

# THE CENTRAL AUSTRALIAN BASINS WORKSHOP: ABSTRACTS

The abstracts and short papers which follow have been selected from presentations given on 13 and 14 September 1993 at the Central Australian Basins Workshop held in Alice Springs. They represent otherwise unpublished information which may be of interest to *PESA Journal* readers.

## Cambrian biostratigraphic events within central and northern Australian basins

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There is a demonstrated relationship between biostratigraphic and sequence stratigraphic units. Undoubtedly, sequence stratigraphic analysis is enhanced by the presence of a detailed biostratigraphy developed either within a basin or correlated to it. So far an integrated approach to such analysis is available for the Cambrian of the Amadeus Basin and part of the Middle Cambrian of the Georgina Basin. Central and northern Australian basins containing Cambrian rocks have been reviewed with the idea of identifying those biostratigraphic events which will permit the recognition of sequence boundaries in basins lacking seismic stratigraphic sections or adequate downhole geophysical information. The standard used for interpretation of events, sequence stratigraphy and correlation is biochronological and essentially relies on the Middle and Late Cambrian trilobite biostratigraphy developed in the Georgina Basin, and on the conodont and trilobite biostratigraphy of the Cambrian–Ordovician passage in the same basin.

Coordination of the biostratigraphy of the Georgina Basin with the sequence stratigraphy established in the Amadeus Basin, has led to the confident recognition of seven biosequences which can be used to develop an integrated approach to the sub-division of Cambrian rocks in other central and northern Australian basins which are known in less detail. Of these, biosequences

1-3 and 6-7 are directly correlated between the Amadeus and Georgina Basins. Sequence 1, of possible late Tommotian–early Botomian age, can also be correlated to the Ngalia Basin. Sequence 2, of Ordian–early Templetonian age, is the most widely recognised biosequence in northern and central Australia, being readily correlated in the McArthur, Daly, Wiso, Ord and Bonaparte Basins. Oddly, it is not recognised to date in the Arafura Basin. Sequence 3, late Templetonian–late Undillan, contains the deepest water parasequences of all the sequences recognised here, and is of global significance and extent. It is best documented in the Georgina Basin, but recognised also in the Arafura and Wiso Basins and correlatable in the Bonaparte Basin. Sequences 4 and 5, Boomerangian–early Iverian and late Iverian–early Payntonian respectively, are best dated biochronologically in the Georgina Basin, but best developed lithostratigraphically in the Amadeus Basin, and are correlatable in the Bonaparte Basin. Sequences 6 and 7, late Payntonian and Datsonian, are again better documented in the Amadeus Basin, but better dated in the Georgina and Bonaparte Basins. Sequence 7 also occurs in the Arafura Basin. Sequences 4-7, which are biochronologically well known, are in need of more rigorous sedimentological and environmental definition.

