  
on Vulcanospeleology

Centro Speleologico Etno (Catania)  
cse.mail@tin.it



## Pico Island

**Azores – 2004**

### ABSTRACTS & PRESENTATIONS READY

Just received: the abstracts and proceedings of the XI<sup>th</sup>  
International Symposium on Vulcanospeleology  
Pico island, Azores, 2004

During this symposium all participants got the Abstracts in b/w.  
Now the 'final thing' is issued. The Abstracts again, but now with colour  
pictures (68 pages).

The Presentations are all on a CR-rom.

This gives a host of the colour pictures used during the presentations. In  
addition a slide-show.

Contents:

Invited Lectures: 5

Session I : Vulcanospeleology of the Azores Islands - 4

Session II : Vulcanospeleology of the World - 8

Session III: Biospeleology of Volcanic Caves - 5

Session IV: Theoretical Studies, Conservation and Management of Caves -

7

Posters : 3

All information

João Carlos Nunes (Editor - Azores University)  
jcnunes@notes.uac.pt



# INTERNATIONAL CONFERENCE on GRANITIC CAVES



Spain (Galicia, Coruña, Santiago de Compostela, Vigo and Baiona) - September 2007

A conference on granitic caves is prepared for 2007.

Provisional program below.

Organizer Marcos Vaqueiro - I.C.O.G.C. / Chairman of Speleology Clube Espeleoxico Mauxo

< mvaqueiro@frioia.es >

- Granitic caves
  - Technical speleology on granitic caves
  - Genesis and classification of granitic caves.
  - Mapping on granitic caves
  - Biospeleology on granitic caves
  - Archaeology: Men and caves.
- Speleothemes
  - Types:
    - Opal speleothemes
    - Organic speleothemes and mineralizations
    - Allophane speleothemes
  - Caves in related lithologies or :
    - Caves in sandstone
    - Caves in quartzite
    - Caves in quartz
    - Marine erosion caves
    - Volcanic tubes 
    - Caves in other planets (Mars, ..) 

William R. Halliday  
Honorary President,  
IUS Commission on Volcanic Caves  
6530 Cornwall Court  
Nashville, TN USA 37205  
bnawrh@webtv.net

Finally:

## MOWICH CAVE

*The following account is by Bill Halliday, who finally managed to visit Mowich Cave. In previous Newsletters much of the discussions and problems to visit this cave were published. Due to an editorial problem only the 'story' here. The original publication also contained 9 figures and a list of references. Congratulations to Bill tenacity in this matter, and many thanks for this report.*

After five years of negotiations between this Commission and the Umpqua National Forest, Mowich Cave was visited by speleologists in October 2004 (Nieland and Ormsbee, 2004) and April 2005 (this report).

This little-known cave has a problematical history. For many years it was one of the principal recreation features of the Umpqua National Forest, reached by its own trail (Rushin, 1978). That trail (#1441) now is obliterated, but is still shown on the US Geological Survey's 1998 Potter Mountain 7.5 minute topographic quadrangle. An outline map of the cave by US Forest Service employees was published in 1977 (Anderson, Bell and Rushin, 1977). Unfortunately the cartographer somehow produced a mirror image of its plan. This erroneously indicated that the upflow section of the cave curved away from the canyon wall into an area where its overburden could be more than 200 feet (70 meters) -- more than that of any other lava tube cave known in the world and thus a focus of international interest. In 1999, however, a team of members of this Commission found the cave closed and gated without compliance with due process requirements, and an international controversy developed. Access still is severely limited, but a science-based Cave Management Plan now is in preparation. A 2004 US Forest Service map (Nieland and Ormsbee, 2004, p. 3) documented important details of the cave, but

omitted some sharply demarcated features of the cave's walls and some ceiling heights evidently were estimated rather than measured. The present map (Figure 1) is redrawn from the 1977 and 2004 maps based on field measurements on 13 April 2005.

As far has been determined, Mowich Cave is an immature unitary lava tube cave about 450 feet long (150 m). It is located east of Roseburg, Oregon in forested subalpine terrain within the Umpqua National Forest, at an altitude of about 3550 feet (1080 m). Its entrance is at the base of a vertical cliff estimated to be 80 to 100 feet high (25 to 30 meters -- [Broeker, 2004, p. 2]). If this estimate is correct, its overburden and thus the load on its ceiling is the greatest on record, anywhere in the world.

The only known entrance resulted from truncation of the cave by downcutting of the Clearwater River along the south side of the Toketee intracanyon basalt flow in which the cave is located. This basalt flow was approximately 760,000 years bp (Broeker, 2004, p. 2). In this location its central axis is from ENE to WSW.

Mowich Cave thus is the oldest lava tube cave in the conterminous United States. Several lava tube caves in Hawaii and elsewhere are older. At least one of those in Hawaii is as large or larger than Mowich Cave (e.g., Szukalski, 2002). Thus its age is of regional but not international significance. It also is of regional significance as the only lava tube cave reached by car in less than two hours from the Roseburg (OR) metropolitan area. It was gated primarily to protect a small maternity colony of *Plecotus townsendii*, at that time federally listed as a threatened and endangered species, but subsequently removed from this list. Because the gate is only a few feet from the maternity colony, protection by a fence appears preferable to a gate (Perkins, 1990, p. 10).

The cave's entrance is arched, with a ceiling height of about 12 feet (4 m). The gate is a few feet inside the indefinite overhang, at a point where the width at floor level is about 35 feet (12 m). Ten feet (3 m) inside the gate, its width at chest level is 31 feet (10m) and ceiling height is 14 feet (4.5 m). This was the observed site of the maternity colony in 1999.

3

The entrance room is about 150 feet long (50 m). It narrows slightly toward the rear, and the floor gradually slopes upward. 125 feet from the entrance (40 m), the ceiling height is 8 feet (2.5 m) and width is 26 feet (9 m). Its floor consists mostly of reworked clayey and sandy sediments plus some slabby breakdown primarily from frost wedging.

At a point about 125 feet (40 m) from the entrance is an angled break-in-slope about 25 feet long (8 m) with a rise of about 6 feet (2 m). Near its base is a short narrow stream channel with a pothole about 2 feet (0.6 m) in depth and diameter. Nearby are several large remnant mounds of clay fill up to about 3 feet high (1 m). Traces of similar fill high on the walls and ceiling indicate that most or all of this room originally was filled with sediment. Presumably most of it has been removed by piping or by erosion by swirling backwaters of the Clearwater River or a major tributary, during downcutting. On both margins of the break-in-slope are remnants of a complex sequence of thinbedded sediments with individual beds 0.2 to about 2 cm in thickness. The north side of the break-in-slope is vertical to overhanging. Here erosion has exposed a cross-section of a large sediment mound. Its layers appear to be disconformable with those nearby. Some cross-bedding is present. Thick sequences of thin-bedded sediments are uncommon in lava tube caves. A lesser sequence was present in Gremlin Cave, Mount St. Helens, WA during post-eruption mudflows of the 1980s (Halliday, 1985).

The remainder of the cave is a slotted crawlway 8 to 26 feet wide (2.5 to 8 m), with only two short chambers as much as 5 to 7 feet high (2 m). This entire section of the cave is notable for thinbedded deposits, some of which are as much as 3-4 cm thick. No charcoal was observed at any point. They are only slightly compacted. Their longitudinal slope could not be traced over distance, but they appear to have been deposited by backflooding. Some very small soil pipes are present, and locally the deposits have been eroded by dripping, trickling and running water. This has produced some additional stratification, and several irregular pockets up to three or four feet (1 m) in diameter extending laterally as far as the cave wall. The largest drip complex has carved a remnant of stratified fill into a free-standing horizontally striped likeness of

the Rock of Gibraltar or a medieval fortress ("The Castle"). Also, a persistent current produced a rounded channel up to 3 feet deep (1 m), offset

from the center line of the passage toward the convex side of each sinuosity of the cave. This channel gradually enlarges from the rear of the cave to the break-in-slope. Morphologically it resembles the channels commonly seen in clay fills of karstic caves of the eastern United States. At its lower end, its curved bottom is replaced by a flat bottom consisting of reworked sediments. A few small fragments of transported bedrock and cohesive clay also have been deposited here. It was not possible to determine whether this channel was initiated under phreatic or vadose conditions.

The far end of the cave is at an ill-defined point where the fill nearly touches the ceiling and the channel is too small for further crawling. One of the higher sections of the crawlway passage is just downstream from this point and just upslope from an animal (? feline) den containing splintered mammalian bones (? rabbit). The den is within a low but spacious drip slot complex on the north wall of the cave. On April 13, 2005 this chamber was perceptibly warmer than the rest of the cave (the entrance chamber was estimated at about 3 degrees Celsius). On October 15, 2004 its temperature was recorded as 13.5 degrees Celsius (Nieland and Ormsbee, 2004, p. 5). The remainder of the crawlway passage was perceived as homeothermic and cooler than this terminal chamber. The higher air temperature here may be due (1) to its being the highest point in the cave (ceiling about 8 feet (2.5 m) higher than that of the entrance (Nieland and Ormsbee, 2004, p. 3), (2) to residual summer heat of the nearby canyon wall, or (3) to decomposition of the considerable pile of bat guano on its floor. Although the gnawed bones, animal droppings and nest material suggest the presence of an additional orifice here, no confirmatory air movement was detected. Studies of temperatures throughout the cave are ongoing.

The outer part of the entrance room is an important maternity roost for a small but relatively constant population of *P. townsendii*, and this bat also uses the east end of the crawlway passage as a hibernaculum. *Myotis* spp. also utilizes this cave; their usage is less clearcut and may include seasonal swarming (Moore, 1993, p. 81). A larger population may have existed until a predator began to inhabit the den near the rear of the cave. This den was not investigated for bat bones.

The entrance room also hosts cave moths and harvestmen, and a small guano-based ecosystem exists in the crawlway segment including very small web-dwelling spiders and a brown and yellow surface centipede. On 13 April 2005 rodent-transported green leaves were observed on a ledge in the entrance room and on the floor of the crawlway channel.

At no point in the cave is the original lava floor exposed. The amount of breakdown elsewhere in the cave is unexpectedly scant for a cave with loading by so great an overburden. The ceiling and walls were searched carefully to determine if it is concealed by subsequent sediment deposition. This is not the case. Nowhere are the surfaces of the ceiling and walls disrupted for more than a very few square feet and I estimated that approximately 98% of these surfaces are intact. Gypsum and presumably other white secondary minerals are scant and have not contributed significantly to breakdown. Some of the larger breakdown areas near the rear of the cave reveal considerable nonhomogeneity of the country rock and this should be studied. No congealed tube lining was identified at any point.

The cross-section of the entrance room is roughly rectangular. That of the crawlway area is irregularly arched, with occasional poorly defined cupolas. No rheogenic features were observed at any point of the lava walls or ceiling. The ceiling characteristically is irregularly pocketed, with minimal glazing and with only a few, poorly developed stubby lava stalactites. Glazing is minimal, but has partially welded a few small slabs back in place after they had partially separated from the ceiling.

Mowich Cave thus contains many features of unusual scientific and popular interest. On a scale of 1 (lowest) to 5 (highest), I found its resources and values to be as follows:

Geological	5
Biological	3
Recreational	3
Cultural	2

If requested by the Commission, I will continue to monitor the development of a science-based environmentally and socially just Cave Management Plan.

This is the Commission-report as issued to the U.I.S. in May 2005. Note the next symposium is going to be Mexico 2006 due to a delay of the Korean symposium.



## Report 'Commission on Volcanic Caves' 2001 - 2005

The Commission consists of some 30 members from 5 continents.

Our Commission organised two symposia during this period:

- Iceland 2002, very successful, participants from all over the world;
- Azores 2004, also very successful, participants from several continents.

To maintain contact between the members 14 Newsletters were issued during this period (nearly 250 pages reporting activities of our members). Activities of the commission are very diverse, e.g.:

- involvement in 'UNESCO' heritage projects,
- initiate government protection of caves (in Rwanda),
- exploration of lava-tube caves all over the world,
- starting a list of the (100) longest caves, but also trying to give an indication of the importance of caves, which can be very controversial to size,
- looking forward to the next symposia: Korea 2006 and Australia 2008.

Jan Paul van der Pas  
Chairman of the Commission on Volcanic Caves  
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Latest news about the other U.I.S.  
non-limestone commissions.

-- COMMISSION on GLACIER CAVES and KARST in  
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Secr. : Giovanni BADINO : < badino@to.infn.it >

Latest symposium - 6th in Sept. 2003, Ny-Ålesund - Svalbard

Next symposium - 7th on Glacier Caves ...etc. 6-12 Sept. 2005

Azau Kabardino-Balkarija - Caucasus - Russia

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-- COMMISSION on PSEUDOKARST --

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Latest symposium - Teply Vrch - Slovakia, 2004 (organizer Dr. Gaál)

Next symposium - IX International Symposium on Pseudokarst

May 2006, Beskidy Mountains, Poland.

Organizer Dr. Jan URBAN < urban@iop.krakow.pl >