

CARBON DATING - 4000 YEAR ERROR DISCOVERED

On 8 August the Archaeology Correspondent of the London *Times*, Professor Norman Hammond, reported the discovery of another major radiocarbon dating anomaly, this time in respect of one of Australia's oldest aboriginal sites. During the 1960s the remains were found of aboriginal campfires along the shores of a dry lake, Lake Mungo, in New South Wales. Carbon dating of the charcoal had furnished dates for the fires between 26,270 and 30,780 years ago, but according to Hammond:

Archaeomagnetic studies carried out at the time showed that the ground beneath the fires had been baked at a temperature above 400 deg. C, and this suggested to W.T. Bell of the Australian National University, Canberra, that the thermoluminescence (TL) technique might be used to date the hearths independently. ... Mr. Bell measured the uranium and thorium activity in the samples... TL dates for four fireplaces were between 31,400 and 36,400 years ago, each with a statistical error of about 2,000 years. The comparable radiocarbon dates for the same hearths were from 26,270 to 30,780 years ago. The validity of Mr. Bell's dates is supported by earlier TL dating carried out at Oxford on overstones from four fireplaces at Lake Mungo, which gave a mean age of 33,500... Mr. Bell says: 'Radiocarbon ages from about 30,000 years ago are likely to be approximately 4,000 years too young.'

Editor's Note. The TL method is based on the fact that sedimentary materials, such as clay, often contain trace quantities of the radioactive elements uranium and thorium. Heating the clay above a certain temperature sets the 'clock' in these radioactive materials back to zero, after which their activity begins afresh, and at a precisely determinable rate. It is thus scientifically possible to measure when the heating took place. The Oxford Research Laboratory, which worked on the Shroud C14 dating, was a principal development centre for the TL method.