

DEUA - A NEW CAVING AREA IN NEW SOUTH WALES

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Abstract

A cave with a 12 m high entrance has been discovered in a previously unknown limestone lens in rugged country between the Wyanbene and Bendethera caving areas in south-eastern New South Wales. It was discovered by B.M.R. geologists during a field mapping programme early in 1978. However, it was not until mid-November of that year that cavers were able to visit the area. In this paper the area and the cave are described.

INTRODUCTION

A new caving area has been discovered in south-eastern New South Wales. It is situated on a tributary stream of the Deua River, approximately 100 km south-east of Canberra. This paper is a preliminary report on the area which so far, has been visited only once by cavers. That was in mid-November 1978 when a party, made up of members of the Canberra Speleological Society and the Capital Territory Caving Group, paid a fleeting three hour visit during which the only known cave was explored and mapped.

The name proposed here for both the area and the cave is Deua, after the Deua Trigonometrical Station approximately 2 km south-west of the area.

THE AREA

The Deua area lies at an altitude of approximately 550 m on the lower eastern slopes of the Minuma Range between the Wyanbene and Bendethera cave areas. It lies within the proposed Deua-Tuross National Park. The limestone is covered with thick "rain forest". Eucalypt forest occurs along the top and upper slopes of the Minuma Range, but along the valley floors and on the limestone, "rain forest" with fig trees, lawyer vines and stinging nettles predominates.

Deua joins the list of cavernous limestone lenses, situated between the Shoalhaven and Deua Rivers, which comprise the Upper Shoalhaven Karst Region (Nicoll & Brush, 1976). The most northerly of these is Cheitmore, followed to the south by Marble Arch, Wyanbene, Deua and Bendethera. Further areas of limestone are inferred by the presence of shallow, grassy depressions and springs near Cheitmore and Wyanbene, scarn mineralisation approximately 3 km south of Marble Arch (Johnson, 1964), the Big Hole, which is thought to be the result of subjacent karst collapse (Jennings, 1966) and an occurrence of limestone float in a creek bed 3 km north of Deua.

The Deua limestone occurs near the base of a Silurian volcanic sequence (M. Owen, pers. comm.). It is underlain by black cherty siltstones, probably of volcanic origin, and is unconformably overlain by tuff, agglomerate and lava. Conodonts recovered from the limestone have indicated a late Silurian age, similar to other limestones in the region. The Silurian sequence is unconformably overlain by Upper Devonian terrestrial conglomerate, sandstones and siltstones which crop out in a north-south strip along the Minuma Range

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The limestone crops out over an area of approximately 200 m by 100 m and has a thickness of about 50 m. It has been folded into a tight anticline which gives the impression that the thickness is much greater than it really is. The rock has been recrystallised and slightly dolomitised, and according to the Folk classification for limestones (Folk, 1959) it is a biosparite (M. Owen, pers. comm.).

HISTORY

Caves in the Upper Shoalhaven Region have been known for approximately 150 years. They were first referred to in 1832 in a report of a trip to the area by the New South Wales Surveyor-General at the time, Major Thomas Mitchell. According to Carne and Jones (1919), Mitchell was shown the Big Hole and a cave at Cheitmore.

For their report, *The limestone deposits of New South Wales*, Carne and Jones painstakingly compiled all information known at the time. All major deposits are referred to in the text, while many more insignificant lenses are shown on accompanying maps. In the area south of Braidwood however, only Cheitmore, The Big Hole, Variegated Marble (now known as Marble Arch), Wyanbene and Bendethera are shown.

It is possible that the Deua area was found long ago but the discovery not recorded. The area is near the Majors Creek, Araluen and Snowball goldfields, and also in the general area are a number of old copper prospects. It does seem likely that early prospectors would have at least passed close to the limestone - even if the cave was not noticed.

The first known visit to the area was in April 1978. During the course of field mapping work by geologists from the Bureau of Mineral Resources for the Araluen 1:100 000 Geological Series, a party led by Mike Owen discovered limestone float in two creek beds in rugged country on the eastern side of the Minuma Range. Aerial photographs were used to locate likely areas from where the material could have originated and these were subsequently investigated in the field. Three possibilities around one occurrence were checked out without success. However, near the other 3 km to the south a small lens of limestone was found. Soon after, a cave was found in the limestone by Ken Mitchell, one of the party (see Fig. 1).

The B.M.R. also found a lens of limestone about 200 m long on the western side of the Deua River, approximately 4 km east of Bendethera Cave. Karst features such as rillen-karren, joint widenings and solution pits have been found, but no caves.

HYDROLOGY

Deua cave contains a small stream (little more than a trickle) derived from a shallow valley immediately to the west of the entrance. The stream sinks into its bed above the limestone contact, which is approximately 50 m horizontally and 30 m above the entrance, and re-appears in the cave near the bat chamber. The stream is seen for only a short distance before it sinks into the gravel floor.

A small spring has been found near the end of the ridge in which the cave is situated. It is approximately 80 m from the junction of two small creeks

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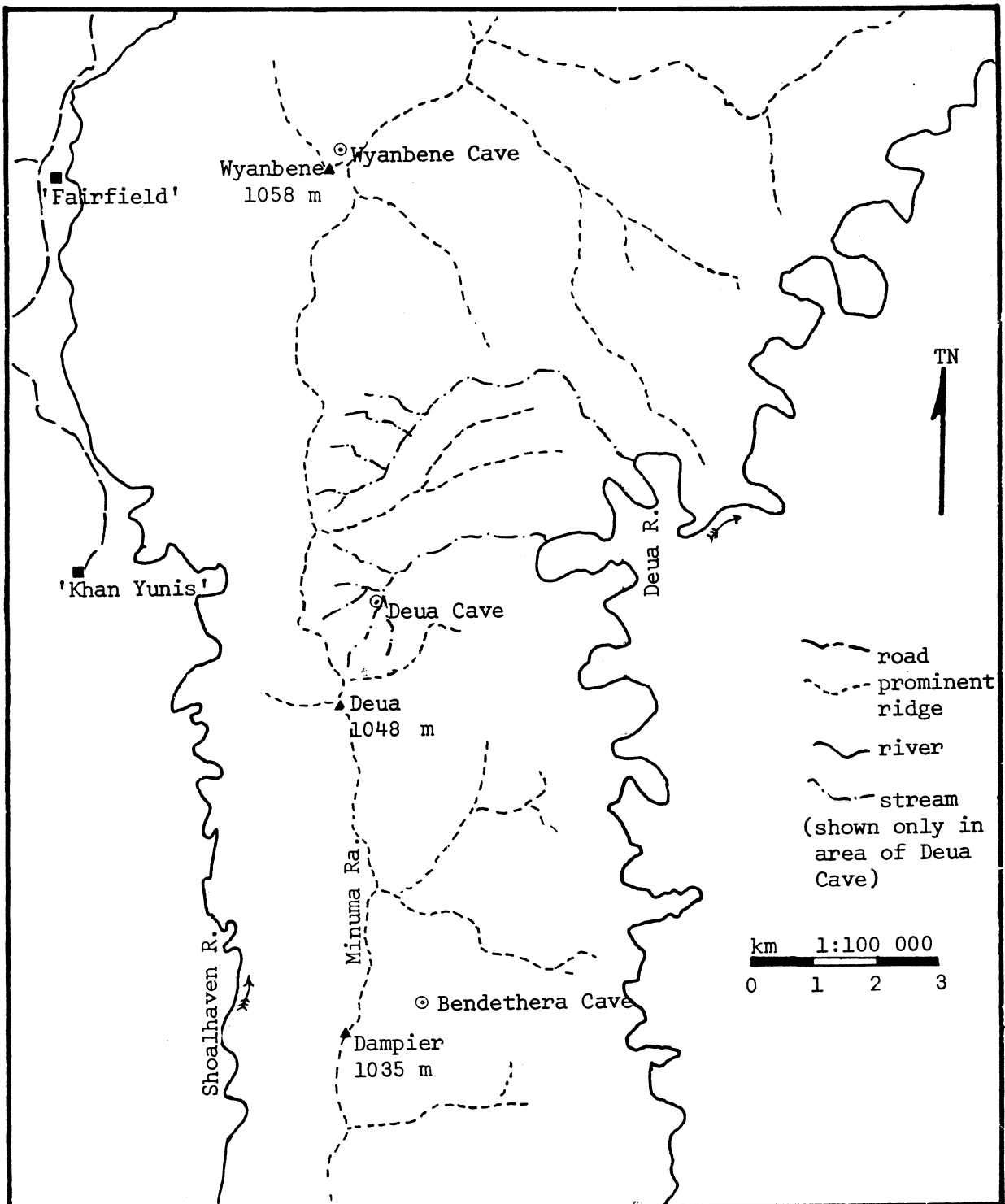


Figure 1. Deua Cave location.

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north of the cave. As well as being the probable rising for water seen in the cave, it may also be the rising for the stream east of the cave, which also sinks into its bed near where it crosses the limestone.

THE CAVE

The cave is about 80 m long and consists of a tall meandering stream passage, developed along joints, with an upper level chamber adjacent to the entrance. The bedrock walls are pale grey and have a soft chalky appearance, while the floor, in general, is composed of coarse angular gravel (see Fig. 2).

Despite the large size, the 12 m by 3 m entrance is not obvious more than a few metres away. It is effectively hidden by the thick vegetation.

The steeply sloping earth floor at the entrance terminates in a short pitch, at the base of which is a shallow pool of water, fed by a small stream. This can be followed for about 8 m to where it emerges from between breakdown material. One entrance to the upper level bat chamber is directly above this point.

The chamber is about 6 m by 8 m and contains a large accumulation of guano, evidence of a long history of occupation by bats. On the November visit there were estimated to be more than one hundred bats - probably *Rhinolophus megaphyllus* - present. A continuation of the chamber connects back to the main passage via a series of holes, the largest of which can be free climbed.

At the foot of the entrance climb, the passage is about 2 m wide and more than 20 m high. Some 20 m further in the passage widens and some decoration is present - much of it being guano-stained and brittle. Beyond this "hall", roof height decreases sharply and the passage continues through a flowstone-coated room. One wall and most of the rubble floor have been flowstone coated. At one end, a number of gours about 10 cm deep and 20 cm wide occur. These, and the flowstone below them, are a dull yellow-brown colour and have started to re-dissolve.

The cave beyond here consists of a dry, rubble-floored meandering passage which steadily decreases in height and width. At the limit of exploration the passage is down to crawl-size, and after a few metres may become impassable.

CONCLUSIONS

Our current knowledge of the area is limited. Several features have not yet been thoroughly examined. The sinking points of the two streams and their joint resurgence, for example, have not been closely looked at.

No outcrop has been found north of Deua to account for the limestone float found in a creek bed there. The outcrop may only be very small, but its location would be of some interest. In addition, the recently discovered lens near Bendethera does warrant further investigation.

Although the Deua area is small, and only one cave is known, the discovery demonstrates that new areas of cavernous limestone can still be found in south-eastern Australia; an area thought to have been fairly well explored during the past 150 years.

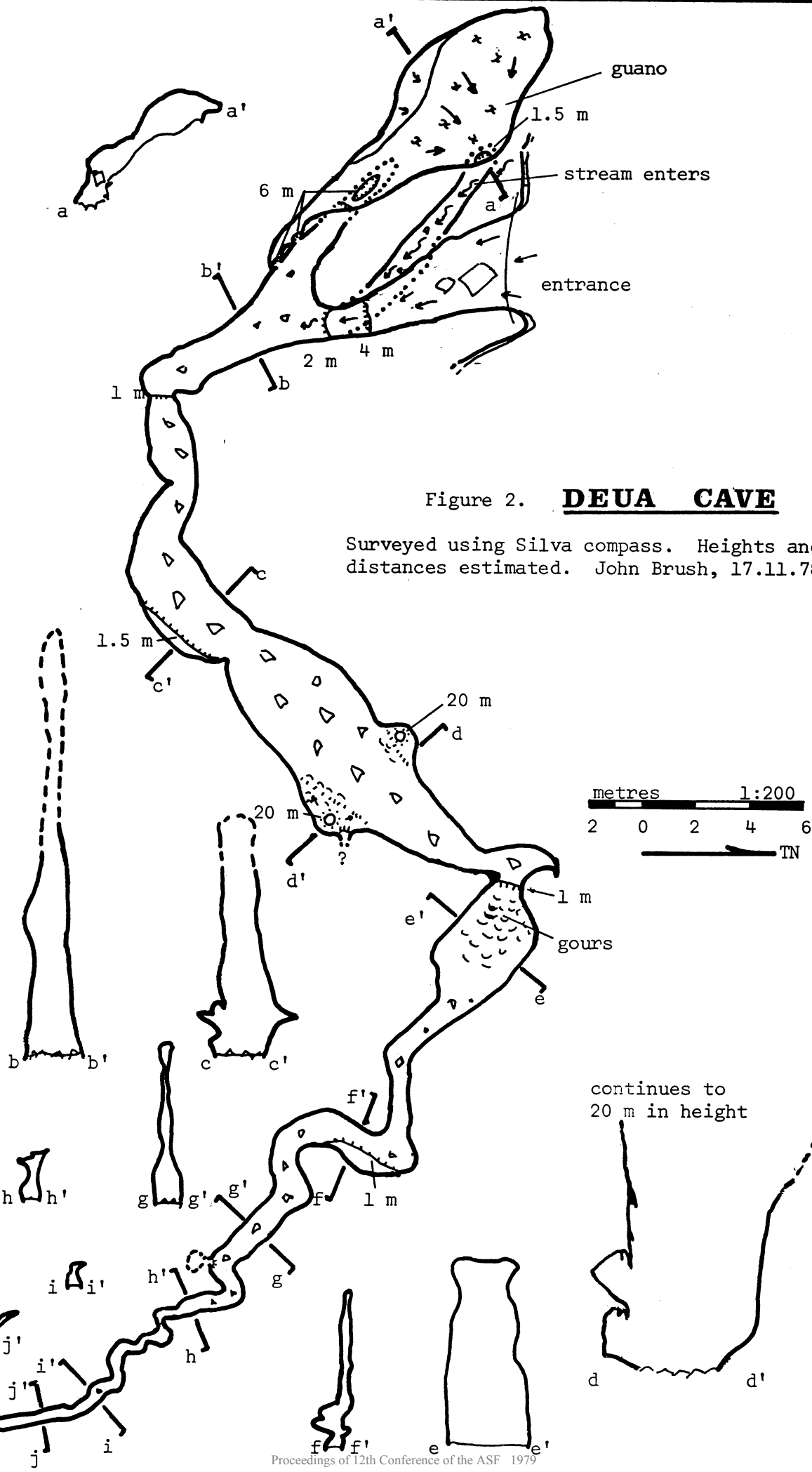


Figure 2. **DEUA CAVE**

Surveyed using Silva compass. Heights and distances estimated. John Brush, 17.11.78

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NOTE ADDED IN PROOF

On a combined Canberra Caving Clubs/National Parks and Wildlife Service visit to the area in August 1979, cavers from NUCC pushed the terminal squeeze and more than doubled the length of the cave. Total depth is now more than 50 m. A second small cave to the east of the main cave was also found on this trip.

ATEA '78

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Abstract

The Atea Kanada is located in the rainforest of the southern highlands of Papua-New Guinea. The cave was partly explored in 1976 but further investigation by the 1978 expedition extended the mapped length to thirty kilometres, making it the longest cave in the southern hemisphere and Asia. Initial hopes for the southern hemisphere depth record were not realised.

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