

EXPLORATIONS IN THE SUMIDERO DEL HIGO, SAN FERNANDO, CHIAPAS

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The high plateau of the municipio of San Fernando constitutes an important limestone area near the capital of the state of Chiapas in southern Mexico. This area is characterized by a typical tropical-karst morphology, with blind valleys and dolines. The San Fernando plateau is delimited to the east by the vertical fault of the Cañón del Sumidero, to the north by the Río Grijalva basin, to the south by the valley of Tuxtla Gutiérrez, and to the west by the border of municipio Berriozábal. This limestone massif is also part of the same range that continues to the west toward the Cañón del Río La Venta area.

The area of San Fernando has been the subject of previous speleological investigations. The first reports, since 1985, were made by foreign expeditions, one Dutch and some Italian, which visited a few interesting caves of this area. Subsequently a French expedition occurred in 1987, but after this date no more speleological explorations were carried out in this zone until the year 2000, when Grupo Espeleológico Jaguar A.C. started a systematic cave-exploration project in this area.

Sumidero del Higo was discovered in May 2010 by members of the GEJ and the La Venta exploring team during the final days of an expedition to Cueva del Puercoespín (see *Speleologia* 64, page 44; see also AMCS Activities Newsletter 28, pages 104 and 185 for the first reports about the exploration of Cueva del Puercoespín). Apparently other local cavers had explored the entrance shaft of Sumidero del Higo, but their explorations didn't make it beyond this point and were not documented. That May GEJ made its first incursions into the cave, exploring a couple of shafts. The cave promised to have extensive development, but the arrival of the rainy season stopped the explorations. In November of the same year we returned to the cave with more equipment and longer ropes and continued with the rigging of new pits. That same November, during another joint exploration with the La Venta, we reached a depth of 200 meters, just beyond the bottom of

Pozo de los Cristales, the second-deepest shaft, 45 meters, that has been discovered to date in this cave. After this pit, an active passage with water continues down through a pair of short drops and finally, after a hundred meters, becomes a diagonal-shaped crevice. The water disappears long before reaching this point. From the Pozo de los Cristales, a window in the wall was observed on the left-hand side and 9 meters up, but we did not climb to it. On our way out from this last pit we took down any fixed gear. In total, 400 meters of passage had been surveyed within the cave thus far.

In January 2011 further visits were made in order to re-rig the final pits. In February a team made up of Christian Cisneros Pérez, Gilbert Salinas Pérez, and Kaleb Zárate Gálvez took part in establishing the first extended camp within the cave. Base camp was set up only two pits from the entrance, so that the gear would be more secure during projects in the cave. During this expedition the window in the gallery of Pozo de los Cristales was reached; it proved to be a nasty climb because the wall was covered in a layer of mud. Beyond the window the cave opened again, and to the right there was an crumbly, slightly inclined gallery with a slope towards the Pozo de los Cristales. On the other side, continuing to the left, we went down

into a short and narrow but dry meander that intersected a new, wider passageway. To the left, the gallery continued for a hundred meters to a low roof. This passage was narrow for about 10 meters, but finally opened into a big room known as El Bosque, where the exploration ended. This trip lasted three days and two nights.

The cave was visited once again in April 2011 in order to explore some of the passages that were not previously investigated. El Bosque is a huge room formed by the collapse of the roof, and consequently there is a large conical pile of boulders in the center of the room. Above the boulders beautiful speleothems are growing, including many tall stalagmites and some giant columns that were roughly 10 meters in height. Below the boulders it is possible to continue to a little drop that leads to the top of a big mud ramp that finally intercepts a new active passage. This is an important stream, with much more water than is in Pozo de los Cristales. On April 30 a new team (Francesco Sauro, Roberta Tanduo, Roberto Trevi, Greta Guidi, Giorgio Annichini, Stefano Guarniero, Christian Cisneros Pérez and Kaleb Zárate Gálvez) entered to survey and explore this new lead into active passage. It had a meandering shape, not unlike a small canyon, as it was high and narrow in some parts and low and wide in others. Upstream the cave stopped in a shallow sump. Downstream the cave was explored for almost 1 kilometer until the team reached a waterfall, the Sumidero Sigüe Adelante shafts, that were not descended for lack of equipment. At 2:00 a.m. on May 1, after removing gear from the Sumidero del Higo, except for the window climbed in the Pozo de los Cristales, the team reached the outside world. During this season the explorations within Higo ended up surveying 991 meters of horizontal progression and 251 meters of overall depth.

In January and February of 2012 the rigging of the cave started again, and a new underground camp was established at -233 meters of depth on February 11-12. This was positioned as near as possible to the newly discovered active passageway, close to where the big muddy ramp ends. The idea was to save time, since it normally required three to four hours to reach this point from the cave's entrance. During February 25-26 and March 3-4 we continued surveying and the waterfall section was descended. Immediately following this a new shaft was discovered.





GALLERY "EL BOSQUE" BY FRANCESCO SAURO

Therefore we started to organize a new, extended-camp expedition. From April 2 through 8, with eleven cavers in two teams and seven days to dedicate to this project, this new, extended camp was created. This final exploration is detailed below.

THE EXTENDED EXPLORATION OF 2012

APRIL 2

The first team, consisting of Alessandra Lanzetta, Rodrigo Monjaraz Ruedas, Ulalume Hernández Arciga, Gilbert Salinas Pérez, and Kaleb Zárate Gálvez, entered the Sumidero del Higo at 1:00 p.m. Numerous kilos of equipment and food were brought into the cave so as not to run out in the coming days. At 8:00 p.m. the team arrived at base camp, located at a depth of 233 meters. The rest of the evening was spent re-establishing this camp.

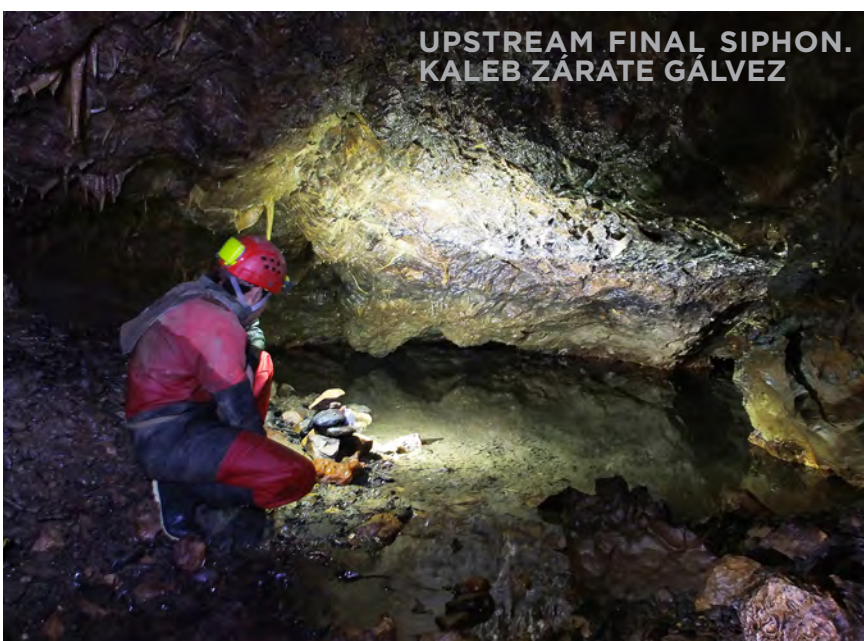
APRIL 3

The team was divided into two groups. Three

went upstream to try to drain and pass beyond the sump. They started by digging the floor around the sump, which was made of sediment, principally sand and small stones. Finally the water level was sufficiently low to permit passage as long as the caver was facing upward. A small gallery was discovered that was approximately 1.5 to 2 meters high and 10 meters long. The water in this space reached to knee level, and then the passage ended in a new sump on the right-hand side of the gallery, so the explorations upstream were stopped here. As this team headed back they took pictures of the water passage downstream and were joined by A. Lanzetta and G. Salinas, both part of the second group, who had gone to rig and explore downstream. This group descended the Sumidero Sigue Adelante, which measured 10 meters in depth. Then tens of meters farther on a new drop was descended and named Pozo Extremo. Beyond these shafts, a waterfall was discovered spilling into the main passage from the left side of the cave. Downstream there were several small drops that could be easily down-climbed without ropes. Along the stream passage there were speleothems that nearly closed the passageway in some places, leaving only a small and narrow space to squeeze through. In these area we found it was necessary to remove our harness to get through. The cave continued, but it was necessary for the team to start heading back to the camp to eat and get some much-needed rest.

APRIL 4

The push team had been reduced to three people because two members of the party had started their long ascent out of the cave. The survey



team continued on downstream, and the exploration team continued on from the end point the previous day. The cave continued on in a meandering fashion, with small drops and some low spots under formations. Near the end of this section the narrow passage began to be choked by boulders. Then, over a mountain of mud, there was a large, 10-meter-high gallery with a beautifully immense stalactite in the center that hangs down until it almost touches the top of the mud mountain. The water ran through 25 meters of a low-roofed phreatic gallery and then disappeared abruptly in a sump similar to the one found upstream.

APRIL 5

Early in the morning another member of the group left the cave. At times throughout our expeditions members have had to leave for various personal reasons, often independent of caving difficulties. We were definitely feeling like we needed reinforcements at this point, and, thankfully, the arrival of the second team was scheduled for this day. Meanwhile the two cavers who remained continued working on surveying the cave. The waterfall found beyond the Sumidero Sigue Adelante was explored. It was necessary to climb the waterfall, which spilled from a narrow, meandering canyon. Alessandra was the only member who could pass through it, so alone she explored this new passage, the Meandro de la Cascada, for about 400 meters. She returned after roughly one hour, but the canyon continued. At 1:00 a.m. the next morning the two-member exploration party returned to the camp and found that the second team had not yet arrived. Unfortunately food supplies and extra batteries had run out.

APRIL 6

The team headed back to the Meandro de la Cascada and found over the top of the waterfall an easier access point where the meander widens a bit more, though the first part is still narrow, with sharp, jagged walls. About half of the canyon was surveyed, and it was pushed until the team arrived at another sump. Most of the meander is narrow, but the final part widens and is beautifully sculptured by erosion. The final sump is turquoise in color and measures roughly 1 meter in depth. The food for this day consisted mainly of nuts and granola. Around 1:00 a.m. the team returned to base camp to find the new team fast



KALEB ZÁRATE GÁLVEZ

asleep. This new group, consisting of Christian Cisneros Pérez, Juan Carlos Franco Guillén, Gabriel Alberto Franco Guillén, and Gabriel Merino Andrade, had arrived at 7:00 p.m. that evening.

APRIL 7

We started to work at noon because of the general fatigue that was felt from the previous day. The group was divided in three parts: two members went upstream to try to drain of the sump again, another two went downstream to survey the main passage to its conclusion, and the rest of the group went back to the Meandro de la Cascada to complete the survey. At 9:00 p.m. the four cavers downstream were gathered at the base of the Sumidero Sigue Adelante. The survey to the final sump in the main water passage had not been completed, so two of them came back for finish the survey, because it was the last day of exploration. At 3:30 a.m. they arrived in camp after derigging all fixed gear from the pits down-



FIRST SHAFT OF SUMIDERO SIGUE ADELANTE. KALEB ZÁRATE GÁLVEZ



KALEB ZÁRATE GÁLVEZ

stream. The other four were already sleeping in camp when they arrived.

APRIL 8

At 10:00 a.m. the majority of the team started the long, arduous ascent to the exit. Meanwhile the camp was dismantled, and around 2:00 p.m. the rest of the cavers began their return to the mouth of the cave, carrying with them kilos of waterlogged ropes and equipment. At 8:00 p.m. the final members were coming out of the Sumidero del Higo. The cave was left rigged from base camp to the entrance.

A month later, on May 5–6, team members Christian Cisneros, Barbara Macini, Gilbert Sali-

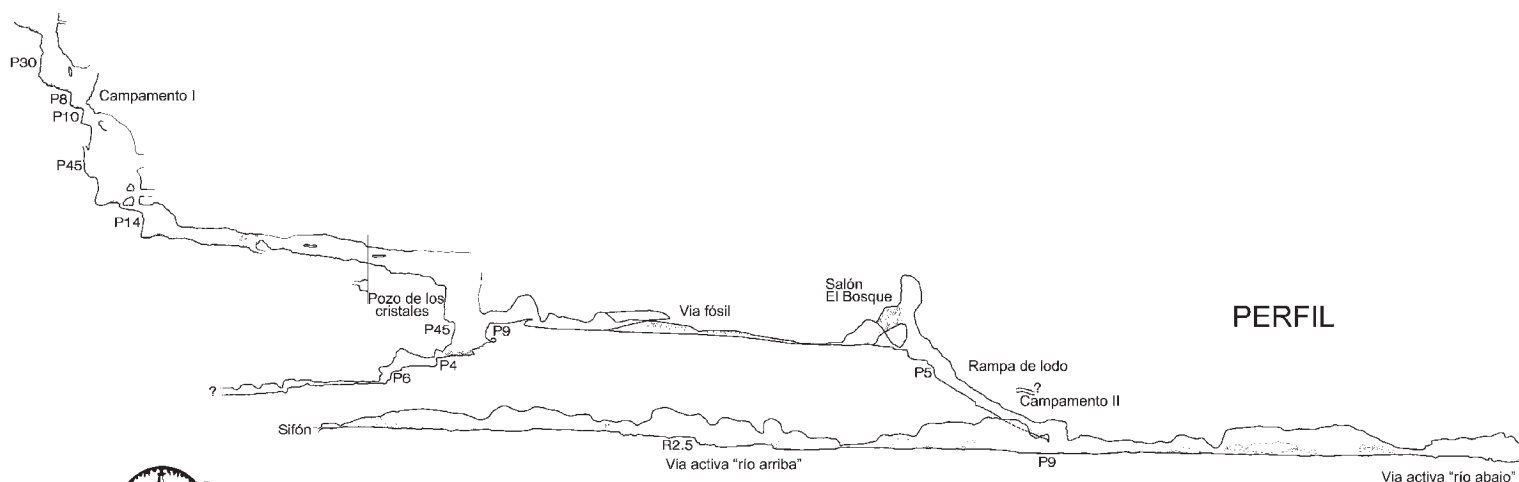
nas Pérez, Alessandra Lanzetta, and Kaleb Zárate Gálvez returned to Sumidero del Higo to derig the cave and survey on the surface between the entrances of Sumidero del Higo and the nearby Cueva del Puercoespín. A possible connection between these two caves has been expected to exist since the discovery of the Sumidero del Higo. Even though this connection has not been made, due primarily to the upstream sump, the plans show an undeniable link between the two caves, which are currently only separated by 15 short meters between the sumps of the two caves.

The explorations of Sumidero del Higo have thus far led to 3,057 meters length and 368 meters

depth. Currently, this is the deepest cave known in the San Fernando area. If the connection Puercoespín-Higo is made, the combined length will be more than 7 kilometers. [There is a much larger and more detailed map of Sumidero del Higo at amcs-pubs.org/maps/2643.pdf.]

We would like to give our thanks to the community of Benito Juárez, especially to Don Reymundo and his family, and to the *comisariado ejidal*. Equally we would like to thank to La Venta Exploring Team for their help and support during these trips. We thank Francesco Sauro and Calvin Smith for their comments on this manuscript.

The following is a comprehensive list of all who have participated in the exploration of this cave: Francesco Sauro, Carla Corongiu, Leonardo Colavita, Roberta Tanduo, Alessio Romeo, Roberto Trevi, Greta Guidi, Giorgio Annichini, Stefano Guarniero, Cyntia Reyes Hartmann, Gizzan Gibrand Tapia Ramírez, Luis Arturo Hernández Mijangos, Claudia Valeria Sánchez Flores, Gabriel Merino Andrade, Juan de Dios Rendón González, Gabriel Camacho Hernández; Christian Cisneros Pérez, Gilbert Salinas Pérez, César Andrés Pérez Bonifaz, Juan Carlos Franco Guillén, Gabriel Alberto Franco Guillén, Benjamín Chuy Siu Hau Soto, Sandra Inés Ocaña Hernández, Omar René Ortega Chavarría, Zenaído Ortega Chavarría, Rodrigo Monjaraz Ruedas, Ulalume Hernández Arce, Alessandra Lanzetta, Barbara Mancini, and Kaleb Zárate Gálvez.



Grupo Espeleológico
Jaguar A.C.

LA VENTA
ESPLORAZIONI GEOGRAFICHE

SUMIDERO DEL HIGO

Benito Juárez, San Fernando (Chiapas, México)

Position WGS84: N16°54'31.0" W93°11'06.5"

Quota: 935 msnm

Development: 3057 m

Depth: -368 m

Survey by F. Sauro, R. Tanduo, L. Colavita, G. Annichini, G. Guidi, S. Guarniero, A. Lanzetta, B. Mancini,

G. Merino Andrade, C. Cisneros Pérez, G. Salinas Pérez, B. C. S. Hau Soto, O. R. Ortega Chavarría, K. Zárate Gálvez

Grupo Espeleológico Jaguar A. C.-Associazione Geografica La Venta

November 27, 2010; April 30, 2011; February 12, 26, March 3-4, April 4-7, 2012

