GUE Explorers Discover a New Underwater Cave in the Yucatan

Exploring Sistema Maya

By Christophe Le Maillot

Although Sistema Maya is located very close to the coast, some of its aspects resemble caves further inland

Given that Mexico's Yucatan has more than 350 km of explored cave passageways, it is surprising to find that the area still has so much more underground to be discovered. For the last seven years, from December 1 to December 15, a dedicated group of local divers has organized a series of two-week exploration projects along the Caribbean coast of Quintana Roo, which have yielded interesting results in terms of the variety of caves found underground.

In December 2003, exploration in Ox Bel Ha and Punto Venado (DIR Quest Vol. 5, No. 1 Winter 2004) gave rise to tremendous discoveries. In December 2004, the focus of exploration was again to be a part of the Ox Bel Ha cave system: a section named Yax Chen, or "blue-green well" in Mayan. This area of cave borders the Sian Ka'an biosphere (Mayan for "where the sky is born"), an area that stretches across a total of 650,000 hectares of wetland and jungle. This nature reserve is believed to be a major drainage point for most of the water originating from the Ox Bel Ha cave system.

Although the main objective of the project had already been determined, explorers are always on the lookout for information that may lead to new discoveries. As a result, the first day of the December 2004 project was spent meeting with local landowners who had at some point expressed an interest in showing their properties. Of the many parcels of land visited that day, one was especially stunning: Located directly on the beach at Tulum, it showcased 300 meters of undeveloped rocky and sandy coastline. Such a sight is becoming increasingly rare on Mexico's Caribbean coast, whose real estate market is booming, and where new construction, enormous resorts, massive hotels, beachfront homes and condominiums appear to be daily occurrences.

On this pristine property, the landowner pointed out an interesting

Beautiful speleothems as close to 90 meters (300 feet) from the coast are found throughout the cave

The system is isolated from other karst windows and appears to not have been exposed to extensive dissolution

water hole. The only possible access to the water table was through a 1-by-3-meter-long crack along the most collapsed side of the breakdown area. The stagnant, tannic water of the surface pool did not make a great impression on divers. Appearances proved to be deceiving, however, once the reconnaissance dive was underway. This new cave, later named Sistema Maya, changed the course of the planned exploration.

After leaving behind the orange glow of Sistema Maya's tainted, tannic cave entrance, ongoing passageways were found heading northwest, running perpendicular to the coast. Further exploration during the week yielded a total of 8,100 feet (2,450 meters) of tunnels. The steep and narrow slope, strewn with debris at the entrance, proved to be a prelude to the unstable nature of the cave that the team of explorers would face all week. The main passageway, which resembled a giant roller coaster, took the team across numerous shallow breakdown areas and into deeper phreatic sections until it terminated in an impenetrable collapse. The continuation of the cave led away from the main section into small and silty corridors. Zero visibility and falling chunks of ceiling gave rise to challenging exploration conditions.

Sistema Maya is the 127th cave to have been discovered in the area. Its exploration yielded several points of interest. First, given the proximity of the ocean (fewer than 100 yards/meters away), the team was surprised to find the halocline at a depth of 40 feet (12 meters). This sort of depth for a halocline is normally found a lot further inland. Second, flow was nearly nonexistent in the fresh water. Third, a number of dark puddles of what seemed to be some sort of fungus were found on the cave floor. Fourth, orange-looking foam was found in Maya that could potentially be of a bacterial nature. Fifth, compared to other area sites, the variety and abundance of cave creatures populating Sistema Maya was notable. As with many caves characterized by silt dunes of an organic origin or extensive tannic areas, isopods, shrimps and blind cavefish were plentiful. A pretty awesome spectacle!

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Gelatinous deposit found on the bottom appears to be a bacterial colony with an orange coloration indicating a ferric metabolism of some sort