

CUEVA DE LOS CALÍGRAFOS - BUSTALVEINTE – GÁNDARA 2025

Introduction

This unique traverse, the longest between mouths without siphons in Europe, just over 12 km long and ahead of the second-longest, Caballos-Valle (11 km) in Rasines, is one of the most beautiful experiences any speleologist can undertake.

The purpose of this new description of the traverse is to reflect the complete re-equipment that the Espemo, Gesap, and Viana clubs under the direction of Miguel Oury completed in 2023. This undertaking, which required almost one hundred complete anchors with rings and more than three hundred meters of new rope, was funded by these three clubs and the Valencian and Aragonese federations. During this new re-equipment, in addition to changing all the anchors (some of them for exploration) and replacing the entire fixed rope on the traverse with new rope, the particularly exposed passages of Río Viscoso have been secured, making this beautiful traverse undoubtedly safer. Attached to the text of the description is a complete and detailed technical sheet of the thirty-four rope passages we will encounter along the route.

This activity would not have been possible, and may serve as a token of gratitude, without the methodical and systematic exploration and surveying work of the French team from the Dijon E.C., nor the good work of Antonio Ortigosa (GEGET), Fernando Martín (Katiuskas), and their colleagues from GAEM in their preliminary work marking the route, as well as its dissemination and publication.

Historical Introduction

In 2001, the French Speleo Club Dijon resumed their exploration of **Torca la Sima**, encountering a violent draft at its final point, where STD had stopped years earlier. Through a 4-meter climb and 20 more meters of joint, they connected with the colossal network of galleries that today forms the system and gives meaning to the Gándara spring.

During the following years, French explorations were systematic and constant, exponentially increasing the thousands of meters surveyed year after year. A faint beam of light at the top of the collapse that ends the Trade Winds Gallery challenges the French to clear part of the upper part of the great collapse that once blocked the magnificent natural entrance to the system. This is evidenced by the remains of the fossilized skull of a cave bear found on the intermediate ledge of the **Bear's pitch, P49**, just 100 meters from the entrance. This new access, the **Gándara Cave**, was used from then on for explorations of the eastern part of the system. Today, with a length of 104 km, a vertical drop of -815 m, and seven known entrances, it forms the third major Spanish system.

Geological Description

Excavated within an alternating limestone-sandstone complex, it belongs to the third Urgonian infra-Cretaceous system, dated as Clansayan-Lower Albense. In the vicinity of Portillo de Lunada, there are repeated alternating series of sandstone, calc-sandstone, marly, and limestone strata (with very evident rudist layers in some areas), ranging in thickness from metric to decimeter. In its first half, the traverse runs through a basal sandstone stratum that acts as an impermeable base, with the conduits excavated in the area of contact with it and an overlying limestone layer between one and eight meters thick. This results in a process of lamination in width, rather than vadose excavation. This phenomenon defines the morphology of the areas of the **Gándara de Caligrafos-Bustalveinte system** and its intermediate Viscoso River network. The morphology is identical to that of the Bernias Cave, south of the Lunada road. The morphology of the first third of the Viscoso River is particularly interesting. Mechanical erosion in this vadose zone has managed to shape the sandstone stratum, transforming it into a veritable grid. This grid connects the overlying limestone stratum—between 0.5 and 2 m deep, depending on the area—and the underlying stratum—between 2 and 15 meters deep—through this multiple perforation. This creates truly spectacular re-excavations beneath the sandstone stratum: giant potholes and meanders no more than 35 cm wide and over 8 m deep. The stratification of the sector of the system below Picón del Fraile has a sustained dip of between 5 and 12 degrees, caused by a monoclinical lapiaz tilted to the southeast and lacerated by large fractures. This dip provides the sustained gradient of the system's conduits to the terminal zone of Río Viscoso. The water catchment area of this large system is still under study, but there is already sufficient confirmation to define it. The valleys, of glacial origin, of Bustalveinte, west of Picón del Fraile (upstream of the Posadía), of Ojón to the The eastern and Brena rivers directly feed the system, as well as the Bernias area south of Portillo de Lunada. Similarly, the Peña Lusa and Imunía river systems, and even the Castro Valnera karst complex, feed into the Gándara spring.

Preliminary Considerations

- This crossing, without great technical difficulty beyond its countless rolling mill areas, is very long and requires good physical condition. **Not everyone is capable of tackling it at all times.**
- The intermediate section of the crossing, **Río Viscoso**, is very far from the two mouths and has a succession of narrow sections in both directions that would make a rescue almost impossible. • There have been small, physically fit groups who have completed the traverse in just over 12 hours, but obviously this isn't within everyone's reach, nor does a speleologist generally run around. Therefore, we will have to consider whether to tackle this undertaking in a single day with minimal gear or in two or three days,

bivouacking. Everyone should weigh the pros and cons of both options, their own capabilities, and make the decision that best suits them.

- Everything we put into the cave, everything, must be taken out. A preliminary point on which we all agree.
- The names of galleries that are not proper nouns have been translated into Spanish because the name itself already provides prior information about the cave, which would be lost in French.

Timeframes

As we know, this is merely a guideline and will depend greatly on the group, the experience, and the physical condition of its members.

Below, we suggest some average values, knowing that the first half of the activity is more demanding than the second, and that from the middle of the route onward, the pace is much slower.

In any case, as we know, some people can complete it in 12 hours, and others can go completely overboard, exceeding 30 hours, as has already happened. Estimated Area

Calligraphers - La Unión 4 hours

Bustalveinte - La Unión 3 hours

La Unión - Sardine Room 2 hours

Sardine Room - Viscous River 2 hours

Viscous River 4 hours

Viscous River - Great Well Room 2.5 hours

Great Well Room - Cruzille Gallery 4 hours

Cruzille Gallery - La Gándara 3 hours

Total 21.5 hours

Access

Cave of the Calligraphers (longest route)

Cueva de los Calígrafos

Datum WGS84

30 T 446889 4781092



Boca de la Cueva de los Calígrafos

From either side, we must reach the top of the **Lunada Pass**. At the top, next to the pass sign, there is a parking lot for several vehicles. Just across the road, an ascending path begins (120 m elevation gain), which we follow until we reach the **Bustalveinte Valley pass** on our right. Here, we abandon the path we were following and, following a poorly marked path, we enter the valley, taking care to follow its right side and without losing altitude. We will soon see the mouth of the **Calligraphers' Cave**, perched on a cliff to the right of the valley.

Cave of the Bustalveinte (Shorter route)

Cueva de Bustalveinte

Datum WGS84

30 T 447068 4781308



Boca de Bustalveinte

From either side, we must reach the top of the **Lunada Pass**. At the top, next to the pass sign, there is a parking lot for several vehicles. Just across the road, an ascending path begins (120 m elevation gain), which we follow until we reach the **Bustalveinte Valley pass** on our right. Here, we abandon the path we were following and, following a poorly marked path, we enter the valley, taking care to follow its right side and without losing altitude. We will soon see the mouth of the **Calligraphers' Cave** on a cliff to the right of the valley. We continue down the valley until we reach the **Bustalveinte Spring**, which gives the cave its name. The spring is located at the foot of a rocky cliff on the right. The mouth of the cave is a shelter that can be seen about 15 meters above the spring. To reach it, we must climb to the spring and take a path that ascends up a ramp to the left. Once at the level of the cave, we must carefully navigate the ledge that leads into it. There are two slightly exposed, but not complicated, passages. The mouth of the cave is a shelter, and the access to the cavity is a horizontal crack at the bottom, at ground level.



Rampa herbosa de subida a la boca de Bustalveinte



Vista de la boca y el collado al fondo

Cave of the Gándara (Exit for traverse or going in bottom)

Cueva de la Gándara

Datum WGS84

30 T 452461 4782350

We ascend approximately 250 m along the road that leads to **Puerto de la Sía**, starting at the junction with the road that leads to the **village of Gándara**. On the right, marked by a milestone and next to a culvert (a drainage ditch), the path begins. After a 100-m drop, it will take us to the mouth of the cave, now completely open due to a collapse.

Description of the Crossing

Calligraphers Area - La Unión

From the entrance itself, we begin to crawl, the general trend during the first hours of the crossing. **A 90kg, 1.80m caver passes without problems**

A few meters from the entrance, still seeing the light outside, we encounter the narrow passageway that was once cleared by the French, a difficult task attested by the stones piled up to the right of the passage.

This passage, a non-selective zigzag, now leaves us in the descending gallery of the **Lagarto-Lézard**, a rolling mill in 1.4 km sections, with a steady downward slope of 5 to 7 degrees, and a general southeasterly heading.

Barely 100 meters from the entrance, we come across the first fork, which we take to the right, surrounding a large block detached from the roof. We pass a 70 m stretch of boulders and stones on the ground, reaching another 100 m stretch of smooth, washed sandstone soil, partially covered with sand of white clay (Also known as kaolin or kaolinite, its color is due to the fact that it is a water-washed clay). A few sections appear that allow you to take three or four steps upright. Without getting lost and staying on course, we begin to follow a seasonal watercourse over washed sandstone.

At 400 m from the mouth, a descent of about 2 m is followed by a similar climb, and after a second descent, the gallery offers the first 15 m section where we can walk upright. A little further on, alternating shuffling steps with crouching or hunched steps, we reach a block that we cross under. About 200 m further on, a 2 m climb takes us to a small room from which we exit straight ahead and to the left, turning 90 degrees to avoid a drop-off on our right. We reach a chaotic area, where we avoid a large boulder on the right and, taking a descending zigzag, approach the first rope passage of the traverse, a R3↓ (800 m from the entrance). After the rope, we leave the river and enter a small gallery on the right, which after a few meters returns us to the main gallery. We pass the first chaos of boulders on the right wall, followed by a short descent, and after another 50-m stretch of rolling mill, the gallery seems to suddenly close. About five meters before the end of the gallery, and to the left, a semi-crawling passage emerges that perpendicularly intercepts the main gallery (another rolling mill), after a narrow passage. We take it to the right and descend. This rolling mill, 100 meters long and seemingly endless, has narrow sections that force us to follow the water itself. Behind it, another small chaos of blocks, which we zigzag around without difficulty, and after which a watercourse joins on the right.

Now another rolling mill area with some pots, which gives us some respite, leads us to a chaotic room with a high ceiling, where a narrow passage on the right brings us to two

consecutive 3-meter descents, which move us to the left. The second of these two descents leaves us on some blocks placed like steps.

The gallery continues until reaching a passage where the gallery ceiling drops to 30 cm from the riverbed at a point where the river drops to a drop of just over a meter. We drop through the gap and continue (the passage can be avoided on the left if you have water). Another stretch of river and we exit to the left, in a sandy, crawly area that opens onto a high-ceilinged room, on the left wall of which we find the R4↓ with a rope that will take us back down to the river—1.1 km from the mouth. We follow the river for a mere 100 m and, after turning 90° to the left, we find the entrance to a dry gallery, also on our left, from where we can already hear the flow of the **Confluence River**. We leave the river we had on our right and, with a small rise, descend to **La Unión**.



Llegada a La Unión



Progresión inicial

Bustalveinte – La Unión Area



The first few meters of the cave are quite dusty, but soon we reach a wet area where we encounter the Confluence River, which will be our guide. We follow the path of the water, which saves us from having to crawl too far. The general progression is on all fours or hunched over (depending on the height of each one), although along the way we pass the base of several chimneys that allow us to stand up and stretch our backs.

At a point when the gallery expands, we leave the channel to pass over a large block attached to the left wall.



Gran bloque pegado a la pared izquierda



Chimenea con fósiles por la que cae agua

It's worth doing the croquette to go under the wall and see the ascending tube, its walls filled with marine fossils.

Behind the chimney, we follow the **Confluence River gallery**, whose slope increases and whose ceiling drops until it transforms into a rolling mill that forces us to crawl. At first, it's easiest to stick close to the right wall, but after twelve meters, we have to look for a passage on the left wall that takes us out of the channel and leads to a fracture. Parallel. Here we can regain our vertical position, but only for a short time, as we return to the river and once again must crawl to the bottom of the mill. On both the right and left, there are a couple of narrow vertical passages (not restrictive) that allow us to reach a room.



Inicio del primer laminador

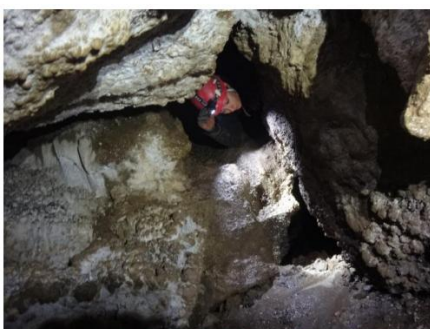


Salida del primer laminador a mano izquierda

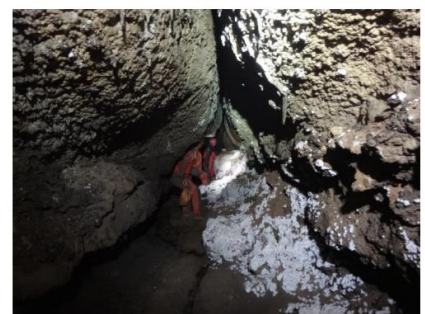


Inicio del segundo laminador

The continuation is straight ahead, on the other side of the room, amidst a jumble of blocks through which you squeeze, looking for a high passage on the right. We come to a fracture where we continue, looking for the continuation (the trend is downward) until we reach the river again. We progress easily to a point where the water seeps under some rocks, and we climb a mud ramp on the right. We follow the fracture, which transforms into a meandering riverbed, along which we sometimes progress in opposition without any difficulty.



Paso a la sala después del segundo laminador



Progresión cómoda hacia la Unión

We reach a new chaos of boulders, which we overcome by climbing to the right to reach a platform that crosses over to the opposite wall, where we descend back to river level. The gallery runs fairly straight and progresses easily to a restricted passage. **For normal or larger cavers, there is a more spacious underpass to the left.** A few meters beyond the narrow passage, we reach the mouth of the river.

In a room where the sound of water can be heard. After a 4-meter drop, we find ourselves at the back of the room, which is actually a fireplace? We exit through a ground-level cat flap, following the water to flow into another chimney. Again, we follow the river as it widens and it's carrying more and more water. After a 90° bend to the right and following the channel, we reach **La Unión** 50 meters further.

Note:

As of August 2023, this part of the crossing (Bustalveinte – La Unión) is well marked with milestones and orange reflectors with a G (towards Gándara) and a B (towards Bustalveinte).



Paso restrictivo. Estrechez



Chimenea en resalte 4 m



Lleada a La Unión

La Unión Area – Big-Headed Sardine Room

Now, we comfortably descend the **Río de la Confluencia** for about 100 meters, until it once again becomes a rolling mill, not a slithering one, but a curved one. We continue until the river falls like a waterfall through a hole about two meters wide at a point where the gallery turns sharply to the left. We continue to the left until a gallery crosses the one, we are on, where we reach a sandy-soil crawl space on the left. This crawl space, about 10 meters long, gradually opens up into a gallery, which begins by tracing a Z-shaped curve.

At the last bend in the Z-shaped ridge, and to our left, a stream joins a blackish rocky area. From there, the gallery leading up to **Tangente Verde** takes on a straight line, heading north. Barely twenty meters from the previous entrance, a climb to the left takes us to a slightly exposed ledge. A little further on, we come across a passage that gives us the impression that we have to climb again, but this is not the case; we can easily overcome the obstacle along the riverbed.

The gallery continues downward, and we enter, following the river, through two tunnel-like areas, the second of which is a bit tricky, until we pass the Bouillon Gallery on our left. We descend a sandy ledge of about 5 m and then climb back up at 50 m in two sections of 3 and 2 m. We continue along the left wall and, descending to the end of the gallery, we climb straight ahead until we reach a window that opens like a balcony, overlooking a drop, secured with a rope, which we can cross without difficulty.

Continuing along the gallery before **Tangente Verde**, we descend about two meters

between boulders, and following the lower part of the river, we turn right, which, after a narrow passage, leads us down to the **Tigre River**.



Quitamiedos en Galería Previa a Tanaente Verde



Formaciones de la galería tras el Río Tigre

We take the convenient **Tigre River** gallery downstream, to the right at the junction, trying to stay along its left wall, because after 50 m we have to exit through a manhole cover that immediately opens into a beautiful gallery heading north, where we can find stalactites, macaroni, and eccentrics in abundance – **the Green Tangent**.

After 50 m, another gallery crosses us transversally, which we will ignore to continue through a chaos of ascending blocks, after which we must look for a small passage next to the left wall that will give us access to the continuation of the gallery. A watercourse joins us on the left, another gallery on the left, and then another one that crosses us transversally and ends the **Green Tangent**. We take the intersection on the right, a 50-meter descending winding road heading northeast that, after turning left, becomes a meandering gallery that takes us to **the Arena Room**.

This room, with its floor covered in large slabs detached from the ceiling and covered in sand, ends in a hollow where we can see the **Papillote River flowing**.



Bello Rincón en Sala de la Arena



Sala de la Sardina vista desde el Vivac

Leaving the river in front of us, we turn left and enter a new rolling mill that crosses the **Papillote River**, which we leave on our left. The roof gradually rises, and after fifty meters we reach the fork to the left that leads to the **Dune Galleries** (heading north at the entrance, then northeast later). This passage, which crosses a chaotic area at its beginning, leads us through a pleasant area of white sand, following a marked path that runs alongside a large drop-off on the left. Immediately afterward, we cross a small

room and pass a second hollow, opening up to the Big-Headed **Sardine Room** (Salle de la Sardine à Grosse Tête), **where bivouac 4 was located during the explorations.** The **Sardine Room**, with its flat ceiling, has a floor covered with slumped flagstones and sand. To its right and at its rear, we can see two hollows through which the **Sardine River flows.**



Vivac en sala de la Sardina

Our route continues along the left wall of the Sardine Room until we enter a low-ceilinged gallery that curves to the right and becomes straight and descends after joining a tributary on our left (**the Old Rifle Gallery**). The river that flows through this gallery is the **Centipede River** (Rivière du Mille Pattes). After 50 meters, the main stream of the **Centipede River** joins it, also from the left. Initially, we make good progress following the right wall, but once we descend into the riverbed, it is best to follow the left wall to avoid an area with a low ceiling. Another 50 meters further on, we leave the riverbed at a fork on our left, which gives us access to a chaotic gallery that will eventually lead us to the **Scooter and Catalan Rooms**. This gallery, which starts out easy, soon begins to reveal boulders. A couple of climbs precede a fork to the left, which gives us access to a 20-meter-long, jointed gallery that forces us to progress sideways. This gallery finally closes with a simple climb of about 3 meters that leaves us on a ridge, from which, with a stride, we reach a boulder, without descending, that brings us closer to the right wall. From there, we see a small pool to our right into which a small stream falls, and to the left, a jumble of boulders descending about five meters, which we will take. We continue along another short stretch of narrow gallery, followed by a small room with sand. From this last sandy salt flat, our route begins to wind between boulders, with the occasional exposed step, until reaching a climb of about three meters in opposition over a recess, which now brings us closer to the narrow passage separating the **Scooter and Catalan Salt Flats**. This narrow passage, with flat, sandy blocks on the ground, about five meters long, leads us to the It opens onto the **Catalan Room** through conduits with passages between slabs. Further descending

passages between blocks and some narrowness, which makes us lose sight of the whole, lead us down a ramp to the centre of the **Catalan Room**, where the descent of the collapsed blocks begins, leading us to the **Viscous River**. This downward-sloping access is marked with **four black arrows**. This collapse has three descending crawl spaces, the last of which is the narrowest and is easily negotiated by sliding on your chest. This last one leads you to a small room with a curb in front of it that you must climb, and which gives access to a short, low-ceilinged gallery on the left. At the end of this conduit, we encounter two new narrow passages, now ascending, after which a short chaotic area and a new narrow passage where a watercourse appears finally lead us to the **Viscous River**.

Intermediate Zone: The Viscous River

The Viscous River, so named for the white clays (kaolins) that cover the black sandstones through which it flows, is 1 km long and has just over 400 m of rolling mills. It flows predominantly eastward. In addition to being a geological gem of the first magnitude, it is a true school of progression.

All the old "steps of faith" exposed along ledges are now (complete re-equipment of the traverse in 2023) superbly secured with durable anchors and new rope.

We begin by walking on the riverbed, but very soon we have to kneel and begin to crawl, alternating this with a sitting position and gradually allowing ourselves to fall with the help of our hands. After an initial area where the sandstone stratum is complete, perforations begin to appear that connect with a lower limestone layer onto which the water falls, forming beautiful pools. The sandstones become increasingly fractured by mechanical erosion, forming an upper latticework over which we proceed carefully, as the river flows between three and five meters deep beneath our feet. This entire stretch of low roof following the river, despite its beauty, becomes monotonous until it is interrupted for the first time by a ledge secured with a rope. We continue following the river, which maintains a similar tone, until we reach the area of the sinkholes. We've now passed the worst of **Viscoso**, and moving to the left, in a short area where you can walk upright, we find the first of three installations about sinkholes. The second is ten meters away, and the third is twenty meters further on. This last guardrail runs over a fun sinkhole with a foot ledge on the left and hands on the sloping right wall.

After this step, we return to **Viscoso**, at a point where the river flows to the right under a rolling mill, and we can walk comfortably alongside the left wall, where the ceiling rises above our heads.

After fifty meters, we enter a short fossil gallery on our left, which we can also walk upright. Finally, this conduit leaves us back at the river, announced by a very concrete window on the right from which we can already see the active course.



Ventana con formaciones previa a la salida al curso de Viscoso



Quitamiedos en Viscoso

We once again enter a low-lying area, seeing the **Viscoso River** on our left. Beneath the sandstone stratum and through the vadose excavation of the lower limestone layer, the water has formed a narrow (no more than 40 centimeters) and deep meander (more than 10 meters in some areas).

This re-excavation section of **Viscoso** is followed by several block chaos with some crawling steps, which leave us in the last area of bankruptcy, announcing the arrival of the **P11s**.

Two guardrails, ten meters apart, both leave us in front of a fossil gallery that runs perpendicularly to the right of the active course. We follow this dry gallery for about forty meters until it ends in front of some narrow ramps ahead and a crawling passage between boulders on the left, which we take, and which will take us to a short area with a low roof. We immediately emerge into the river, in a wide area where **Viscoso** disappears between boulders and in front of the rope of the **first P11↑(we must go up, no way through following the river)**. We soar up the eleven meters and exit the handrail with our feet on a block that facilitates the maneuver. We enter a fossil gallery parallel to the river course, with a high roof, chaotic, and covered in slippery kaolin. During the 100-meter route, continuing eastward, there will be continuous ups and downs over boulders and downclimbs. We then reach **P11↓, the descent to Viscoso**, a tricky descent with impeccable equipment. We now have only 200 meters left to **Viscoso**. A couple of narrow passages and we progress through a comfortable zone that allows us to move quickly throughout this stretch at the end of the river.

The final exit from the river, a key step in the crossing, is preceded by a couple of crawling steps that take you back to a wide area. Right there, we must climb onto a slippery ledge—made of decomposed strata—in front of us, instead of continuing downstream.

Viscous River Area – Great Well Room

We climb behind a block, from the curb, along a marked path and access a new gallery. Chaotic. We progressed comfortably, but with continuous ups and downs.

We climbed a fixed rope—R3↑—a giant boulder and exited straight ahead. After a narrow passage, we reached the Room Before **Bivouac 3**. After crossing it, we exited through a comfortable corridor followed by another crawling passage that now leaves us at **Bivouac 3**.

We continued along the gallery without the possibility of getting lost, but with continuous boulders to negotiate. This gallery led us to a steep ramp a little further ahead, and after a bend to the right, we found the ropes for **P50↑(we must go up)**

This shaft, with joints, is very divided, which facilitates the ascent for large groups. We did not exit straight ahead, where the exit handrail seemed to lead us, but to the left where the Myotte gallery began. From here, the blackish sandstones that have accompanied us throughout the journey disappear, revealing the mountain limestone characteristic of Cantabrian caves. The large canyons and the hollowing out of the large chambers are the most representative geological phenomena—the Cruzille Gallery, the **Great Well Room**, and the **Angel Room**—are examples of this.

The Myotte Gallery—1.4 km long—starts off easily as we traverse the first esses but soon becomes a chaotic area of boulders with continuous ramps.

Our progress is interrupted by a pair of relatively close rope overhangs, R4↑ and R2.5↑, with a drop below the latter. The gallery continues in similar conditions until a boulder appears to obstruct it. We cross the pass by climbing onto a curb on the right, go around the large boulder, and ten meters further on, we find the continuation of **Myotte**.

Areas begin to appear with the ground covered in a blackish "soil," which we cross along marked paths that lead us to an emblematic site of the traverse, **Los Órganos**, beautiful white formations, some of which rise from floor to ceiling.

We cross the formations via a ramp on the left and immediately find a R5↑. Our gallery continues covered with boulders until we reach a new ledge, R6↑. We follow the gallery we were on for a while longer, without getting lost, until we find the last roped section of the **Myotte** and almost the end of the gallery, a P11↑ with a detour halfway through. Beyond this, and after crossing a black earth ramp on the left, we find the window that opens onto the upper part of the **Great Pit**. **The Great Well Room** is one of the most spectacular areas of the journey, consisting of a magnificent volume that connects the upper parts of two wells, fifty and thirty meters in diameter, separated from each other at the top by a kind of hill covered with boulders. The smaller and deeper of the two breathtaking abysses—more than 100 meters—has a waterfall on its southern face, which, cascading cleanly, gives the complex a majesty that is difficult to match. We will

carefully exit the window that gives us access to the **Great Well Room**, as we will be facing the abyss level a little further on. We skirt the window above and to the right (northwest) to follow a marked route along the left wall. Twenty meters along this wall, we will have an almost complete view of the room, and in front of us, the corridor of blocks that divides both shafts. We must cross it carefully, since the exit from the room is on the opposite side of the Great Shaft. Having crossed the corridor, we turn right (If, instead of turning right (east) to exit the **Great Well Room**, we turn left (west) and skirt the smaller, deeper well, the one with the waterfall, we will soon reach a short earthen laminator that will take us to **Bivouac 5**. There we can draw water).

The Snail Gallery forms a descending loop that begins at the handrail before the to take an ascending handrail, which we can already see, and which will eventually lead us out of the room through an ascending gallery.

Great Well Room Area – Great Cruzille Gallery

A few meters from this exit gallery, we come across a P8↑ with a switch halfway up. We head off to the right of P8, taking the wide gallery instead of the junction on our left that would take us to bivouac 5.



Los Órganos de la Myotte



Sala del gran Pozo vista desde Vivac

The gallery starts off easy, only to begin again with the sections of boulders detached from the roof, something we are now accustomed to on this traverse. Fifty meters after the previous P8, we join the **Grandmother Denis Gallery** (La Mère Denis) on the left. We follow it to the right, heading west at the beginning, then gradually turn southwest.

This gallery, which we will explore for 700 meters, is not demanding, but has bouldering sections, climbs, and descents, as it traces successive curves.

600 meters into the Abuela **Denís tunnel**, it marks a sharp 180° turn in a "C" shape (from east to west). Barely twenty meters from the exit of the "C," the Abuela **Denís tunnel** ends as it is cut transversely by a new tunnel, the **Galería del Caracol**, at a point known as **El Cruce**.

We take the Crossroads to the right, descending a ledge with blocks stacked like steps. Almost immediately, we reach a rather low handrail that prevents a collapse. This is followed by a ramp that we descend, after which the gallery forces us to go around a block, in an area where we begin to see white veins of crystallized calcite on the walls. We immediately enter Room, (**In this small room, at the bottom of its right wall, there is a two-meter-long rolling mill, followed by a two-meter-long cat flap, beyond which we access the beautiful Anemones Gallery. It's well worth a visit**) which also has some crystallized calcite veins on the left wall. After a meandering S, we come across P4↓+handrail+P15↓, which begins at the top of a window. Between the two shafts, there is a long handrail that runs along a ledge that starts in the wall of a large block.



Pasamos tras El Cruce

After P15, we continue down the gallery until it appears to be cut transversely by another one next to the large block of **Salto del Caballo**. A slightly exposed passage takes us right in front of a ledge on the right, which we cross sitting or on all fours.

We continue along the gallery—eastward—between collapsed blocks, until we reach the **Sala del Arco**, where it turns left. This is a beautiful room with a sand-covered floor and a majestic stone arch spanning it.

We continue without getting lost, again between blocks, until three passages force us to crawl on all fours: the first horizontal, the second downward, and the third, twenty meters from the previous one, at ground level and about two meters long.

In this small room, at the bottom of its right wall, there is a two-meter-long rolling mill, followed by a two-meter-long cat flap, beyond which we access the beautiful **Anemones Gallery (It's well worth a visit).**

We won't cross it, but following its right wall and in a descending area, we'll find an unobstructed and well-ventilated narrow passage, which was, during our explorations, the connection between **La Gándara** and the rest of the cavity.

This passage hangs a meter and a half above the ground on its exit face, so the ideal approach is to cross it feet first, sliding on your chest.

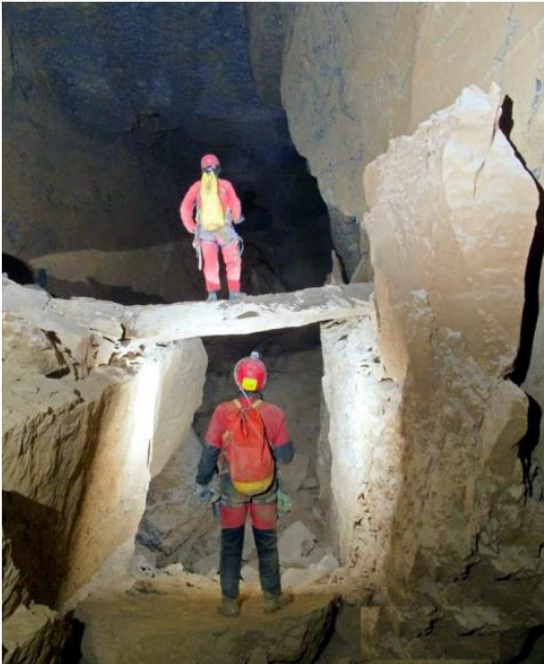
We emerge into a pressure tube, which we take to the right (west), and progress through a winding area of beautiful tubes decorated with gouge marks (The shapes called gouge marks indicate erosion caused by a powerful current that carries stones that hit the walls. Their size indicates the size of the stones, and therefore the speed of the current. Their shape allows us to determine the direction of the water flow). 100 meters from where we are, the only place where we can currently draw water.

The ceiling of the tubes drops slightly, and we find a gallery that crosses across and which we take to the left (eastward). We climb a curb with stone steps and a ribbon abutment, immediately followed by two equipped steps - R4↓ and R3↓. The gallery, with a sandy floor, ends at the top of a meander whose descent (R5↓), equipped with a rope, leaves us on the access route to the **Zan Brun** shaft northeast (left, looking at the gallery we came from). The traverse continues in the opposite direction—southwest—progressing through a comfortable zigzagging sandy-floor conduit that leads us to a new R4↓, which we descend easily.

Now, in a wider and more comfortable gallery, continuing southwest, we find the French Bivouac, or **Bivouac 1**, on our right. We are 150 meters from the **Grand Cruzille Gallery**. We pass the bivouac and continue along the right wall, crossing chaotic areas. The gallery rises and we pass by the roof. We continue straight ahead, along a wide gallery, along a marked path until we reach an ascending joint, covered by a collapse of boulders, which we access by overcoming an awkward curb. We climb over the boulders, with some steps requiring us to lie down, and we emerge into the **Grand Gallery of Cruzille**.

This straight, eastward-facing gallery, its 700-meter length, is a magnificent Cantabrian canyon, carpeted with large boulders, which will eventually lead us to the **Sala del Ángel**. We take it to the left, emerging from the collapsed boulders we came from, and the passage becomes monotonous, tired as we are from our long journey. Halfway

along its length, a drop to the left will reveal **Contra Río**, with the waters of **Salto del Ángel** and heading toward the **Río en Calma**, the system's major collector.



Puente sobre la Galería Cruzille. Foto: J. Fogué. Club Abismo (Guadalajara)

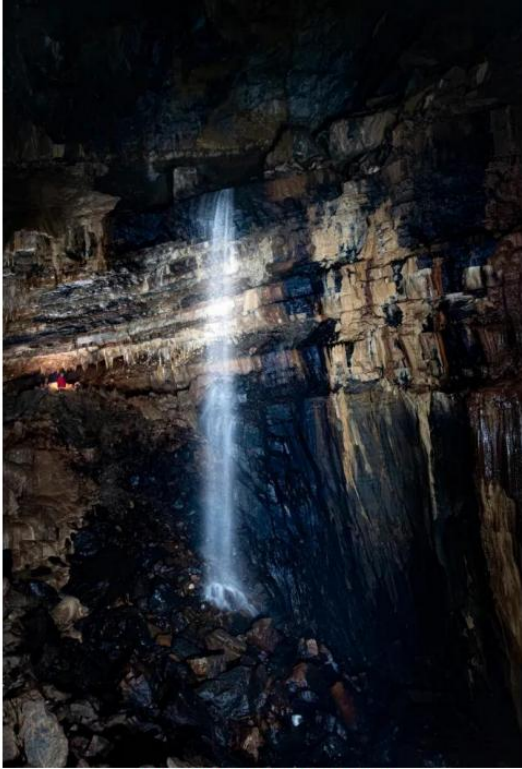


Excéntricas en la Sala del Ángel. Foto: Paco Cuesta

This imposing gallery ends in two steep, very slippery ascending ramps. The most accessible is the one on the left, which halfway up joins the other on the right at a Blowhole. From there, a simple climb takes us to an extraordinarily concretized "hill" from where we can see the majestic volume of the **Angel Room**. On the ceiling, we have the most beautiful set of eccentrics you will ever see, and in front of us, the curtain of water from **Angel Falls**. We have to cross the room to the opposite side of the room, and we do so by means of a simple perimeter traverse, to the right and without losing height.

We first cross under part of the curtain of water, then cross an area of beautiful formations, where we can collect water. We begin the ascent between boulders and following markers that lead us to the beginning of the long, zigzagging, ascending handrail that leads us out of the room. We are now in the P32 gallery and two consecutive R5↑s ascending and equipped with ropes They lead to a couple of tricky descents, after which we find another R4↑.

Following the upward trend we were following, we reach **P32↑(WHICH MUST BE RIGGED BEFORE ATTEMPTING THE TRAVERSE, 55m ROPE NEEDED)**, a very fragmented route that we must have left in place before embarking on the traverse. A long handrail at the exit from the shaft brings us back to earth, and we follow the gallery toward the exit.



Salto del Ángel (foto de archivo)



Cabecera y pasamanos de salida de P32



Galería de La Gran Vía previa al Delator

We must pay special attention when crossing a narrow, low-ceilinged passageway—a crawly one—with formations all around it, because if we continue to the left, we will enter the exit for the traverse from **Torca la Sima** (on left). But if we turn right, we will come out into a small room where we will find ourselves facing a narrow, uncomfortable ramp made of blackish, slippery blocks. We will traverse it lying down and almost without feet, to finally exit via an ascending crawly passageway. From this passageway, we emerge onto **La Gran Vía**, now familiar to all.

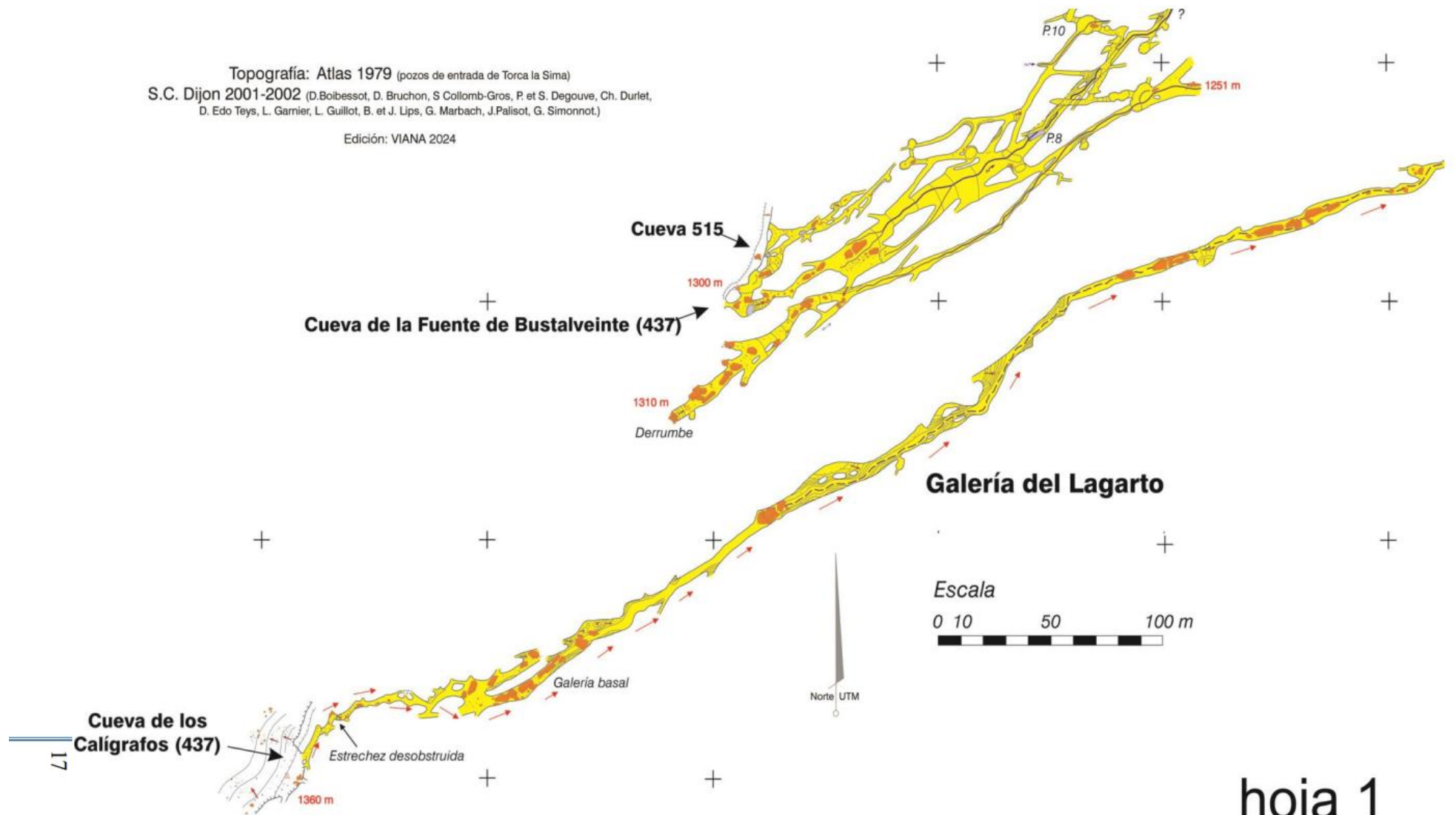
This comfortable 250-meter-long gallery, heading predominantly east, has its last stretch marked by the FCE's Cavity Conservation Department before the Delator, a final zigzagging 200-meter-long rolling mill, which, coming from **Calígrafos**, catches us already tired. The rolling mill, with a comfortable soft earth floor, becomes lower in its final stretch. We will finally exit the Delator when it appears to end, through a narrow passage near the roof and at head height.

Thus, we enter the beautiful **Sala del Fisco**, where we can get water. Following an area marked again by the FCE's Cave Conservation Department, we emerge at the **Galería de los Alisios**. Now, all we have to do is cross the handrail at **P49 del Oso** (We need a rope to descend the del Oso, which is where we find the final siphon of the system) and climb along the right wall to the top of the boulder pile, where the 17th entrance to **La Gándara**, commonly known as "El Pinchazo," is located.

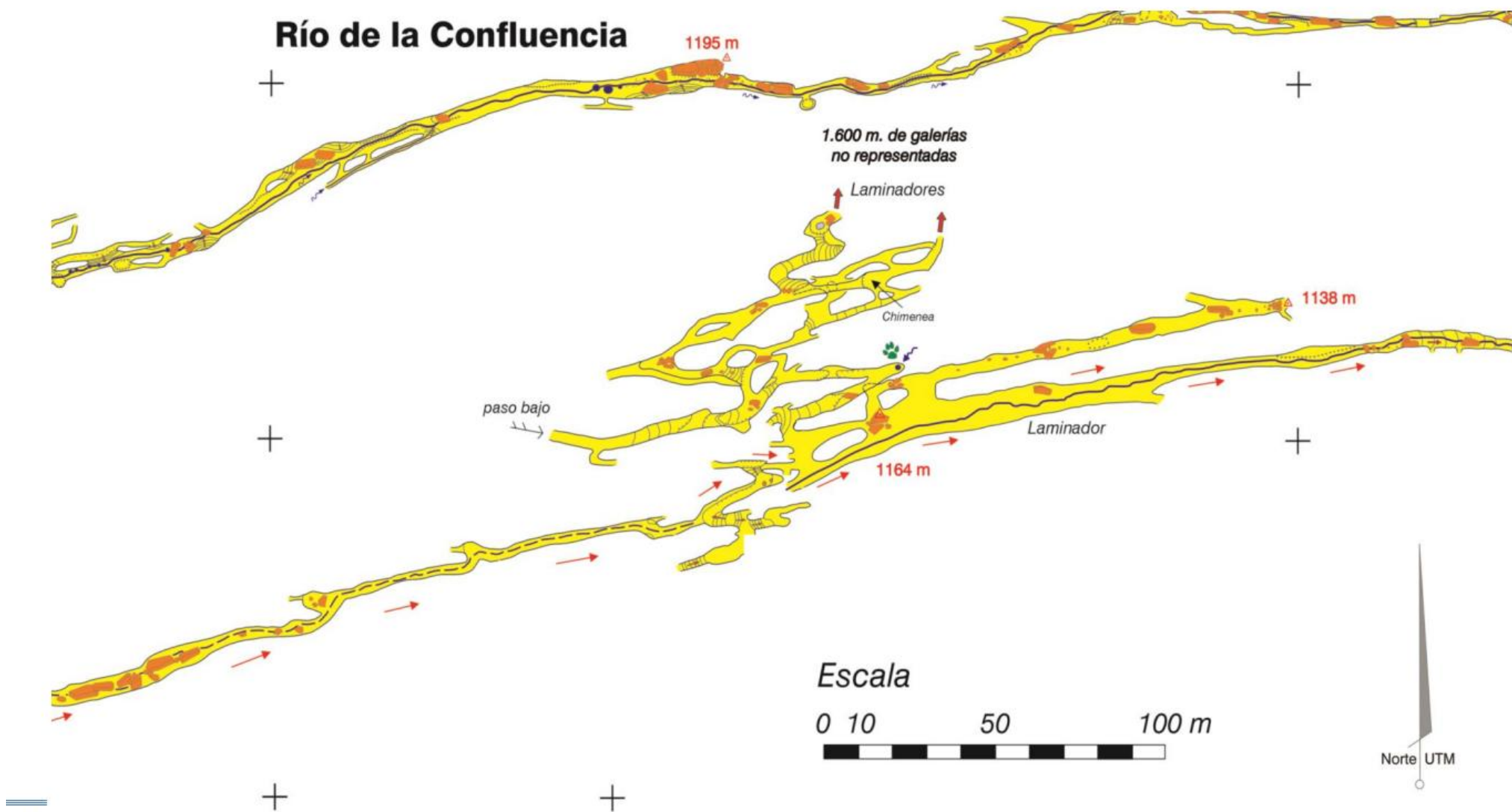
I would recommend a trip to Bivouac 1 beyond Salle de Angle before attempting the traverse! The P32 is the only rope that needs rigging before attempting the traverse (P60 + 10 Krabs).

Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)
S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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hoja 1



18

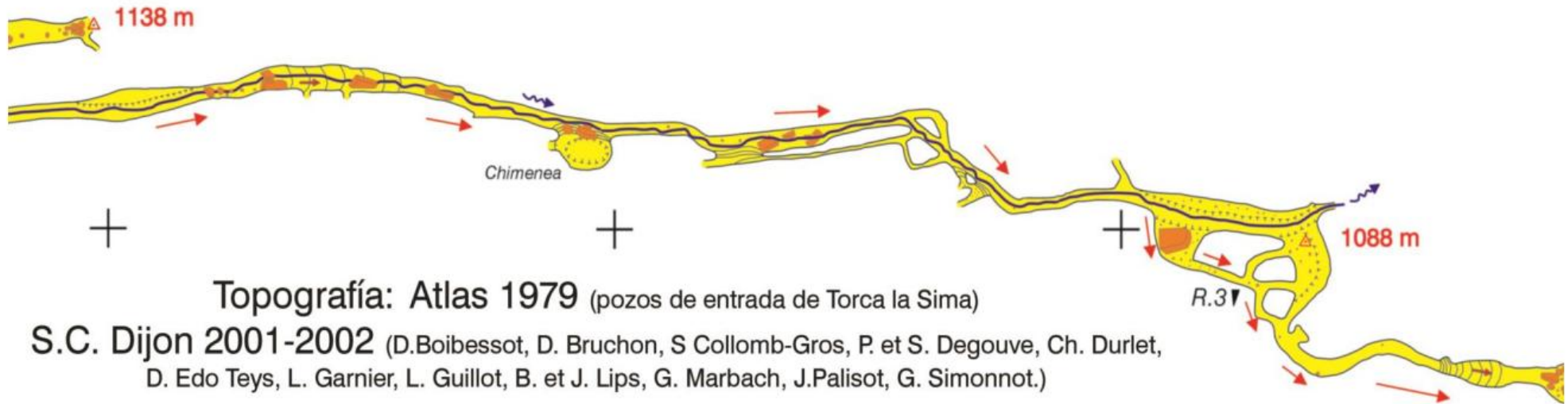
Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet, D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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hoja 2

Galería del Lagarto



Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durlet, D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

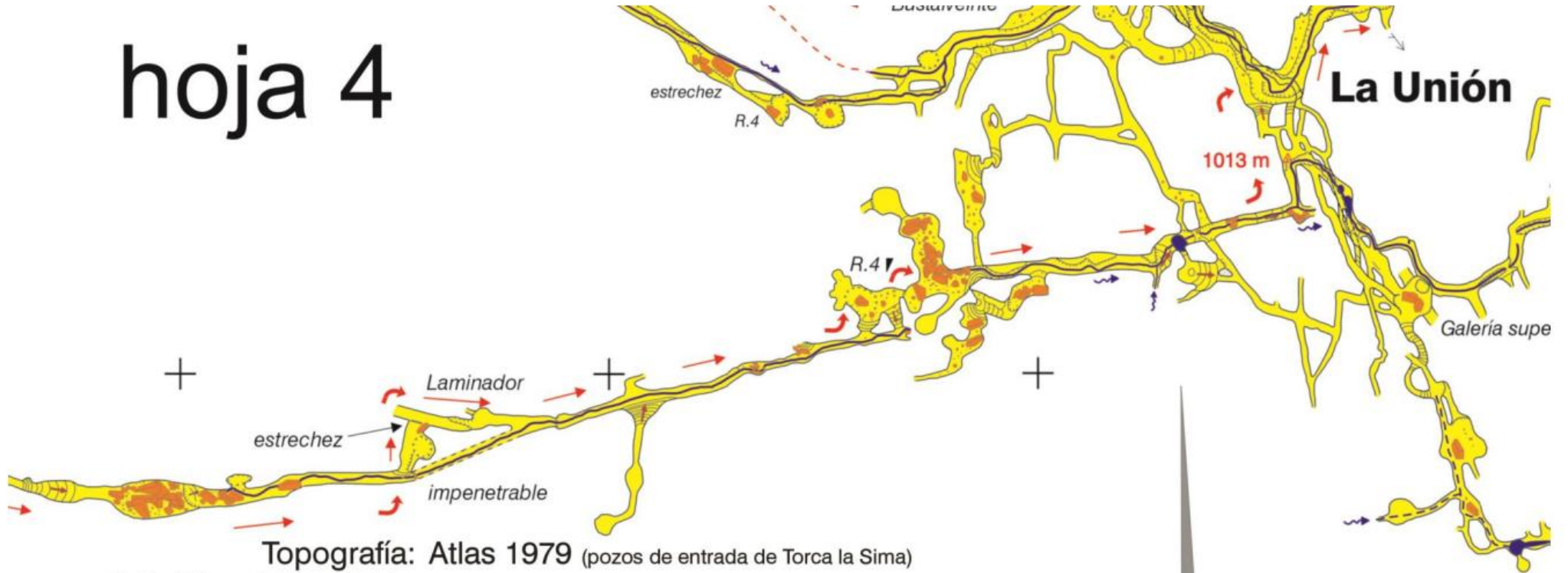
Edición: VIANA 2024



Escala



hoja 4



Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)
S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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Escala



no representadas:
Resto del Río del Tigre
Red de Galerías de la Bolera

Río del Tigre

estrechez

giro derecha
obviando trepada
enfrente

hoja 5

Galería Previa a Tangente Verde

ventana con
pasamanos

Galería del Caldo

Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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bajada a
galería inferior

desfondes

Galería Previa a Tangente Verde

trepada

Escala

0 10 50 100 m

Norte UTM

curso de
agua a la izq.

la Zeta

978 m

gatera

Río de la Confluencia

El Lago

hacia
Bustalveinte

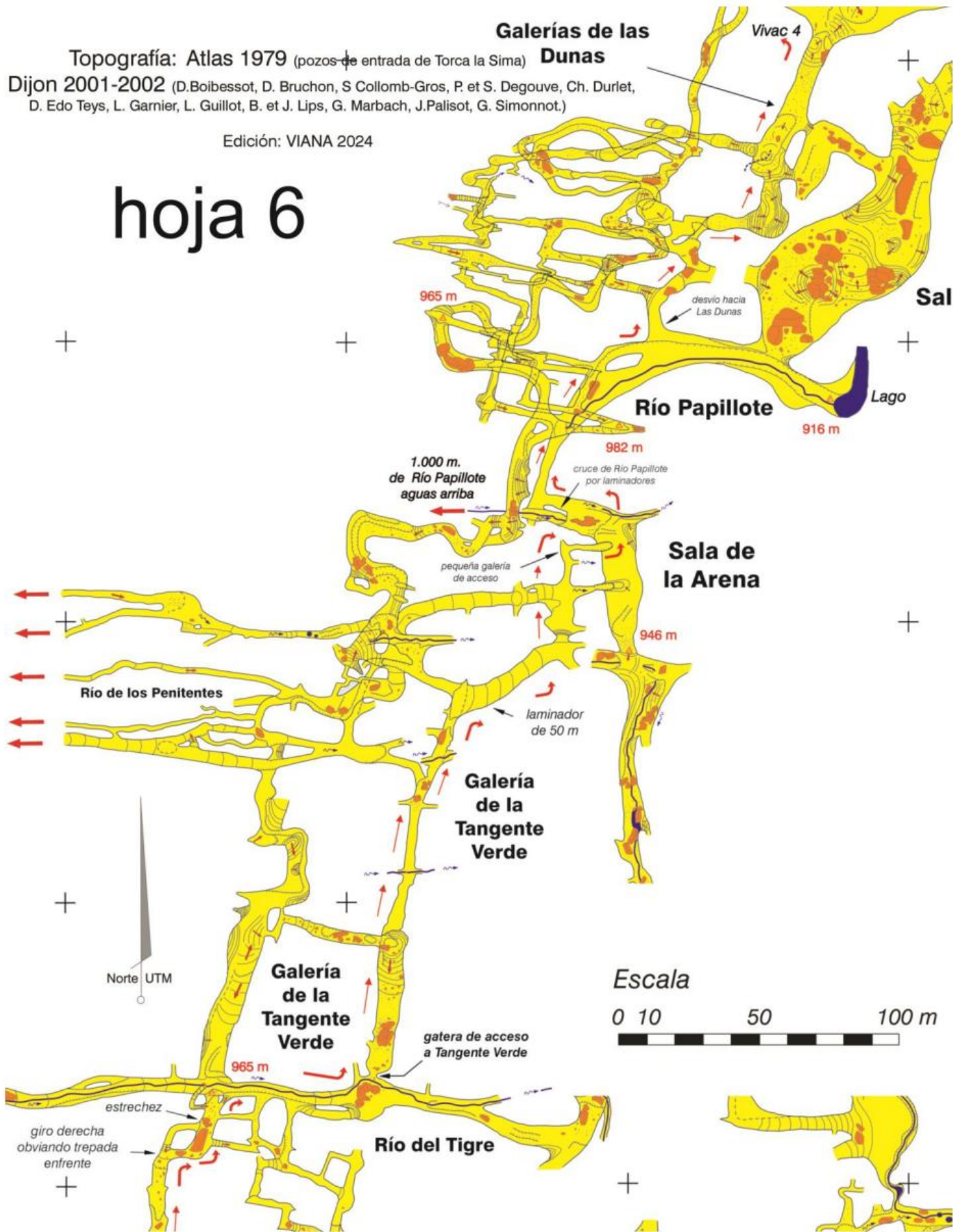
La Unión



Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)
Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

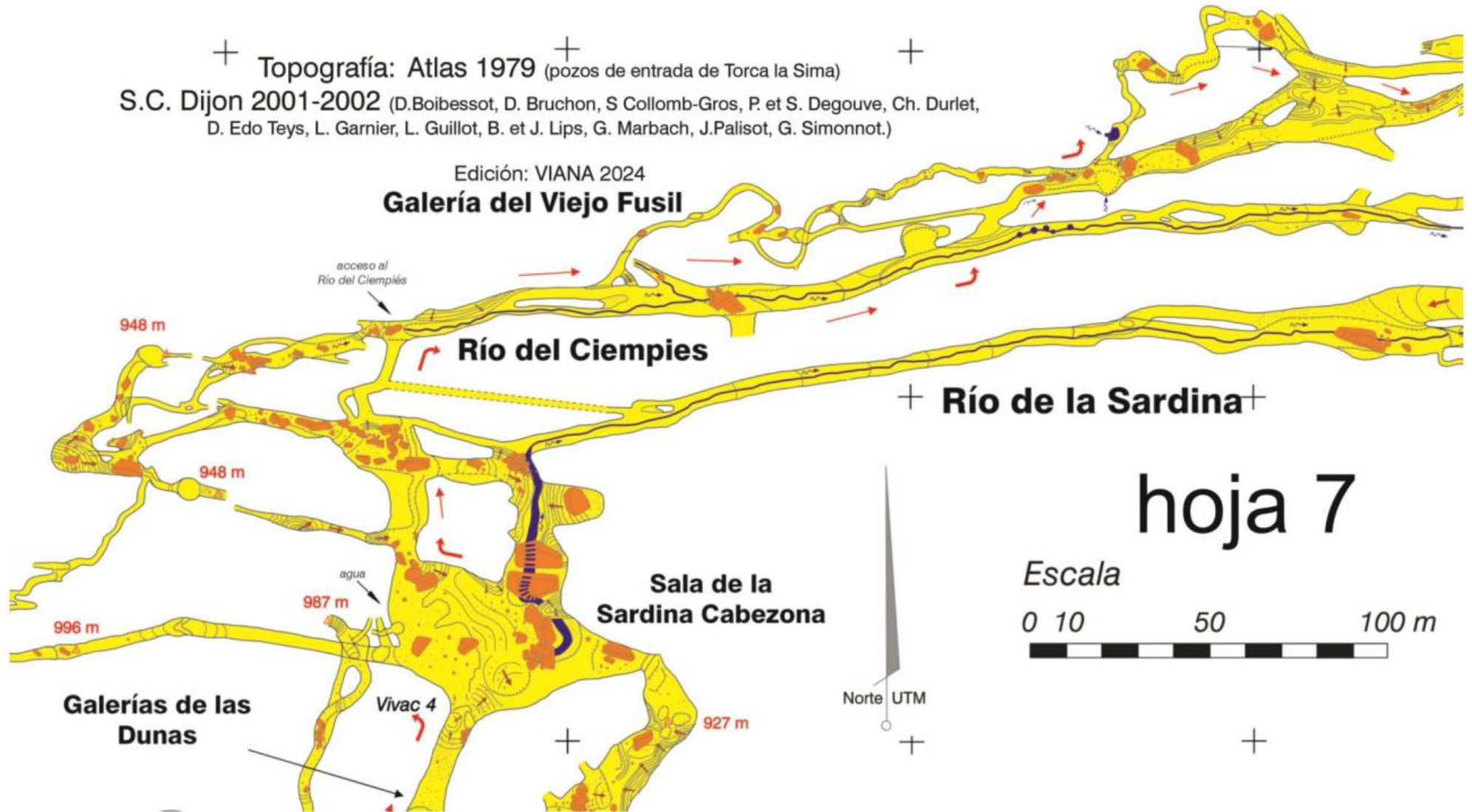
Edición: VIANA 2024

hoja 6



Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)
S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

Edición: VIANA 2024
Galería del Viejo Fusil



hoja 7

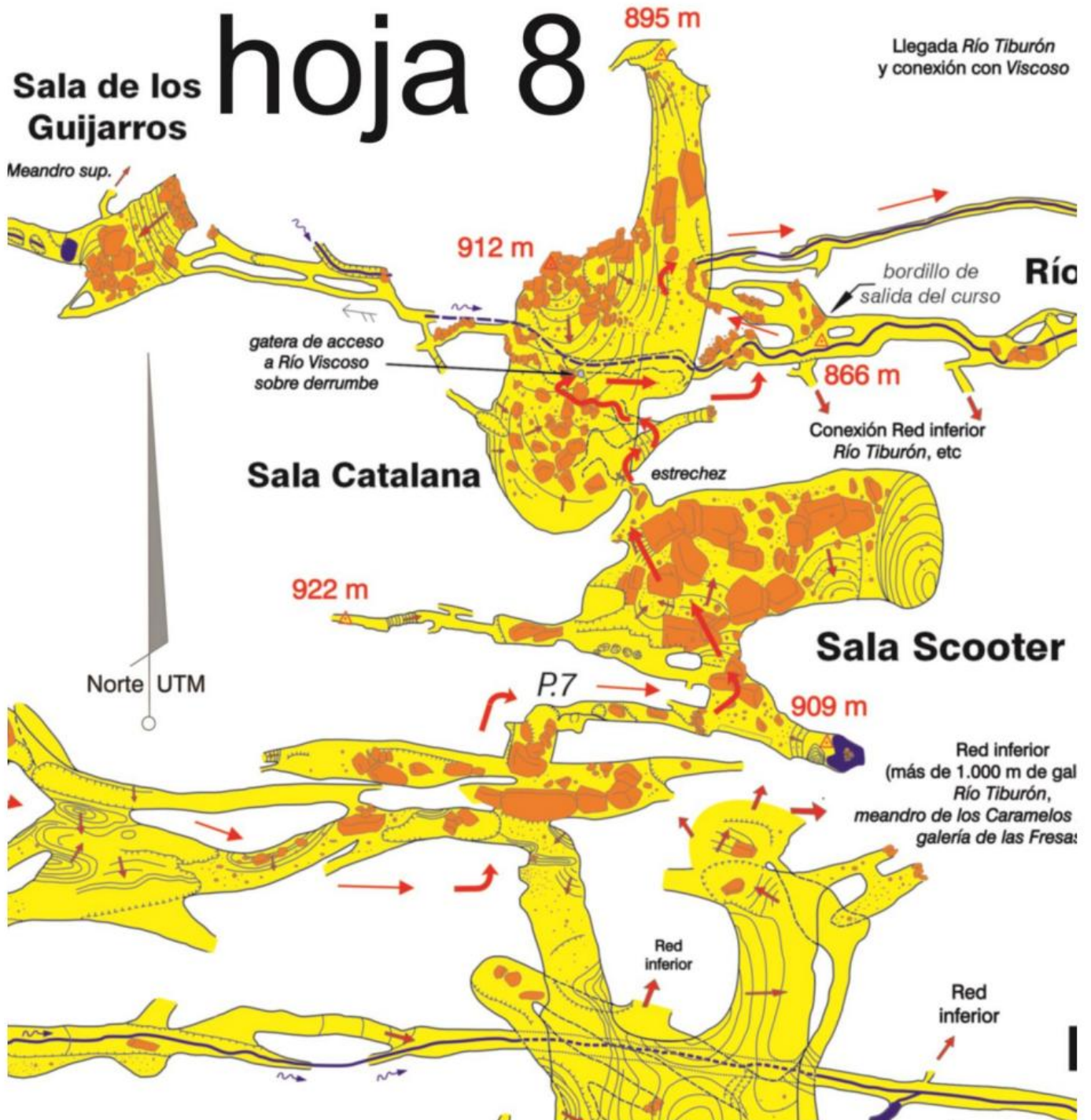
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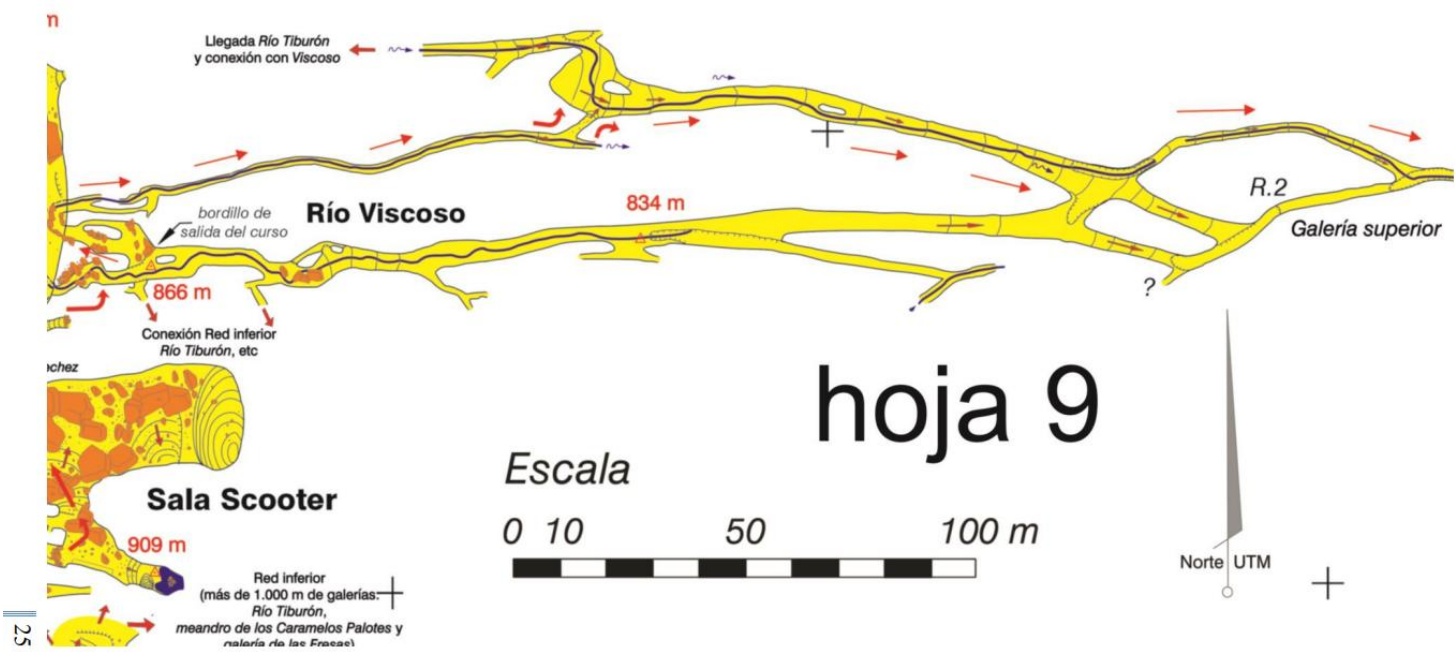


Sala de los Guijarros

hoja 8

Llegada Río Tiburón y conexión con Viscoso





hoja 9

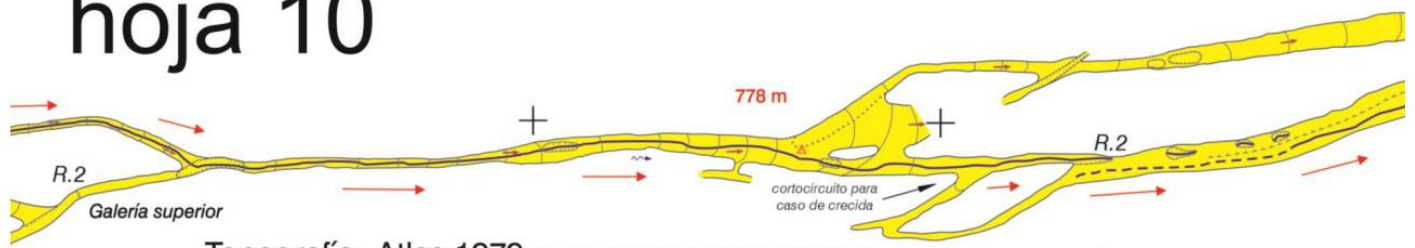
Escala



Norte UTM

hoja 10

Río Viscoso



Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

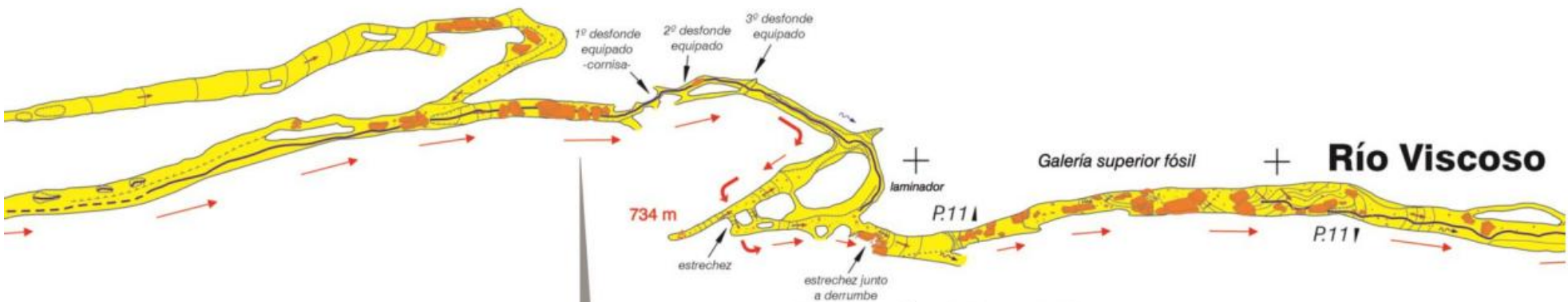
S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet, D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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Escala



Norte UTM



hoja 11

Norte UTM

Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)
 S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
 D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

Escala

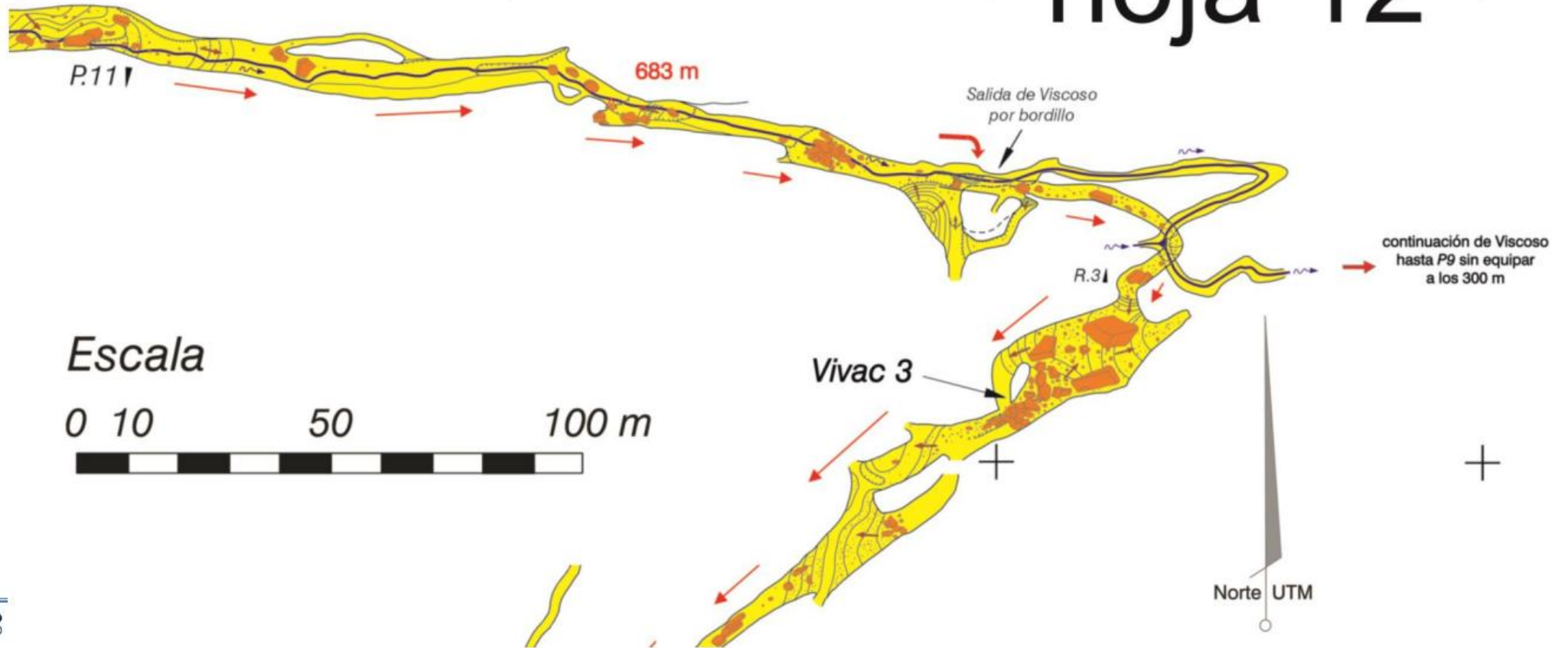
Edición: VIANA 2024

0 10 50 100 m

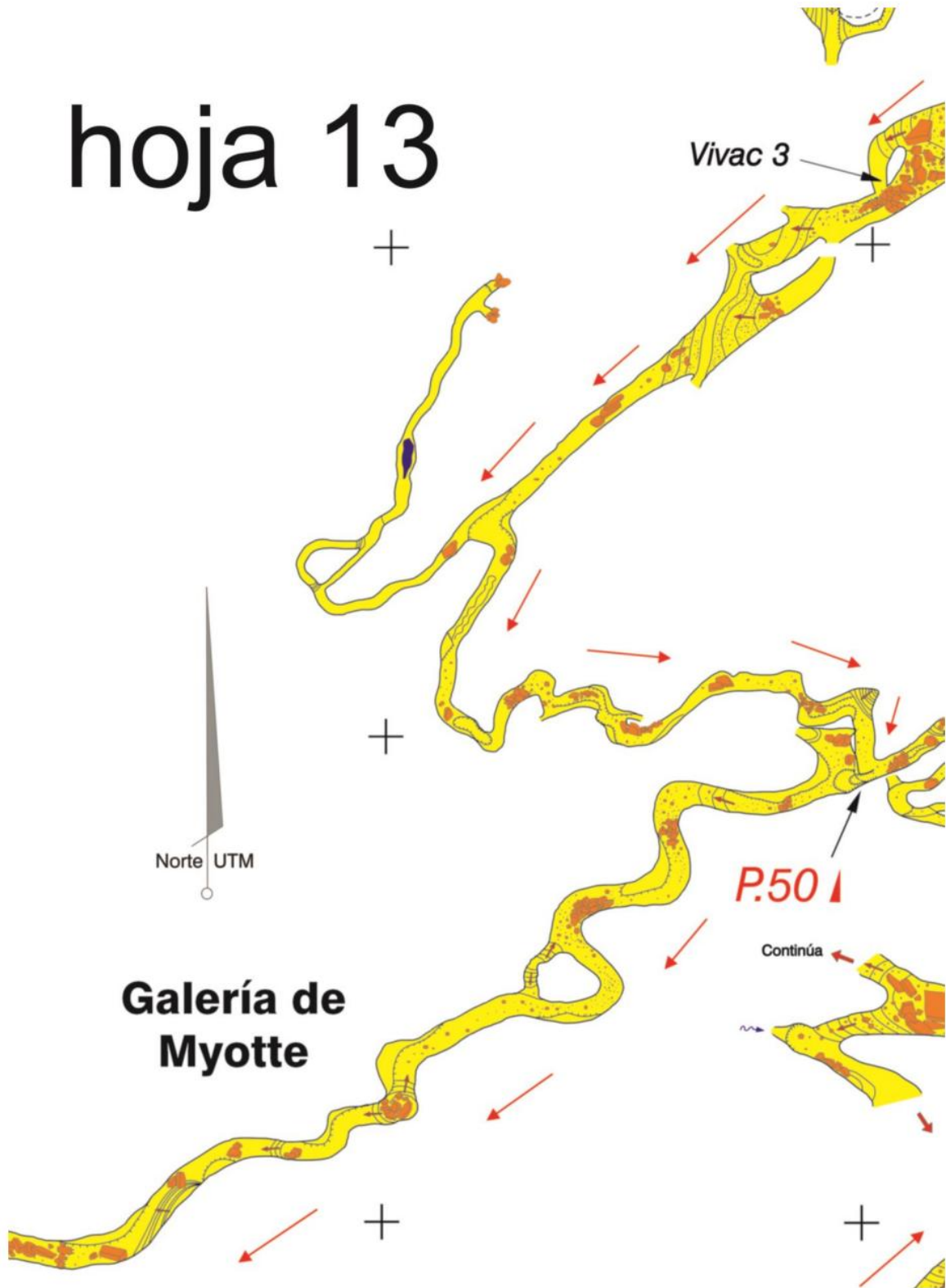


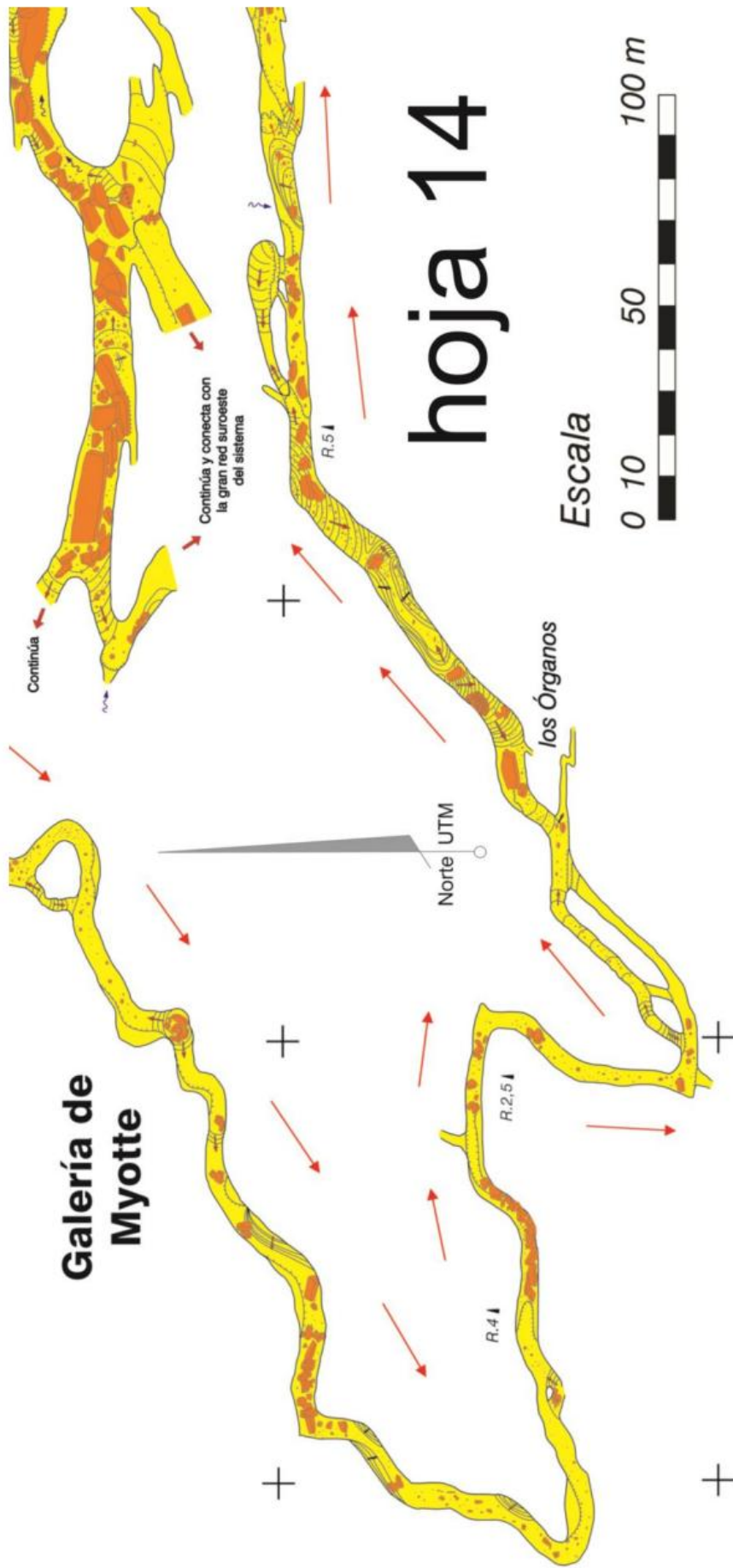
+ Río Viscoso +

+ hoja 12 +



hoja 13

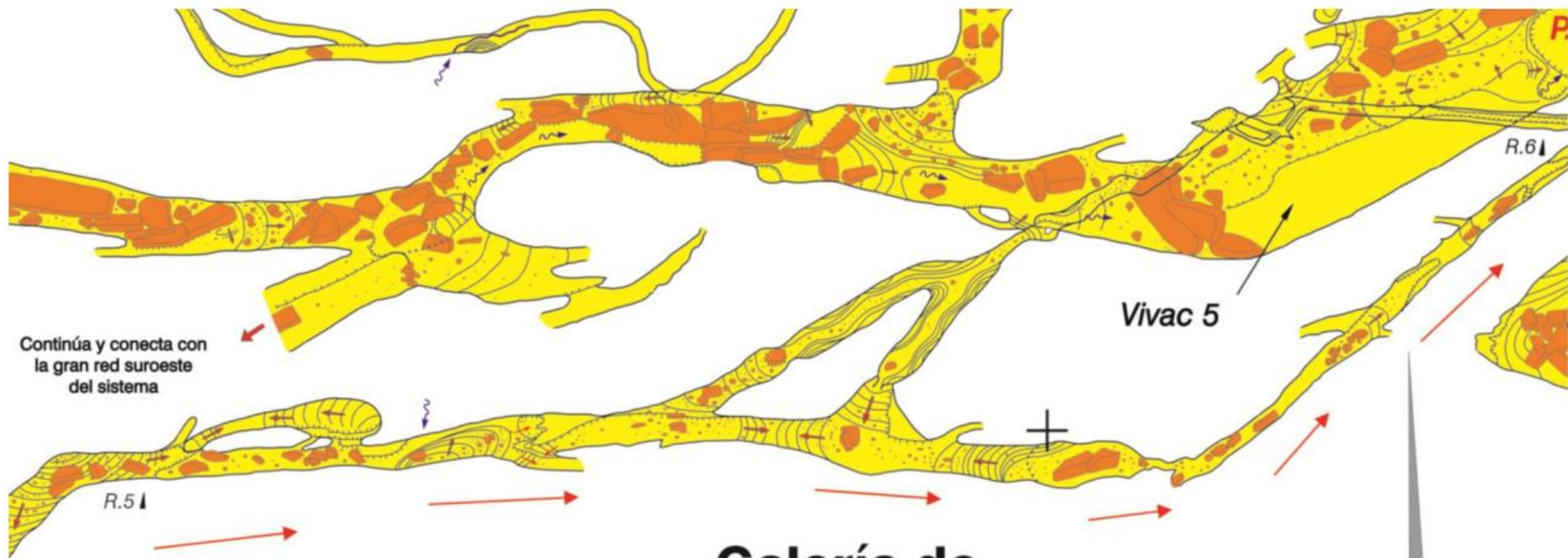




hoja 14

Escala





Continúa y conecta con la gran red suroeste del sistema

Vivac 5

R.5 ↓

R.6 ↓

Escala



Galería de Myotte

Norte UTM

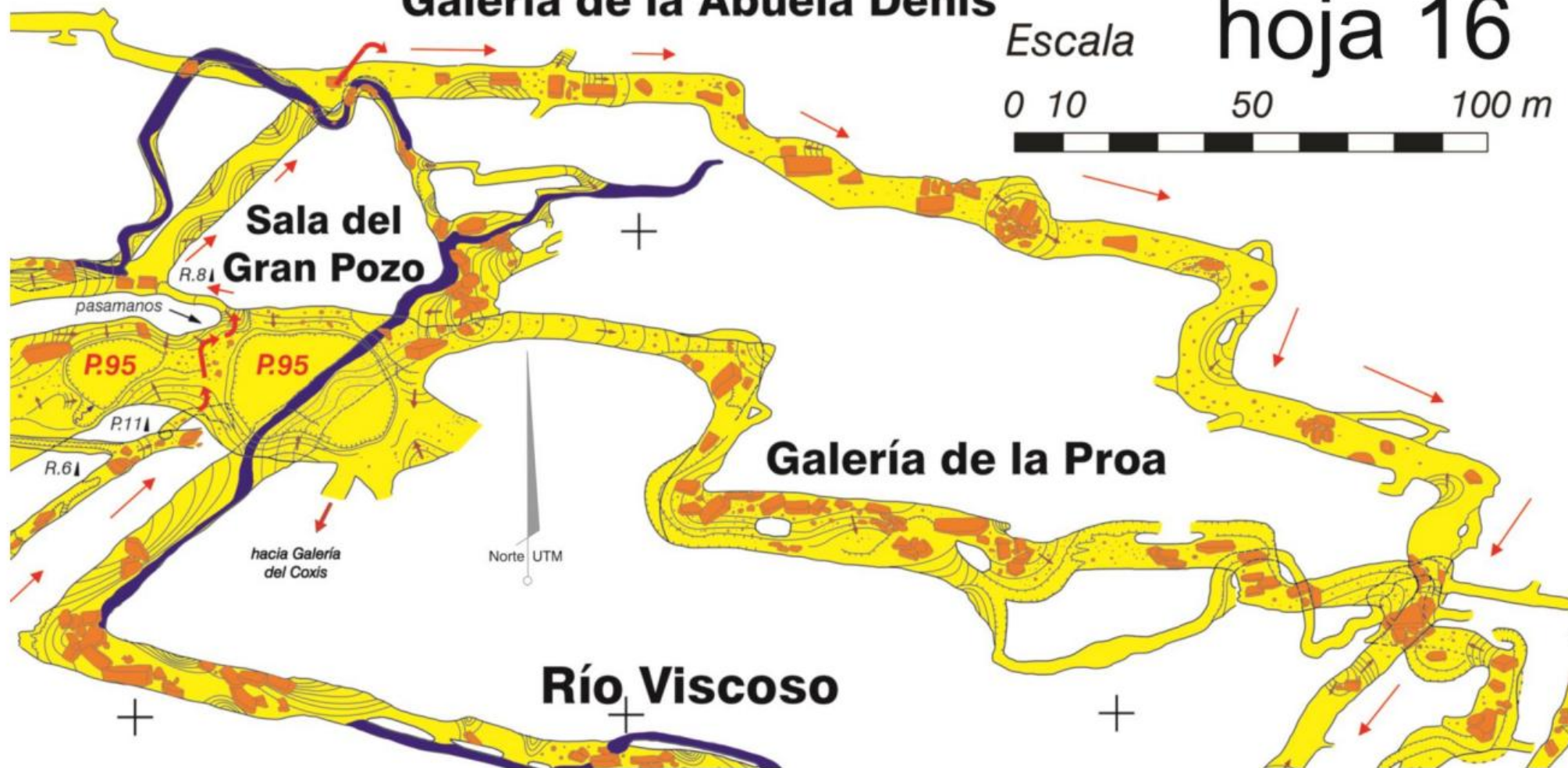
hoja 15

Galería de la Abuela Denís

Escala

hoja 16

0 10 50 100 m



Sala del Gran Pozo

Galería de la Proa

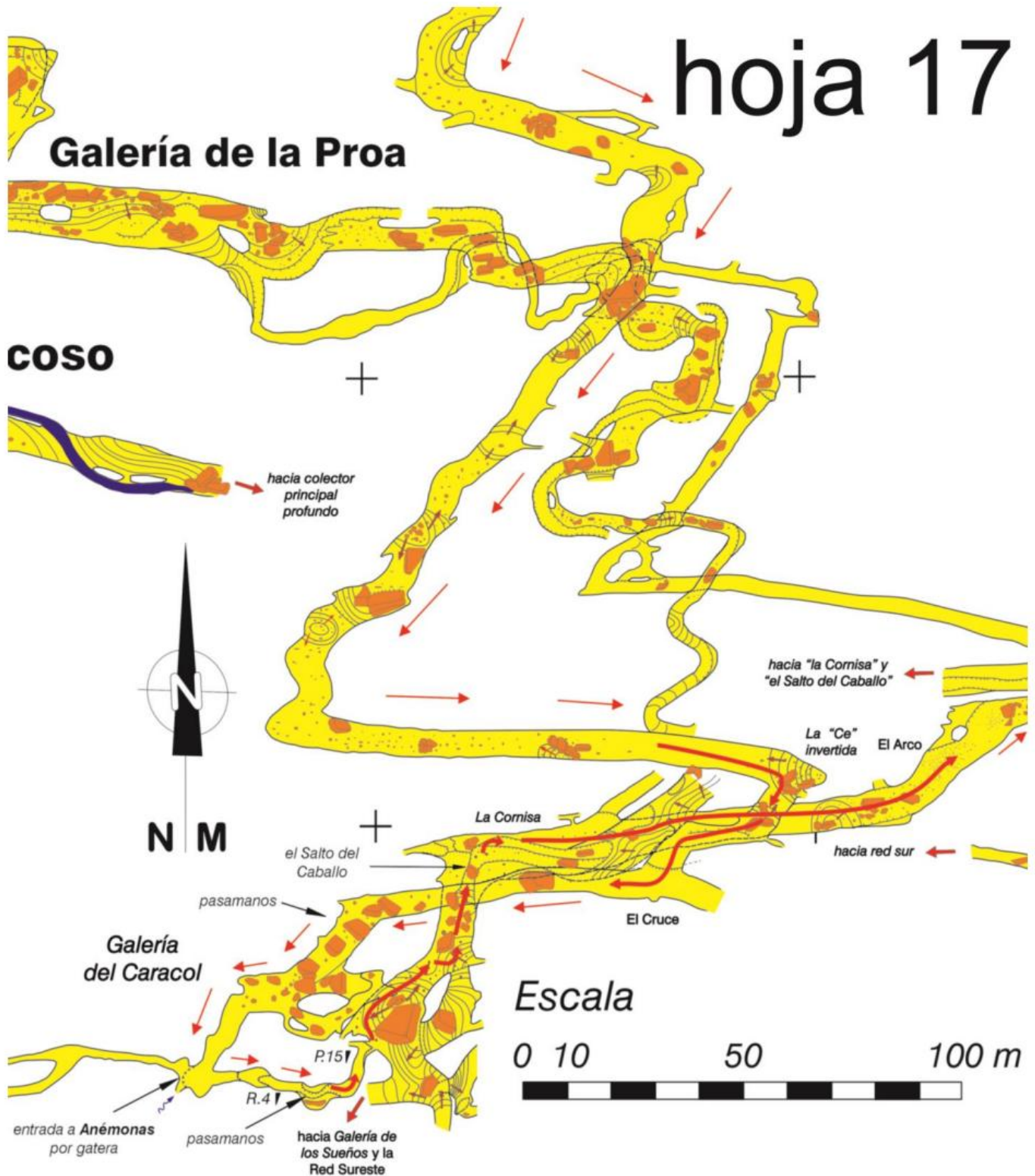
Río Viscoso

hacia Galería del Caxis

Norte UTM

33

hoja 17

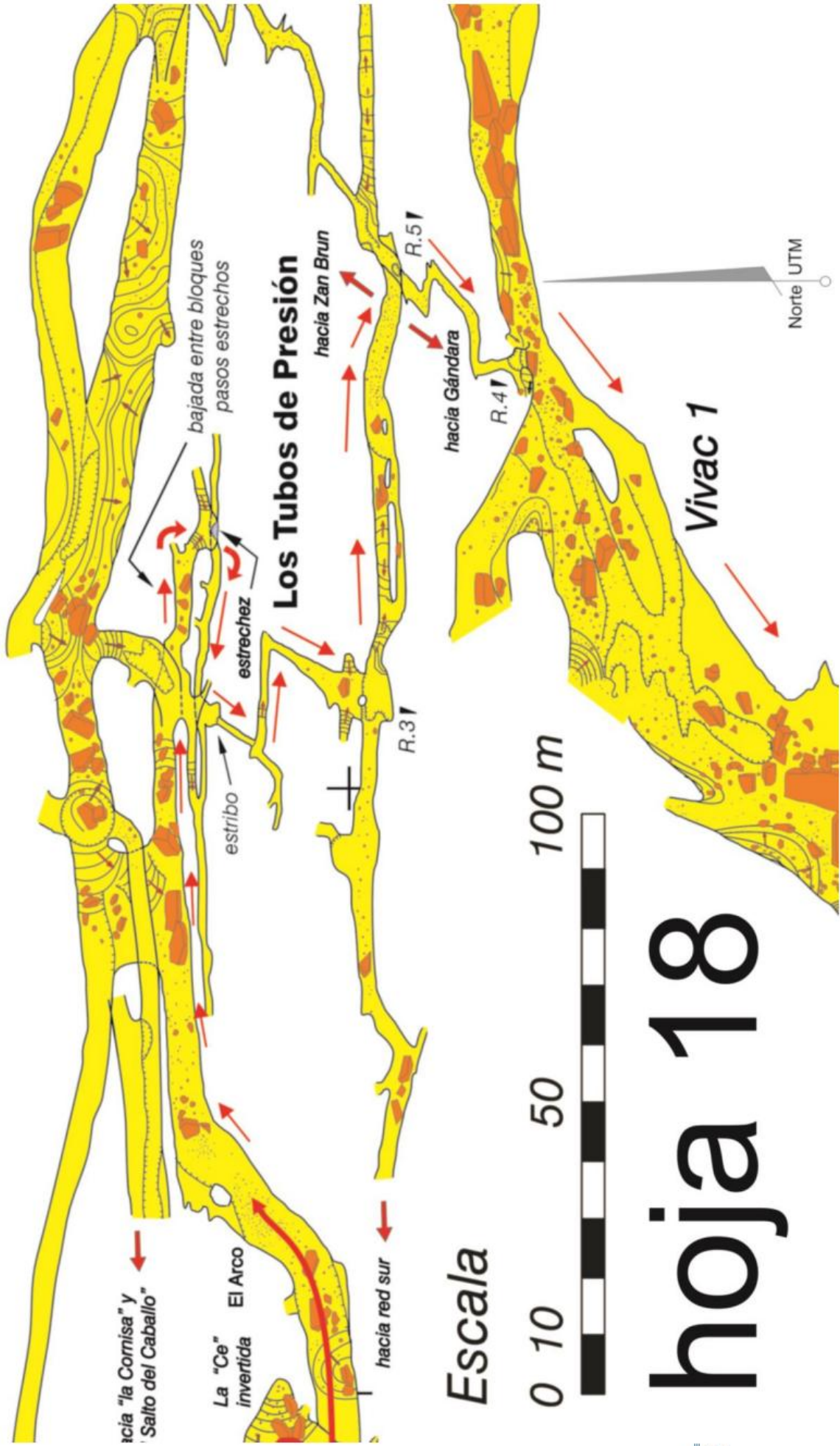


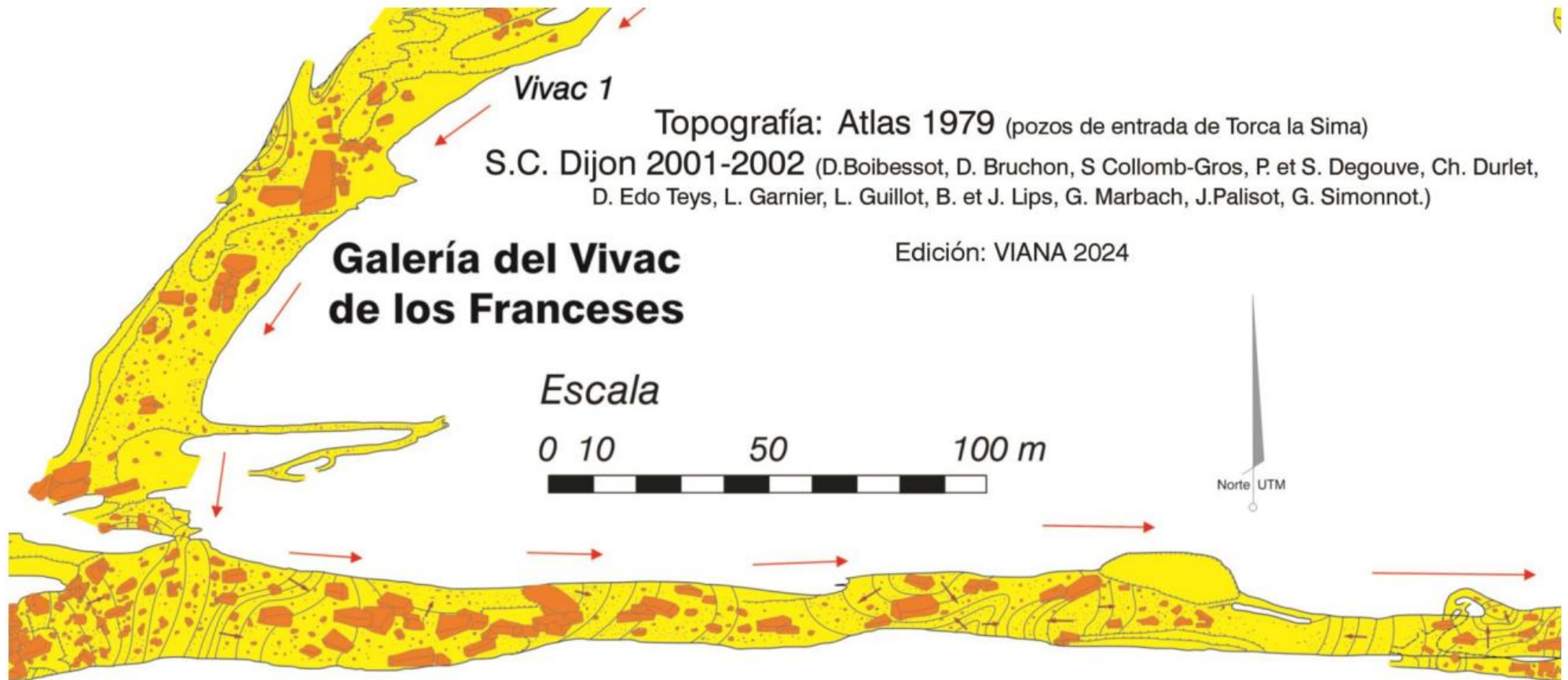
Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet, D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

Edición: VIANA 2023

(Los nombres de galerías que no corresponden con nombres propios, se han traducido a español para facilitar la información que aportan.)



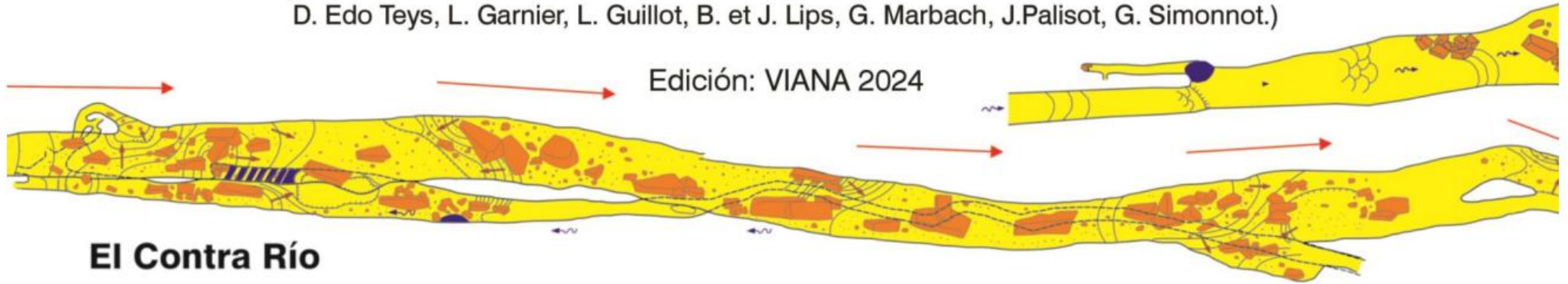


Gran Galería de Cruzille **hoja 19** **El Con**

Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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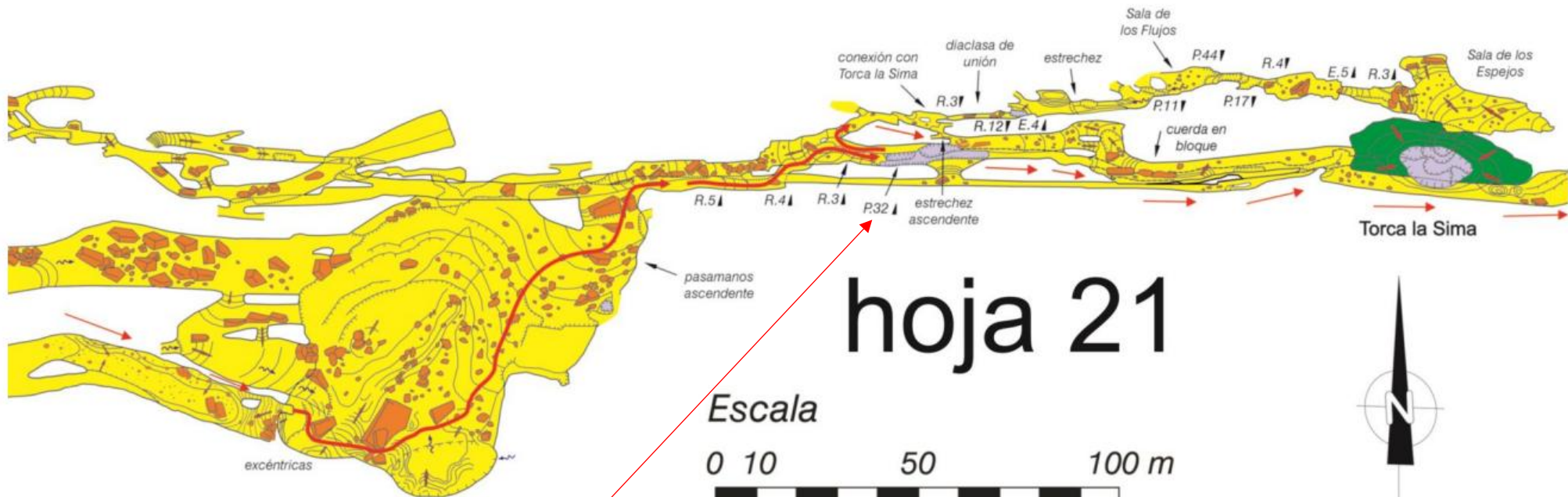


El Contra Río

Escala

0 10 50 100 m





Sala del Ángel

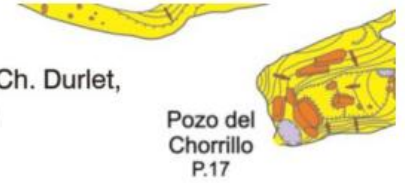
P32 requires rigging before attempting the traverse. 60m rope and 10 hangers (it is P bolted).

If doing the traverse from Torca la Sima too Gandara it is not needed.

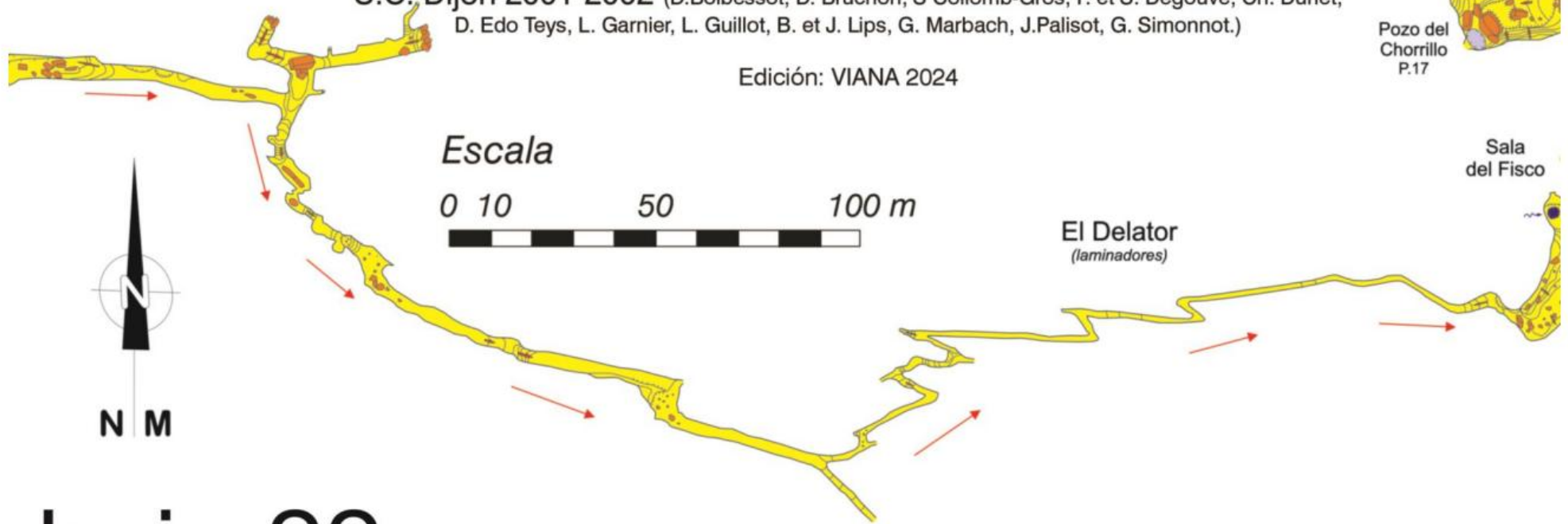
Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet,
D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

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Pozo del Chorrillo
P.17



Escala



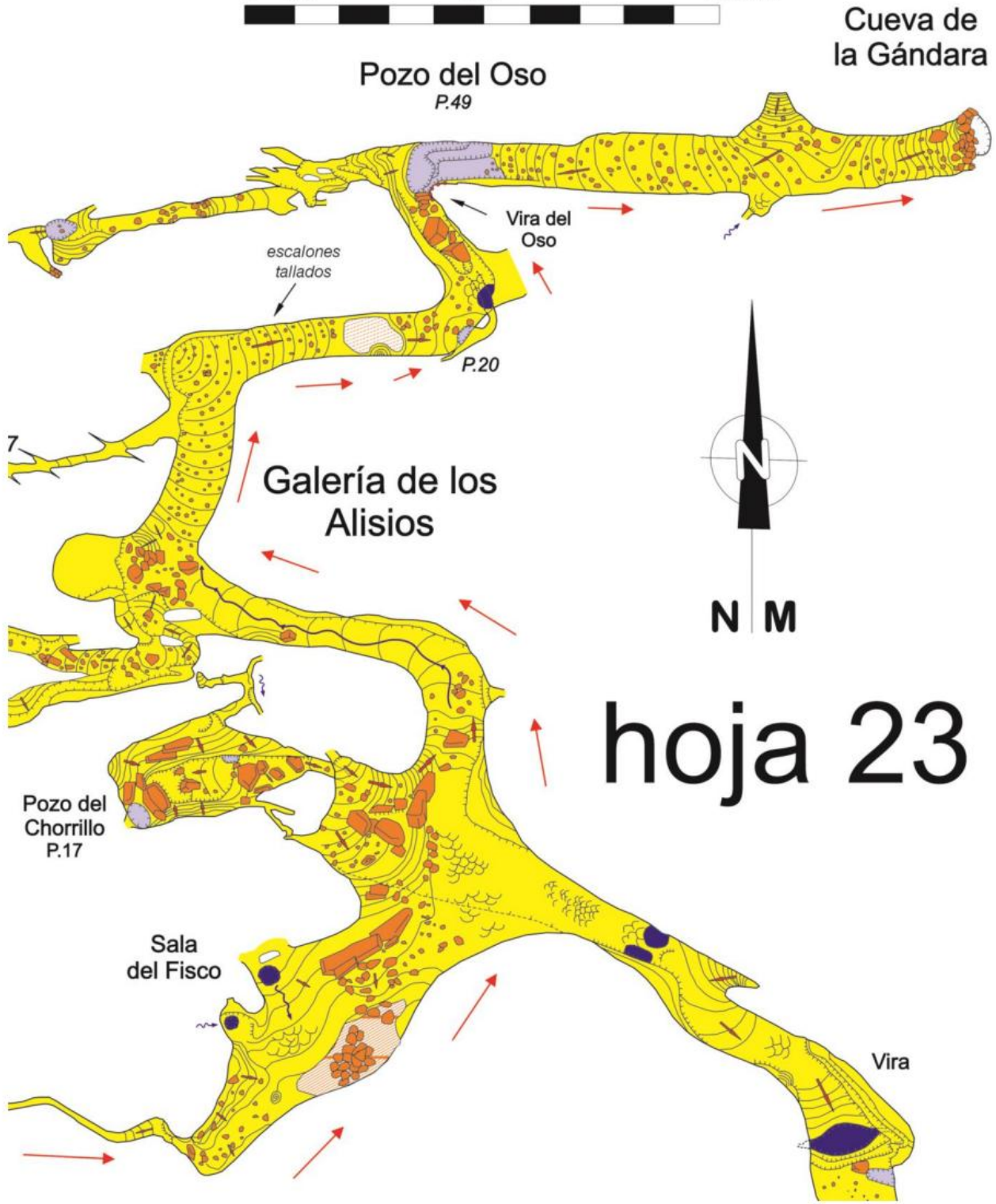
hoja 22

Topografía: Atlas 1979 (pozos de entrada de Torca la Sima)

S.C. Dijon 2001-2002 (D.Boibessot, D. Bruchon, S Collomb-Gros, P. et S. Degouve, Ch. Durllet, D. Edo Teys, L. Garnier, L. Guillot, B. et J. Lips, G. Marbach, J.Palisot, G. Simonnot.)

Edición: VIANA 2023

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hoja 23