HOLOCENE SEDIMENTOLOGY OF OLD MAN LAKE, SOUTH EASTERN SOUTH AUSTRALIA.

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CONTENTS

Abstract
Acknowledgements
List of Figures
List of Plates
List of Appendices

1. Introduction ........................................................................................................... 1
2. Lake Setting ........................................................................................................... 2
   2.1 Location, Morphology and Climate ............................................................. 2
   2.2 Geological Setting ......................................................................................... 2
       2.2.1 Regional Geology ................................................................................. 2
       2.2.2 Local Geology .................................................................................... 3
   2.3 Hydrology ....................................................................................................... 3
       2.3.1 Regional Hydrology ............................................................................ 3
       2.3.2 Local Hydrology ................................................................................. 4
3. Water Chemistry .................................................................................................. 7
4. Sediment Facies .................................................................................................... 9
   4.1 Surface Facies ................................................................................................. 9
       4.1.1 Calcretised Sand Dune and Vegetated Dune Sand .............................. 9
       4.1.2 Lake-beach Sands and Associated Hardgrounds .............................. 10
       4.1.3 Fossil Thrombolite .............................................................................. 11
          4.1.3.1 Bryozoa ....................................................................................... 22
          4.1.3.2 Green luminescence ................................................................... 23
   4.2 Stratigraphic Facies ......................................................................................... 24
       4.2.1 Stratigraphy of Core 1 (Lake Edge: North) ........................................ 25
          4.2.1.1 Carbonate component grain description ..................................... 25
          4.2.1.2 Siliciclastic component grain description ................................. 26
          4.2.1.3 Mineralogy ................................................................................. 26
          4.2.1.4 Foraminifera .............................................................................. 27
          4.2.1.5 Molluscs .................................................................................... 27
          4.2.1.6 Bryozoa ..................................................................................... 28
          4.2.1.7 Hardgrounds ............................................................................ 28
       4.2.2 Stratigraphy of Core 2 (Lake Centre) .................................................. 29
          4.2.2.1 Carbonate component grain description ..................................... 29
          4.2.2.2 Other properties ......................................................................... 30
5. Organic Analysis of Old Man Lake Cores ........................................................... 33
   5.1 Rock-eval pyrolysis ....................................................................................... 33
   5.2 Gas Chromatography ..................................................................................... 37
       5.2.1 Middle Organic Unit .......................................................................... 37
       5.2.2 Basal Organic Unit .............................................................................. 38
6. Discussion ............................................................................................................ 40
7. Conclusion ........................................................................................................... 42
8. References .......................................................................................................... 43
Abstract

Old Man Lake lies nestled within an inter-dunal hollow of the Robe Range, 13 km south of Robe. Three lithologically distinct Holocene sequences are observed in cored sections of the lake. A basal-dune sequence which is overlain by an estuarine sequence. Following the estuarine sequence is a lacustrine sequence. The sequence stratigraphy correlates to Holocene sea level change.

The occurrence of C25 highly branched isoprenoids (HBI) are characteristic of marine diatoms. Their observation in Old Man Lake sediments coupled with their appearance in Hamelin Pool (Shark Bay-Western Australia), may imply a restricted marine, rather than a marine, environment. Assuming a restricted marine environment, C25-HBI may be used in the extrapolation of Holocene sea level changes, reflected in core sequence stratigraphy.

Fossil thrombolites characterise the eastern margin of Old Man Lake. The bryozoa, C. aciculata and green luminescing aragonitic gastropods are closely associated with the thrombolite. These three features may collectively imply a greater ground-water inflow operating in the past. Wetter conditions are known to have prevailed 6900 to 5000 years ago (Dodson 1974).
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List of Figures

1. Locality Map.
2. Old Man Lake Surface Lithology.
3. Core 1 Stratigraphy and biota associations

List of Plates

Plate 1. Scenic view, looking north over Old Man Lake.
Plate 2. Northern beach of Old Man Lake.
Plate 3. Close up of gastropod cover from northern beach.
Plate 4. Eastern beach of Old Man Lake.
Plate 5. Hardground material of eastern beach.
Plate 6. Pit 2 hardground material, under cathodoluminescence.
Plate 7. Pit 2 hardground material, under cathodoluminescence, showing charcoal in contact with calcitic hardground.
Plate 8. Thrombolitic terrace from eastern margin of Old Man Lake.
Plate 9. Close up of clotted thrombolite.
Plate 10. Close up of semi-laminated thrombolite.
Plate 11. Thrombolite under cathodoluminescence, showing yellow-red foram luminescence

Plate 12. Thrombolite under cathodoluminescence, showing luminescence variation (green to yellow red) in gastropod.

Plate 13. Thrombolite under cathodoluminescence, showing isopachous calcite cement rimming an internal chamber of a gastropod.

Plate 14. Thrombolite under cathodoluminescence, showing emerald green luminescing layers.

Plate 15. Bryozoa (*C. aciculata*), encrusting thrombolite.

Plate 16. Location of bryozoa in thrombolite.

**List of Appendices**

Appendix I  Analytical Techniques
A. TOC analysis.
B. Solvent extraction.
C. Column and gas chromatography.
D. X-ray diffraction analysis (XRD).
E. Cathodoluminescence analysis.
F. Rock-eval analysis.

Appendix II  Gas Chromatography Results.

Appendix III  Coring Methods.

Appendix IV  Detailed Core Description.
Appendix V  XRD Results.
   A. Mineral percentages.
   B. Trends.

Appendix VI  Van Krevelen Diagrams.