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SOUTHERN CAVER

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"SOUTHERN CAVER"

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WE DID IT OUR WAY

After editing between us, some twenty four issues of "Southern Caver", we have decided to make this issue our last for the time being. We feel that a spell is necessary, but hope to be back at some future time.

We have derived much satisfaction and a good deal of pleasure from producing this publication, which we feel is a very worth while venture and one of the Society's most important activities. We believe strongly that the magazine should be continued and maintained at least at its present standard. Its value in providing members with an accurate record of Club activities and exploration together with the opportunity it gives members to publish articles, many of lasting interest, cannot be too highly stressed.

We trust that future executives will provide the same generous support that we have enjoyed during our terms as Editors of this publication.

Among many worthwhile articles that have appeared during our association, we remember with particular affection the fine series by Kevin Kiernan on the Gordon and Franklin expeditions, and for something different "A Long and Boring Article" which appeared in Volume 8 No.2.

We have endeavoured to cast as wide a net as possible, and have been pleased to publish such diverse items as the series on Glacio Speleology, a subject comparatively untouched, and some of the delightful "SRT Vs Caving" argument. The magazine can be credited with at least a couple of "firsts". Leigh Gleeson's article "Southern Cavers in Exit" (5/2) was, we think, the first time and motion study recorded underground on the local scene, and we believe ours is the only journal to publish humorous articles (that is intentionally). We recall one by Aleks Terauds (a former editor of "Southern Caver") called "Cavers Carless", which, despite its author's protestations, is well based in fact and can even now bring a blush to certain cheeks.

Perhaps the edition that was the most difficult to produce, and in the long run provided the greatest satisfaction was the special issue devoted to the Society's Precipitous Bluff Expedition which we compiled from material written by Kevin Kiernan. This was intended for special publication by the Society's executive, but those responsible for it failed and it was later turned over to us.

No magazine can succeed without contributors and we have been especially fortunate in this respect. We must thank particularly Kevin Kiernan, Steve Harris and Leigh Gleeson for articles of high quality and consistency.

At the time of writing, we do not know who the next editorial team will be, but we offer them our best wishes and condolences.

It remains for us to thank our readers for putting up with us. May we suggest you go buy yourselves a chain saw. (If this reference escapes you see "Fads" by A. Terauds Vol. 2, No.1.)

D. Elliott
R. Mann

A SHALLOW ENGLACIAL CAVE SYSTEM IN THE MUELLER GLACIER, NEW ZEALAND

By Kevin Kiernan

Large volumes of meltwater frequently complicate exploration of terminal outflow caves in glaciers, particularly in summer. Although exploration of shallow surficial grottoes occuring on the bare ice of some glaciers can be most rewarding on account of their often quite exquisite beauty, these larger subglacial caves have been of most interest to the glacio-speleologist. However comparatively little interest has been shown in shallower englacial systems. One such was partly explored by the writer some 2km from the snout of the Mueller Glacier in January 1979. It was essentially horizontally developed, devoid of the large flows which complicate subglacial cave exploration, and was actively enlarging its diameter by aerogenic mechanisms but shortening by collapse.

Caves on the upper reaches of glaciers tend to be of restricted size, with larger but much wetter swallets further downstream. Holes are frequent in the debris covered snouts of many New Zealand glaciers but frequently infilled with rocks and gravel. A number of such holes were examined on the Mueller Glacier prior to location of the cave here described, and subsequently on the Tasman Glacier. Entrances in such situations tend to have to be fairly large and recent to permit entry, and the caves generally appear to be of fairly steep gradient.

Exploration

The morning sun rose reluctantly over Mt. Wakefield and hung unenthusiastically in the morning air as I sweated across the chaotic Mueller debris, dancing from slithering block to stable after having crept down the even more unsound lateral moraine wall behind White Horse Hill. These walls of loose and unconsolidated debris, left unsupported with the downwasting of the glacier, must represent some of the most hazardous features of this part of the Southern Alps, a few years ago knocking out one would be glacio-speleologist. The booming avalanches off Mt. Sefton were rekindled by the first touch of the morning sun as I made my way toward a sinkhole complex in a dry valley, spotted the day before from the Sealy Range. The rattling of rocks down ice escarpments on the glacier grew more frequent as the morning warmed and the ice lips began to melt. My new climbing companion had shown the temerity to be less than enthusiastic about my obsession with glacier caves, had I crawled out of his pit as I was leaving and decided on a sightseeing trip elsewhere.

But for the present there was a never ending ocean of giant boulders but no viewpoint from which to check directions. Then suddenly, the first doline, about 40m wide, flanked to the north by a scarp of hard granular ice 8m high, capped by rock debris and concealing at its foot a shadowy entrance 5-6m high. Every few minutes rocks clattered down over the edge so I paused a while, wondering at the best spot to dive in between volleys, then charged through beneath where some had just fallen and shouldn't be due again for a while.

After about 7m a passage 2m wide and 1m high discharged a small tributary stream which sank at the upstream end of the doline, and a blast of cold air, perhaps 2-4m/sec. The air in glacier caves generally stays close to 0°C depending on the geothermal flux and the temperature and volume of any running water. When the outside air is colder than that within, during winter or on very cold nights, the less dense and warmer cave air rises out upper entrances, such as swallets, or in this case, probably crevasses. This phenomenon is known from some limestone caves. In summer, the air within is colder and more dense and flows out the bottom entrances, and for the moment this reverse chimney effect was making life quite unpleasant. After about 30m of crawling up the icy trickle without much change in passage size, the lure of a more spacious entrance noticed earlier on the other side of the doline became irresistable.

There was only one problem: from within the spacious entrance it was not possible to see from just where overhead the next lot of rocks was likely to come. A smaller entrance would have limited indecision. A few photographs filled in the time. Then 10 minutes pacing back and forth. The choice came to seem like putting it off much longer, losing my nerve, and waiting for winter to freeze the near continuous stone falls into immobility or the arrival of a rescue party with a sherman tank, or else making a break for it. I picked the easiest looking path across the boulders and ran like hell.

Breath recovered, I stood before the next entrance, at the foot of a loose 4m debris barrier built up by entrance rockfall, speculating whether there was sufficient time between volleys to ascend it. There was, but my calculations had forgotten there were two sides to every problem and a clattering behind me had the adrenalin pulsing again before I stood at the foot of the pile in a magnificent entrance 6m in diameter, with beautifully scalloped walls. This large scale (up to 1m long) scalloping results from air current eddies increasing the rate of heat transfer, and is graphically described as "thumb-print ice" by Charlesworth (1957).

The passage disappeared into darkness: this was more like it. After taking a couple of photographs and cursing a malfunctioning flashgun I headed in. The passage was floored with mainly small calibre deposits mostly glacio-fluvial materials, but also some rock fragments derived from the enlcosing ice during aerogenic cave enlargement. After about 50m the main passage veered slightly north-easterly, but after clambering down over some of the larger rocks covering the floor another 40m in, my light went out. Almost simultaneously the ice gave a forbidding groan. I suddenly convinced myself I had strong religious views about people, particularly me, being squashed out of recognition, and momentarily panicked, but rapidly tripped over a rock and stoved my head into the wall. After deciding that if the cave hadn't fallen in after the latter it probably wasn't going to, a little blind fiddling with the light in the dark produced the odd perfunctory flash, and this plus a memory in between saw me back to daylight. A few minutes work and the scungy light blazed again, but I had retraced only half my steps when it died utterly. One day I'll have a companion for these ventures, and with luck he'll be a fanatic about good lights.

Morphology, Spelean deposits and speleogenesis

Nevertheless, daylight and an uncluttered floor permitted access along a large passage running at right angles for 20m to an archway at a slightly higher level linking the original sinkhole with the next downstream. This was 5-6m high, 6-7m wide, 20m long and a truly superb sight. Into one end ran a steep, smooth, ice tube 2m in diameter, from above the earlier passage. It was smooth walled and free of scalloping, having probably only recently been abandonned by running water. In the archway, thin dirt layers were exposed in the glacier ice, stemming from the dust clouds which are raised periodically from the moraines and ridges by strong winds which spread them on the compacting ice further upstream. There were also fairly frequent interbedded rocks. From outside one massive boulder in the roof near the entrance was also identifiable on the surface: the thin roofs bred a new respect when walking on glaciers. About 3-5m thickness of ice beneath the bulk of the overlying rock debris seemed fairly typical.

A further passage only marginally smaller was explored for some 30m, as far as daylight and limited braille permitted, in one corner of the boulder - filled downstream doline. It was developed at the same level as the main passage and was possibly connected to it. Within one wall was part of a discreet body of clear ice partly wetted within the opaque white glacier ice. Halliday Anderson (1972) have suggested similar features in the Paradise Ice Caves, Washington, represent seasonally frozen englacial conduits, and certainly this feature was flowing substantially. It had developed along an inclined minor thrust plane and could perhaps be regarded as analogous to a dip tube in a limestone cave. Presumably there is a seasonal change from a vadose to phreatic state.

Further evidence of probable phreatic activity, noted from a very small passage remnant upglacier, was a narrow degraded ridge of gravel and cobbles 40cm high which rose 1m over a convexity in the ice floor, suggesting deposition in the narrow conduit by water under hydrostatic pressure. Typically, however, the floor of the main system were covered by colluvial deposits of varying calibre near the entrances and waterlain cobbles, gravels and silt further inside, blocking some smaller side passages and forming a small terrace in the first part of the main passage. There was no evidence of the river niches so conspicuous in terminal outflows previously examined, suggesting air currents had long since replaced running water as the main agent of enlargement.

No ice speleothems were present, summer ablation rates presumably being too high for their preservation. The usual spectacular ice blue and green color refractive effects were limited by the thick moraine cover on the ice.

The essentially horizontally developed morphology of the system may stem from its occurrence not far from the point of slowing of the glacier ice. It was developed not far from the point where supraglacial moraine again becomes abundant beyond the tributary ice and heavily crevassed corner around the end of the Sealy Range. At this point englacial debris may be starting to be returned to the surface by upthrusting behind the slowing ice front. The fairly gently inclined thrust planes evident may possibly have provided a site for phreatic speleogenesis by englacial water under hydrostatic pressure, with only a limited vertical component in the structural elements. Vadose flow may have been more quickly achieved under the lower confining ice pressures of essentially subhorizontal distribution near the surface, with the conduits subsequently invaded and modified firstly by supraglacial meltwater and then atmospheric ablation mechanisms.

Alternatively, the shallow depth of the passages beneath the base of the bulk of the supraglacial lode could suggest supraglacial melt adjacent to this darker coloured material which would be differential heated by solar radiation, may have provided both a source of meltwater and a zone weakness where speleogenesis could have been initiated. Diurnal or seasonal refreezing of the waters nearer the surface might favour downward migration of the developing conduit, as would ablation under the influence of the running water, until more consistent conditions deeper in the ice allowed a more permanent and efficient conduit to develop in equilibrium with both meltwater supply and the pressures within the ice tending to close the void.

Subsequently enlargement permitted increased meltwater flow, which was active in further enlargement both in its own right and armed with its load of clastic debris from englacial and supraglacial sources, as a precursor to aerogenic mechanisms of enlargement and ultimately destruction.

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JANE RIVERING

By Ian Cantle

The Jane River, with all its beauty and seclusion has an extremely intriguing and varied system of riverside caves. Because it takes a through trip down the river to be able to see these caves, they are all the more interesting and rewarding - the effort involved and, I suppose because Bob and myself were the first to venture into a lot of the passageways, completed what was essentially a liloing holiday.

About half way to Warnes Lookout, along the Jane River track is a low range called Everlasting Hills. On our first day we raced out to where contour depressions are marked on the Nive Sheet. Small streams meander strangely around little hillocks and one that we follow4d ended up flowing at right angles, excitingly into the Hills themselves. It sank into a small hole with a side entrance that wound its way, with a couple of glow worms on the roof, back to the stream and disappeared with a gravelly ending. The depressions marked on the map are full of thick green forest.

Once on the Jane we soon came to Algonkian Rivulet which again has contour depressions marked on the map. We visited seven lakes (many are not marked on any maps, nor easy to discern on aerial photos) which are really beautiful themselves, often reed-lined and with small quartzite beaches. There were smaller depressions everywhere, but alas no caves - only possums and thick moss forest. Back on the Rivulet we discovered that we'd walked right past small dolomite bluffs that had little nodules and little unnegotiable passages of a couple of metres in length. Some had what appeared to be gypsum flakes near the entrance.

Below the Norway Range and before where the Jane cuts an incredibly beautiful gorge through the bottom of the Surveyor Range, almost every major bend in the river has an outcrop of limestone (or dolomite) usually visible as bluffs from hundreds of yards upstream.

There would often be a small natural arch at river level with a stream passage leading back from this entrance to an open doline entangled in roots and rainforest vines.

Occasionally a whole string of up to six small dolines would extend back from the river, connected underground, or all fallen in creating a parallel-walled gully.

Cave crickets and cave spiders, strangely long legged, criss-crossing webs bejeweled small, pebbly, wet passages.

Up and downstream of the HEC hut for about a kilometre (in between the gorges known sometimes as Humbaba and Gilgamesh) are perhaps where the best caves can be found. One particularly big and contorted, interconnecting system has a large riverside window that looks across the valley to two amazing cascades descending from White Hill Plain.

Continually hopping on and off the lilo to look at every limestone hole became tiring, hazardous (holing liloes on sharp bits of rock) and 'cold-in-the-bones' producing a sort of half-lethargical, half shivering attitude. So some extremely promising passages were not looked at at all, or sometimes only partly looked at. One particularly fine example of this was where a stream gushed from a hole some four feet above river level but was a bit hard to get at and we were cold enough to want to keep on moving, sitting in the water the whole time.

Another stream we followed up through a three metre archway; then followed it round a few bends but didn't go any further when I could see at the end of a 30 metre, fairly straight passage the customery daylight hole.

Still another time, behind an extremely dark black limestone bluff, a passage led off which I didn't explore, that had 10" and 12" stalactites - speleothems didn't occur very often in any of the caves.

I could see why previous SSS/Tas. cavers expeditions up the Franklin didn't bother to explore far up the Jane - its lowest reaches have nothing of the better limestone bluffs like those around and beyond the HEC hut. (The bluffs however are not as big as those on the Franklin).

To me the only way to appreciate these caves is to do a trip right down the Jane River to the Franklin and Gordon. Then one can appreciate more not only coming across the caves while floating easily in the flowing waters, but also the incredibly inspiring and rewarding gorges and forests (especially the Huon - myrtle forests) of the upper Jane.

Footnote

The Society would like to thank Ian Cantle for providing this summary of his cave observations made in the Jane River area over the past summer.

Detailed geological mapping has not been conducted over much of the area described, but Precambrian Jane Dolomite is recorded from the general area and the caves described are probably in this rock type. The Everlasting Hills depressions were visited by an SCS party led by Kevin Kiernan two years ago, the results having been reported in Southern Caver in Kevins area report and a subsequent item by Leigh Gleeson. Brief observations on the lower Jane have also been recorded in an article by Kevin Kiernan.

However the other areas: Algonkian Rivulet - the Norway - Surveyor reach of the Jane, and the Humbaba - Gilgamesh areas - have never been visited by speleos. Hence Ian's article is a major contribution to our knowledge of these interesting karst areas of the western rivers. A follow-up trip is on the drawing board.

- Editors

NELSON RIVER

By Kevin Kiernan

Nelson River is the northern most of a number of fault dislocated limestone areas extending from near the Lyell Highway southwards to the Andrew River. The limestone underlies the Nelson Valley for several kilometres, but only outcrops clearly in a few places, the most noteworthy being a meander core of about 80ha extent which is pock marked by numerous dolines and exhibits abundant Karren development.

The Nelson River flows underground for a short distance and a considerable number of small caves are known but there has been little exploration of them. A minor project has now been initiated by the writer with the intention of systematising work in this area.

To date a number of new caves have been located, and others previously known have been explored for the first time, including the Nelson River resurgence which involved a cold swim up the deep waters of the stream passage. Heavy rain has proven a hinderance subsequently flooding a number of caves.

Three prominant remnant terrace levels are recognisable on the eastern valley wall, with the surface of the limestone outcrop approximating the lower most terrace. The caves themselves are developed on two levels, the current one being fairly recent. Some of the caves are moderately well decorated but some resolution of speleothems is occasionally evident. A number of the caves have now been surveyed and surface surveying is progressing well. Much more exploration and surveying remains to be completed.

One interesting aspect has been the discovery by Kevin Kiernan and David O'Brien of bone deposits in some of the caves. These occur in the upper horizons of a clay deposit and in the base of an overlying cave breccia. Both were deposited upon an alluvial fill, probably dating from the last glacial, of several metres thickness. The breccia itself consists in part of angular, probably frost derived material and related to processes not substantially operative in that part of Tasmania since the close of the Pleistocene, and hence the bones may well date from late Pleistocene times. Further work is required to confirm or refute this.

The alluvial fill has subsequently been largely removed, and the unsupported clay and cemented breccia is collapsing from the roof and walls. The few surficial bones collected from the deposits are being handed on to Dr. Peter Murray of the Tasmanian Museum for examination. The discovery follows previous bone discoveries by the Society over the past few years which have revealed a wide variety of recent material from a number of areas (Andrews 1970), including a recent Thylacine skeleton from Zulu Pot at June Florentine (Andrews 1972) and older material from Montagu (Kiernan 1973; Goede, Murray and Harmon 1978) and a substantial unstudied deposit in Fraser Cave on the Franklin River (Kiernan 1977a, b).

The area is two hours walk from the Lyell Highway and about four hours drive from Hobart. A series of further trips is planned over the coming months, and a more substantial report on the area should hopefully appear in this publication in due course.

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Grafitti in letters 20 cm high seen on a suburban Christchurch (N.Z.) utility construction:

I'D RATHER EAT
WETAS THAN VOTE
NATIONAL !

(K.K.)

CAVES IN WILDERNESS - SHOULD WE RECORD?

By Kevin Kiernan

Wilderness has always been to me, above all, a blank spot on a map, of which knowledge is either non existent or apparently so. Irrespective of any other quality - of virgin beauty, opportunity for challenge or solitude, or absence of motorised access - mystery couples with remoteness has seemed to me to be the essence of what wilderness is all about. Only roads, tracks, facilities and development can destroy wilderness faster than maps.

Science has become so fundamental to contemporary humanity that recording, mapping and studying have been much encouraged. Cavers have become speleologists, whether they are or not, and with great aplomb probe, measure, name (or number) and generally record every shadowy overhang they encounter, the pace restricted only by their own numbers and over-zealousness and the frequency of the aforementioned shadowy overhangs. Mankind doesn't slaughter virgins to appease the gods much these days, for they are in short supply, and there is also a new god, Science.

The feeling of wilderness which accompanies one in a major cave system beneath otherwise developed and well known terrain can for some, myself included, be equalled or even surpassed by comparatively less significant systems which are set in a context of surface wilderness. The proximity of the former to civilisation generally ensures that they are rapidly described, photographed, measured, mapped and mauled but those in surface wilderness have often escaped this. I'd like to suggest they should stay that way.

Tasmania's south-west is the last substantial temperate wilderness left in Australia. Numerous limestone belts and caves exist, some explored and recorded, some not. Recording caves has been largely restricted to those sites where developmental proposals have been mooted. Most blank spots on the map have vanished, apart from what lies underground, often at the hands of their greatest advocates. Is it really so vital to mankind or our own egos that we should fill those blank spots in?

Anyone who has been caving long in Tasmania has been involved in all manner of exciting exploration and discovery. We don't even deserve what we get, its not as if we work for it - we don't dig the bloody things out and lovingly shape the stals - mostly we just fall down new caves while we're blundering around in the scrub on the pretext of conducting an organised search which generally just means being lost within certain roughly defined boundaries. Tasmanian speleos are lucky to have been in the right place at the right time.

I'd go so far as to say that most Tasmanian cavers, myself included, should quit - that enough's enough and lets leave a bit of excitement for those who follow us. But I'm as selfish as the next bloke and don't want to stop, so perhaps theres another way, if not quite as satisfactory. Perhaps its non recording.

It's not easy to get the concept of non recording accepted due to the background of pressure suggesting speleology is a science (even though that side of it really involves very few people). Moreover, people being people there may be jealousy of the next blokes fun or even Kudos if he is exploring and publicising significant new caves and you aren't. But if he could just keep it to himself such sentiments needn't occur.

But it's not always that easy. With increasing frequency, surface wilderness is coming under developmental pressure, and to bolster the case for conservation there is often a need to take stock of what might be (and usually is) lost. This has occurred in Tasmania, on the Franklin, Gordon, and at one time, at Precipitous Bluff. Generally, however, it is the more accessible areas which get converted into garden gnomes, giant green cement frogs, surplus office space and all the other vital cogs in our society. Fortunately developed karst areas tend to be the best recorded.

But at the same time conservation has become a new god, in whose name all manner of things have been done. Speleologists have often found the dictates of this new god a wonderfully convenient excuse. Some really rather disinterestedin his teachings have used his name to arouse enthusiasm for deeds really perpetrated to honour science (and perhaps through that themselves).

Perhaps I may seem to be skating on thin ice, talking about how one shouldn't talk about non recorded caving, but I merely wanted to implant the seed in the minds of anyone who might like to nurture it. Perhaps its not a long way from some of the things which have been said already. Mieke has raised the issue of insensitive numbering in wilderness areas previously in Southern Caver, and Steve Harris has touched on something relevant to caves in wilderness in questioning, in his words, the purpose of just saving the holes in the cheese. The question goes beyond the too frequent rock-climbers situation of keeping secret a new cliff until their name is plastered across all the routes, because in this case it is unlikely events will ever be revealed (perhaps a conservation threat may change this). Rather, the bush will consume their footsteps and someone else will have the pleasure of finding it one day.

Whether or not the sentiments are acceptable to the bulk of cavers is pretty irrelevant, if some individuals hold them and act by them then it's a fait accompli which really hurts no-one. To continue recording readily accessible and threatened areas is fair enough and often desirable, but will it really hurt if you fail to mention that bit of wilderness you just trod and the cave you found, and in so doing leave it for someone else? If that sounds impossible, just consider the caves of the Junee-Florentine area, a number of which were known to early people in the area. Has that detracted from the pleasure of more recent generations of cavers? If the lost cave of Hastings exists will its eventual discovery merely shatter and dissappoint those who find it? The next lot might record new wilderness caves, but at least they are getting something out of it, and maybe by then non recording will be accepted when people start to realise what it means.

Has it really made all that much difference to speleology that some Tasmanian cavers have already been exploring but not recording some wilderness karst areas for a couple of years anyway? They themselves haven't suffered any, but have been able to savour the expereince and take their time, without their game being spoiled by an influx of people playing the game to a different set of rules. Elitist? Perhaps. But in this age of the mad rush, competition and advertising, where a Captain Conquest seems to lurk around every corner, thats getting pretty hard to find.

A NEW STATE RESERVE

By Steve Harris

Exit Cave is at last protected by State Reserve Status (equivalent status to National Parks). The gazettal of this Reserve has not been too soon as logging threatened to scar the surface above the cave with possible adverse consequences for the cave itself.

The proclamation of the Reserve follows years of lobbying and pressure on the government by speleological societies and individuals, who could easily draw on superlatives in their descriptions of the cave. The National Parks and Wildlife Service itself commissioned an ecological study of the cave environment (Richards and Ollier, 1976) which recommended among other things that the area underlain by all known caves in Marble Hill should be included in a cave reserve.

The new reserve comprises about 440.5 hectares and is described in the gazette notice of 4th April, 1979 as comprising: "All those 2 areas of land containing respectively 424.3 hectares or thereabouts and 16.2 hectares or thereabouts as the same are shown bounded by heavy black lines on L.M. Plan 131 filed and registered in the office of the Director-General of Lands at Hobart".

A press release by the Minister for National Parks and Wildlife, is quoted in full below.

REFERENCE

Richards, A.M. and Ollier, C.D. (1976) Investigation and Report of the Ecological Protection of Exit Cave near Ida Bay in Tasmania. Consultants Report for National Parks and Wildlife Service, Hobart.

The Minister for National Parks and Wildlife, Mr. Lohrey, today announced the proclamation of a 440 hectare State Reserve, near Ida Bay to protect Exit Cave and its environs.

Mr. Lohrey said that Exit Cave is the most extensive cave known in Australia and that it had been described as an Australian Cave of truly international significance.

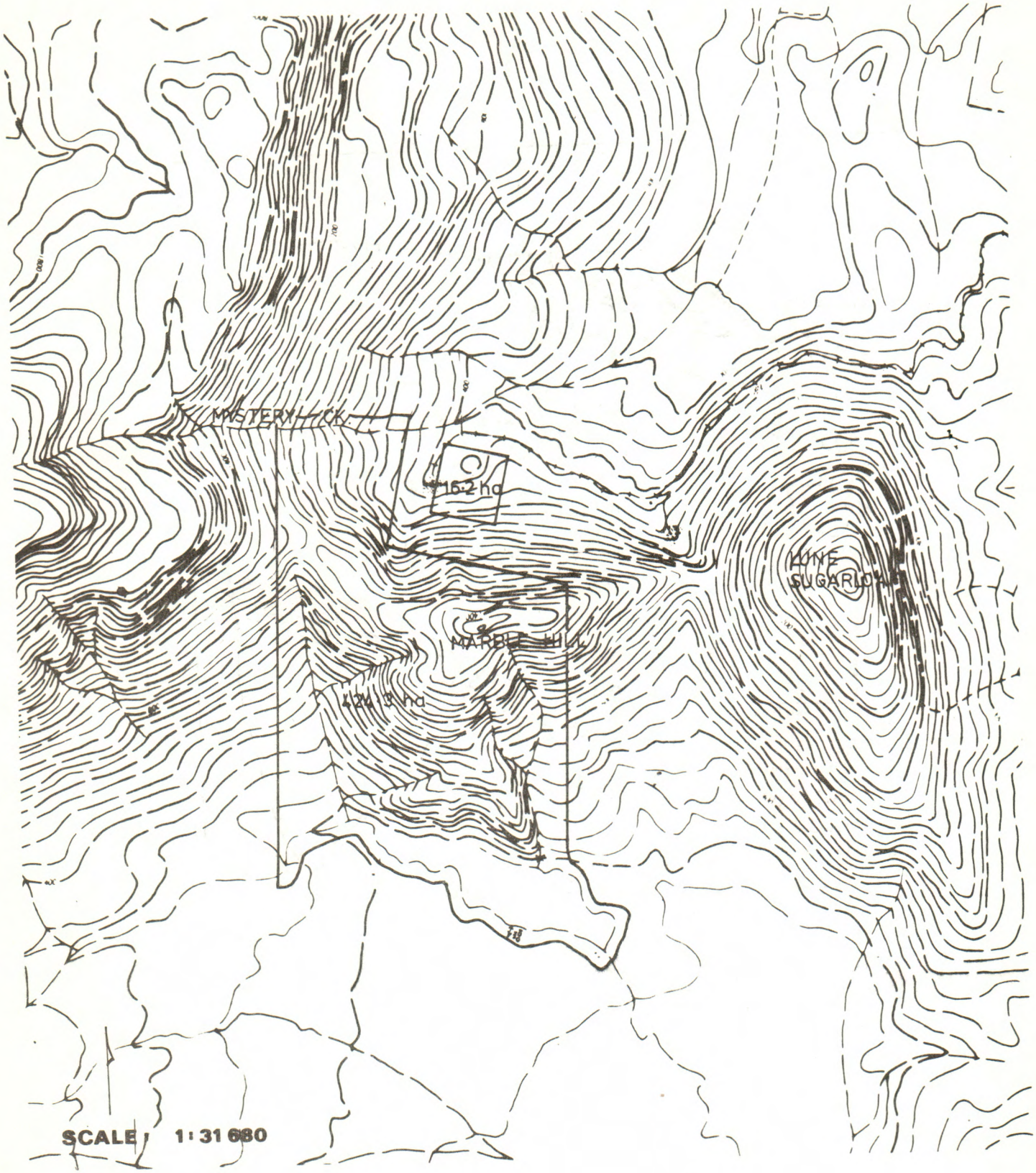
Mr. Lohrey said that the Government had funded the carrying out of an expert evaluation of the cave and its needs in terms of ecological protection. The resulting report had been accepted by all relevant Departments and the proclamation of the State Reserve would implement one of its main recommendations. The Forestry Commission and Australian Paper Manufacturers co-operated in releasing the necessary area from State Forest and Timber Concession, the Minister said.

Apart from being the most extensive cave in Australia, Mr. Lohrey said Exit Cave had significant features including outstanding mineralogical formations, a very large glow worm population which provides the best such display in Tasmania and scientifically interesting deposits of sediment.

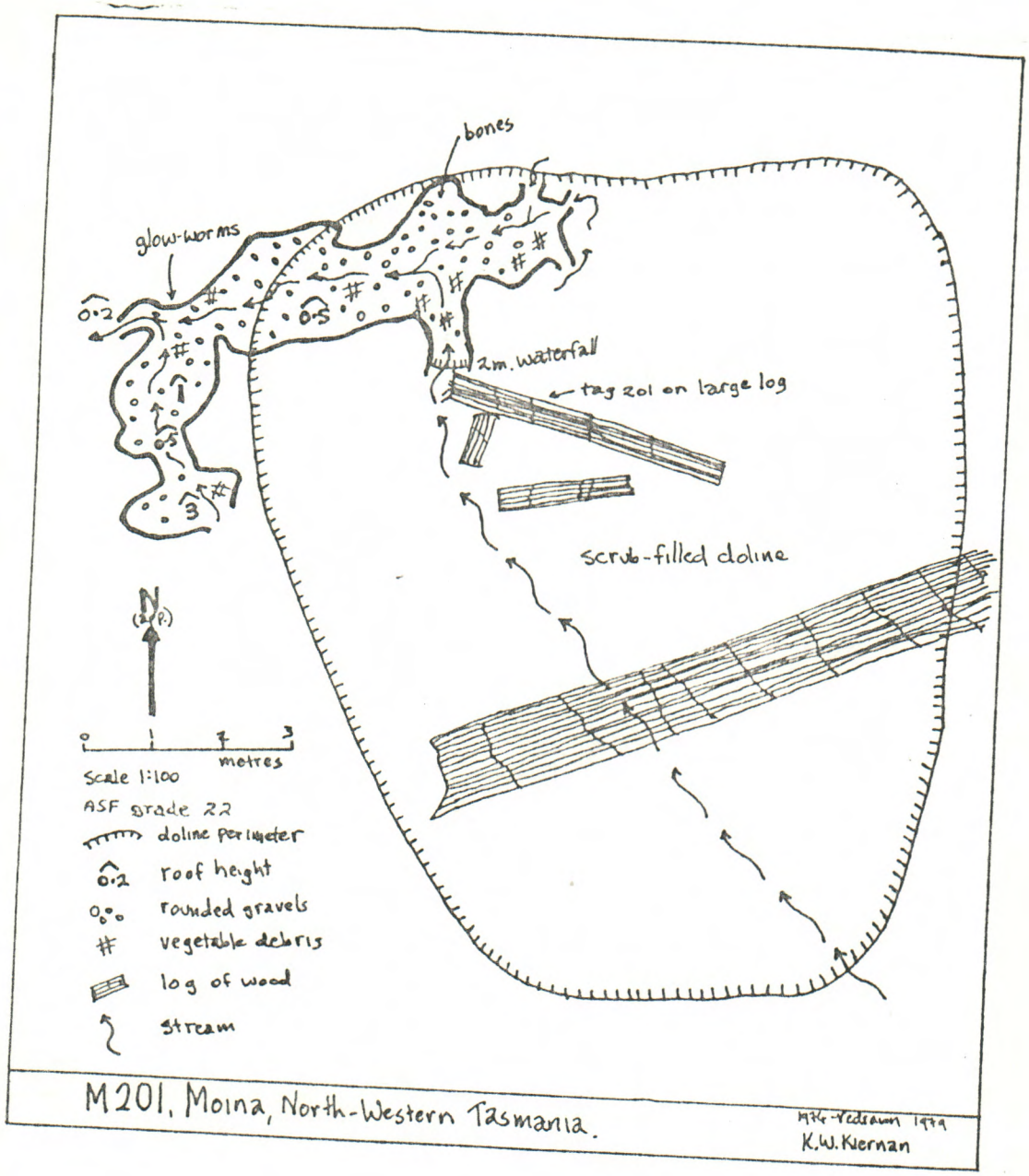
The proclamation of the State Reserve and its consequentmanagement by the National Parks and Wildlife Service would ensure the long term protection of the cave and its delicate environments, he said.

The cave is currently under lease to Mr. Roy Skinner, who has many years of experience in cave tourism, for the operation of adventure excursions into the cave. No special facilities are provided and the tour is fairly demanding, giving a unique opportunity for those prepared to make the effort to see this impressive cave in its natural state.

Anybody wishing to visit the cave should contact the National Parks and Wildlife Service, either at its Head Office in Sandy Bay, Hobart, or through the Ranger at Hastings Caves, the Minister said.



EXIT CAVE STATE RESERVE



SOUTHERN CAVER

APRIL 1979

KARST AREA AT MOINA

By Kevin Kiernan

The Moina Karst area consists of a minor outcrop of Gordon Limestone, principally within the basin of the Iris River, a tributary of the Wilmot River, about 20km N.E. of Cradle Mountain just west of the Cradle Valley Road. It is one of a number of such outcrops in this part of Tasmania. Others occur at Lorinna and the Liena end of the Mole Creek limestone belt 8km and 17km to the S.E. respectively; Loongana 11km N.W.; Gunns Plains 22km to the north, and near Lake Lea 14km W.S.W. the latter being a northern extension of the Mt. Mayday limestone belt. The Limestone also occurs in the last 50 m. of the long water tunnel at the Round Hill mine (McIntosh Reid 1919) and in the bed of Claude Ck. 8km to the east (Kiernan 1975).

Settlement at Moina had its origins in mining activity, but today only one residence is occupied, and that apparently as a farm holding, a few hectares having been cleared of the thick forest cover, which occurs in this area, where rainfall is of the order of 180cms. p.a. Much of the pasture area is degraded with bracken and blackberry.

Part of the small limestone deposit has been inundated with the filling of the artificial Lake Gairdner to a level of about 460m as part of the Mersey-Forth hydro-electric power development. The waters of the Wilmot impounded at the confluence of the Iris and Lea Rivers, flow by tunnel into the artificial Cethana storage in the Forth Valley to drive the turbines firstly of the Wilmot hydro-electric station and then the Cethana station. The Cethana storage was responsible for the flooding of the Lorinna cave area. Limestone cavities reputedly posed some problems during drilling of the tunnel.

Geology and Karst

The Moina limestone outcrop is a small remnant of about 2.25km^2 extent with maximum dimensions of 1.5 x 1.5 kilometres. A very small isolated outcrop is indicated by Hughes (1957) 1.5 kilometres to the west in the valley of the Lea River, which has not been visited by speleologists and is of only a few hundred metres extent. It is not indicated on the Tasmanian Department of Mines Sheffield Sheet, but the latter does show a slightly larger outcrop a little under 1km to the N.E. at Bell Mt.

The main Moina outcrop is bounded to the S.W. and N by Moina sandstone and faulted against the same material to the east. To the west and south the limestone is overlain by Tertiary basalt. A considerable portion of the limestone surface is mantled by alluvial deposits, till, basalt talus and pleistocene solifluction deposits. Although some sink-holes have undoubtedly developed beneath this material others have been infilled by it. Where the mantle thickest and floors shallow dry valleys it permits ephemeral surface drainage. Gradational podzolic soils predominate.

The limestone topography is subdued. At the eastern end of the outcrop, a substantial stream, Bismuth Creek, persists in its brief surface course over the limestone, but a few hundred metres to the west another sinks into the 10m deep entrance doline of M201 upon encountering the limestone. The Iris River flows across the western perimeter of the main limestone outcrop. Maximum limestone relief to lake level is of the order of 60m.

Much of the limestone remaining above lake level has been cleared of its natural vegetation and is now degraded pastureland. There exists a couple of minor dry valleys with some linearly arranged sinkholes interrupting the long profile of the more easterly of these valleys. There is little exposed limestone. Near the Iris River bridge the rock is dense, light-dark bluish grey, dipping north-easterly at approximately 25°. Here it is thinly bedded with calcite veins, and includes quartzite beds up to 60cm thick. Further downstream some minor exposures near the confluence of Bismuth CK with the Iris River exhibited a more massive structure (Hughes 1957) but are now flooded, while up stream on Bismuth CK the limestone has been metamorphosed to skarn. In the cleared land some small scale rundkarren stands as testimony to accelerated soil erosion due to mismanagement.

Caves

This small karst area has received very few visits from speleological parties. In the 1960's a party from the Tasmanian Caverneering Club recorded two small caves on the left bank of the Iris River near the bridge, Subsequent to the filling of Lake Gairdner a party from the Southern Caving Society which visited the area in 1974, found the lake to have filled these two caves virtually to roof level. The same party explored the swallet M201, which although probably the hole reported by a geologist and recorded by Geode, Kiernan, Skinner and Woolhouse (1974) does not have the reported 9m entrance pitch, and in fact requires no tackle.

The two former caves appear to have been typical river bank caves developed by the Iris River itself and perhaps seepage waters operating upon prominant joints. On the other hand M201 is a fairly recent swallet formed upon collapse of the basalt overlying the limestone into a subjacent solution cavity. Some early maps (e.g. McIntosh Reid 1919) indicate this stream to cross the limestone surface, so its disappearance under ground may be a very recent event. Glow-worms are present in the short section of cave explored.

The potential for further discoveries appears very limited but cannot be totally discounted.

Cave List:

The following three caves have been recorded (those numbered in parentheses have not been physically tagged):

M201: Swallet of a moderate sized stream at the upper edge of the limestone; stream enters sinkhole 10m in diameter and 10m deep; small passage blocked a few metres inside by rock and gravel; further progress may be possible with work; small glow-worm population and recent bones.

(M202): Small cave in left bank of Iris River near bridge; does not penetrate beyond daylight.

(M203): Very small cave in limestone exposure by Iris bridge.

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AREA REPORTS

By Ron Mann

This report covers the period from 9th October, 1978 to 30th April, 1979.

Mole Creek (2 trips)

Steve Harris led a trip during 14/15 October to Kubla Khan to show some of the delegates to the Royal Australian Institute of Parks and Recreation Conference, held in Burnie, through the cave. Approximately seven hours werespent underground; the party entered and left by the back entrance. All the party were impressed by the beauty of this cave and some of them photographed the fine formation. Leigh Gleeson, Greg Middleton and Steve Harris later went to Union Cave on the Mersey River where they waited while some other cavers dived the third sump to find more passage.

The 1979 Easter trip was a great success with a total of 18 people spending the holiday at Mole Creek. Clubs represented were SCS (7), CEGSA (7) and VSA (4).

The weather was excellent and many caves were visited.

Two parties explored Kubla Khan, one doing the through trip and the second party laddered the back entrance and went as far as the Khan before returning, leaving the pitches rigged for the through trip. Herberts Pot attracted two trips, one early on and the second on the Tuesday by a CEGSA team.

Many of the cavers checked out Croesus while a few intended doing the Georgies - Wet Caves trip but returned through Georgies after failing to find the short route to Eureka Link.

The opportunity of caving and socialising with mainland cavers was appreciated by all our members present and we hope to see the Australians again!

Junee/Florentine (5 trips)

On the 22/23 October a party led by Leigh Gleeson surveyed in Satans Lair.

The final section of this cave remains to be surveyed and due to the winter water levels it will probably be next summer before it can be attempted in reasonable comfort.

Three Falls Cave was surveyed on 17th February by Leigh Gleeson, Aleks Terauds and a reluctant Steve Street. The survey has now been drawn and should be published shortly.

A party of four visited Frankcombes Cave in March and reported that the stream was virtually dry. About 2½ hours were spent underground in this interesting cave.

After Easter, Leigh Gleeson (SCS), Terry Reardon, Rick Hutchings and Rod McDougal (CEGSA) bottomed Khazad Dum in five hours however the return trip took over ten hours. Although the visitors found the trip very trying they enjoyed the experience.

Ida Bay (3 trips)

Leigh Gleeson, Dave Martin (SSS) and a visitor from England spent five hours in Exit Cave on 19th February doing the round trip to the Grand Fissure and Edies Treasure. Dry weather made the trip to the cave a pleasant walk and the low water levels helped make the caving enjoyable.

Kevin Kiernan led a party to Exit Cave during the period but found that the key he had would not fit the lock - a new lock had been fitted with no advice to SCS. Kevin notes that six person's time, energy and petrol were wasted because of someones thoughtless action. (Another new lock has been fitted and the cave is now controlled by the National Parks and Wildlife Service - see "A New State Reserve" elsewhere in this issue - Editors).

A party of five club members showed Terry Reardon and Rick Hutchings (CEGSA) through Exit on 28th April. Four of the party went to the Grand Fissure while the others looked at formation in the side passages before the rockpile. The water levels were moderately high but did not cause any problems.

King Island (1 trip)

Kevin Kiernan was a member of a University party which visited two sea caves on the south western coast of King Island. The main cave was about 80m long and although it was not formed in limestone it was profusely decorated by calcium carbonate. Gypsum wall encrustations were also present. A smaller cave to the south has been extensively vandalised and another promising hole in the same area was not explored. The caves were surveyed and with a more detailed description may be published elsewhere.

Mt. Anne (1 trip)

A surface trip to the Mt. Anne area was held on 23/24 March with the aim of locating the karst area containing Kellers Cellar. The weather was not kind to the party and the aim of the trip was not realised.

Nelson River (1 trip)

Kevin Kiernan and Dave O'Brien left their car at the King River and walked in to the Nelson River area over 21/22 April to explore the many small caves in this area. A separate report is published elsewhere in this issue.

SRT Practice

Three separate SRT practices have been held over the period, two of them by the seaside at Blackmans Bay, south of Hobart.

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FISH SIGHTED IN HERBERTS POT

Dave Martin and Steve Worthington (SSS) reported that on a trip to downstream Herberts Pot on 14th February, 1979 they sighted what they believed to be a fish about 12cm long, white and with fins, swimming in shallow water. From their description the area would be upstream of the downstream tributary.

KHAZAD DUM SURVEYING

Dave Martin and Steve Worthington (SSS) surveyed in the depths of Khazad Dum on 17th February, 1979, from Sump 1 to Sump 2. Sump 2 is about 2 metres lower than Sump 1 which is much less that the 20 - 50 feet claimed by R. King et al on 16th April, 1976. They therefore state that the new depth would be 1060 feet. Dave also notes that a stream resurges 75m to the south east of Sump 1 and flows 30m downstream to Sump 2. Connection between the two streams has not been confirmed.

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