

Peru 2018

Franco-Peruvian Caving Expedition in the north of Peru (Amazonas and San Martín regions)



Organization :

ECA Espeleo Club Andino de Lima (Peru),
GSBM Groupe Spéléologique de Bagnols-Marcoule,
Groupe spéléologique Vulcain and
Groupe spéléologique Les Dolomites (France).

From 11 august to 13 september 2018

2 – The Target



Our target is to explore and survey natural caves of karstic massifs in the north of Peru, mainly in the Amazonas and San Martín Regions.

3 – The Team



Jean Loup Guyot



Jean-Sébastien Moquet



Liz Hidalgo



Xavier Robert

4 – The Team



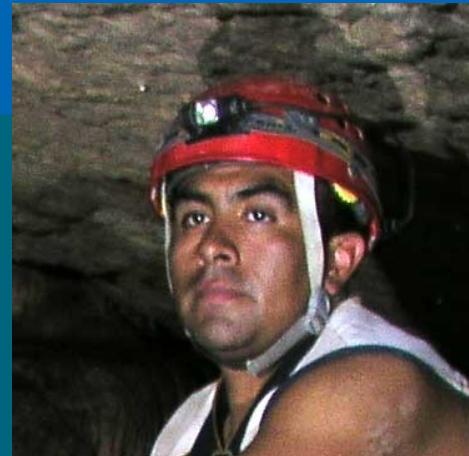
Constance Picque



Jhensen Quispe



Carlos Amasifuen



Hugo Salgado

5 – The Team



Araceli Torrejon



Patricio Reátegui



Patrice Baby



Carola Mick

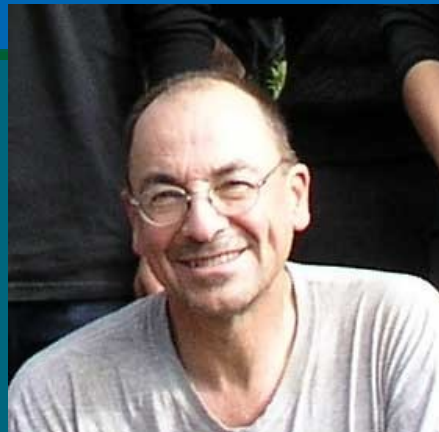
6 – The Team



Ana Rodriguez



Marc Pouilly



Jean-Yves Bigot



James Apaéstegui

7 – The Team



Angela Ampuero



Carol Romero



Sue Barreda



Manuel Quispe

8 – Chachapoyas



Everybody knows the meeting place:
Chachapoyas (Amazonas, Peru).

9 – Chachapoyas University



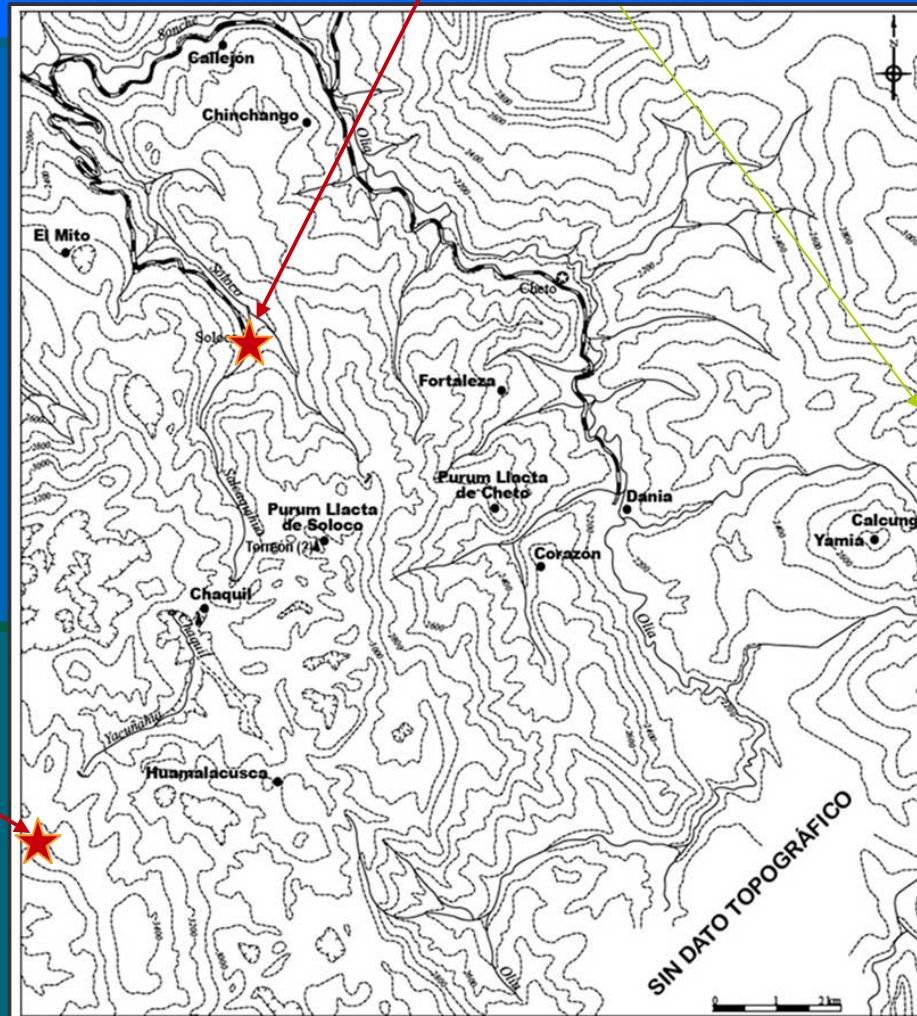
13-8-2018

The cars are full and we have to leave a part of our equipment in the Chachapoyas University, and also in Carlos Amasifuen home.

10 – From Soloco to Ancayrrumo

We have to go from Chachapoyas to Soloco by car and after we have to walk until Ancayrrumo.

Soloco



Soloco

Ancayrrum

o



11 – From Soloco to Ancayrrumo

The meeting place in Soloco is Manuel Rojas home.



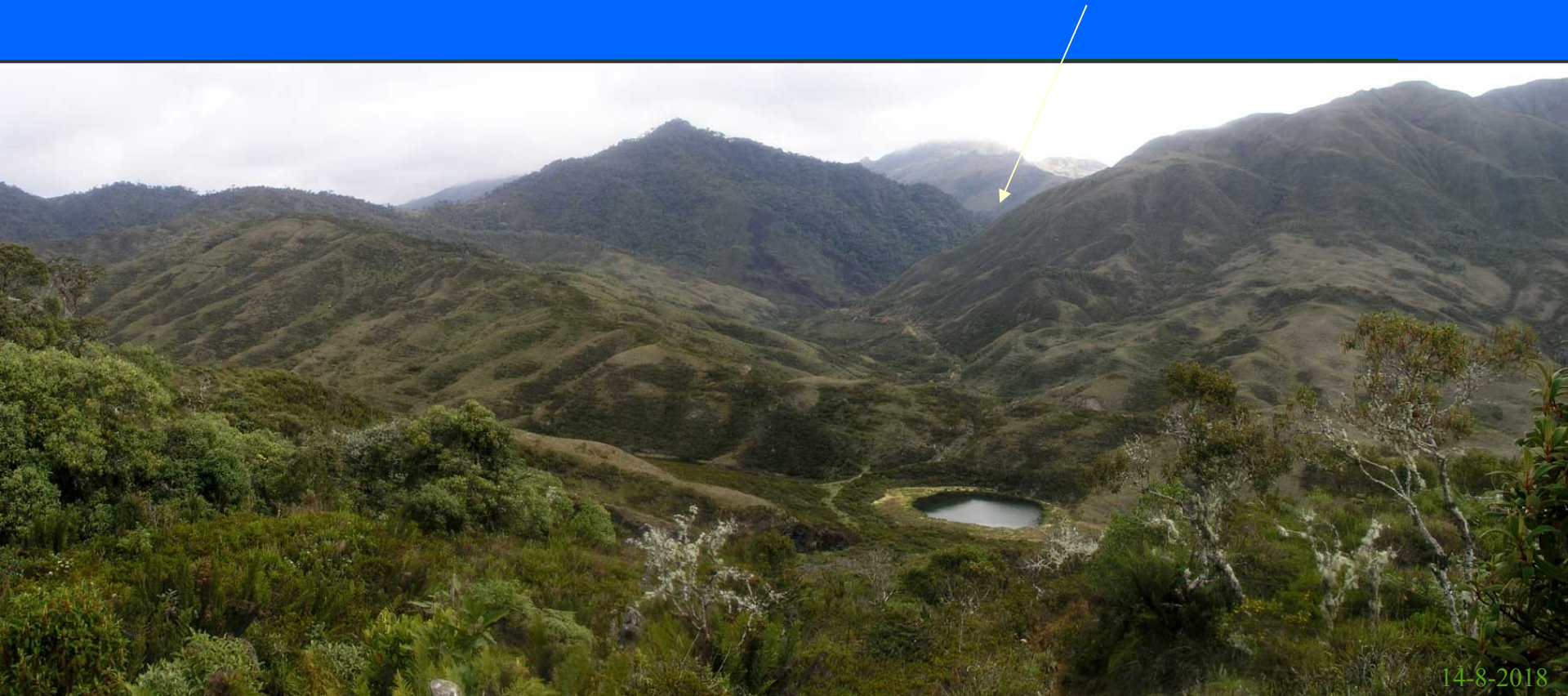
14-8-2018



We need eight mules in order to carry our equipment until Ancayrrumo Camp.

12 – Higher than Chaquil

Ancayrrumo

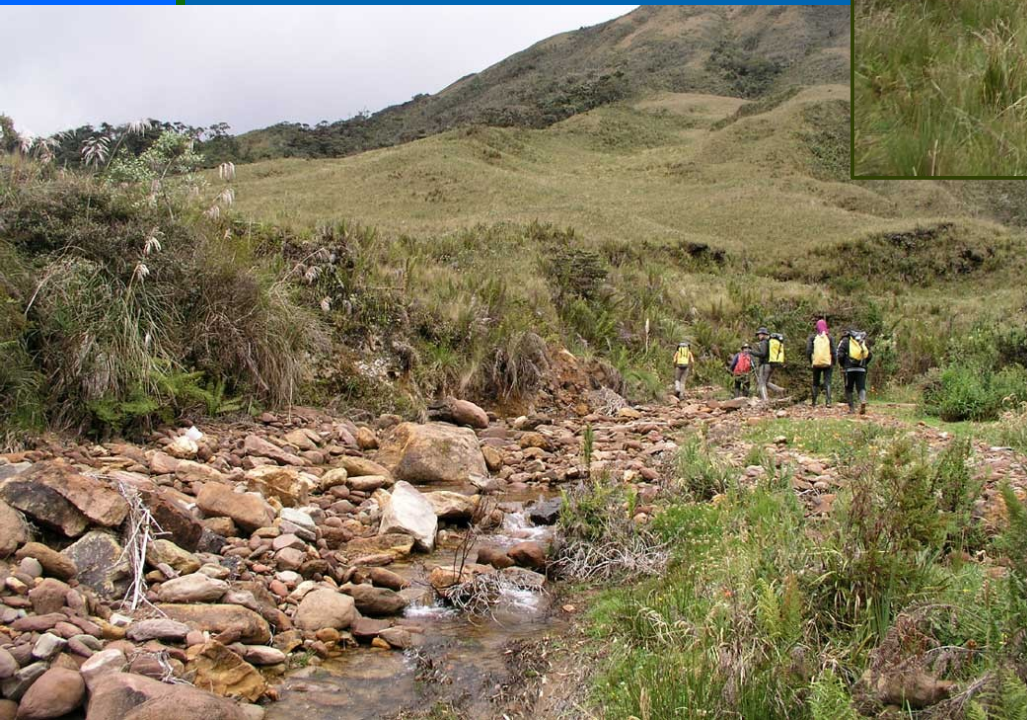


14-8-2018

The Ancayrrumo Camp is located on the over side of Chaquil Lakes,
We have to walk a longtime for arrive to 3080 m high.

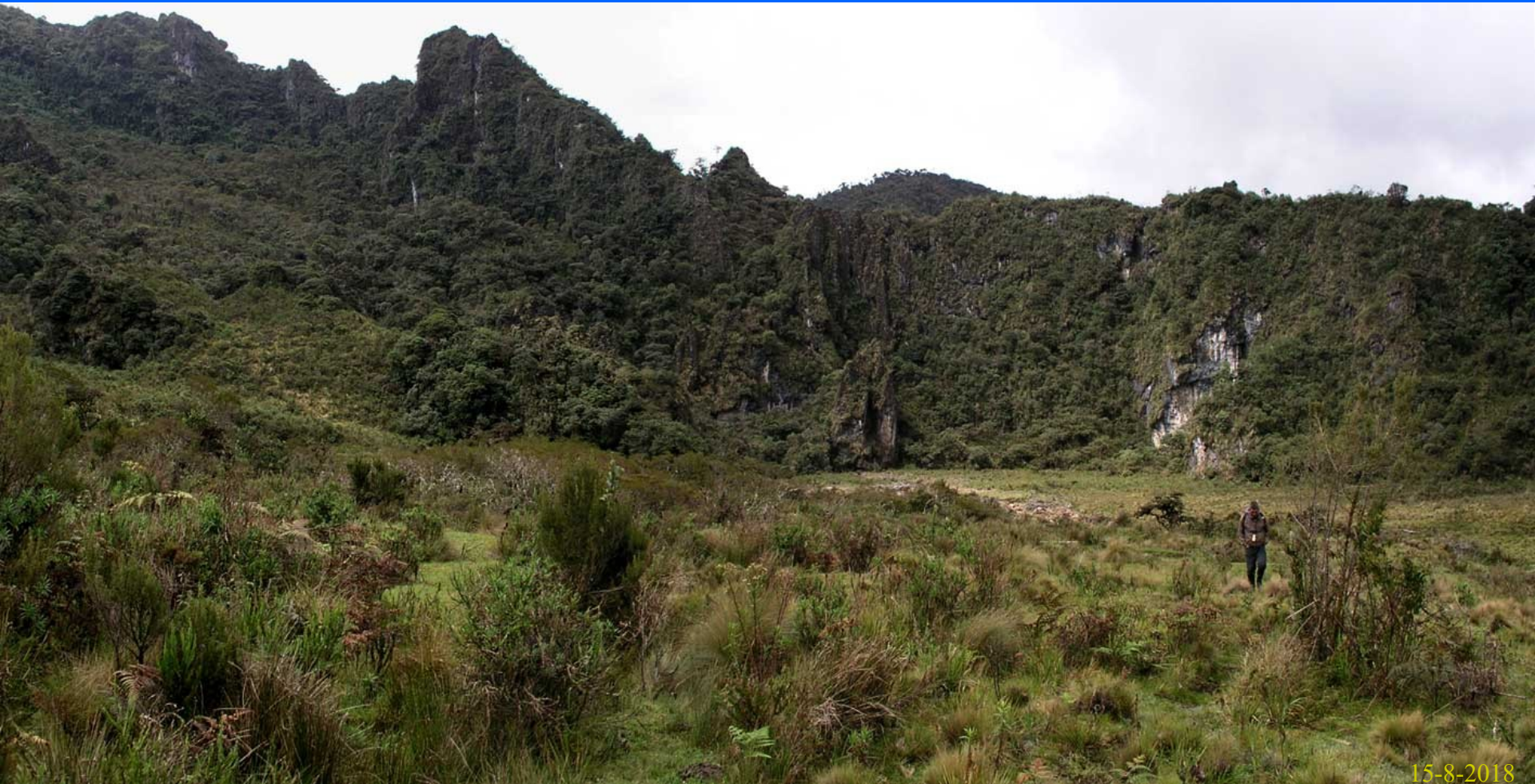
13 – Exploration

First of all, we have to explore the surroundings and to have a look in the caves noticed on the satellite pictures.



During this day of exploration, we understand that we'll cannot carry out the target, because the target is out of range and too far for us.

14 – Los Palacios



15-8-2018

The depression of los Palacios (written down X7) is impressive, but without continuation.

15 – Sandstone- Limestone limit

Sandstone



Limestone



We follow the sandstone-limestone limit because we hope to find sinkholes and caves.

In our heads, we imagine that the caves are opened and we could explore easily the head of the networks...

But it was a dream...

16 – Rain day

No chance, with
a bad weather all
the day...



16-8-2018



The Ancayrrumo Camp (shack
covered by corrugated iron) is
very comfortable for cooking and
to store the equipment.

17 – Too much water in the rivers

We won't stay at home all day long and we organized a « sample day » in the rivers around the camp.



Liz Hidalgo and Jean-Sébastien Moquet are the leaders of this action.

The assessment is not good:
only three little caves explored.

18 – Paltry Returns...

Tragadero de
Ancayrrumo

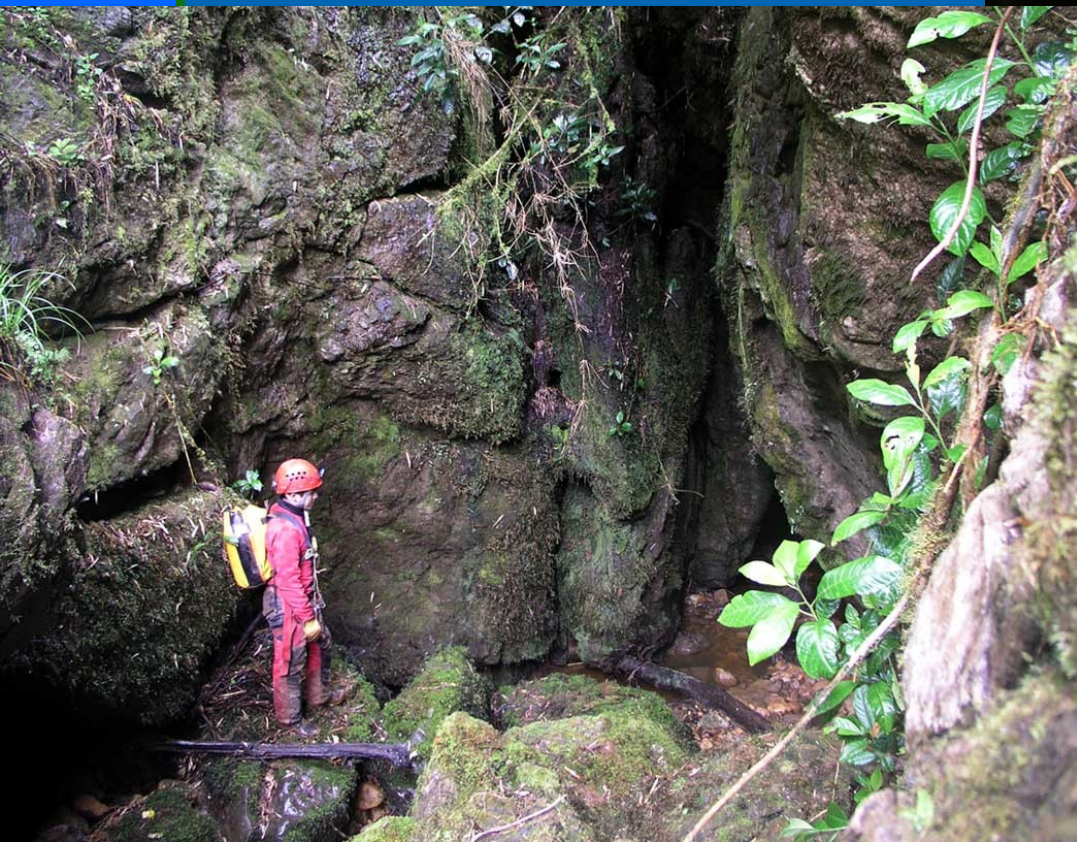
Tragadero de
la Calavera

Cueva del
Refugio



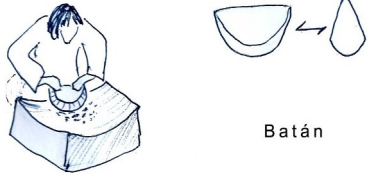
19 – Tragadero de Ancayrrumo

The Ancayrrumo Tragadero (X6),
flowed into the Río Yacuñahui Spring
(= Río Chaquil Spring), closed by blocks...

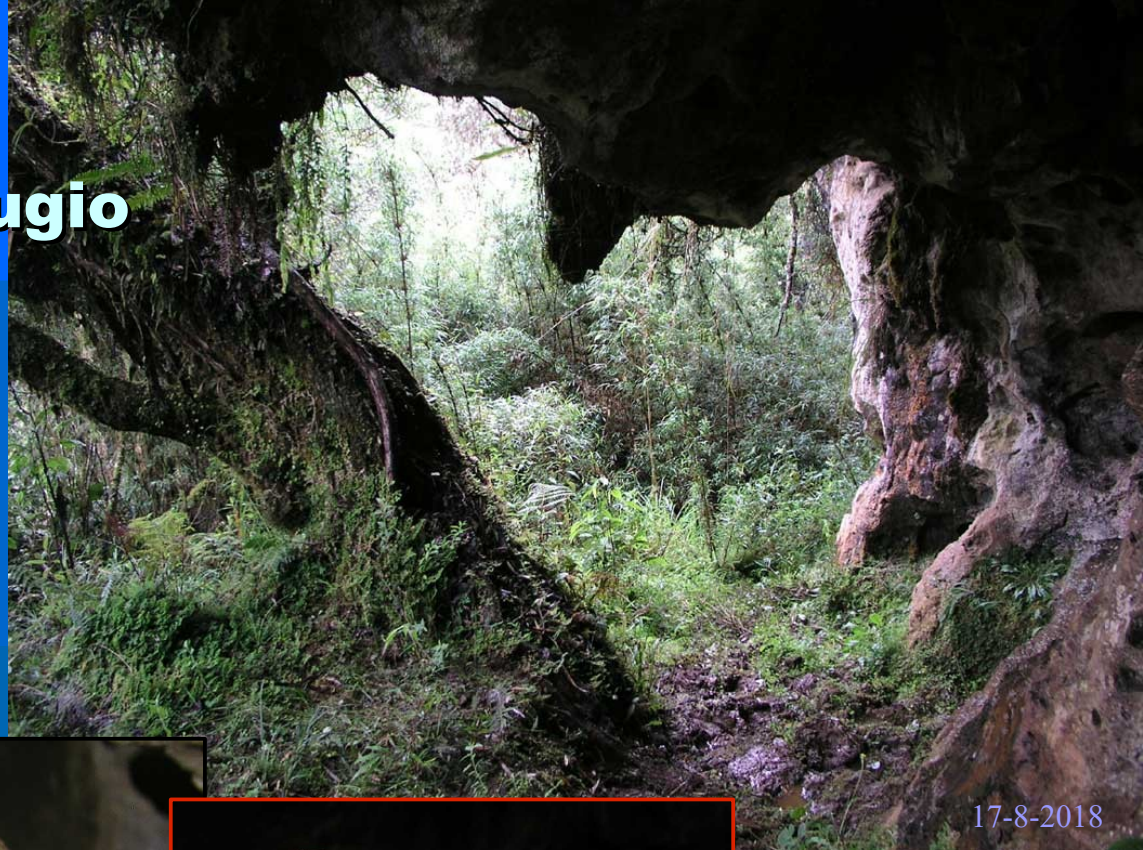


20 – Cueva del Refugio

Some archeological vestige has been found in the little shelter, like batán's storehouse (sort of millstone) made of sandstone (tool traces). These tools have never been used.



Batán



17-8-2018



Others objects from Chachapoyas everyday life were discovered

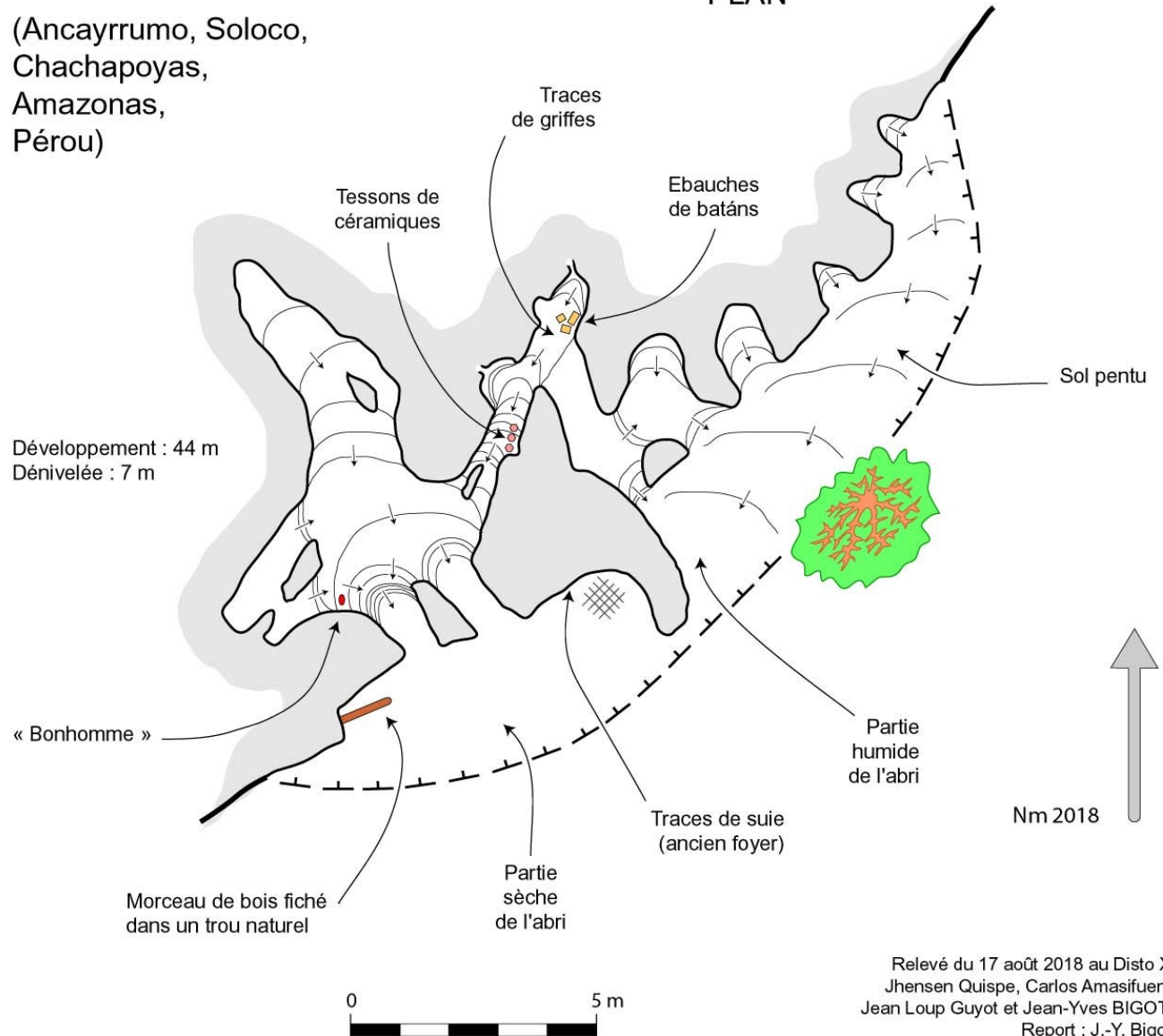
like a toy: terracotta man.

21 – Cueva del Refugio

CUEVA DEL REFUGIO

(Ancayrrumo, Soloco, Chachapoyas, Amazonas, Pérou)

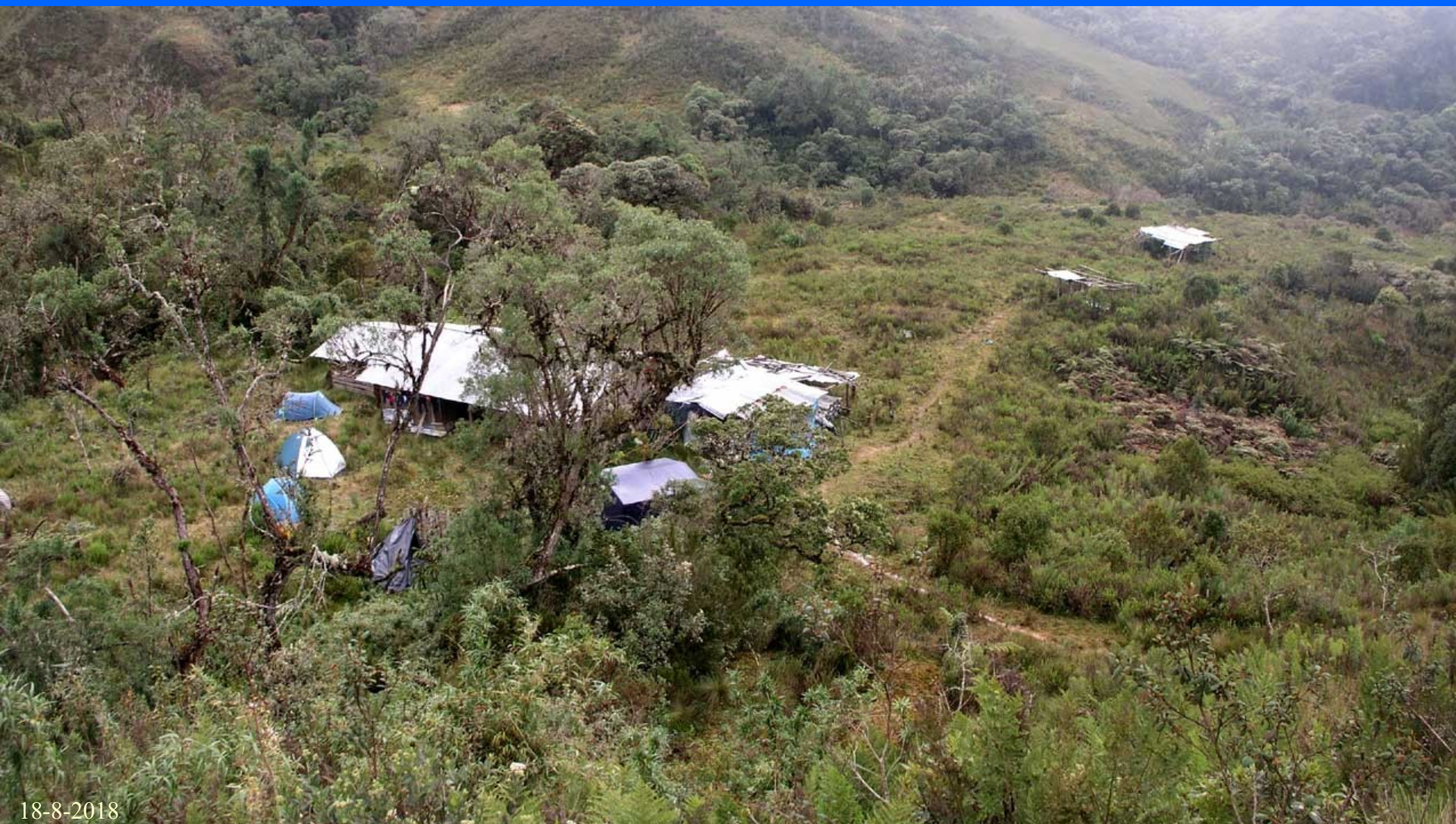
PLAN



Survey of Cueva del Refugio.

22 – Ancayrrumo

Our camp of Ancayrrumo is based near construction huts built for water supply. These project of water supply has been abandoned and for us, these corrugated huts are a boon.



23 – Reconnaissance of X5 Tragadero

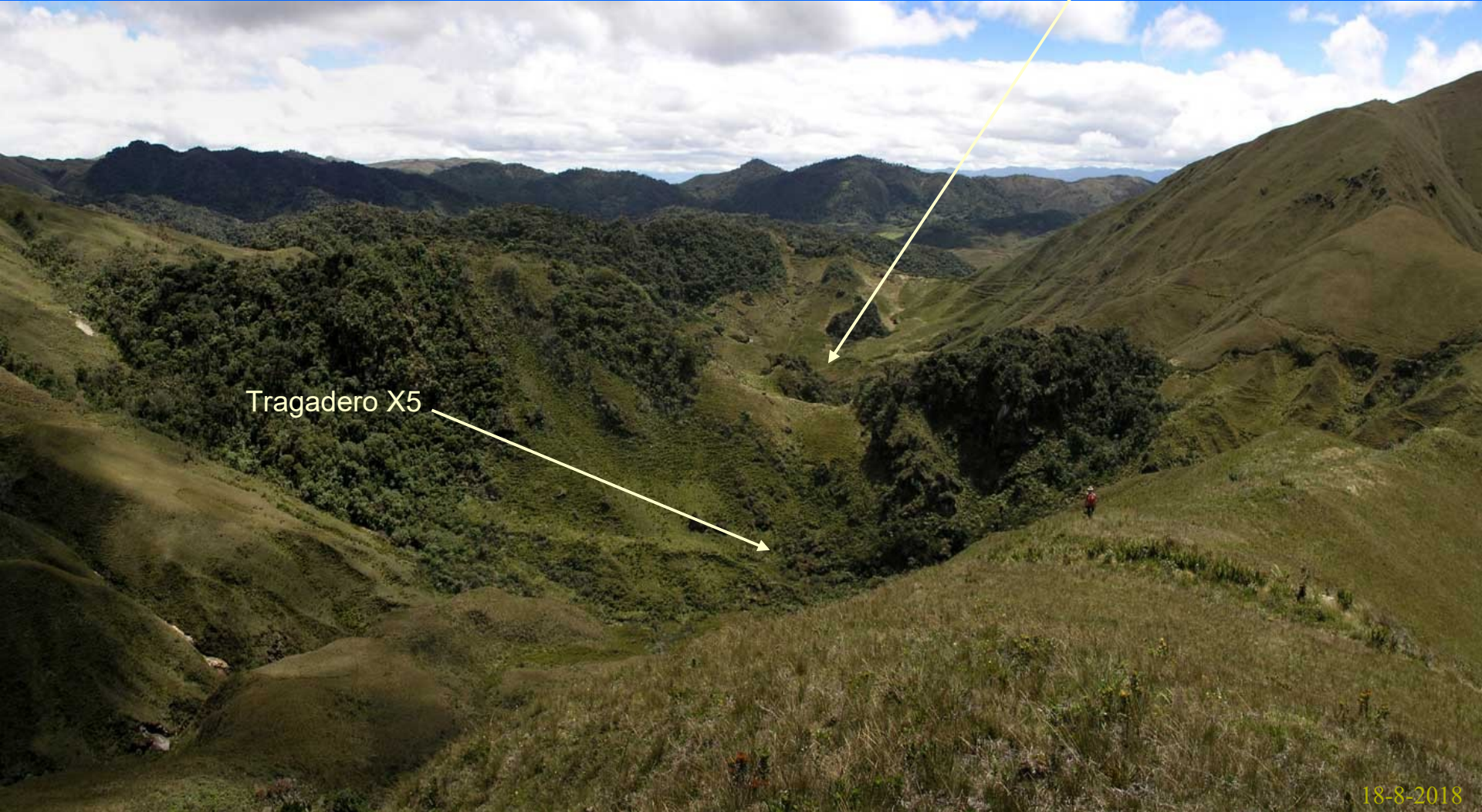


Jean-Sébastien Moquet, Constance Picque, Jean Loup Guyot and Jean-Yves Bigot decide to go and see the X5 Tragadero within walking distance. The others stay near the camp for continue to explore holes and tragaderos.

24 – The Tragaderos X5 & X15

Tragadero X15

Tragadero X5



18-8-2018

The river disappears in an enormous depression (X5), behind it we can see the Tragadero X15.

25 – Tragadero X15



Tragadero X15

The exploration of tragaderos X5 and X15 leads to nothing. They are entirely full of filling, but the landscapes are really beautiful.

26 – The Ancayrrumo Base Camp

Ancayrrumo
(camp)



After a long time of walking, we are happy to get back together around a good bottle.

The Ancayrrumo team all together.

27 – The Team

Xavier
Robert

Hugo
Salgado

Jean-
Sébastien
Moquet

Jean Loup
Guyot

Constance
Picque

Jhensen
Quispe

Liz
Hidalgo

Carlos
Amasifuen

Nelly
Rojas

Eida
Barbales

Jean-Yves
Bigot

28 – The Black Hole



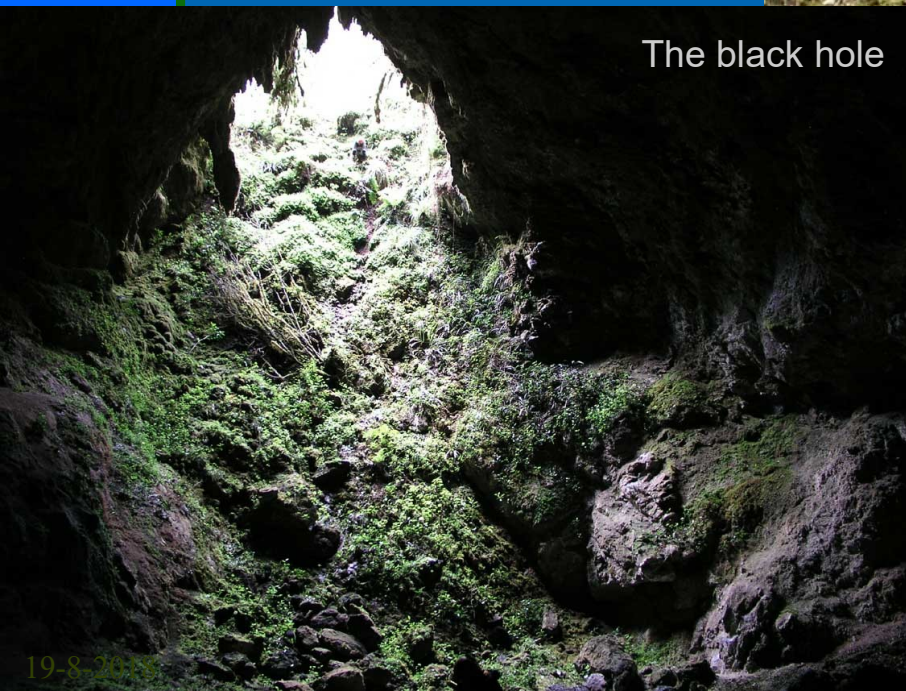
19-8-2018



Hugo Salgado, a mexicain speleologist, incorporates the team. With Xavier and Jean-Yves, they go to explore on the other side of great polje of Palacios. After the col (path), some caves appear on the horizon...

29 – The Zorro's lair

No chance, the black hole is only a big gap without continuation. Just above, a large shelter is a lair of animal: « zorro » (the fox in spanish language).



The black hole



30 – Axe Hole

At the bottom of Axe Hole, we found a curious thing. There is a carved stone like a axe.

19-8-2018



Of course, this zone is very interesting, but we have to go tomorrow.

After a long week in the base camp in the difficult conditions, we hope to take a hide...

31 – Samples

We go down to Soloco and Jean-Sébastien Moquet samples in the rivers.



In the Río Sonche Valley, the Río Soloco Resurgence is in flood and worthy of interest.

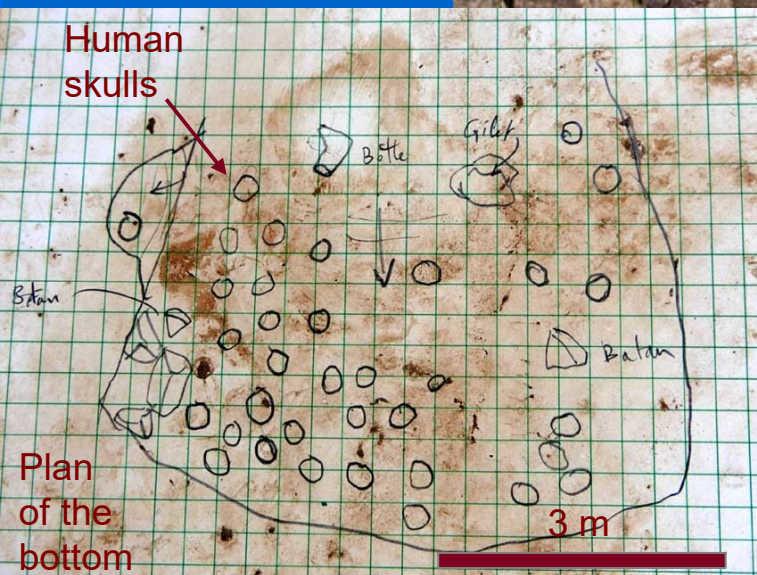
32 – Pozo del Torreón

Before our leaving, we
will go down in the Pozo
del Torreón...



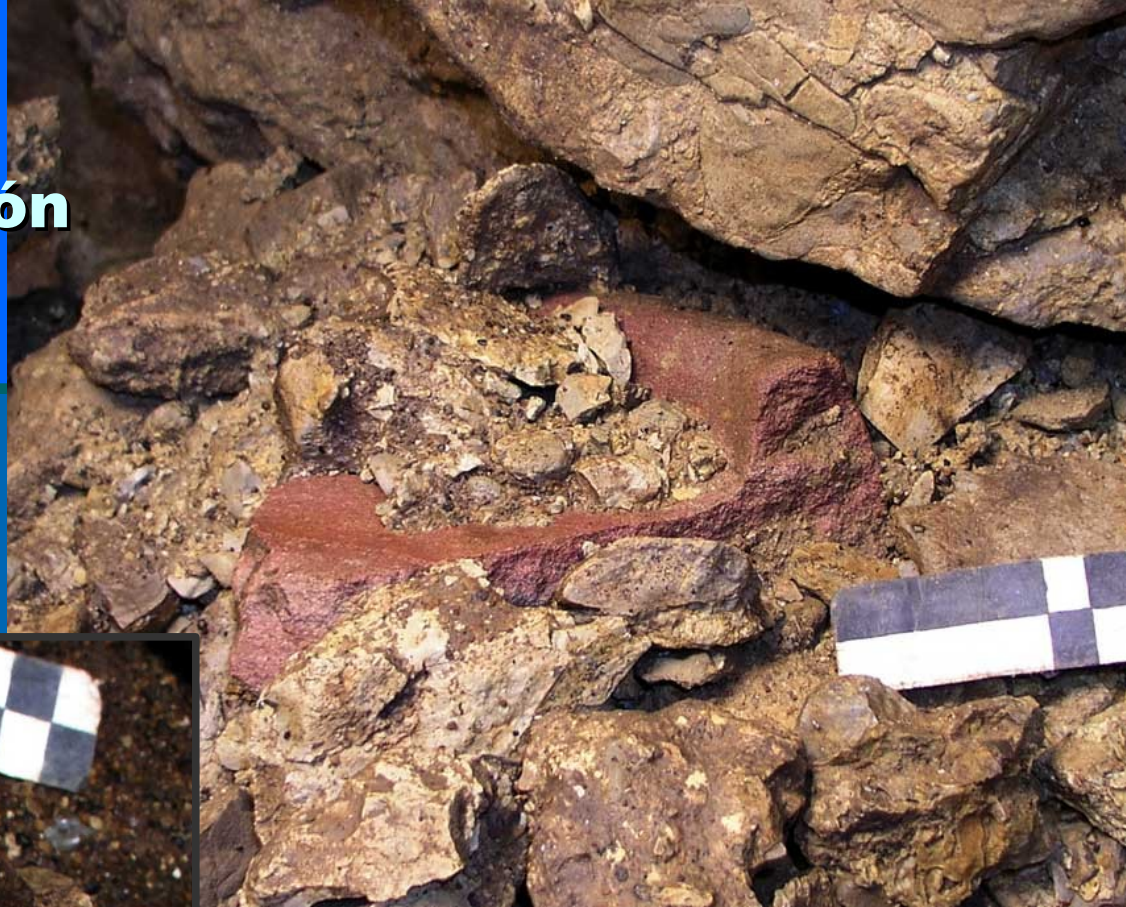
33 – Pozo del Torreón

At the bottom of pit, about 30 to 40 m deep, we find around thirty human skulls. These men had been thrown by the top of pit located at the foot chachapoyas tower called: « El Torreón ».



34 – Pozo del Torreón

In addition, there are fragments of batán and a mustelidae skull...



21-8-2018



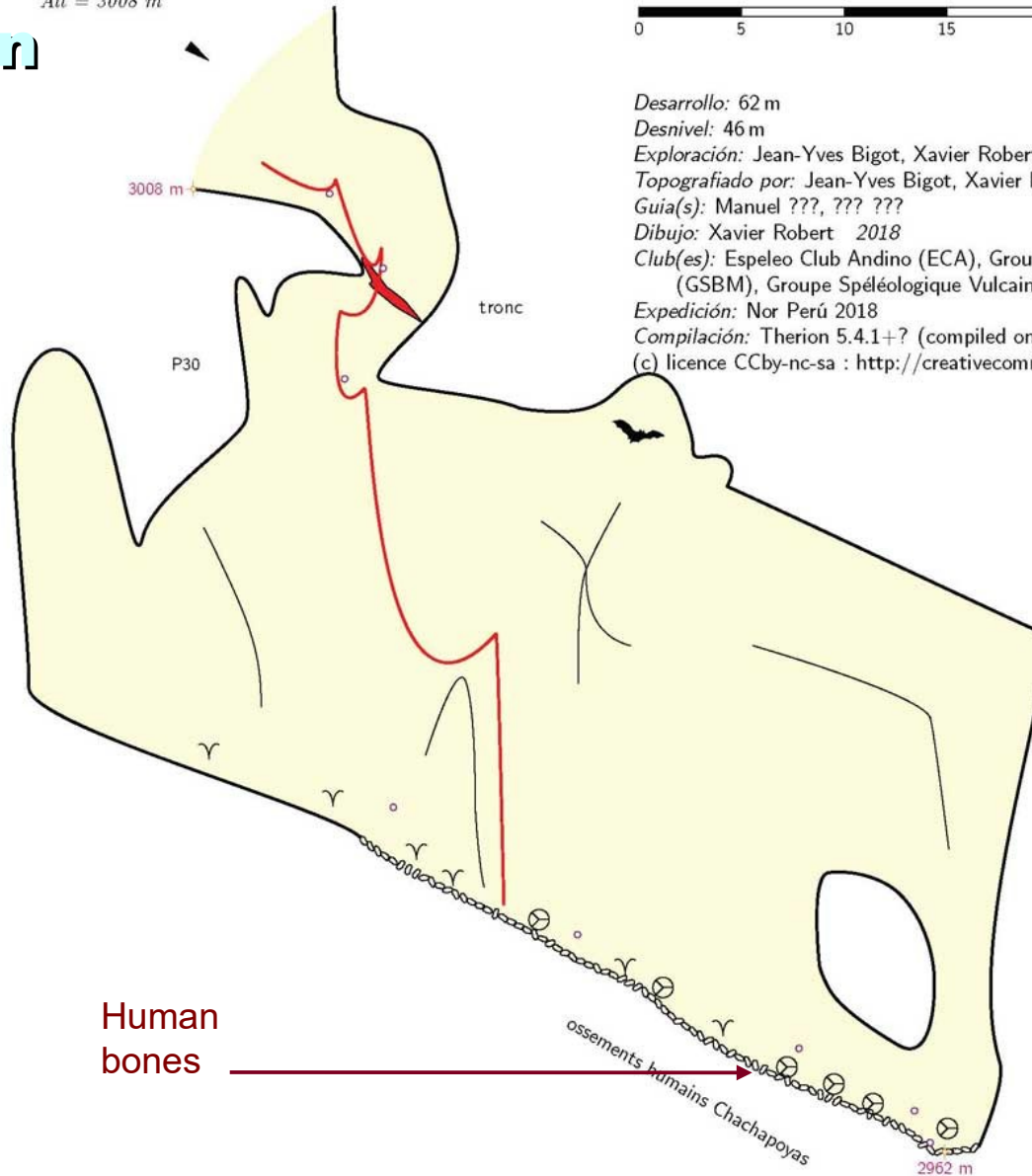
... That the Chachapoyas could domesticate.

35 – Pozo del Torreón

Pozo del Torreón

Alzado, Soloco, Chachapoyas, Amazonas, Perú

Lat : -6.288594
Long : -77.741208
Alt = 3008 m



Desarrollo: 62 m

Desnivel: 46 m

Exploración: Jean-Yves Bigot, Xavier Robert, Hugo Salgado 2018

Topografiado por: Jean-Yves Bigot, Xavier Robert, Hugo Salgado 2018

Guia(s): Manuel ???, ??? ???

Dibujo: Xavier Robert 2018

Club(es): Espeleo Club Andino (ECA), Groupe Spéléologique de Bagnols Marcoule (GSBM), Groupe Spéléologique Vulcain, Asociación de Montañismo UNAM

Expedición: Nor Perú 2018

Compilación: Therion 5.4.1+? (compiled on 2018-12-07) el 10.12.2018

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Cross-section
of Pozo del
Torreón.

Human
bones

ossements humains Chachapoyas

2962 m

36 – Bagua Grande



After this failure in Soloco (Ancayrumo), we decide to try another reconnaissance in Bagua Grande...

37 – Bagua Grande

A new recently map of the Amazonas Region reveals us many caves indicated as tourist attractions.



23-8-2018

Xavier Robert

Eufemio Ilatoma Sanchez

In Copallín, north of Bagua Grande, we meet the authorities.

38 – Caverna de la Palma

In Palo Grande, the Cueva de la Palma is indicated, but we have no guide.



It's occupied by many bats; and the cave is full of garbage...

39 – Bats

Many of species of bats find shelter in this cave. Some one eat fruits and another one blood. The vampire bats produce liquid guano of blood color.



40 – Constructions



23-8-2018

The Palma Cave used by Prehispanic populations;
A huge rock stairs (on the right) has been built.

41 – Cuevas de Montalvo

In afternoon, we find a nice guide, Edil Montalvo; we can see three little caves located in his property.



Araceli
Torrejon

Constance
Picque

Edil
Montalvo

Xavier
Robert

Hugo
Salgado

Part of the team
in the Cueva de
Montalvo n° 2.

43 – Terrace Constructions

The ground of caves isn't natural ?
Too flat, too easy to walk !
There are terrace constructions built of
big blocks holding the soil.



In the Cueva de Montalvo
n° 2, there is a terrace
made of two big blocks.
Of course, there is not a
natural fact.

44 – Curious Composition

Block



In the Cueva de Montalvo n° 3, a stone block in a barrier of stalagmites has been added and is covered by the calcite.

45 – Cuevas de Montalvo



The Montalvo Caves had been formed in the Cretaceous limestones. The dip of layers is visible at the roof of gallery.

Xavier Robert suggests changing of
massif and we recognize the other side
in the south of Bagua Grande.

46 – La Union Alta

Cueva de la Union Alta



24-8-2018

Crossing a few villages of Miraflores and Perlamayo, a couple
of farmers (Ismael Diaz and Naysi Chamaya) indicates us a
little cave in a bush: la Cueva de la Union Alta.

47 – La Union Alta



The interest of the Union Alta Cave is archeological, but there is no continuation.



But we have sure that it exists in this karstic landscape (dolines, depressions, etc.) many caves...

48 – Perlamayo



Come back to Perlamayo, where somebody speaks about of cave and white fishes... But we have to pay him 20 soles !

49 – Tragadero de la Lechuza



A woman guides us to the entrance of cave and she said : « It's there ! ».
But we have to open a path into the rainforest.
After 20 m long in the vegetation, we arrive in front of a big entrance guarded by a owl.
We named this cave: Tragadero de la Lechuza, but it's known: Caverna Olaya.



50 – Caverna Olaya



There is a little stream, populated by white fishes.



51 – Caverna Olaya

The blind fishes show the adaptation of these species in the underground environment. The karst of South Bagua seemed especially interesting for its biological potential.



24-8-2018



The cave had been explored without problem to 915 m long and 115 m deep. And it's not finished.

52 – Caverna Olaya

At the bottom, the roofs are very high and the ground is full of blocks.



Araceli Torrejon poses in front of the guano bats. These bats eating fruits, and the seeds are germinating.

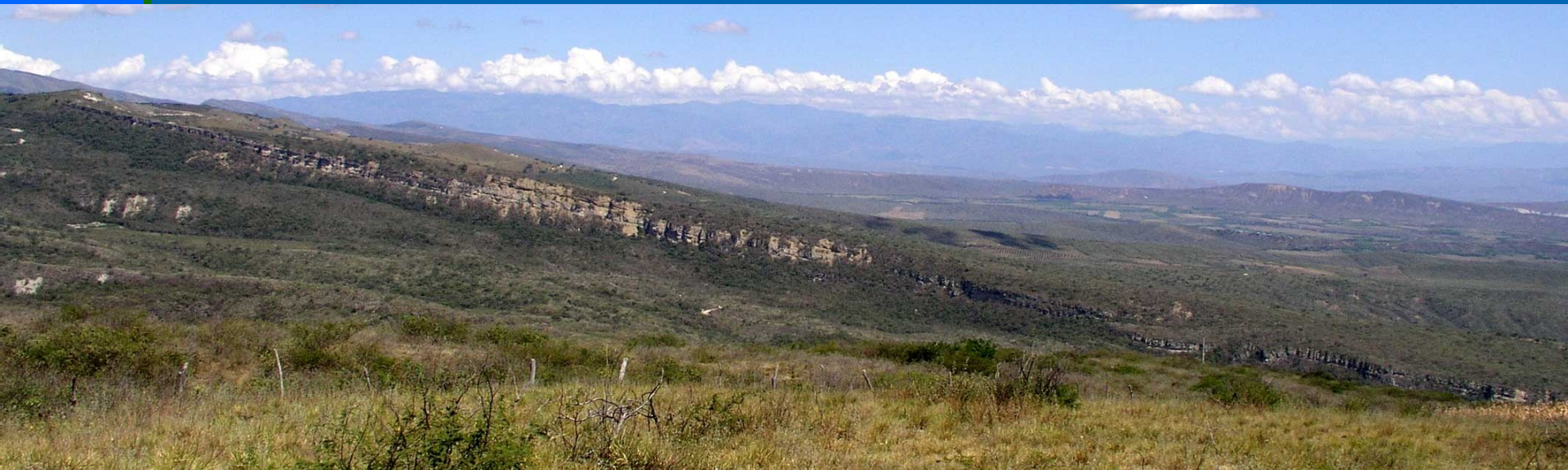
53 – Caverna Olaya



54 – South Bagua

25-8-2018

The karstic massif located in the south of Bagua Grande is very singular. The layers of cretaceous limestones are tilted. The upper parts of this monocline reach 2000 m high (towers karst) and are covered of the rainforest cutting by the colonists.



The structure of limestones allows the development of many caves in the dip. Today, we know none resurgence in this region...

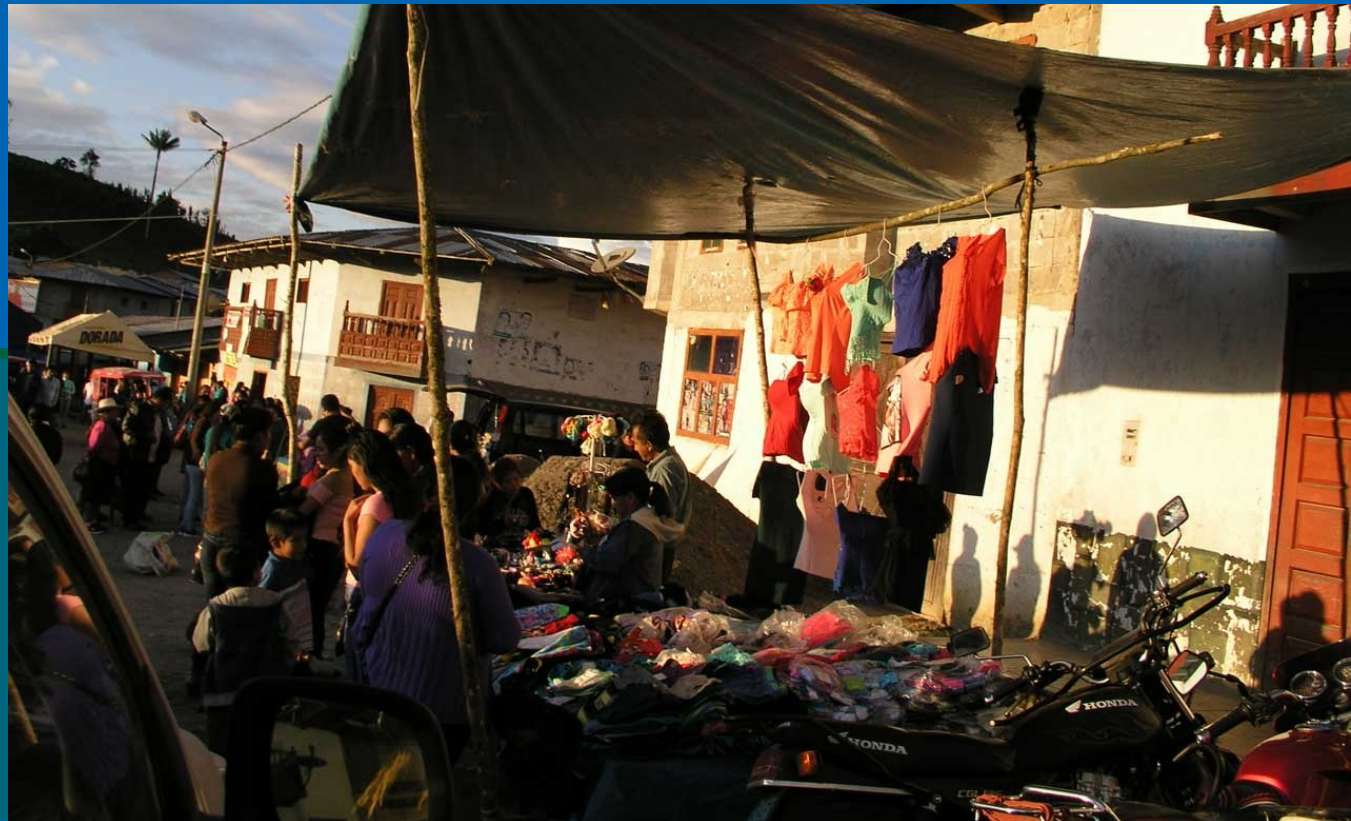
55 – Campo Alegre

Eglise de Alto Peru.

25-8-2018

In Campo Alegre, it's the feast of patron saint and all of farmers are there...

There is no body in the mountain !
But we find a few caves without guides in Nueva Holanda, near Rosa Pampa.



56 – Nueva Holanda

The Cueva del Ica is easy to visit and there are many archeological remains, but devastated (444 m long; -35 m deep).



Entrance of Cueva del Inca.

25-8-2018



Pozos de Nueva Holanda.

Near the cave, there are two pits: los Pozos de Nueva Holanda (101 m long ; -44 m deep).

57 – Pozos de Nueva Holanda

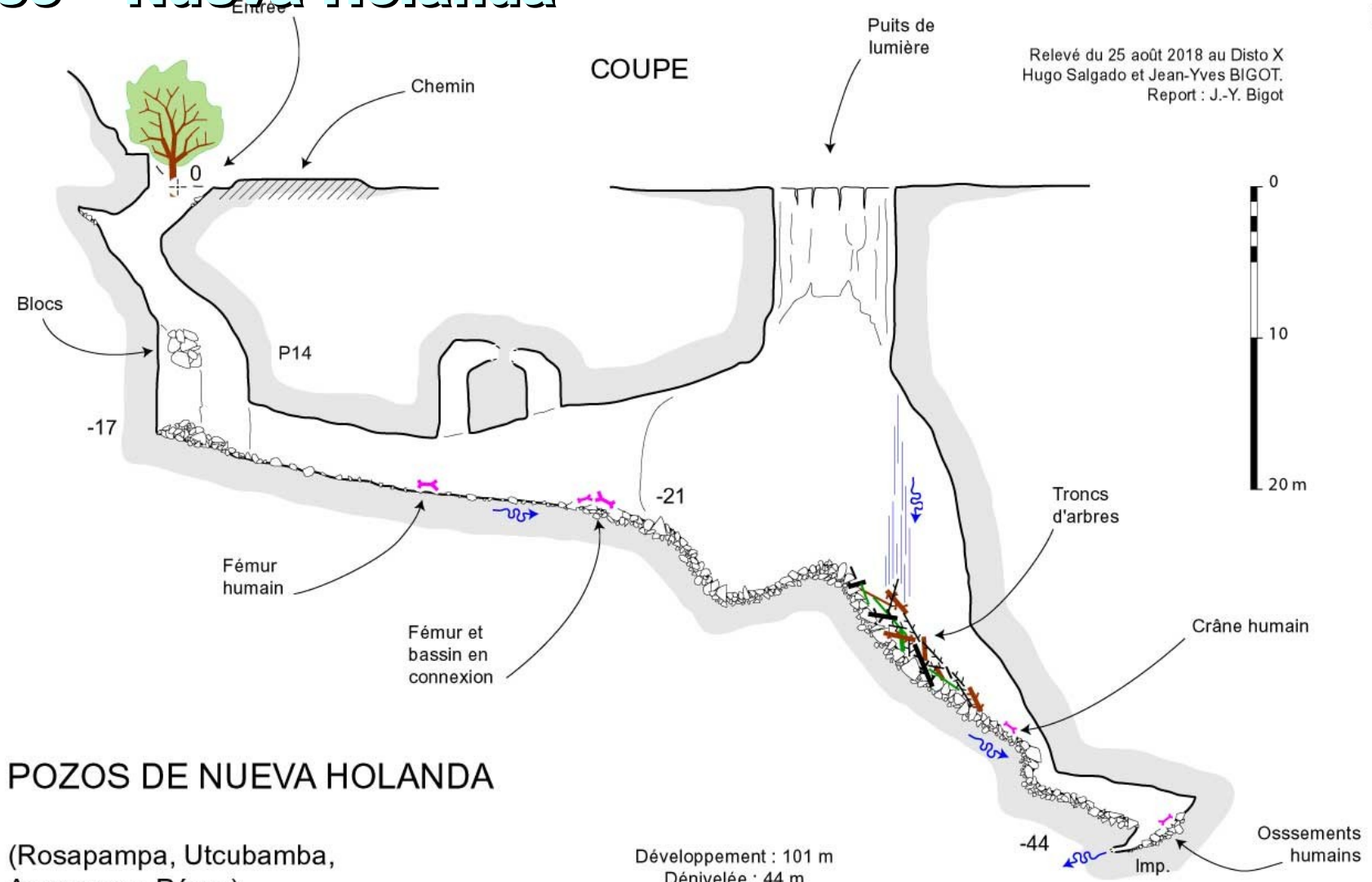
There are many bones on the ground, may be in anatomical connexion (thigh bone-iliac). Probably, men had been sacrificed like the Chachapoya Culture.



58 – Pozos de Nueva Holanda



59 - Nueva Holanda



POZOS DE NUEVA HOLANDA

(Rosapampa, Utcubamba, Amazonas, Pérou)

Développement : 101 m
Dénivelée : 44 m

60 – Have a breather

The suffocating heat in Bagua Grande is tolerable with the comfort of the *Rio Hotel*.

25-8-2018

Jean Loup
Guyot

Hugo
Salgado

Araceli
Torrejon

Carola
Mick

Constance
Picque

Xavier
Robert

Jean-
Sébastien
Moquet



61 – Tres Naranjas

Guided by Abundio Sanchez Delgado living in Rosa Pampa Village, we can recognize Tres Naranjas zone, near the Cerro Shipago high point about 2850 m of altitude.

At this height, the temperature is low and the clouds wrap the towers karst. The caves are located in the lower part of towers.



62 – Tres Naranjas



The third cave of Tres Naranjas
is a very good surprise.

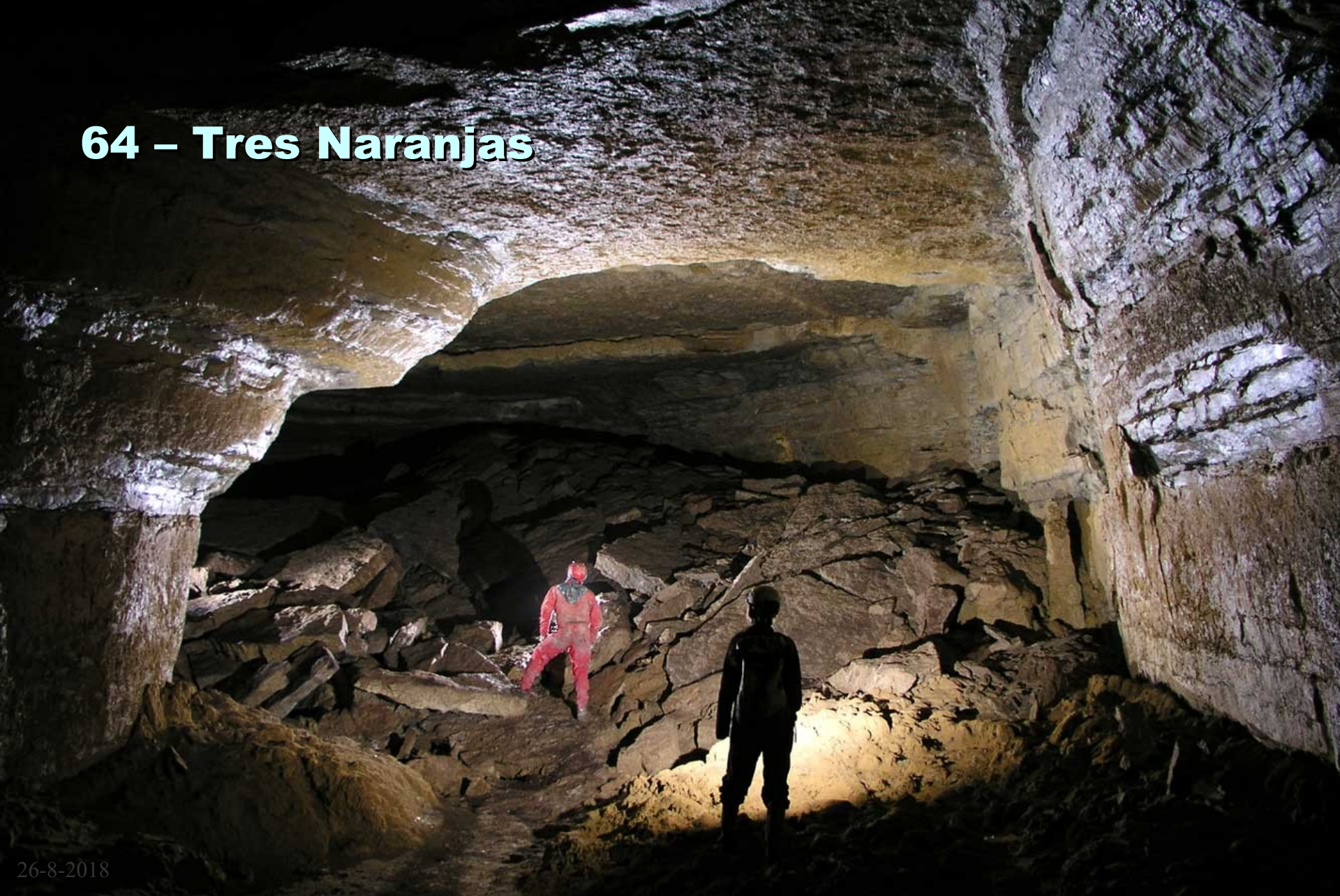
63 – Tres Naranjas

The entrance of cave n° 3 is wide and big blocks seemed huge stairs.



Xavier Robert looks for continuations. Without tools, he begins a work site near « La Puerta »: the target is to enlarge a narrow passage.

64 – Tres Naranjas



26-8-2018

This cave is 389 m long and the benefit of « The Gate » digging is 15 m long...

65 – Tres Naranjas



It's very astonishing to find horizontal caves at this altitude (2761 m). Necessary, there is a base level around this height.

But, we are on the top of this mountain. The uplift of the Andes mountains could be an explanation.



66 – Tres Naranjas

Surveying, Xavier Robert has found a strange building, seemed a chair of stones.



26-8-2018



It's a stone chest. Inside, different bones had been left: skull and long bones. This chest is a secondary grave sacked and the skull is fallen. However, the pillage is old.

67 – Tres Naranjas

Initially, the flat stones were on the top of the building, but they had been removed and put on the left side.

68 – 2nd Karst International Symposium



27-8-2018



The celebration of 2nd Karst International Symposium take place in the great auditorium of the National Toribio Rodriguez of Mendoza University (UNTRM) located in Chachapoyas City (Amazonas).

69 – Chachapoyas



27-8-2018

Pedestrian street in Chachapoyas City (Amazonas) viewed from the Puma Urco Hotel.

70 – 2nd Karst International Symposium

28-8-2018

Chachapoyas University Campus.

The talks take place during three days in the National Toribio Rodriguez of Mendoza University (UNTRM).

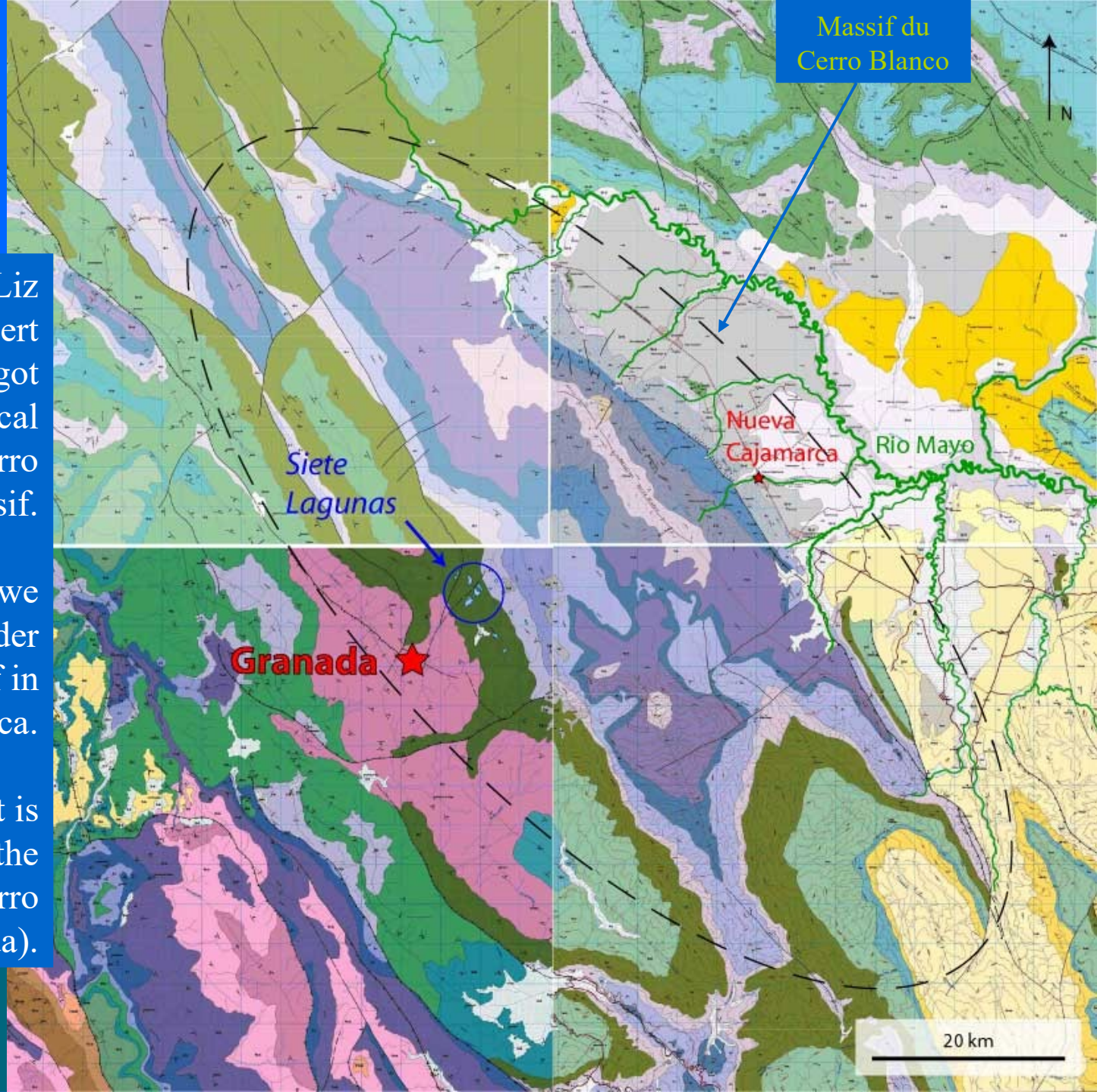


71 – Cerro Blanco

Patrice Baby, Liz Hidalgo, Xavier Robert and Jean-Yves Bigot attempt the geological transect in the Cerro Blanco Massif.

For many years, we explore the eastern border of Alto Mayo Massif in Nueva Cajamarca.

But today, the target is the reconnaissance of the western slope in the Cerro Blanco Massif (Granada).



72 – Granada



30-8-2018

In Granada, we take the time to visit the village. Many things are been found all around ; the interest is archeological and geological.



73 – Granada

The daughter of our guide, Dario Labajos Conila, shows us « maoshán », the mountain papaya (*Vasconcellea pubescens*).



74 – Granada

In this place, all of things remind the presence of Chachapoyas people. Everywhere, there are many archeological remains.



Flat and batán in sandstone.

75 – Granada

The colonists houses of Granada have style. These are very ecological and covered by straw.



Our neighbour is a spinner. Her clothes look like these of native populations of Chachapoyas Region, in particular the « pañuelo » (white headscarf).

76 – Granada



30-8-2018

In Granada (3000 m high), the nights are rather cold. The room of Dario is perfect to sleep and store different stuffs. Tomorrow, we will go to the « Siete Lagunas », for a geological and speleological reconnaissance.

77 – Siete Lagunas

31-8-2018

We leave Granada with two mules, it's easy to walk on the path.

Quebrada Canchi Valley.



78 - Siete Lagunas



On the road, we find old round huts built by Chachapoyas population.

In the wet zones, boards have been arrange on the muddy ground.



79 – Siete Lagunas

Everywhere, it's the drought in the Amazonian Basin; it's the same case in the Andes Mountains.



31-8-2018



Dario have difficulty finding springs, because the ponds are totally dry...

80 – Siete Lagunas

During the ascension to the lakes, we are very surprised to find frontal moraines...



Cerro Sauche peak and
Quebrada Gondolan Valley.

31-8-2018

81 – Siete Lagunas

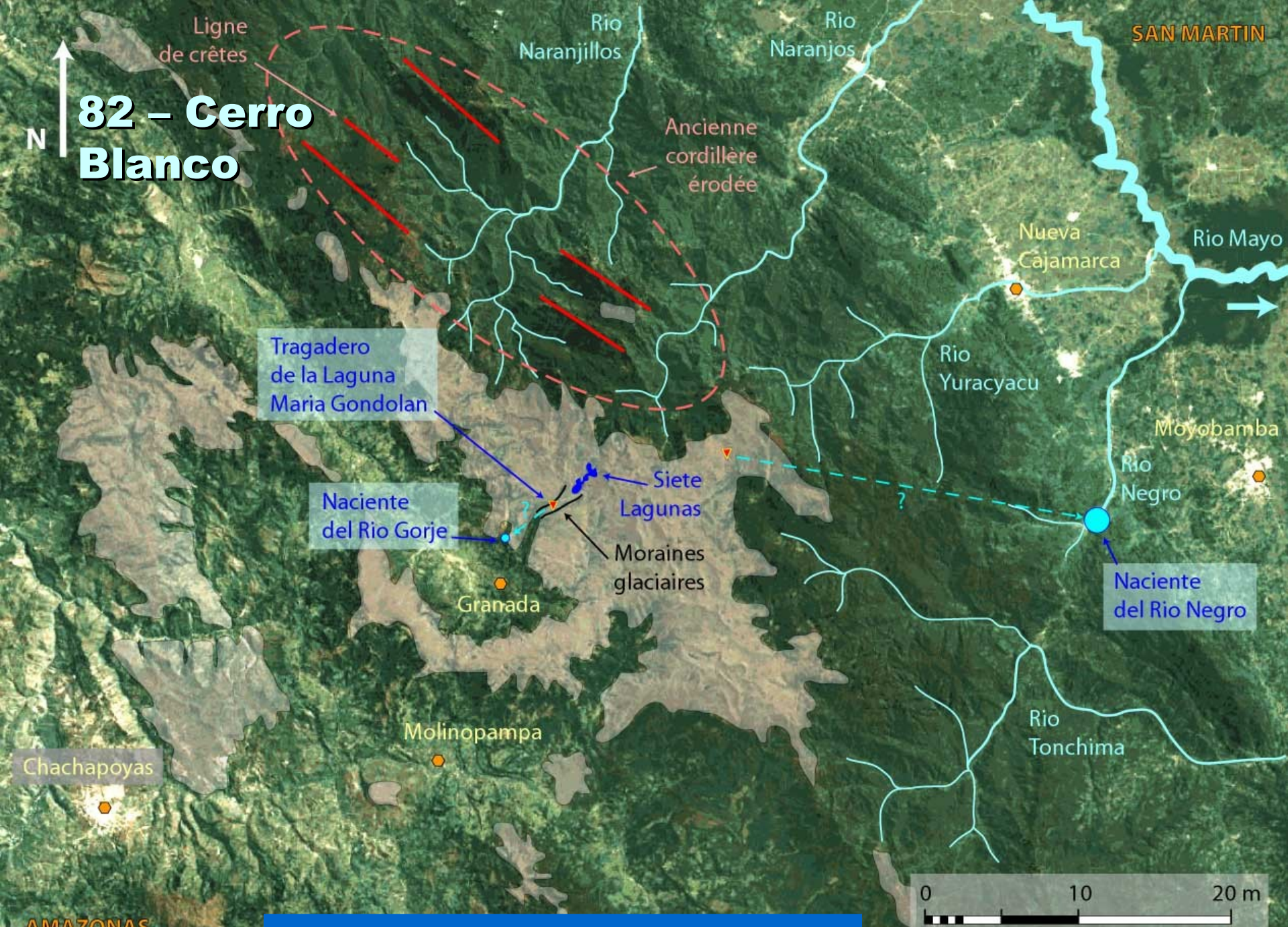


31/8/2018

Indeed, if you tell « moraine » you say « glacier ». But, there is no glaciers, no mountains or accumulation zones of snow...

What's the matter ?

We can see only lakes and rock stumps in the landscape. The mountains, supporting the glaciers, aren't here, completely eroded by the rainforests coming from the Amazonian Basin.



82 – Cerro Blanco

La zone des Siete Lagunas près de Granada.

83 – Canchilmal



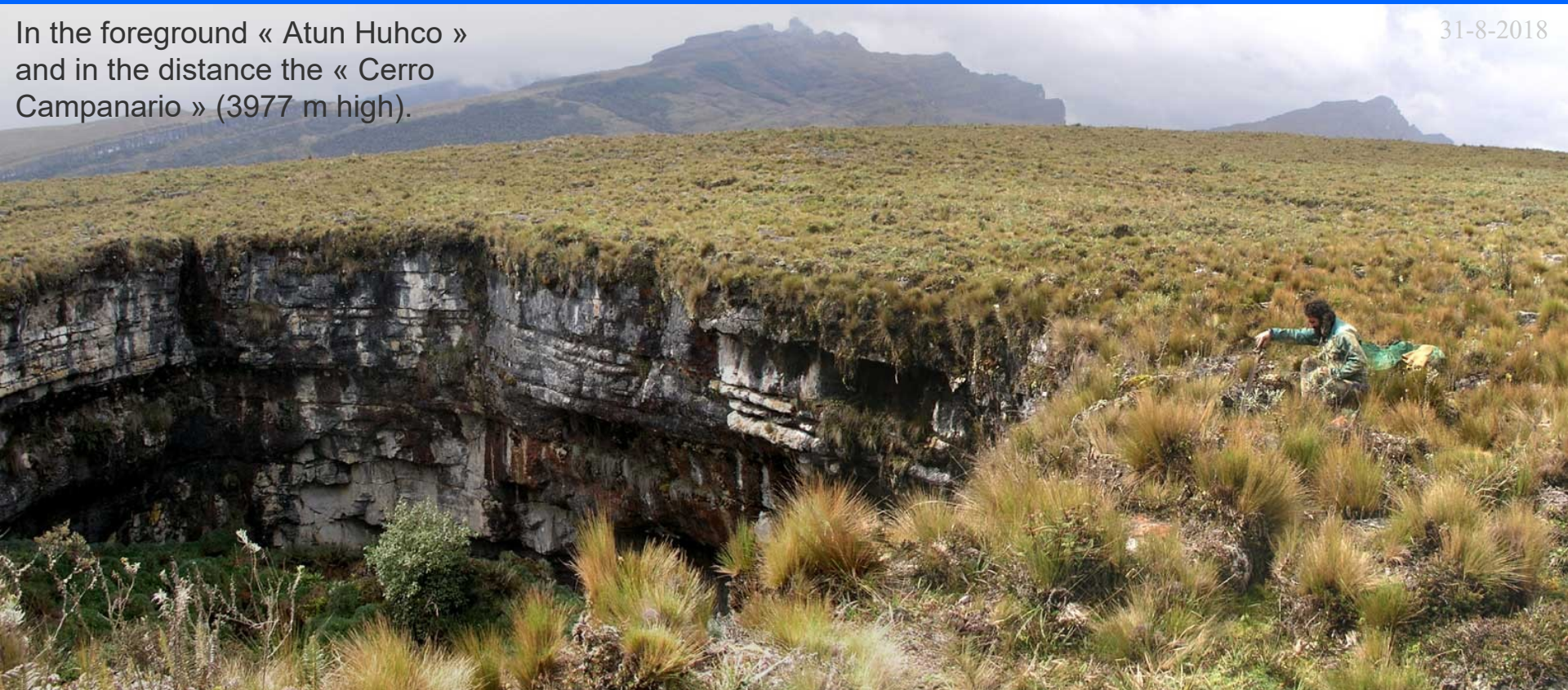
31-8-2018

Dario suggests us going up to the Canchilmal Plateau,
There are the « Atun Huhco » and the « Hueco de Llave ».

84 – Canchilmal

In the foreground « Atun Huhco »
and in the distance the « Cerro
Campanario » (3977 m high).

31-8-2018



The name of « Atun Huhco » coming from the quechua language « jatun »
or « hatun », means great and « huhco » hole.
The cave is explored et surveyed by us, but without continuations.

85 – Canchilmal



From left to right: Patrice Baby, Liz Hidalgo, Xavier Robert and Jean-Yves Bigot,
Canchilmal Plateau, 3750 m high.

86 – Siete Lagunas



31-8-2018

In early evening, we come back to the camp near the lakes.

87 – Siete Lagunas



At the camp, we are very cold...

88 – Tragadero de la Laguna Maria Gondolan



Quebrada Gondolan Valley.

We have to return to Granada Village.

Yesterday, Dario showed us the cave entrance where the river disappears. This river comes from « Siete Lagunas » Lakes: there is the Tragadero de la Laguna Maria Gondolan.

This sinkhole is penetrable and we have decided to explore it...

89 – Tragadero de la Laguna Maria Gondolan



Actually, the cave is huge and the gallery goes on.

90 – Tragadero de la Laguna Maria Gondolan

However, without ropes it's difficult to continue.



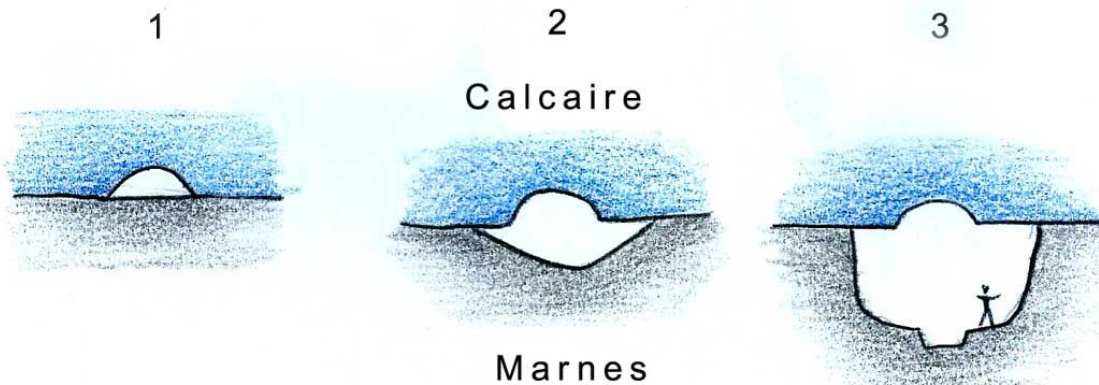
We have to come back with appropriate equipment.

91 – Contact Cave

The speleogenesis of this cave is easy to understand. The Tragadero de la Laguna Maria Gondolan is a lithological contact cave between limestone and marl.



1-9-2018



The original conduit is at the roof where we can see corrosion morphologies. In the second time, the river have eroded the marls.

1-9-2018

92 – Chachapoyas

With the erosion of filling, a grave appears... That is a very young child or newborn baby.



It's sure,
Chacahapoyas
populations live in
this place located at
more 3500 m high a
long time ago...

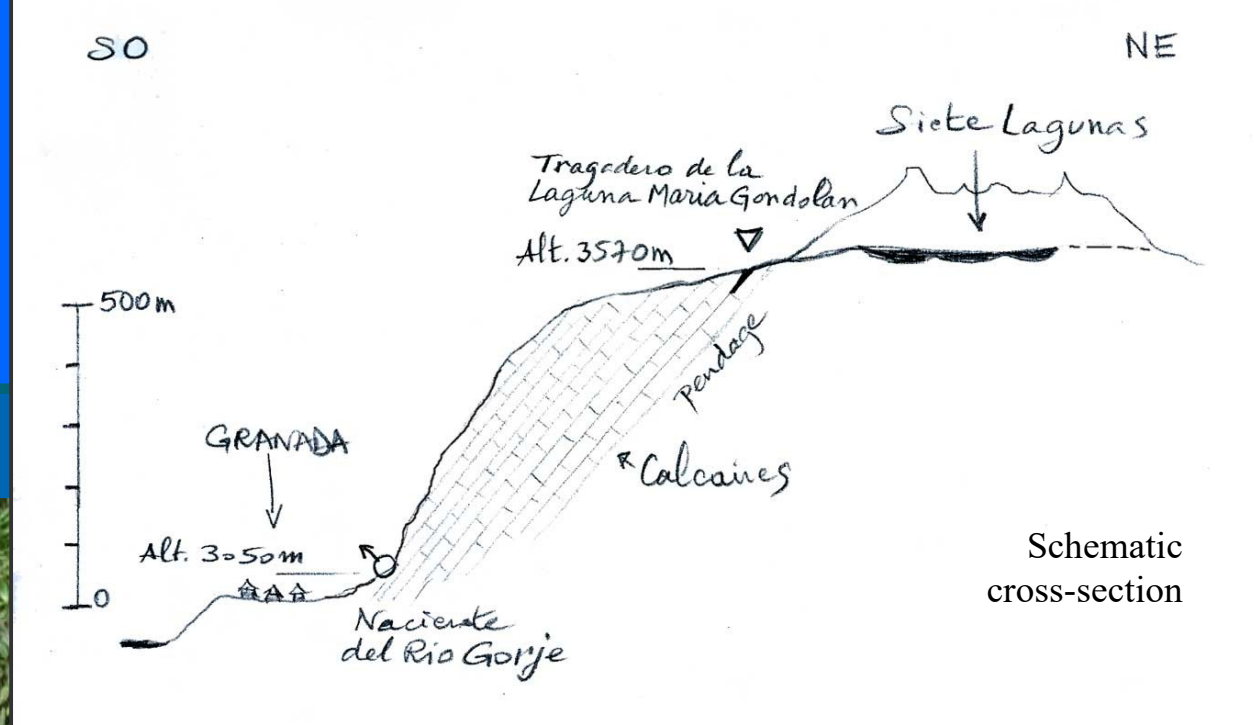
93 – Naciente del Río Jorge



1-9-2018

Dario knows a resurgence, the Naciente del Río Jorge, near Granada. According to him, this spring is the lost river of Tragadero de la Laguna Maria Gondolan.

94 – Naciente del Río Jorge



Schematic cross-section

The difference in level between the Tragadero de la Laguna Maria Gondolan and this resurgence is about 500 m deep.

95 – Departure



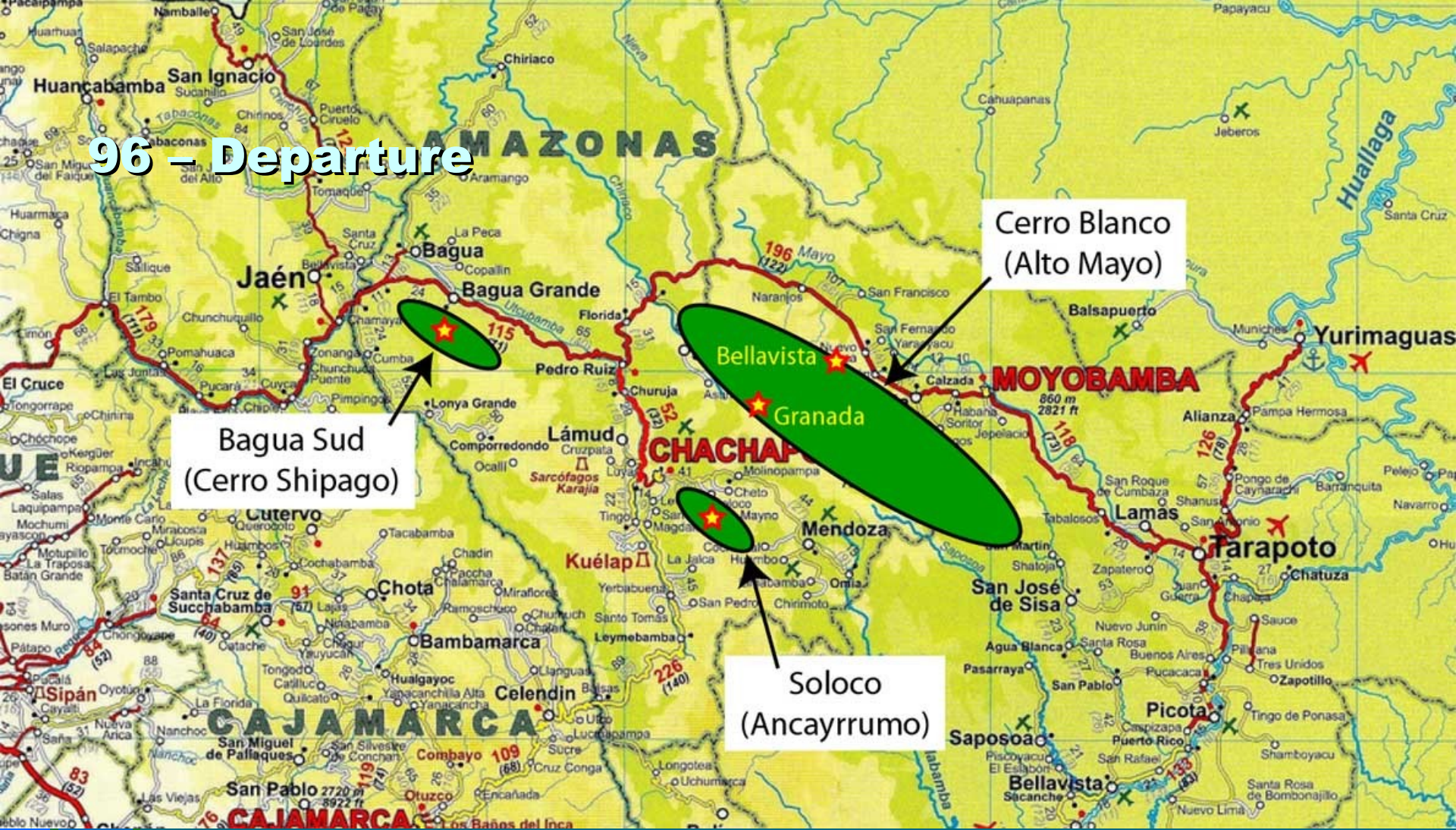
Rio Granada valley.

We have to go to base camp of Palestina in Nueva Cajamarca (San Martín).

We have to by pass to the north of Cerro Blanco Massif.

But before our departure, we have to install a pluviometer in Granada.

96 – Departure



Bagua Sud
(Cerro Shipago)

Cerro Blanco
(Alto Mayo)

Soloco
(Ancayrrumo)

After the Soloco (Ancayrrumo) and Bagua Grande Massifs, we have to leave Granada and the Amazonas Region, because we have to go to Palestina Camp (San Martín Region). Over there, we will be able to explore the Tragadero de Bellavista...

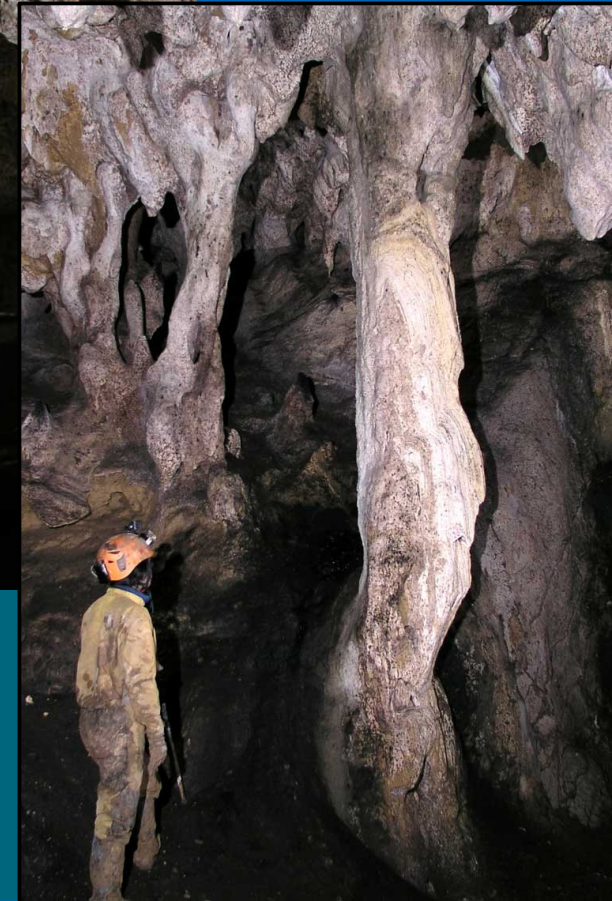
97 – Cueva Metal

On the road, an archeological site is indicated: the Cueva Metal (Corosha, Jumbilla)

We take our time and we measure this cave with our tools (313 m long).

98 – Cueva Metal

The condensation-corrosion produced by the bats (CO_2 + vapor) had corroded the walls and the speleothems.



Of course, the Cueva Metal has been occupied by prehispanic populations, but also by too much bats (biocorrosion).

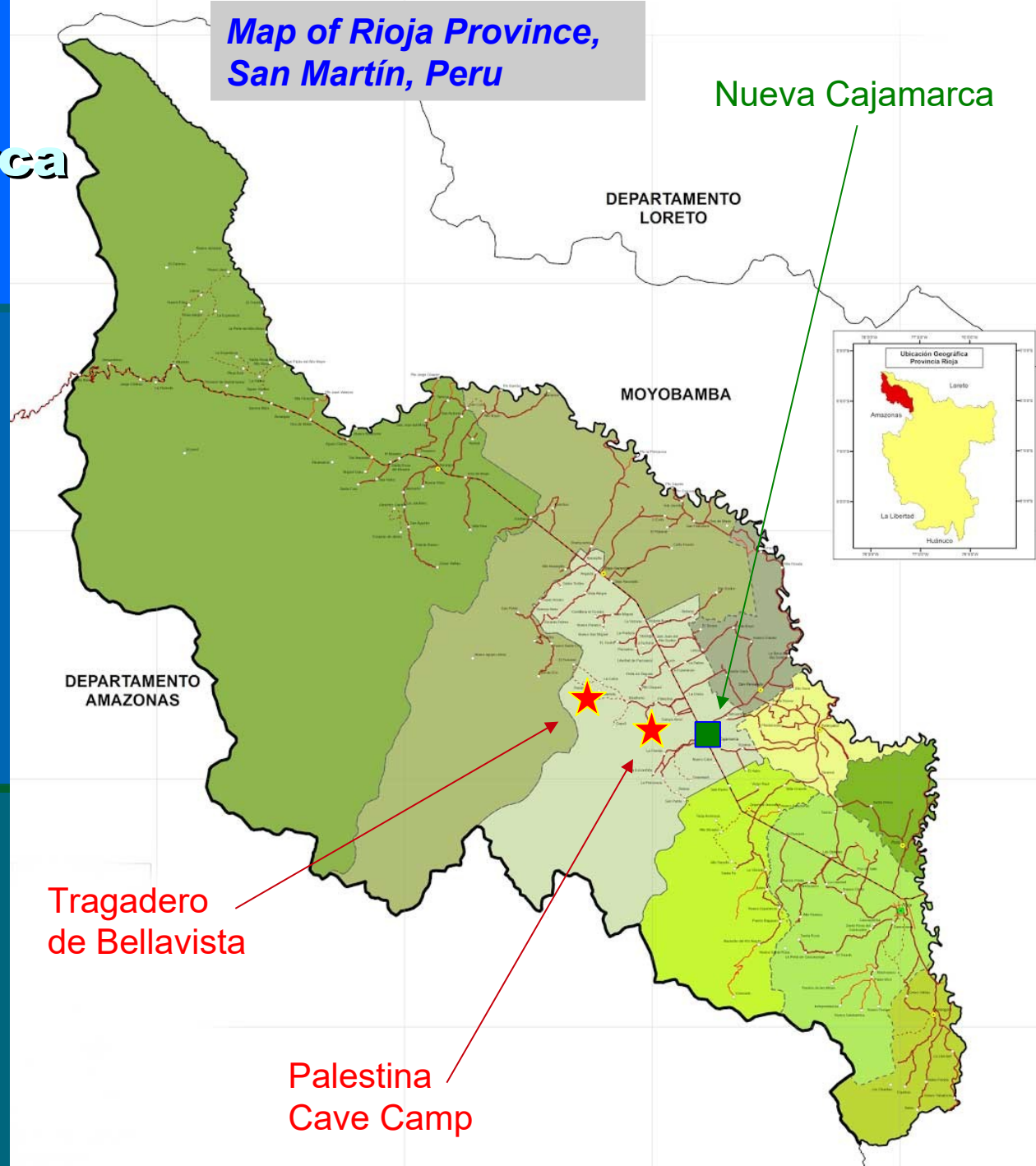
2-9-2018

99 – Palestina, Nueva Cajamarca (San Martín)

We have an appointment in the Palestina Cave Camp, near Nueva Cajamarca.

The main goal is the Tragadero de Bellavista, a cave explored until -429 m deep in 2017.

Map of Rioja Province,
San Martín, Peru



Nueva Cajamarca

DEPARTAMENTO LORETO

MOYOBAMBA

DEPARTAMENTO AMAZONAS

Tragadero de Bellavista

Palestina Cave Camp

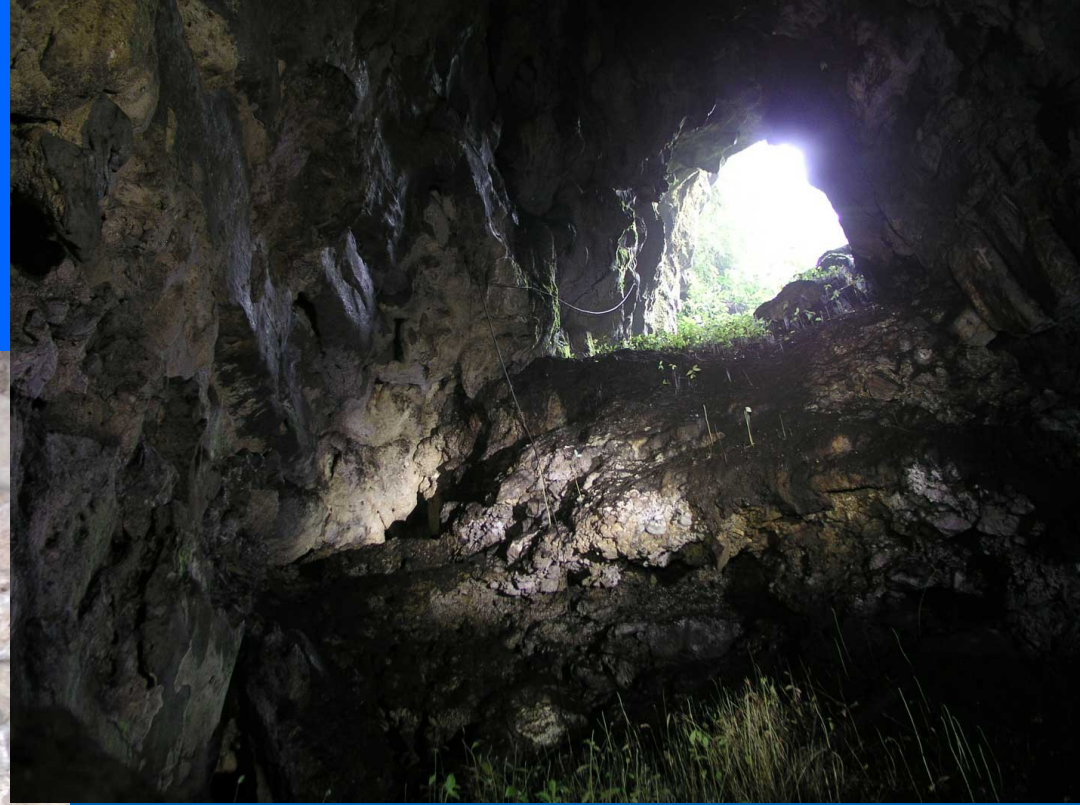
100 – Return to Bellavista



3-9-2018

The path is arriving to the Bellavista Village, people will be able to go out and reach the town. The normalization of relationships between people and us is a priority after the problems in 2017.

101 – Tragadero de Bellavista



James Apaéstegui, Patrice Baby, Jean Loup Guyot, Xavier Robert and Jean-Yves Bigot install the equipment into the Tragadero de Bellavista.

In 2017, the young people of Bellavista have removed our ropes and many stuffs untill -200 m deep.

Technically, it's difficult to imagine but it's true...

102 – Tragadero de Bellavista

The blind fishes live in the subterranean river of the Tragadero de Bellavista.



3-9-2018



These fishes can go out of the water and crawl on the sand. In this way, they can change of ponds.

103 – Tragadero de Bellavista

The calls of oilbirds resonate in the big pit.



3-9-2018



On the rock walls of the Bellavista sinkhole (doline), we can see swallows, hummingbirds, oilbirds, parakeets and Guianan cock-of-the-rock. This site has been called by the british explorers: « The Garden of Eden ».

104 – Río Negro



Today is a rest day, because we decide to explore the Bellavista bottom.

Liz Hidalgo gauge with a flowmeter (gun) the Río Negro flow.

105 – Bellavista Bottom

Jean-Yves Bigot, Jean Loup Guyot and Liz Hidalgo initiate Alex, a young man leader during the events of 2017.
He gives back our ropes.

5-9-2018

5-9-2018

Patrice Baby, Constance Picque, Marc Pouilly and Xavier Robert got the bottom and install the equipment until -429 m deep, terminus in 2017.



106 – Bellavista Bottom



5-9-2018

Everybody is at the terminus 2017 (-429 m). But there are many problems and we stop at -472 m deep... However, we can swing back and forth in a pit and discover a window. After that, we explore the upstream fossil gallery.

107 – Bellavista Bottom

This is the end of exploration. The upstream gallery is finished in front of sump at -477 m deep. We can see the sun after 19 hours underground.

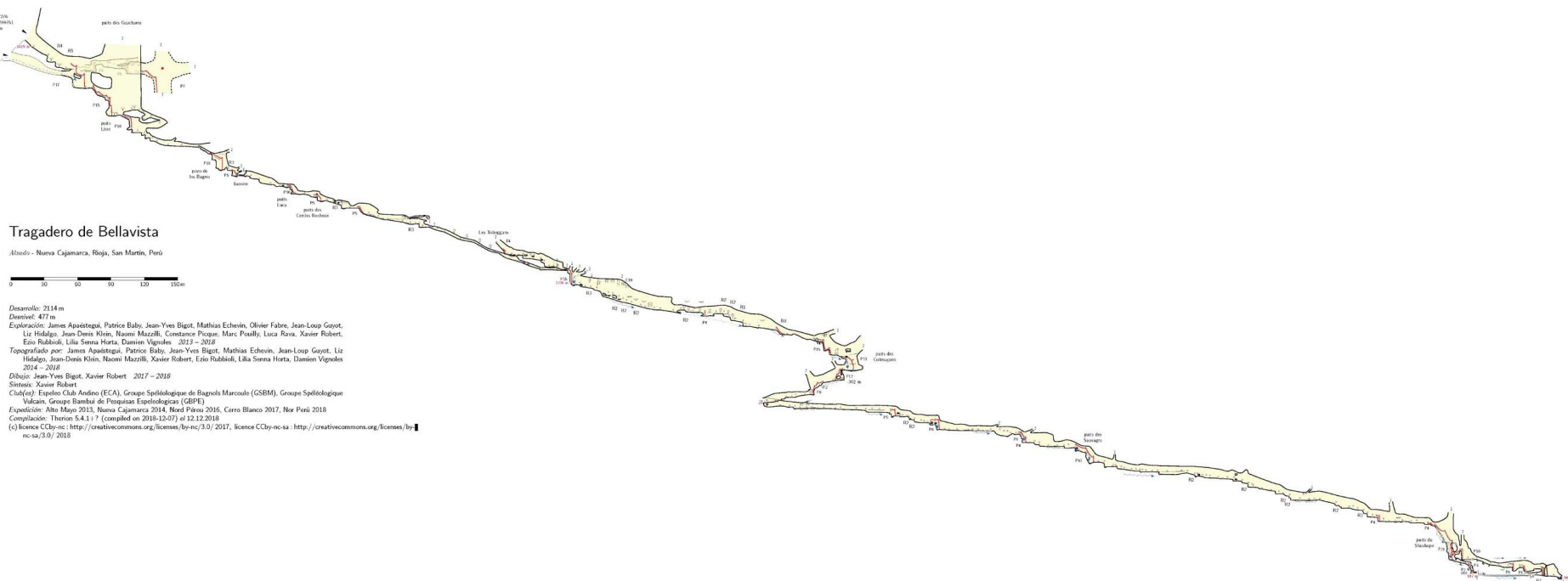


Sump at -477 m.



5-9-2018

108 – Bellavista Bottom



Tragadero de Bellavista

Alto de - Nueva Cajamarca, Rioja, San Martín, Perú

0 30 60 90 120 150m

Desarrolló: 2114 m
Desnivel: 477 m
Exploración: James Apóstegui, Patrice Baby, Jean-Yves Bigot, Mathias Echevin, Olivier Fabre, Jean-Loup Gayot, Liz Hidalgo, Jean-Denis Klein, Naomi Mazzilli, Constantine Proust, Marc Pouilly, Luca Piva, Xavier Robert, Enzo Rubbioli, Lila Senna Horta, Damien Vigorles 2012 – 2018
Topografía por: James Apóstegui, Patrice Baby, Jean-Yves Bigot, Mathias Echevin, Jean-Loup Gayot, Liz Hidalgo, Jean-Denis Klein, Naomi Mazzilli, Xavier Robert, Enzo Rubbioli, Lila Senna Horta, Damien Vigorles 2014 – 2018
Diseño: Jean-Yves Bigot, Xavier Robert 2017 – 2018
Síntesis: Xavier Robert
Club(es): Espeleó Club Andino (ECA), Grupo Spelológico de Bagnols Marcoule (CSBM), Groupe Spéléologique Valais, Groupe Espele de Tronques Epistologicas (GEPE)
Expedición: Alto Mayo 2013, Nueva Cajamarca 2014, Nord Pánuo 2016, Carro Blanco 2017, Nue Perú 2018
Compilación: Theron S.A. 1.1 (compilado en 2018-12-07) al 12.12.2018
(c) Science CChy-nc: <http://creativecommons.org/licenses/by-nc-sa/3.0/> 2017, licence CChy-nc-sa: <http://creativecommons.org/licenses/by-nc-sa/3.0/> 2018

Cross-section at – 477 m deep of the Tragadero de Bellavista.

109 – Samples



Many samples are collected and everybody has to contribute.

However, the DNA samples taken on living fishes are very delicate and reserved to expert fingers.

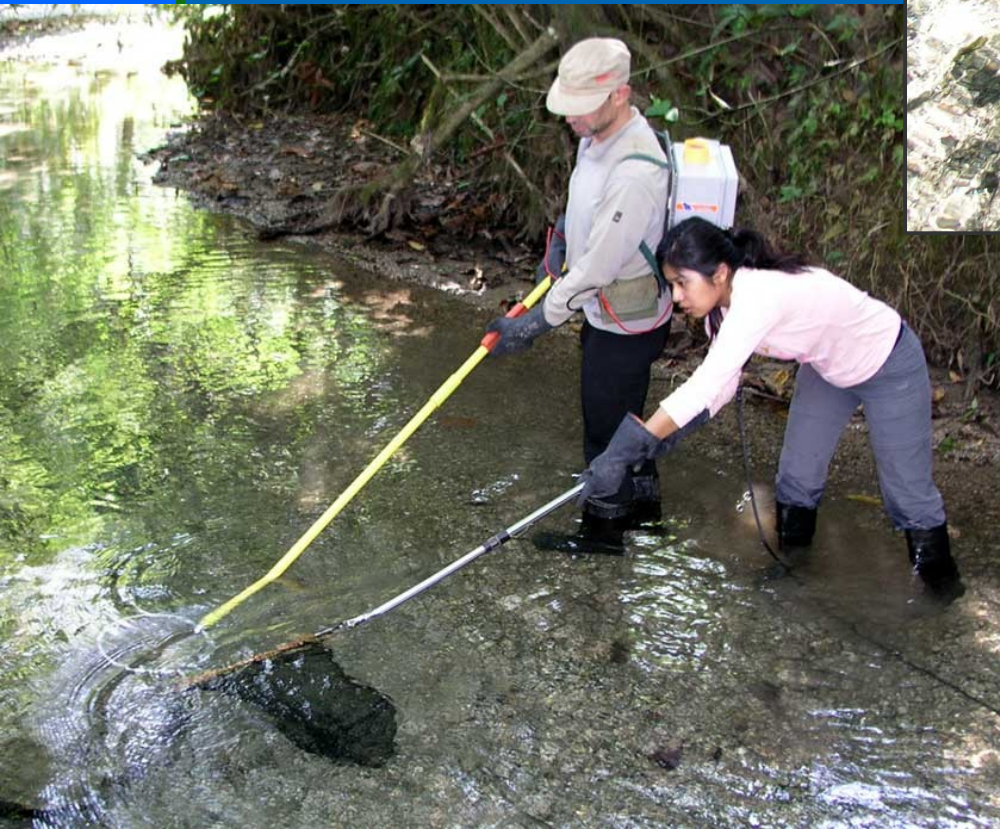


8-9-2018

8-9-2018

110 – Electric Fishing

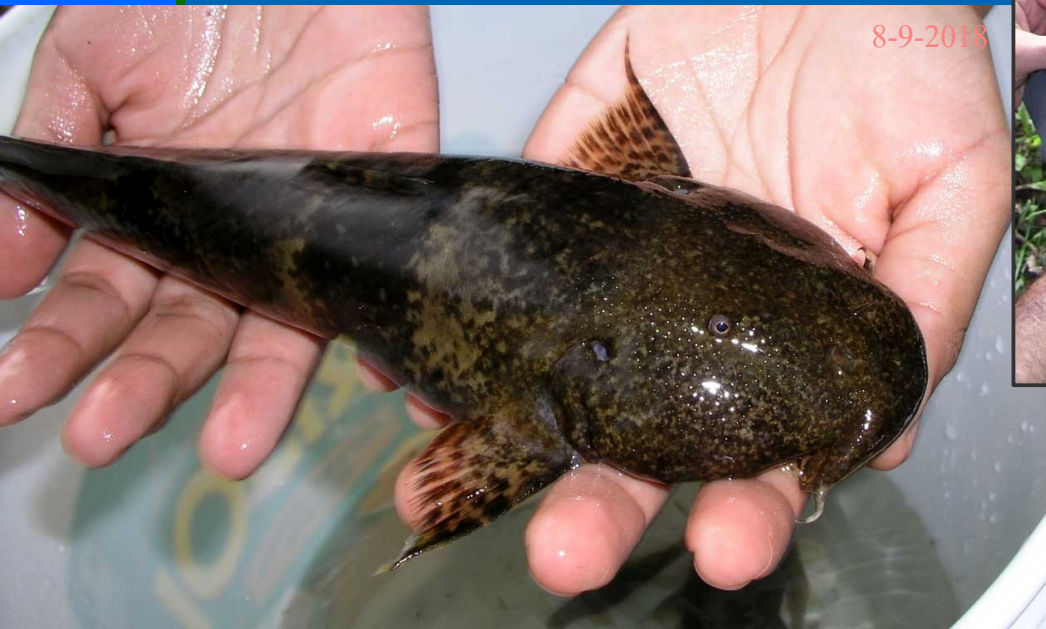
Marc Pouilly and Ana Rodriguez are « fishers sellers » and use an electric fishing equipment for catching samples fishes.



Take care, you have to use the boots and regulate the voltage of electric arc...

111 – Ojo de Aguas Claras

The fishing is very good in Aguas Claras: big catfishes (silures) had been captured.



Generally, these fishes had attempted the subterranean adventure.

112 – Ojo de Aguas Claras



8-9-2016

At the same time as the miraculous fishing, Xavier Robert dives the Ojo de Aguas Claras until -10 m deep, but the flow is too much strong to continue.



113 – Cueva de Cascayunga

Xavier Robert thinks will dive the terminal sump of Cascayunga Cave.

Result: 110 m long, -12 m deep, without go out.

9-9-2018

The carriers are: Constance Picque, Marc Pouilly, Ana Rodriguez and Jean-Yves Bigot.

Marc and Ana take advantage of the opportunity to fish in the subterranean river.



114 – Cueva de Cascayunga



115 – Cascayunga

One more, Marc and Ana try to capture fishes with their electric fishing equipment in the streams and rivers...

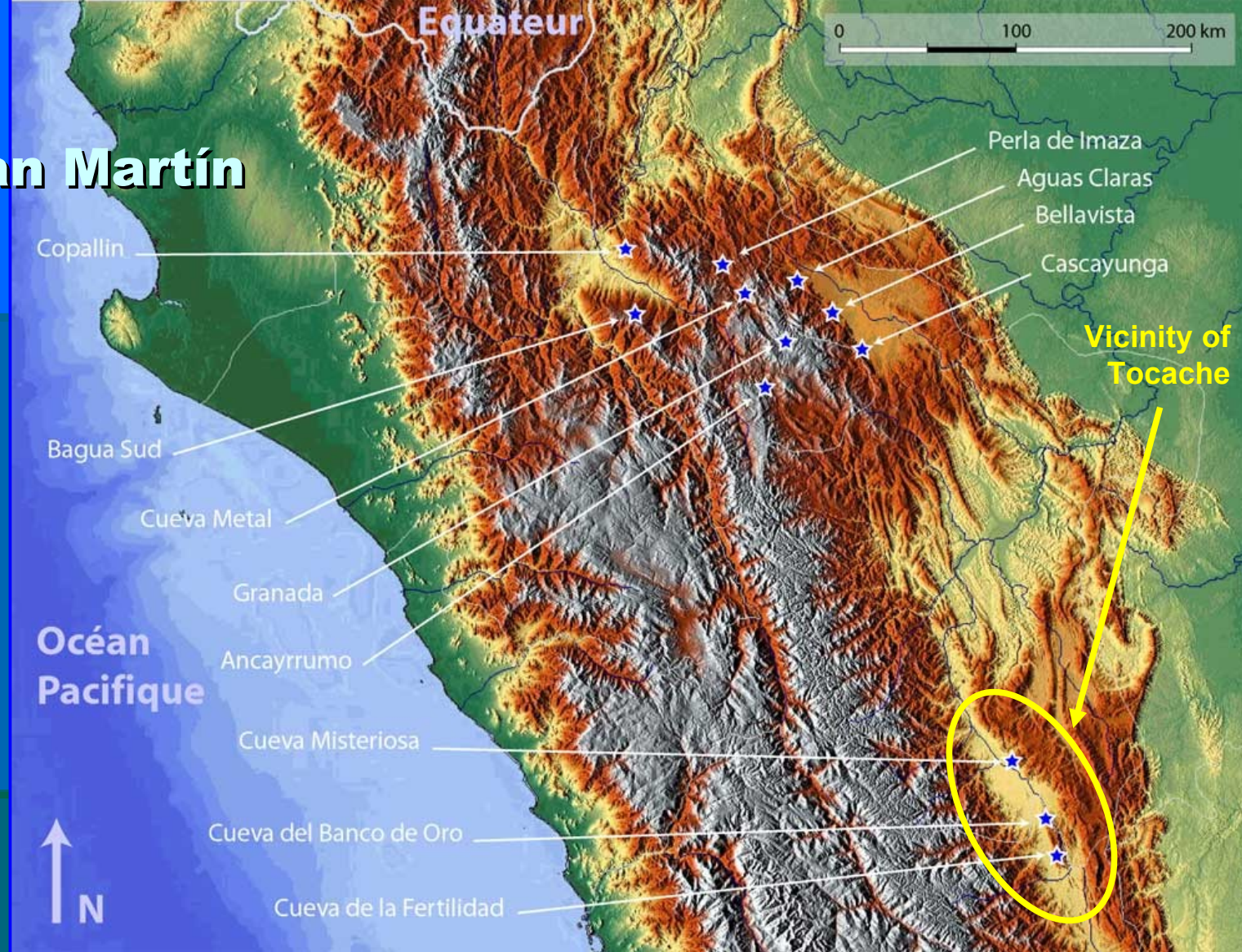


But they find no fish in their net; may be it's the chahut of children ?

Cascayunga is a quiet village where the girls play volleyball and boys play soccer (football).

116 – San Martín

It's the end;
Marc Pouilly,
Ana Rodriguez
and Jean-Yves
Bigot return to
Lima via Tingo
Maria.



On the road, we have to stop in Tocache (south of San Martín Region), the goal is capture some fishes.

117 – Río Huallaga Valley in Tocache



11-9-2018

The view on the Río Huallaga Valley is entirely foggy by the smokes and aerosols due to wildfire. The climate change and the exceptional drought in Amazonian Basin, that favors deforestation...

Jean-Yves Bigot

Amancio
Ñahuincopa

118 – Cueva Misteriosa

With our guide, Elger Marchena working in the Tocache Municipality, we go to Amancio Ñahuincopa house, owner of the Cueva Misteriosa.

Marc
Pouilly

The son of
Amancio

Ana
Rodriguez



Elger and Amancio.



11-9-2018

Family picture in the entrance
of Misteriosa Cave.

119 – Cueva Misteriosa



11-9-2018

Elger, Ana and Marc go to sample fishes (*Tricomyscteridae*) in the subterranean stream of the Cueva Misteriosa, while Jean-Yves takes some pictures with Amancio.



120 – Amancio Home



11-9-2018

Amancio suggests us to eat his products (bananas, etc.).

121 – Tipishca

In the afternoon,
we go to the city
hall of Nuevo
Progreso; we
have an
appointment
tomorrow.



11-9-2018

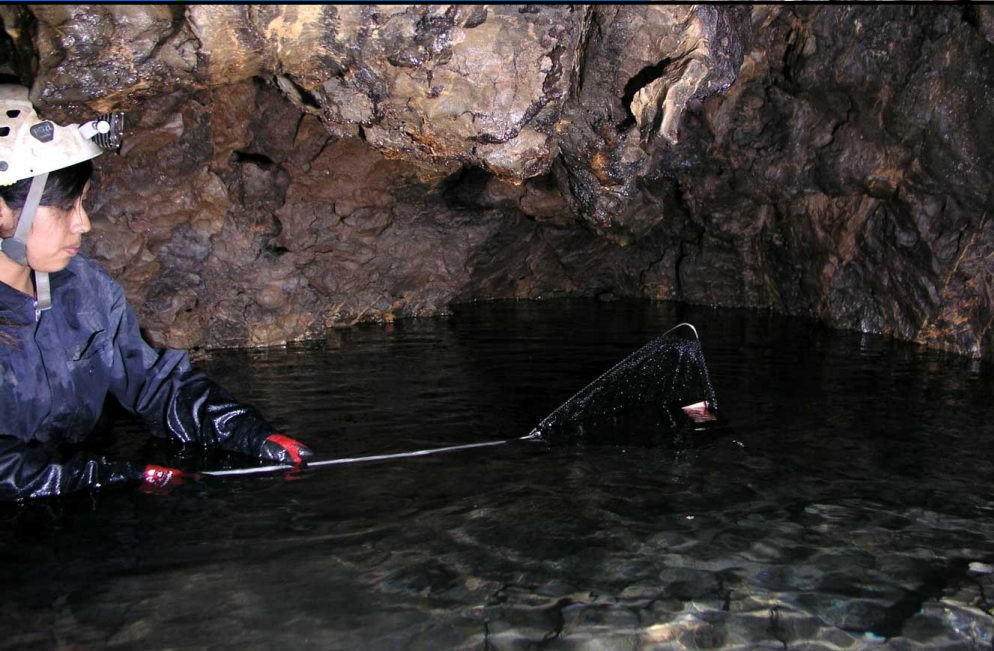
Crossing Tipishca, we see many ponds used for fish farming.

We think that it exists a resurgence...

With a guide, we follow a pipe until a cave, because the water is tapped.

122 – Cueva del Banco de Oro

Our guide, Arturo Pardo Melgarejo, is very happy to lead us to the Banco de Oro Cave.



123 – Cueva del Banco de Oro



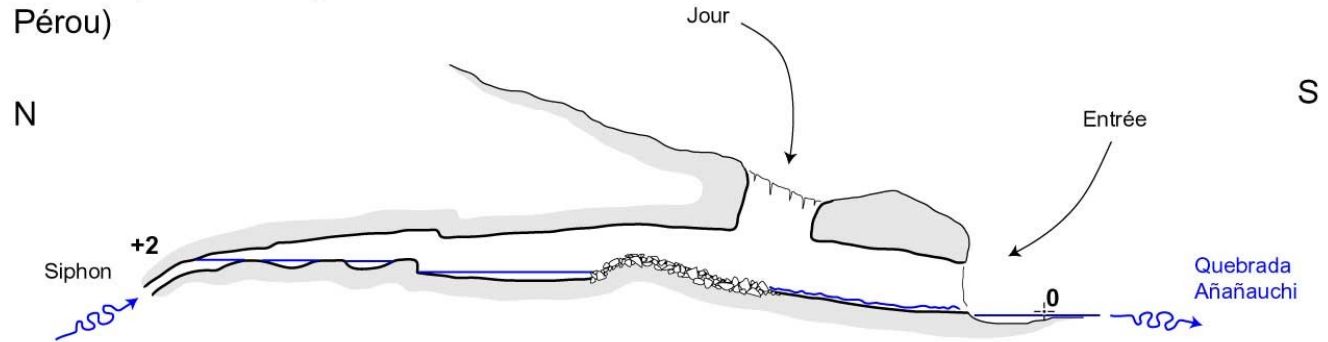
The catch is no good and the Cueva del Banco de Oro (Tipishca) stops on the sump after 48 m walking.

124 – Cueva del Banco de Oro

CUEVA DEL BANCO DE ORO

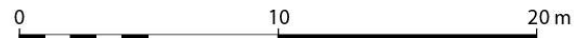
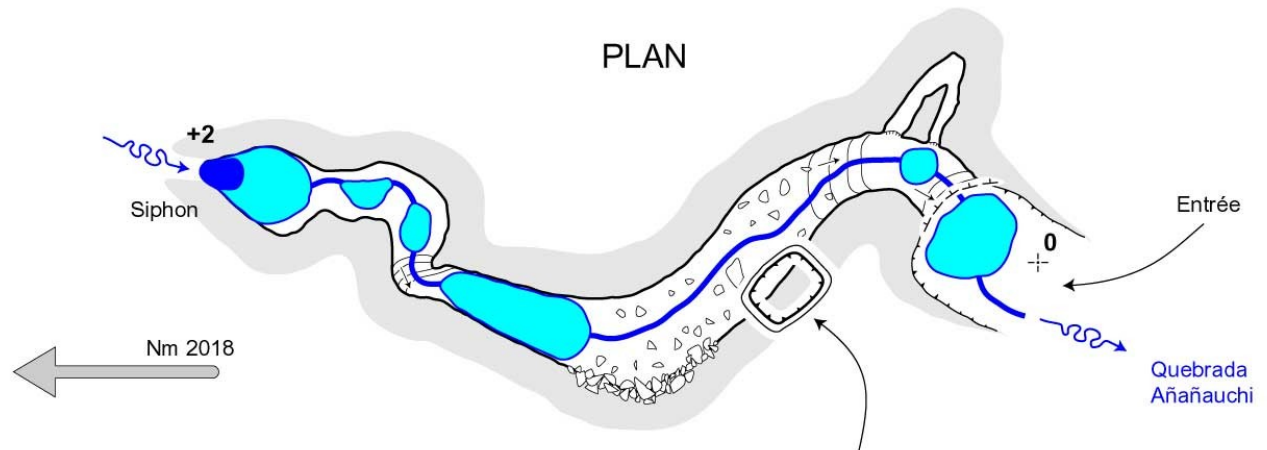
(Tipishca, Nuevo Progreso,
Tocache, San Martin,
Pérou)

COUPE PROJETEE (N 304°)



Développement : 48 m
Dénivelée : +3 m

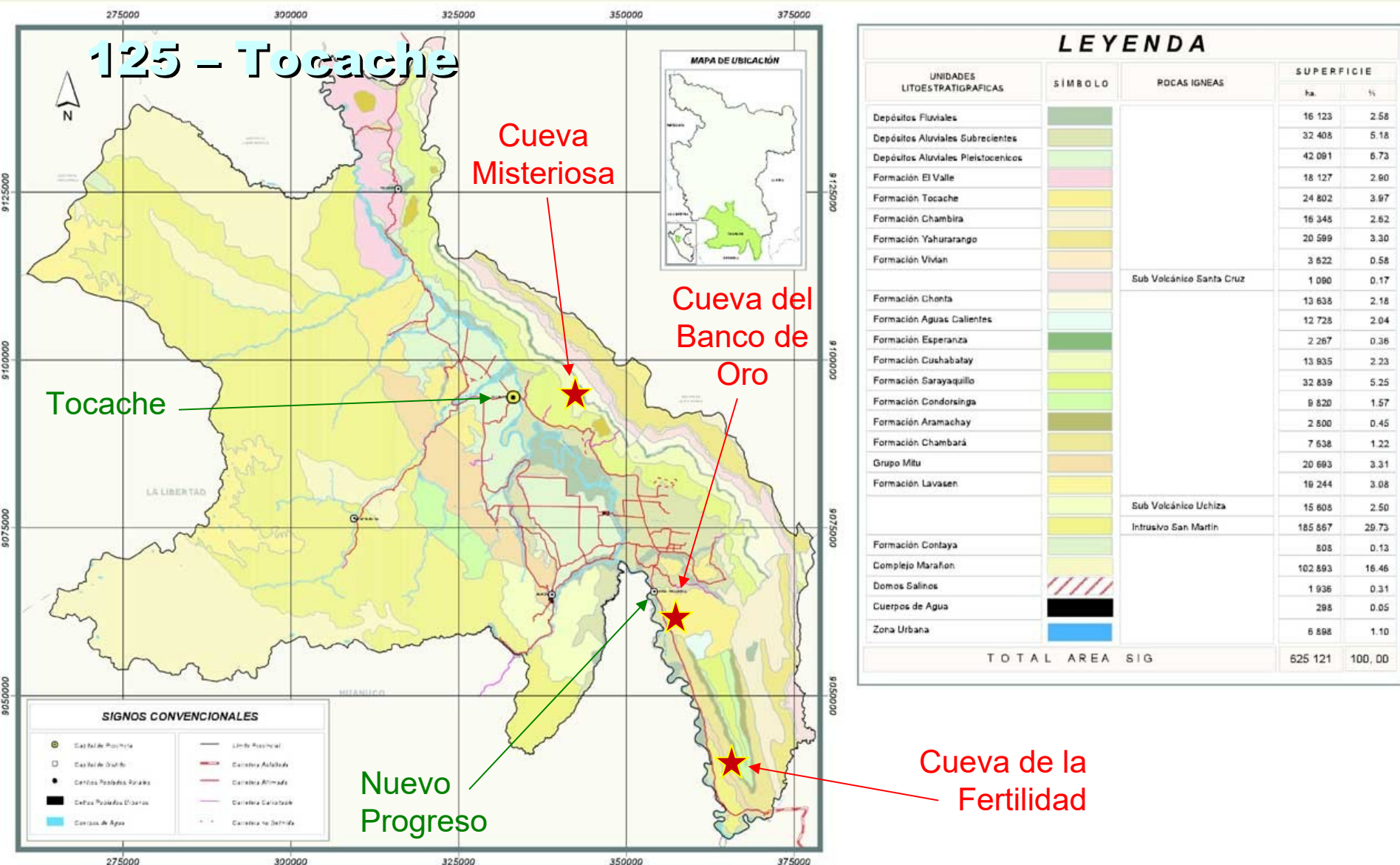
PLAN



Relevé du 11 septembre 2018 au Disto X
Marc Pouilly et Jean-Yves BIGOT.
Report : J.-Y. Bigot

Survey of
Cueva del
Banco de Oro
in Tipishca.

MAPA 02 : GEOLOGÍA



We have to explore others caves (Cueva de la Fertilidad) in the Santa Cruz Region, they will guide by an official delegation of Nuevo Progreso city hall.

126 – Santa Cruz



Marc Pouilly, Ana Rodriguez and Jean-Yves Bigot are guided by the Nuevo Progreso delegation, makes up a driver, a photographer, two people in tourism job, a consultant in tourism and a local guide.

12-9-2018

The access of the Santa Cruz Zone is not easy: they have to walk in the rainforest.



127 – Santa Cruz



Our guide is hesitant, because is lost. He doesn't remember the way to the Cueva de la Fertilidad...

The group waits for and takes the time to make yourself up with Achiote (*Bixa orellana*), a fruit rich in beta carotene.



A part of the group in perdition in the rainforest.

128 – Santa Cruz

12/9/2018



129 – Santa Cruz

In the meantime, our desorientated guide has found people: Andrés Salazar García, a ex-soldier. He leads the group to the cave.



12-9-2018

Dry bed of river.



There is a river full of water...

Further away, its bed is dry...

130 – Cueva de la Fertilidad



12-9-2018

The entrance of the Cueva de la Fertilidad appears at the bottom of a big depression.

131 – Cueva de la Fertilidad



There are many oilbirds in this cave.
We explore a short subterranean river (98 m long), probably the lost river seen before.

132 – Return to Lima

The route was:
Nueva Cajamarca-Tocache,
Tocache-Nuevo Progreso
and Nuevo Progreso-
Huánuco,
the last section is:
Huánuco-Lima.



133 – Crossing the Andes



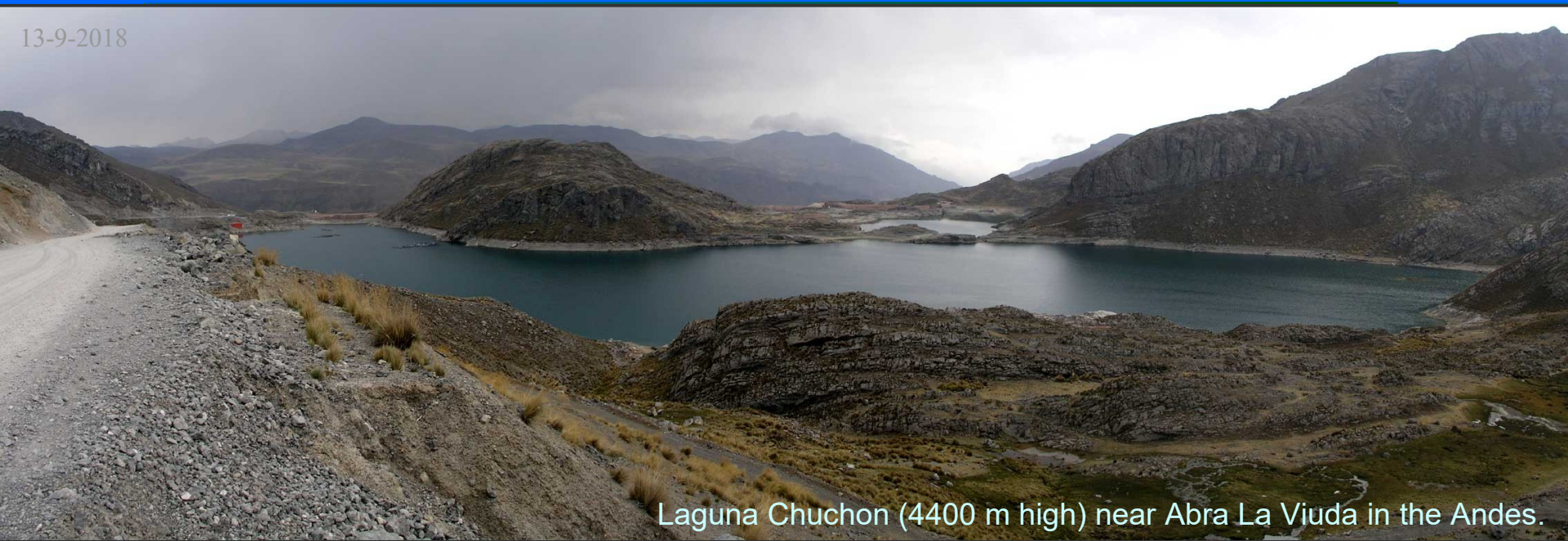
13-9-2018

Marc, Ana and Jean-Yves travel from Huánuco to Lima crossing the stoneforest of Huayllay, volcanic stone eroded.



134 – Crossing the Andes

13-9-2018



Laguna Chuchon (4400 m high) near Abra La Viuda in the Andes.

The return to Lima follows the road Cerro de Pasco-Huayllay-Canta-Lima.

This is the end of the trek.

135 – The End

The End