

### ***New Discoveries of Articulated Well-Preserved Megafauna from Nullarbor Caves***

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#### **ABSTRACT**

In May 2002, cavers from CEGSA and VSA using ultralight aircraft discovered a number of new karst features on the western Nullarbor. Some of these caves contained articulated skeletons of extinct mammals. The cavers notified museum specialists in Victoria and South Australia, who then in turn notified paleontologists at the WA. Museum as the caves occur on WA crown land. A recovery expedition took place in July 2002, resulting in the finding of several complete skeletons of the marsupial lion, *Thylacoleo*; skeletons of three species of sthenurine kangaroo, the giant wombat *Phascolonus gigas*, the giant kangaroo *Procoptodon goliah*, extinct species of *Wallabia* and remains of an unidentified macropodine kangaroo.

The Nullarbor discoveries are extremely important in providing the first complete, articulated skeletons of megafauna from the Pleistocene epoch from anywhere in Australia. Samples are currently being tested for ancient DNA, and for dating the age of the fossils using OSL (optical stimulation luminescence) and ESR (electron spin resonance) techniques. It is likely that the unique preservation of the fossil material was the result of a long period of constant dry conditions in the caves, which we believe may have been sealed off in some cases shortly after the animals accidentally fell in.

The series of events that took place from time of first discovery to recovery of the specimens is a crucial time to preserve valuable scientific information. Correct procedures were followed here enabling uncontaminated skeletal specimens to be sampled for ancient DNA. On first discovering a skeleton in a cave, cavers should stay clear and take photographs which can then be sent to appropriate museum authorities. If, as in this case, the material proves to be of great scientific value, then an expedition can always be arranged to retrieve the fossils. In any event it is better to leave bones in caves and send photographs than to touch or remove specimens from their in-situ positions.

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