ABSTRACT: POSTER

Caves of the Nullarbor — their nature and setting

HENRY SHANNON, Northern Caverneers

The more famous deep caves of the Nullarbor are actually uncommon. The typical Nullarbor cave is short, shallow and present in thousands. Examples for this paper are from South Australia only, near the coast but beyond timbered ground. The plain appears little modified from its inferred state at the finish of Nullarbor Limestone deposition; an idea supported by the survival of fossil shorelines at the inland margin of the plain, notably the Ooldea Range. Their presence constrains what can be allowed for later erosional lowering of the plain. The donga areas, which are closed depressions, are incised some five metres below the net of rises surrounding them. They are usually aligned features some, and possibly all, following structural trends.

Extra general lowering is indicated by breccia clasts in fossil cave fills that are not Nullarbor Limestone and come from strata that no longer exist. At present there is build-up of a windblown dust and calcrete cover studded with float blocks. Enterable caves develop from breaching of a cupola topping an aven made up of ellipsoidal swellings. The smooth form indicates development under phreatic conditions with a water table above the present surface, so the caves are fossil features. Once the breach is made there is space to put the cover materials away and a doline develops through stripping of cover down to limestone pavement. The cave then tends to fill up with sediment; it does not to grow in response to modern water input. If a suitable seal develops a cave converts to a rockhole and holds water.

Where a cave is small but more than just a shaft entry, passages with smoothly rounded phreatic-style forms can be followed a short distance before degenerating into spongework or anastamosing tubes. It is common to have remnants of earlier episodes of cave development such as wall pockets with miniature cave scenes and breccia-filled former caves truncated by the solution-style or break surface of the present cave.

In the case of larger caves more broken rock is present tending to the form of the deep caves; arch sections with an up-and-down central hump of broken rock. But in these caves, there is evidence for solutional attack on the actual fallen blocks and of a crystal crust shed prior to the water table dropping away.