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Partridge, T. C.

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Bernard Price Institute for Palaeontological Research
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THE SEDIMENTOLOGY OF SOME TRANSVAAL HOMINID CAVE DEPOSITS AND ITS ENVIRONMENTAL AND CHRONOLOGICAL IMPLICATIONS*

by

T.C. Partridge

Palaeoanthropology Research Group, Department of Anatomy, University of the Witwatersrand, Johannesburg.

ABSTRACT

The sedimentology of cave deposits is principally influenced by two sets of factors:

(1) those relating to the morphology of the depository and its evolution through time; and
(2) those resulting from external influences, including the production of sediments and their introduction into the cave under varying conditions of climate and vegetation cover.

The interaction of these two sets of factors often poses unique sedimentological problems which differ markedly from those encountered in other sedimentary environments. In particular, the imprint of intracavernous conditions on specific sedimentary facies frequently complicates interpretations relative to extracavernous environmental influences. Inferences from sedimentological studies should, therefore, be supplemented as far as possible with other evidence — for example from isotope analyses, palynology and faunal studies — in any meaningful attempt to reconstruct ancient environments from these deposits.

The sequence of intracavernous events which occurred during the accumulation of the Makapansgat and Sterkfontein Formations will be outlined in relation to the probable imprint of external changes. When viewed in conjunction with the evidence of variations in the concentrations of ^{13}C and ^{18}O in the various stratigraphic units and with interpretations relative to the extent of the cover of woody vegetation near each site, a fairly consistent picture of climate fluctuations emerges. These early fluctuations may, in a general way, parallel those recorded by Shackleton and Opdyke in the northern hemisphere for the period between 3,2 My B.P. and the beginning of the Quaternary.

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