

COPY 3

~~S.K. Skwarko~~

(7)

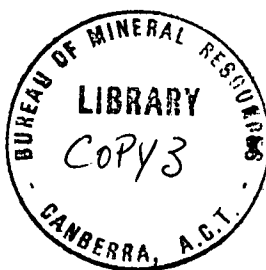
COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

1962/83

019591



THE MESOZOIC STRATA OF MT. YOUNG 1:250,000 SHEET AREA

by

S.K. Skwarko.

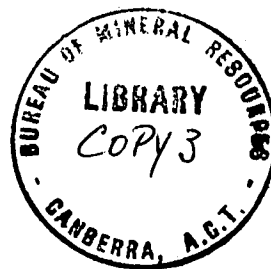
The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

THE MESOZOIC STRATA OF MT. YOUNG 1:250,000 SHEET AREA

by

S.K. Skwarko

RECORDS 1962/83



Contents

	<u>Page</u>
SUMMARY	1
INTRODUCTION AND ACKNOWLEDGEMENTS	1
FOSSIL LISTS	1
DISCUSSION	4
REFERENCES	5

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

THE MESOZOIC STRATA OF MT. YOUNG 1:250,000 SHEET AREA

by

S.K. SKWARKO

RECORDS 1962/83

SUMMARY

Macrofossil marine assemblages in the Mt. Young 1:250,000 Sheet area contain over 40 species, most of them new. There are also plant remains.

The earliest Neocomian sediments are quartz sandstone and marginal conglomerate deposited in a non-marine environment, possibly in brackish lakes. The only fossils associated with these deposits are indeterminate plant remains.

Later Neocomian sediments are marine and were laid down during a transgression which proceeded from north to south across the Sheet area invading the northern portion of the Bauhinia Downs 1:250,000 Sheet area immediately to the south in Lower Aptian times. The clayey sandstone which accumulated in the shallow epicontinental sea contains the abundant marine macrofossils.

INTRODUCTION AND ACKNOWLEDGEMENTS

Lower Cretaceous strata of Mt. Young 1:250,000 Sheet area were examined during 1960 and 1961 field seasons. Numerous field observations of lithologies and their sequences, and collections of fossils followed by the identification of fossils, and the dating of strata provided material for this Record.

In the field the writer has benefited by the assistance and cooperation of the members of the Hodgson Downs and the Bauhinia Downs Field Parties which is here acknowledged with sincere thanks.

FOSSIL LISTS

Open nomenclature has been used when listing fossil names. New generic and specific names will replace these in Bureau of Mineral Resources publications.

A list of Lower Cretaceous marine macrofossils collected at the four localities in the Mount Young 1:250,000 Sheet are arranged below in alphabetical order.

	Fossiliferous Localities			
	T.T.			
	35	55	56	57
Pelecypoda:				
<u>Astarte(?)</u> sp.nov.	x			
<u>Astarte(?)</u> sp.ind.			x	
<u>Camptonectes</u> sp.nov.a	x	x		
<u>Camptonectes</u> sp.nov.b	x			
<u>Camptonectes</u> (?) sp.	x			
<u>Camptonectes</u> sp.nov.d			x	
<u>Camptonectes</u> cf.sp.nov.d			x	
<u>Cyprina(?)</u> sp.nov.a	x			
<u>Cyprina</u> (<u>Venillicardia</u>) sp.nov.b	x			
<u>Cyprina</u> (<u>Venillicardia</u>) sp.nov.c	x			
<u>Dosiniopsis</u> (?) sp.nov.	x			
<u>Exogyra</u> sp.nov.	x			
<u>Grammatodon</u> sp.nov.	x			
<u>Iotrigonia</u> subgen. ^{nov.} et sp.nov.			x	
<u>Lima</u> sp.nov.b			x	
<u>Lucina</u> sp.aff. <u>Lucina</u> sp.H.Woods, 1907	x			
<u>Maccoyella</u> <u>corbiensis</u> (Moore), 1870	x			
<u>Maccoyella</u> sp.nov.aff. <u>M. barklyi</u> (Moore), 1870			x	x
<u>Maccoyella</u> sp.nov.			x	
<u>Modiolus</u> (?) sp.nov.	x			
<u>Nototrigonia</u> sp.nov.a	x			
<u>Nototrigonia</u> sp.nov.b			x	
<u>Ostrea</u> sp.ind.	x			
<u>Panope</u> sp.nov.a	x			
<u>Panope</u> sp.nov.b <u>Panope</u> sp.nov.c	x	x		
<u>Panope</u> sp.cf. <u>P. sulcata</u> Etheridge Snr., 1872				x
<u>Panope</u> sp.cf. <u>P. maccoyi</u> (Moore), 1870				x
<u>Pseudavicula</u> sp.nov.aff. <u>P. papyracea</u> Eth. Jnr., 1892	x			
<u>Pterotrigonia</u> (<u>Rinetrigonia</u>) sp.nov.	x	x		x
<u>Syncyclonema</u> sp.nov.	x	x		
<u>Trigonia</u> gen.nov. sp.nov.	x			
<u>Trigonia</u> sp.ind.	x	x		
(?) <u>Trigonia</u> sp.				x
<u>Gen. et</u> sp.nov.b	x			
Gastropoda:				
<u>Cellana</u> (?) sp.nov.			x	
<u>Cinulia</u> (?) sp.	x			
<u>Diodora</u> (?) sp.nov.			x	
<u>Pleurotomaria</u> (?) sp.a	x			
<u>Pleurotomaria</u> (?) sp.b	x			
Cephalopoda: New species of <u>Dimitobelidae</u>				
			x	
Ammonite frag.indet.	x			

The following are the four Lower Cretaceous localities at which collections were made, with lists of determinations and suggested datings.

T.T.35: 1½ miles south-east of Rosey Creek Homestead (abandoned).
Run II, Photo 5099 Point I. 5/90 1-mile Sheet.

Pelecypoda: Grammatodon sp.nov.
Modiolus(?) sp.nov.
Pseudavicula sp.nov.aff.P.papyracea Eth.Jnr., 1892
Maccoyella corbiensis (Moore), 1870
Syncyclonema sp.nov.
Camptonectes sp.nov.a
Camptonectes sp.nov.b
Camptonectes(?) sp.nov.c
Ostrea sp.ind.
Exogyra sp.nov.
Trigonia sp.nov.
Pterotrigonia (Rinetrigonia) sp.nov.
Nototrigonia sp.nov.a
Nototrigonia sp.nov.b
Trigonia sp.indet.
Astarte(?) sp.nov.
Lucina sp.aff.Lucina sp. H.Woods, 1907
Cyprina(?) sp.nov.a
Cyprina (Venilicardia) sp.nov.b
Cyprina (Venilicardia) sp.nov.c
Dosiniopsis(?) sp.nov.
Gen.nov(?) sp.nov.a
Panope sp.nov.a
Panope sp.nov.b
Gen.et.sp.nov.b
Pelecypod frags.indet.

Gastropoda: Cinulia(?) sp.
Pleurotomaria(?) sp.a
Pleurotomaria(?) sp.b
Gen.et sp.indet.

Cephalopoda: Ammonite frag.indet. Age: Neocomian

T.T.55: On both sides of a creek, on the western edge of
Yiyintyi Range; 20 miles north-north-east of
Rosey Creek. Run 7 Ph.5191 Pt.8. 5/84 1-mile Sheet.

Pelecypoda: Maccoyella sp.nov.
Syncyclonema sp.nov.
Camptonectes sp.nov.a
Camptonectes sp.nov.d
Camptonectes cf.sp.nov.d
Lima sp.nov.b
Iotrigonia subgen.nov.sp.nov.
Trigonia gen.nov.sp.nov.
Pterotrigonia (Rinetrigonia) sp.nov.
Trigonia sp.ind.
Panope sp.nov.c

Gastropoda: Cellana(?) sp.nov.
Diodora(?) sp.nov.

Brachiopoda: Not identified

Cephalopoda: New species of Dimitobelidae

Plants : Indeterminate Age: Neocomian

4.
T.T.56: Tawala pocket, 16 miles from Rosey Creek, bearing
195°. Run 15 Ph.5023 Pt.22. 5/97 I-mile Sheet.

Pelecypoda: Maccoyella sp.nov. aff. M. barklyi (Moore), 1870
(?) Trigonia sp.
Astarte(?) sp.ind.

Brachiopoda: Indeterminate Age: Neocomian-Aptian

T.T.57: 11 miles at 188° from Rosey Creek. Run.13 Ph.5177
Pt.2. 5/97 I-mile sheet.

Pelecypoda: Maccoyella sp.nov.aff. M. barklyi (Moore), 1870
Exogyra sp.nov.
Pterotrigonia (Rinetrigonia) sp.nov.
Panope sp.cf. P. sulcata Etheridge Snr., 1872
Panope sp.cf. P. maccoyi (Moore), 1870
Pelecypod frags. indet.

Age: Neocomian-Aptian

DISCUSSION

Mesozoic sediments cropping out on the Mt. Young
1:250,000 Sheet area are part of an elongate belt of scattered
remnant outcrops stretching to the south and the south-west
and possibly to the west and north-west of the Gulf of Carpen-
taria. Preliminary notes on the sedimentation and environ-
mental conditions of this area have been given elsewhere
(Skwarko, 1961) and only a short resume follows. Examination
of fossils collected in this area has resulted in the modi-
fication of some ideas on the nature of the marine transgres-
sion and the time in which it took place.

The first sediments which accumulated consist of
quartz sandstone and marginal conglomerate which were dep-
osited probably in Neocomian times. The environment was non-
marine and may have consisted of brackish lakes or subcoastal
lagoons which, although probably close to sea level, occupied
depressions between detritus-shedding Proterozoic rocks of
considerable relief. The few rivers which flowed through,
or into, this area seem to account for the presence of plant
remains. No remains of indigenous organisms have been found
in the saccharoidal sandstone.

Continued downwarping of this apparently unstable
epicontinental shelf brought about a marine transgression
still within the Neocomian times. In the Mt. Young Sheet
area, the sea apparently encroached progressively inland,
at right angles to the coast. Fossiliferous localities T.T.55,
T.T.35, T.T.57 and T.T.56 extend inland from the coast in
that order. Their fossil content and the age which it implies
will be discussed in turn.

The assemblage from T.T.55 consists of over thirteen
species of marine macro-organisms (see fossil lists above).
All of them are new, and only three have been found in other
assemblages farther to the south.

At locality T.T.35 an unusually prolific fauna con-
tains over thirty species, of which only one, Maccoyella
corbiensis, has been previously reported in Australia.
M. corbiensis has a wide geographical distribution in the
Great Artesian Basin, but is confined to the Roma sediments
which are regarded of Aptian age.

The fossil collection from T.T.57 is limited to five determinable species of which only three are new. Of these, Exogyra and Pterotrigonia are well represented at locality T.T.35 (Pterotrigonia is also found at locality T.T.55); M.sp.nov.aff.M.barklyi is absent from both T.T.35 and T.T.55 and seems to be related to the Great Artesian Basin Aptian M.barklyi. P.sulcata and P.maccoyi are both known from Aptian beds of the Great Artesian Basin.

The assemblage from T.T.56 is too limited in the number of species to be of use in this discussion. It seems however, that the assemblage from T.T.57 is intermediate between the new assemblage at T.T.35 and the known Aptian assemblages from the Great Artesian Basin; the T.T.57 fauna is regarded as transitional in age between Aptian and Neocomian. This deduction is further strengthened by the fact that fossiliferous localities farther to the south of Mt. Young area, i.e. on the Bauhinia Downs 250,000 Sheet area, contain assemblages made up almost entirely of Aptian forms to the exclusion of pre-Aptian species such as a T.T.35 and T.T.55. Fossils from T.T.55 are regarded older than those at T.T.35.

Therefore, consideration of individual fossil assemblages shows that the number of Aptian species increases southwards, and implies that the beds are younging, as might be expected, away from the coast. The fact that fossils at T.T.57 are a mixture of Neocomian and Aptian species, and that assemblages farther to the south are definitely of Aptian age implies that to the north of T.T.57, i.e. at T.T.35, the beds may be of Upper Neocomian age. The Neocomian beds at T.T.55, to the north of T.T.35, are almost certainly older as implied by palaeogeography, stratigraphy and palaeontological evidence, though how much older than Upper Neocomian is not known. They may possibly be Middle Neocomian. These beds in turn overlie the non-marine quartz sandstone apparently conformably which may or may not be of Lower Neocomian age.

REFERENCES

- Skwarko, S.K. 1961 - Progress Report on Field Activities in the Northern Territory during 1961 Field Season. Bur.Min.Resour.Aust.Rec. 1961/153 (Unpubl.).