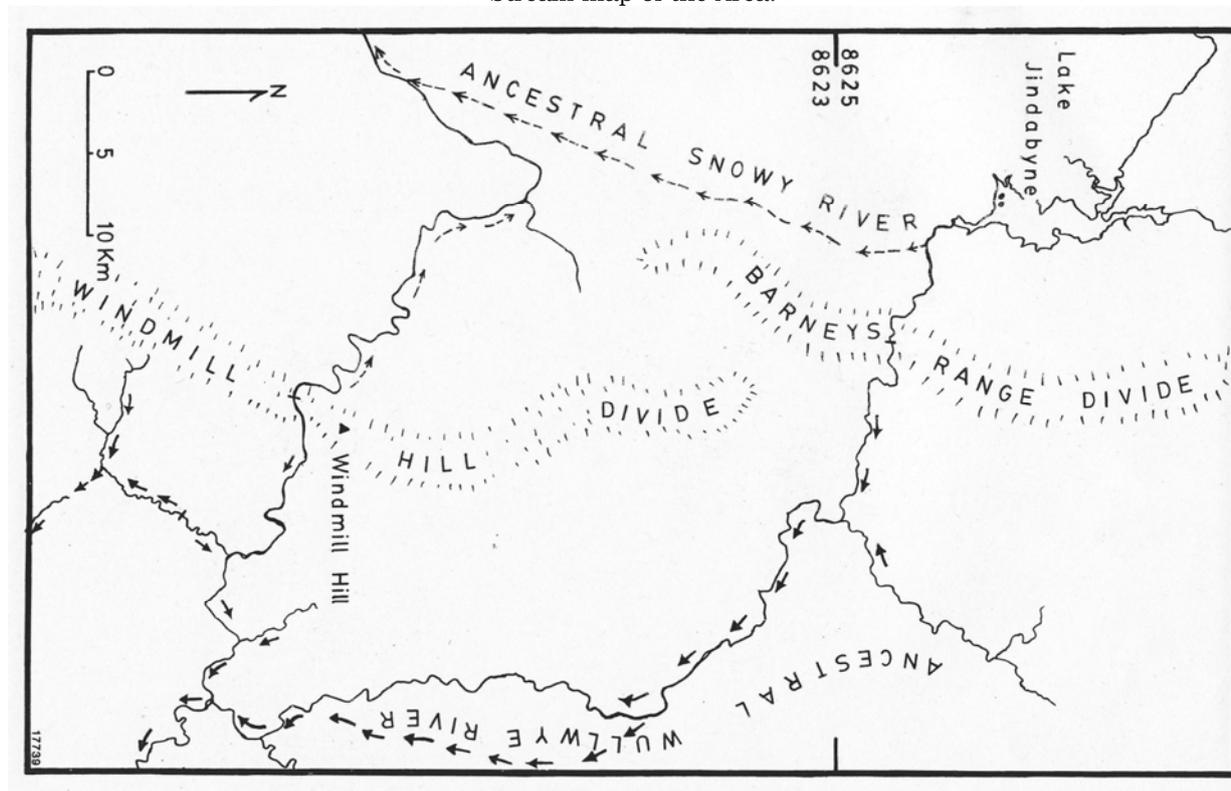


Stream map of the Area.

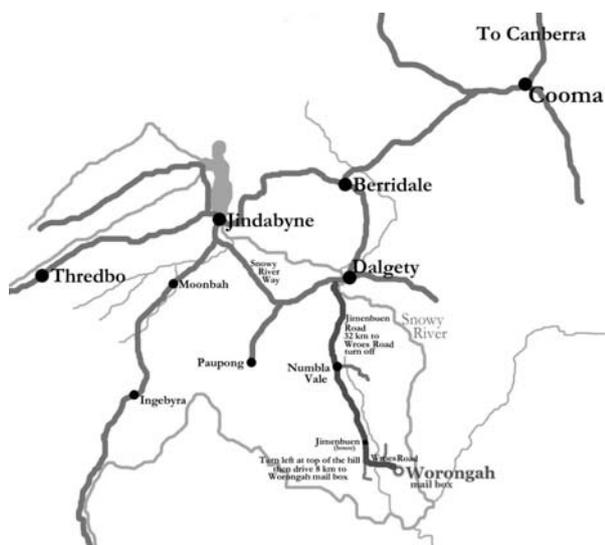


## STONE BRIDGE – SNOWY RIVER, NEW SOUTH WALES

– Andy Spate

*Where the Snowy River disappears beneath vast granite boulders, threading its way through hole, cracks and fissures to emerge far downstream (Foster 2002).*

Location map.



Recently our Editor wrote of the granite Melville Caves in Victoria. Most ACKMA members would be aware of member David Chitty's adventure touring of a granite 'boulder-pile' cave at Mount Buffalo, Victoria. Many other caves in granitic boulder piles are known in Australia including at Labertouche (just east of Melbourne), in the upper reaches of the Pinch and Jacobs Rivers in Kosciuszko National Park, and at a large number of sites in Far North Queensland including Black Mountain and Cape Melville near Cooktown, and

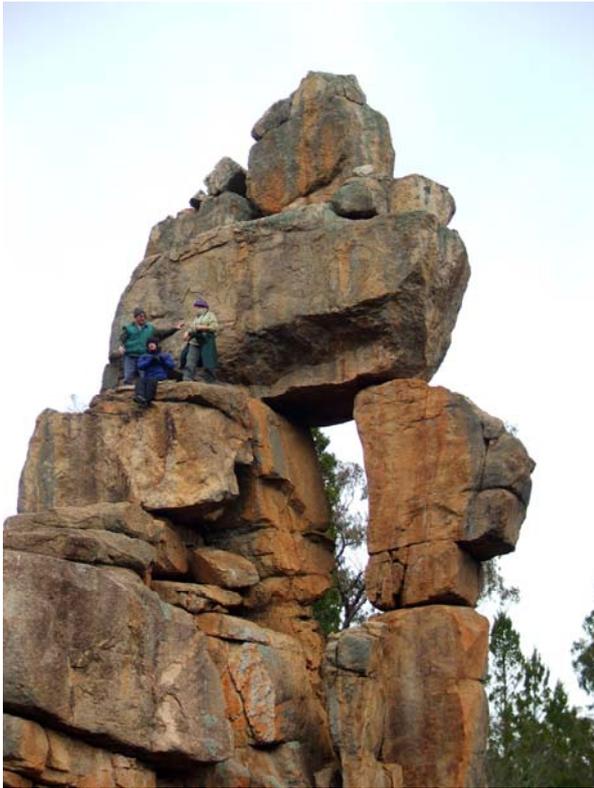
at Chillagoe. And, for example, more karst-like caves are found at Girrawheen National Park in southern Queensland.

Although I had read of the Stone Bridge in George Seddon's evocative book – *Searching for the Snowy* – some years ago and had several times admired the splendid granite scenery of the Snowy River between Dalgety and the Victorian border by car and helicopter, I had not had the opportunity to visit and appreciate this wonderful geographic feature until recently.



Catherine Sellars in the Stone Bridge 'cave'.  
Photo courtesy of Jan Mitchell.

The Lion's Head Portal, Matong Gorge.



Brian and Jan Mitchell's property *Worongah* lies about one hour's drive from Jindabyne – at 0800 one Saturday morning three ACKMA members plus one (Cath Sellars; Kirsty Dixon; Kirsty's mother, Judith; and myself) drove from Berridale to meet Brian and Jan who conduct Stone Bridge Tours on their property. They describe their tours as 'an exclusive 4 Wheel Drive Nature/Farm Eco Tour'. Their brochure states that 'highlights include the Matong Gorge and the unique Stone Bridge [highly unusual, but not unique] and the day-long tour includes:

- Chauffeured four wheel drive off road experience
- Regular photo opportunities at key viewing points
- Local flora and fauna
- Stories of the property and its history
- Visiting the homestead
- Sheep shearing demonstration
- Hearty shearers lunch
- Home baked country delights for morning and afternoon tea'

We opted for all the above – minus the sheep shearing – being a gun-shearer myself (three per day!) it seemed an unnecessary diversion from the wonderful granite scenery.

The morning involved filling out the necessary indemnity form and a trip to the fabulous Matong Gorge including such delights as the Lion's Head Portal and much information from Brian and Jan. Then back to lunch at the homestead and off to Stone Bridge!

Much of the southern Monaro district of New South Wales is underlain by granite of Silurian age (dated to about 417.5 million years ago).

Further details of the geology can be found in White and Chappell (1989). The granite outcrops are spectacular tors and boulder piles and have been deeply incised by the Snowy River from Jindabyne almost all the way to Orbost near Buchan in Victoria (although below the Victorian border it is in other rock types). The Berridale Batholith is an I-type granite emplaced in the Canberra-Quidong orogenic zone – an important part of the development of the eastern highlands. The rocks are mapped as the Buckley's Lake Adamellite. In places they are intruded by quartz feldspar porphyry dikes and veins.

The palaeogeomorphology of the Monaro is of considerable interest with a number of major river diversions having taken place – as well as many different types of lakes and other features. White and Chappell (1989) show, as their Figure 6, the present and some postulated ancestral courses of the Snowy River – part of which flowed eastward to the ocean rather than the southern course with the huge, and enigmatic, east, south and then west loop shown on the map.

Ian Foster (2002, page 42) says:

*Then I caught my first glimpse of the Stone Bridge. It was like nothing I had ever imagined. Scrambling down a steep bank, we stood in a riverbed 50 m wide, with only a small stream winding between enormous boulders sculpted by a raging torrent that no longer flowed. Without warning, Brian disappeared into a hole below a house-sized rock.*

*Cautiously we followed. We soon found ourselves in a cavern the size of a large room ... One wall flowed in a perfect curve; the other was intricately carved in shapes that would grace any art gallery. Across the floor washed the remains of the Snowy River ... [the Snowy Mountains Hydro-electric Scheme has diverted almost all of the former majestic Snowy River westwards to the Murray Darling Basin].*

*At one end of the chamber, the river disappeared underground for 100 m or more ...*

George Seddon (1994, page 72) evocatively provides more detail:

*When we could drive no further, we walked up and then along a spur, and there was the fantastic Snowy below us down a final steep slope, with the Stone Bridge.*

*The Stone Bridge was an experience that I cannot translate into words. ... It consists of a drop of perhaps twelve metres over a distance of about 200 metres, but it is not an ordinary rapid so much as a massive and intricate piece of sculpture. ... This granite has a massive jointing system, planes of weakness set at right angles, three or four metres apart. The rock has not weathered into the usual rounded boulders, [characteristic of granite] but into great cubes, although the edges have been rounded and undercut. The result is a series of almost horizontal bare rock pavements, almost vertical rock walls, and deep slots. At one point, the entire river disappears into one of the slots,*

*where it can be heard and sometimes glimpsed moving with great force some four metres or so below, eventually to emerge from fissures and slots lower down. There is no real 'bridge' and it is quite difficult to clamber across because of changes in level and sheer faces, but the river itself is well out of sight. There is a big pool above this series of rapids, so that the [now] greatly diminished river still moves with impressive energy. What a sight this must have been when the Snowy River ran free.*

It is hard to improve on Seddon's description – and it would be a very interesting project to more fully explore, map and document this feature. The cave map would be very complex! My impression is that a roughly rectangular slot or chute was excavated by the river between two or more sets of parallel joints and that the enormous boulders came later carried by the type of extreme flood flows that formerly occurred in the Snowy – especially when heavy, warm spring rains fell on the snow country of Kosciuszko National Park. I have experience of how huge these floods can be when my house in Orbost was flooded in the early 1970s!

But can boulders 'the size of houses' be moved by flood flows? Certainly! Theoretically the carrying power of a stream is proportional to as much as the sixth power of the velocity (Gilbert's Sixth Power Law). This means that, if the velocity doubles, the size of the particles comprising the load may be increased up to sixty-four times

(Lobeck 1939). Flood flows in the former Snowy would have had much greater velocities (and depths) capable of transporting huge lumps of granite. Looking at the geology of the boulders in more detail might provide support for this idea.

The sculpting of granite by rivers creates many forms analogous to those found in limestone and other karst rocks – the so-called bedforms in the lower Snowy River valley are spectacular examples of these small-scale landforms.

But as your Editor is breathing heavily at my back at my late submission of this piece I had better wind up ...

Brian and Jan's tours are not cheap – but they do last a full day and provide a window into a very remote, unknown, rugged and beautiful part of south-eastern Australia. The prices vary according to party size – we paid \$180 each (minus 10% for booking online). But we had a great informative and fun day – and as Kirsty paid for us all, Judith, Cath and I thought it was great value! Further details, including the availability of half day tours to either Matong Gorge or the Stone Bridge, can be found on the Stone Bridge website: <[www.stonebridgetours.com.au](http://www.stonebridgetours.com.au)>

And finally, very sincere thanks to Jan and Brian for entertaining and informing us – and indeed making this fine part of Australia's natural heritage available to the wider community.



The Stone Bridge 'cave' starts under these huge granite boulders, with Cath Sellars for scale – halfway down, two-thirds across the image.

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