

# Oxford University Cave Club Expedition 2003 - Julagua 2003

## Destination

Pozu Julagua, in the Picos de Europa, north-west Spain.

The Picos are in the Asturias province of Spain (See Map 1).

Camping is permission pending, but should be at Ario, the site of several previous expeditions.

Ario is near Los Lagos, a popular tourist beauty spot in the Picos. Map 2 shows the Lagos and the surrounding area.

The site itself is marked upon Map 3, and is a 3 or 4 hour walk from Los Lagos. Pozu Julagua is a further 20 minutes from Ario, beyond 2 ridges. It and the surrounding area (known as Area 4) are shown on Map 4.

## Duration

Currently beginning with the departure of the trailer and equipment on 7<sup>th</sup> July 2003, and ending with the departure of all expedition members by 30<sup>th</sup> August 2003.

## Objectives

The primary objective is the further descent and exploration of Storm Cave (the OUCC name for Pozu Julagua). This cave is in an area known as Area 4, which has all the signs of the possibility of a deep cave system, but has so far failed to yield one. Last year Storm Cave was pushed to a depth of -721metres, suggesting that it was the "deep cave" of Area 4. Julagua 2003 intends to return to and continue exploring this cave. The surveys showing this depth, length, and potential, are attached

As our secondary aim, we hope to continue the search for new caves. In previous expeditions Area 4 has been investigated quite thoroughly, but still needs more work. Should Storm Cave close down when C3-C4 has ceased to be a viable alternative the remainder of expedition will be spent in a co-ordinated period of "shaft bashing" for new and promising caves.

Of special interest is an area to the west of Storm Cave, Cabeza Llabria, thought to be directly above another large system, 2/7. This

area has a number of choked entrances that are draughting quite strongly, indicating good potential. If a cave could be found, it is likely that it would lead into 2/7 below the lower limit of exploration.

Also, Area 13 has not been examined in any detail. This is the area containing Pozu Cabeza Muxa. The area has excellent potential for caves, however, and is well worth looking at.

As a back-up aim, we have the C3-C4 system. This project would be too large to have as a secondary aim, but if Storm Cave closes down within the first week of expedition, then we will move the camp at Ario to Snow Pole. The leads we have in C3-C4 are the underwater connection to 2/7 that our surveys show to be only 5 m away and the upstream limit, a 10 m waterfall.

## Justification

For the past twenty one years, OUCC has been exploring an area of the Western Massif of the Picos de Europa in Northern Spain. In this time, good relations have formed with the National Park authorities who respect the club's aim to fully understand the hydrology of the area. In total, over 50 kilometers of passage has already been surveyed.

Area 4 has not been looked at in detail, and it would be excellent if a system could be found there. So far, no deep caves have been found in the immediate area, which implies that there is potential for an as yet undiscovered system. Area 4 is one of the big gaps in our knowledge of the region, and has needed detailed examination for some years. Storm Cave is an excellent lead, which is hoped to fill that gap. So far it has lived up to the potential, and it is currently the most likely entrance to the suspected Area 4 system.

Perhaps an even bigger gap in our knowledge is Area 13. Although Cabeza Muxa has been found there, there is definite potential for more caves. To date, only 12 entrances have been found in the area, compared to over 50 in Area 4. This indicates the lack of exploration on the surface. Should Storm Cave close down exploration in Area 13 shall become a serious consideration, well worthy of attention.

Not only this, but the expedition provides an excellent opportunity for expedition members to experience caving of a scale and nature simply

unavailable in Britain. It offers less experienced members the chance to hone their skills in a new and challenging environment, and is also a thoroughly enjoyable experience for older, more experienced members. As well as conducting hydrological and speleological research the expedition is, quite simply, a thoroughly enjoyable caving experience.

## Details of Field Work

Single Rope Technique (SRT) is the safest and most efficient way of descending (and ascending) deep vertical caves, such as those in the Picos. New ascents will be tackled with advanced aid-climbing techniques before being rigged for SRT. All expedition members will have experience of SRT in the UK prior to expedition (see Safety and Training section for more details).

Accurate surveys are essential to exploration, and using a compass, clinometer and measuring tape, we will continue surveying to BCRA Grade 5 standard. Survey data will be processed using "Survex", a specialist cave survey program, to calculate station positions and plot a rotatable 3D representation of the main line. This will aid our search for new entrances and focus exploration in Pozu Julagua on the most promising leads. To complete this task many old entrances in our area will need to be re-surveyed so we can accurately position them on a 1:10000 topographical map. A portable PC may be used to process the survey data in the field.

We will also continue previous year's work in producing a comprehensive map of the entrances to caves using GPS technology. This system allowed us to create a detailed map of area 4 last year, so that attempts to find new caves could be closely co-ordinated. Areas that have been looked at could be recorded more easily so that we would not cover them again by accident. GPS mapping will be particularly useful in the event of further exploration and "shaft bashing" in Area 13.

Other electrical aids used will be a drill to aid bolt placement whilst rigging, a radio for surface communications between our campsites and a beacon to help locate the route across the mountains between the caves and our campsite at Ario. We can get heavy-duty batteries recharged at a bar close to our base camp and car batteries can be used for charging up batteries for some of the lighter applications.

We are able to carry out one fluorescein dye trace each year. The exact aims of the trace are decided upon in the field in order to maximise the information gained about the missing hydrological links in the catchment area. Flow rate observations, flood responses, and temperature logging may also provide us with information about the hydrological network.

Photography is an important tool for documenting the cave, and illustrating its features to others. The photography typically tries to balance the broad spectrum of expedition activity, from a record of unusual or impressive passage development, through speleothems and other interesting geomorphological features, to the more sporting aspects of the project. The expedition hopes to include several cave photographers, some of whom have received awards for the quality of their work. New technology, including robust digital cameras, means this year should see even more cave photography.

We will produce a report of the expedition's findings and activities, with an electronic version openly available on the Internet. We shall also be making a number of presentations to the various supporting and interested organisations, such as the British Cave Research Association.

### **Safety and Training**

Caves are a hazardous environment, but by being properly equipped and well prepared we expect to avoid serious accidents. Expedition members carry out risk assessment exercise early in the expedition's preparation. These clearly identify potential hazards that might be encountered above and below ground and establishes sound practices for overcoming these hazards. Training is an important part of this preparation, particularly in a technical and self-reliant skill like single rope technique (SRT). We therefore ensure that newcomers receive SRT instruction first in a gym in Oxford, then in Yorkshire potholes, whilst experienced expedition members develop their SRT skills further by training others. Members with less than one years caving experience will be strongly encouraged to attend a week long trip to Yorkshire, which offers the best SRT potholing in the UK, directly before the departure of the expedition. This trip is to ensure that expedition members are SRT experienced, and will allow training in the company of experienced members in less demanding conditions than may be found on expedition.

We will also undertake training in the controlled use of explosives in caves, a vital technique for the safe removal of a casualty from caves. This is especially important for passage through constricted parts of the cave, where moving a stretcher would be difficult or impossible. Such explosive use will be avoided if possible, and only used if necessary. Where possible Spanish expert aid will be used in the controlled detonation of explosives in Spain, and we hope to avoid their use.

In the event of an emergency, we will have adequate medical supplies and rescue equipment including a recently upgraded stretcher. There is no cave rescue organisation in Spain, but local Spanish caving clubs and other expeditions in the area would be mobilised. These have already proved their value for handling minor incidents. Underground first aid kits will be positioned at strategic points in the cave, as will stoves and food supplies. A cave rescue stretcher, stove, and food and water supplies will be kept in our equipment shelter near the entrance, for swift deployment and effective response in the event of an emergency. In addition, all members will be equipped with personal first aid kits supplied with a variety of medicines and materials suitable for cave injuries and incidents, including varying strengths of painkiller, anti-inflammatories, bandages, candle and lighter, pencil and paper, and dressings.

In recent years expeditions to Spain have been preceded by medical training and rescue training for all expedition members. These sessions will be repeated prior to the departure of this year's expedition, including a refresher course during the proposed week in Yorkshire. In addition to our own training sessions in cave rescue and medical practice, expedition members will be attending the basic medical training provided by the Oxford University First Aid Unit, or strongly encouraged to take a similar standard of course if this is not possible. At least one member will be undertaking the Wilderness Medical Training course. By ensuring a level of competence and basic first aid knowledge in all members, along with the knowledge and experience of rescue procedures, we hope to ensure that, in the event of any accident, the incident will be dealt with as efficiently and safely as possible.

## Itinerary

7<sup>th</sup> July – Depart England. Equipment will go via ferry, expedition members shall make private arrangements, taking advantage of the proliferation of cheap flights, coaches, and Spain's excellent public transport network.

9<sup>th</sup> July – Equipment trailer and vehicle shall arrive at Los Lagos.

10<sup>th</sup> – 14<sup>th</sup> July – Will mostly be spent carrying equipment from the trailer to Ario, to ensure that the expedition has sufficient supplies for the continuation of caving. Possibly an advanced trip shall be made to begin rigging the previously explored cave

15<sup>th</sup> – 22<sup>nd</sup> July – 1 week spent rigging previously explored cave, allowing time for re-rigging, replacement of bolts, equipment problems, and possible unforeseen circumstances.

22<sup>nd</sup> July – 16<sup>th</sup> August – Exploration of Storm Cave, including pushing from the previous limit of exploration, and also exploration of any previously unexplored areas of cave leading from areas already discovered. This will include a Grade 5 standard survey of all passage explored.

16<sup>th</sup> – 29<sup>th</sup> August – De-rigging of Storm Cave and Ario campsite. This will coincide with the completion of surveying, and the pushing of any half finished activities, i.e. half bolted pitches, or unexplored streamway. Equipment will then be entirely removed from Storm Cave. Such equipment as is deemed appropriate will be left in Red Circle cave at Ario, so as to be left conveniently for the next expedition. A full inventory shall be taken of equipment left, and of equipment returned to England.

30<sup>th</sup> August – Trailer and vehicle shall leave Spain via ferry.

31<sup>st</sup> August – Trailer and vehicle shall return to Oxford. Expedition ends.

Due to the nature of the expedition and transport arrangements to and from Spain, and also the diverse amounts of time available to various participants, it is impossible to itinerise the arrival of individual members at this time. Last year found that several old members did not decide to come to Spain until after the expedition had departed. However, once individual travel arrangements have been ascertained the expedition will have a more reasonable understanding of which persons will be available when, and how well manned the expedition will be at any time. If insufficient members are available caving will not proceed, due to the inherent safety risk.

## Budget

The following budget is based upon last year's experience, and is subject to change at the time of writing. It will also be influenced by factors such as non-monetary sponsorship and donations e.g. donations of transport or food. As more data arrives, a more accurate budget will be compiled.

(Based on 25 members)

### Expenditure

<b>Administration</b>		<b>£1,530.00</b>
Personal Insurance	£250.00	
Training etc.	£450.00	
Publications including:		
Report		
Proceeding		
Officer's Expenses		
OUEC Bulletin		
Sub total	£830.00	
<b>Travel</b>		<b>£2,800.00</b>
Vehicle Purchase	£1000.00	
Ferry Ticket	£1000.00	
Fuel & Tolls	£800.00	
<b>Equipment</b>		<b>£2,850.00</b>
Ropes	£800.00	
Rigging Gear	£1200.00	
Surface Camping	£600.00	
Spares Kit	(£50 hire) £250.00	
<b>Food</b>		<b>£2,000.00</b>
Surface Food	£2000.00	
<b>Safety</b>		<b>£1310.00</b>
First Aid Training	£910.00	
First Aid Kits	£250.00	
Rescue Kits	£150.00	
<b>Miscellaneous</b>		<b>£250.00</b>
Stove Fuels	£250.00	
<b>Contingency</b>		<b>£810.00</b>
10% of fixed budget	(£10,740) £1075.00	
<b><u>Total Expenditure</u></b>		<b><u>£11, 815.00</u></b>

## Income

<b>Personal Contributions</b>		<b>£7,175.00</b>
Deposits (~£175.00/person)	£4375.00	
Food (~£80.00/person)	£2000.00	
Insurance (~£10.00/person)	£250.00	
First Aid Training (~£30/person)	£750.00	
<b>Sales</b>		<b>£750.00</b>
Vehicle Sale	£500.00	
Spares Kit	£200.00	
Publications	£50.00	
<b><u>Total Income</u></b>		<b><u>£7,925.00</u></b>
<b><u>Shortfall To Raise</u></b>		<b><u>£3,890.00</u></b>

## Funding

Although amounts are uncertain at the moment, last year's expedition was able to acquire funding from:

The Royal Geographical Society  
The Ghar Parau Foundation  
Oxford University

Whilst the Gordon Foundation provided a Land Rover, which would immediately reduce the above deficit to £2,890.00

The possibility of sponsorship for the provision of food and batteries will further reduce this.

There is also the possibility of funding from the Oxford University Cave Club to cover the cost of new equipment, whilst a thorough checking of all expedition equipment, including ropes and rigging gear, may further reduce costs, as current figures are estimates.



## Personnel

**Expedition Leader** – David Legg, 2<sup>nd</sup> year History Undergraduate  
Exeter College  
1 OUCC expedition in Spain  
[David.legg@exeter.ox.ac.uk](mailto:David.legg@exeter.ox.ac.uk)  
07966374769

**Treasurer** – Paul Garver, 3<sup>rd</sup> year Physics Undergraduate  
St Edmunds Hall  
2 OUCC expeditions to Spain

**Secretary** – Cristoffer Pedersen, 2<sup>nd</sup> year History and Politics Undergrad  
St Catherine's College,  
1 OUCC expedition in Spain

**Gear Officer** – Simon Goddard  
2 OUCC expeditions in Spain

**Medical Officer** – Anette Betcher, Bioinformatics Officer  
University of Oxford Bioinformatics Centre  
2 OUCC expeditions to Spain  
Expeditions to the Philippines, Vietnam, and Austria

**Safety and Rescue Officer** - Dr Gavin Lowe, Computer Studies tutor  
St Catherine's College  
10 OUCC expeditions to Spain  
Expeditions to China

**Home Agent** - Dr. Steve Roberts  
St. Cross College

**Field Agent** - Juan-José González Suárez  
Federaçion Asturiana Espeleologia

For further information please visit:  
<http://milos2.zoo.ox.ac.uk/~oucc/index.htm>