

Bonito Caves

Text and photos by Pierre Constant

— *Cave Diving in Brazil*





Gruta do Mimoso cave entrance (above); Scenery of Serra da Bodoquena on the way to Bodoquena (top right). PREVIOUS PAGE: Dive guide Tuta inspects stalagmite cones in Gruta do Mimoso

— *“Moro num país tropical, abençoado por Deus e bonito por natureza ...” (“I am born in a tropical country, blessed by God and beautiful by nature...”)* So goes the famous song by the popular Brazilian musician Jorge Ben Jor.

Did you say, “Bonito”? I had never heard of this place. A Brazilian diver I met in the Galapagos Islands referred to it as the capital of cave diving in Brazil, located south of the Pantanal wetlands in Mato Grosso do Sul—a state bordering Bolivia and Paraguay.

In July 2019, I took a domestic flight from Sao Paulo to Campo Grande, where I hired a car at the airport. On the pleasant 300km drive to Bonito, I passed endless fields of transgenic corn and the green pastures of zebu cattle farms.

The little town of Bonito is a tourist attraction for Brazilians and a self-proclaimed ecotourism wonderland. Everything is geared to serve the “bona fide” tourist, not the cave diver. Here, local agencies control the game. You cannot access any place without going through an agent, who will eventually hand you a voucher for any activity you can think of. Furthermore, a rental car proved to be a real necessity in Bonito if one wanted to access all the sites.

Located west of Bonito and Bodoquena is Serra da Bodoquena—a weathered limestone plateau of both carbonatic and terrigenous rock in the Corumbá Group (formed 580 million years ago in the Ediacaran Period of the Neoproterozoic Era). The sedimentary deposits followed a period when the planet was subject to intense glaciation. An ocean formed through the separation of the African and South American continental masses, formerly joined in the Rodinia supercontinent.

The second chapter in the geological history of the region took place 60 million years ago (in the Cenozoic Era)

View of Lagoa Misteriosa spring (above); Caracara bird of prey, *Caracara plancus*, in Mato Grosso do Sul (center)



THIS PAGE: Scenes from Lagoa Misteriosa; Dive guide lago and stumps of wood in Lagoa Misteriosa (top center and top right); Tour photographer takes photos of divers (right)

with the formation of caves. The Bodoquena Plateau slopes eastward, with a 200m escarpment on the western side. A karst area that extends 200km north-south is part of a plateau with an average elevation of 800m, which surrounds the lower plains of the Pantanal Mato Grosso Plain. Dominated by dolomites, the eastern sector of the Bodoquena exhibits a morphology of karst plains with residual hills and features such as dolines, caves, sinks and springs, as well as tufa limestone deposits along the current fluvial drainage system.

Covering an area of 77,022 hectares, the Serra da Bodoquena National Park, which was created on 21 September 2000, is administered by the Chico Mendes Institute for Biodiversity Conservation. It is part of the Pantanal Biosphere Reserve and classified as an IUCN protected area, with the aim of preserving natural ecosystems of great ecological importance, enabling scientific research, environmental education and ecotourism. Protected species in this area include the armored catfish *Ancistrus formoso* (a troglobitic spe-

cies of the Siluriformes order, adapted to living in caves), jaguar (*Panthera onca*) and cougar (*Puma concolor*), among others. More than 200 caves have been identified in the region, all of them on private farmland or in the park, and are hard to get to.

Lagoa Misteriosa

Being the odd unwilling tourist, I booked a R\$400 (US\$75) tour to dive the sinkhole Lagoa Misteriosa. Transportation was not included in the fee, so I was glad I had the car to drive the 51km south from Bonito to Recanto Ecológico Rio da Prata. It was a bucolic landscape

of farmland, with Brahman cows, "gauchos" on their horses, and the ever presence of *urubu*, or turkey vultures, swooping down from above. I handed in my voucher and was allowed to don my shorty for the dive.

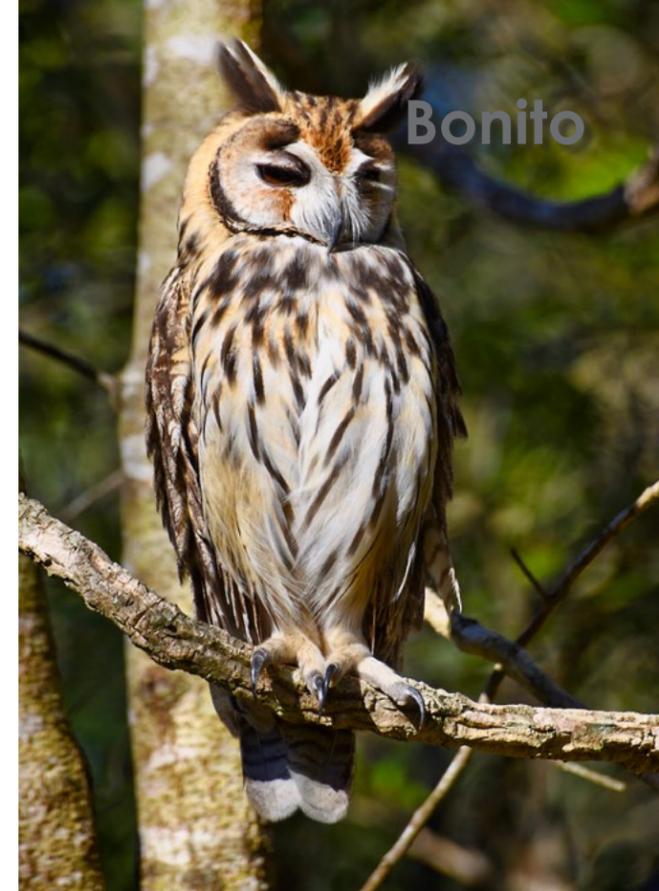
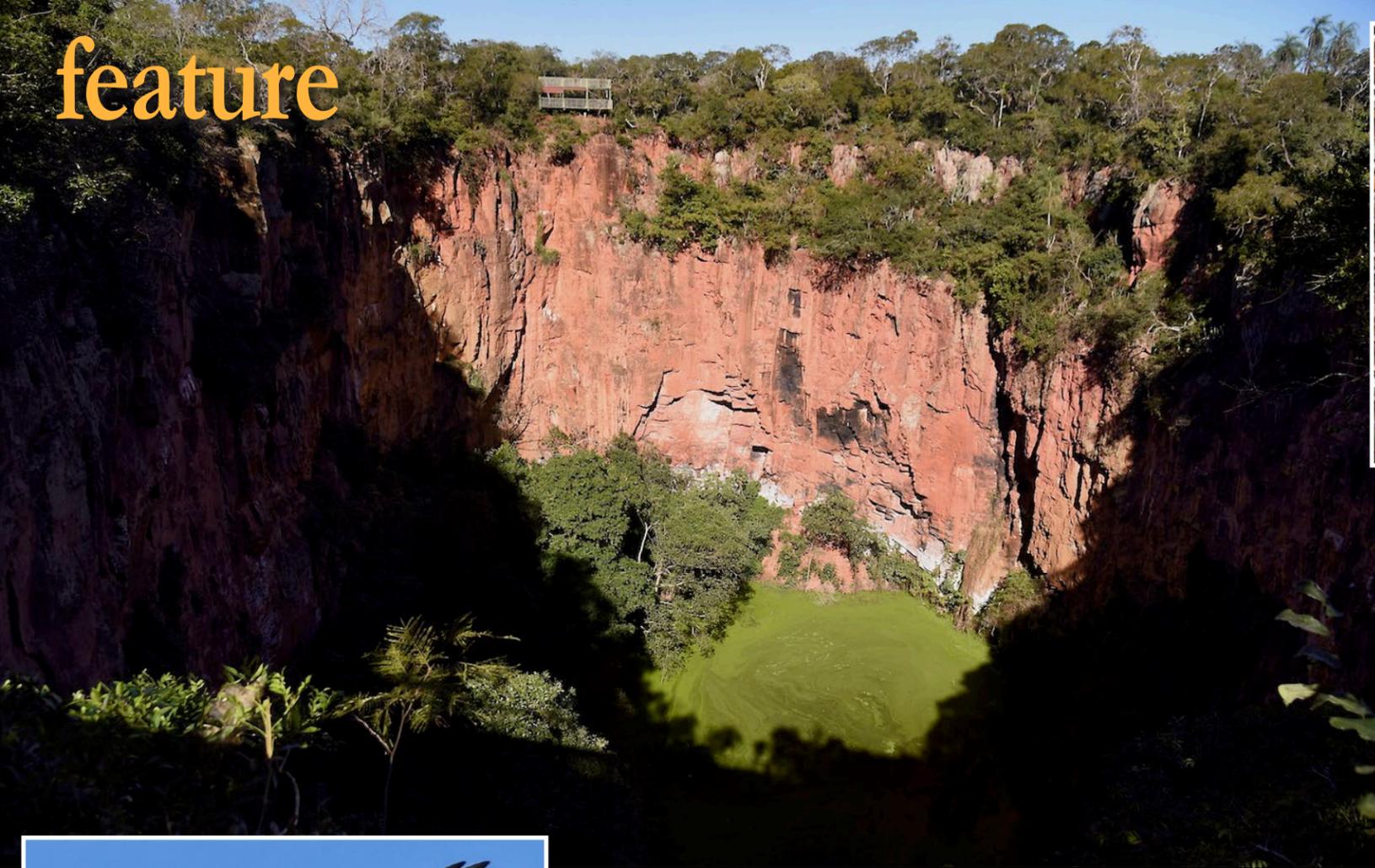
As part of a group of snorkelers, I was led along a 400m trail through the forest, then down a wooden stairway to the sinkhole, which was emerald green in color. Lago, our 19-year-old dive guide, spoke some English, although I found that speaking Spanish fluently came in handy when communicating with Brazilians.

Coming from a deep spring in a fracture in the rock, the water was a balmy 25.4°C. The first dive ever made here was done by Augusto

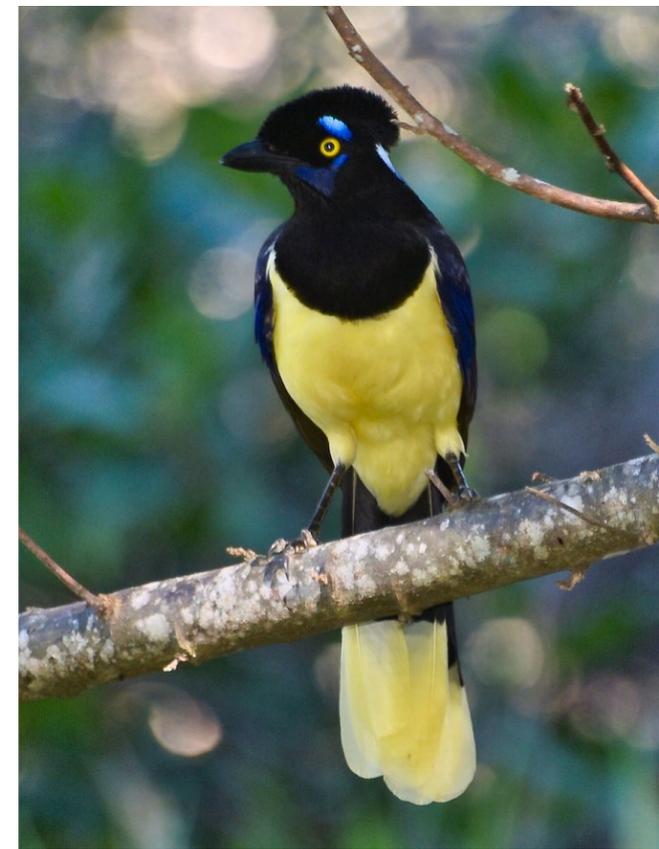


Armored catfish (*Ancistrus sp.*) is a protected species found at Rio da Prata.





Bonito



Plush-crested jay, *Cyanocorax chrysops* at Buraco das Araras (above); Striped owl, *Asio clamator midas*, Buraco das Araras (top right); Red-and-green macaws, *Ara chloropterus*, Rio da Prata (center)

Buraco das Araras red sandstone sinkhole (above); *Urubu*, or turkey vulture, *Cathartes aura* (left); *Jacaré*, or caiman, at Rio da Prata (top center)

underwater. Plenty of small fish, known as *lambari* in Brazil (*Astyanax sp.*), which were yellow in color with a black spot on the tail fin, swam around my mask like pests. There were also *mussums*, which the dive guide later confirmed to be marbled swamp eels (*Synbranchus marmoratus*).

Lagoa Misteriosa was a good place for creative photography. I photographed rays of sunlight filtering through the water, old wooden logs resting underwater and lago as an underwater model, while the underwater photographer assigned to us took pictures of me in every position! One positive comment about the experience is that you could choose the photographer's best shots of yourself in the end, at no extra cost. Just bring a USB stick.

Buraco das Araras

Only 15 minutes away was Buraco das Araras, which incurred a R\$78 entry fee

(US\$20). This remarkable sinkhole in red sandstone was 160m across and 100m deep, had a green-water lagoon at the bottom and was surrounded by trees and vegetation. Two *jacaré* (caimans) lived here, prisoners of their own fates. There was no way down, but a trail in the forest went around the sinkhole and led to two viewing platforms, one at each end. The main draw here was a population of red-and-green macaws (*Ara chloropterus*), which dwelled in the cliffs and in the trees. They were noisy for sure, but so entertaining and such a beautiful sight in flight. The forest was teeming with birds, and I was surprised by a striped owl resting on a branch in the sunlight.

Seeking authorization

Back in Bonito, I explained my dilemma to another agency. "But I came here to go cave diving!" I said and enquired about the renowned Gruta do Lago

Azul. Definitely a place of wonder and enchantment, it was a large cave that had been dived before. "We'll see if we can get an authorization for you," said the agent. It was denied, as expected, since Gruta do Lago Azul was a site of archeological and paleontological research.

"You may look for Edy Edmundo, Secretario do Meio Ambiente (SEMA)," said the agent. "He is an experienced cave diver here. His office is in the Department of Environment."

So, I went there and waited patiently for half an hour before Edmundo came out to meet me. Straightaway, he advised me to contact another cave diver, named Tuta, who could possibly arrange a dive at Gruta do Mimoso, which was actually closed for tourism. But the man was not in town that day. "Come back again tomorrow," said Edmundo.



Auler as a member of a French-Brazilian expedition in 1992. The deepest dive down to 220m was undertaken in 1998. However, I was instructed that we would not go deeper than 25m—a shame, since I was promised by the tour agency that I could dive to 40m. "But that is not the same price!" I was abruptly told later. Considering the fame of the site and the number of dive novices doing their "baptismo" (baptism) here, this was a well-oiled industry!

The visibility of the water in the sinkhole was excellent; it was a deep blue color





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View into the sinkhole Abismo Anhumas from the outside (left); Rappelling down in tandem into Abismo Anhumas (right)

Abismo Anhumas

Meanwhile, I decided to have a look at Abismo Anhumas (Anhumas Shaft), another famous cavern, 23km to the southwest, in the hills of Serra da Bodoquena. To get there, I drove along a red dirt road that climbed into the dry *mato* (forest). The last 100m had to be done on foot. The operation here consisted of rappelling down 72m on a rope, through a narrow cleft that opens into a huge cavern, which had a lake at the bottom. From a viewing platform, you can peek inside the sinkhole. One can get a glimpse of people sliding down or being pulled out, with harness, helmet and the lot. A mere fee

of R\$1,517 (US\$400) is charged for the experience, should you decide to dive in the lake as well!

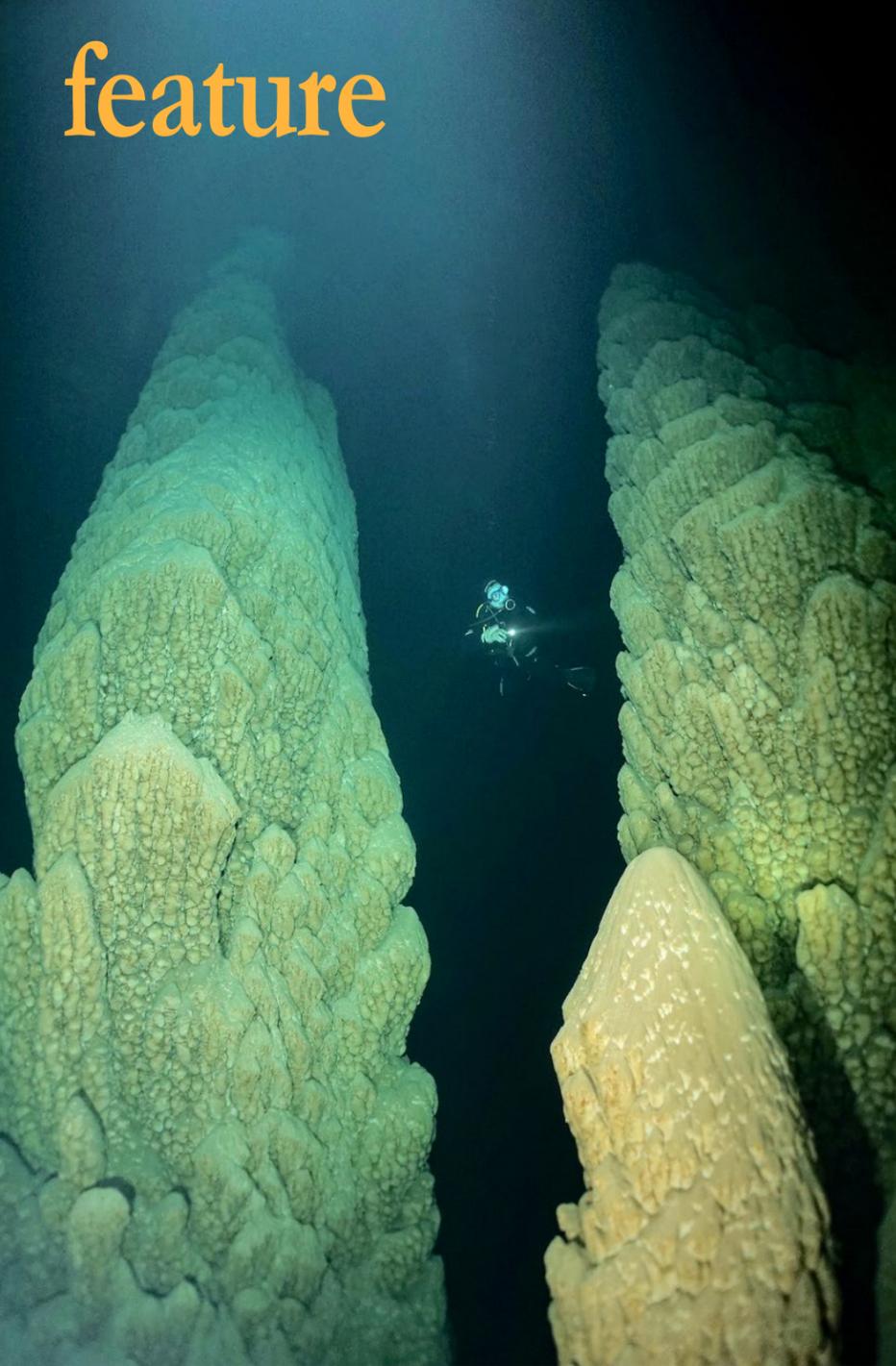
A team of six guys pulled people out on a rope, running a boardwalk 30 to 40m long. The whole ordeal was carried out with enthusiasm and a good sense of humor. A friendly guy named Fernando gave me the name of the operation's owner, Juca, whom I should approach for further information. That same evening, I met Juca by chance on the street. As it turned out, he was the owner of both Ygarape Tours and Bonito Scuba.

Two days later, I was back with my dive gear. It was compulsory to go

through the necessary training at the rappel center the day before, where you are given a basic understanding about how the technique works. Here, you had to pull yourself up nine meters on a rope, with the help of your legs and a rappelling tool.

Back at Abismo Anhumas, early in the morning, my scuba tank and dive gear were brought down separately on the rope, as well as my underwater camera in a bag. The subterranean lake was 120m long by 90m wide, with a maximum depth of 80m in a specific pit hole. I rappelled down together with another guy, to whom I was hooked up with a cable and our legs had to be clutched.

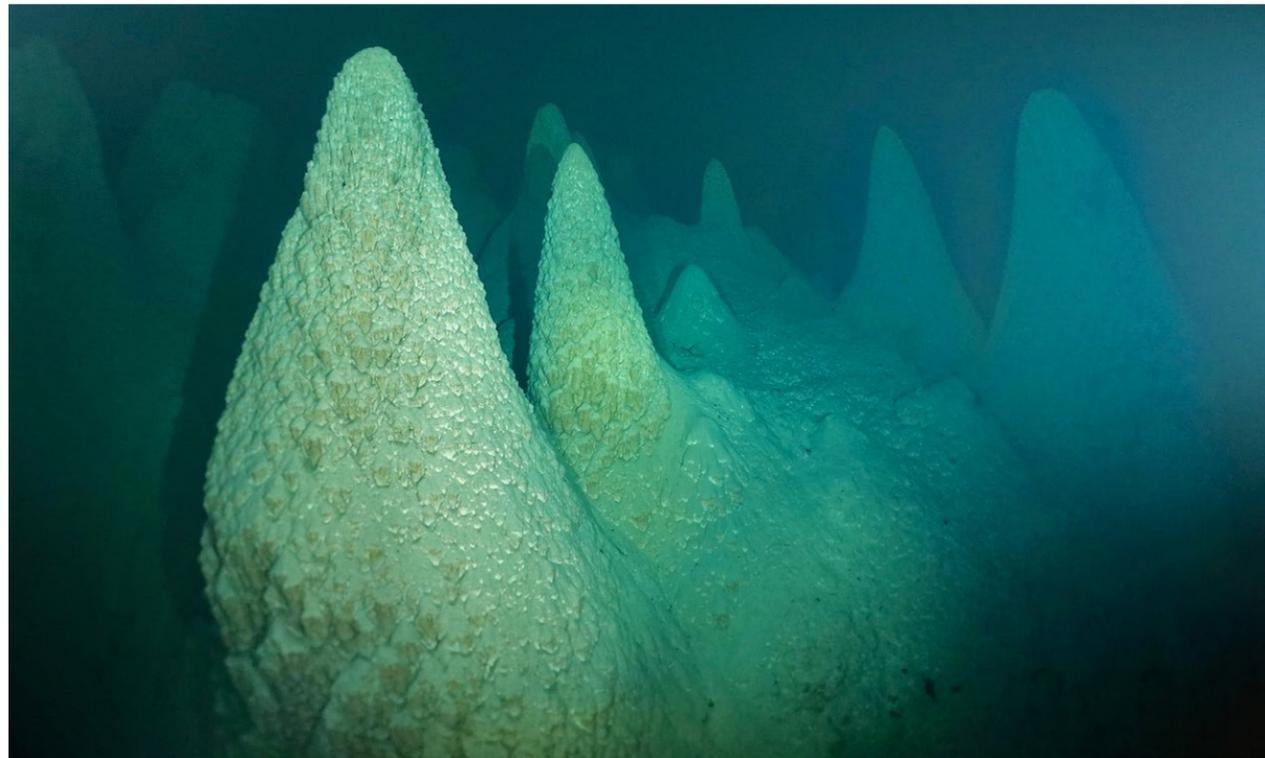
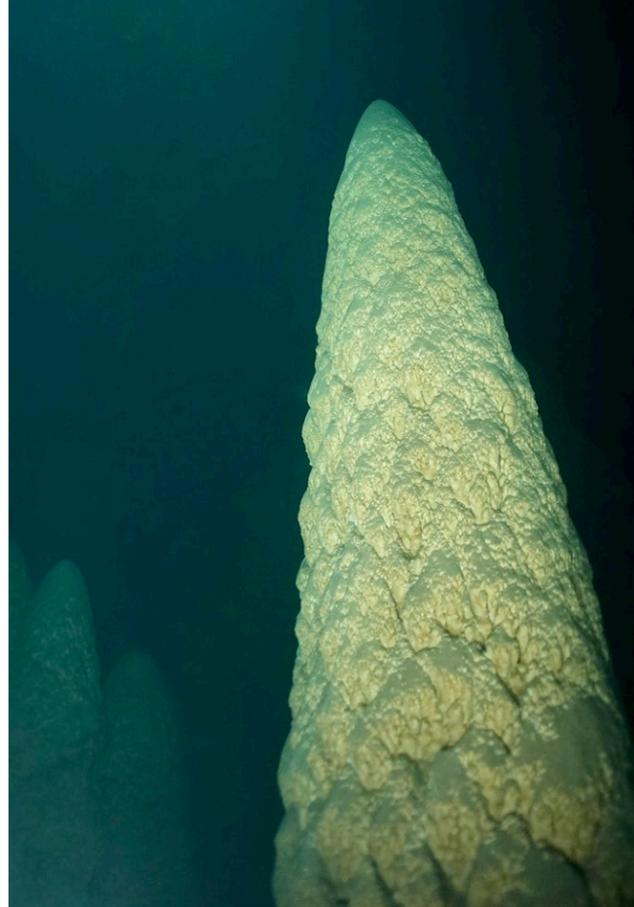




Underwater, the temperature was a frisky 18°C, and the 5mm wetsuit was indeed appreciated. Most of the lake did not exceed a depth of 20m. The water visibility was not clear, which was not helped by the darkness of the surroundings. The only source of light came from the open roof of the sinkhole.

Giant stalagmites rose from the bottom like nuclear warheads. Yellowish-white in color, the tallest was 19m high! According to this scale, it would mean the stalagmite was

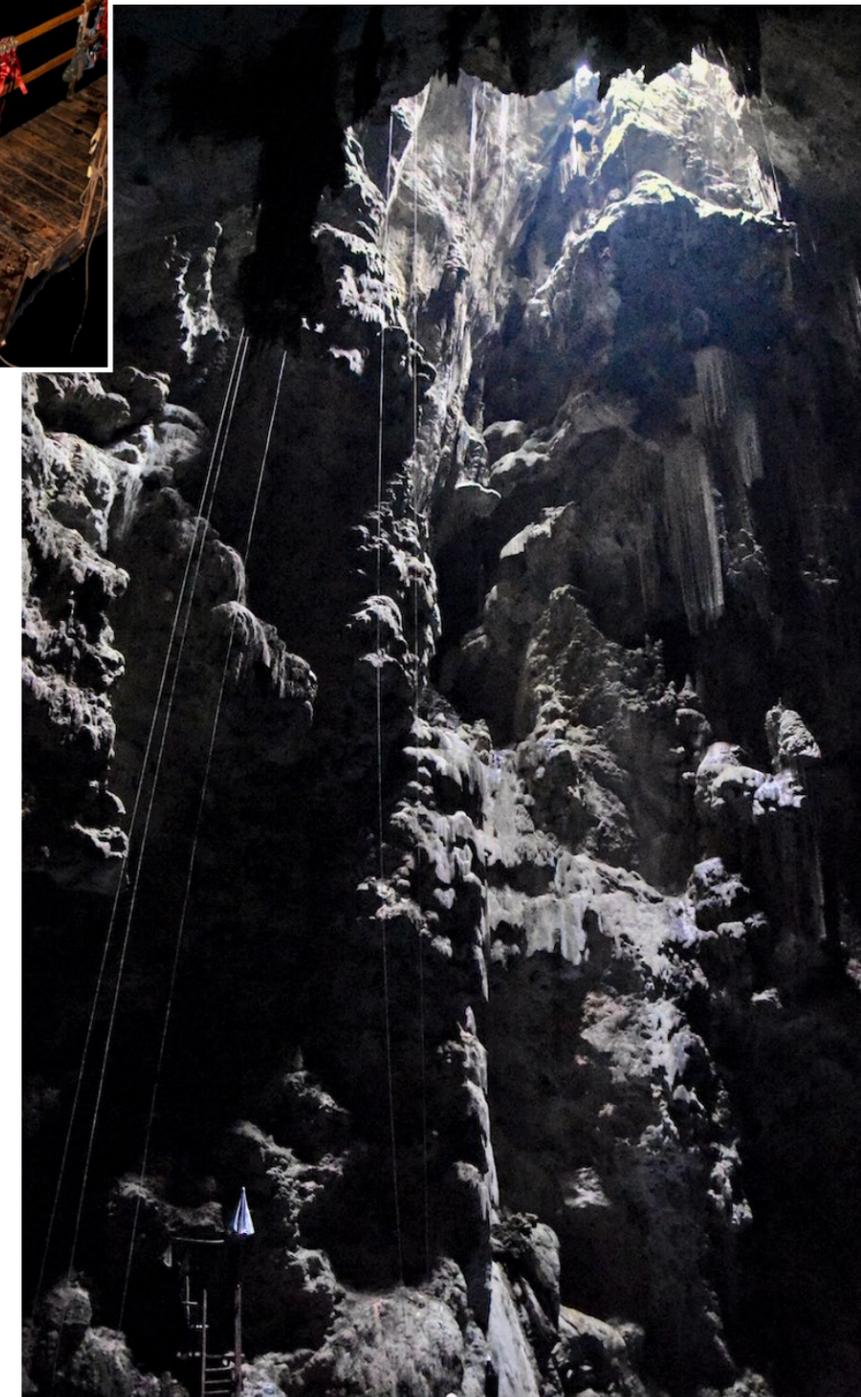
19,000 years old, if we consider a deposit growth of 1mm per year. A mind-boggling explanation is that these stalagmites were made underwater, from the accumulation of sediments dripping down from the stalactites above and incidental mineralization. It was hard to believe, but a proven scientific fact. With the shortage of light, photography of the stalagmites was rather challenging.



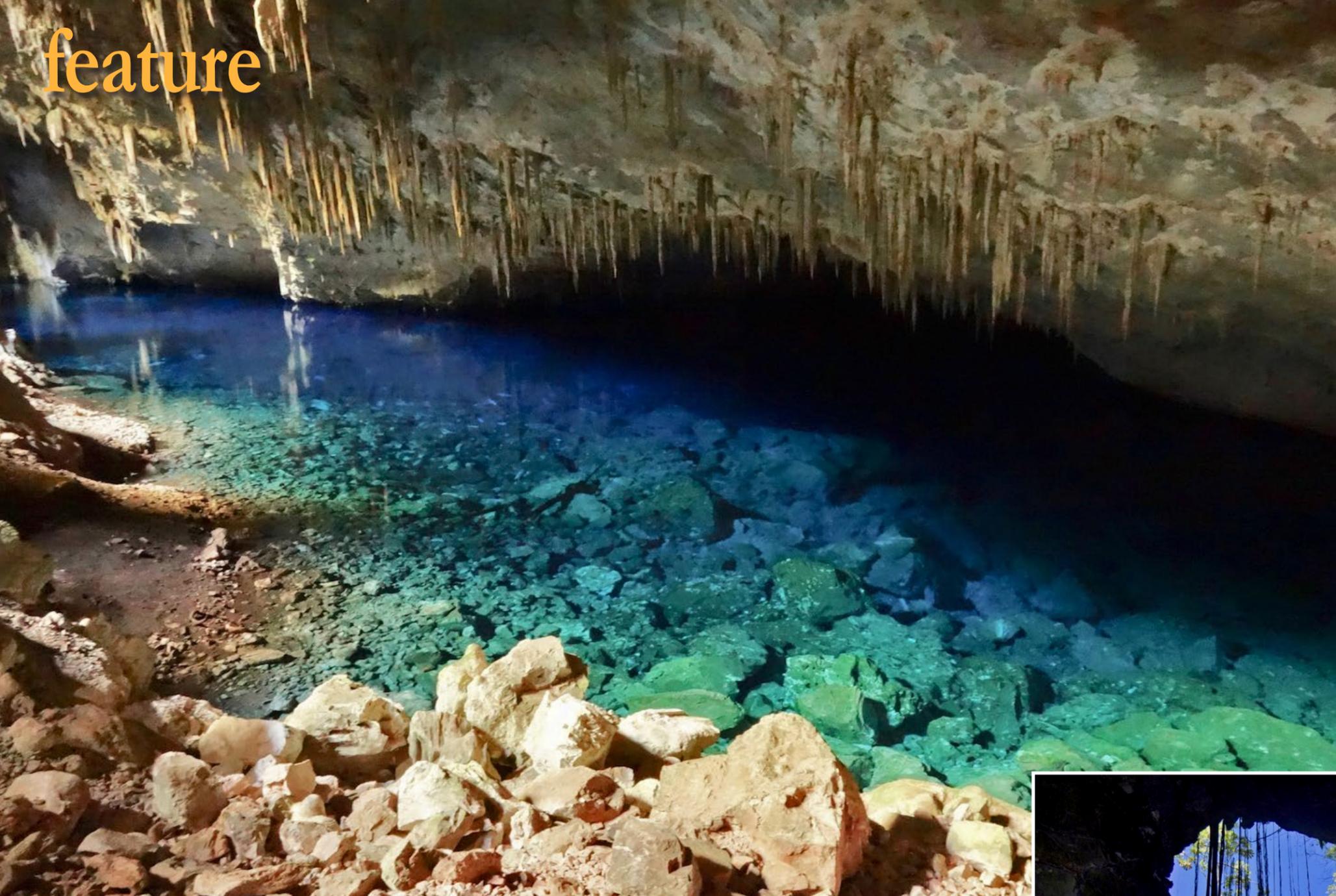
Eduardo, the dive guide, pointed out the full skeleton of a *tamandua* (giant anteater) laying on the bottom. It was estimated to be at most 100 years old.

The total dive time was 34 minutes,

THIS PAGE: Underwater scenes showing the huge stalagmites in Abismo Anhumas; Arriving at the platform after a 72m rappel down into the sinkhole (below); Skeleton of a *tamandua*, or anteater, in Abismo Anhumas (right); View of the daylight hole in the open roof of Abismo Anhumas (bottom right)



with a maximum depth of 18m, and I still had 100 bar left. The hoisting up was rather quick and took no more than three to four minutes. It was a memorable experience.



Blue Lake, Gruta do Lago Azul (left); View looking up to the entrance of Gruta do Lago Azul (below)

spring in distant times.

During the Franco-Brazilian BONITO/92 Expedition of Jacques-Yves Cousteau, fossils of megafauna mammals from the Pleistocene were discovered at the bottom of the lake. These were from the giant ground sloth *Eremotherium laurillardi* and the sabre tooth tiger *Smilodon populator* (dating from 1.8 million to 11,000 years ago).

A second expedition in March 2015, led by researchers of the Museo da Historia Natural—which included divers, photographers, journalists and filmmakers—went to a depth of 90m, discovering 12,000-year-old fossils at depths of 17m to 50m. Other caves in the region, such as Buraco do Japonês, Nascente do Rio Formoso and Fadas Cave, revealed fossils of Pleistocene carnivores such as jaguar, Pantanal cat (*Leopardus braccatus*) and bear (*Arctotherium* sp.), as well as mastodons (*Stegomastodon* sp.), gomphotheres (*Notiomastodon platensis*), prehistoric armadillo or glyptodont

Gruta do Lago Azul

Gruta do Lago Azul would have been a fantastic dive, but the Brazilian bureaucracy is such a headache and the restrictions are so insane that it will take a long time before anything becomes possible. It is simply not enough to be a licensed Full Cave Diver. The environmental laws are overly protective, but promotion of the place by agencies is fully encouraged, as long as it attracts the *lambda*-paying tourist.

The reason behind the inter-

diction is the occurrence of the bones of Pleistocene animals. The Monumento Natural Gruta do Lago Azul (Blue Lake Cave Natural Monument) was declared a national heritage site in 2001 by the Instituto do Patrimônio Histórico e Artístico Nacional (IPHAN), not only for its fossils, but also for the occurrence of rare minerals such as nesquehonite, and for the minute endemic crustacean *Potiicoara brasiliensis*, which resembles a weird mantis shrimp, barely a centimeter long.

However, tourism activity here was approved in May 2008.

Lago Azul Cave was formed in Neoproterozoic-era dolomitic carbonate rocks of the Corumbá Group, within the geotectonic Paraguay Fold Belt, in relation to the Pan African/Brazilian orogenic event which extends for 1,500km. The main chamber of Lago Azul extends 224m northwest-southeast and 184m in a northeast-southwest direction, with a maximum depth of 90m. This chamber was probably a former



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Piraputanga fish, *Brycon hilarii*, at Nascente Azul

(*Glyptodontinae*) and tapir.

Nowadays, one can be led by a tour guide along the tourist trail, which takes you down a flight of cement stairs to the bottom of the 60m cliff, into the cavern and to the edge of the Blue Lake. The light being minimal, it is rather difficult to take photos of the lake in natural light, unless you push to 3200 ISO, use the timer and keep the camera perfectly motionless!

More caves

Other dry caves around Bonito (such as Gruta de Sao Miguel and Gruta Sao Mateus) can be visited on a tour, but they hold very limited interest in comparison to the amazing caves found elsewhere.

Back in Bonito to pick up some lights, my aim was now the search for Fazenda Mimoso (Hacienda), where Gruta de Mimoso should be

located. Hard to find, I ended up at Estancia Mimosa. A helpful man showed me a road junction on the way to Nascente Azul on a map. Driving to the spot, I discovered a hilltop crested with original forest. A dark 4x4 pick-up was parked in the shade of some trees. "These farmers can help me for sure," I thought. To my astonishment, they were divers—with scuba tanks! Addressing the big one in a drysuit, I reached out my hand and asked: "May I know your name, by any chance?"

"My name is Tuta," he said.

"Oh, what a coincidence! I was just looking for you," I said.

After I explained the reason for my presence, he pointed his finger towards the cave: "Go have a look, then we'll have a chat."

Tuta was indeed the new legal operator, who had free entry and

permits to take divers into Gruta do Mimoso. With Bruno, his assistant, he was busy placing lines and markers for future underwater circuits, adapted to all levels of diving and cave diving. The greatest depth reached was 40m+ in the Catacumba. The site was not yet open for visitors but should be in March 2021.

"Send me a copy of your passport, TDI Full Cave certification and DAN insurance, and we could plan it for this weekend," he said. Well, wasn't this providence at last? I thought.

Springs

The regions of Bonito and Jardim are full of *nascentes*, better known as springs in English. These include Nascente Azul, Nascente del Rio Formoso, Nascente da Ceita Corê, Nascente do Rio Sucuri and



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School of piraputanga fish at Nascente Azul (above); Aquatic plants at Nascente Azul (right); *Flutuação*, loosely translated as snorkeling, at Nascente Azul (left); Clear-water spring at Nascente da Ceita Corê (bottom right)

Nascente do Rio Olho d'Água—all of which come from Serra da Bodoquena and from the artesian waters below. In those areas, the water comes out crystal clear and warm at 24°C on average, whereas river water on the surface is around 18°C. Colorful fish life is plentiful at the *nascentes* and favors an activity known as *flutuação*, which Brazilian brochures translate as snorkeling. However, it is not really snorkeling but something rather different.

he said.

I frowned with displeasure, but the man added: "And you cannot bring the camera arms with the strobes. It will annoy other people and create delays."

I did not understand but complied for the sake of peace. Then the small group I was with, composed of families with kids, moved on along the trail to the departure point. At the midway point, we were told we had to collect equipment.

"I do not need the neoprene shorty!" I said.

Nascente Azul. I signed up for the experience, in the hope of taking some nice photos of the fish in fabulous visibility, and I showed up one morning at Nascente Azul, with mask, fins, snorkel and my underwater camera. "Sorry sir, you cannot bring your fins," said the guide.

"May I know why?" I asked.

"Because it will disturb the bottom, and you cannot skin dive,"

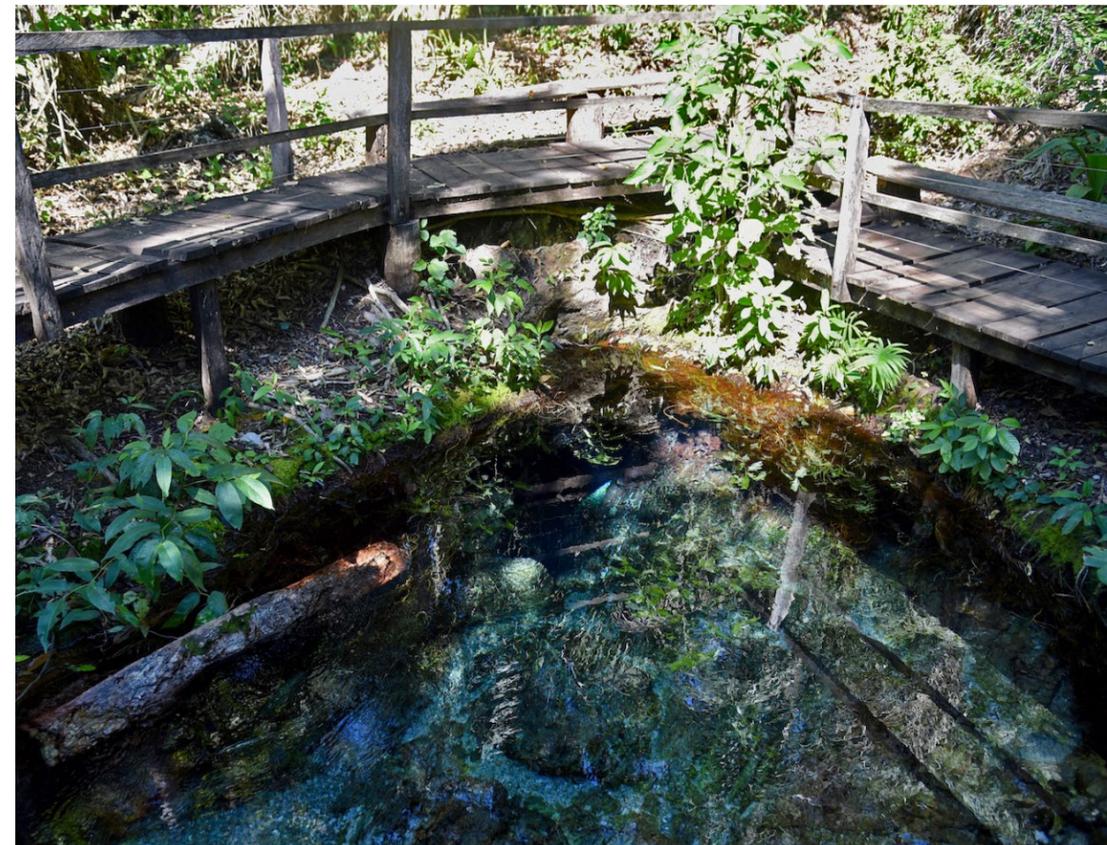
"You have to, sir, as well as the life jacket. This is the rule of the environmental law for conservation!" he said.

By now, I was pretty upset about the whole circus. Once in the water, I felt like a floating tortoise, with my head down and my back bobbing up like a champagne cork.

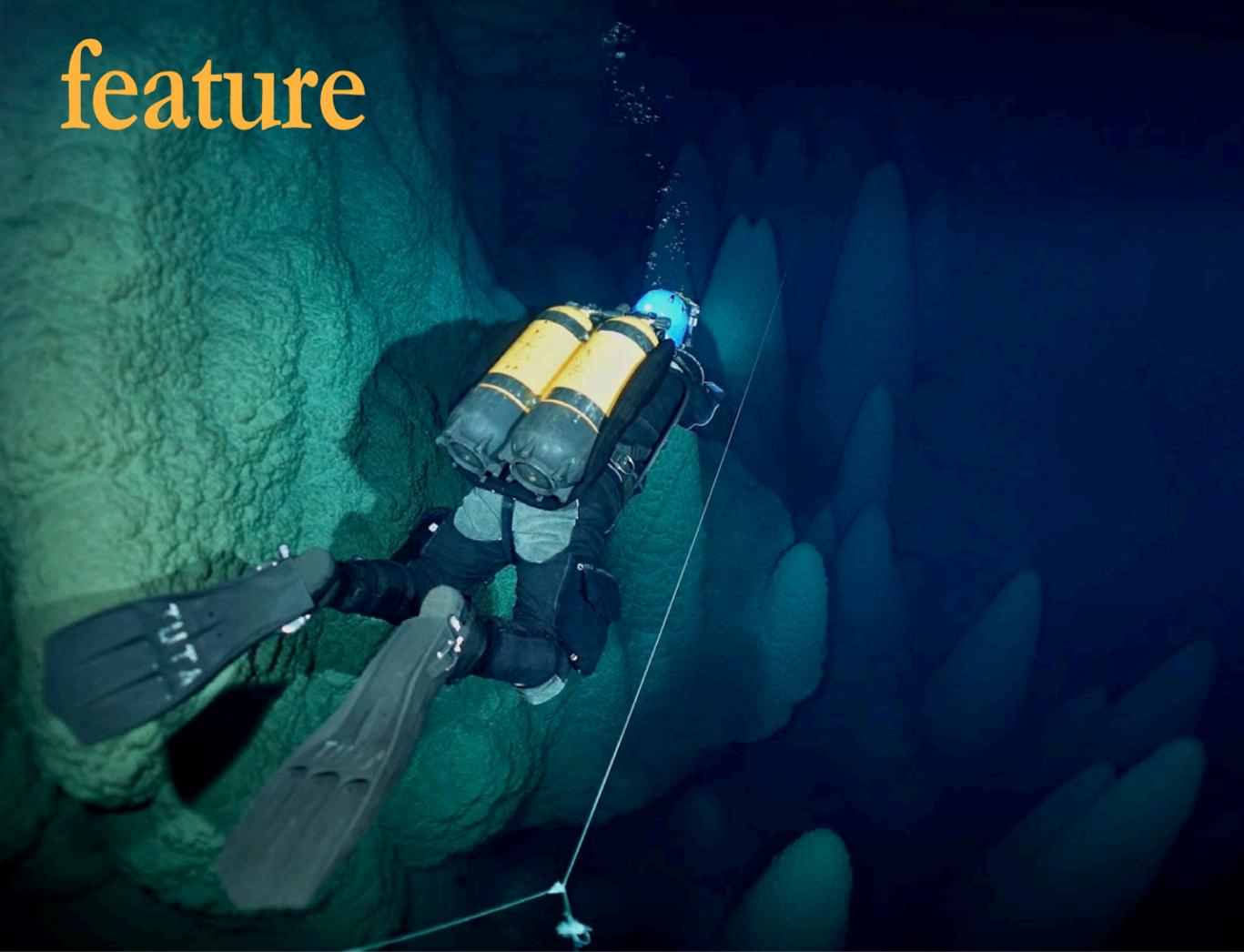
"You must move forward with your arms. Do not use your legs!" he said.

For goodness sake, how did they expect me to take decent photos of the fish like this? It was ridiculous. A bad joke. I thought to myself, "Now you understand the principle of floatation."

Ceita Corê. Ceita Corê was another attractive spring, located on a farm of the same name. Bubbling with gin-clear water, the hole connected to a subterranean chamber that was six meters deep and to a cave fracture that descended 155m. An enticing cave to dive, this activity was sadly not on offer. "However, you may snorkel and skin dive to 5m, if you wish!" said the guide.



THIS PAGE: Underwater scenes of spectacular stalagmites in Gruta do Mimoso; Dive guide Tuta penetrates the tunnel to Gruta do Mimoso (bottom left); Tuta entering the "Salon of the Cones" (top left); Tuta glides over a cluster of cones (left); Tuta hovers over cones that thrust upward like daggers (below); Overhead view of the cones (center)

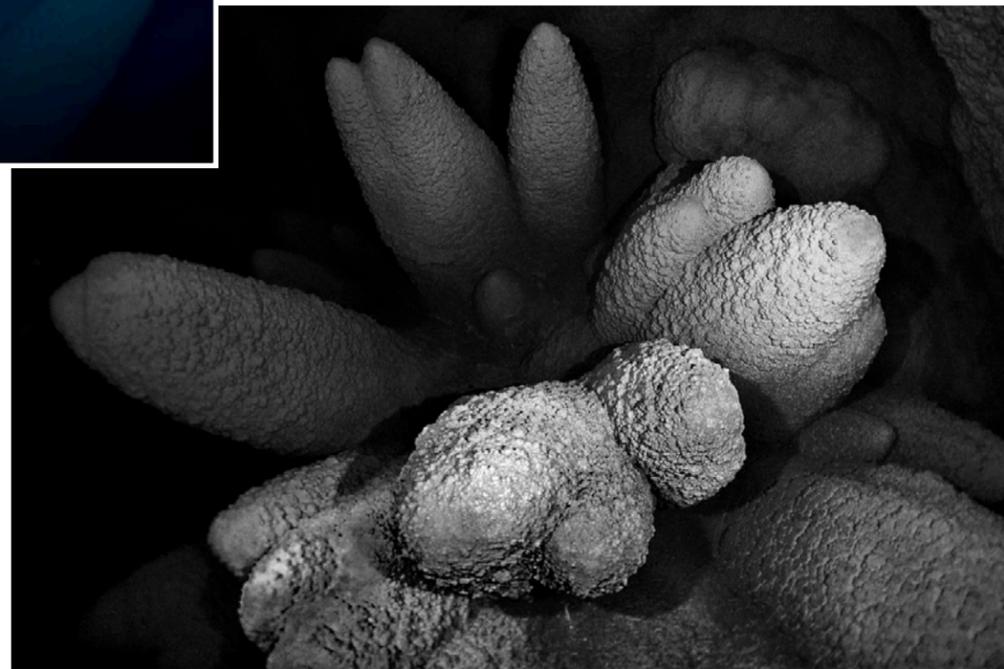


Gruta do Mimoso

Tuta had confirmed our dive at Gruta do Mimoso for Sunday. "Did you bring your signed Liability Release?" he enquired at once. I nodded in agreement. We would be diving with twin 10-liter steel tanks and a backmount with a manifold system.

"The first dive will be a loop around the main tunnel, following the U-shape of the yellow line, maximum 18m depth. You'll lead," said Tuta, as if to test me. No camera this time, I was diving only to get used to the cave features of the main chamber. It took me 15 minutes to cover the circuit. Visibility was fabulous. There was hardly any fish life except for small lambari (*Astyanax sp.*).

Tuta led the second dive, and I brought the camera along this time. After five minutes, a T-junction took us left into the

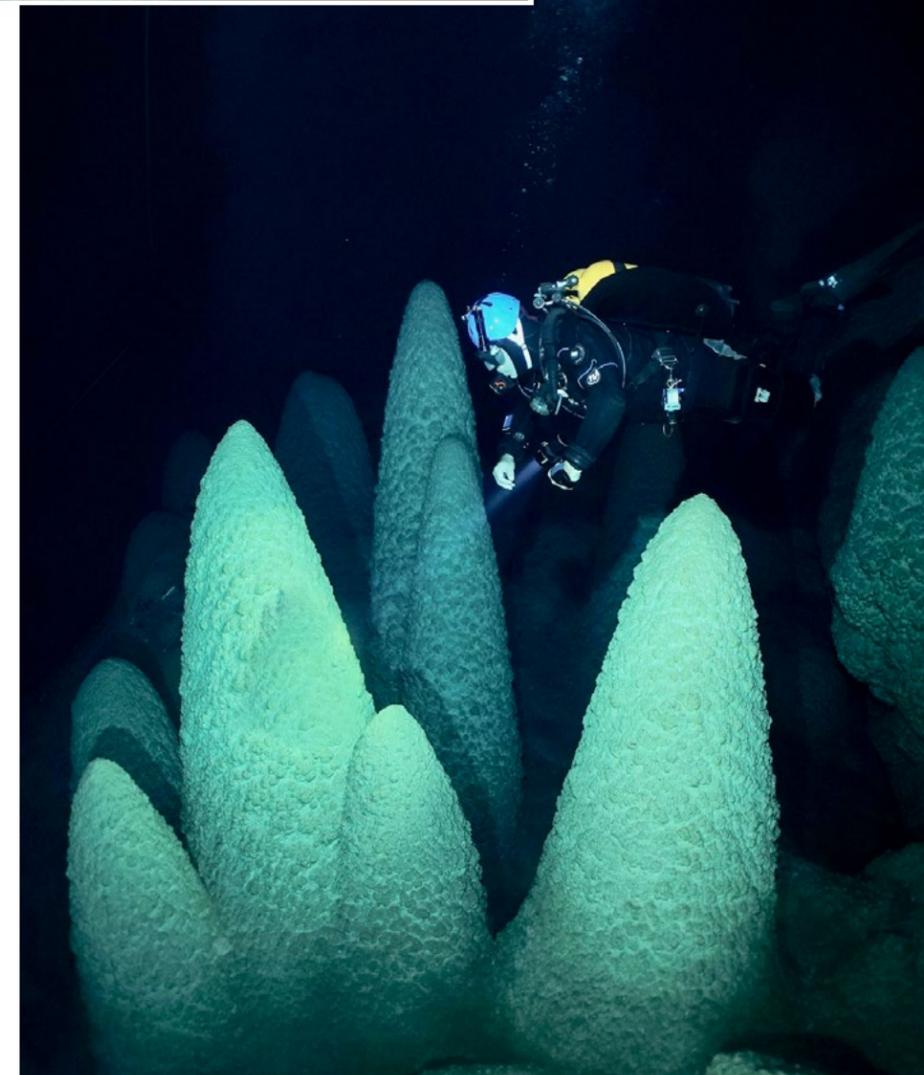


Salon of the Cones, the highlight of this dive.

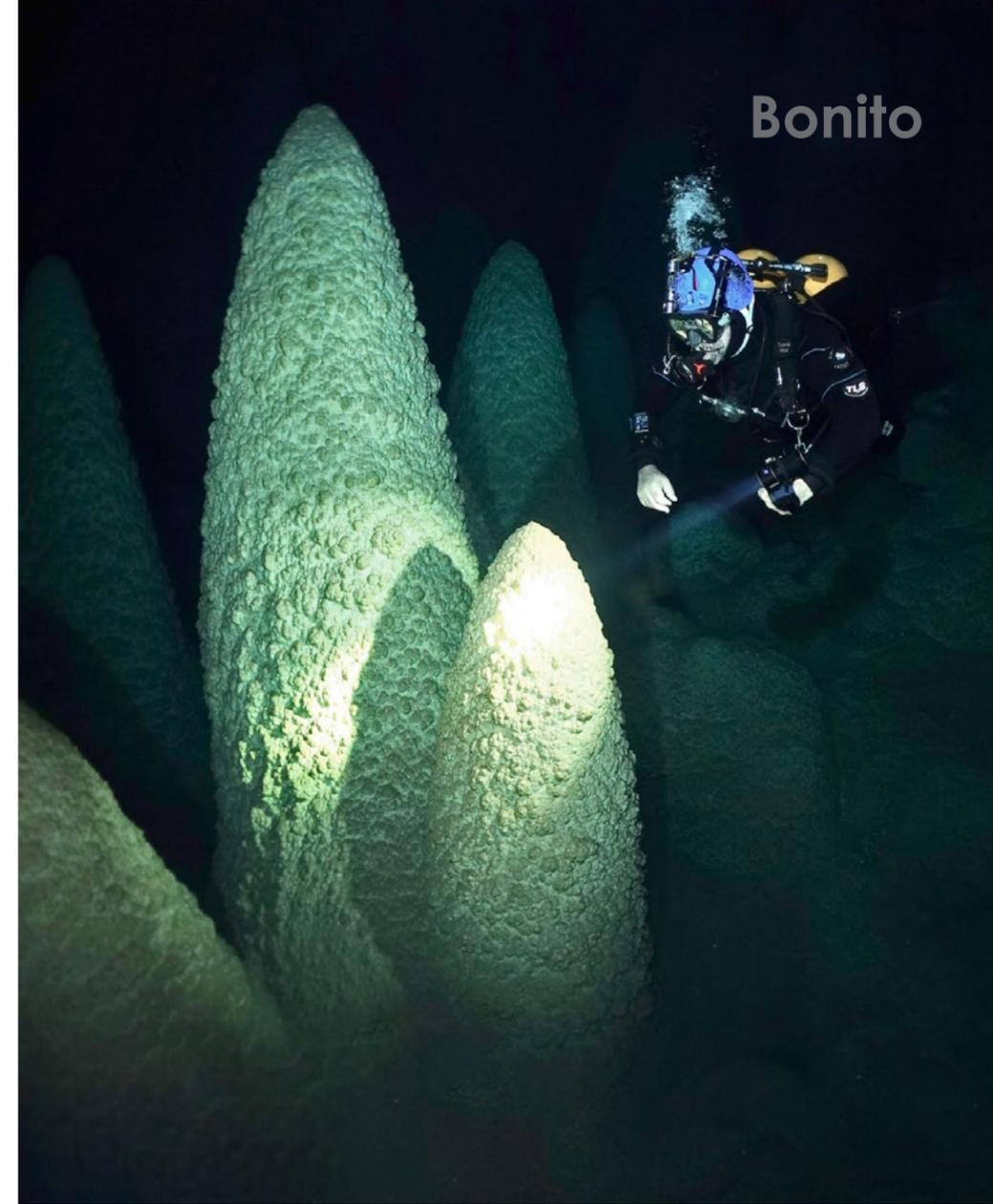
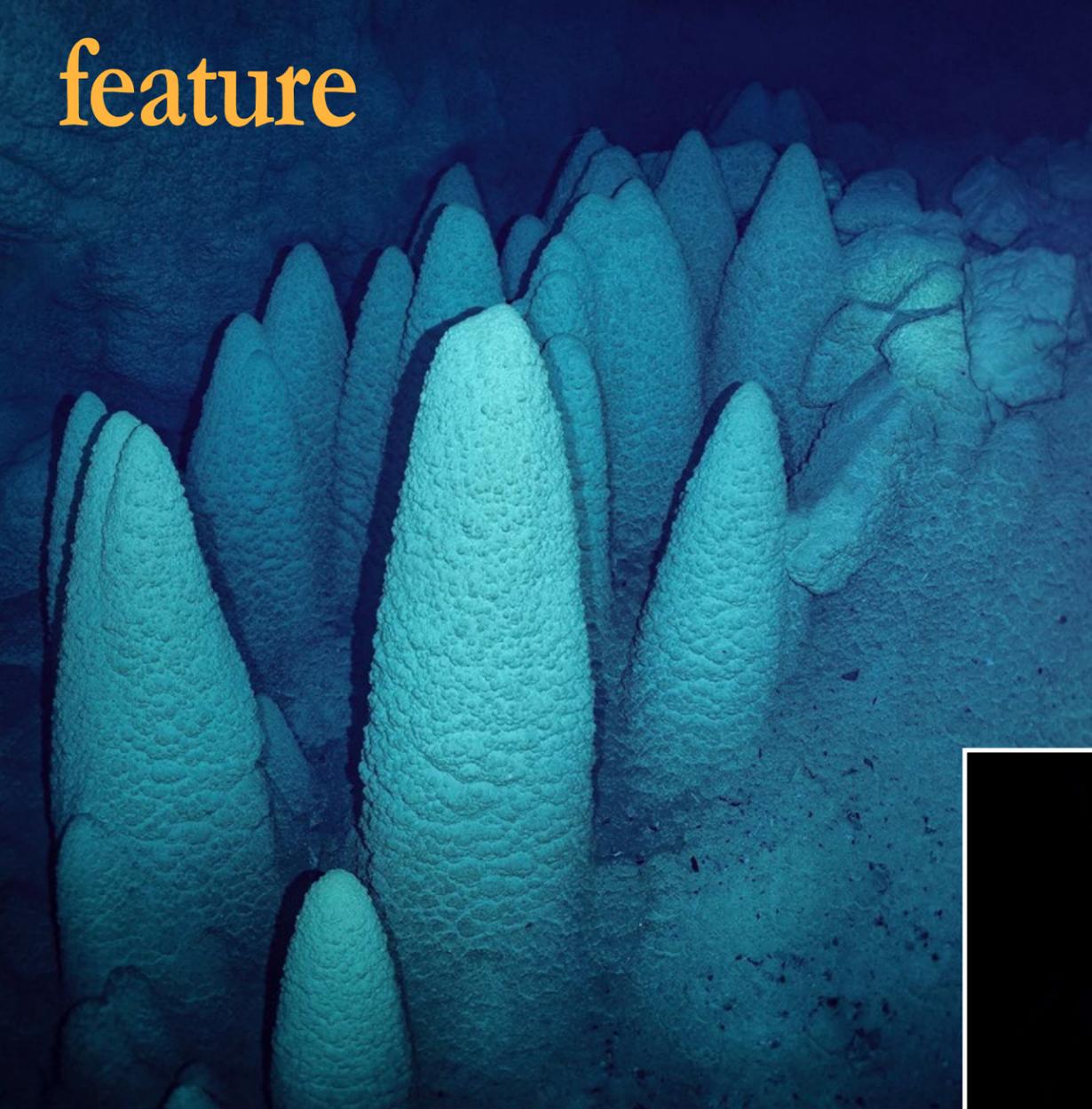
"Do not swim below the line, always above the cones," Tuta warned. A vision of a surreal Christmas-tree-like forest in white appeared in the beam of my torch. It was simply breathtaking. The stalagmites were a few meters high and set rather close to one

another like a collection of rockets pointed towards the ceiling. Floating above them, I noticed some bulbous ones among the tapered cones.

"When we take a right turn at the end of the alignment, you may come deeper to shoot from below," advised Tuta. The depth gauge now marked 26m, from the



Alignment of cones between the guide lines in Gruta do Mimoso (left); Tuta's progression forward to the next chamber (below); Side view of Tuta inspecting the cones (right); View of cones protruding upward like daggers (bottom center); Tuta at a decompression stop (bottom right)



previous 22m. The tallest stalagmite might be close to 10m, reckoned Tuta. Following the side of the chamber a bit farther on the left, we came to a side tunnel that plummeted into the Catacumba, at a depth of over 40m. Not the plan for today. We made it back into the main tunnel and slowly rose to the 10m level. Above us was a dry chamber where we would not surface.

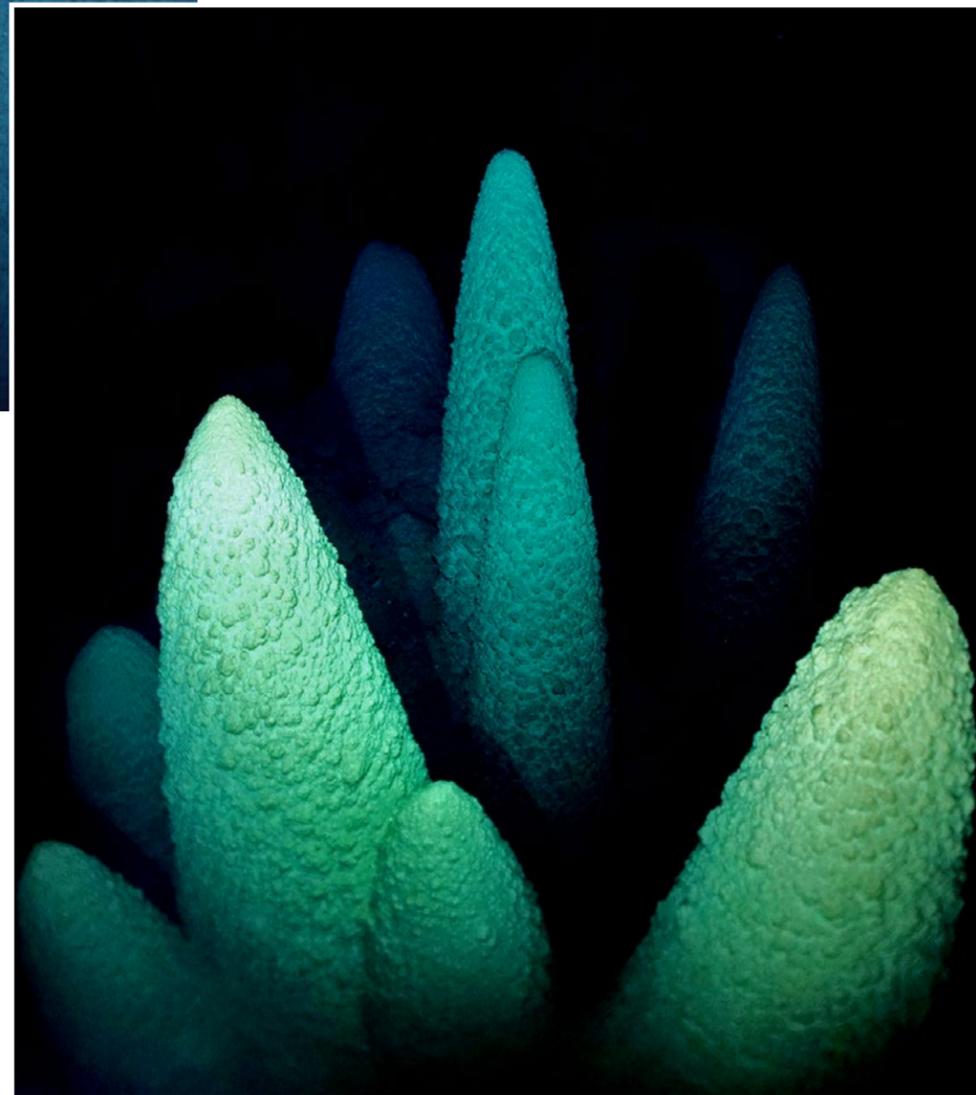
"Back in 2003, a couple of Italian divers explored the cave. One came out of the water there and fainted after a few minutes. The oxygen level is only 10%. Fortunately, his friend brought him back into the water, where he

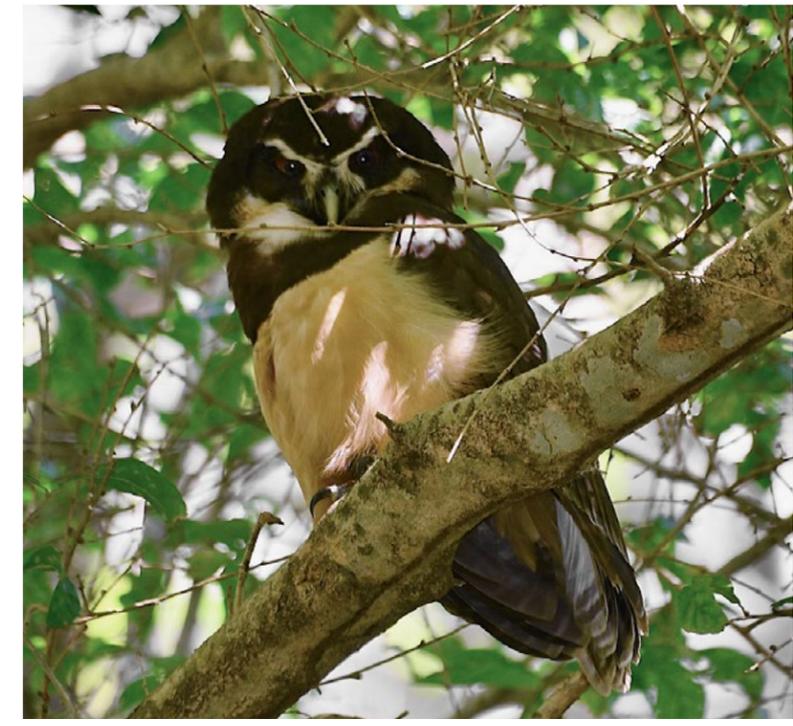
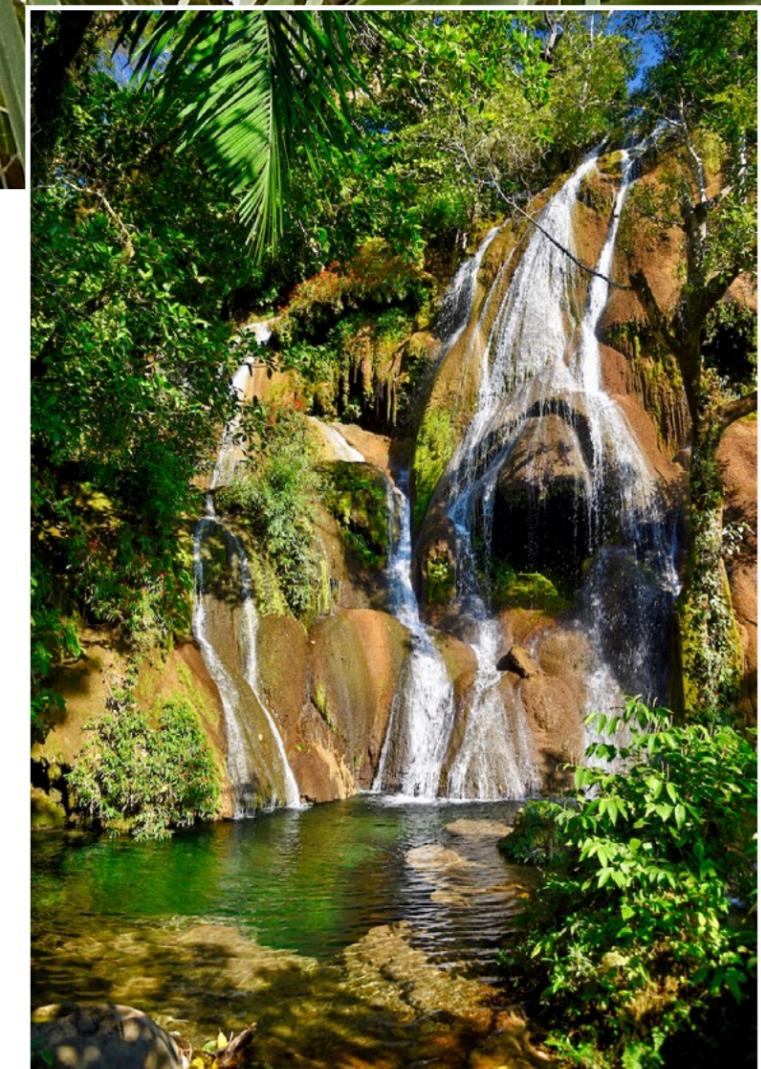
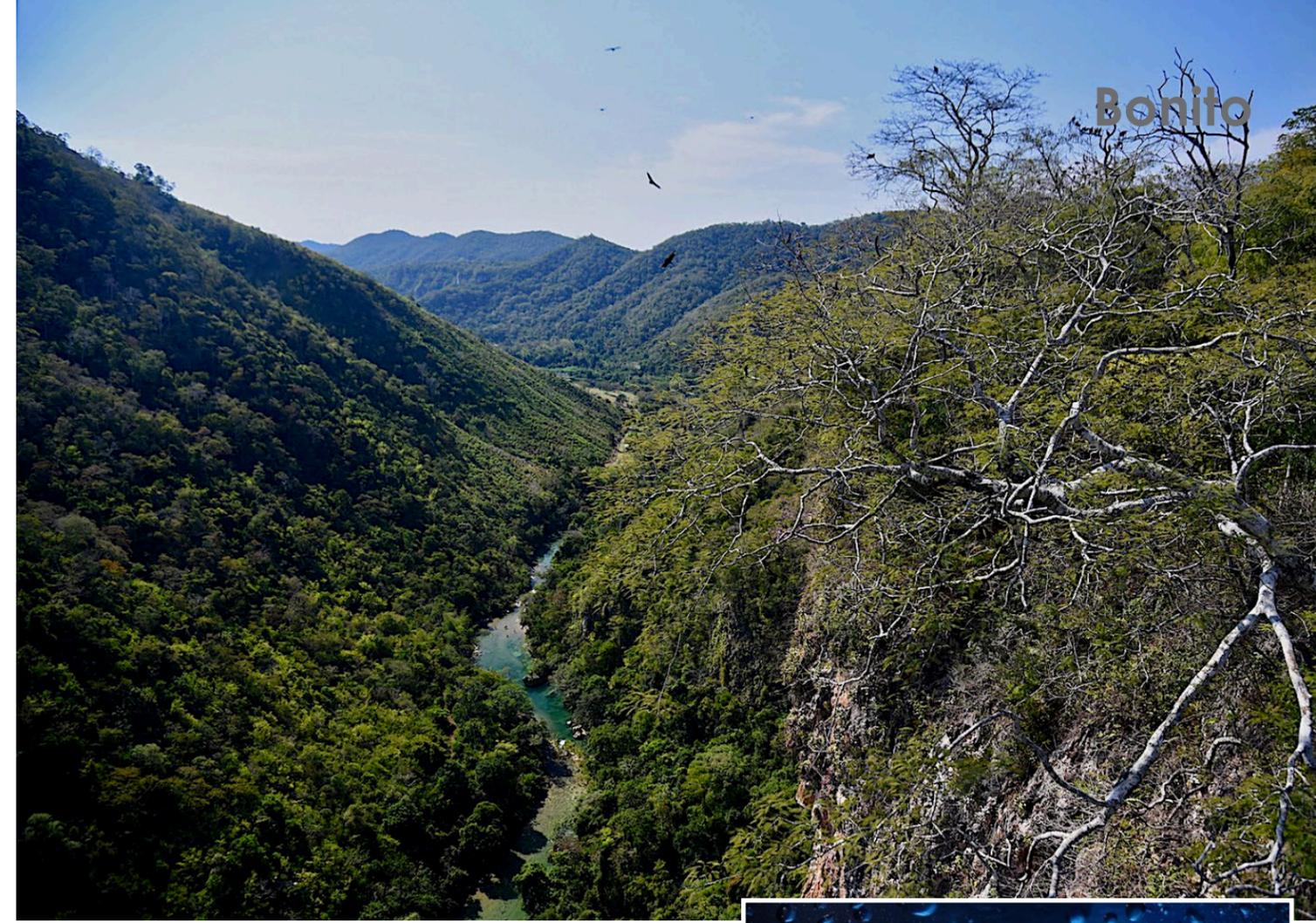
could regain consciousness with his regulator," Tuta informed me later, dead serious.

I emerged from the dive after 44 minutes, truly enchanted and thrilled by the cave. But there was not going to be another opportunity for me to dive it. "We still have a lot of work to do on the cave and we are just behind schedule," explained Tuta, with a nod of the head.

Topside excursions

Besides diving in rivers such as Rio Formoso or Rio da Prata for the colorful fish life—with species such as piraputanga or South American trout (*Brycon hilarii*), dorado





The tawny-browed owl, *Pulsatrix koeniswaldiana*, is endemic to Mato Grosso do Sul (above); Waterfall at Boca da Onça (left); Underwater photographer at Lagoa Misteriosa, with snorkelers at the surface (bottom right)

Aerial view of Rio Salobra at Boca da Onça (above); Toco toucan, *Ramphastos toco*, in the town of Corumbá (top left)

(*Salminus brasiliensis*) and curimbata or streaked prochilod (*Prochilodus lineatus*)—there are a number of excursions available for those who like *trilhas* (trails) to walk. A well-recommended one is Fazenda Boca da Onça, where a two-hour tour in the forest takes you first to a platform, where you can rappel down 90m to the river bed of the Rio Salobra. The trail then passes through the forest to eight amazing *cachoeiras* (waterfalls) in a very lush natural environment. The tallest waterfall is no less than 156m.

Afterthoughts

Bonito is an experience of a different kind, definitely Brazilian in style. To be perfectly honest, the current restrictions on cave diving left me a bit puzzled and frustrated, knowing that there was so much yet to be discovered underground. But as Tuta rightfully concluded: “Blame it on Brazilian bureaucracy!” ■

With a background in biology and geology, French author, cave diver, naturalist guide and tour operator Pierre Constant is a widely published photojournalist and underwater photographer. For more information, visit: calaolifestyle.com.

