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1962/82

THE MESOZOIC STRATA OF ROPER RIVER AND URAPUNGA 1:250,000 SHEETS.

by

S.K. Skwarko.

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CONTENTS

SUMMARY

Fossils from the Urapunga and the Roper River 1:250,000 Sheets are listed in alphabetical order and by localities. They are all marine and probably all of Neocomian age.

Marine sedimentation in the Urapunga - Roper River area commenced in the Neocomian with the deposition of sandstone and claystone, and apparently was not preceded by the non-marine and the early marine sedimentary phase of the Mount Young area. The transgression probably proceeded to the west and north-west from the Gulf of Carpentaria for a considerable distance inland and marine conditions prevailed until sometime in the Aptian. Following the withdrawal of the sea the area was again flooded by an extension of the Great Artesian Basin in the uppermost Albian. All Aptian and uppermost Albian sediments have been stripped by erosion in the Urapunga - Roper River area, but some remnants of these beds have been encountered in the surrounding areas.

INTRODUCTION

Lower Cretaceous strata of the Roper River and the Urapunga 1:250,000 Sheets were examined during the 1960 and 1961 field seasons. Field observations on lithology and palaeogeography were summarised in previous Records (Skwarko, 1961a,b), and these, together with the identification of the fossils collected and their dating has provided material for this Record.

Fossils were collected at only three localities on the Roper River 1:250,000 Sheet area, the greater portion of which is at present covered by the sea, and it has been found convenient to discuss these two sheets under a common title.

I wish to thank C. E. Prichard, Senior Geologist, Bureau of Mineral Resources, Darwin, for facilitating the examination of the area discussed here.

FOSSIL LISTS

Open nomenclature has been used when listing names of fossils. New generic and specific names will replace these in Bureau of Mineral Resources publications where the individual forms will be described.

Lower Cretaceous marine macrofossils collected at eleven localities on the two sheets are arranged below in alphabetical order. The twelfth locality, TT12, contains only worm tubes and doubtful borings.

FOSSILIFEROUS LOCALITIES T.T.

	Urapunga								Roper R.		
	5	6	7	8	45	46	47	48	42	43	44
Pelecypoda:											
Astarte(?) sp.									x		
Camptonectes sp.nov.a	x	x			x	x				x	
Camptonectes sp.nov.c		?			x						
Camptonectes sp.indet.		x									
Camptonectes (?) sp.indet.				x							
Dosiniopsis(?) sp.indet.											x
Exogyra sp.nov.		x			x					x	
Exogyra sp.aff.sp.nov.				x							
Lima sp.nov.a		x									
Lima sp.b					x						
Lima sp.										x	
Maccoyella corbiensis (Moore),1870	x		x	x	x				x	x	
Maccoyella cf.corbiensis										x	x
Maccoyella sp.		x								x	
Neithea occidentalis (Conrad),1855		x									
Nototrigonia sp.nov.f						x					
Nototrigonia(?) sp.nov.g									x		
Nototrigonia sp.nov.h									x		
Ostrea sp.a					x						
Ostrea sp.b		x									
Ostrea sp.indet.		x			x						
Pecten sp.indet.				x							
Pterotrigonia (Rinetrigonia)sp.nov.					x					x	
Syncyclonema sp.nov.		x				x				x	
Trigonia sp.indet.					x		x				
Gastropoda:											
Gen.et sp.nov.aff.Nerita								x			
Belemnites indet.	x	x			x	x		x		x	
Sponges or Bryozoans	x		x			?					
Echinoid spines		x		x	x						
Worm borings?				x							
Rhizocorallium							x				

Twelve localities of Lower Cretaceous age at which fossils were collected are described in the following pages together with fossil lists and suggested ages.

URAPUNGA 1:250,000 SHEET

T.T. 5: Canopy Rock 1-mile Sheet; about 4.5 miles east from Mountain Valley Road turnoff along Maranboy-Mainoru Road; 17 miles from Mainoru. Mesa north side of the road.

Pelecypoda: Camptonectes sp.nov.a
Brachiopoda: spp.indet.
Cephalopoda: gen.et spp.indet.
Also: ?Bryozoa.
Neocomian.

T.T. 6: Mount Throsby 1-mile Sheet; 1 mile on the north side of the Maranboy-Mainoru Road, 4½ miles west from Mainoru Homestead.

Pelecypoda: Maccoyella corbiensis (Moore),1870
Maccoyella sp.
Syncyclonema sp.nov.
Camptonectes sp.nov.a
Camptonectes(?) sp.nov.c
Camptonectes spp.indet.
Neithea occidentalis (Conrad),1855
Lima sp.nov.a
Ostrea sp.b
Ostrea sp.indet.
Exogyra sp.nov.

Also: Echinoid spines, brachiopods indet., corals and indeterminate belemnites.
Neocomian.

T.T. 7: Canopy Rock 1-mile Sheet; just south of the Maranboy-Mainoru Road; 18.2 miles west from Mainoru Homestead.

Bryozoa(?)
?Neocomian.

T.T. 8: Canopy Rock 1-mile Sheet; a solitary mesa 2 miles south-east from Mountain Valley Homestead.

Pelecypoda: Maccoyella corbiensis (Moore),1870
Camptonectes(?) sp.indet.
Pecten sp.ind.
Exogyra sp.aff.E.sp.nov.

Also: Echinoid spines, brachiopods indet., corals, roots or worm borings.
Neocomian.

T.T.12: Flying Fox 1-mile Sheet; a solitary cone-shaped hill about 1½ miles north of the Maranboy-Mainoru Road, about 17 miles east from Sugarbag Waterhole.

Problematica: Worm tubes and borings(?)
Neocomian.

T.T.45: Urapunga 1-mile Sheet; about 2 miles north of the Roper Valley Road, about 18 miles east of the Roper River Mission.

Pelecypoda: Maccoyella corbiensis (Moore),1870
Camptonectes sp.nov.a
Camptonectes sp.nov.c
Lima sp.b
Ostrea sp.a
Ostrea sp.indet.
Exogyra sp.nov.
Pterotrigonia (Rinetrigonia) sp.nov.
Trigonia sp.indet.

Cephalopoda: Belemnites indet.

Also: Corals

Neocomian.

T.T.46: Urapunga 1-mile sheet; about 14½ miles east of the Roper River Mission.

Pelecypoda: Syncyclonema sp.nov.
Camptonectes sp.nov.a
Nototrigonia sp.nov.f
Pelecypod frags.indet.

Cephalopoda: Belemnite spp.indet.

Also: Bryozoa(?)

Neocomian.

T.T.47: Maiwok Creek 1-mile Sheet; 2.3 miles, 10°west of north from Sentinel Hill.

Pelecypoda: Trigonia sp.indet.

Problematica: Rhizocorallium spp.

Neocomian.

T.T.48: Maiwok Creek 1-mile Sheet; about 6½ miles north-west from Die Jumb Peak.

Gastropoda: Gen.et sp.nov.aff.Nerita

Cephalopoda: Belemnites spp.indet.

Neocomian.

ROPER RIVER 1:250,000 SHEET

T.T.42: Port Roper 1-mile Sheet; 4 miles south-east of Murrenjerro Waterhole.

Pelecypoda: Maccoyella corbiensis (Moore),1870
Nototrigonia(?) sp.nov.g
Nototrigonia sp.nov.h
Astarte(?) sp.
Pelecypods indet.

Brachiopoda: Indeterminate fragments

Neocomian.

T.T.43: Phelp River 1-mile Sheet; about 20 miles north-north-west of Wonmurri Waterhole.

Pelecypoda: Maccoyella corbiensis (Moore),1870
Maccoyella sp.
Syncyclonema sp.nov.
Camptonectes sp.nov.a
Lima sp.
Pterotrigonia (Rinetrigonia) sp.nov.
Exogyra sp.nov.

Also: Echinoid spines and indeterminate belemnites.

Neocomian.

T.T.44: Sheet 5/64 1-mile; about 9 miles north-west of Wonmurri Waterhole.

Pelecypoda: Maccoyella cf.corbiensis (Moore),1870
Dosiniopsis(?) sp.
Pelecypods indet.

Neocomian.

DISCUSSION

In the north-western corner of the Urapunga 1:250,000 Sheet area Lower Cretaceous beds are relatively common. Elsewhere only a few, widely scattered outcrops of the originally extensive, and probably continuous, sheet remain.

Lithology of these Mesozoic beds and their succession has been discussed previously (Skwarko,1961a,b) and will not be repeated here.

In the Mount Young area there is good evidence for the Neocomian marine sedimentation and for the preceding non-marine, probably lacustrine, environment still in the Neocomian times (Skwarko,1962a), but in the Urapunga-Roper River area the non-marine phase is probably absent; all the fauna collected is marine, and has species in common only with the rich assemblage at locality T.T.35, Mount Young area, which is regarded as being of later Neocomian age (Skwarko, 1962a). The plant-bearing sediments which occur on the Katherine 1:250,000 Sheet area to the west are not lacustrine deposits. (Skwarko,1961a,b). The early marine phase represented by the unique assemblage from locality T.T.55 on the Mount Young area, followed the lacustrine cycle but preceded the later Neocomian phase represented by T.T.35; this early marine phase also seems to be absent in the Urapunga-Roper River area. It is likely that sedimentation in the Urapunga-Roper River area and to the west of it commenced later than in the Mount Young area.

Examination of Mesozoic strata in the northern Arnhem Land will probably throw additional light on the history of sedimentation and direction of marine transgression in this part of the Territory in the Lower Cretaceous times. It seems, however, that in the regions so far examined the earliest downwarping of the epicontinental shelf took place in the northern and north-eastern portion of the Mount Young 1:250,000 Sheet area, possibly during Neocomian times; this gave rise to estuarine conditions under which quartz conglomerate was deposited in inland lakes and subcoastal lagoons. Further downwarping apparently still somewhat localized, brought about invasion of the sea at a later date, but again apparently only in the Mount Young area. This was followed by a more widespread sinking which allowed the sea to transgress inland as far as the southern boundary of the Mount Young 1:250,000 Sheet in the south, much farther to the west of the present Roper River mouth, and farther to the north-west into Mount Evelyn 1:250,000 Sheet. In the Aptian times the transgression maintained its southward trend from the coast in the Mount Young area overrunning the northern part of the Bauhinia Downs 1:250,000 Sheet; there is no evidence for further marine transgression in the Aptian west of the Roper River mouth, but the sea still occupied the area and withdrew at a little later stage leaving behind Aptian sediments.

The sea seems to have returned in the Upper Albian times, flooding the whole of the "inland area of sedimentation" as well as the Neocomian and Aptian shelf deposits. It probably extended from the Queensland border in the Calvert Hills area (Skwarko,1962b) as far as Darwin in the north. The fine-grained sediments deposited during this marine transgression are still

preserved overlying the non-marine sediments of the inland area of sedimentation, and also possibly at Darwin, but have been almost entirely eroded off from the coastal Neocomian and Aptian strata.

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