

THE UNIVERSITY OF BRISTOL SPELAEOLOGICAL SOCIETY EXPEDITION TO GREECE 1984

by

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ABSTRACT

In the summer of 1984 a ten-person expedition explored the Askion and Vermion mountains of northern Greece. Twenty-four small caves were found, of which only one was currently active. The longest cave was just 115 m in length. There are no plans for a follow-up expedition.

INTRODUCTION

In the autumn of 1983 it was decided that the following summer should be the occasion of a major U.B.S.S. caving expedition abroad. It was felt that an effort should be made to venture further afield than Austria or Spain, preferably to a hitherto unexplored area. The Askion and Vermion mountain ranges in northern Greece (FIGS. 1 and 2) were chosen, after consultation with Tony Waltham and research in the library of the Royal Geographical Society, because of their height and good depth of limestone. As far as could be determined no other party of cavers of any nationality had visited the region.

Great difficulty was experienced in obtaining large-scale maps of the area, the best available being 1/200,000. It was therefore decided to send an advance party to try to buy maps locally and to carry out a reconnaissance. This party consisted of Steve McArdle and Nick Patrick who arrived at Siatista on the southern slopes of the Askion range on 3 August 1984 after travelling across Europe by train. In the event they were unable to purchase maps even of the quality available in Britain, but they did do some useful surface work.

Of the remaining members of the expedition, Mike and Sue Bertenshaw, Martin Warren and Clive Owen travelled in two cars with the tackle, arriving at Siatista on 15 August; and Wanda Iskrzynska, Charlie Self, and Pete and Alison Moody flew. Once there it was possible to move the whole expedition from site to site by car, in relays.

As Askion had proved rather disappointing to the advance party it was decided to move fairly promptly to the Vermion range once most of the expedition had assembled at Siatista and carried out some limited exploration. The transfer to the new site, on the eastern side of the Vermion mountains, was effected on 18 August. Two further moves of camp were made, to sites on the western side of the range. The remainder of August was spent exploring Vermion, with a couple of short excursions to the Vourinos range just to the south-west and one visit back to Askion to follow up a promising lead.

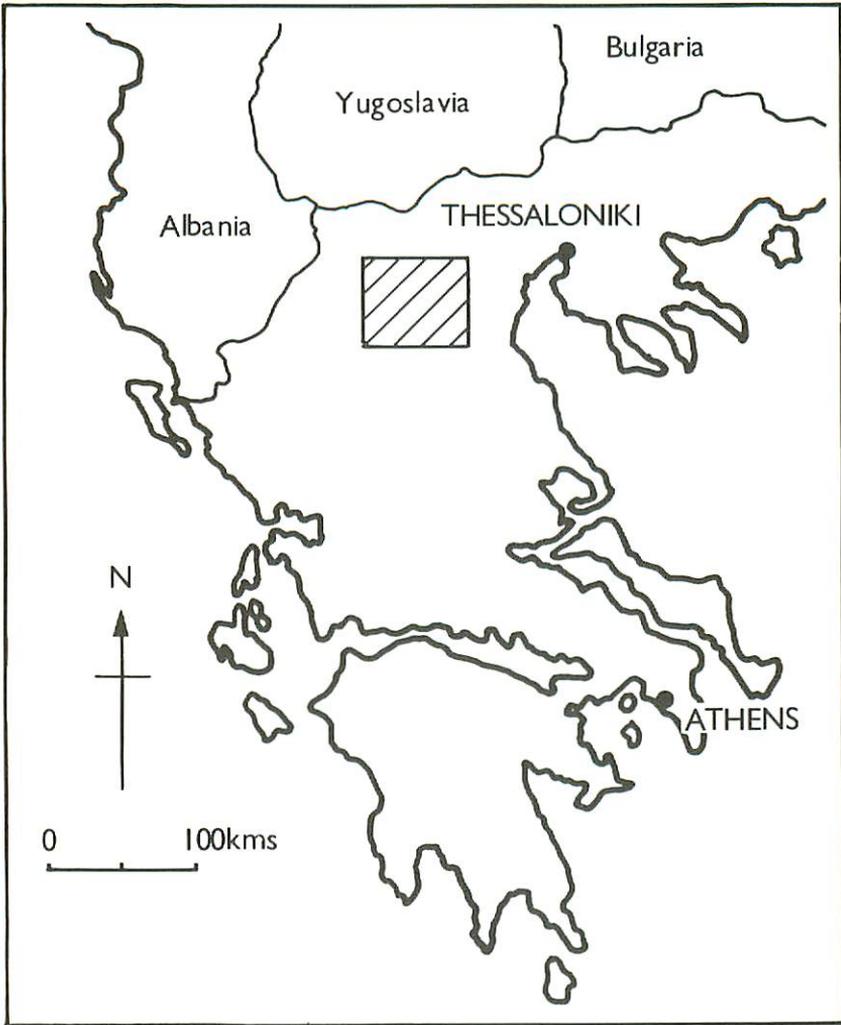


FIG. 1 — LOCATION OF ASKION/VERMION AREA

On 1 September the expedition set off for Astraka (Waltham, 1978) to do a final three days of sporting caving, descending Tripis Tis Nifis and Ulysses Pot before departure for home.

Expenses and finances are summarized in the appendix (p. 191).

DESCRIPTION OF ASKION

The Askion mountain range has the form of a broad ridge about 25 km long running north-south (PLATE 1). It covers an area of some 250 sq km and rises to a maximum height of 2111 m. Its name, meaning 'without shade', is apt as its hills are rounded and bare. Vegetation consists of grass and scrub oak with a noticeable increase in the density of cover on north-facing slopes.

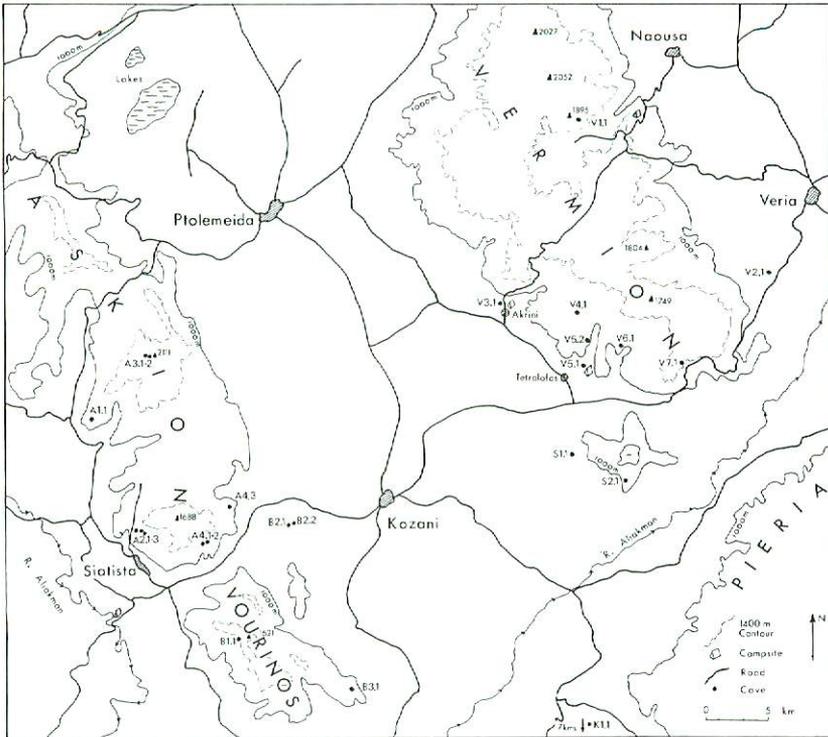


FIG. 2 — ASKION AND VERMION REGION OF GREECE

There is a distinct absence of surface drainage in the hills themselves though the Aliakmon River runs southwards within 5 km of the western slopes. Karst features include karren above Siatista and a mature limestone pavement in the Pelekanos region about midway up the western flank of the range. Several closed depressions were noted in the south-east part of the area.

DESCRIPTION OF VERMION

Like Askion, the Vermion range takes the form of a ridge running roughly north-south and is about 32 km long. Larger than Askion, it has an area of some 450 sq km and the highest point is 2052 m. Much of the ground above 1400 m forms three plateaux: northern, central, and southern. These plateaux are very bare like Askion but the edges of the range present a marked contrast. The eastern side is heavily wooded, with forestry being practised above 800 m and fruit grown lower down. This side also has a number of streams and a large resurgence at Naoussa which produces 5-10 cu m/sec and supplies the town's water. The western side (PLATE 2) is very dry by comparison with only a few small springs, all of which have blockhouses built over them with pipes conducting the water to local villages. Vegetation on this side of the range is sparse and similar to that of Askion. Both eastern and western sides are very steep with outcrops of rock up to 75 m high. Large drift deposits are present on the western side.

A visit to the northern plateau revealed a number of small dry valleys and a series of closed depressions running north–south. Two shakeholes, each 50 m across, were found near spot height 1895 m but these were blocked. In this area the rock is a calcareous conglomerate which is also found on the central plateau along with red mudstones.

GEOLOGY AND GEOGRAPHY

The geology of Greece (Ager, 1980) has been divided into a series of zones based on the palaeogeography of the region and on earth movements. These zones run parallel to the Adriatic coast, that is north-west – south-east.

Kozani lies within what has been called the Pelagonian Zone, an area chiefly composed of old metamorphic basement rocks. From Triassic times the Pelagonian Zone was a land ridge where no sediments accumulated. However there were two saddles on the ridge, one located near Kozani, and in these dips more than 1000 m of thick white limestones were laid down. In late Jurassic times these limestones were superimposed by lava flows. The limestone is thus Triassic and Jurassic in age, though extensive recrystallization has destroyed almost all the fossils that could help identification.

The Vermion mountains to the east of Kozani belong to a different zone, the Vardar Zone, which was thrust up over the top of the Pelagonian Zone by major earth movements at the end of the Cretaceous period. The Vermion mountains are thus a major nappe structure. The rocks are a mixture of limestones, flysch and lavas dating from Jurassic to Cretaceous times, though the main bulk of the sediments are limestones of late Cretaceous age.

Observations by members of the expedition confirm that the Askion and Vermion mountains are composed mainly of limestone. This limestone is massive, hard and recrystallized. There is very little soil cover on the tops and the bare, rounded hillsides are deeply dissected by valley systems, now mainly dry. The valley sides are cut by steep erosion gullies to give a classic 'badlands' appearance to the terrain (PLATE 2).

Much of the lower land is covered by a thick layer of outwash debris. Only rarely have the present small seasonal streams succeeded in cutting down to the original valley floors. For their water supply the local people rely on springs, the resurgence at Zoodohos Pigi (V7.1) supplying water for a dozen villages at the southern end of the Vermion mountains.

The deep valley systems obviously pre-date the present climate, which is dry even by Mediterranean standards. The colder and wetter climate that prevailed during the Quaternary was responsible for the bulk of this erosion. No caves were found associated with this phase of erosion, which is hardly surprising in view of the quantity of debris that fills the valleys.

The caves discovered by the expedition are all much older, most lying high on the hillsides and bearing no relation to the present landforms. The most promising find, A3.2, was on the crest of a ridge near to the highest point of the range. Like many of the other caves here it soon ended in a mud

EXPEDITION TO GREECE



PLATE 1 — SUMMIT PLATEAU OF ASKION, SHOWING BLIND SOLUTION DEPRESSIONS
Phot.: A. N. Patrick



PLATE 2 — THE 'BADLANDS' SCENERY OF WESTERN VERMION, SEEN FROM CAMP
AT TETRALOFOS
Phot.: A. N. Patrick

EXPEDITION TO GREECE



PLATE 3 — CAVE V6.1 OF THE VERMION REGION

Phot: A. N. Patrick

and boulder choke. Most of the finds were clearly phreatic and fossil and a number of solution pockets were exposed in cliffs, most notably A4.1 which was 9m high. The exceptions to this are the springs, which are mostly immature. The only resurgence large enough to be entered, V7.1, soon became impassably small.

The chances of finding a young active cave system in this region large enough to be entered seem slim, while all that remains of the older systems are a few fossil remnants, all choked.

THE CAVES

A1.1 Location: in outcrop 150m (vertical) above road between Eratira and Sisanion at junction with road to Pelekanos. Visible from road. Altitude 800m.

Description: this is a phreatic hollow 2m high and 3m deep. Smaller (impenetrable) tubes lead off from the main cavity. A number of other small phreatic features are to be found in the same outcrop, including two 6m long tubes of 0.75m diameter.

A2.1 Location: in a cutting on the east side of the Siatista to Galatini road, at the crest of the pass. Alt. 1190m.

Description: a low entrance leads into a chamber containing insects, graffiti, and refuse. Off the chamber is a 3m deep pot with a boulder floor. A number of stalagmite bosses are to be seen. Length 10m, depth 5m.

A2.2 Location: 200m east of A2.1 is a rocky closed depression. The cave is in rocks 50m south-east of this. Alt. 1240m.

Description: a very steep open shaft descends 7m to a rift. Both shaft and rift are choked.

A2.3 Location: 50m south-east of A2.2 in a patch of bushes on a limestone pavement. Alt. 1250m.

Description: the entrance is a grike partially blocked by shepherds. A 3m drop on to a boulder floor is followed by a 1m step under a low arch into a chamber 4m across with a flat boulder floor and a small colony of bats. No way on can be seen.

A3.1 Location: on the ridge 400m west of the summit of Askion. Alt. 2050m.

Description: a 2.5m drop leads to a short rift passage with a boulder floor. The passage runs west for a few metres, then turns south and becomes too narrow. Length 10m, depth 4m.

A3.2 Location: between A3.1 and the summit of Askion in a shakehole 7m across and 6m deep. Alt. 2080m.

Description: a low arch 1m wide in a rock wall leads to a 6m pitch. This drops into a chamber with flowstone on the walls and a boulder floor. A 1m wide passage leads off from the west side of the chamber but turns north and chokes after only a few metres. Depth 15m.

A4.1 Location: obvious huge entrance in valley 2km north of Siatista to Kozani road, 5km east of Siatista. Visible from road. Alt. 1190m.

Description: this feature is 9m high and 20m wide. The floor rises gently to a small blind passage at the eastern end of the back wall. The passage closes down after 2m.

A4.2 Location: in limestone pavement on top of A4.1, between cliff-line and line of closed depressions. Alt. 1220m.

Description: two circular holes 0.6m across have boulders resting on them to exclude sheep. A drop of 2.5m leads to a stoop under a low arch and descent into a small mud-floored chamber 2m high and 2m wide.

A4.3 Location: in east-facing cliffs above village of Xirolimni on Siatista to Kozani road. In gully above dry stream bed running down to sheepfold near to northern end of cliffs and 12m below cliff-top. Alt. 1110m.

Description: a 1m high slot in the back of the gully leads to the head of a 7m pitch after 2m. The foot of the pitch has a boulder floor and the walls are well covered by flowstone. Several impenetrably small inlets may be seen and there is no way on.

B1.1 Location: an unmetalled road runs along the western flank of the Vourinos mountains from the main road just south of Siatista. 6.5 km from the junction a track leads east towards a forested ridge. After 3 km a church is reached at the crest of the ridge. A path leads south from the church and begins to traverse the face of a cliff. The entrance is a cleft in the cliff at the end of the path, 200 m from the church. Alt. 1540 m.

Description: the entrance is 2 m high and 1.5 m wide, narrowing to a 0.75 m diameter phreatic tube. This gradually increases in size and leads to a chamber 3 m by 4 m and 2.5 m high. The chamber contains poor black formations and the way on is blocked by flowstone. Length 50 m, depth 5 m.

B2.1 Location: a small isolated bluff lies 700 m south of the road between Siatista and Kozani, opposite the village of Kalamia. The cave is at its western end. Alt. 830 m.

Description: a small tube leads for 15 m to the head of a 5 m pitch. There is no way on from the foot of the pitch which lands on thick mud.

B2.2 Location: obvious 'entrance' on north side of the bluff mentioned under B2.1. Alt. 820 m.

Description: this turned out to be another solution pocket. A number of phreatic tubes were found nearby.

B3.1 Location: high on the south-facing slope of ridge 5 km south-east of village of Kerasea, which is some 15 km (by road) south of Kozani. Alt. 1180 m.

Description: this is an open fissure 10 m wide by 20 m long and 8 m deep which was descended by ladder. At the western end a walking-sized passage leads off with walls well covered by flowstone. The passage narrows after 15 m and then becomes slightly larger again only to end in a flowstone blockage after a further 20 m.

A steep tube in the southern wall near to the bottom of the fissure connects to the surface and provides an alternative to the pitch.

V1.1 Location: west of Naousa a spur from the road leads into a valley 3 km south of spot height 1895 m. From the valley a track climbs towards a saddle 1.5 km east of point 1895 m. The entrance is in a bank at the west side of the track 400 m south-west of the saddle. Alt. 1410 m.

Description: a small low entrance soon widens into a chamber 4 m by 2 m and 1 m high. A lower chamber can be seen through holes in the floor, which is made of slabs of shale. The cave itself is in a calcareous shale band amongst metamorphic rocks. The lower chamber is slightly smaller than the first and no way on can be seen.

V2.1 Location: 500 m west of the Veria to Kozani road and 1.5 km north of the village of Georgiani in an outcrop of limestone above an orchard. Visible from the road. Alt. 480 m.

Description: this is a solution pocket with a height of 3 m, 5 m wide and 10 m deep.

V3.1 Location: from Akriini a track leads north-west over the mountains towards Naousa. The cave, which has been made into a church, is at the west side of the track, 750 m above the village. Alt. 960 m.

Description: this cave is in a lens of calcareous conglomerate and has been partially enclosed and gated in the process of making it into a church. The main chamber, which is just inside the entrance, is 10-12 m wide and 3 m high. A second entrance is 5 m right (north) of the first. To the left of the main entrance are two inlets which are too narrow to follow. Ahead, passing to the left of the altar, the roof becomes lower and two tubes go off in a northerly direction. Both become too tight after a few metres. There are no other ways on.

V4.1 Location: from Tetralofos a track runs north-east to an unnamed hamlet which is reached after 5 km. Just above this the westerly branch of a track junction leads into coniferous forest. The entrance is at the north side of the track 2 km beyond the junction. Alt. 1220 m.

Description: the entrance is a hole 1 m in diameter in the bank on the uphill side of the track. It opens immediately on to a 30 m pitch from the surface. At the bottom of the pitch a further descent of 10 m is possible into a narrow rift which pinches out after 5 m. The floor is choked with gravel. Above the rift an aven can be climbed for a few metres until it becomes too narrow.

V5.1 Location: there is a water trough at the west side of the track mentioned under V4.1 just outside the village, opposite a football pitch. 100 m west of this is a stream bed running down from the north. The site is 500 m upstream from the trough. Alt. 790 m.

Description: several small holes draught strongly outwards from an area of fault breccia. 100 m upstream a very strong draught can be felt from an open joint in the west bank. Both sites were dug for two days using explosives to excavate the open joint. There was no sign of an imminent breakthrough at the end of this time.

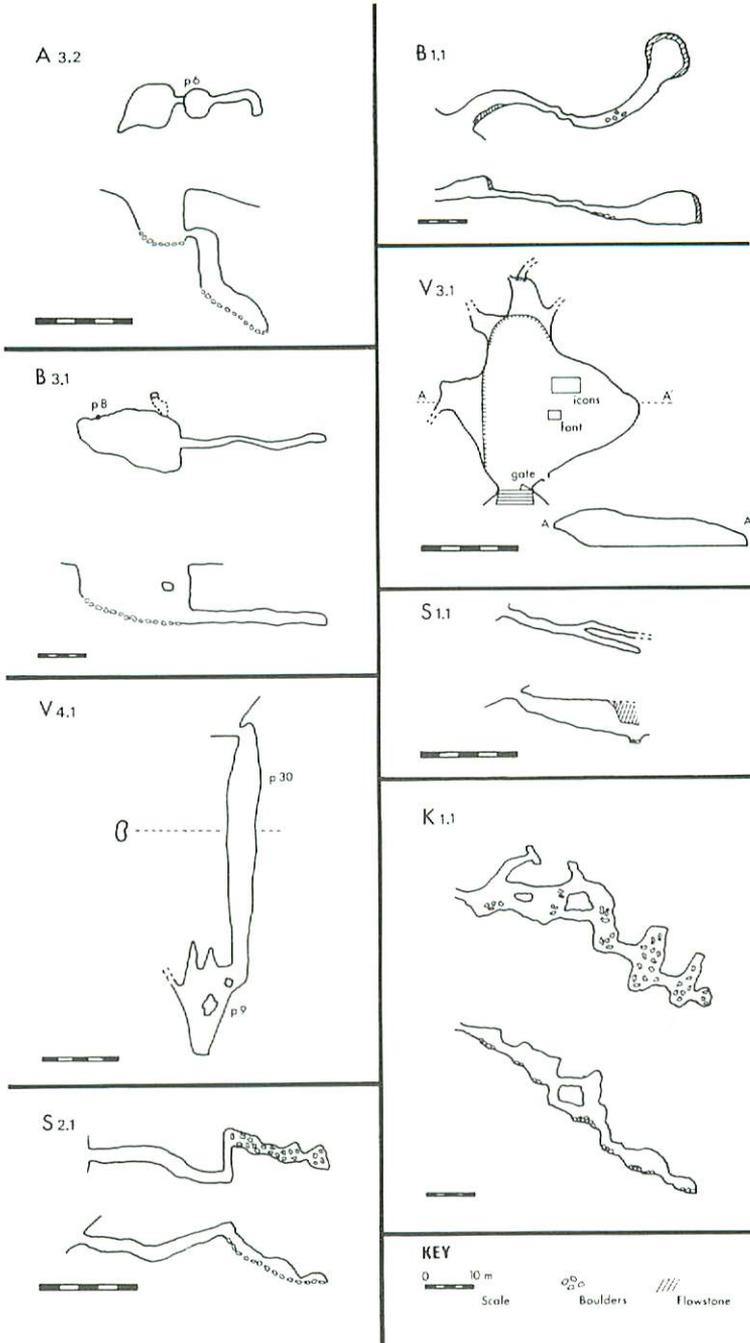


FIG. 3 — CAVES OF THE ASKION AND VERMION REGION

V5.2 Location: 1 km upstream of V5.1, high in the east bank of the stream. Alt. 860m.
Description: slippage of a shale horizon has revealed a small hole through which it is possible to squeeze into a low chamber 2.5 m across, floored with mud. The mud obscures any way on.

V6.1 Location: the next village east of Tetralofos is Voskohorion. From here a track leads north up a valley. The entrance is in a cliff face and can be seen from the track 4 km from the village. Alt. 1040m.

Description: the entrance is 10 m high and 4 m wide (PLATE 3). The rising clay floor meets the roof after 30 m.

V7.1 Location: this is situated at Zoodohos Pigi on the Kozani to Veria road. On the north side of the road 50 m west of the Angelo's cafe is a roadside fountain fed by the resurgence. Behind the fountain is a churchyard. The cave is inside a locked blockhouse in the churchyard 15 m from the road. Alt. 1280 m.

Description: the water emerges from a low bedding plane 2 m wide and 0.3 m high. Progress is halted 5 m in by collapsed slabs of limestone over which pours water from cracks in the roof. A search of the area around the churchyard revealed no other entrance.

S1.1 Location: the Skopos hills lie 8-10 km south of Tetralofos and can be reached by a track from the Kozani to Veria road. This track crosses a ridge 2 km east of the highest point. The cave is in the east bank of a stream bed 400 m east of this point. Alt. 900 m.

Description: a boulder has been used to block the entrance. Inside, a rift passage 1 m wide with a boulder floor descends for 10 m to a 1.5 m drop into a blind pit. A draught can be felt from beyond a barrier of flowstones. There are well-developed stalactites on the roof.

S2.1 Location: the Skopos hills form a ring about a deep closed depression 1.5 km across. The cave is high on the west flank of the southern spur of the hills. Alt. 1120 m.

Description: the entrance is a phreatic tube 3 m in diameter. The passage rises gently for the first 15 m before turning sharply left and narrowing. A steep bouldery descent leads to a small, well-decorated grotto after 15 m. Length 35 m, depth 10 m.

K1.1 Location: 25 km south of Kozani is the village of Metaxas. A further 2 km south of here a dry valley runs up into hills east of the road. The cave is amongst scrub high on the north side of the valley 2 km from the road. Alt. 1140 m.

Description: the entrance is a small hole dropping into a sloping chamber 4 m across and 3 m from floor to ceiling. To the left is a descending rift which is choked at the bottom by mud. At the bottom of the entrance chamber it is possible to descend through boulders by two different routes into a second chamber. Boulders were removed to reveal a 2 m drop into a rift. The cave ends in a series of bouldery rifts decorated with flowstone and looking as if the removal of more boulders could yield more passage of a similar nature. It is reminiscent of Read's Cavern in Mendip. Length 115 m, depth 35 m.

CONCLUSIONS

The results of the expedition can be summed up under three headings: cave exploration, geomorphology, and future prospects.

For the first of these it is sufficient to say that some twenty-four caves were found and described. The longest, K1.1, was 115 m in length and the deepest, V4.1, boasted a 30 m pitch in a total vertical range of 40 m. The altitudes of the entrances varied from 480 to 2080 m. These finds would have caused some excitement on Mendip, but in terms of continental cave exploration can only be considered a disappointment.

The caves visited by the expedition show no relationship to the modern landscape. This is because they predate the cold wet phases of the Quaternary which produced the present-day valley pattern. Evidence for this is to be found in the boulder and mud blockages in many of the caves, even in those with the highest entrances.

Active younger systems of any size are unlikely to be found in this area so the prospects for future cavers lie in breaking through blockages in the older systems. It should be borne in mind also that, because of the help we received from local people, it is unlikely that other entrances are to be easily discovered – otherwise we should have been shown them!

ACKNOWLEDGEMENTS

This expedition was made possible by financial assistance from the Ghar Parau Foundation, the Sports Council and the Tratman Fund administered by the University of Bristol.

Particular thanks are due to Tony Waltham, who provided helpful advice and encouragement whilst the expedition was being planned. Thanks also to Dick Willis and Julian Griffiths who, besides rendering useful information, allowed their names to be submitted as the expedition's referees for the Sports Council and Ghar Parau applications.

The expedition would have found far fewer entrances had it not been for the local people who enthusiastically led us to caves and then insisted that we share lunch with them, often showing amazing generosity and hospitality. Many were very kind and helpful but Angelo, Ivgenios and Florentia were outstanding.

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APPENDIX – FINANCIAL STATEMENT

Income	£ p	Expenditure	£ p
Grant from Tratman Fund	400.00	Train fares	227.00
Grant from Ghar Parau	150.00	Flights	560.00
Grant from Sports Council	200.00	Ferries and green cards	644.65
Members' Contributions	2176.12	Petrol	561.83
		Road tolls	108.73
		Local bus and rail fares	19.00
		Food	345.32
		Insurance	222.00
		Camping	23.78
		Tackle & explosives	213.81
	2926.12		2926.12

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