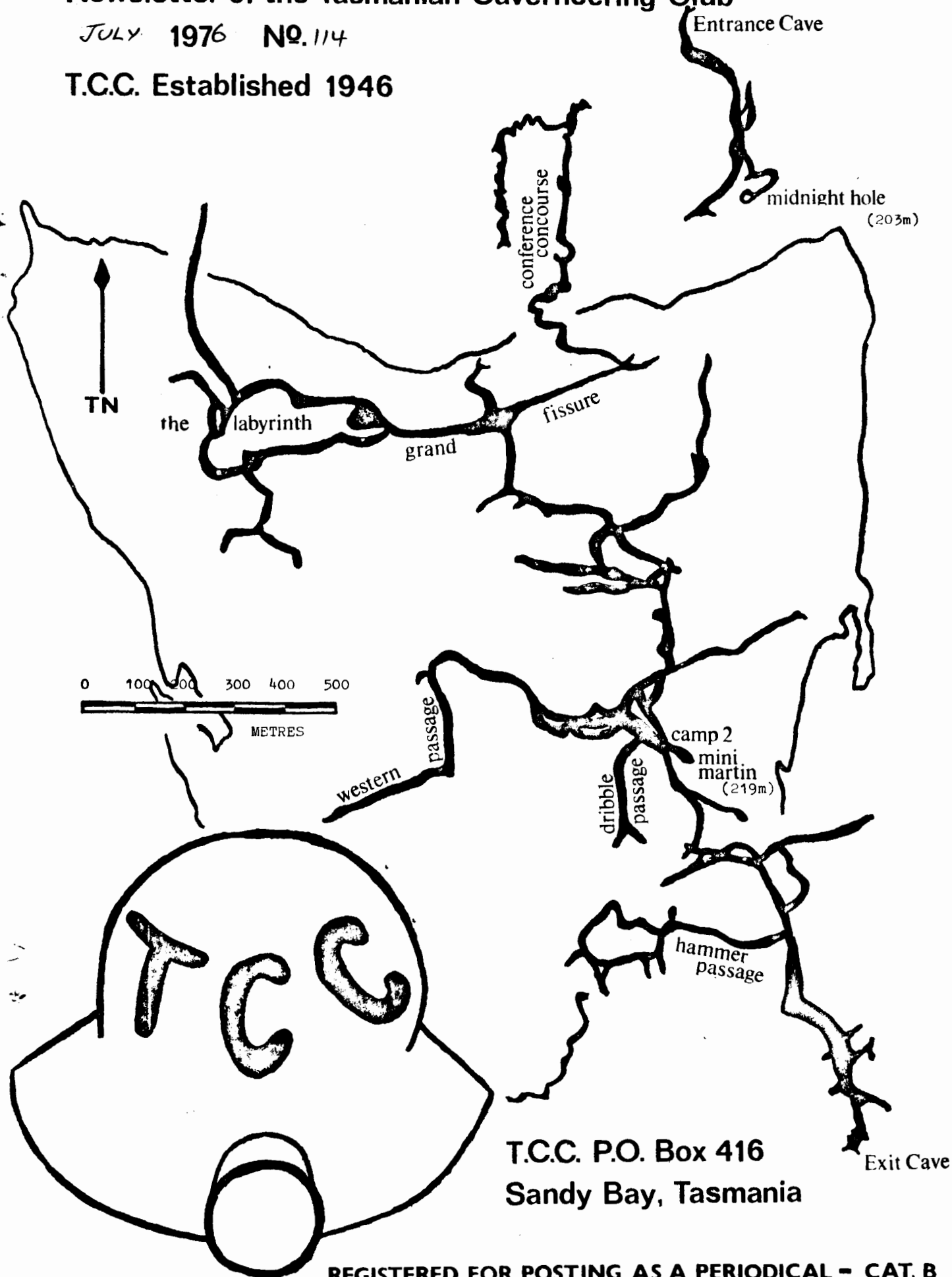


SPELEO SPIEL

Newsletter of the Tasmanian Caverneering Club

JULY 1976 NO. 114

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FORWARD PROGRAMME

- July 10-11 : LAKE SPICER/WEST COAST:- 'A/Leader:- Therese Goede.
Leaving Friday night, 9th.
- July 12 : MONDAY:- Leader:-Albert Goede - cave numbering Florentine area.
- August 7-8 : WEEKEND TRIP:- EXIT CAVE - Leader: Albert Goede & Andrew S.
Track marking etc.
- August 11 : PLEASE NOTE: General Meeting a week later than usual. It will
be held at - Tony Culberg's, 16 Nelumie St; Lindisfarne. After
the meeting, members are asked to participate in a "house-wrecking"
session - (I think that should read "house-warming") - As Tony is
to lousy to put on a barrel - B.Y.O.G.!
- August 28-29 : Trip to Julius River Area. More on this next issue!

PS. Maydena members are running trips just about every weekend. If you are interested
contact Steve Annan on Maydena 88 2222 (what an easy number to remember).

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EDITORIAL

The only people doing any active caving at the moment are the members of the Maydena Branch. Trips are being held regularly and it looks like the stubborn perseverance of John Parker and the Annan's is finally paying off! Recent trips to an area north of Maydena have produced a number of promising holes which require exploration by SRT equipped cavers. Some have exceeded 70 metres and are still going strong. The area in question is approximately on the same level as Khazad-dum and the feasibility of deep caves is a definite possibility. The holes lay east of K.D. and are in the vicinity of Rift Cave (JF34). If any old member is able to assist with information on this area, the Editor would like to hear from you. Clubwise, TCC appears to have a number of internal problems. Membership has diminished considerably over the last 12 months or so and the number of "active" members has also declined alarmingly. One might argue that this is quite common at this time of the year and given time, things will improve! However, after a much closer look at the situation, one starts to realize that this might not be the case.

A number of TCC members are drifting closer to SCS and I personally feel that we are going to lose a number of these members within the near future. This is being brought about by the fact that we are not doing enough within the club to encourage a more personal approach. SCS is a younger club which is catering for a younger age group and this, I feel, will place TCC in a very grim situation. This will be even more apparent towards the end of the year when a number of present members will no longer be available due to better employment prospects and other involvements.

It is time that TCC and SCS got together and looked at the idea of amalgamation! The state has three active caving clubs of which two are in the south. Victoria, for example has a number of caving clubs but these are affiliated with the one governing body - VSA. This works quite successfully and I can see no reason as to why this would not work in Tasmania. I realize that there are a number of personal problems which, unfortunately have existed within both TCC and SCS over the years but if caving is to suffer due to pointless personal confrontations between individuals, it is time that

EDITORIAL Cont;

someone got off their butts and did something about rectifying the situation.

Over the last two years or so, I have personally endeavoured to bring about a much closer liaison between these two clubs but my efforts have been frustrated (on both sides) by a minority group of individuals who do not wish to see the clubs working together as one! It's bloody high time that each and every member of both clubs took a good look at what is happening to caving due to this pitiful rift that occurred a long time ago! Forget the bloody past and start pulling your fingers out and having a go!

Now that I have got that off my chest on with the magazine!

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NEW MEMBERS

A welcome is extended to John Parker of Maydena, who was voted in as a full member at the June meeting of TCC. Glad to have you aboard!

CHANGE OF ADDRESS

Albert Goede has moved house and his new address is as follows:- Unit 4, 12D Strickland Avenue, South Hobart. 7000

RESIGNATION

I have been advised that one of TCC's most distinguished members, who has long been associated with the club in one way or another, and has held numerous titles of office has tendered his resignation from all aspects of caving: - ROY SKINNER. Australian caving in general will not be the same without this familiar figure who, over the years, has contributed greatly towards the furthering of caving throughout Tasmania and the mainland. Roy, in appreciation for your contribution over the years, TCC and ASF would like to say - thankyou! Apparently, Roy's resignation was due to personal commitments and we would like to wish you and wife Pam, the best for the future.

CLUB DINNER

Persons interested in attending the Annual club dinner are asked to submit their names to Andrew Skinner at their earliest convenience. The dinner will be held at the Hotel Carlyle on Saturday 18th. September.

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STALAGMITES - WHAT THEY TELL US by Albert Goede

To the average caverner a stalagmite is a typical feature of the cave environment - a thing of beauty to be admired and photographed but not of any great significance.

The scientific caver appreciates the beauty and grace of stalagmites as much as anyone but at the same time, he is likely to be curious about the nature and history of development of these formations. He may begin to wonder how they grew, how old they are, how fast they grow and what they can tell us about the past. In recent years quite a few answers to such questions have been found as more and more scientists have become involved in the challenge of understanding the cave environment.

How do they grow?

Contrary to popular belief stalagmites do not usually form because water saturated with calcium carbonate and dripping from the roof becomes supersaturated as it splashes onto the floor and some of it evaporates. Only near cave entrances is the humidity sufficiently low at times to make evaporation a significant process in the

depositing of calcite. Further into caves the relative humidity is usually very high and frequently approaches 100% so that evaporation of water, if it occurs at all, is very slow.

To understand why calcite is deposited to form stalagmites (and other formations) we must first of all know something about how limestone dissolves. Rainwater is not pure water, it contains in solution small quantities of the gas carbon dioxide which is present in the atmosphere in small amounts. This turns the water into very dilute carbonic acid which dissolves limestone much more efficiently than pure water. Not all rainwater falls on bare limestone. Some of it soaks into soils. Soils not only contain water, they usually contain a lot of air trapped in tiny pores between soil particles. This soil atmosphere contains much more carbon dioxide than the free atmosphere because a lot is given off by the roots of plants and by soil organisms. Water moving through the soil picks up carbon dioxide and becomes a much stronger solution of carbonic acid than rainwater. When it reaches the bedrock limestone below the soil, it dissolves a lot of rock as it penetrates into tight fissures and joints. As it moves down it becomes saturated with calcium carbonate - the chemical which makes up most of the limestone - but it still contains carbon dioxide in solution.

As the water emerges from the roof of a cavern it comes into contact with the cave atmosphere which contains much less carbon dioxide than the soil atmosphere from where the water has come. Carbon dioxide gas now diffuses out of the water into the cave air and this makes the water supersaturated so that it deposits calcium carbonate as calcite to form stalactites, stalagmites, flowstone and rimstone.

Stalagmites may form at any time after the cave comes into existence. Many are actively growing today while others are fossil forms. They may have experienced more than one period of growth separated by periods in non-deposition. A small fossil stalagmite only 10cms high from the Ballroom in Exit Cave was found to have undergone at least four different periods of growth.

How old are they?

Until relatively recently there was no way of telling the age of a piece of stalagmite. It had long been known that stalagmites show growth rings, rather like those of trees in appearance. In some Californian caves it was shown that one growth ring was deposited every year. If this was universally true, the ages of active stalagmites could be determined by counting rings back from the present outside surface. However, it has been shown elsewhere (Europe and New Zealand, Hendy, 1969) that growth rings are frequently not annual.

In recent years several more successful methods for dating cave-deposited calcite have been discovered. The two methods most widely used are "carbon 14" and "uranium-thorium" dating. Both are radiometric methods, that is they depend on the decay of radio-active atoms of carbon or uranium.

The carbon 14 method is widely used for the dating of wood and charcoal. It is not quite as satisfactory for the dating of calcite in caves. With care it can be used to obtain approximate ages for portions of stalagmites that are not more than 30,000 years old. Unfortunately, many stalagmites are older than this and cannot be dated by this method.

The uranium-thorium method has come into use only in the last few years (Harmon et al, 1975) and has the great advantage that it can be used to date stalagmite material ranging in age from 1,000 to 300,000 years ago. The method is based on the fact that when calcite is deposited it usually contains small but significant amounts of uranium. After deposition the uranium decays at a constant rate to another chemical element - thorium. By means of quantitative analysis the amounts of uranium and thorium in a piece of calcite can be measured and from this the age of the sample can be calculated. Some stalagmites are too old to have their age determined even by this method. This gives an indication of how long some caves have been in existence.

How fast do they grow?

Once you can measure the age of various parts of a stalagmite it becomes possible to work out how fast it grows in height and this has now been done for a limited number of stalagmites in caves in various parts of the world.

Hendy (1969) found that a stalagmite in Twin Forks Cave, Nelson (South Island) New Zealand, had an average growth rate of 7cms/1,000 years.

Continued from previous page,

Duplessy and others (1970) found that a stalagmite in Aven d'Ornag in Southern France had a growth rate of 5.95cms/1,000 years. This fossil stalagmite was 2.44 m high and had grown to its present height between 130,000 and 90,000 years ago.

Most measurements of growth rate refer to long slender column stalagmites with a constant diameter which can be expected to grow relatively rapidly. Harmon and others (1975) determined average growth rates for seven stalagmites of this type in North and Central America and found a range of growth rates of between 5.85 and 0.23 cms/1,000 years with most of the values near the lower end of the scale. Two short stubby stalagmites had average growth rates of only 0.56 and 0.81 cms/1,000 years.

Although the number of growth rates determined so far is small, it is obvious stalagmites grow very slowly. The fastest rates determined so far is 7cms/1,000 years and the slowest 0.23cms/1,000 years. The average rate for nine constant diameter stalagmites is only 2.97cms/1,000 years.

This gives rise to some interesting speculations. The Khan in Kubla Khan Cave at Mole Creek, is Australia's tallest stalagmite and its height has been measured as approximately 17.7 metres. It is a massive formation and its growth rate would almost certainly be slower than that of most of the slender, constant diameter stalagmites measured so far. A rate of 1cm/1,000 years may well be generous but at that rate the Khan would have taken more than one and three quarter million years to grow to its present height. Even at a very fast rate of 5cms/1,000 years, it would still take have taken 354,000 years to grow. These figures are calculated on the assumption that growth has been continuous. Intermittent growth would take even longer.

It is quite obvious that any part of a cave containing tall stalagmites must have been in existence for a long time. Sweeting (1973) claims that some stalagmites in Aggtelek Cave in Hungary are over 40 metres high. One wonders just how long they have taken to form!!!

What do they tell us about the past?

Some years ago (Hendy and Wilson, 1968) it was found that two stable isotopes of oxygen found in calcite varied in their relative abundance dependent on the temperature at which the mineral was formed. Cave temperatures away from entrances are almost constant and approximate to the mean annual temperature at the surface in the area in which they are found. During the ice ages the mean annual temperature in temperate areas was 6 deg. to 10 deg. C lower than it is today and this should show up in the ratio of the two stable oxygen isotopes. The last of the major ice ages occurred from about 75,000 to 10,000 years ago.

If we can take a large stalagmite, date it at various points from top to bottom and determine the oxygen isotope ratio at regular intervals we can determine the changes in mean annual temperature that have taken place with time.

This has been done for two stalagmites. The Aven d'Ornag stalagmite in France, has yielded a record of changing temperatures from 130,000 to 90,000 years ago - (Duplessy and others, 1970) In New Zealand a temperature curve for the last 100,000 years has been produced for the Waitomo area by combining records obtained from two stalagmites taken from different caves in the same area. By using stalagmites, it should be possible to build up a curve of climatic change for the last 300,000 years.

It should be obvious by now that there is a lot more to stalagmites than meets the eye.

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JUDDS CAVERN

An article on Judds Cavern, Cracroft, appears in the March Edition of The Tasmanian Tramp, No. 22, published by the Hobart Walking Club.

The article, by Hilary Cane, describes the exploration of Judds Cavern by the Manuka Club and TCC. It concludes: "The future of this part of Tasmania's wilderness is not very bright. I wonder how close the bulldozers will be by the time this article goes to press?"

Also in this edition of the Tramp is an article on Mount Bobs by Jenny Birch in which a trip to Judds Cavern is described. There is a photo of the sink hole below Lake Sydney.

One disturbing aspect about the two articles is that a map has been published which shows the actual locating of Judds Cavern. Having seen the destruction of stalactites in Damper Cave, Precipitous Bluff, I seriously question the practice of publishing the location of caves - even when they occur in remote wilderness areas.

Andrew D. Skinner.

APOLOGY

Apologies are offered to Peter Watts who has informed me that he was also present at the Search & Rescue Exercise at Mole Creek (See page 6, Speleo Spiel No. 112).

MAYDENA NEWS

John Parker reports that over the past few months, he, with the assistance of Steve and Anne Annan, has been combing the area above Khazad-dum on the ridges below Tyenna Peak. This area is apparently a caver's paradise with lots of limestone and littered with sink holes, many with promising passages leading off. John has been down a number of these holes and assures us that at least five are worthy of further exploration. A number of these shafts also contain the bones of many animals. Perhaps the most exciting find to date (22/6/76) was that of a magnificent sink hole approx. 60' x 70' wide with a large passage leading off. A few days later, the Editor received this trip report: -

June Area - 26/6/76.

Party: Max Jeffries, John Parker, Anne & Steve Annan (MB/TCC) Therese Goede, Laurie Moody and Shane Garlick (TCC).

Maydena group set off at 8.30am from the John Bull Road and were joined later at the cave recently discovered by John Parker & Co. the previous Saturday, by Therese, Laurie

Maydena Report Cont;

and Shane. Sixty metres of ladder was let down to the floor of the sink hole, from where three large passages led off. There were also a number of smaller ones. Anne, John, Steve and Shane climbed down but the cold (it was pouring with rain), lack of proper equipment (abseiling is the only feasible way of getting up and down) and exhaustion kept us from getting into any of the passages.

After this, we moved on to another smaller hole found by John a few weeks earlier. John and Shane went down over 60 metres of mud-slide, then a series of drops - without reaching the end - the cave has a few formations and a lot of bones. All in all, two caves well worth further exploration in the near future.

Anne Annan.

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TRIP REPORT

Mole Creek and other Areas - 12-14/6/76.

June Long-weekend.

Party: Therese Goede & Bill Nicholson.

Saturday morning dawned fine and clear - until we got to the Midlands. Here an all enveloping mist hugged the car into a slow crawl. Sometime was spent taking photos of the sun through mist and we eventually arrived at Mole Creek at noon. We visited Wet Cave & Honeycombe briefly and then inspected the limestone quarry. Here we came across some lost tourists who were looking for Maracoopa Cave. About turned and headed to said tourist cave. Decided that I might as well experiment with my camera in the comfort of the tourist cave, rather than Genghis Khan, so collected gear together and headed underground. Five hours were spent shutter-bugging and being able to see what one was focusing on (with the help of the cave lights) was a definite advantage (Thanks Gordon & Jans). Exited and drove back to Deloraine for petrol, then up to Devonport, Burnie and inland to Hellyer Gorge. Raining, so slept in the Renault. Morning provided more rain, not the hoped for wisps of mist rising out of the gorge in filtered sunlight - perhaps next time! Headed towards Queens-town and fortunately the rain eased. Photographed happily along the route and went to Zeehan so Bill could delight in the geological collection and the museum there. Continued onwards but got side-tracked at the Strahan turn-off and headed there instead. Fuelled up and then drove up the road along the King River to just past the railway bridge. Fantastic scenery - incredible water pollution. Well worth another visit when things dry out a little. About turned and drove to Ocean Beach for a spectacular sunset (more shutter-bugging). Eventually arrived at Queenstown after dark but felt the detour had been well worth the effort. Spent a very comfortable night at the home of Bill's brother. Began the return to Hobart at 9.00am, clear skies and sunshine - and frost. Detour via Lake St. Clair and arrived at Risdon Vale at 4.15pm. A very enjoyable trip & thanks to Stephen and Sue Nicholson for their hospitality.

Therese Goede

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CHANGE OF PHONE NUMBER

Please Note: Anthony (Tony) Culberg is no longer employed at the Geilston Bay High School. He is now employed as a lecturer in accountancy at the Hobart Tech. College and his work number is now - 34 3241 Ext. 78 - don't phone before lunch on Monday, Tuesday or Wednesday. He is there all day Thursday and only three hours on Fridays. How does one go about getting a cushy job like that?

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ASF NEWSLETTER No. 72 is at the printers and should be out before the end of the month. Make sure you get your copy while stocks last - Order NOW!