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MIDDLE MIOCENE LIMESTONES FROM KING ISLAND, TASMANIA

by

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MIDDLE MIOCENE Limestones FROM
KING ISLAND, TASMANIA.

By

Irene Crespín, Commonwealth Palaeontologist.

The earliest reference to Tertiary limestones on King Island, Bass Strait, was made by the late Professor Sir Baldwin Spencer in an account (1888) of his expedition to the Island in 1887. He stated that limestone outcropped at Wickham lighthouse on the north-west corner of the Island and to the south between that point and Yellow Rock; on the east coast, just south of Lavinia Point and at the Blowhole Creek; on the west coast between Pass and Ettrich Rivers and inland near Popky Lagoon and Fitzmaurice Bay.

In 1910 Debenham published notes on the geology of King Island in which he gave a list of fossils determined by W.S. Dun from a limestone outcrop at Seal River.

Chapman (1912) described the fossil content of limestones collected by J. A. Kershaw from an outcrop along the bank of the Seal River on the extreme south-east of the Island. It is possible that this locality is the same as that recorded by Debenham.

The present collection was made by Mrs. A. J. Adams from near her property "Avondale" in the centre of the Island. The locations given for the samples are:-

No.1 from a well $3\frac{1}{2}$ miles from Mrs. A. J. Adams' property.

No.2 from the same locality, underlying 14 feet of overburden

No.3 from the same locality, underlying No.2.

Nos.1 and 2 are cream coloured bryozoal and shelly, marly limestones. The material, when washed, shows the fossils to be poorly preserved. The fossils include foraminifera, echinodermata, bryozoa, brachiopoda, pelecypoda and ostracoda. The assemblage listed below from these two samples indicates that the limestones are Middle Miocene in age and belong to the basal subdivision of the Balcombian, the Longford substage, a name recently introduced by the writer (1943). Rocks of similar age are found near Harrawah and at Table Cape, Tasmania, in Western Victoria and in the Mount Gambier area, South Australia.

No.3 is a bluish-gray weathered to ochreous coloured, bryozoal limestone, which is partly recrystallised. Determination of fossil genera and species is difficult because nearly all specimens are coated with minute facets of calcite, which, in many places, completely replaces the organism.

A list of fossils determined in the samples is given below. This is incomplete because of the poor preservation of many specimens.

Fossil	Samples	1.	2.	3.
<u>FORAMINIFERA.</u>				
<u>Trochammina</u> sp. ..	..	X	..	..
<u>Gaudryina</u> (<u>Pseudogaudryina</u>) <u>crespinac</u> Cushman	..	..	X	..
<u>Lagena favosopunctata</u> Brady	..	..	X	..
<u>Lagena globosa</u> (Montf.)	..	..	X	..
<u>Lagena laevis</u> (Montf.)	..	..	X	..
<u>Lagena marginata</u> (W. & B.)	..	X	..	..
<u>Prondicularia lorifera</u> Chapman	..	..	X	..
<u>Guttulina irregularis</u> (d'Orb.)	..	..	X	..
<u>Guttulina</u> cf. <u>problema</u> (d'Orb.)	..	X	..	..
<u>Spirillina vivipara</u> Ehrenberg	..	..	X	..
<u>Discorbis globularis</u> (d'Orb.)	..	..	X	..
<u>Cibicides lobatulus</u> (W. & J.)	..	..	X	..
<u>Eponides concentricus</u> (P. & J.)	..	..	X	..
<u>Eponides repandus</u> (P. & M.)	..	X	X	X
<u>Elphidium parvi</u> Cushman	..	..	X	..
<u>ANTHOZOA.</u>				
<u>Flabellum</u> sp. ..	..	X	..	..
<u>ECHINODERMATA.</u>				
<u>Fibularia gregata</u> Tate	..	X	..	..
Club-shaped cidaroid spines.	..	X	X	X
<u>BRYOZOA.</u>				
<u>Cellaria robusta</u> Maplestone	..	X	..	..
<u>Cellaria gracilis</u> Busk	..	X	..	X
<u>Cellaria depressa</u> Maplestone	..	X	..	..
<u>Cellaria rigida</u> McG.	..	X	..	X
<u>Cellaria laticella</u> Maplestone	..	X	X	X
<u>Macropora clarkel</u> (T.Wds.)	..	X	..	..
<u>Macropora crassatina</u> (Waters)	..	X	..	..
<u>Melicerita angustiloba</u> Busk	..	X	..	..
<u>Acanthodesia simplex</u> (McG.)	..	X	X	..
<u>Ellisiniidra cylindriciformis</u> (Waters)	..	X	X	..
<u>Membranipora argus</u> (d'Orb.)	..	X	..	X
<u>Crateropora patula</u> (Waters)	..	X	..	..
<u>Gigantopora cribraria</u> (McG.)	..	X	..	..
<u>Bigemellaria pedunculata</u> McG.	..	X	..	..
<u>Adconellopsis clavata</u> (Stol.)	..	X	X	X
<u>Porina gracilis</u> (McG.)	..	X	X	..
<u>Porina vertebralis</u> Stol.	..	X	X	..
<u>Smittinella tatei</u> (T.Wds.)	..	..	X	X
<u>Smittina elongata</u> McG.	..	X	..	X
<u>Smittina seriata</u> Waters	..	X	..	..
<u>Coborea grandis</u> Hincks	..	..	X	..
<u>Exochella grandis</u> Canby & Bassler	..	..	X	..
<u>Prontomaria gibbericollis</u> McG.	..	..	X	..

Fossils	Samples	1.	2.	3.
BRYOZOA				
<u>Microporella pocelliformis</u> Waters	..	..	X	..
<u>Schizoporella clypeata</u> Canu & Bassler	..	..	X	..
<u>Schizoporella bombycina</u> Waters	..	..	X	..
<u>Gephyrophora marginopora</u> (Reuss)	..	..	X	..
<u>Menipea innocua</u> Waters	..	..	X	..
<u>Crasepodozum elongatum</u> Canu & Bassler	..	..	X	..
<u>Crasepodozum roboratum</u> Hincks	..	..	X	..
<u>Aspidostoma airenensis</u> Maplestone	..	X	..	X
<u>Hippomonella abdita</u> (McG.)	..	X	X	..
<u>Bulbipora areolata</u> McG.	..	X	X	..
<u>Porella denticulata</u> Waters	..	X	..	X
<u>Nellia</u> sp.	..	X	..	..
<u>Velumella depressa</u> Canu & Bassler	..	..	..	X
<u>Retepora rimata</u> Waters	..	X	..	..
<u>Crisia aeropora</u> Busk	..	..	X	..
<u>Idmonea milneana</u> d'Orb.	..	X	..	..
<u>Idmonea trigona</u> McG.	..	X	..	X
<u>Mezynoecia proboscidea</u> (M. Edw.)	..	..	X	..
<u>Lichenopora australis</u> McG.	..	..	..	X
<u>Lichenopora radiata</u> Aud.	..	..	X	..
<u>Tecticava schnapperensis</u> McG.	..	X	X	..
<u>Heteropora nodulosa</u> McG.	..	X	X	..
BRACHIOPODA				
<u>Magellania</u> sp.	..	..	X	..
PELECYPODA				
<u>Chlamys praecursor</u> (Chapman)	..	X	X	..
OSTRACODA				
<u>Macrocypris decora</u> G.S.B.	..	X	..	..
<u>Pseudocythere caudata</u> G.S.B.	..	X	..	..
<u>Bythocypris reniformis</u> G.S.B.	..	X	X	..
<u>Bairdia</u> cf. <u>croceina</u> G.S.B.	..	X	..	..
<u>Bairdia</u> sp.	..	X	..	..
<u>Bairdia ovata</u> G.S.B.	..	..	X	..
<u>Pontocypris attenuata</u> G.S.B.	..	..	X	..

Notes on the Fossil Assemblage.

(1) Foraminifera are extremely scarce in Samples 1 and 3 and although fairly common in Sample 2, they are not well preserved. The majority of species are not indicative of the age of the beds, but the assemblage generally, together with the typical Balcombian forms, Gaudryina (Pseudogaudryina) orespinae Cushman, Frondicularia lorifera Chapman and Elphidium parri Cushman, is characteristic of the lower portion of the Balcombian stage and is referable to the Longford substage, recently instituted by the writer (1943).

(2) Echinodermata are poorly represented. The small echinoid Fibularia gregata, recorded from Sample 1, is typically Balcombian. Possibly the most interesting fossils in the collection are the numerous club-shaped cidaroid spines in Samples 1 and 2. Chapman

and Gudmore in 1934 state that they were unable to correlate these club-shaped spines with any of the cidaroids examined, although they were recorded from several localities in Victoria, South Australia and Western Australia belonging to the Balcombian stage.

(3) Bryozoa are the commonest fossils present. Many forms are determinable in Samples 1 and 2 but although Sample 3 is composed almost entirely of them, few forms are recognisable on account of the incrustation of calcite. The assemblage is typically Balcombian (Middle Miocene). At the same time the assemblage is more typical of Western Victoria and south-east South Australia than of Gippsland (eastern Victoria). Aspidostoma airensis is important as a zone fossil. It is characteristic of the Janjukian stage but it is found ranging upwards into the basal Balcombian.

(4) The only representative of the Brachiopoda is a broken valve of a Magellania.

(5) Mollusca are rare, the only one present being that of the polycypod Chlamys praecursor (Chapman), which is typical of the lower Balcombian in other localities.

(6) Ostracoda are fairly common and though all species recorded are referable to recent species they are typical of the lowest substage of the Balcombian (the Longford) horizon in Western Victoria and south-eastern South Australia.

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