

COMMONWEALTH DEPARTMENT OF COMMUNITY SERVICES
AND HEALTH



Australian Radiation Laboratory

Tietkens Plain Karst - Maralinga

by

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Part 2

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LOWER PLENTY ROAD
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APPENDIX I. CAVES

MARALINGA BLOWHOLE (Matthews, 1985)

N155 Ooldea 750E 6641N (YDS E 462.6, YDS N 1243.4)

A one metre diameter tube in a square hole at the centre of a 2.75 m x 2.85 m concrete slab, drops three metres and then steps down to -10 m. The cave lies 20 m off the Watson - Maralinga Road, was probably exposed during roadmaking, and had been vandalised by rubbish and graffiti. Extensive faecal deposits from the stick nest rat (believed to be extinct in this area of the Nullarbor for at least 70 years (A. Spate, pers. comm.)) were also present.

Soil deposits of fresh wind blown red sands and an apparently much older dark soil (see soil radioactivity analyses, Table 3) were present in the cave. The cave is entirely in Nullarbor Limestone, and appears to have been formed by phreatic action at the fresh - saline water interface. At that time the saline groundwater was higher and the three distinct levels in the cave indicate that there may have been three rest levels in its dropping. The only decorations in the cave are extensive roof and wall coverings of poor quality dog tooth spar. An interesting piece of graffiti was found in the cave

April 1960

We have some photographs of the caves, if you are interested.

D.H. Summers (D.O.W.)	Beard (DOW)
Justin Avenue,	24 Second Street,
Northfield Adelaide SA	Wingfield Adelaide SA

We found no tunnel from the first cavern, and have not found one on this level yet.

SHOWER FLOOR BLOWHOLE (Mathews, 1985)

N183 Ooldea 751E 6639N (YDS E 463.3, YDS N 1242.2)

A blowhole which has been used as a disposal pit for wastes from Maralinga construction camp (not visited). A concrete apron surrounds the entrance.

APPENDIX II. METHODS OF CHEMICAL ANALYSES

SAMPLING - Duplicate water samples were collected in acid washed plastic bottles from the following sites. The location of the sites are shown on Figure 1.

Yadina Rockhole
Tapwater at Maralinga Village
Bore No. 8 in Maralinga Village
Bore No. 14 in Long Valley
Freshbore on Tietkens Plain

ANALYTICAL METHODS -

pH - was measured at the site using an Orion Model 211 Digital pH meter and measured in the laboratory using an Orion Ionanalyser/901.

Dissolved oxygen - was measured at the site using an Orion Model 97-08 oxygen electrode; correction was made for salinity.

Alkalinity - was determined at the site by titration with 0.01M HCl using methyl orange as the indicator and by pH titration to 4.5.

Cation, anion and molecular species analyses - anions were measured on a Dionex Ion Chromatograph Model No. 2000 isp. Cations were measured on an Applied Research Laboratories Inductively Coupled Plasma (ICP) spectrophotometer Model No. 34000 at the New South Wales Water Resources Commission Laboratory.



Plate 1. Cavity filled with earth in Roadside Quarry



Plate 2. Calcrete nodules and calcrete sheets in Roadside Quarry



Plate 3. Multiple fracturing of the indurated carbonate rock surface at Yadina Rockhole



Plate 4. Solution pan without vegetation at Yadina Rockhole

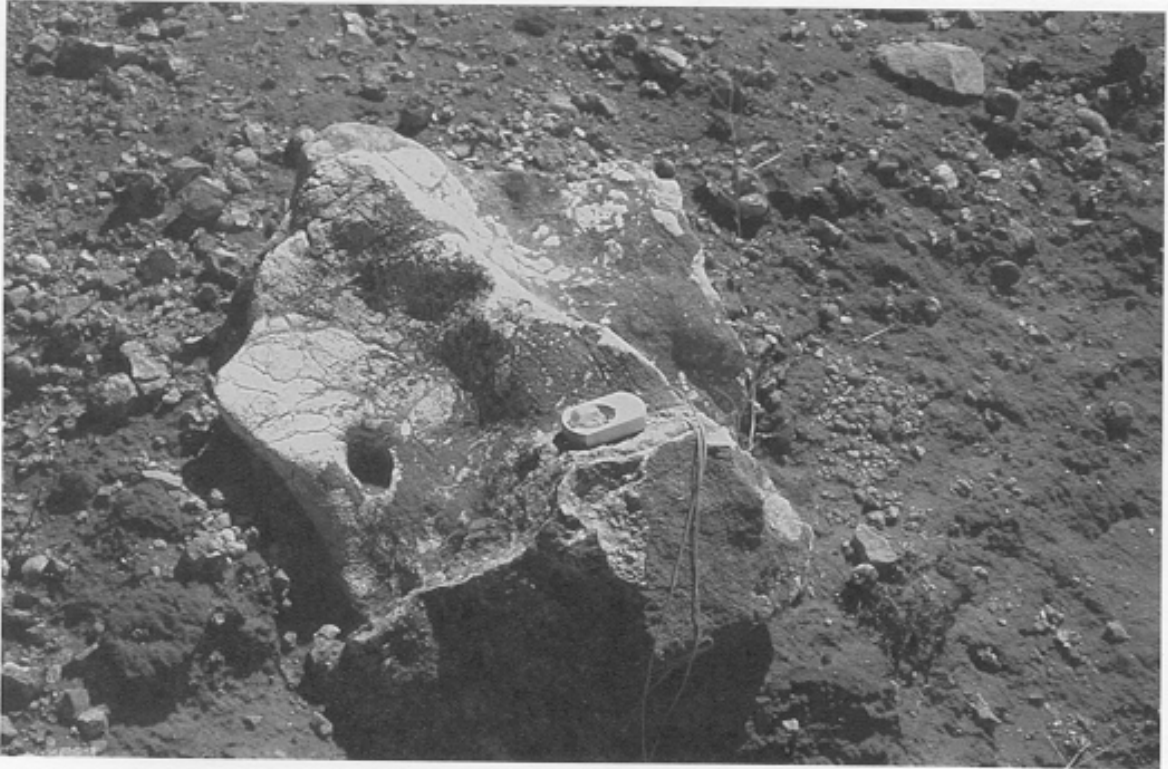


Plate 5. Subsoil weathering of a dolomite boulder

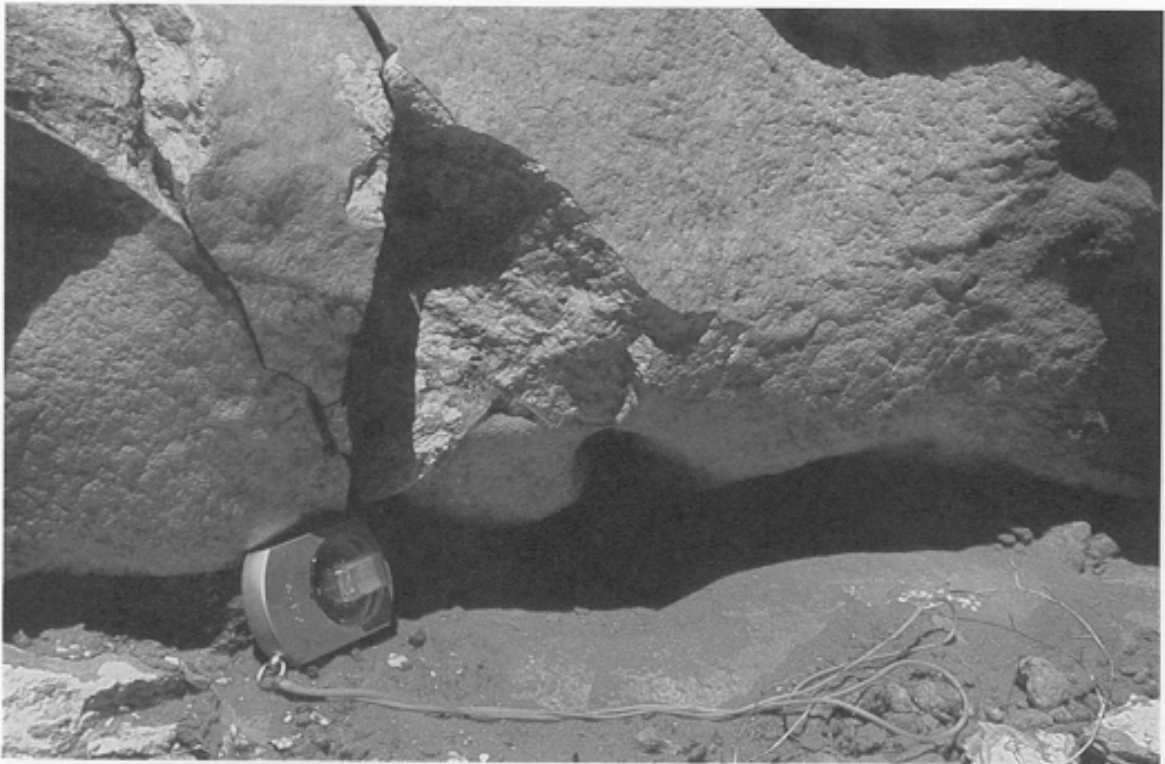


Plate 6. A dolomite boulder with an unweathered surface



Plate 6. Shell holes. Plate 7. Paling Rockhole of Taranaki



Plate 8. Taranaki danga after a rainstorm

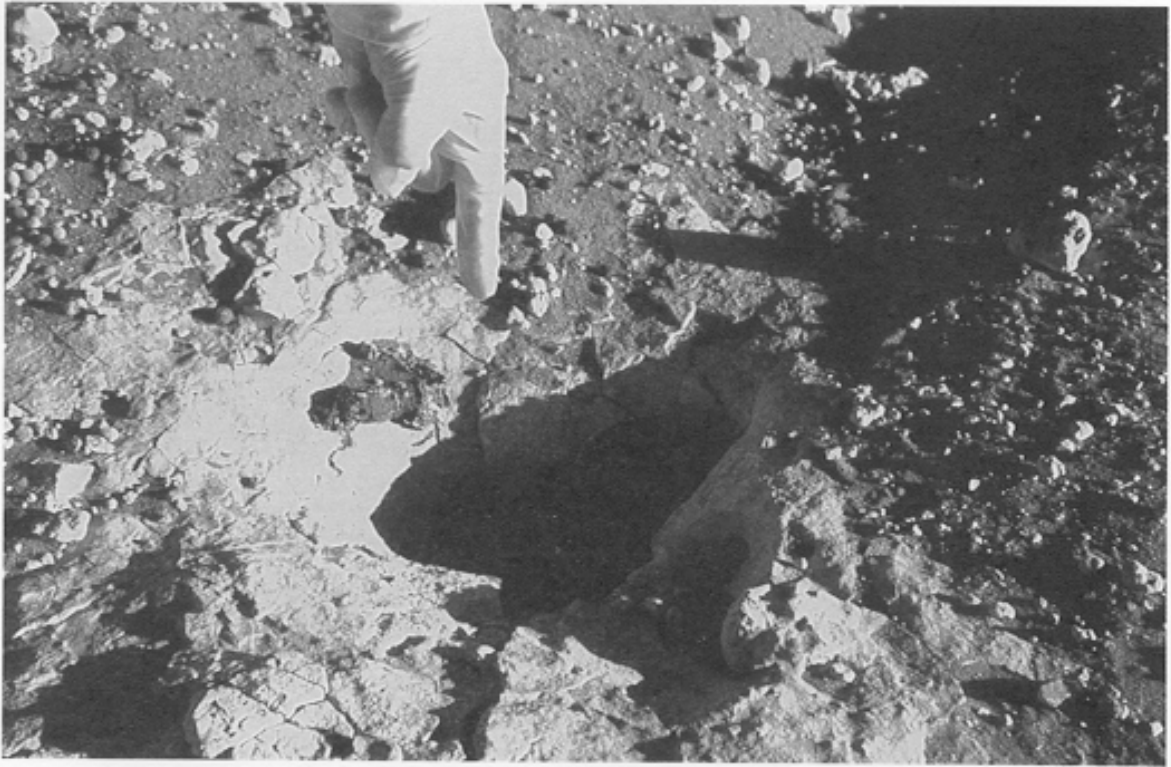


Plate 9. Small solution hole within the man-proof fence at Taranaki



Plate 10. Hole into which water sinks within the man-proof fence
- this hole may have been a rabbit burrow initially