GEOLOGY

of the

DELAMERE AREA

SOUTH AUSTRALIA

by

W. C. Leslie, B.Sc.

Honours Thesis Department of Economic Geology University of Adelaide December 1962

SUMMARY

In Stockyard Creek near Delamere there is a tilted sedimentary sequence with a stratigraphic thickness greater than 5500 feet. This is a portion of the sediments of the Adelaide Geosyncline.

The finding of Lower Cambrian fossils (hyolithids) in two formations of the Delamere Marble, has allowed relative dating of the sequence which is given as Upper Proterozoic and Lower Cambrian age. The base of the Cambrian has been taken as the lowest known occurrence of the hyolithids.

A description of the geology of the area and a detailed account of the lithology of the Stockyard Creek section is given, and where possible, by using lithological similarity and fossil evidence the sequence has been correlated with the type areas.

CONTENTS

| | page |
|------------------------|------|
| Introduction | 1 |
| Physiography | 2 |
| Investigation Methods | 3 |
| Stratigraphy | 4 |
| Sturt Group | 5 |
| Marino Group | 9 |
| Mt. Terrible Formation | 14 |
| Cambrian Succession | 15 |
| Wangkonda Limestone | 15 |
| Sellick Hill Limestone | 16 |
| Fork Tree Limestone | 17 |
| Heatherdale Shale | 18 |
| Greywackes | 20 |
| Permian | 21 |
| Recent | 22 |
| Structure | 23 |
| Economic Geology | 25 |
| Acknowledgements | 27 |
| References | 28 |
| Tilustrations | 99 |