

# რასქა 2018

**Report of the 2018 Racha (Georgia) Speleological Expedition  
Rapport de l'expédition spéléologique Racha 2018 (Géorgie)**



*Tskhrajvari, on the ledge of RAW 001 cave. The road below leads to Nakerala pass. In the distance, East Racha.*

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# რეპორტი 2018

## Report of the 2018 Racha (Georgia) Speleological Expedition



**Dates:** June 10<sup>th</sup> to 25<sup>th</sup>, 2018

**Location:** Georgia, Racha Massif, Racha-Lechkhumi and Kvemo Svaneti region. South point of the Racha massif located in Imereti, near Tkibuli. Area located about 160 km northwest of Tbilisi, west of Ossetia, on the southern edge of the Greater Caucasus.

**Georgian participants :** Lasha Asanidze, Merab Gongadze, Giorgi Lominadze (Vakhushti Bagrationi Institute of Geography), Janiko Janashia, caver of Tkibuli.

**French participants :** Mathieu Bergeron (GSC), Christopher Ducher (SCHV), Roger Laot (GSVO), Joël Marouseau (SCHV), Philippe Picard (SCHV), Martial Pommier (SCHV), Alain Ravanne (SCHV), Jean-Louis Thomaré (SCSH).

### **French clubs :**

Spéléo-club de la Haute-Vienne (SCHV 87), 18 rue de la picaude, 87280 Limoges

Groupe spéléologique de la vallée d'Ossau (GSVO 64)

Spéléo-Club de Saint-Herblain (SCSH 44)

Groupe Spéléologique Corrèze (GSC 19)

## **A brief history of twenty-seven years of Franco-Georgian expeditions and relations:**

In 1979 a twinning agreement was signed between Nantes, Tbilisi and Saarbrücken. In the 1980s, exchanges between the Speleo-club of Saint-Herblain and the University of Geography of Sofia in Bulgaria, led to establish contacts with cavers of the USSR and the Institute of Geography Vakhushti Bagrationi.

- August 1991: a Nantes caving group (Speleo-club of Saint-Herblain) makes contact in Georgia with local speleologists after having been blocked on the Turkish-Georgian border and entered by Armenia. A few cavities visits but the uncertainty of the political situation (putsch against Gorbachev) led the Georgian cavers to quickly evacuate the French group to Turkey. This exchange with modest but effective objectives (return visit of the Georgians to France in 1992) established a strong link which both parties promised to develop.
- 1992: First welcoming in France of Georgian speleologists in the Pyrénées-Atlantiques (Massif of Pierre-Saint-Martin) by the Speleo-Club of Saint-Herblain.
- 1997: Jean-Michel Gorgeon joins the Speleo-Club of Haute-Vienne and stimulates exchanges
- 1998: Expedition Georgia 98 by the Speleo-Club of Haute Vienne and Saint-Herblain on the massif of Migaria.
- 1999: Welcoming in France (from July 23 to August 15) of Georgian speleologists in the Chartreuse massif by the Speleo-Clubs of Haute-Vienne and Saint-Herblain.
- 2001: Georgia Expedition 2001 by the Limousin Speleology League on the Migaria massif.
- 2002: Welcoming in France from July 15th to July 29th) of Georgian speleologists in the Pyrénées Atlantiques on the Arbailles massif by the Speleology League of Limousin.
- 2003: Welcoming in France of two Georgian speleologists on the Arbailles massif to prepare the French Federation's initiator's certificate.
- 2004: Expedition Georgia 2004 of the Speleological League of Limousin: European youth project (European Commission) Franco-Georgian with Ukrainian and Polish youth on the Migaria massif. Karstological study carried out and published by Nathalie Vanara (EDYTEM Collection - N ° 7 - 2008 - Cahiers de Géographie).
- 2006: Reconnaissance on the Khvamli massif
- 2007: Welcoming in France of five Georgian speleologists on the Causses du Quercy and the Arbailles massif (64).
- 2008: From August 2<sup>nd</sup> to 12<sup>th</sup>. Contacts and reconnaissance interrupted by the Russo-Georgian conflict. The French are repatriated by the Ministry of Foreign Affairs.
- 2009: reconnaissance on the Askhi massif. Report sent to the FFS.
- 2010: south-west zone of the Askhi massif.
- 2011: Georgians in the cavities of the Grands Causses (southern France)
- 2013: Senaki plateau
- 2014: plateau northeast of Senaki.
- 2016: Migaria, summit area and Saadamio, northeast of Senaki.
- 2017: October, Racha East recognition and local speleologist contacts.
- 2018: Racha massif.

### **A poorly structured speleological context**

These past twenty years have brought us with a fairly good knowledge of the field as well as good relationship with the numerous contacts linked with speleology.

The speleological practice however remains poorly structured. The university institution, sole organizer of the activity during the soviet period, doesn't have the capacity to do so nowadays. The recent publications are of a very high theoretical level in karstology or extensive bibliographical compilations, probably due to the lack of on-site studies and human resources. However, they are finally available as they are written in English, we may consider them as a necessary and successful refounding. The scarce speleologists from the civil society do not benefit of a sufficient standard of living which would enable them a regular practice. Foreign expeditions, from central or oriental Europe, follow one another without any methodical follow-up. In some ways, we're also doing so...

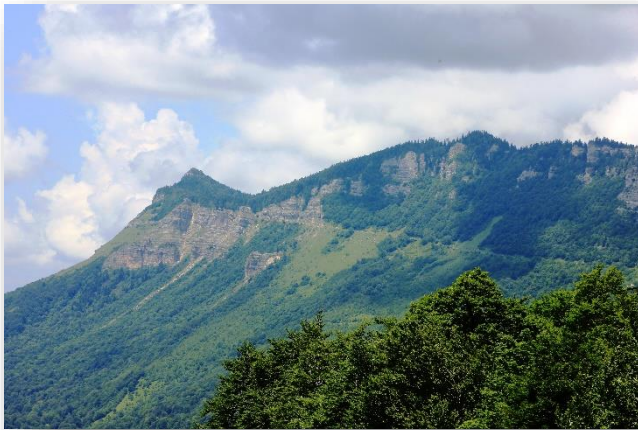
### **New contacts and a long-lasting friendship**

The Racha massif, approached or crossed several times since 2001, was the object of a reconnaissance in October 2017. Contacts were established with Lasha Asanidze, Giorgi Lominadze and Merab Gongadze, from the Vakhushti Bagrationi Geographical Institute, who welcomed us in Racha on our first week of stay. A young local speleologist, Jano Janashia, living in Tkibuli, a mining city situated on the southern border of the massif, guided us on our second week and his group of friends accommodated us and greeted us with a very warm welcome. As usual, Mamuka Nikoladze, our friends Sophie and Liza Burnadze, as well as their parents, Eteri and Lexo, provided us with the lodging in Tbilissi and helped us solve all the logistic matters.



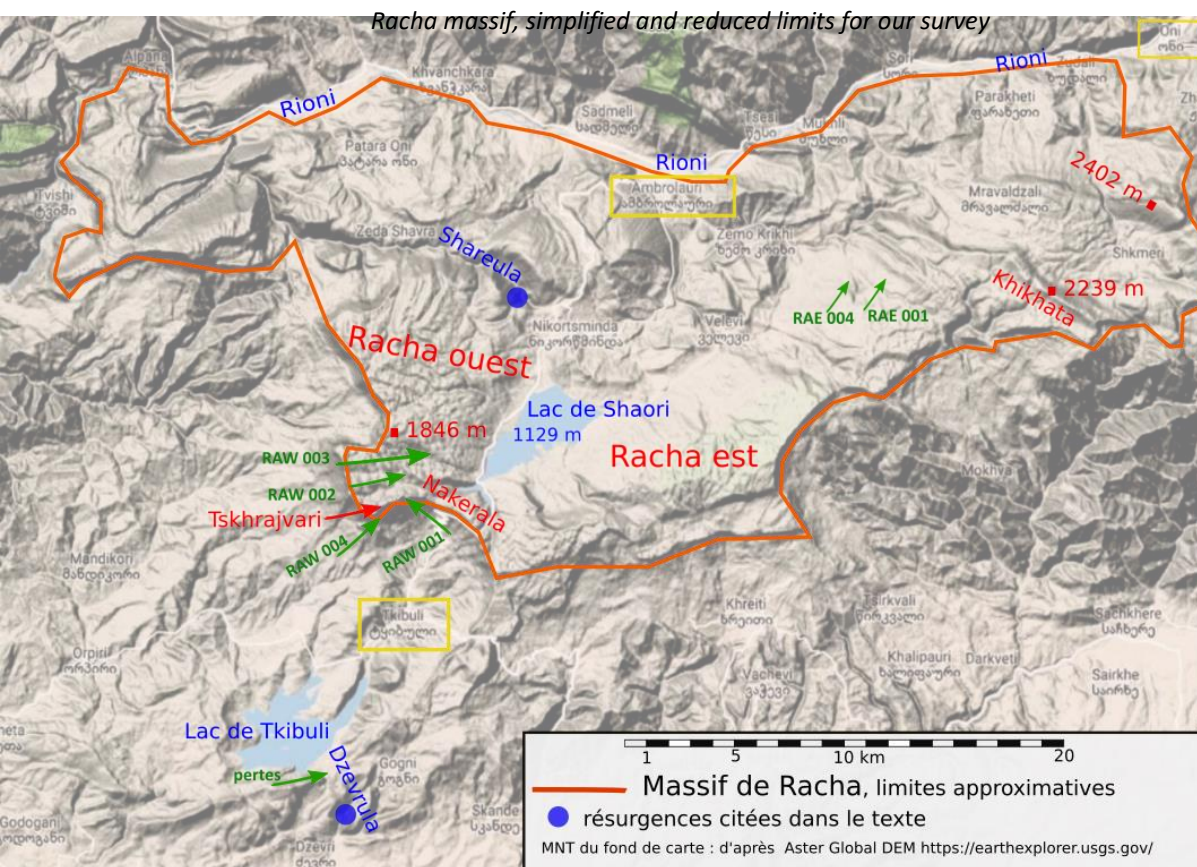
*Lasha and single rope technique*

## The Racha massif: a wild Vercors yet to be discovered?



Tskhrajvari and Nakerala ridge

The Racha Massif is situated in the Racha-Letchkhoulie and Lower Svanetia region, its capital city is Ambrolauri. In demographic decline, this nearly 5,000 km<sup>2</sup> region has only 30,000 inhabitants and remains away from the very relatively prosperous islands of Tbilisi and Batumi.



Defined as being a north edge element of "Georgian Block" along the Main Thrust of the

Transcaucasian Massif (TCM) (I. Gamkrelidze, 2000) (Sh. Adamia et al, 2011), the Racha limestone massif spreads from west to east on about 40 to 50 km and covers 600 km<sup>2</sup> to 700 km<sup>2</sup> depending on the authors. The vast Shaori polje, 1,100 m high, divides the west Racha plateau, reaching 1,846 m on its occidental border and on the east Racha plateau, which reaches 2,402 on its oriental limit. The Lower Cretaceous limestones (K1b-br > 1,000 m: Berriasian, Valanginian, Hauterivian and Barremian) set the limits of the steep reliefs and escarpments on the southern and western mountain sides, like the Nakerala ridge over Tkibuli, and then get lower towards the interior following a Neogene syncline axis (north-

west), bordered by Shaori polje, up to the covering by the Higher Cretaceous and Miocene molasses, towards the Rioni valley, in the Ambrolauri area striated by a deep faults system parallel to the Great Caucasian axis.



*Christopher in a resurgence of the Shareula river*

The Shaori polje bears since the 1950's a 10 km shallow dam lake whose waters supply the Tkibuli power station, situated outside from the natural watershed. Karstic phenomena, of a high density, are visible almost everywhere and also with a great intensity, as seen in the Shareula resurgence whose pocket valley gets back to the same direction of the major faults area deeply notching the plateau covered with black Neogene basalt.

The heavy rainfall (at the Nakerala Pass 2,760 mm – quote by

Asanidze, 2017) enables the growth of a deciduous forest up to 1,400 m - 1,500 m and of pine trees on the higher level, up to 1,900 m. In these forests, the low vegetation density, consisting mainly of laurels and Pontian rhododendrons, makes it really hard to progress and

sometimes proves it impossible. The low massif



temperature enables the permanent sustainability of ice at the sinkholes entrances as of 1,500 m.

Environmental conservation measures seem to be on the agenda with the « Shaori-Khikhati Planned Managed Reserve » project but they don't go over the simple prohibiting camping signs for hypothetical hikers which appears somewhat inconsistent.

The seismic activity seems to have set an end to the future of the region: the Racha earthquake which took place on April 29<sup>th</sup> 1991, of a magnitude of 7, caused 270 casualties, in addition, it destroyed tens of thousands of houses and was followed by disastrous landslides in volcanic covered areas.

Final disaster, of political nature, the de facto annexation of South Ossetia since the 2008 Russian-Georgian conflict does not allow anymore any oriental access to the north road

situated in the high Rioni valley with the total closure of the border. The Oni district is a dead-end.

To simplify, the context, at a latitude of 42° similar to the Pyrenees, is as close, without being identical one would know, to the one of an Alpine massif such as the Vercors, but a Vercors without any villages nor roads. An only track enables the access with a 4-wheel-vehicle to the meridional edge of west Racha. The high zone of oriental Racha would may be accessible to a 6-wheel-truck. A question, title of this paragraph, is yet to be answered, is it still a wild massif? Absolutely not. Back to the wilderness would be more adequate. In fact, the forest is ruling up to 1,100 – 1,200 m at the expense of the crops, among which the vine. It is the result of the official policy of the mountain kolkhozy abandon at the end of the 1950's. Beyond, the last loggings date from several decades and the old forest tracks are out of use, wiped out by vegetation. And the shattered cable car at the tip of the southwest plateau, soviet repossession of a popular pilgrimage site, is yet the witness of the material hopes and territory control disengagements, despite a project, recent but little realistic, to rehabilitate the access to the Tskhajvari site linked to a religious touristic renewal.

As far as the speleology is concerned, this massif was never methodically prospected, the soviet then international interests quickly redirected themselves to the west of the country and its Abkhazian potential with depth records...

The sum of these elements constitutes for us a strong motivation to set up a deeper research on the Racha massif.

## **Description of the visited caves**

**Coding and numeration of the cavities:** RA for Racha, RAE: east Racha, RAW: west Racha. The numeration is used on the Karsteau database ( <http://karsteau.org/karsteau/>) which gathers all the data of the cavities we have collected since 1998 in Georgia.

**Coordinates:** expressed in UTM, 38T time zone (Be aware that the ordinates of soviet maps are situated two km further up north).

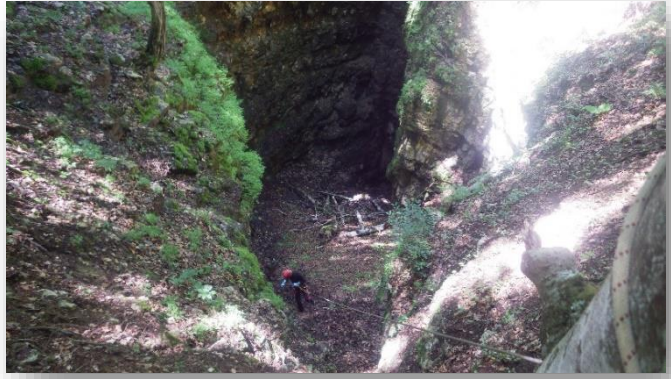
**Cartography:** the topographic maps from the soviet period, dating from the years 1980 - 1990, are the most reliable documents, but they are written in Russian. We calibrated them for GPS Android. Despite their clarity, recent maps digitalised by a cartographic company, in Roman characters, are very approximative, and at times inaccurate.

The Google Earth images dated on the 2<sup>nd</sup> of April 2012 are of a good quality on east Racha, under a snow cover. For the totality of the massif, the satellite cover is excellent on Yandex or Bing.

The geological map of the high Rioni basin edited by the USAID in 2004 is schematically but clear for non-specialists. Those of the Science Academy, despite their small scale, are the most elaborate in the tectonic and geological domains. Unfortunately, we could not access the old 1/50 000<sup>e</sup> geological maps, essential to the understanding of the structure of the massif.

## The isolated caves of east Racha

For the first part of our stay, we settled in the village of Zemo Skhvava, 8 km south-east-east of Ambrolauri in the western area hit by the 1991 earthquake (magnitude 7). Our objectives were to explore two cavities seen in October 2017 in the forests of the north Racha edge, and to evaluate the prospection conditions on the top of the plateau, strewn with dolines and which reaches up to the Khikata ridge at 2,239 m.



*RAE 004 Skhvava*

### RAE 004 Ice cave of

**Skhvava** სხვაგას საყინულე (Skhvavas sakinule)– 13<sup>th</sup> June 2018. Racha-Lechkhumi and Kvemo Svaneti.

**Coordinates :** 38 T - 356,252 E - 4704,306 N. 1400 m.

A previously known cavity, spotted in 2017.



*Screes in RAE 004 Skhvava*

**Access:** On the marked hiking trail from Shua Skhvava which leads to the cave. A two-hour-walk, without any difficulty. About 300 m above the Krihula torrent. Nearest local place name: Udabnotske.

**Description:** Big doline, 50 x 20 m large with vertical walls and 20 m deep. Unstable screes on the slope with tree trunks blocking the way. 3 x 5 m porch which gives access to a big hall 10 x 20 m with a 30 m high chimney. The collapsing walls have created an enormous funnel which clogged the bottom. Strong ice-cold air stream, dangerous obstruction removing.

**Equipment:** natural anchors on 2 trees, 30 m rope.

**Commentary:** the access is possible without gear but not without any risks that local walkers take. The cave is situated on the way of a large ravine which most probably participated to its terracing but this ravine is now covered with a deep forestry soil. The water supply seems therefore limited. During our visit, it wasn't an ice cave.



**RAE 001 Sasule cave** (pronounced « sassouley » in English) სასულე – June 14<sup>th</sup> and 15<sup>th</sup> 2018.

Racha-Lechkhumi and Kvemo Svaneti.

**Coordinates** : 38 T - 358,418 E -

4704,369 N. 1613 m.

A previously known cavity, spotted in 2017, by Alain, Roger, Jean-Louis, guided by Ziveri Rachvelishvili.

Depth: 70 m.

**Access:** situated at about 1,600 m high. Difficult access, GPS compulsory with GPX files, from the village of Zemo Skhvava, a three-hour-walk in the forest, 600 m drop. Direction of the old mill, then nearby an old cross. Nearest local place name: Tsiakhi.

**Description:** Big oval-shaped 5 x 15m and 70m deep. Horizontal strata of 3 to 5 m large. First level at – 30m, second level at – 50 m, intermediate gallery, then a 20 m shaft. Arrival on the scree cone with an unstable slope and high sleek walls. On the east side, 20 m long, 10 m large, obstructed at bottom end by a block hopper, strong ice-cold air stream, dangerous obstruction removing. Incoming water from a large chimney, placed under the entry. West side, 30 m long, 5 to 15 m large, bottom end totally obstructed by blocks and tree trunks. Big 60 m high chimney.



*RAE 001 Sasule, clogged shaft*



*RAE 001 Sasule shaft*

**Comments:** the way from the village is unclear. The GPS position isn't sufficient, a GPX track is necessary because of the ravines and rock barriers. Our team came back at nightfall with great difficulties. The day after, a surveying towards the track featuring on the soviet maps, which disappeared rapidly, only revealed a few dolines. The slope deposits, covered with a forest soil, do not allow the spotting of the rock nor of any cavities. The Sasule cave (local name linked to the air move coming from the shaft) is obstructed with limestone scree coming from the shaft, without any addition of soil or clay, the accumulation seems more important than the dissolution which therefore limits the possibility of a continuation. A few stalactites on the vault. Some wood pieces reached the bottom as well as a few animal bones (a collar bone fragment of a Suidae or ruminant).

Pit 70 m		Rope 100 m	2 natural anchors on tree
	Rebelay -30 m		2 anchor bolts
	Leveling and long ledge -50 m		2 bolts + 8 anchor bolts
	Pit 20 m		

So, the two caves, Sasule and Skhvava, were explored and are without continuation. No discovery whatsoever nearby. The access to the summit area would require a camp at about 1,900m at the exit of the oriental track coming from Mravaldzali.



*RAE 001 Sasule, stalactites (ceiling) and crystallized block in the wall*

## The Tskhrajvari caves, horizontal wonders.

The south-west tip (1,589m) of the Racha massif is situated just like the Nakerala Ridge in Imereti. The Tkibuli inhabitants claim with a certain pride the belonging of this site to their region by the spiritual attachment of the Tskhrajvari sanctuary (the nine Crosses), a dizzying place of an outdoor worship, which dominates the Tkibuli country over



*Looking north from Tskhrajvari*



900m. A cable car built in the 1980s linked it directly to Tkibuli. Its concrete station is now completely ruined. It was the time of the mining prosperity in the Tkibuli basin. The access track which goes along the Nakerala scarps, in really bad state and dangerous towards the end of it, ends at parking zone at the exit of a short tunnel. Several horizontal cavities have been discovered or re-discovered these last years by speleologists or locals. The

area observed on the plateau, simple way to Muradi and Racha in 2001, is strewn with holes, sinkholes and springs but its exploration is difficult because of the vegetation.



*Sinkhole and sandy emergence on the path to RAW 003 « Racha 2001 »*

## RAW 001 Tskhrajvari cliff cave

ცხრაჯვარი – june, 17<sup>th</sup> 2018

**Coordinates** : 38 T - 334,073 E -

4694,862 N. Altitude : 1,590 m. In

Imereti

Cave on a cliff terrace about 500m north-east-east of the former cable car.

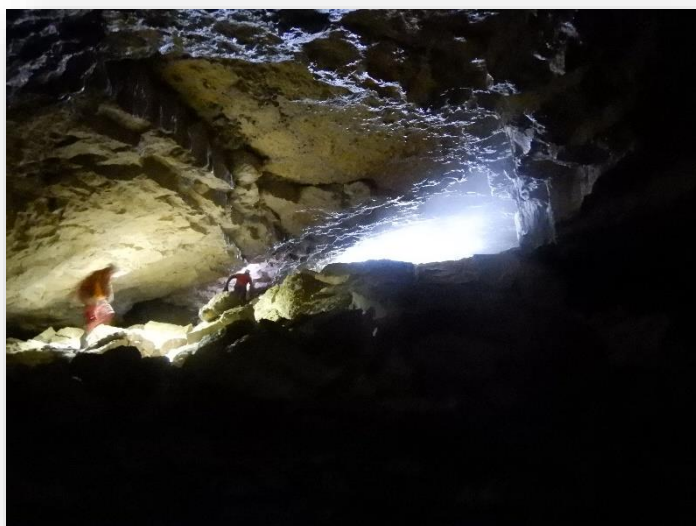
Extension of the topography of the site:

460m

**Access:** trail above the tunnel, a twenty-minute-walk in the forest, then along the cliff side. Wonderful view over the city of Tkibuli and the lake.



RAW 001, porch on the ledge



**Description:** 15m large porch by 2m high with blocks of strata fallen from the ceiling and strong cold airstream. 80 m of curved galleries 20m large by 10m high, flattener and narrow passage through collapsed blocks, then way out at the bottom in a large steep chamber with enormous rocks big as a house and flat ceiling. Direction west, a passage under the ceiling 5m large ends up in a second chamber

60m long, with at its left a 5m blocked well. Another narrow passage through blocks leads to a third chamber 50m long, closed by a block hopper (“trémie” in French) and with a joint (“diaclose” in French) on the right without further way out. On the opposite, west direction, a very large gallery 20 to 30m large, with enormous collapsed blocks, under a flat ceiling 2 m high, stop on a hopper. On the side, we advance along a vertiginous pit 20m deep with huge rocks and a narrow clayey passageway through rocks and no obvious way out. **Commentary:** Our research couldn't allow us to follow the airstream which would attest of a continuing cave system.



**RAW 002 Muradi cave მურადი 18<sup>th</sup> of June 2018**

**Coordinates :** (precision 20 m) : 38 T 333,602 E 4695,692 N alt :

1,500 m. Situated in Racha-Lechkhumi and Kvemo Svaneti.

Discovered by a hunter and later studied since 2015 published by Lasha Asanidze. Development: 800m

**Access:** west Racha Massif, start at the Tskhrajvari carpark ცხრაჯვარი (Nine crosses), forestry trail towards the North, an hour easy walk, GPX file recorded.

**Description:** Porch entry 1m by 4m large with a strong cold airstream. Large and beautiful fossil gallery 4 by 10m. Little projection with a 7m long bamboo ladder, good state but vertiginous. The equipment of a ledge must be anticipated. Beautiful vaulted and sinuous gallery 3 to 5m large. Little gallery to the right with a passage in opposition over the water and stop on a narrow passage at 3m high, in a stalagmite flow, with a strong airstream. Interesting obstruction to clear to consider. Another gallery on the right leading to a well, unvisited with lots of fossils on the sides. Main gallery 5m large, all white, covered by concretions, exceptional gours (rimstone dams) with crystals and tens of stalactites like bludgeons (bottlebrush stalactites) which reflect themselves over the water, 50cm big. Ending on a large well 10m deep, blocked (Janiko and his friend went down in it) with a large hopper opposite.

**Commentary:** This altitude cave with a horizontal development is stunning by the beauty of its concretions. Unfortunately, its discoverers haven't yet the culture of protecting the environment: traces of footsteps are covering the concretions on the floor and no way has been signalled. We stopped on our progression of a totally concreted gallery in order to protect it.

We explained the situation to our Georgian friends and wish to come back there in order to protect these two delicate passages with the adequate equipment. The touristic guidance, economic activity in full development but free of control, is yet another threat to this type of cavity.



*Speleothems in RAW 002 Muradi*



**RAW 003 Racha 2001** რაჭის 2001  
– 20<sup>th</sup> June 2018

**Coordinates** : 38T - 334,514 E -  
4696,023 N. 1,422 m. Situated in  
Racha-Lechkhumi and Kvemo  
Svaneti.

**Access:** West Racha Massif, start  
at the Nine Crosses carpark,  
forestry trail on the north  
direction, an hour and a half of an  
easy walk, half an hour according  
to Muradi. GPX file from Muradi.



RAW 003 Racha 2001

**Description:** porch with a strong cold  
airstream, muddy bank and passage  
through unstable big rocks. Behind,  
on the left a river with an up and  
down siphon, and a little gallery with  
turns around and joins the entry. On  
the right, a large fossil gallery, 10m  
to 20m large, 3m high, flat ceiling.  
Higher level with a magnificent  
canyon which sinuates with a river.  
Collapsing rocks from the ceiling  
divide the gallery into two parallel  
branches. On the right, in a  
concreted area, junction by a  
pothole on a vertiginous ledge over  
the river, then stop on screens. On the  
left, 2 to 5m large gallery, 2m high,  
numerous bear wallows, low  
passages, big well on the left which  
leads to the river (not visited) and big  
15m terminal well, followed by a P10  
which joins the river too. Canyon:  
river with numerous water potholes, 2 to 3m large and 10 to 15 m high, end on two siphons.



**Commentary:** very beautiful cavity, the Czech speleologists did the topography in 2016.

Pit 15 m, end of large fossil gallery window	Safety line	Rope 40 m	4 plugs
Pit 10 m			Natural anchor
	Rebelay -5 m		1 plug
			2 plugs

**RAW 004 Cave under**

**Tskhrajvari** ცხრაჯვარი (The nine crosses) – 21<sup>st</sup> June 2018.

**Coordinates** : 38 T - 333,641 E - 4694,274 N. 1454 m. In Imereti. Cave at the bottom of the cable car cliff, re-discovered by Janiko, but long time known (graffitis on the rock walls).

**Access:** 150m drop, an hour of difficult descent on abrupt slope, herbaceous vegetation with some passages of box trees and laurels impenetrable. GPX file useful.



*Path to RAW 004 Cave under Tskhrajvari*



the flowstone floor. Opposite, a cascade falls along a 10 m high big wall. A circumvention high above, leads to two enlarged flowstone passages, a narrow opening “letter box” type, a concretioned ledge in opposition, then the 3m large river. The downstream links to a little gallery to the cascade. The upstream stops on a hopper with a strong airstream.

**Commentary:** several clearings of possible obstructions are interesting.

**Description:** Triangular porch 2 x 5m with strong cold airstream and magnificent view over the city of Tkibuli and the lake. On the right, a little sinuous gallery and a river 1m large with low passages in the water, stops on the siphon. The main gallery, a large joint with blocks across, 2 x 10 m, later opens out on a big gallery of 10 to 15 m large and high on



## The worrying Dzevrula disappearances

The Dzevrula river, whose name would be Tkibula in its higher part and Dzevri downstream, is the natural water supply of the Tkibuli dam lake (522m). The outflow of the Tkibuli lake (also known as Akhalsopeli-Tkibuli) is now an underground penstock pipe, but an unpredictable affluent which drains a several square kilometres basin, situated north-east, still flows into the swallow hole. The resurgence is situated 2km to the south, in the canyon where the penstock pipe of the Tkibuli hydroelectrical power-station exits (year 1956), operated by EnergoPro, which allowed us to visit a secondary resurgence in the installation grounds.

### TK 001 Dzevrula swallow hole (ponor) ძვერულა – 19<sup>th</sup> June 2018

**Coordinates :** 38 T - 331,137 E - 4682,553 N. 485 m. In Imereti.

**Access :** A ten-minute-walk by a trail arranged by Janiko and his friends as a discovery path around the lake.

**Description:** Two large entry porches. In the first one, the river flows into a large 15m well. The second is easier as far as the access is concerned. The gallery in joint of 2m large and 15m high, slick walls with scallop patterns (water flow corrosion) and very strong cold airstream. First 5 m ledge secured by a rope (natural fixation). A first pool is avoided by an acrobatic step on a higher bench (safety rope). A hundred dead bats in the water. Second pool with a little 5m levelling. Two ledges with a descent on a stalagmite flow, then stopping of the exploration and imperative retreat for safety reasons!



*RAW 004 dewatered gallery*

**Commentary:** Two people were killed in exploration during the 1960's according to the local speleologists. The conditions are extremely dangerous due to the sudden floods. Beware of a fatal spillway of the lake, a lack of sealing of the dam and the sudden stopping of the dam extraction devices! Even with a rather favourable weather forecast we strongly advise against any exploration.

## 2018 expedition overview

If our aim was the immediate discovery of great cavities, we surely would have done better going to another place! As a matter of fact, our results are very modest: a small cavity as a first and visits of other cavities already known by the locals. But despite the consideration of



new constraints, our first contact with such a huge massif appears very promising. As the human aspect of our activity.

The very friendly relationship with the local researchers, from the institutions or as individuals, is determining and must be consolidated. These ones are strongly in demand of exploration techniques and we can help them in these domains. We need better information on the massif. We wish to exchange with the foreign teams who have visited the massif these last years, on the follow-up they intend to give to their work. As for us, only a persisting action can lead to results, as the nature of discoveries is concerned and also with the organisation of the research with different stakeholders.

On a very operational manner, it is the place called Vakenadzvri, situated west of Kharitsvala, just to the north of the Tskhrajvari area, which must be prospected.

Our return on Racha is therefore our priority.



*Janiko with single rope technique monitored by Joël*



*RAW 001 Tskhrajvari, under the porch.*

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YLMAZ A. et al., Comparisons of the suture zones along a geotraverse from the Scythian Platform to the Arabian Platform, *Geoscience Frontiers*, China University of Geosciences (Beijing), 2014, (téléchargeable).

### Publications d'éléments citant ou concernant Racha et ses cavités :

LEZHAVA Zaza et al., *Relief Development History of Zemo Imereti Plateau, Georgia, Caucasus* in *Open Journal of Geology*, 2019, 201-212

ASANIDZE Lasha et ali, *Speleological Investigation of the Largest Limestone Massif in Georgia (Caucasus)* in *Open Journal of Geology*, October 2017, pages 1530-1537.

ASANIDZE Lasha et al., *Karst morphological processes and evolution of the limestone massif of Georgia from depositional, sedimentary, and structural investigations in Muradi Cave*, *Proceedings of the 17th International Congress of Speleology 2017*.

ASANIDZE Lasha et al., *Complex speleogenetic processes and mineral deposition in the Caucasus region of Georgia*, *Journal of Environmental Biology*, Special issue volume 38, pages 1107-1113, Septembre 2017.

[http://doi.org/10.22438/jeb/38/5\(SI\)/GM-30](http://doi.org/10.22438/jeb/38/5(SI)/GM-30)

Et, dans tout ce que nous entreprenons, nous nous souvenons de lui ...



GORGEON Jean-Michel (1958-2015) fut à l'origine des échanges et explorations franco-géorgiennes et relança la dynamique à partir de 1998 en organisant les expéditions sur Migaria et Askhi.

Il publia avec :

VANARA Nathalie, *Le fonctionnement hydrogéologique du massif de Migaria*, Collection EDYTEM - n° 7 - 2008 - Cahiers de Géographie



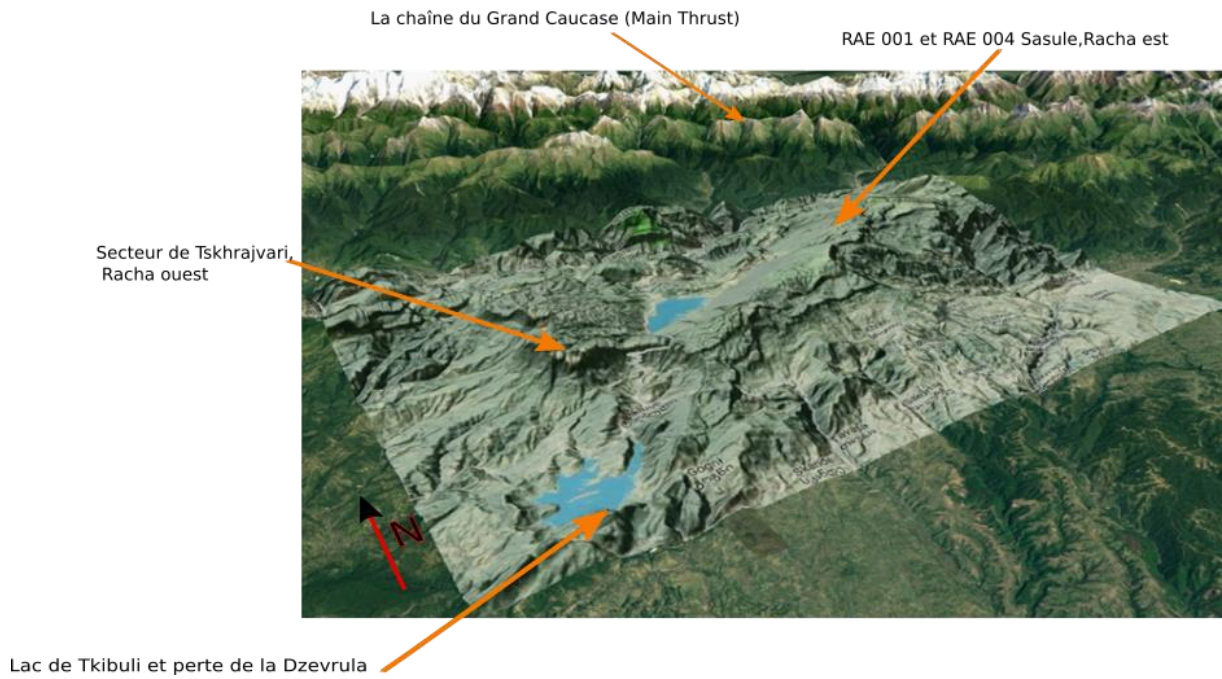
*Grande salle de RAW 001 Grotte de la falaise de Tskhrajvari*

Un carnet de voyage, journalier, et un album photos ont été réalisés en 2018.

**Annexes :**

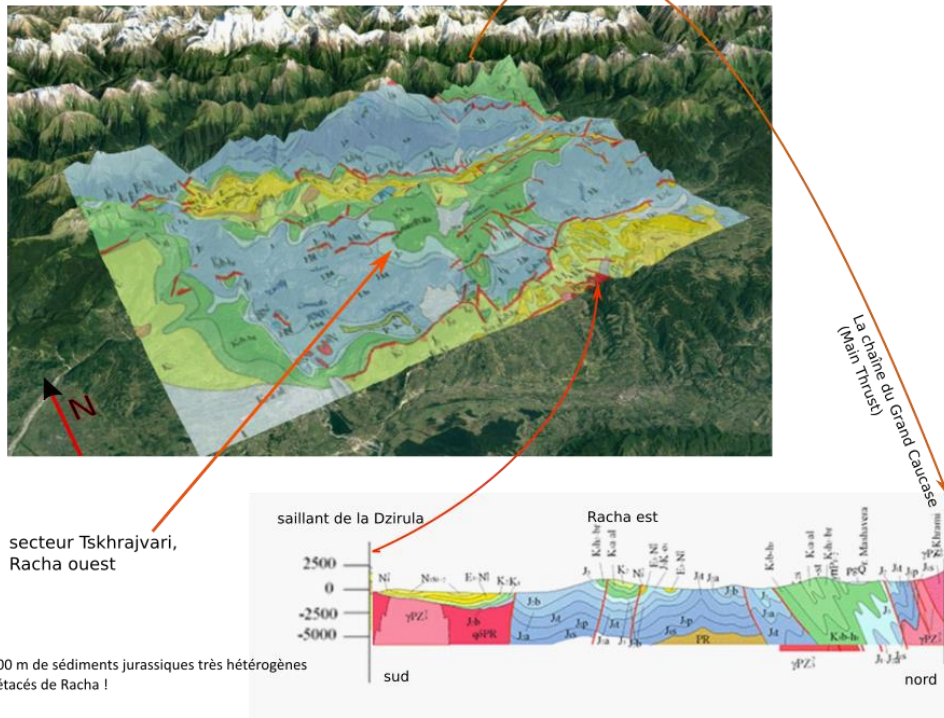
- schémas de situation géographique et géologique
- topographies RAE 001, RAE 004, RAW 001, TKI 001

Représentation « minérale » du massif de Racha depuis le sud-ouest et centrée sur le lac de Shaori.  
 MNT de l'USGS reprojété sur Google Earth Hauteurs x 3.



Contexte géologique du massif de Racha.

Projection d'un extrait de la carte géologique (GUDJABIDZE et GAMKRELIDZE, 2003-2004-2005) sur GE.



En effet, environ 5000 m de sédiments jurassiques très hétérogènes sous les calcaires crétacés de Racha !

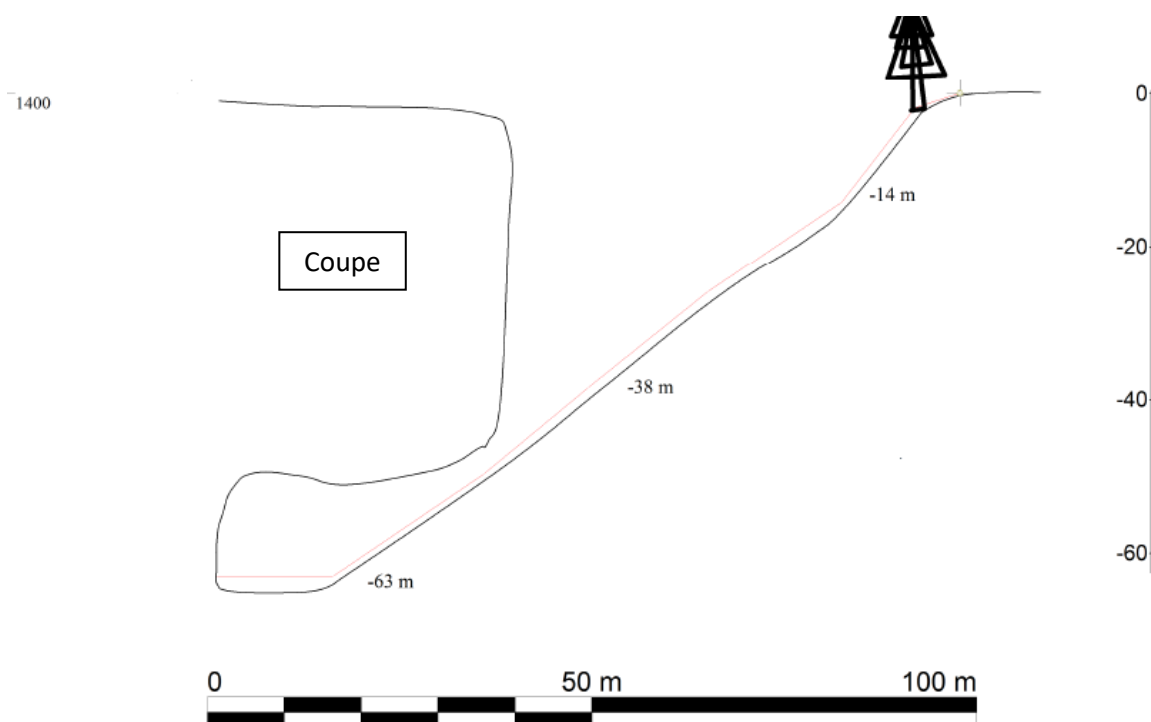
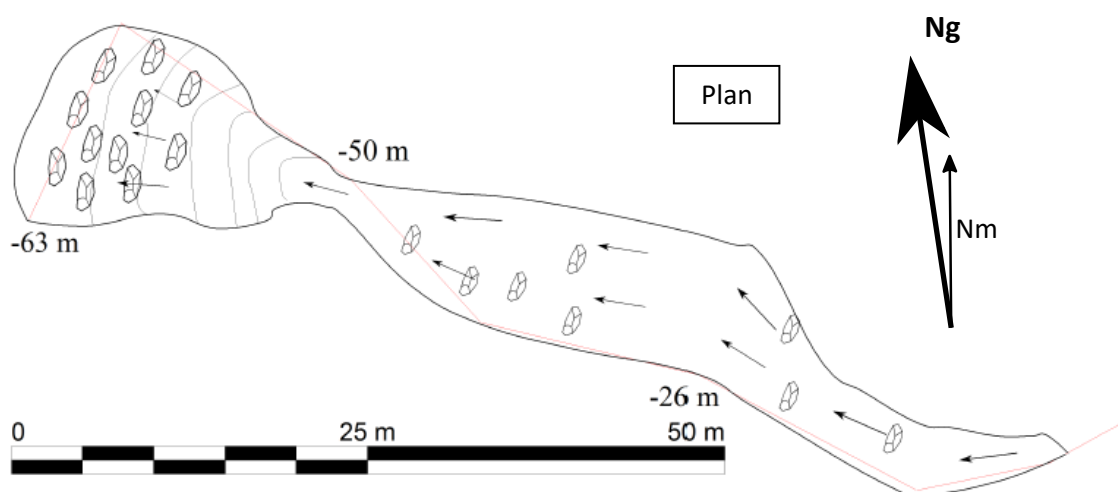
# RAE 004 Glacière de Skhvava სხვაჯას საყიბულე (Skhvavas sakinule)

Lieu-dit Udabnotske, villages de Shua Shkhvava et Zemo Shkhvava, municipalité d'Ambrolauri, région de Ratcha-Letchkhoumie et Basse Svanétie, Géorgie.

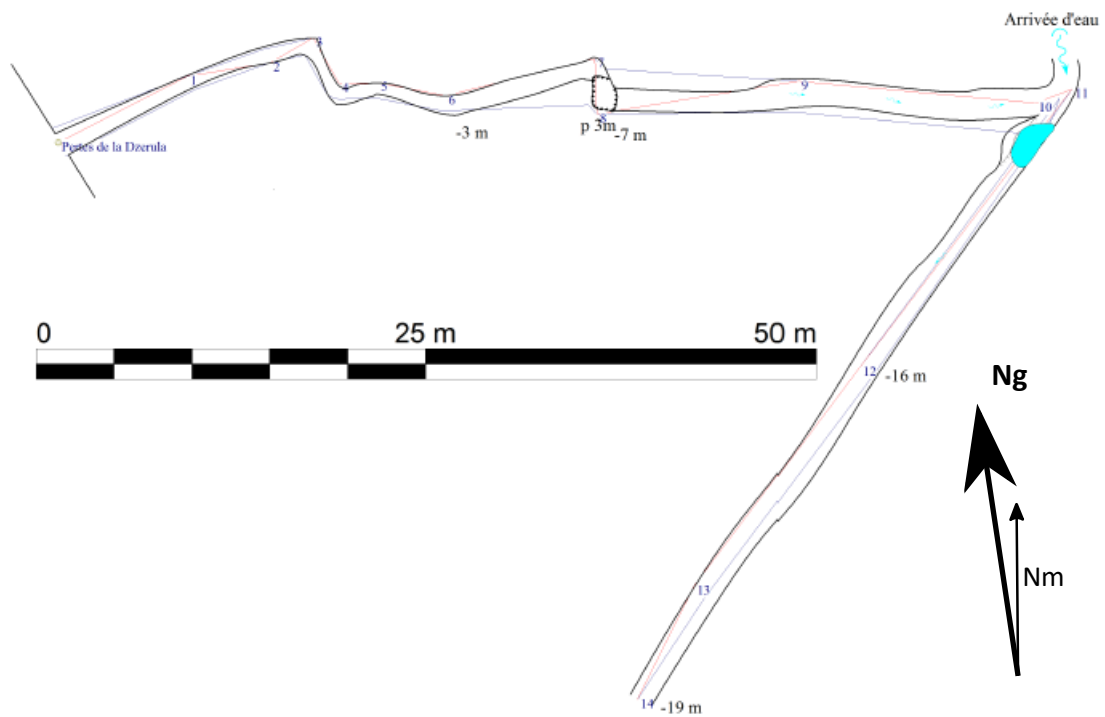
**Coordonnées :** 38 T - 356,252 E - 4704,306 N. 1400 m.

Nord magnétique dans le secteur Tkibuli au 15 juin 2018 : 6° 44,6' est

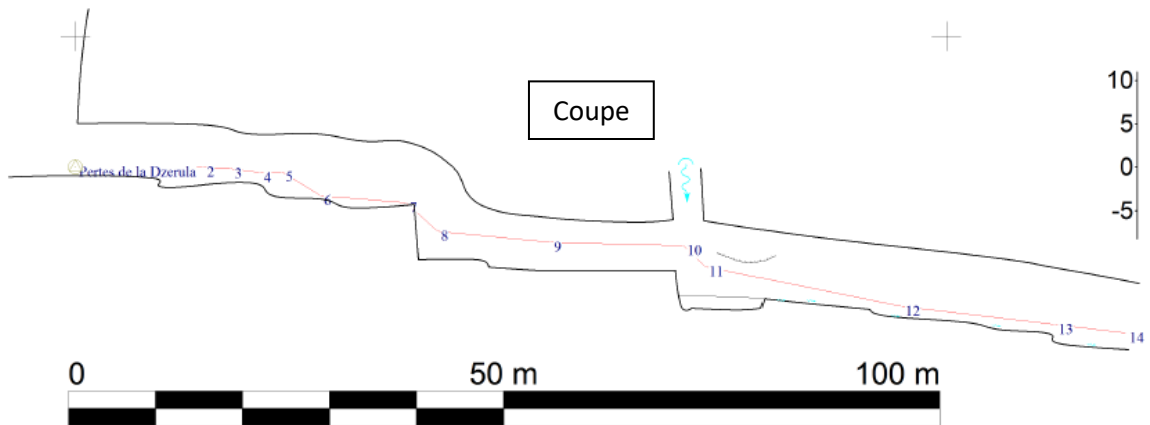
**Auteur :** expédition Racha 2018, Fédération française de spéléologie, 13 juin 2018



## Plan



## Coupe



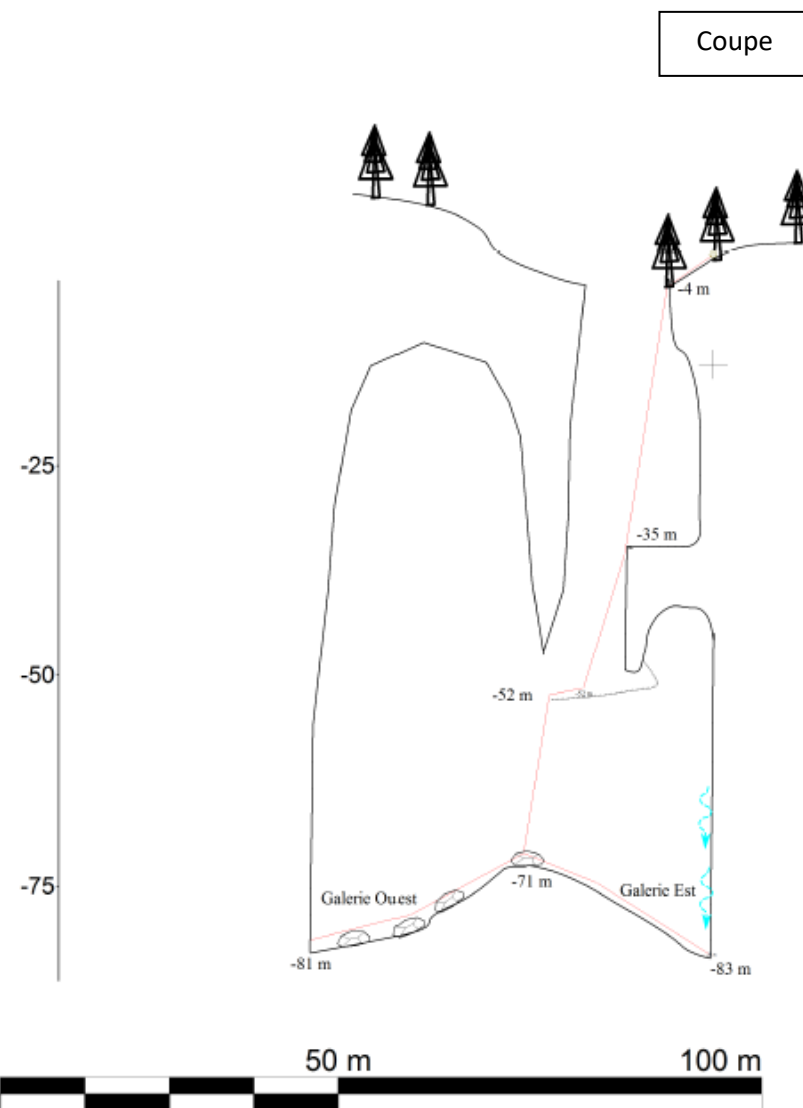
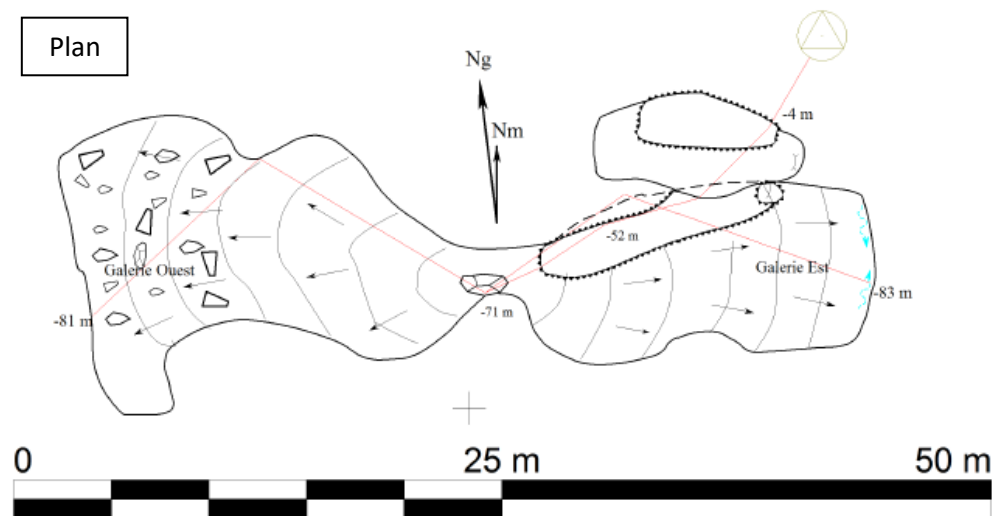
### TK 001 Pertes de la Dzevrula ძევერულა

Près du barrage du lac de Tkibuli, municipalité de Tkibuli, région d'Iméréthie, Géorgie.

**Coordonnées** : 38 T - 331,137 E - 4682,553 N. 485 m.

Nord magnétique dans le secteur Tkibuli au 15 juin 2018 :  
6° 44,6' est

**Auteur** : expédition Racha 2018, Fédération française de  
spéléologie, 19 juin 2018



## RAE 001 gouffre Sasule სასულე

Lieu-dit Tsiakhi, villages de Shua Shkhvava et Zemo Shkhvava, municipalité d'Ambrolauri, région de Ratcha-Letchkhoumie et Basse Svanétie, Géorgie.

**Coordonnées** : 38 T - 358,418 E - 4704,369 N. 1613 m.

Nord magnétique dans le secteur Tkibuli au 15 juin 2018 :

6° 44,6' est

**Auteur** : expédition Racha 2018, Fédération française de spéléologie,  
14 juin et 15 juin 2018

## RAW 001 Grotte de la falaise de Tskhrajvari

ცხრაჯვარი, Municipalité de Tkibuli

Coordonnées : 38 T - 334,073 E - 4694,862 N. Altitude : 1590 m.

Développement topographié : 460 m.

Auteur : Expédition Racha FFS 2018

Ng  
Nm  
Nord magnétique au  
15/06/2018 dans le secteur  
Tkibuli : 6°44,6' Est

10 50 100m

