



No.76

July 2020

Union Internationale de Spéléologie (UIS)  
Commission on Volcanic Caves

*e*-NEWSLETTER

No.76 – July 2020

**Contents**

- Editorial..... Page 3
- Message from the Chairman..... Page 4
- Hawai’i Lava Caving – 2020..... Page 7
- Announcement - Postponement of ISV19..... Page 44
- ISV19 – A Letter from Carmelo Bucolo..... Page 46
- ISV19 – A Letter from Roberto Conti..... Page 48
- ISV19 – A Letter from Giuseppe Priolo..... Page 51
- Offer to host ISV 20 – Vietnam..... Page 54
- STOP PRESS! Dak Nong Geopark..... Page 57



<http://www.uis-speleo.org/>



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

The Commission on Volcanic Caves Newsletter has been published regularly since December 22, 1993. The Newsletter is available free of charge to all members of the commission, and to others who are interested in Volcanic caves.



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### MISSION STATEMENT

The UIS Commission on Volcanic Caves encourages exploration and scientific investigation of volcanic caves, and hosts the International Symposium on Vulcanospeleology about every two years



### COVER PHOTO

Lava Tube on Monte Egitto

By Giuseppe Priolo

## Editorial

Well, the world is a very strange place at the moment, COVID 19 has played havoc with all our plans, including postponement of the 19th International Symposium on Volcanic Caves until next year. This issue of the Commission newsletter includes details of the postponement, including some exciting additional field trips.

To counterbalance the frustrations of delayed projects, Greg Middleton has provided a comprehensive account of his recent explorations in Hawaii, which he just completed before the world came to a standstill. The account includes a wealth of superb photos, and will no doubt bring back many memories for those of us fortunate enough to attend the 17<sup>th</sup> ISV four years ago.

Finally we have an exciting offer to host the 20<sup>th</sup> ISV in Vietnam, which I am sure many readers will be very interested in attending.

Hopefully there is enough of interest in this bumper issue to relieve a little of the boredom of those stuck at home due to the various lockdown restrictions in place around the world. I know that I am frustrated with the inability to get underground, but I am looking forward to the time when we can all get together under the volcanoes again.

It only now remains to thank the authors of the material in this newsletter, and to encourage all readers to submit tales of exploration, news and anything of interest in the realm of volcanic caves.

Ed Waters, 4th July 2020

## Message from the Chairman

Hello everyone

How the world has changed since December 2019 when I wrote a few words for the previous issue of the Commission on Volcanic Caves Newsletter. At that time many of us were looking forward to meeting up at Catania in Sicily for the 19th International Symposium on Vulcanospeleology (ISV) in August this year.

Plans for the 19th ISV were well advanced and registrations were rolling in strongly when in March, the symposium organising committee undertook a critical review of the viability of the symposium in the light of the rapid spread of Covid-19. Initially, the organisers decided to continue as planned but to keep the situation under review. However, it soon became clear that in view of the huge social and economic impacts of the pandemic, there were too many uncertainties to be confident about being able to stage a vibrant and successful symposium later in the year. In April, the organising committee, in consultation with the Commission on Volcanic Caves, concluded that the most viable option was to postpone the 19th ISV for 12 months. It was a difficult decision to make and many factors were taken into consideration, including the timing of the UIS International Congress of Speleology (ICS) that is scheduled to take place at Le Bourget-du-Lac, France, in July-August next year.

As many people who commonly attend ISVs also actively participate in the ICSs, the Commission has worked hard over the years to avoid convening an ISV in the same year that an ICS is planned. Rescheduling the ISV to just a few weeks after the ICS is not 100% ideal. However, right round the world we are all living in changed circumstances, many aspects of which are a good deal less than ideal.

I sincerely hope that by the middle of next year the Covid-19 situation will have significantly improved and that many of you will be able to attend both the ICS and the ISV. However, if your circumstances are such that you can only attend one of them, then I urge you to very seriously

## UIS Commission on Volcanic Caves Newsletter No.76

consider making it the ISV. The Commission's policy of focussing on ISVs as the principal forum for presentations on volcanic cave matters remains unchanged.

The 19th ISV organisers had planned a comprehensive program of presentations, social activities and a wide range of speleological, cultural and scenic excursions for this year's ISV. However, now that it has been postponed to 2021, they are seizing this opportunity to arrange additional activities and attractions as noted in this issue of the Newsletter. The new excursion options include a caving camp - offering the chance of exploring and studying new caves - as well as a range of cultural experiences and delights. This issue of the Newsletter includes information on the new excursions.

Looking beyond next year, I am delighted to announce that Vietnam has offered to host the 20th ISV in the late September/ early October period in 2022. The Symposium would be organised by the Dak Nong Global Geopark in co-ordination with the Province of Dak Nong, the Vietnam Institute of Geosciences and Mineral Resources and the Vietnam National Museum of Nature. A preliminary outline of the proposed symposium appears elsewhere in this Newsletter. At this early stage, details on the arrangements for presentations and field excursions, the venue, accommodation options and anticipated costs are still being worked through. The Commission will carefully evaluate the offer when further information becomes available. Should you have any comments on the proposed outline, or more generally on future ISVs, please contact me.

Moving on from future meetings to recent activities in volcanic caves, the lockdowns and restrictions have made it difficult for many of us to visit lava caves this year. Over the last several months, I have managed to visit only three or four caves (all in limestone). I imagine many of you have been similarly constrained. However, I know that a few fortunate members have been able to continue their lava cave investigations. Most notably, Greg Middleton and Stephan Kempe travelled to Hawaii in March and met up with several local cavers and visited a range of significant lava caves.

# UIS Commission on Volcanic Caves Newsletter No.76

**Greg's report on the trip forms a major part of this issue. I hope you enjoy reading it.**

**Stay safe**

**John Brush**

**Chairman / President**

**Commission on Volcanic Caves.**

**International Union of Speleology**



**Skylight entrance to Taddariti Cave, Sicily. Photo by Serena Nicoletti**

# Hawai'i Lava Caving – 2020

Greg Middleton

## Invitation

When Prof. Stephan Kempe from Germany invites you to Hawaii for a spot of lava caving you tend to take notice. This was a great opportunity, as Stephan is not only a world authority on lava caves, but is also at the forefront in the study of Hawai'ian caves. Not having any better plans at the time, I readily accepted the invitation on 26 January. (NB: At that time Coronavirus was an obscure disease only thought to be affecting parts of China. It was declared a pandemic by WHO only on 11 March 2020.)

I flew into Honolulu on Monday 9 March and straight on to Hilo on the Big Island. I was met by Stephan and Christild and driven up to their rented house in Volcano, on the northern flank of the Kilauea Volcano.

## Area east of South Point

Next day we were picked up by Don Mitchell and Rick Hazlett in Don's 4 x 4 and driven down south of Na'alehu to the lava fields east of South Point. A rough track known to Stephan took us close to Kamakalepo Cave (or Lua Nunu o Kamakalepo, which translates as 'Pidgeon Hole of the Common People'). We descended a deep puka, around 60 m long x 40 m wide and up to 20 m deep (Photo 1) to access the impressive mauka (that is to say 'towards the mountains' or upflow) entrance (Photo 2).

The reason for visiting this cave was primarily to see a stone wall that is among the larger defensive structures built in caves by the Native Hawai'ians. There is some irony in the fact that in the 1950s, during the Cold War, this was one of many caves on the island designated as 'Civil Defense' caves (i.e. places where the local populace might shelter in the event of nuclear attack – though it is doubtful any protection from radioactivity would have been of long duration).

The layout is shown in Fig. 1, from a 1999 survey of the cave by Stephan Kempe, H.-V. Henschel and C. Lerch (Kempe and others 2008a).

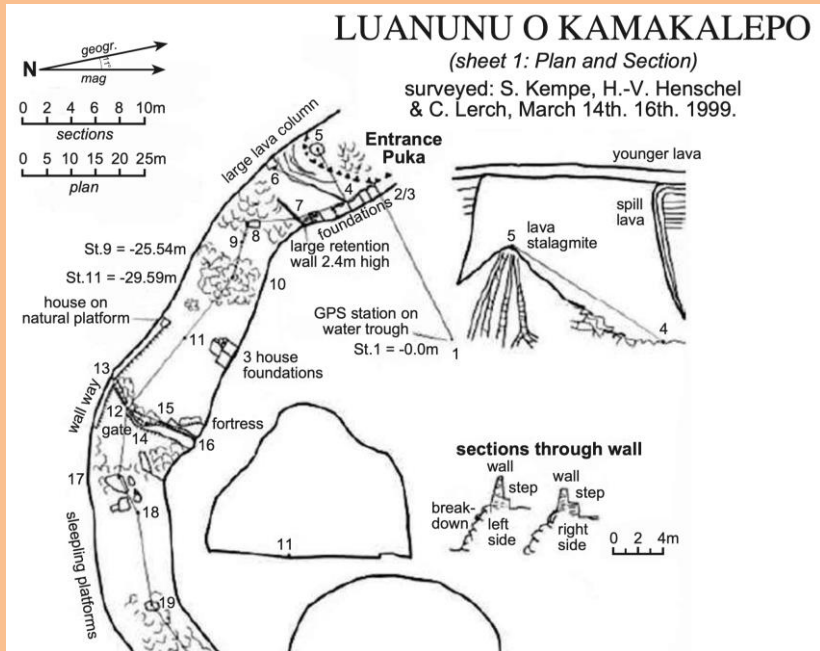




**Photo 1. Puka providing access to the Lua Nunu o Kamakalepo mauka cave. The rise on the left is a massive lava stalagmite.**



**Photo 2. The huge entrance to Lua Nunu o Kamakalepo. Rick, standing on breakdown at the right, indicates scale.**



**Fig. 1.** Part of a 1999 survey of Lua Nunu o Kamakalepo, showing the section from the entrance puka to beyond the defensive wall (running between stations 13 – 16).

Actually, if the whole truth be told, our visit was not just for those of us who had not seen the wall to witness it, but more specifically for Don, who had visited the cave when he was just 16 (over 50 years earlier) to revisit the wall.

The Kamakalepo wall is, indeed, an imposing structure.

It has all the characteristics of a mediaeval defence wall: it is c. 2 m high and up to 1 m thick and because it was erected on breakdown it reaches 3.7 and 5.5 m above the floor. It stretches from wall-to-wall and due to its convex-mauka curvature, it reaches a length of almost 25 m (the cave being 23 m wide and 14 m high at its centre). A doorway slightly off the middle of the wall admits access and platforms behind the wall would

## UIS Commission on Volcanic Caves Newsletter No.76

permit the defenders to throw sling stones and spears at any attackers. Sling stones (wave-worn pebbles) are found on the floor in places. The defenders would have stood in the dark, while the attackers would be outlined by daylight coming in from the entrance. Behind the wall 102 sleeping platforms have been counted – these extend well into the zone of complete darkness (Kempe and others 2008b).

We descended the steep, breakdown-floored entrance and walked the 40 m or so to the wall. I used my new Yongnuo (YN300 II) digital video lights to illuminate it while Rick and Don provided scale (Photo 3). The workmanship is of a high standard; the breakdown lava rocks have been stacked without using any mortar and the wall shows no sign of deterioration although it has probably been standing for hundreds of years.



Photo 3. The defensive stone wall across Kamakalepo Cave with its central gateway. Rick Hazlett (red shirt) and Don Mitchell provide scale.

## UIS Commission on Volcanic Caves Newsletter No.76

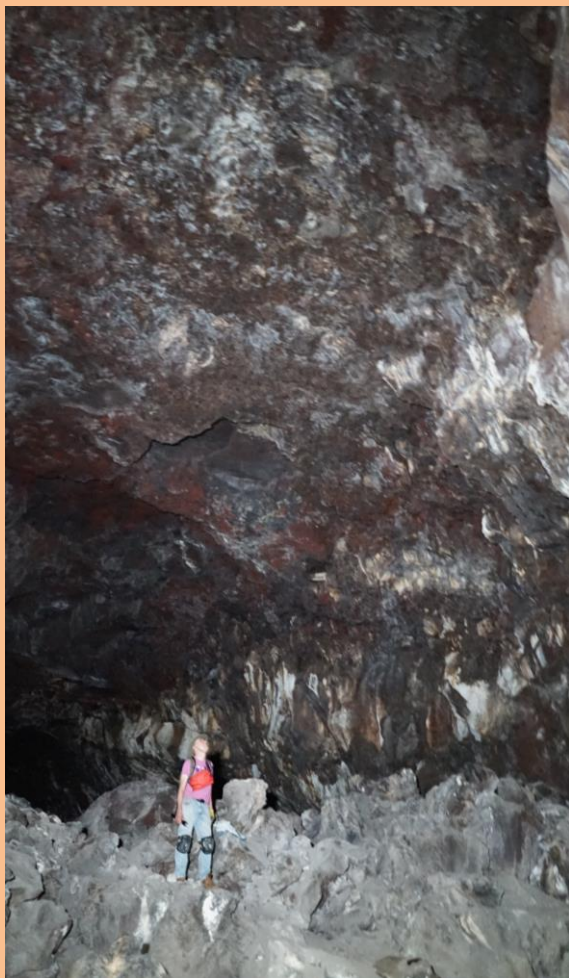
Behind the wall we observed the many level sleeping platforms mentioned by Kempe and others (2008b). The Hawaiians went to a great deal of trouble to make these among the large breakdown blocks that comprise the floor of the cave (Photo 4).



Photo 4. A carefully prepared sleeping platform in Lua Nunu o Kamakalepo.

The ceiling of the cave rises to a high dome immediately behind the wall (Photo 5) and the cave continues as a large meandering passage (Photo 6) for over 400 m (Kempe and others 2008a).

Before we left the puka we briefly inspected the makai (downflow) entrance (Luanunu Makai Cave) but were discouraged from entering by the large numbers of wasps buzzing around.



**Photo 5. The high domed roof of Kamakalepo Cave behind the wall – source of the massive breakdown!**



**Photo 6. Looking further into the large passage of Kamakalepo Cave.**

Returning to the vehicle, we drove further south, past Pork Pen Puka and the mysterious large steel structure known as the ‘smoke stack’, parked and walked across to Waipouli Puka. This average-sized pit gives access to the Waipouli Makai (or Dark Water) Cave which is apparently a lower (separate) former part of the Kamakalepo system and its mauka counterpart. A concrete base on the lip of the puka harked back to the time when water was pumped from the large lake in Dark Water Cave for local agricultural purposes. The area has been overtaken by exotic acacia plants following abandonment of grazing.

We descended steeply into the puka (Photo 7) and into the cave, where Stephan and Rick mused about the stratigraphy (Photo 8).



**Photo 7. Stephan makes his way down the steep entry to Waipouli Mauka (Dark Water) Cave.**



**Photo 8. Stephan and Rick examining a marked red layer which may represent an ancient 'cooked' soil.**

At the bottom of the steep entry passage is a quite impressive brackish lake (Photos 9 and 10) which Stephan advised us is influenced by the tide although the sea is perhaps a km away.



**Photo 9. Rick at the lake in Waipouli Makai (Dark Water) Cave.**



**Photo 10. Large lake in Waipouli Makai Cave.**

We continued further south, stopping next at the quite impressive 'Stonehenge Puka' (Photos 11, 12).





Photo 11. Rick approaching Stonehenge Puka.

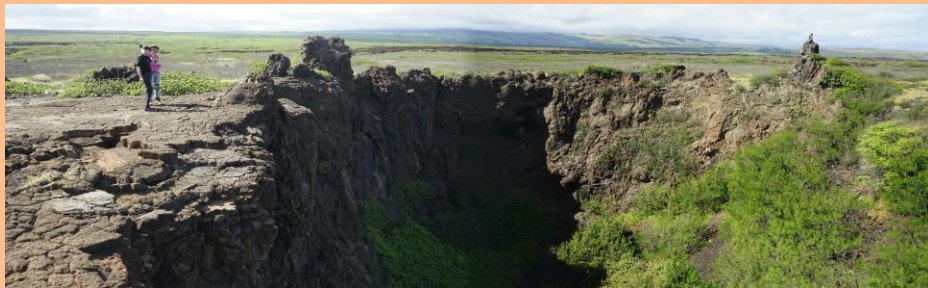


Photo 12. Stephan and Rick admiring the puka.

The puka is the last downflow feature related to the Kamakalepo system but there is now no pyroduct opening into it. According to Kempe and others (2008a):

Stonehenge Puka is a 60 x 40 m large and up to 20 m deep crater, which not only issued lava as a rootless vent but from which large blocks were swept out that today mark its rim (and therefore the puka bears a certain resemblance to the real Stonehenge.

From there we drove to the coast and followed an indifferent track along the shore to the west and then inland, eventually finding our way back to H'way 11, the 'Hawaii Belt Road' or Mamalahoa Highway, the only road providing access to the southern part of the island.

A couple of days later we were back at South Point, this time a bit further west in the Kula Kai View Estate where we met up with some of the local cavers including Diana Northup (well known for her studies of microbial slimes in lava caves), Andreas Pflitsch (a professor from Germany who is studying the rate of cooling of pyroducts), Peter Bosted (preeminent local cave surveyor and photographer) and later, Ric Elhard (owner of Kula Kai Caverns, a large show cave on the gated estate).

Peter took Stephan and I to see Lanikai Cave (meaning Heavenly Sea), located on the adjoining Kahuku Country subdivision, which Peter and the Hawaiian Cave Conservancy are keen to purchase. It is probably a branch (no longer connected) of the large Kanohina System, of which Kula Kai is part (Elhard 2017).

We walked from Lanikai Drive across about 700 m of quite rugged lava to a collapse puka entrance (Photos 13, 14).



**Photo 13.** Stephan entering a collapse puka entrance to Lanikai Cave.



**Photo 14. The author in entrance to Lanikai. [photo: Stephan Kempe]**

**The cave contains many interesting features, which Peter photographed at every opportunity (Photo 15).**



**Photo 15. Peter photographing details of a white crystalline deposit on the wall, probably primarily gypsum.**

## UIS Commission on Volcanic Caves Newsletter No.76

There were also classic 'sharks tooth' stalactites (Photo 16), occasional breakdown pukas (Photo 17) and tree roots (typically of the endemic Ohi'a, *Metrosideros polymorpha*) (Photo 18).



**Photo 16.** Lava stalactites of a form known commonly as 'sharks teeth' stalactites.



**Photo 17.** Stephan at a typical intermediate puka. This is probably a 'cold puka' meaning it collapsed after the flow of lava in the pyroduct stopped.



Photo 18. Peter among tree roots (probably Ohi'a) in Lanikai Cave..

There are some low (crawl) sections but generally this pyroduct allows comfortable walking (Photo 19).

At one point in the makai (downflow) portion of the cave there is a classic near-circular column dividing the passage (Photo 20) and also an attractive ribbed flow pattern on the sloping floor (Photo 21).



**Photo 19. Typical passage in Lanikai Cave. [photo: Peter Bosted]**



**Photo 20. Stephan at residual column.**



Photo 21. Ribbed flow pattern on sloping floor.

After leaving the cave we ran into Ric Elhard on our way out of the estate. He and his partner, Rose, are in the process of moving to mainland USA.

### Bird Park Cave (Upper)

On 15 March Stephan and I decided on a visit to Bird Park Cave (Upper) which is in Kipuka Puaulu, part of Hawaii Volcanoes National Park. (We anticipated that closure of the park was imminent due to the Coronavirus pandemic.) Unfortunately the kipuka is an area infected by Rapid Ohī'a Death, a root fungus which is killing these iconic trees which occur widely in lava fields.

Access to the small entrance to the cave (Photo 22) is readily gained by a steep descent from the circular walking track through Kipuka Puaulu.



**Photo 22. Stephan about to enter Bird Park Cave.**

**I first visited this cave in 2009, in company with the late Fred Stone (Middleton 2011); it doesn't appear to have changed much.**

**Much of the 200 m of the cave is walkable passage, the walls of which are largely covered by reflective biomats (Photo 23).**





**Photo 23. The white surfaces of passage walls are microbial biomats (Stephan Kempe).**

**There is also a striking section where the wall is adorned with unusually regular vertical flutes (Photo 24).**



**Photo 24. Regular vertical fluting on wall.**

**There is a short crawl section with a typical rough a'a-like floor (Photo 25) and a couple of small lava falls (Photo 26).**



**Photo 25. Flat-floored crawl, Bird Park Cave.**



Photo 26. Stephan at a lava fall.

At another point there is a feature looking remarkably like a longitudinal lava tree mold (Photo 27).



**Photo 27. Probable longitudinal lava tree mold.**

**The cave ends abruptly at an ash cone with ample evidence of biological activity (fungus on scats), probably due to rats finding a way down from the surface (Photos 28, 29).**



**Photo 28. Ash cone at the terminus.**



Photo 29. Vigorous growth of fungus on scat, probably of rat.

The genesis of this cave and many of its features are described in detail in a paper by Kempe and others (2017).

### Delissea Cave System

Peter Bosted has been engaged for the past few years in the exploration and survey of an extensive and complex system of caves on the northern slopes of Hualalai Volcano in the North Kona region known as the Delissea System. By mid 2019 he had undertaken over 200 trips to this system. Peter has provided a detailed paper giving the history of exploration and the many highlights of this system including the survey achievements of the last five years, illustrated with his beautiful photos (Bosted 2019). As at early 2019 the total surveyed length of the system was 64.7 km with a vertical extent of over 1500 m. Of this, 36.75 km is contiguous and known as Delissea Cave. This cave is likely to exceed the length of the Kipuka Kanohina Cave at South Point (42 km) and has the potential to rival Kazumura Cave (66 km) which has held the world length record for a lava cave for many years.

Peter was generous enough to offer to guide Stephan and the author on a tour of a very small part of this remarkable cave; we were delighted to accept. The cave is both physically difficult to get to (we had the benefit of Peter's 4 x 4) and is in a restricted access reserve, the Pu'u Wa'awa'a Forest Bird Sanctuary. We were able to drive up to an elevation of 1450

m from where we had a walk of about 500 m to the HVE75 entrance (Photo 30).



Photo 30. Stephan in entrance to Delissea HVE75.

While Peter checked out a side passage he was keen to survey, Stephan and I made our way down the main passage, taking photos (Photo 31, 32).



**Photo 31. Passage with gold microbial biomats (Stephan Kempe)**



**Photo 32. Stephan photographing in Delissea.**

**Returning from his explorations, Peter rejoined us (Photo 33) and we continued on down the main passage where there were lots more spots for interesting photos (Photo 34).**





**Photo 33. Peter Bosted in Delissea.**

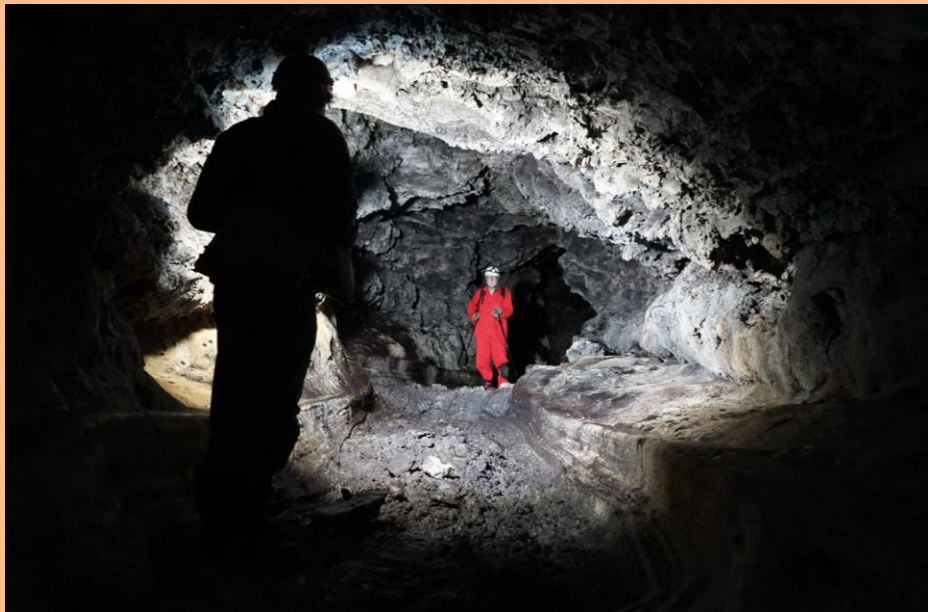


Photo 34. Peter photographing passage, with Stephan for scale.

After lunch at a large open puka (Photo 35) Stephan returned to the car overland while Peter and I continued a bit further through the cave, taking more photos (Photo 36).

We got back at Peter's ute about 15:15; delighted to find Stephan had located it. We then drove back down, through innumerable gates, to our car, and drove back to Volcano.

It had been a thoroughly enjoyable and eye-opening trip through a tiny part of the huge Delissea System. Our thanks to Peter for the opportunity to visit this great cave.



Photo 35. The author under the large puka where we had lunch.  
[photo: S. Kempe]

On 20th we drove south to the South Point area, to Peter and Ann Bosted's place in the Ranchos subdivision. There we were joined by Tomislav Gracanin (President of the Cave Conservancy of Hawaii) and we made our way to the house of Ric Elhard's sister (it's just like one big happy family over there). From there we walked the short distance to the puka which is the main entrance to Maelstrom Cave (Photo 37), part of the Kanohina System.



**Photo 36.** The large passage continued on after the 'lunch puka'  
(author). [photo: P. Bosted]



Photo 37. Main entrance to Maelstrom Cave.

I had visited Maelstrom before, in 2009 with Fred Stone and Arthur Clarke (Middleton 2011) but on this occasion we visited different parts of this extensive cave.

This was effectively a photographic trip for Peter, particularly to try to improve on some photos he had taken previously. So we took lots of pics (using both my LED video lights and Peters, which were much more compact and brighter!) (Photos 38, 39, 40, 41, 43, 44). Peter showed us a

rare bat skeleton (Photo 42) – this is the only one recorded in this extensive cave.



Photo 38. Stephan in a main passage of Maelstrom. (Stephan will not be pleased that this photo is published. He is on a campaign to have 'pyroduct' accepted as the common name for a lava tube because not all caves of this type are actually 'tubes' – except that this passage has the shape of a classic tube.)



**Photo 39. Tomislav in another part of the same passage/pyroduct – but looking anything but tubular and a better example of a lava cave.**



**Photo 40.** Stephan at a point where lava (of a much more golden colour) in the main pyroduct has overflowed into a side passage that has already drained. One of the shots that Peter was keen to improve on.



**Photo 41.** Dual passage and pillar.





**Photo 42.** The only known bat skeleton in Maelstrom Cave.



**Photo 43.** Large passage in Maelstrom. [photo: Peter Bostead]



Photo 44. Stephan in large passage with haematite-rich floor.

After a couple of hours we left the cave by an entrance makai of where we had entered. On the way back to the cars we had to pass Ric's sister's place again and who should be sitting on the verandah but Ric (in caretaker mode). We paused for a chat and a beer. There was a lot of talk about caves available for purchase in the nearby subdivisions and threats to others from proposed developments.

## UIS Commission on Volcanic Caves Newsletter No.76

Next day Stephan and I walked to the Hawaii Volcanoes National Park to view the Kilauea Caldera, significantly modified after major volcanic activity in 2018 (Photo 45). I had walked all over the caldera floor with Bill Halliday in 2000 (Middleton 2001). Today access to the caldera is not permitted; in fact, you can't even go to the Jaggar Museum or the Volcano Observatory which were damaged in the last eruptions.

That afternoon we drove down to Hilo to visit Jack and Marti Lockwood. Jack, with Rick Hazlett, has written the definitive work on volcanology, *Volcanoes: Global Perspectives* (2010), a new edition of which is to be published soon. It's putting it mildly to say Jack, now retired after 30 years with the USGS, is quite a character. There was lots of talk about geology, history and the increasing threat from the novel coronavirus.

Next day I had to cut my trip short and hurry back to Australia on the second last Qantas flight out of Honolulu as the viral pandemic was causing the shutdown of international flights.

My thanks to Stephan and Christild, Peter, Don and Rick for a most interesting and enjoyable Hawaii trip.



Photo. 45. View into the Kilauea Caldera from the rim; Halema'uma'u Crater to the right.

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## ANNOUNCEMENT - POSTPONEMENT OF ISV19

Dear Vulcanospeleologists and Friends,

The Organizing Committee of the 19th International Symposium on Volcano Speleology, convened a video conference at the beginning of April and noted the spread of the COVID19 pandemic all over the world.

Events over the last month or two have changed the lives of millions of people for ever. Tens of thousands of people have died, millions of people have lost their jobs, and even if they still have a job, they may not be at work at present and may not be earning any income. Many businesses have closed, perhaps permanently.

It is general belief that even if Italy and particularly Sicily will exit from the most critical phase before the Northern Hemisphere Summer, it will be difficult for most participants to travel freely from their country of residence to Italy and vice versa. It is also understandable that those who have suffered economic damage from the pandemic will have greater difficulties facing the long journey to come to Catania.

In this global background, the preparation for ISV19 seems an activity of minor importance even to those who worked to organize it over the last two years.

The Organizing Committee had earlier decided to wait until the end of June 2020 to take a decision on cancellation or postponement of the Symposium but the evolution of the situation in the world, forced it to

## UIS Commission on Volcanic Caves Newsletter No.76

bring forward that decision in order to limit the economic impact on participants.

Therefore, the Organizing Committee, having also heard the opinion of the UIS Commission on Volcanic Caves, decided not to continue with the symposium scheduled for August-September of this year and to postpone it to the same period of the following year.

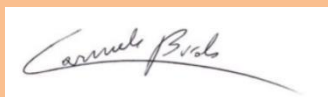
The 19th Symposium on Volcanic Caves thus will be held in Catania from August 28th 2021 to September 3rd 2021. The following excursion to Aeolian Island is scheduled from September 4th 2021 to September 9th 2021.

The Symposium organizers will send an email to all participants that are registered and pre-registered informing them of the postponement and also communicating how to request the return of any sums already paid. Unfortunately, they have to inform registrants that it is not possible to refund of 100% of the amount they have paid because of paypal/bank transfer commissions.

For those who wish, it will be possible not to request a refund and consider the amount already paid as the participation fee of the 2021 Symposium (no increase will be required).

The Organizing Committee is really sorry to have to communicate this news to you, but assures you that it will work to prepare an even more beautiful Symposium for 2021 Summer than that planned for this year. Your appointment with Catania and Sicily is only postponed for a year.

Sincerely

A handwritten signature in black ink on a white rectangular background. The signature appears to be 'Carmelo Brusa' written in a cursive style.

on behalf of the ISV19 Organizing Committee

## ISV19 – A Letter from Carmelo Bucolo

Dear friends

A greeting to all the speleologists, but above all to those who love volcanoes and volcanic caves.

As you know, because of this great Covid19 pandemic, we had to postpone the 19th International Symposium on Vulcanospeleology Catania 2020, to next year, that is from August 28 to September 4, 2021.

Coronavirus in Italy gave us some few dark months but, all in all, we did not lose hope and we worked harder than before, dedicating our free time in organizing an even richer and more exciting 2021 symposium. For the 2021 edition we are studying new excursions, especially in the post symposium period, including the visit to the city and the characteristic monuments of our territory (see program attached ) and a very special excursion that includes the round tour of the Etna on an historic train which reaches the most typical municipalities.

We are also thinking of setting up a well-organized caving camp, on the slopes of Mount Etna, to spend a few days researching and exploring lava fields, deepening various aspects of speleological activity such as prospecting, topography, biospeleology, caving photography, etc. I remind you that the area covered by the lava flows of Etna extends for about 119,000 hectares, more than 250 caves have been explored and many are discovered every year. The Etna volcano is about 700 thousand years old and as regards our caves we can say that geologically speaking, they are fairly young cavities. Regarding the faunistic aspect you could discover the uncommon specialization of the Etna cave fauna, already been highlighted in 1948 when the entomologist Hartig came to Sicily and asked our speleological group for some help for his biospeleological research. In that occasion he found a new carabid insect of the genus *Duvalius* which was identified as a new endemic species (*Duvalius hartigi*) only in 2006 (Magrini, Baviera et Vigna).

## UIS Commission on Volcanic Caves Newsletter No.76

In 2019, another new species was found during a biospeleological study carried out by my wife and me, a small endemic curculionide of 3.80 mm named *Solariola bucolorum*. And you can't miss our bat friends that form large colonies in our caves especially in the period of hibernation. Once again a recent surprise: in an Etna cave we discovered a colony of chiroptera never reported in southern Italy, the *Plecotus austriacus*.

We mainly talked about the biospeleological aspects but we remind you that many other surprises are at hand on the Etna slopes: new speleothems never described before; new cavities used for anthropic purposes such as gravel pits or even underground hypogea used as aqueducts.

What can we add?! Etna is our "Muntagna" which gives us new emotions every day.

I hope I have sent you what I feel for "my mom" hoping I will see you in Catania to share my passion with you and to live together the sensations that this wonderful world gives us every day.

Carmelo Bucolo



## ISV19 – A Letter from Roberto Conti

Greetings to you all scientists and friends of volcanic caves and beyond.

Since I am the Italian representative of the IUS Commission for Volcanic Caves, I was contacted in November 2017 to examine the feasibility of a Symposium on volcanic caves in Italy. It was in March 2018 when the Gruppo Grotte Catania accepted the proposal and within the next three months, we prepared the nomination for the Eighteenth Symposium at Lava Beds in California.

Once the assignment was obtained, we began to work hard to carry out the project (Symposium website; pre-registration procedure, first and second circular).

At the beginning of January 2020, just as we were opening online the final registration procedure for the Symposium, the coronavirus epidemic began to spread in China and then in Italy.

We continued to work on the preparation of the symposium until the epidemic turned into a pandemic, spreading all over the world. In early April, considering the difficulties that each participant would have had in reaching Italy in such a difficult period, we decided to postpone the Symposium for one year (see press release on the web).

To date, after about 4 months of epidemic, we can say that the province of Catania, with just over a thousand cases, has been among the least affected in Italy. Now it is possible to return to mountain trips and speleological activities and our enthusiasm for the realization of the Symposium has awaked with new initiatives to make it even more interesting for you.

The University of Catania has already confirmed us the availability to host the Symposium in the same period of 2021 and the Organizing Committee is working to propose the same program developed for this year; at the moment we can say that no activity or excursion will be cancelled.

## UIS Commission on Volcanic Caves Newsletter No.76

Although we shall have to respect new rules to ensure the safety and health of all participants, we would like to also confirm the maximum number of 80 people. For all that is managed personally by the organizers, we will try not to apply any price increase, in particular as regards the tours and cave visits with the sole exception of the excursion to the Aeolian Islands for which we will seek anyway the cheapest solution.

Looking at the new anti-contagion provisions, we will have to redo new agreements for accommodation and tourist excursions for accompanying persons; in these categories it is possible small price increases may be imposed. We count also on the help of the sponsors to try to absorb the new costs. Finally, we decided to enrich the program of activities, particularly for the week following the symposium to make the stay of those who come to Italy even more complete and interesting.

The new proposals we are thinking about are:

- Etna Camp 2021 (from 4 to 10 September).  
Speleological field, managed by the Club Alpino Italiano, in collaboration with the Etna Park, on a selected lava field in order to discover, explore, study new volcanic cavities on Mount Etna.
- Etna ciuf ciuf and cin cin. (on 4 September)  
With the railway around Mount Etna to discover its landscapes and wines.
- The discovery of the Greeks and Romans in Sicily (on 5 September)

Day tour to the most important archaeological sites of central Sicily such as Aidone and Piazza Armerina.

## UIS Commission on Volcanic Caves Newsletter No.76

I finish with some practical information for those who are already registered and pre-registered:

- the pre-registration made for this year, remains valid also for the new edition of the Symposium,
- those who have registered and did not wish to be reimbursed for the amount paid are considered already registered also for the new edition of the Symposium,
- those registered who requested the refund of the fee will be considered as pre-registered and will have to make a new registration to attend the new edition of the Symposium.

I would like to inform also the speakers that they can send the full text of their contributions by 31 March, 2021 and that it will also be granted them to add new papers to be presented, at no additional cost, by simply sending the abstract to the Organizers by 31 December, 2020 and presenting the full text by the same date.

We recommend everyone to always follow the updates on the website that has already been modified for the new edition and will soon be enriched with beautiful new photos of the caves of Etna.

To all interested parties, I would like to point out that, from the website, it is currently possible to make a new pre-registration while the registration procedure is suspended.

Finally, I remind those who had booked the accommodation for their stay in Catania for this year, to send a cancellation email to the property to avoid unwanted charges.

We plan to publish a new circular about the 2021 edition of the Symposium by the (northern hemisphere) autumn of this year.

We are all waiting for you in Catania

Roberto Conti

## ISV19 – A Letter from Giuseppe Priolo

Dear Friends,

For an endearing 2021 edition of 19th ISV, the staff introduces you two new, fascinating trips on the Sicily land and an offer for the lovers of the exploration of volcanic caves.

These offers are an alternative to the Aeolian Trip that, for logistic reasons, is limited to 30 people.

These are the additional activities for the post symposium period:

Sicily land trips:

- **Etna's Ciuf Ciuf & Cin Cin – Railway tour around the Mt. Etna and its wines**
  - o **Date: 4th September, all day**
  - o **Brunch: in a typical winery farm of Etna**
  - o **Maximum people number: 50**
  - o **Description of trip: Shuttle from Catania to Piedimonte Etneo, departure from Piedimonte Etneo Circumetnea Station, arrival in Randazzo and transfer to the wineries with the Wine Bus. Guided tour and tasting in a winery depending on the daily schedule. Coffee break in an historic village (Randazzo or Castiglione di Sicilia). Guided tour and tasting in a winery depending on the daily schedule. Return to Piedimonte Etneo Circumetnea Station and on the shuttle comeback to Catania (<https://www.stradadelvinodelletna.it/treno-vino-etna>).**
  - o **Cost of excursion: € 75.00/Person**
  - o **Shuttle: with the minibus of Organization (€ 15.00/Person)**

## UIS Commission on Volcanic Caves Newsletter No.76

- **In the middle of Sicily – Aidone, Morgantina and Piazza Armerina, the Greeks and Romans in Sicily**
  - o **Date: 5th September, all day**
  - o **Brunch: in a typical tavern of Sicily**
  - o **Maximum people number: 50**
  - o **Description of trip: From Catania, a quick journey through the most important archaeological sites in central Sicily. Aidone, the city museum with the famous Morgantina's Venus, the ancient city of Morgantina, founded first Millennium BC and the Villa del Casale in the historical and elegant city of Piazza Armerina.**
  - o **Cost of excursion: € 60,00/Person**

### For exploration lovers

- **Etna 2021 camp – Search and scientific observation of new volcanic caves**
  - o **Date: 4th – 10th September**
  - o **Accommodation: hut or camping tent (tents provided by organization)**
  - o **Meals: canteen at the camp (set up by organization)**
  - o **Maximum people number: the more we will be, the more we will have fun!**
  - o **Description of activity: in the Parco dell'Etna lands, the Club Alpino Italiano - Commissione Centrale Speleologia e Torrentismo (CAI-CCST) will organize the camp with this target: to discover, to explore and study new volcanic caves of Mt. Etna. Activities will include:**
    - **Morphological study of new caves,**

## UIS Commission on Volcanic Caves Newsletter No.76

- Rheological observations of lava flows and lava tubes,
- Biospeleological observations in the news caves,
- Pictures and video shooting of the new caves.
- o Cost of camp: € 50.00/person (contribution to food expenses).

The results of these activities will be presented in a paper at the next Symposium: a major work with the contributions of all the vulcanospeleologists involved. Doesn't that sound an exciting idea?

We look forward to many participants joining these excursions.

Giuseppe Priolo

for the Staff of 19th Symposium



Lava roll, Catanese Cave, Sicily. Photo by Serena Nicoletti

## Offer to host ISV 20 - Vietnam

### Hosting applicant

Dak Nong UNESCO Global Geopark in Dak Nong Province, Vietnam

### Proposed time

End of September to early October, 2022.

### Preliminary symposium outline

**Presentations - over a period of 1 to 3 days in provincial facilities at Gia Nghia (the provincial capital).**

**Excursions - to caves and sites of scientific, scenic or cultural interest. If the number of participants is large, the group may be split into 2 or 3 smaller groups. Possible evening activities include a party, a fireworks display and an ethnic cultural show. All these activities would be in the Dray Sap Special-Use Forest.**

### Optional excursion possibilities -

**- day visit to the Chu B'luk volcanic area (volcano, secondary veins, lava field and its contact with the alluvial floodplain).**

**- day visit to explore the Dak Nong geopark excursion routes. Three routes are currently available and could be combined with visits to the Geopark Information Centre, Explorasound (Vietnam's first museum of sound) and/or the Museum of early musical instruments.**

**- pre- or post-symposium field visits focussed on cave exploration.**

**- visits to either the Yorkdon National Park, the Ta Dung National Park or the Nam Nung Nature Reserve.**

**Accommodation - a range of accommodation options from guesthouses and homestays to comfortable hotels is available in Gia Nghia.**

# UIS Commission on Volcanic Caves Newsletter No.76

## General information on Dak Nong Province

- **Location:** Dak Nong Province is on M'ong plateau in the Central Highlands of Vietnam. It is at an average altitude of 600-700m asl, with the highest point being Ta Dung at 1,982m asl. Gia Nghia, the largest town in the province, lies about 220 km northeast of Ho Chi Minh City.

The Dak Nong Geopark was established in 2015 and becomes a UNESCO Global Geopark in 2020. Highlights of the Geopark are the lava tube system, several young volcanoes and waterfalls as well as many other geosites, national parks and nature reserves.

- **Weather and climate:** Located at the transition between the two Central Highlands and the Eastern South Vietnam climatic zones, Dak Nong Province is characterized by a sub-equatorial tropical monsoon and plateau climate, influenced also by a southwest hot and dry monsoon. The annual average temperature is 22.5°C, the highest is 35°C with April being the hottest month; The lowest is 14°C with December being the coldest month. There are two distinct seasons: a rainy season from April to the end of November and the dry season from December to the end of March.

- **Getting there:**

In general, the best way to reach Dak Nong Province is by plane. Tan Son Nhat International Airport (in Ho Chi Minh City) or Buon Me Thuot Airport (Dak Lak Province) are the closest airports to Dak Nong Province. The Organizing Committee will provide shuttle buses to pick up all delegates to the Symposium.

Dak Nong Province can also be reached by bus from other cities/provinces in Vietnam.



### - Lava cave system:

Dak Nong Geopark in Dak Nong Province features the current longest lava caves, some with large passage size, known in Southeast Asia and the immediate northern surroundings, including China. C7 Cave (1,067 m long), C3+C4 Cave (968 m, segmented), C8 Cave (791 m), and P 20 Cave (568 m) were surveyed by expeditions in 2014, 2015 and 2017.

Another cave mapping project took place in 2018, bringing the number of mapped caves to 49 and the total of known cave passages to just over 10.1 km. All the volcanic caves known in Dak Nong Geopark appear to be developed in Pleistocene-Holocene basaltic flows. The caves in Dak Nong Geopark generally do not have bad air, although the less ventilated caves are humid and have a relatively higher air temperature.

During the 2018 project biospeleological investigations were made. These were the first investigations of its kind in the Geopark. First identifications by specialists indicate several new species of spiders from the caves.

Especially, many archaeological artefacts including tools such as oval axes, blade-sharpened oval axes, blade-sharpened short axes, stone flakes and potteries were found in some caves. In 2018, human bones were discovered by the archaeological team in C6 cave. They imply human settlement in these caves at least 6,000-7,000 years BP.

## STOP PRESS!

**DAK NONG GEOPARK HAS JUST BEEN OFFICIALLY RECOGNIZED AS THE THIRD UNESCO GLOBAL GEOPARK OF VIETNAM.**

Dear colleagues,

Dak Nong UNESCO Global Geopark has just been officially recognized as the third UNESCO Global Geopark in Vietnam.

We would like to congratulate and thank all the institutions, local authorities, domestic and overseas scientists, managers and people, who have made a significant contribution to our great success.

Especially, thank you very much Mr. Hiroshi Tachihara, Mr. Tsutomu Honda and our friends/ colleagues in VSS of Japan. Thank you Mr. Guy Martiny, General Secretary of GGN and Chairperson of the UNESCO Global Geoparks Council, who is always with us in all important missions of heritage conservation and geopark development in Vietnam.

Congratulations to the vision of the geologists who have worked over the last 13 years (since 2007) to conserve volcanic caves containing the natural and cultural heritage values of the Krông No, Dak Nong area, that has now become a reality.

Thank you very much also to Mr John Brush and Mr Roberto Conti for your interest, encouragement and support.

Best Regards.

Luong Thi Tuat (Mrs.) - Geologist;

Vietnam National Museum of Nature (VNMN)

Vietnam Academy of Sciences and Technology (VAST).

Member, UIS Commission on Volcanic Caves



**Entrance area, Catanese Cave, Sicily. Photo by Serena Nicoletti.**



**Catanese Cave, Sicily. Photo by Serena Nicoletti.**