

SPELEO — SPIEL

NEWSLETTER

of the

TASMANIAN CAVERNEERING CLUB . No. 83

SEP 1973

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"THE KHAN" IN KUBLA KHAN.

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periodical - Category "B"

President: Albert Goede, 8 Bath Street, Battery Point, Tas. 7000.

Secretary: Andrew Skinner, 2/63 Colville Street, Battery Pt. 7000.

FORWARD PROGRAMME.

- Sept.11-13 - Hastings.Leader: A.Skinner. Most dry holes in this area will be investigated.
- Sept. 15th - Black Buffalo Hotel, Letitia St., North Hobart. ANNUAL DINNER. Pre-dinner drinks 7 p.m. Dinner will be served at 7.30. Payment before night of dinner preferred. Contact T.Goede for further details.
- Sept.16th - Specially arranged to brush away the cobwebs caused by the previous nights celebrations, 1 days climbing practice. SRT and ladder work at one of the usual practice areas(as yet to be decided). Leader: Andrew Skinner.
- Sept.22,23 - Exit Cave. Underground tourist/photography trip. Fridaynight start to Camp 2. Limited numbers(6). Leader: Andrew Skinner.
- Sept.29,30 - Surface work on Marble Hill. Weekend trip to exciting caving area. Leader: Brian Collin.
- Sept. 30th - Entrance Cave or King George V Cave. Trip for scouts - helpers needed!! Leader: Andrew Skinner.
- October 3rd - General Meeting, 8 p.m. Clive and Dot Boulter's, 11 Sheldon Place, West Hobart. Slide show on Kubla Khan and Exit Cave by Andrew Skinner.
- October 5,7 - Mole Creek. Tentative date for meeting of the Tasmanian Council of Speleology. Delegates are A.Skinner, S.Stephens and W.Lehmann. Also a working bee at the Maracoopa Hut followed by a social evening. Sun. easy trip to a decorated cave. Leader: A.Skinner.

EDITORIAL.

There have been no cave reserves declared in Tasmania since 1939. Since that time three caving groups have been established and many important discoveries made. Indeed, probably about 95% of Tasmania's known caves have been explored since 1939.

There is an urgent need for protection of some of the truly magnificent caves found in the Post-war period, as they are undoubtedly among Australia's finest. Exit Cave, longest known cave in Australia and ninth longest in the world, is not protected by a reserve of any type. Kubla Khan has been described by many visitors as the best decorated cave in the country, but it too lies unprotected, undeveloped for tourism and is deteriorating due to injudicious use by cavers and other visitors.

Many aspects of general government policy towards caves need revision. A Caves Protection Act, with similar provisions to the Austrian legislation could be enacted in Tasmania. Such a law could include provisions for the prohibition of the removal and sale of speleothems, restriction of access to certain wild caves to responsible speleologists and popularisation of suitable undeveloped caves for casual visits by the general public, scouting groups, school parties etc. Zoning is urgently needed in cave areas and potential caves reserves as well as an inventory drawn up of known caves in order of importance.

Much of the inventory and analysis of caves and cave conservation has been completed by ASF and its member societies. After this material has been published, pressure must be put on State and Federal governments for implementation and policy formation.

Andrew Skinner.

Keep in practice - whinge about the cost - but book for the dinner!

Miscellaneous:

Welcome to the following prospective members:

Robert Eaton, 15 Wyndham Road, Claremont.

Nick Berwick, 12 Charles Street, Moonah.

Paul de Bomford, 12 Bilton Street, Claremont.

+ Aquamire, the cave reported in the March edition of Speleo-Spiel is hardly a new find. It is almost certainly the cave described by Ken Iredale in a TCC trip report dated 1948. On that occasion, water was encountered at approx. 20 metres vertically from the entrance.

+ Peter Shaw is alive and well! A three page article written by him appears in the winter edition of the ASF Newsletter. Also in the Newsletter is a reprint of Frank Brown's article on the Mole Creek Lime works, first published some months ago in the Spiel.

+ Tenth Biennial Conference (Decavecon?) of ASF will be held in Queensland late in 1974, and is to be jointly hosted by UQSS and CQSS. Just thought you might like to know early.

+ The submission to the enquiry into the National Estate is almost complete and should be forwarded this week. DONATIONS OF SLIDES ARE STILL NEEDED. If you have any decent shots of Kubla Khan and/or Croesus, please forward them to the Secretary, Box 641 G, GPO., Hobart, 7001. I will pay for the cost of duplicates.

TRIP REPORTS

Genghis Khan - 9/8/73.

Party: Andrew Skinner, Ros Skinner and mainland visitors Noel Rawlinson and Catherine Seery.

A short photographic trip was made to this small cave. The aragonite crystals are very suitably placed for close-up work. It is not recommended that this cave is used very often as it is very susceptible to damage. Certain of the non-ASF caving groups in the North-West use this area and their conservation practices leave something to be desired by the state in which other caves have been left. I now understand that there are three non-ASF caving clubs active in the North-West and some have membership cards. Some of the property owners in the Mole Creek area are becoming dissatisfied with large numbers of cavers tramping across their properties without taking care to avoid disturbing stock and crops.

Andrew Skinner.

Croesus Cave 10/9/73.

Party: Andrew Skinner and Noel Rawlinson.

Five hours were spent on photography in this cave, in order to assemble a set of slides for the TCC submission to the National Estate Enquiry. Some good shots were taken but some are still needed for an adequate photographic record of the cave. A duffle bag full of wire was removed from near the Masterlock; and no drums or other rubbish are now in the cave. No new vandalism was detected, but an area near the Golden Stairs was found to have been damaged with a very heavy hammer. Large stalagmites and columns have been smashed but this was some time ago. The track markers were removed from the Golden Stairs as they have not served any real functional advantage. There appears to be no way of keeping this flowstone area clear of mud, but it is washed fairly clean each winter.

Andrew Skinner.

Kubla Khan - 11/8/73.

Party: Andrew Skinner, Laurie Moody, Greg Strickland, Noel Rawlinson, and from Northern Caverneers: Frank Brown, Peter Dowde, Bill Hardeman and Tim Daniel.

The aim of the trip was photographic, again to prepare a set of slides for the National Estate Enquiry. The results were very pleasing, with splendid shots of the Khan (even Lloyd Robinson may be envious) and the Forbidden City. Unfortunately the camera was tilted for the photograph of the Begum. The results in the Jade Pool and Pleasure Dome were not outstanding, and this appears to be a gap in the record. Any donations? (Seem to recall you have a decent slide of

the Pleasure Dome, Norm. If I'm right could you please let club have copy, T...) I will pay the costs of duplicates. The track markers placed at the edge of the flowstone towards the Forbidden City seem to be working well and should be extended much further. The mud has accumulated along the track, but other areas of flowstone should be cleaned with a bucket and brush. The flowstone bank in Cairn Hall has become rather slippery due to the accumulation of mud, but it is not difficult to climb. Some of the eye bolts on this slope are loose and should be used with caution.

Kubla Khan is still in quite good condition, but the presence of the top entrance does pose a serious problem. It makes access to the cave quite easy and it is obvious that many have visited it. Yet on normal "sightseeing" trips there is no real justification for using the top entrance. I would prefer to take to this cave only those members who are capable of the climbing involved from the bottom entrance. In order to protect the cave by reducing numbers of visitors I entreat other caving groups to act similarly. Thanks to Northern Caverneers for their hospitality. Andrew Skinner.

Exit Cave - 14-17/8/73.

Party: Andrew Skinner and Noel Rawlinson.

This was an extended trip mainly for shutterbugging in Conference Concourse and the Grand Fissure areas.

Tues: was spent carrying very heavy rucksacks to Inner Base Camp and photographing Edie's Treasure and the Devil's Stovepipe.

Wed: Twelve hours were spent in the Conference Concourse and the Grand Fissure. Unfortunately there was insufficient time to go to the Labyrinth area.

Thurs: The gear was shifted to Camp 1 and photographs were taken in the section of the cave before the talus.

Fri: A quick withdrawal from the cave was made after the D'Entrecasteaux started to rise. New work was inspected in Newdegate tourist Cave and a warm shower offer from Roy Skinner at Hastings was gratefully accepted.

Track-marking work to be done soon includes: Replacement of markers in Hammer Passage, placing markers in Conference Concourse to protect a small meandering stream on a mud floor and further work in Edie's Treasure.

Andrew Skinner.

June Area - 18,19/8/73.

Party: Andrew and Ros Skinner, Noel Rawlinson, Catherine Seery, Laurie and Sue Moody, Glen Pinnington, Nick Berwick, Paul de Bomford, Jan Hardy, Robert Eaton, Fiona Skinner, Nick Gould and Max Jeffries.

On Saturday the Skinners, Catherine and Nowl visited June Cave and camped the night in the Florentine. We waited on Sunday morning at the ANM gate for the others, but gave up after an hour and headed for Khazad-dum. Ros, Noel and I headed in and we were just coming back from the top of the ninety footer when the remainder of the party turned up. Whilst I took them to see the top of the big pitch and the waterfall nearby, Noel and Ros made a quick trip down the Serpentine. Upon returning to the surface, we found Max Jeffries and a very welcome fire. Noel and I had a quick look at JF 40 and discovered some white leeches, but unfortunately we had no collecting gear with us. Most of the party headed down the track and had a brief look at the entrance of Cauldron Pot. After numerous Oohs, Aahs and Yuks at the sight of the entrance pitch we walked back to the cars, sniffing at the more obvious dolines on the way. Max has reported two creeks sinking to the west of KD., would anybody like to go and look around?

Andrew Skinner.

WARNING - One disturbing feature of the above trip was the arrival of two people without adequate lighting. Members and prospective members are reminded that they must have three sources of light before venturing underground. Have either a head lamp or carbide lamp and bring a hand-torch for a spare source. Candles and matches in a watertight container should be carried AT ALL TIMES.

Hastings Area - 26, 27/8/73.

Party: Andrew Skinner, Mike Jagoe with one teacher and twelve students from the Newtown High School.

On Sunday the party visited King George V Cave, rigging a ladder to make the entrance drop easier. Some photography was undertaken in the main chamber and the party headed upstream. Two groups investigated an aven to the right of the upstream rockfall. Mike had been to the aven before and tells me that explosives were once used in an attempt to enlarge a small passage. The aven rises about 30 metres above the level of the stream passage and terminates in a small chute with basal Permian tillite above. The waterfall to the right of the rockfall was also climbed, but the squeeze at the top was not pushed.

On Monday a visit to Wolf Hole was made. With the large party (15), half descended and went off with Mike as far as Lake Pluto. I took the other half of the party to the Lake and investigated some talus and a side passage on the far side of the water. Unfortunately there was insufficient time to complete the survey commenced on an earlier trip.

Andrew Skinner.

Picton River - 25, 26/8/73.

Party: Brian Collin followed by Noel White.

Brian Collin set out on Saturday morning for an easy weekend on the Picton River track. Noel White went along, mainly to slow Brian down to a pace that would permit him to enjoy the beauty of the bush, and incidentally, to examine and collect fossils from some of the newly discovered limestone occurrences. Both purposes were admirably fulfilled. Brian was slowed to the extent that he did not raise a sweat, and on the rare occasions that the rearguard came within earshot he was heard to tactfully remark on the many previously un-noticed wonders of nature that the (for him) leisurely pace was allowing him to appreciate to the full.

Fossils were collected from five localities, and a number of others were located, but must await the attention of a qualified palaeontologist. Notwithstanding the scratchings of the hard-rock golliwog in attendance, the fossils collected created considerable interest among Banks, Burrett and Rao at the University, and all indicated great eagerness to visit the area personally. Time will tell how much this is worth. Other conclusions were that the limestone probably has a simple structure with very broad folding on an approximately N-S axis. Dips were in the 25 - 40° range, mostly the lower part. Strike is at least five kilometers and as yet the southern limit of the limestone is unknown.

Caving potential is possibly considerable, although the vegetation and thick fluvio-glacial sediment deposits are both major hindrances. The area west of the known limestone occurrences should be checked, particularly the easterly ridges off the South Picton Range. Any outflow caves will probably be found several hundred feet above the Picton River, near the former top of the glacial deposits. The area will be physically very difficult to explore, but its proximity to Hobart and the excellent tracks which have been and are being cut in the area will largely offset this. These tracks are a great credit to the people who have worked so long and hard in cutting them. Where else could you start cutting a track into an inaccessible caving area, only to discover another entirely new and unexpected one on the way?

Noel White.

Mole Creek - (date unknown).

After wandering around the pastures at Caveside and exploring several dolines Glen Pinnington, Michelle Farrell, Fiona Skinner & myself finally entered Pyramid Cave. The party worked their way past the pyramid, over the talus and into Galleon Passage, through Black Shawl and on to the Letter Box. Here as expected the through trip was cut short due to excessive water in the bottom of the squeeze.

Two inches air space over 6" and a certain duck made continuation impracticable. After 5 minutes lying up to ones ears in water the verdict was, passable, but the strong nerve required just wasn't present. An about turn and fast scramble back through the cave saw four quite weary and immersed speleos emerge.

Ross Mansfield,
Party Leader (TCC.)

Frankcombe Cave - 2/9/73.

Party: Noel White, Bill Lehmann, Nick Cummings, Michelle Farrell, Jan Hardy, Laurie Moody, Nick Gould, Nick Berwick, Asahel Bush, Max Jeffries and Therese Goede(surface).

The party left on time at 7 a.m. and gathered at Maydena before 9. Despite a great deal of new clearing in the area the marker was found with little difficulty, and a dazzling array of new trog-suits were soon donned. The weather at this stage was dry but overcast, and everything seemed to be running smoothly.

No difficulty was found in locating the cave entrance and the first stage was occupied with showing the party over the 'pretties' section. The real purpose of the trip was to examine and try to push the long stream passage which was partly explored by Peter Shaw and Noel White a couple of years before. Apart from a sudden loss of interest by Laurie, this part also began well. We were compensated for his withdrawal by the appearance of Max Jeffries, who obviously reads his 'Spiel'. A couple of minor side passages were found, one with some calcified bones. Two large detached ones and a small skull were removed.

Despite the strain on the knees we pressed on. There seemed to be rather more water than previously and finally the worst became apparent. By the time we reached, at cost of extreme discomfort rising chiefly from almost total immersion, the area we were interested in, we found that parts that were previously 'dry' now were covered by nearly two feet of water, which caused some inconvenience as much of the area of interest was less than that high. Having done our best we turned about for the long haul back.

Outside it was pouring rain although the fire Therese had prepared was some comfort. Everyone(except Therese and Laurie, the pikers) was thoroughly cold, wet and uncomfortable. Still it was all good?, clean?, fun?? and we could all be thankful that we had chosen a 'dry' cave for that day.

Noel White.

HASTINGS CAVES. R.K.Skinner.

This article is derived from a report prepared for the Tasmanian Government Tourist Dept. by Roy Skinner. Information supplied by Albert Goede and Noel White is gratefully acknowledged.

DISCOVERY AND EARLY DEVELOPMENT:

From the middle of the nineteenth century until the 1920's, a thriving timber industry flourished in the southern Tasmanian hardwood forests. In 1917 timber-getters for the Hastings mill, who were operating around the foothills of Adamsons Peak, discovered three caves. These were named Newdegate, King George V and Beattie. Of the three, Newdegate is the largest and most highly decorated. This cave was named after Sir Francis Newdegate, Governor of Tas., 1917-1920.

Details of the discovery were not documented at the time, and accounts handed down over the years are somewhat vague and conflicting. Tales are told of large trees being felled and disappearing into the earth, but an inspection of the area surrounding the cave will quickly dispel this possibility. It is possible, however, that as the stumps of several large trees can be seen close to the cave entrance, some of their limbs could have penetrated a short distance into the cave when the trees were felled.

One of the members of the team which was operating in the area was the late Mr. Fred Escourt, and it is generally accepted that he was the first person to enter the cave. The early exploration of the cave has not been recorded, and it is not possible to say how

far Fred Escourt and his companions(if any) penetrated, but it is agreed that this man did become quite interested in the cave, and made several subsequent explomations. To perpetuate his name the largest stalagmite in the cave has been named the Escourt Stalagmite.

Throughout the 1920's, suggestions were made from time to time concerning the opening up of the cave. The Esperance Council took up the case, and in the early 1930's the Government was persuaded to provide the necessary finance to construct an access road from the Lune River road for a distance of 8km. to the cave, and to establish stairways and electric illumination within the cave. This road follows the route of the timber tramline, which was built to carry logs to the Hastings mill. Remains of the log-loading platform can still be seen beside the track from the end of the road to the cave entrance. Funds were made available from unemployment relief. Work was completed in late 1938, and Newdegate Cave was officially opened on the 19th January, 1939, by the Hon. A.G. Ogilvie, Premier of Tasmania. Originally a winding concrete stairway was built in the Great Hall, near the cave entrance, and timber stairways built to connect chambers at different levels towards the farther end of the developed section. These timber stairways were replaced with concrete in 1963. This work was done by Mr. H.W. Fitzgerald. The difficulties of working with concrete in the cave should be realised, as all materials had to be carried to the cave and with-in the cave by whatever means were available. In the case of the original stairway, horses were used to convey materials to the cave, and for the replacement of the timber stairs, a tractor was used, but all movement of materials inside the cave was done by hand. All work in and around the cave is supervised by the Public Works Dept.

The original lighting in the cave was carried out under the guidance of an electrician by the name of Mr.D.Lowry, who was experienced in cave lighting at Jenolan Caves in New South Wales. He was assisted by Councillor H.Brown of Dover, who also acted as cave guide for the occasional parties who visited the caves at that time. Additional lighting and renewal of lighting equipment has been carried out from time to time by the guides.

GEOLOGY OF THE HASTINGS AREA:

Most of the country around Hastings is made up of flat-lying Permian and Triassic sediments intruded by Jurassic dolerites. The rocks of Permian age, ranging from about 225 to 270 million years old, are mostly sandstones which were deposited in shallow seas as indicated by the abundant marine fossils found in them. The rocks of Triassic age, ranging from about 180 to 225 million years old, also consist of sandstones and siltstones which were deposited on land by rivers. Some coal is also found in the Triassic rocks indicating that large, long-lasting swamps were present at that time. Sedimentation probably ceased late in the Triassic, and the flat, low lying land was little disturbed until about 155 million years ago when, in the Jurassic period, vast quantities of molten rock were forced up and spread as thick sheets within the Permian and Triassic sediments. These solidified to form the dolerite which is found throughout most of Tasmania.

Since the Jurassic period, erosion has cut deeply into the rock around Hastings, and in some places such as at Hastings Caves, has cut right through to expose some of the very much older rocks which underly the Permian sediments. In the Hastings area these are strongly folded quartzites and dolomite. It is in the dolomite that the caves occur. These rocks contain no known fossils, and it is not possible to say with any certainty how old they are. From comparison with similar rocks elsewhere in the state it is believed they are late Precambrian in age. Thus it would seem that the rocks found at Hastings caves, which are now seen as through a window in the overlying younger rocks, were probably laid in shallow seas at least 600 million years ago, and were probably folded in two mountain-

building phases before the Permian rocks were laid on their eroded surface.

THE CAVES.

All other tourist caves in Australia occur in Limestone, (calcium carbonate, CaCO_3), The Hastings caves have formed in dolomite, (calcium magnesium carbonate, $\text{CaMg}(\text{CO}_3)_2$), a different, though related rock type.

A B OF CAVES:

It is extremely difficult to determine, in most cases, when a cave begins to form, however a rough estimation can be deduced for the Hastings caves. For caves to form, a favourable rock (in this case dolomite) must be exposed to weathering. The Hastings dolomite was exposed at the beginning of the Permian period, about 270 million years ago, and it might have contained caves then, though we have no evidence of this. It would next have been exposed to weathering some time after the intrusion of the Jurassic dolerites, when stream action had removed sufficient of the over-lying rock to allow some groundwater circulation within the rock. This probably occurred in the Tertiary period, between 2 and 70 million years ago. From evidence near Hastings, it would seem the caves were well-established before the Pleistocene glaciation of about 1 million yrs. ago. In addition, the caves had to be present long enough to allow the cave-dwelling organisms discussed later to become adapted to living entirely in the cave environment. Thus a reasonable estimate would be that most cave development has taken place in the last ten million years, but the early development of the cave could go back forty million years or more.

FORMATION OF CAVE:

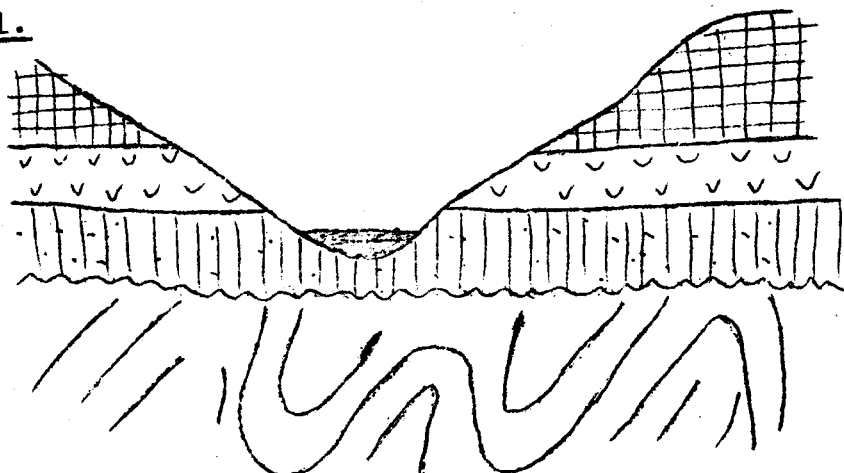
Newdegate cave, the largest of the group, is an extensive cave, only a small portion of which is open to the public. It probably began to be formed when erosion of the over-lying sediments had brought the surface to near the level of the dolomite. At this stage, while the dolomite was still below the water-table, there would be some minor flow of ground-water through joints and fractures in the rock. This water would tend to dissolve some of the dolomite, widening the joints and fractures thus allowing more water to flow through them. This initial phreatic (permeating) stage has been considerably modified in later stages, evidence of which can be seen in only a few places, for example the Pophole.

As the surface erosion continued to cut down, the water table was lowered, draining the water from the higher level phreatic cavities. Rainwater falling on the dolomite, or percolating downwards through the joints in the overlying sediments, or draining off the sediments on to the dolomite, could now use these ready-made cavities to flow through the dolomite. Hundreds of minor trickles, each gradually enlarging its passage, eventually came together to form larger streams which formed larger passages. This type of stream-cave development is typical of the lower levels of the cave, where passages are high and relatively narrow, with water flowing through them.

With denudation of the dolomite some water will find its way as a film into joints. Given sufficient time, this water seeping and dripping down fractures, can produce high-lofted chambers such as are found in Newdegate cave. This, together with undercutting by the streams can cause the collapse of massive blocks of rock producing large, roomy chambers such as form the section of the cave open to the public. (See Figs. 1, 2, & 3 on next page).

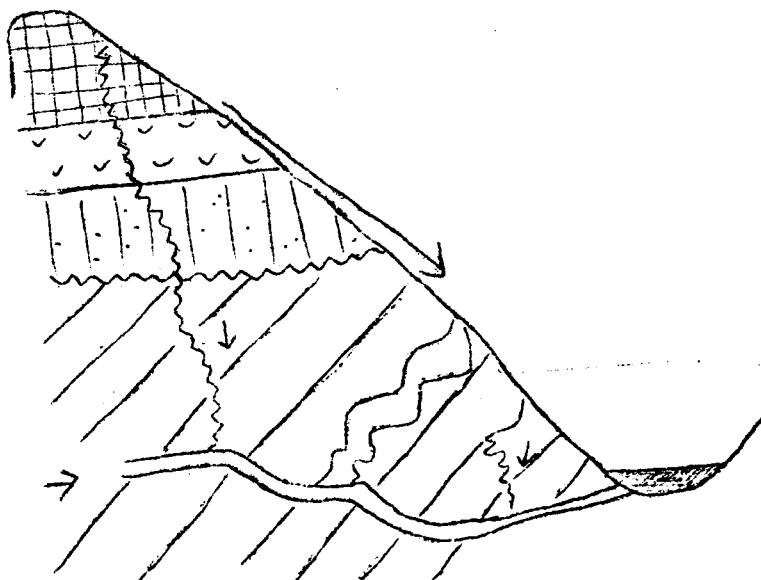
For caves in limestone, it is the mineral calcite that dissolves, and either calcite or aragonite (another calcium carbonate mineral) which deposits. Thus the material deposited is almost identical to that dissolved. This is not so for caves in dolomite

Fig. 1.



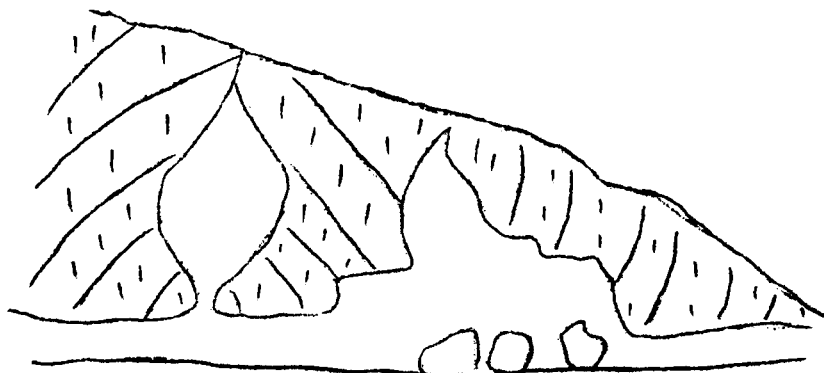
Buried Dolomite basement overlain by sediments of Triassic-Permian age.

Fig. 2.



Percolation by ground water penetrates lines of weakness in the dolomite.

Fig. 3.



Solution action widens the upper passages and corrosion by water erodes the basal portion.

such as at Hastings. When dolomite dissolves, equal numbers of calcium and magnesium ions go into solution. To deposit dolomite from solution about three times as much magnesium as calcium must be

present. To achieve this situation from the solution derived from dissolving dolomite, a large amount of calcium must first be removed, and indeed this is what happens. It is unlikely that any dolomite is deposited in Newdegate Cave. The minerals deposited in dolomite caves are the same as those which occur in limestone caves, namely calcite and aragonite, with a greater likelihood of aragonite occurring since the high magnesium content of the solution aids its formation. Thus it can be seen that in dolomite caves the material deposited is not the same as that dissolved. A small number of stain tests carried out in the cave showed the helictites to be calcite, and some stalagmites to be calcite and some aragonite.

CAVE FAUNA:

In Tasmania, no vertebrates are found in caves except for occasional visitors such as the brush-tail possum and the wombat. At Hastings, only the brush-tail possum has been seen underground, and then only near a cave entrance.

In 1970 a Hastings cave guide, Mr. E. R. Hyatt discovered some bones not far from the entrance. These were identified as those of a kangaroo-rat (Potorous tridactylus). The animal apparently wandered into the cave, fell about 20 ft. down a rock face, and was unable to find its way out. Bats, which are common in caves in other parts of the world, including mainland Australia, do not occur in Tasmanian caves.

The cave fauna at Hastings consists a small invertebrates - mainly insects and spiders (including their relatives, the harvestmen), pseudoscorpions and mites. All food available in the caves has to be carried in from the outside as all animals are ultimately dependent on plant food, and plants can not grow in total darkness. Some food in the form of plant debris is periodically washed in by floods. Other food is brought into the cave by animals which live there but venture outside at nights to feed. At Hastings, as elsewhere in Tasmania, the most important animals that serve this function are the cave crickets, (Micropathus tasmaniensis in this locality, belonging to the family Rhaphidophoridae) which are distantly related to the common crickets found on the surface. They have powerful jumping legs and long feelers. They shun daylight and may be found in large numbers just inside the cave entrance. They venture outside to feed only on dark and windless nights when the air is humid. They feed on both plant and animal food, and are cannibals when times are lean. Their carcasses, droppings and eggs, together with newly hatched juveniles, supply food for some other cave dwellers.

The largest animal found is the Tasmanian Cave Spider, (Hickmania troglodytes), which is often found near cave entrances. It is a troglophile, and also occurs in dark, damp places throughout Tasmania. It has very long legs, and an adult specimen may have a leg span of up to seven inches. This spider makes a horizontal web which may be up to three feet across. Its beautiful white egg sacs are pear shaped, and may be found suspended from the ceilings.

The cave crickets, (M. tasmaniensis) are large insects, and are often seen in the tourist cave. They are more numerous near the cave entrance, but are present throughout the opened section of the cave. They are also known to live in the bush, but are rarely seen because of their nocturnal habits.

Probably the most common animals in the caves are tiny primitive insects known as springtails (order: Collembola). They are much smaller than the head of a pin, and are difficult to see with the naked eye. They are common on rotting wood, mud floors, even on pools of water, and probably form the main food supply for larger cave animals. Of these the most interesting is perhaps the cave beetle (Idacarus cordicollis) - a little dark brown beetle with much reduced eyes and sensory hairs. It is found on cave floors, and under rotting wood, and is restricted to caves in the Hastings

area, although it has a close relative in caves at Ida Bay, a few miles further south. The Hastings Idacarabus is a true troglobite, and was not discovered until 1963.

Huntsman spiders belonging to the family Agelenidae, are common in the dark zones of the caves, and are extremely fast moving. They have not yet been studied or described.

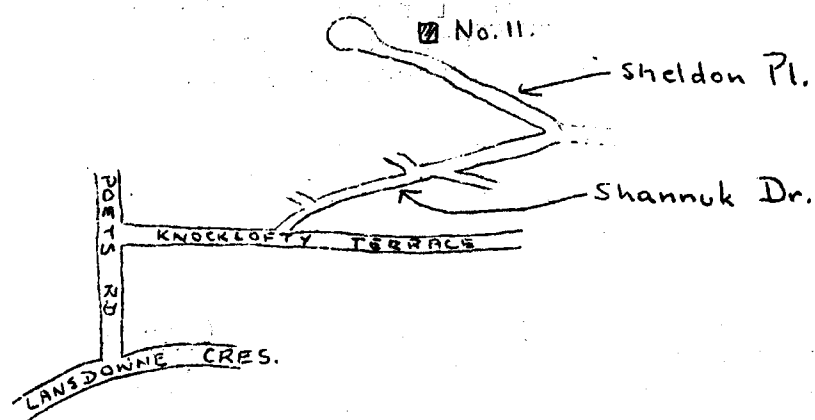
Two species of harvestman occur in Hastings caves. The larger one, (Monoxyomma cavaticum) has a leg span of about one inch, and is fairly common throughout the caves. It also occurs at Ida Bay, where it was first collected and described. The smaller one, a new species of Lomanella, is very rare, and only two specimens are known to science. It has not yet been described.

Another distant relative of both the spiders and scorpions is a little pseudoscorpion about one fifth of an inch long with the scientific name Pseudotyrannochthonius tasmanicus. This is a very attractive animal with long translucent pinchers, and without the tail of the scorpion. It was first discovered in King George V Cave at Hastings, but is now also known to occur on the surface under logs not far from the caves.

Mites are distant relatives of both spiders and pseudoscorpions. They are very small and live in cave soil and rotting wood. Some are parasites, and are carried around on the legs and bodies of the larger cave animals.

The underground streams at Hastings contain very little life, but the mountain shrimp, (Anaspides tasmaniae) - a primitive crustacean found in the highlands of Tasmania, and often referred to as a living fossil - is also found underground where it appears to be able to reproduce and maintain itself. Specimens collected from cave streams show loss of pigment. Those collected in Newdegate Cave have normally developed eyes, but an eyeless variety is found in an underground lake in the Wolf Hole, and appears to be a true troglobite.

(The rest of this article will appear in the next Spiel).



The way to the Boulter's residence. Turn left from Knocklofty Terrace into Shannuk Drive + follow to its end where it turns sharp left. Boulter house first one on right. It's on stilts - you can't miss it!

ATTENTION

LATE BOOKINGS FOR THE DINNER.

Late bookings for the dinner will be accepted up until noon on Saturday 15th, September, as long as they are accompanied by full payment. DON'T miss the social event of the year! Please note that this year dress will be conventional. No trog suits please!

Usual after dinner festivities will be held, probably at the home of Ros and Andrew Skinner.