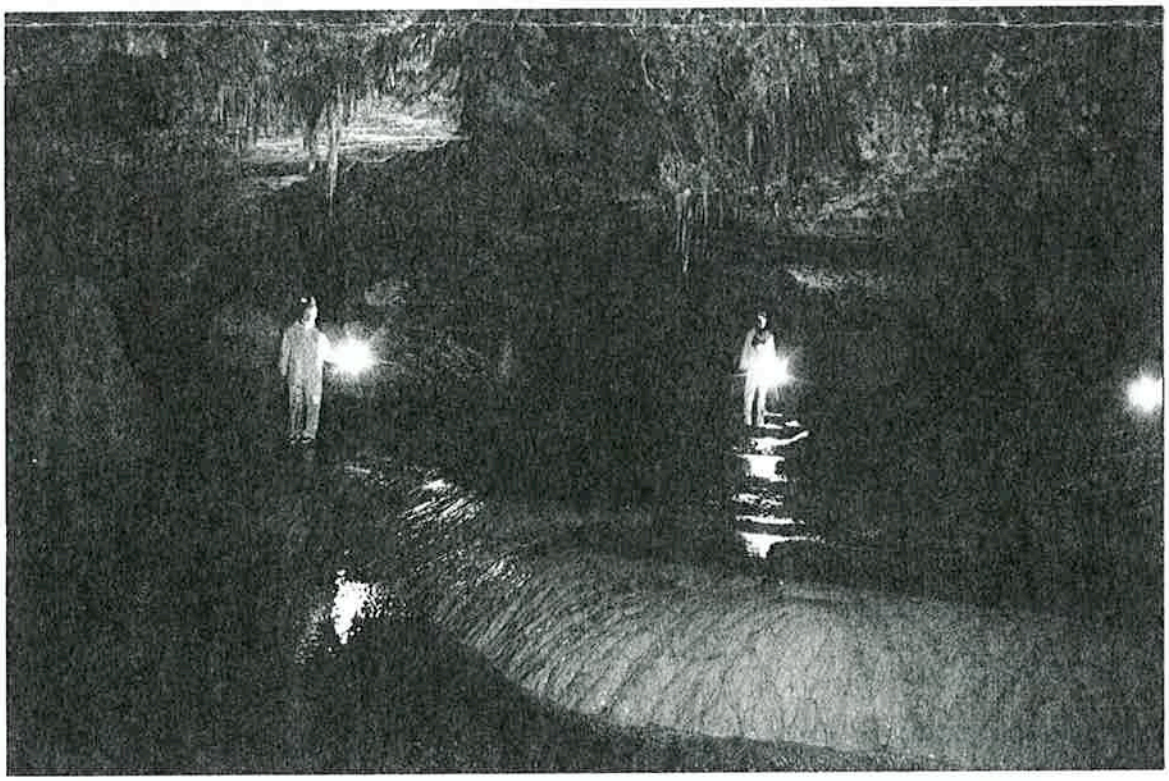
FUSSI



Vol. 13. No. 1 & 2 2001

The Quarterly Newsletter of the

Flinders University Speleological Society Incorporated

WHO IS WHO IN FUSS

President.
Kirsty Kitto
44 Fredrick St.,
MAYLANDS. 5069.
(hm) 8132 0091
Physics Dep't #12681

Secretary
Heath Nitschke
20 Honey Suckle Dr
HOPE VALLEY 5090
8395 9678

Treasurer
Paul Waclawik,
62 Turners Avenue,
COROMANDEL VALLEY 5051
(Hm)8278 4820

Safety Officer.
Clare Buswell
P. O. Box.325
MACCLESFIELD. 5152
8388 9516

Librarian
Catherine Sellars
13 Monmouth Rd,
WESTBOURNE PK 5041
82711707

Equipment Officer
Debbie Callison,
62 Turners Avenue,
COROMANDEL VALLEY 5051
(hm) 8278 4820

Newsletter Editors
Paul Waclawik, and
Debbie Callison
62 Turners Avenue,
COROMANDEL VALLEY 5051
(hm) 8278 4820

SA Speleo Council Rep.
Keven Cocks,
43 Nash Lane,
MORPHETTVALE 5162
(hm) 8381 8024

Australian Speleological Federation Rep
Keven Cocks,
43 Nash Lane,
MORPHETTVALE 5162
(hm) 8381 8024

Clubs and Societies Rep.
Kitto Kirsty.
44 Fredrick St.,
MAYLANDS. 5069.
(hm) 8132 0091
Physics Dep't #12174

Meeting time.
FUSS meets the first Tuesday in the Month at 6pm in the Tavern and 6.30 in the Kelly Morris Rm or other meeting room in the Union Building.

CONTENTS

Front Cover Photo: Debbie and Kylea in Lynds. Mole Ck.
Photographer: M. Choi

The 2000 Club report for the Flinders University Speleological Society Inc. (FUSSI)

Fussi still has problems with low membership. This has made it difficult to run as many activities as we would have liked as participation has been low. We have been working on increasing our membership base (four new members signed up on fair day which is an excellent result!) which will see us able to run more activities. Despite these problems FUSSI has still managed to run activities such as:

- meetings generally involving a quick discussion of relevant business and planning for future trips.
- training days, where we learned and practiced skills required for competent caving, such as rigging, rope and ladder work. These days predominately involved "bridge days" where we would meet at the Flinders University footbridge and learn how to "jump off it" as safely as possible.
- caving trips to locations such as Corra Lynn caves (on Yorke Peninsula), the Lower Southeast, Gloop (in Swan Reach) and the Flinders ranges. We have attempted to hold at least one trip every two months, and the trips have ranged in duration from short daytrips to weeklong epics! (We hope to attract as many people, with as many different work/study commitments as possible, with this range of available trips.)

In addition to these predominately club activities, we have participated in Clubs and Society fair days, as well as external caving club organisational committies.

FUSSI LIBRARY REPORT FOR 2001 AGM

Yep, the library is up to date with all the filing done and all new additions data on the computer. We do need to take the data from 1989 - Dec 1999 and put this on to CD so that we don't let Mavis get hold of it and corrupt any files etc.

We were lucky this year in that a large bunch of maps fell off the back of a truck and into our storage area. These maps are topographic, cover most of the State which has limestone in it and are of a useful scale. Many thanks to the truck driver for this delivery.

The library contains journals from the numerous caving clubs that are active around the country and overseas, as well as books on cave photography, rope techniques, videos and information on the caving areas of Australia.

If anybody wants anything from the library it is stored in the Clubs and Societies compactus with the rest of our gear. Let the secretary know or the librarian know what you want and they will bring it to the next meeting. Borrowing time is usually one month.

EQUIPMENT OFFICER'S REPORT

In September last year few bits and pieces were purchased to help us have lots of fun with ropes. Two new ascenders, one whaletail and a couple of screw gate Kong karabiners were added to our collection.

In terms of general maintenance we have retired a rope and cut another one into two lengths. We do however need to replace our two oldest ropes as they are not eligible for use in any retirement homes. The rope from 1992 has some minor wear but is in reasonable condition, the 1995 rope is in very good condition. The cost of replacing our retired and cut ropes is around $300.00. Any donations would be greatly appreciated. Just leave the money in the meter box if no body is home.

On a more serious note some gear has gone missing. If you have any of the following in your gear bags, then PLEASE BRING IT BACK.

TWO screw gate Kong karabiners with gold coloured gates. NEW
ONE screw gate blue Kong karabiner large D with FUSS engraved on it.
ONE screw gate Alum Alloy Kong karabiner silver coloured gate D.

FUSSI gear is paid for out of student money so we get a bit upset when things get lost or when Mavis takes a liking to them and adds them to her collection of coffee mugs, car keys, and sun glasses. So go through your gear bags and have a second look for items that look a bit out of place. In the meantime the treasurer is off to buy some new rope. Get ready to pat it.

TALES FROM OUR HEROINE (Kirsty)

If you recall, we left our heroine, stranded outside her car, which had voraciously eaten her keys, but which had also driven the only other key to her house, (that was the outside of her house), to the airport that morning, leaving her unable even to get inside her house that night, if she had made it to her door by some other means...

After her breakfast of muffin and coffee, our heroine was feeling somewhat fortified, and made the trip to the science stores in search of some wire (which she only had a very vague notion of how to use when confronted with situation such as this one). The storeman, being a very helpful man, gave her some wires of differing thicknesses, and some kevlar tape which he assured her was easier to use and less damaging to window rubbers. Our heroine made her wary way our to the viscous eater of the keys, prepared to enter the contest of wits and dexterity into which she had been unknowingly entered....

Arriving at the location of her heinous combatant, our heroine decided to do a stupid and girlie thing and check each door was in fact locked - all knobs did in fact appear to be down, but this was after all a battle of wits, perhaps her opponent had a weak underbelly.... (and during this process she thought that a less shut window many in fact present itself to her.)

Door 1- Locked. Door 2 - Locked.

Around to the passengers side... where door 3 revealed itself to be not quite so locked as the previous ones... Positively unlocked in fact.
Grinning rather too much, our heroine returns to the store, and gives back her unnecessary implements. Relating the story to our friendly storeman, who suggested that she take part in tonight's lottery, she makes her way back to her cosy office, secure in the knowledge that she will in fact be able to make her way home with the minimum of fuss (no pun intended), and in fact enter said home upon her arrival.

THE INSURANCE SAGA

Once upon a time, one used to be able to go caving without telling anybody. Just hop across your neighbours fence and head down the nearest hole in the ground. Life was simple, the government owned the electricity supply and blackouts were few. There was only one telephone company, we all owned it, and we did not have to spend our valuable time finding the cheapest way to ring anybody up. Alas, now our lives are run not by governments, which may or may not be democratically elected, depending on the gerry-mander in the State or on how much money each side has got to spend on buying your vote, but by insurance companies.

Now I have a friend who puts insurance companies and their agents up against the same wall as real estate agents, car sales people, fascists and other sundry spivs and spineless fish. In some of his more dogmatic moments he said that he would not wait for the dawn..... I used to argue with him that this type of attitude aligned him with the crypto-fascist camp he was fighting against. However recent experience has caused me to see the error of my ways and I have been forced to agree with my friend's position. It is indeed a sad and sorry state of affairs. What has caused this change?

The first rule of insurance companies is that they will always seek to get their money back. That means that they will sue back down the line of responsibility. When the ASF lost its insurance cover with one months notice, I wrote to the University Insurance section to ask for clarification concerning public liability for members of FUSS when undertaking our activities. The reply I received was that FUSS should go and seek its own insurance, as caving would not be covered under the uni insurance policy, and that caving was considered a high risk activity similar to diving. Numerous discussions occurred between our parent organisation, Clubs and Societies and the Uni insurance people and finally the University stated that FUSS's members would be covered. Legal opinion would however be sought by the University.

So this is where things stand at the moment. We can only hope that the ASF is able to obtain public liability insurance soon so that those members of FUSS who may fall between the cracks of the University policy can have some cover. In the meantime I am going to go to a used car sales rep seminar to see if I can gain some insights into such concepts as "handing over your money for guaranteed coverage," and the meaning behind the words " steak knief deal." Below is the reply to our questions concening coverage for FUSSI from the Uni insurance people.

I have discussed the issues with Michael Harry and for the moment we agree that the general activities of the Clubs will fall under the umbrella of Flinders liability covers.

I understand that some clubs had arranged their own insurances under group policy schemes but cover has ceased because of the HIH debacle. It is possible that in some instances varying needs of clubs may have been addressed by these covers being tailored to the specific risks associated with their individual pursuits.

While it is not possible for me to comment on individual circumstances I expect the cover now provided would be adequate for their needs in most instances.

We will be seeing representatives from the Underwriters (Unimutual) in the near future and it is my intention to discuss the issues with them. I will contact you again if there is any alteration to the above or if there is a need for disclosure of all affiliated clubs and and their activities.

Mike Stevens
Insurance Officer
Financial Administration

NOTES ON RIGGING

BELAYING WITH A LADDER

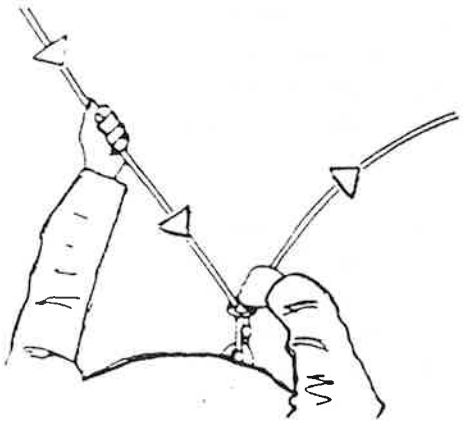
When operating a belay using Static rope, the rope must always be taut This is to reduce the possibility of shock loading the rope climber and rigging in case of a fall Therefore the person climbing the ladder must not climb any faster than the person controlling the rope Static ropes are used in caving rather than dynamic ropes because of their abrasion resistance qualities

Calls used in belaying can be
Belayer "belayer ready"
Climber "take in, that's me"
Belayer: "climb when ready"
Climber: "up" "stop" "down."
Belayer: "OK", meaning affirmative
Climber: "safe", meaning finished climbing and off safety line.

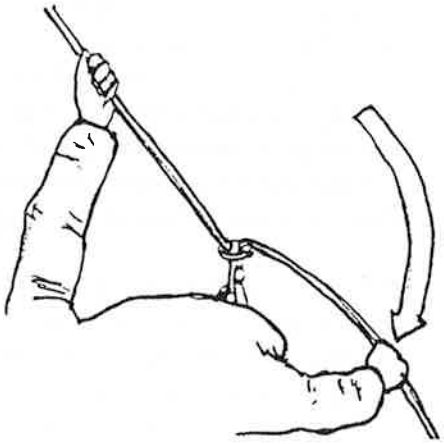
The word "slack" should NOT BE USED in calls as it is ambiguous and could mean either "up or down"

Reference: Australian Speleological Federation Inc. *Cave Safety Guidelines*

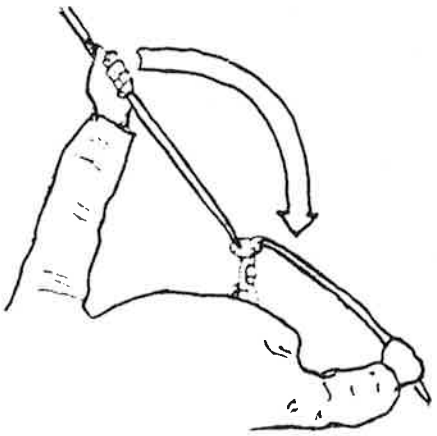
five-step belay method



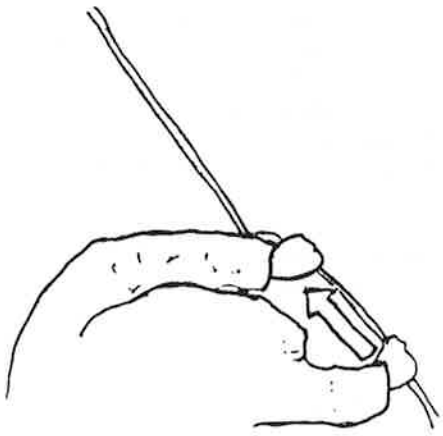
the rope is fed back into the belay device by the guide hand and pulled through with the brake hand



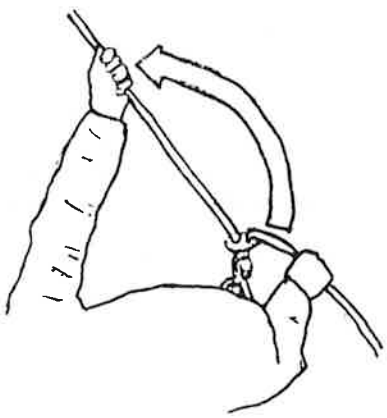
the brake hand now locks off the rope



the guide hand lets go of the guiding side of the rope and firmly grasps the brake rope next to the belay device.



slide the original brake hand along the rope until both hands meet.



the original guide hand lets of of the brake rope and returns to grasp the guide rope

5. Volcanoes and Lava Fields of Western Victoria

Ken Grimes

This article first appeared in Baddeley G., *Vulcon Guidebook.*
20th Conference of the Australian Speleological Federation. Hamilton Victoria. 1995.
It is reprinted here with the permission of the author.

Introduction

The Newer Volcanic Province of Western Victoria is one of the world's larger volcanic plains. It is a flat to rolling basaltic lava plain dotted with volcanic hills, which extends from Melbourne almost to the South Australian border, and the isolated volcanoes at Mount Gambier are a western outlier of the Province (see previous Figure 4-2). Lava tubes, lava caves, and related features are scattered across the province, but the majority of them are in the Hamilton area where they are associated with two of the younger eruptions in the region.

Skeats and James (1937) were the first to describe the features of the lava flows in detail. Ollier (1967) has written an overview of the volcanic province and its features. Cass & others (1993), Nicholls & others (1993) and Birch (1994) give more recent reviews of the volcanicity and describe specific volcanic sites in the province. Whitehead (1991) provided additional interpretations of the lava flows and related features at Mt. Napier.

A Glossary at the rear of this guidebook lists unusual terms used in describing volcanoes and lava tubes.

Surface landforms

The Newer Volcanics mainly range in age from Pliocene (about 4.6 million years) up to very recent times, and further eruptions could occur in the geological future. The volcanics are dominantly built up from lava flows, but there are numerous small volcanic cones built from explosive activity as well as the larger maar lakes formed from major explosions (Figure 5-1).

Nearly 400 volcanic centres have been recognised, which if averaged over the 4.6 million years of eruptive history indicates one eruption every 11,500 years, though events were probably not as evenly spaced as that. Isotope dating suggests that at least seven volcanoes have erupted in the last 25,000 years: Mount Leura, Red Rock, Tower Hill, Mount Eccles and Mount Napier in Victoria, and Mount Schank and Mount Gambier in South Australia.

The youngest volcano is Mount Gambier, which has been dated at about 4,000 years old. In the Hamilton area Mount Napier erupted about 8,000 years ago, and Mount Eccles in several stages between 20,000 and 7,000 years ago. See Head & others (1991). The flows associated with these younger eruptions show better caves and surface features than those of the older volcanics. None-the-less, several of the caves found further east are in flows several million years old. The younger lava flows show a number of interesting surface features in addition to the caves and tubes.

Vents, Cones, Craters and Maars

Spatter cones (Figure 5-1A) are formed by lava fountains driven by either liquid or gas pressure in a lava pool within the vent. The ejected material is still hot and plastic when it lands so it forms welded spatter rather than loose scoria. The line of small cones that runs south-east from Mount Eccles was probably formed by a chain of lava fountains along a fissure. The Shaft (H-8) is one of these spatter cones in which the throat is still open, and can only be entered via a 23 m vertical drop.

Strombolian scoria cones (Figure 5-1B) are built up by rhythmic explosive activity driven by expanding gas bubbles in the magma (molten rock). The rhythm is a consequence of alternating build up of pressure beneath a crust, and then sudden explosive removal of that crust. The cones show all gradations from loose scoria to welded spatter. More violent explosions occurred in some of the volcanoes, throwing out larger sized bombs and blocks of both magma and country rock such as limestone. The upper, steep, part of Mount Napier is an example of a Strombolian cone.

Maars (Figure 5-1C) are a distinctive type of volcanic crater characterised by their broad but shallow form, their extent below the level of the surrounding country level, and the relatively low, but broad tuff rings that surround them. Maars are formed by deep-seated (*Phreato-magmatic*) explosions that occur when uprising magma (at about 1200° C) encounters groundwater in a porous rock strata. The resultant steam pressure creates an explosion that literally 'blows the top off' to form a crater and associated widespread ash (tuff) deposits.

Commonly the violent steam driven explosion is followed by a quieter lava fountain or strombolian phase in which spatter or scoria cones are built up within the crater. Because they extend below the level of the surrounding country, most maars contain lakes. Tower Hill and Lake Purrumbete are the two largest maars in the region (respectively, 4 km and 3 km in diameter). Orth & King (1990) provide an excellent booklet on the geology of the Tower Hill crater and maar lake.

Composite vents result from a variation of style during an eruption, or the coalescence of several vents. Thus Mount Napier is a composite cone comprising a basal gently-sloping lava shield and a superimposed steeper scoria and spatter cone. Mount Eccles is actually a group of vents and scoria cones, that follow a north-westerly fissure, and it also has extensive lava flows associated with it. The main scoria cone shows some evidence of steam driven explosions near the beginning of the eruption. The crater lake is at the level of the regional water table, and fills three overlapping craters. Mount Gambier is a complex group of overlapping scoria cones and maars, with only minor lava flows.

Lava Flows

Basalt is a hot (1000 - 1100° C) liquid that can flow readily when first erupted, but becomes more viscous (thicker) as it either cools, or loses its gas content. There are two main forms of basaltic lava flow, which grade into each other (Figure 5-2). *Pahoehoe* (pronounced pah-hoey-hoey) which is the Hawaiian word for 'smooth', and *aa* (pronounced ah-ah with a glottal stop) which is an Hawaiian expression of pain. Pahoehoe lava is the most liquid form, characterised by the formation of thin smooth skins that become wrinkled (hence its alternative name of 'ropy lava'). Pahoehoe lavas advance as a succession of lobes, each of which develops a skin, is inflated by the liquid pressure within, then ruptures at one or more points to release liquid lava that forms new lobes.

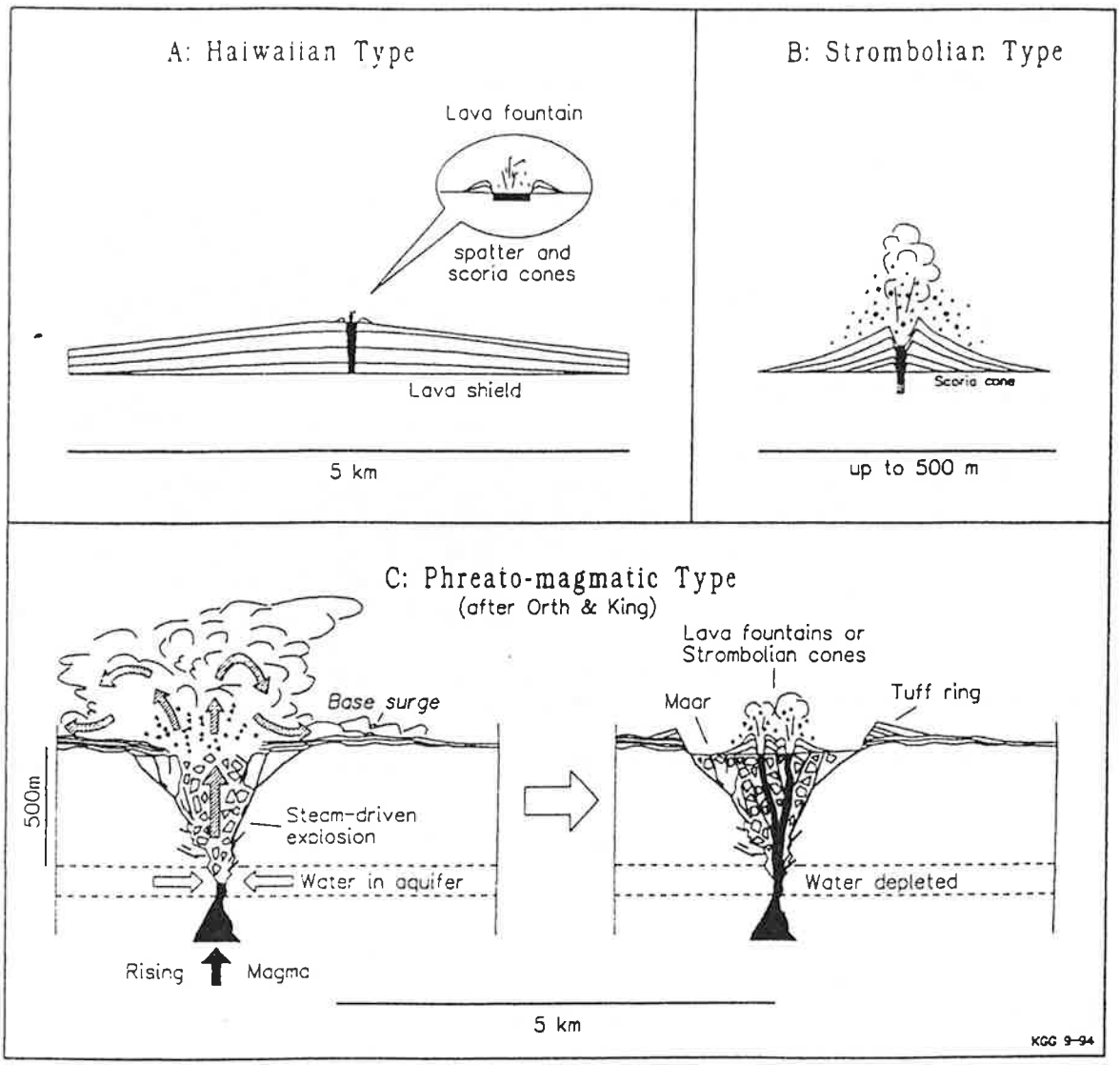


Figure 5-1: Types of Volcano found in the Newer Volcanic Province

The best modern model for the nature of vulcanism in this region is provided by the *Hawaiian volcanoes* (Figure 5-1A). There we see broad lava shields built up by successive flows of very fluid basaltic lava spreading out from a central crater or fissure. In the crater area we see lava pools with fountains jetting into the sky and building local small cones of welded spatter or loose scoria. The long lava flows are seen to be fed either by surface channels, or underground by lava tubes.

Examples of lava shields are the lower slopes of Mount Napier and the lava fields surrounding Mount Eccles. However, in Victoria we also have Strombolian eruptions (Figure 5-1B), slightly more explosive than the Hawaiian vents, which build larger scoria cones; and also the maar lakes, which are large but shallow craters formed by major steam driven explosions (Figure 5-1C).

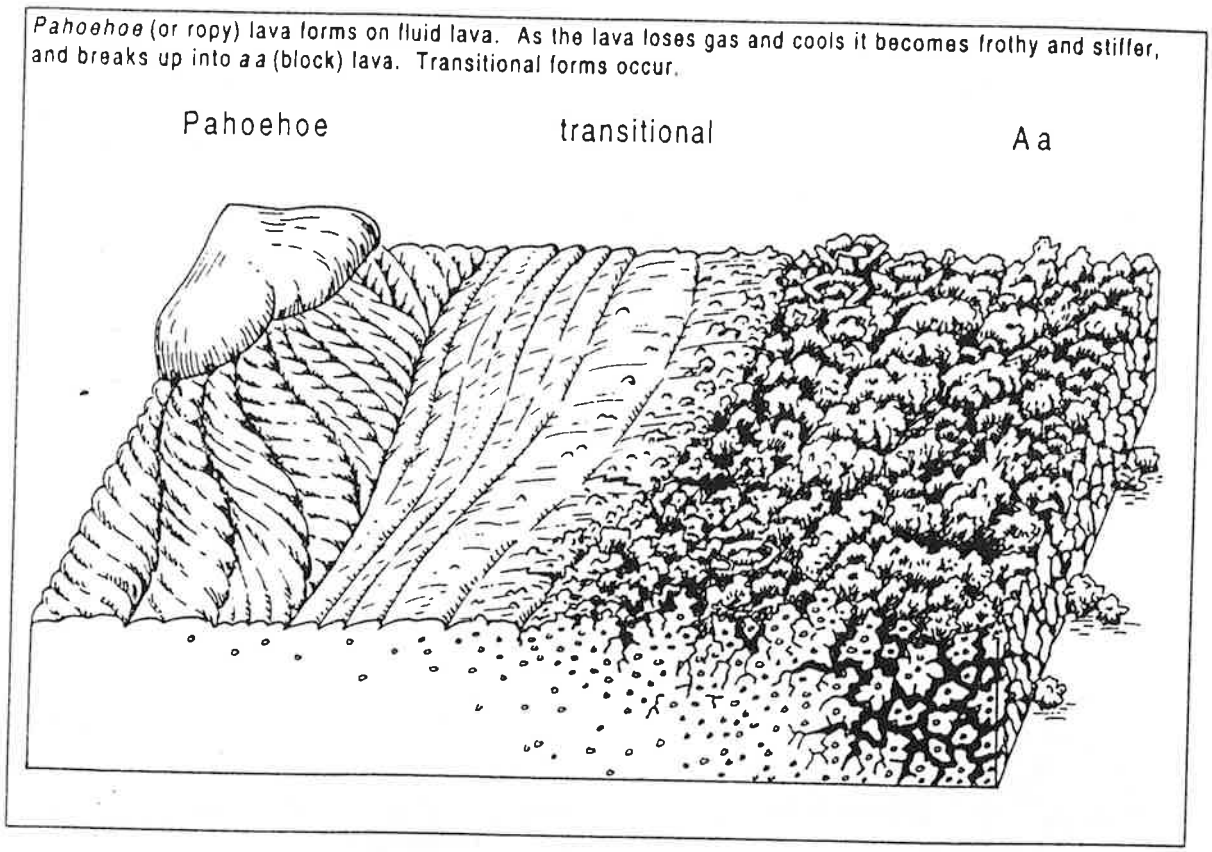


Figure 5-2: Types of Lava Surface

As pahoehoe loses gas and cools it becomes frothy and more viscous. The surface tends to crack, twist and break into angular, often spiny, blocks to form what is called *aa* or 'blocky' lava. Aa advances as a rubble wall in a manner akin to a caterpillar track with fragments from the surface falling down the face and being buried beneath the advancing front. Unfortunately the terminology is confused by the common occurrence of transitional types. Thus one author might refer to a flow as 'spiny pahoehoe', while another would call the same flow 'cauliflower aa'.

Lava flows can form broad sheets built up of multiple flows, or may be confined to a pre-existing valley. Figure 5-3 illustrates some of the surface features of a lava flow. Major 'wrinkles' or pressure ridges tend to form either transversely across the flow (*transverse ridges*) or parallel to the edges (*lateral ridges*) where the lava is moving more slowly than the central area. Ridges can also form as residual high areas at the edge of a flow when the central part subsides as a result of drainage of the lava from within it. In aa flows rubble is piled up at the edges to form lateral *rubble ridges*.

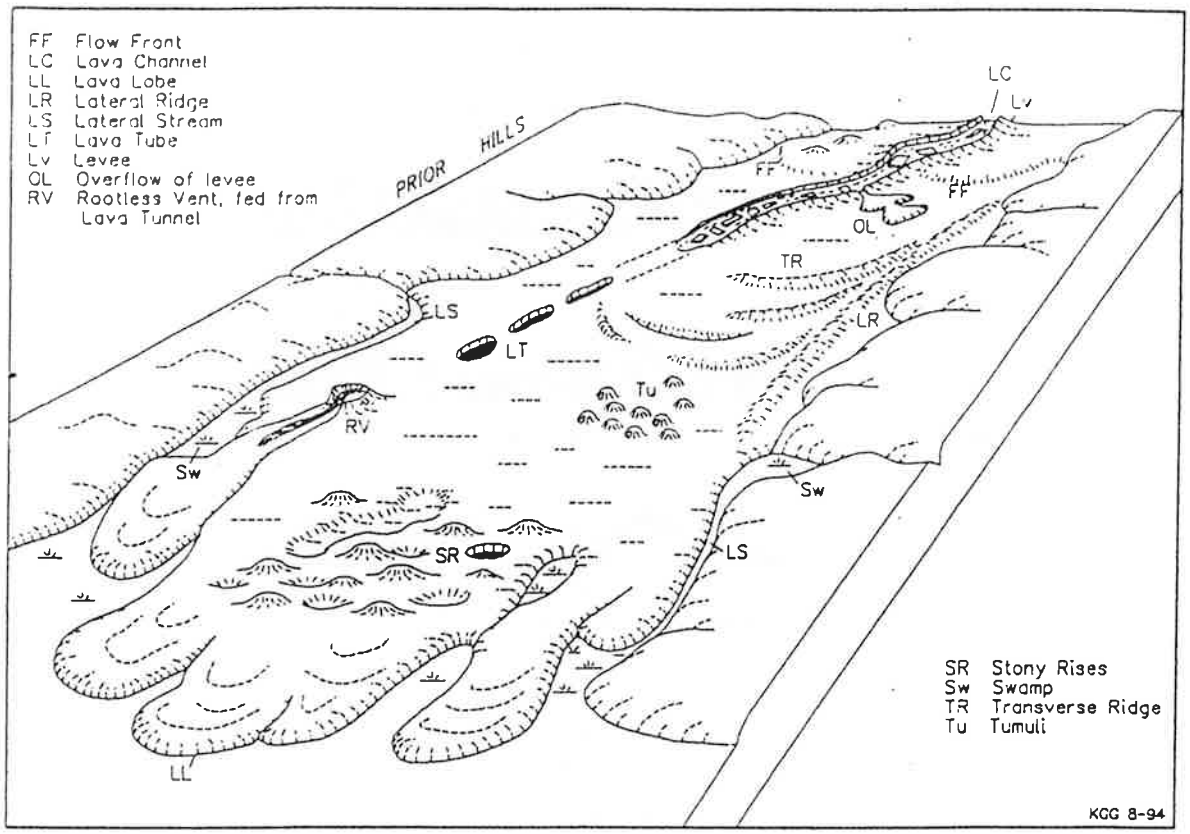


Figure 5-3: Some Surface Features of a Basaltic Lava Flow

Lava flows commonly have irregular surfaces with a local relief of up to 10 m. These are known locally as *Stony Rises* (Figure 5-4). Part of this irregularity is due to the initial nature of the overlapping lobes of lava (Figure 5-4A). However, after the surface of a flow has solidified, pressure from the liquid lava below may inflate it in several ways:

- Evenly, to raise the crust into a smooth convex surface,
- Irregularly, leaving some areas behind as hollows,
- Pushing up weak spots up to form small steep walled domes, called *tumuli*.

See Figure 5-4B and 5-5, and Walker (1991).

Alternatively a reduction in pressure can let the surface crust subside, either evenly, leaving lateral ridges of solidified material, or more unevenly to form a hummocky surface (Figure 5-4C). The stony rises can therefore form by either inflation or deflation (or both), but the general principal is that of uneven movement of a solidified crust floating on a liquid core. There are some very good examples of *tumuli* in the Harman Valley. These were originally thought to be 'gas blisters' possibly formed by steam when the flow ran across a swamp; however, Ollier (1964b) showed that they were solid.

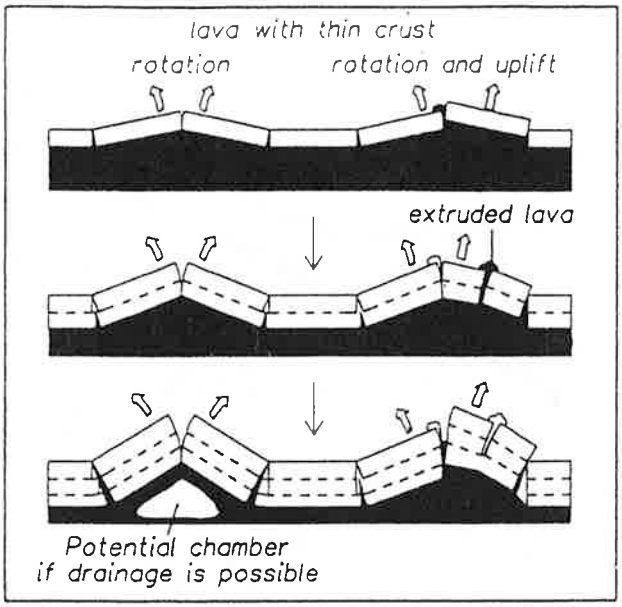


Figure 5-5: Formation of Tumuli

Lava tubes provide good insulation for the hot lava flowing within them. This allows the formation of very long flows such as the 50 km Tyrendarra Flow from Mount Eccles, which extends offshore across the continental shelf (which was dry at the time), and the older 60 km flow from Mount Rouse, which may also extend offshore (Figure 6-5).

When a lava flow follows a valley, as in the Harman Valley west of Mount Napier, it disrupts the drainage. Twin *lateral streams* may run down each side of the original valley (Figure 5-3). *Swamps* or *lakes* will form where the flow enters the valley, and where tributary valleys have been dammed by the flow. An example is Lake Condah, which has been dammed behind the Tyrendarra flow from Mount Eccles.

The older volcanoes of the region have degraded features, and thick lateritised soils, which make their recognition difficult. One example is Mount Hicks, the rounded hill with the microwave tower north of Mount Eccles.

FUSSI MEMBERSHIP LIST 8/01

NAME	ADDRESS	TELEPHONE
Buswell, Clare	P. O. 325 Macclesfield. 5251 Wholefood Shop	8388 9512 #12886
Callison, Deb	62 Turners Avenue, COROMANDEL VALLEY 5051	8278 4820
Choi, Marie	75 Cappella Drive, HALLET COVE 5158 battymarie@picknowl.com.au	8322 0895
Cocks, Keven	43 Nash Lane, MORPHETTVALE 5162 kevencoc@tafe.sa.edu.au	8381 8024
Hunter, Robert	14 Ann St, STEPNEY 5069	83626697
Kitto, Kirsty	44 Fredrick St, MAYLANDS. 5069. Physics Dep't kirsty.kitto@ flinders.edu.au	8132 0091 #12174
Maurer, Heiko	P. O. 325 MACCLESFIELD 5251 Computing Science. Adelaide University heiko@cs.adelaide.edu.au	83536018 83034486
Nitschke, Heath	20 Honey Suckle Dr, HOPE VALLEY 5090 Earth sciences xenonyne@hotmail.com	8395 9678 #13601
Riley, Ivan	14 Ann St, STEPNEY 5069 riley@bigpond.com.au	83626697
Sellars, Catherine	13 Monmouth Rd, WESTBOURNE PK 5041 cathy_sellars@hotmail.com	82711707
Sullivan, Joe	Sull0079@ flinders.edu.au	
Trezise, Cory	124 Alawoona Rd, MUNA PARA. 5115	8254 7126
Waclawik, Paul	62 Turners Avenue, COROMANDEL VALLEY 5051 paul.w@loftuscomp.com.au	8278 4820
White, Brenden	5/14 Hill Ave, CUMBERLAND PK 5041 brendan.white@flinders.edu.au	8297 2627

WHAT IS ON FOR THE NEXT FEW MONTHS

Tue Aug 14th	1PM	**GENERAL MEETING.** Planning for the Corra Lynn trip. Clubs and Societies.
Sun Aug 26th	**CORRA LYNN TRIP**	Come on everybody, time to knock off the sedentary winter lifestyle and get really dirty. Kirsty Co-ordinating.
Tue Sept 4th	1PM	**GENERAL MEETING.** Clubs & Societies Video of Scrubby Ck Caves, VIC.
Sun Sept 9th	11AM	**BRIDGE JUMP.** Clare co-ordinating. You **must** ring her and let her know that you are attending by the THURSDAY 10TH AT 1 PM. This helps plan the gear requirements.
Wed Sept 12th	1PM	**LIBRARY DAY**. Clubs and Societies Lots of help needed. Great way to find out what other cavers are doing around the world. BYO lunch.
	SEMESTER BREAK	**17 Sept -1 Oct**
Sept 28 -30	October long weekend	**Byaduk caves**. Come along and experience lava caves. Complete body padding a must. You will find out the double meaning of A a and pahoehoe.
Tue Oct 8th	1PM	Search and Rescue Seminar. Preparation for the search and rescue weekend at Corra Lynn cave. Learn how to bandage, monitor and use safe lifting techniques.
Sat/Sun 12/13		Search and Rescue weekend. A must for any caver.
Dec 14-Jan 12	**Tasi**	Clare co-ordinating. All depends on Mavis and her need to injure cavers. Ask Heiko!
Jan 12-19/02	**Yarrangobilly Caves**	Snowy Mountains. 10 days of great fun and wild caves. Kirsty co-ordinating.
April/May 02	**Nullarbor**	GET THERE ANY WAY YOU CAN