Club:	Name of Area:	Author:	Date of trip:
VSA	*Drik Drik, mainly 3DD-4.*	***K.G. Grimes.***	*25-1-2004*

Caves visited:
3DD-4 and surface spring on Glenelg River.

Title of report (if any):
Drik Drik area.

Names in party (indicate Author, Leader)
Ken Grimes, Janeen Samuel, Lynne Lacota.

Report: **No locations, but attach sketches of new caves if possible.**

Introduction

While the main team were surveying in the far end of DD-4, three of us spent a couple of hours photographing in the entrance section, then visited a spring on the Glenelg River. Small grey-scale versions of some of the photos are included with this report. For the full versions see the filenames listed on a separate CD.

Part 1: Hydrology.

In DD-4, Entrance section.

At the entrance the main stream was flowing at 2.2 L/sec (Pooh-sticks), and had a temperature of 15.1˚C and EC of 2130 µS (abt 1,380 ppm TDS)

A small stream entering from the side passage at the entrance (NE side) flowed at abt 0.02 L/s (timed into cup of water bottle). Its temperature was 15.3˚C and its EC = 943 µS (abt 620 ppm).

Spring beside Glenelg River

This is upstream of the lookout (at about 524050m E, 5790350 m N). First reported by George Christie. This is a short, steep-sided, valley (abt 100m long) feeding into the river. There is dense swampy vegetation on the valley floor. The ground is damp and spongy in places but I could find no actual flowing water amongst the undergrowth. In a small hole I found a puddle which measured: 15.4˚C temp, EC = 564 µS (365 ppm TDS)

Comment on hydrology:

This visit was after several very dry years. We did have good spring rain in 2003, however.

In DD-4 the cave stream was flowing a little slower than on my last visit (2.8 L/s on 9-6-2001) and had a higher concentration of TDS (EC was 1590 µS on 9-6-2001). This increase in TDS with reduced flow seems reasonable: A slower flow in dry years means more time for the water to dissolve lime, and also would result in a greater proportion of (saturated?) seepage water as against through-flowing stream water (assuming part of the stream is through-flow from the sink to the east of the plateau).

The side passage at the entrance had a lower concentration of TDS, so must be coming from the surface via a shorter route and has not had time to pick up as much lime.

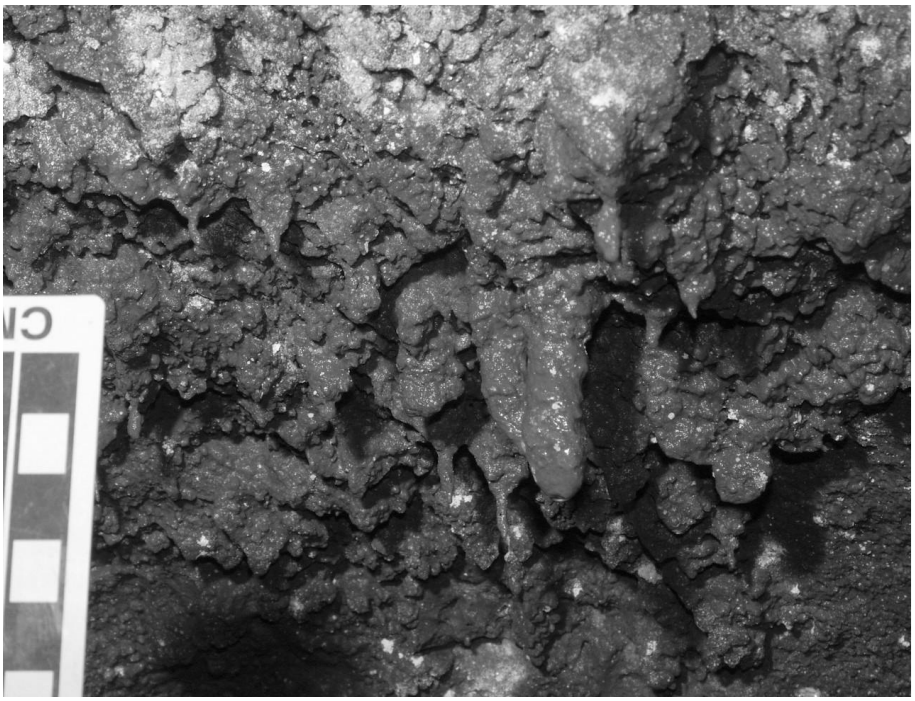
The spring on the Glenelg River has a lower TDS than the cave stream, so is probably not being fed by that (or if so, there has been considerable dilution by local seepage from the surface).

Part 2: Speleothems

I photographed mud speleothems in the entrance section, and also some of the calcite rafts and crystal growths in old footprints.

Mud speleothems.

The walls are commonly coated with a brown mud, except where active seepage (on east wall) is depositing calcite speleothems. The upper walls have dry mud, but the lower metre or two has damp mud coatings with several "speleothem" forms. Many mud surfaces have a spotty secondary covering of light grey powder which probably consists of actinomycetes or a similar micro-organism. This powder can be seen in many of the close-up photos.



D040086: Lumpy mud coatings on wall, with a few incipient mud "strings".

The mud speleothems have several sub types - described below.

"Irregular coatings": This is an irregular coating with lumps and nobs. It is similar in appearance to cave coral or moonmilk, but is formed of soft mud. Presumably the mud coating either overlies prior speleothem, or the soft mud has sagged and moved under gravity. See photos D040070, D040085 & 86 (stereo-pair), and the upper parts of D040074 & 75, and C011219. More distinctive forms may also occur (see below).

"Mud stalagmites": These were photographed on an earlier trip, in the decorated area before the second rockfall. Small rounded cylinders with a central drip-hole, or drip-holes in smooth banks with just a narrow raised rim. (Photo C991220). These would accumulate from dripping of mud-rich water.

"Mud-strings": These are thin brown strings of mud that hang vertically. They are typically 1-2mm in diameter and slightly thicker at the top (root). They are generally found under overhangs of the wall. In some cases, at the attachment to the roof or wall the string widens to a cone, splits into several feet or spreads into a thin v-shaped "leaf". Some strings have a slightly bulbous end. The longest seen was about 16 cm long and only 1mm wide for most of that length. On a previous trip (1999), some mud-strings were seen further into the cave, hanging from the ends of mud-coated stalactites.

These mud strings are soft and flexible. We had been avoiding touching them, but on this trip a swarm of blow-flies followed us into the cave and landed on the threads as we photographed them. The strings bent and shook as the flies landed, but did not break, indicating that they are not only soft but moderately resilient and flexible.

I suspect that there may be an organic input to these forms, and to the mud leafs described below. Possibly, mud is coating cobwebs or other organic filaments.

See photos:

D040041 & 42: Stereopair of a short mud string (3 cm long, 2 mm wide) connected to the overhung wall by a "tripod" base of three branching threads.

D040043 & 44: Stereopair of a long string (16 cm long, abt 1 mm wide) that is attached to the wall by by a small "mud leaf" that has a central hole which splits it into two diverging blades.

D040048 & 51: Stereopair of a short mud string (5cm long by abt 2mm wide) that spreads at the base and is attached at several points to a lumpy wall. Blowfly for scale !

D040084: Two short mud strings and a "wishbone" comprising a hanging loop about 2 cm long of 1 mm diameter mud-string, attached to the roof at each end, and with a 6mm long mud string dropping from the centre!

C991219 and C991221, 22: Mud strings associated with calcite stalactites (further into the cave).

"Mud leaves":

These are flat to undulating sheets which have a broad attachment to the wall at the top and narrow downward to form a triangular "leaf". The end may be extended as a thin mud string (as described above). There is a full gradation from leaves with short mud strings on the end to long strings with only a small leaf at the base.

A mud leaf may have irregular, angular holes or gaps - these seem to be secondary things where part of the sheet has

fallen out. As with the mud strings, the mud leaves are flexible and wobble when a blow-fly lands on them.

Photos: D040026 + 27 (stereo), 32 + 33 (stereo), C990412.

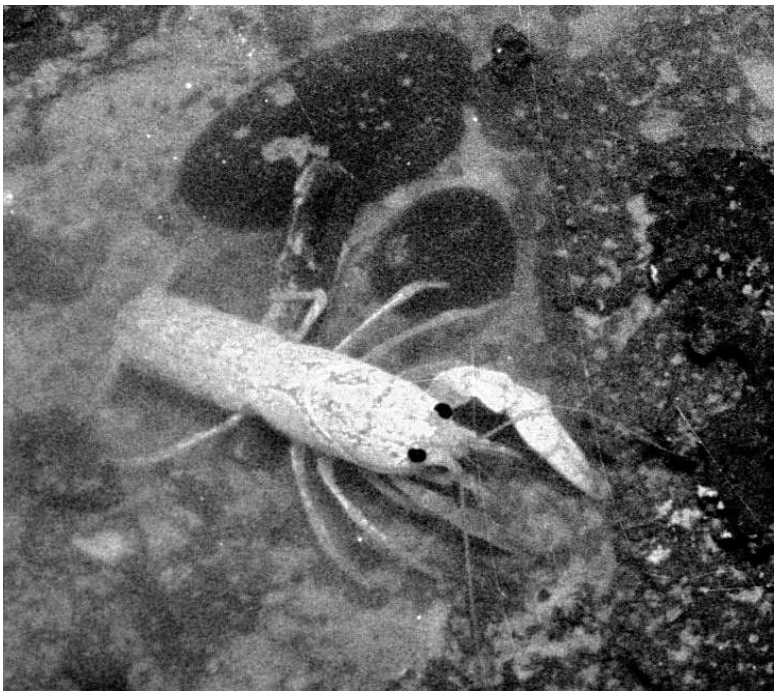
Calcite speleothems in old footprints

About 50m in from the entrance a set of old footprints is preserved on a mud bank on the left side. These contain water and calcite crystal growths, and some have calcite rafts floating on the surface. The age of the footprints is uncertain, but predates the present phase of exploration which started in 1995.

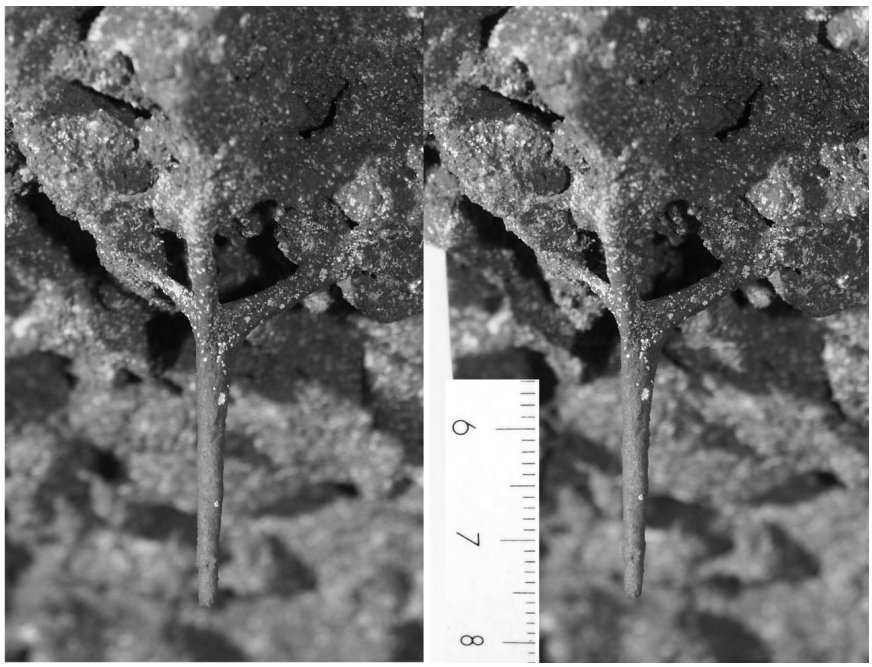
Photos: D040065, 73, 77, 78. C991214.

Part 3: Biology

A pair of pale green-grey tree frogs were seen on nettles(?) just outside the cave entrance - see photo D040100J (collage of 3 photos). We saw mosquitos(?) on moonmilk near the entrance (photo D040095x). Wetas were also seen at entrance. On a previous trip we saw white yabbies in the cave stream (see photo below, CC991224).

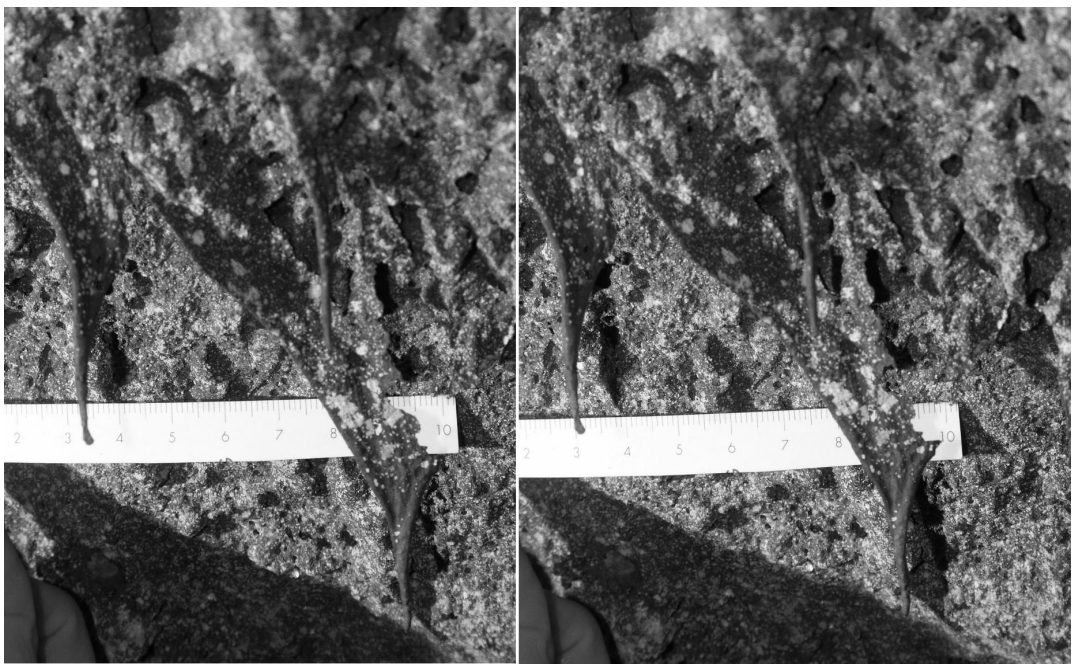


C991224: Pale yabbie in cave stream. About 4 cm long.
Note also the rounded black pebbles - which are basalt.



D040041,42. Mud "strings" suspended from a "tripod" of three strings. Stereopair.

D040084: "Wishbone" mud string, and two smaller strings.



D040032,33:
Mud "leaves" with short "strings" at ends. Stereopair.