

THE UNTAMED RIVER EXPEDITION TO PAPUA NEW GUINEA

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Whilst some of the caves in the more accessible areas of Papua New Guinea have been explored since the 1930's, it is only comparatively recently that major expeditions have turned their attentions to the country. Papua New Guinea is a very difficult country to organise any expedition to; even the simplest caving trip can be a nightmare of logistics as there are very few areas in the country which are accessible due to the lack of a basic infrastructure of roads; the total lack of railways; and the generally limited development of the country.

It was in the 1970's and 80's that major International expeditions turned their attentions to the tremendous potential that exists in Papua New Guinea, with perhaps the most spectacular successes being achieved by Australian expeditions in the Southern Highlands with the discovery of Atea Kananda and Mamo Kananda. Certainly the Southern Highlands area still possesses a lot of potential for further major cave exploration. In addition there are several other areas of interest on the mainland, particularly the West Sepik Telefomin area explored by the British in 1975.

If one looks at the New Guinea islands of New Ireland, Bougainville and New Britain, the story is very different, with only limited caves being discovered up until the early 1970's. On New Ireland the Lelet Plateau exhibited quite a great deal of potential but was very disappointing when Australian expeditions spent some time exploring there.

On Bougainville there is a very noticeable Karst feature, The Sinkhole, and many smaller caves having been explored by expatriates working for Bougainville Copper and other companies on the island; however, again, no major development has yet been discovered and probably does not exist.

New Britain is the largest off-shore island of Papua New Guinea being 600 kilometres long and approximately 80 kilometres wide. The main mountain ranges are the Nakanai Mountains and the Whiteman Mountains, with some other small areas of Karst Limestone in addition to the major development in those two ranges. The Nakanai Mountains became known in the early 1970's when Mike Bourke and others discovered the huge, collapsed dolines of Nare, Minye, Kavakuna, Ora amongst others.

These shafts generally exhibit huge Karst features with major collapses into dolines usually in association with very large underground rivers. the Nare Cave is particularly spectacular, being a 340 metres shaft, 150 metres across, like a cylinder that has been punched down through the tropical jungle. In 1978 and 1980 two very successful French expeditions managed to explore the Kavakuna doline; partially explore the Nare, and descend the Minye shaft, but were repulsed by big rivers in each case. In particular a comment made by the French leader, that the river in the Nare was "untamable", led to the naming of *The Untamed River Expedition*.

The tremendous caving challenges of these huge holes was seen by Mike Boon, a well known British caver who now resides in Canada; who, along with Dave Gill, decided to mount an expedition to explore the Nare, the Untamed River. A team of twelve people was assembled in England consisting partly of experienced cavers to be involved in the exploration, and partly of less experienced persons to be involved in the surface support; these people actually finished up doing a lot of cave exploration themselves. The twelve expedition members were drawn from a variety of professions and included a doctor borrowed from the British Army.

It was a daunting task to establish such a major expedition with the intention of putting a twelve-man team into the jungle for a minimum of three or four months. Preparation took almost a year and involved the amassing of a tremendous amount of equipment, food and medical supplies. All possible contingencies had to be allowed for due to the remoteness of the area to be explored.

A major boost was given to the expedition when it was given Royal Geographical Society approval. This led to many doors being opened and, in addition, the nature of the expedition captured the public's eye and much sponsorship and publicity was received.

Our major sponsors included British Airways; Bank Line Shipping Company, who shipped all the equipment to Papua New Guinea for us; and many specialists in caving equipment including Beal (rope); Oldham (lamps) and Duracell (batteries). Over two tonnes of equipment was eventually assembled and shipped to Rabaul, the capital of East New Britain Province.

The principle intention of the expedition was to explore, survey and photograph the Nare cave; and then to look at any other caves in the area which could be discovered, since there were obviously many other caves to be found in that vicinity.

The Nakanai Mountains were reached by taking a day's journey on a small coastal freighter around the south coast of New Britain. Then a base was established at a logging camp, to which we were grateful for accommodation and storage. From that point it was approximately 45 kilometres into the jungle to the intended Base Camp. We were fortunate to have the services of a helicopter available to us, and this lifted in the majority of the equipment, and some of the personnel, to enable an early start to be made in the exploration of the Nare.

A camp site was established made out of polythene sheeting laid over saplings framed up by local villagers. We slung hammocks between poles under mosquito nets and set ourselves up approximately 400 metres from the huge shaft.

The nearest village, Ire, was about two or three hours walk away. Beyond that, going back down towards the coast, was a mission station called Nutuve, which was the nearest radio and medical post. It was often easier for the villagers from Ire to come to our camp and receive attention from our doctor than to go to the Nutuve mission.

The expedition began in earnest when the shaft itself was rigged. This was done in three ways. There was what was referred to as the Trade Route, which consisted of approximately 10 drops in varying sizes, some very short, with the final drop being 120 metres to the bottom of the hole. On the opposite side we rigged down through the trees, as we had done on the Trade Route, but reached an overhang which gave a free hanging pitch of 260 metres in a single drop. This was rigged using a rope especially brought for that purpose. In addition, above the upstream porch there was a hauling line established, again using a special long rope, to lower equipment, food and Carbide down the hole for the exploration.

At the base of the shaft a river was visible of approximately 15-20 cubic metres per second, running across the bottom between two large entrances. Upstream, it was a short distance to a sump where the river welled up from underground. Downstream was a huge porch and the river disappeared from view in a passage 70 metres high and 70 metres wide.

Initial exploration was made by going in and out of the cave every day. This very soon proved to be a major effort after a day's exploration and so a camp was established at the bottom of the shaft. It was a remarkable experience to look upwards, with blackness all around, and see an unexpected grey circle with stars in it, high above. Unfortunately, one night we experienced a major rockfall and spent the rest of the night sleeping in helmets! This prompted us to move the camp underneath the porch but there was nowhere suitable to camp without first crossing the river.

The fixing of a horizontal line across the river (Tyrolean line) was the crucial method of progressing the exploration of the cave. One proceeded along ledges, at or above water level, to which many safety lines and handlines were fixed in order to ensure that one didn't fall into the boiling white water leading who knew where. This carried on until the ledges ran out and the walls undercut, at which point it became necessary to cross to the other side of the river. This was usually accomplished by throwing a grappling iron across the river to lodge behind boulders or stalagmites.

We used a very carefully worked out technique, practised many times in white water rivers in Wales, whereby the grappling iron was used as a trail ferry (where a person holding onto the line is washed from one side of the river to the other while

wearing double buoyancy jackets). It was necessary to have two lifelines on this person: one that was located upstream and one downstream.. If an upstream line only had been used, and had been required to hold a person in the event of the grappling iron coming loose, the water pressure would have forced the caver deep into the river incurring a serious risk of drowning. It was necessary for the person upstream to play the caver in the river like a fish; while the person on the lower end pulled in hand over hand as quickly as possible. Fortunately this didn't happen often. In some instances, where the river was too wide to throw the grappling irons across, we used a 50mm compressed air powered mortar to fire them, on permanent loan to the expedition from the S.A.S.

Progress in the cave was extremely slow. We would perhaps rig 100 metres of safety line along the side, and on some crumbling ledges, to reach a point where one could progress no further; spend several hours putting in a Tyrolean line; get over to the other side; progress another few hundred metres and then have to cross back over again! Thus a few hundred metres of cave could take a day or two to explore. Trips were normally taken as 12 or 13 hour working days and after three or four days underground a return trip was made to the surface to enjoy a bit of sunlight.

There were numerous places along the river where technical rock-climbing was involved to make progress, with some very challenging traverses and one climb across a rock bridge from one side of the underground river to the other.

Throughout all this, the noise was constant to the point where we had to wear earplugs to get any sleep at all. All movements such as river crossings had to be completely worked out beforehand because no form of verbal communication was possible should any unforeseen problems arise.

The Tyrolean lines themselves were fixed by the use of an ingenious tensioning (Pabsablog) knot which we were very careful to de-tension at the end of each trip to reduce rope fatigue. This ensured that we were held as high above the water as possible because the river was liable to fluctuations due to the afternoon thunderstorms which were a regular occurrence even in this, the "dry" season. We did have two unavoidable low Tyroleans in the water and one very spectacular sloping one where it was necessary to prusik up; however sliding back down on a Petzl pulley was the best way to make the return journey, and considerably quicker too.

After some weeks of slow progress, one of the team jumped over a narrow chasm onto a ledge to which we were able to fix what proved to be the final Tyrolean. We rounded a corner and came to what we called Armageddon. The cave didn't end, there but was certainly impassable. The passage had come down dramatically in size to be approximately 5 metres wide and 1.5 metres high and completely filled with the raging river. There were no ledges available to us - they had run out - and every now and then a large wave sealed the passage completely. A spotlight shone down the passage indicated that this was happening for at least another 30 metres. There was a feeling of frustration at not actually reaching the end or a positive

conclusion to the cave but it was not possible to make and further progress and remain alive.

A further week and a half was spent carrying out a survey, photographing and detackling the cave, in which everything was removed from the cave including a telephone line down to the first camp. The survey revealed that there were no side passages at all in the Nare.

At the same time that the Nare was being explored our support team was exploring numerous other small caves in the area. Unfortunately none of these revealed any major developments and certainly did not lead us into the Nare as we had hoped would happen. In addition a small team spent a week on a reconnaissance trip to the Ora cave but didn't succeed in getting any further than the Australian expedition had in 1973.

The last ropes were removed from Nare just before Christmas and we had a brief break down at the logging camp on the Coast to recuperate and to celebrate Christmas and the New Year. The local villagers were hired to keep an eye on our camp and they did a splendid job. Considering that there was no one else in the area who was likely to pinch anything, it was the best way to ensure that nothing went missing!

Upon our return to the jungle, we found the campsite a little more overrun, and the regrowth already starting. Of course the wildlife in the jungle has no regard for civilisation and we were often visited by such things as snakes, scorpions, spiders, bull ants, and leeches. The best near miss occurred when a scorpion was found in the seat of one man's trousers as he was about to put them on!

After Christmas the team was substantially reduced, initially to five, and then to four shortly afterwards. We had been shown the entrance to a cave called Pavie, just before Christmas, by the hunters from the village after we managed to make it known to them that we would be interested in exploring it.

Pavie was a large shaft, similar to Nare but not as deep, perhaps 120 metres in total. We set up a small base camp under an overhang at the entrance since it was several hours walk away from our Base Camp. After the entrance shaft we encountered a small series of passages (including a high dry ox-bow with nesting cave swiftlets) eventually leading to a pitch down into a large river. We were then involved in carrying out numerous Tyrolean crossings of the river for over one and a half kilometres until we reached the sump.

The survey showed that this was probably the upstream section of the Nare River Cave, but there were obviously other feeders since the river was small, perhaps only 10 cubic metres per second. Even though it was a smaller river, it was no less dangerous, and one of the team broke a rib on one of the river crossings here.

During the exploration of Pavie Cave there was a bit of light relief when the local villagers held a Sing Sing, which was partly an initiation ceremony for the young

men of the village, and partly a gift exchange ceremony to another village who had helped out this one in the past. It was a fascinating insight into tribal cultures and we were possibly the only people from outside the area to have ever seen it.

When we had flown into the area by helicopter we had inadvertently gone further into the mountains than the Nare area and had spotted a large arch, taking a bearing on it from the helicopter. In order to find it we sent out our local guide, Camillus, to check other the villages in the area. He managed to locate the Gamvo arch, so after the exploration of Pavie was complete, two of the team went up to the site of the cave. This was approximately half a day's walk from our Base Camp and felt a long way into the bush. A very simple bivouac was set up with hammocks between trees, beginning the exploration of this cave.

Directly underneath the huge arch was a shaft approximately 170 metres deep and broken into several pitches by ledges. On many of the ledges there were large hairy spiders and Scutigera centipedes. The only similar life we had seen were large tailless whip scorpions, with 450mm antennae, in one cave, and 100mm leeches (which presumably fed off the bats) in another cave.

At the bottom of the shaft we encountered yet another river, smaller than the river in the Pavie Cave. The passage was low at first but then became wider and higher, eventually developing into a very well decorated river passage, 6 metres wide by 3 metres high; making exploration very easy and spectacular. A short pitch was encountered and a further few hundred metres led to another very intimidating-looking pitch. The whole passage went straight over the edge of the shaft, but unfortunately we had run out of rope and so surveyed out.

A couple of days later the Doctor and Camillus turned up with more rope, food and Carbide and so the exploration of Gamvo Cave continued.

The intimidating shaft turned out to be only 16 metres long but was exciting and spray lashed. This led to a short swimming section with a duck at the end of it exactly the size of a helmet! Very shortly afterwards the passage and the river went through a hole in the floor, a bit like a toilet, which proved tricky to negotiate.

Beyond this a series of very boisterous cascades led us again to a huge passage. After passing several inlets, all adding more and more water to the river, we arrived at the inevitable sump having just passed through a passage over 80 metres high and 60 metres wide. The inlets were explored on later trips when over one and a half kilometres of cave were explored. In total the cave was over 6 kilometres long and nearly 500 metres deep, which was a very respectable depth for Papua New Guinea and indeed the Southern Hemisphere.

Cave surveys were undertaken using a Suunto compass and clinometer and a fibreglass tape. The readings were then entered into a small programmable calculator which produced the co-ordinates. These were then drafted onto sheets of A4 graph paper so that even in the middle of the jungle we were able to draw up what we had explored that day.

Ultimately we ran out of time and so the retreat was made back down to the Coast. This was no simple matter because of the logistics involved in moving all our equipment. In the end we hired an entire village as porters to make the long walk back. Once the equipment was organised we again took a very pleasant South Seas cruise back to Rabaul.

We consider that this was a very successful expedition with over 11 kilometres of new passage being discovered. We felt that we may have done some of the the best sporting caves in the world and were privileged to have participated in this expedition.

Further to our expedition a French team has been to the Nakanai Mountains but only found a few minor caves. The Whiteman Range of West New Britain was also explored by the French expedition but again nothing of major significance was found although it is also a major Karst area. It would seem that in future, expeditions to Papua New Guinea should concentrate back on the mainland again, particularly in the Highlands area. Only last month a Papua New Guinea helicopter pilot told how he had sheltered inside a doline, complete with a load on a sling below him, to wait out a storm squall that passed overhead. He later emerged and carried on about his business. That was in the Hindenburg Wall Region of the West Sepik Province and there must be many more dolines out there waiting to be found.

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