



**DEPARTMENT OF MINES  
SOUTH AUSTRALIA**

GEOLOGICAL SURVEY BRANCH

REPORT No. 674

PALAEONTOLOGICAL REPORT 3/57

SECOND REPORT ON SAMPLES COLLECTED  
FROM LAKE ALEXANDRINA AREA BY C.S.I.R.O.

by

N.H. LUDBROOK  
PALAEONTOLOGIST

D.M.2101/55

Report Book 44/59

44/59

SOUTH AUSTRALIA  
DEPARTMENT OF MINES

GEOLOGICAL SURVEY BRANCH

REPORT No. 674

PALAEONTOLOGICAL REPORT No. 3/57

SECOND REPORT ON SAMPLES COLLECTED  
FROM LAKE ALEXANDRINA AREA BY  
C.S.I.R.O.

by

N.H. LUDBROOK  
PALAEONTOLOGIST

D.M.2101/55

Report Book 44/59.

MICROFILMED

## SECOND REPORT ON SAMPLES COLLECTED FROM

### LAKE ALEXANDRINA AREA BY C.S.I.R.O.

#### ABSTRACT:

Twenty samples taken at shallow depth from the Lake Alexandrina area indicate varying conditions of deposition.

#### 1. INTRODUCTION:

A second set of samples collected by Mr. C.J. de Mooy, Division of Soils, C.S.I.R.O., during a soil survey of the Lake Alexandrina area, were submitted for determination of conditions of deposition.

#### 2. DESCRIPTION OF SAMPLES:

F.4/57 (C.S.I.R.O. - 7).

Al2; 6224; 7. Section 305, Hundred of Seymour,  
4 miles east of Wellington.

Cream yellow, soft fine-grained somewhat powdery  
fossiliferous limestone with glauconite. Megafossils  
mainly as casts and moulds.

Megafauna determined from latex casts.

Chlamys sturtiana (Tate)

Chlamys sp.

Turritella (Colpospira) tristira Tate

#### Foraminifera

Textularia sp. cf. sagittula DeFrance

Textularia spp.

Bolivinopsis crespinae Parr

Gaudryina (Pseudogaudryina) crespinae Cushman

Pyrgo spp.

Quinqueloculina sp.

Triloculina trigonula Lamarck

Massilina torquayensis Chapman

Robulus sp.

Sigmomorphina subregularis Howchin & Parr

(contd.)

Sigmoidella kagsensis Cushman and Osawa

Gattulina irregularis d'Orbigny

Gattulina proboscis d'Orbigny

Pyralina fusiformis (Reamer)

Globulina gibba d'Orbigny

Buliminella madagascariensis var. spicata Cushman

Bolivina cooki Cushman

Bolivina victoriana Cushman

Angulogerina spp.

Trifarina bradyi Cushman

Cassidulina subglobosa Brady

Sphaeroidina bulloides d'Orbigny

Eponides sp. cf. repandus (Sichtel & Sell)

Cyroidina

Stomatopina torrei Cushman and Bermudez

Bagina philippinensis (Cushman)

Cibicides pseudoungerianus Cushman

Cibicides unbonifer Parr

Cibicides vortex Norreen

Cibicides sp. nov.

Anomalina spp.

Globigerina bulloides d'Orbigny

Gumbelina rugosa Parr

Astronomenion sp.

Heronallonia pusilla Parr

Notorotalia sp. nov.

### Correlation:

This is one of the mid-Tertiary marine limestones. Its fauna is "Janjukian", currently considered to be of Oligocene age. It is equivalent, in part at least, to the Gambier Limestone and Ettrick Marble.

F.5/57 (C.S.I.R.O. - 8)

A.15; 6338; 7. Section 59, Hundred of Coolinong.  
Kunkar (surface travertine) with Coxiella shells  
which inhabit salt lagoons and the Coorong.

F.6/57 (C.S.I.R.O. - 9)

A.14; 6308; 7. Section 623, Hundred of Seymour.  
Dark brown carbonaceous silty sand with shells of  
the Murray River snail, Meracomelon moorundianum  
Iredale.

The sample is contaminated with bryozoa and foraminifera  
from the Tertiary limestone.

Washed residues consist of medium-fine angular to  
sub-angular quartz grains, coated with silty matter,  
mica flakes.

#### Fauna

Meracomelon moorundianum Iredale

Austropyrgus sp. juvenile

Rotalia beccarii Linne - probably indigenous

#### Flora

Chara sp.

The following species are derived from Tertiary limestone

Triloculina trigonula Lamarck, Angulogerina sp.,

Cibicides pseudoungerianus Cushman, Globigerina

bulloides d'Orbigny, Elphidium adelaidense Howchin

& Parr, Elphidium cf. simplex Cushman, Notorotalia

howchini (Chapman, Parr and Collins).

The contaminated state of this sample renders it difficult  
to determine the conditions of deposition. The presence of the  
freshwater snails indicates deposition as river silt.

F.7/57 (C.S.I.R.O. - 10)

A.15; 6342; 6. Section 306, Hundred of Malcolm.

54 - 60"

Kunkar (surface travertine)

F.8/57 (C.S.I.R.O. - 11)

A.13; 6320; 6, Section 1074, Hundred of Seymour.

24" - 36" Cutting, river cliffs, 2 miles south of Wellington.

Kunkar ("surface travertine")

F.9/57 (C.S.I.R.O. - 11)

A.13; 6320; 6. Section 1074, Hundred of Seymour.

10-20'. Cutting, river cliffs, 2 miles South of Wellington.

Kunkar ("surface travertine")

F.10/57 (C.S.I.R.O. - 11)

A.13; 6320; 6. Section 1074, Hundred of Seymour.

30 ft., cutting river cliffs, 2 miles south of Wellington.  
Cream yellow, fine-grained bryozoal limestone with some glauconite.

Microfauna:

Textularia spp.

Dorothia parri Cushman

Gaudryina (Pseudogaudryina) crespinae Cushman

Bolivinopsis crespinae Parr

Quinqueloculina sp.

Massilina torquayensis Chapman

Sigmomorphina subregularis Howchin & Parr

Sigmomorphina semitecta (Reuss)

Sigmoidella elegantissima (Parker and Jones)

Guttulina silvestrii Cushman and Ozawa

Glandulina laevigata d'Orbigny

Globulina gibba d'Orbigny

Pyrulina fusiformis Roemer

Marginulina sp.

Frondicularia lorifera Chapman

(contd.)

Robulus cultratus Montfort

Bolivina cookei Cushman

Cassidulina subglobosa Brady

Eponides sp. cf. repandus (Fichtel & Moll)

Stomatorbina torrei Cushman and Bermudez

Gyroidina sp.

Baggina philippinensis (Cushman)

Cibicides pseudoungerianus Cushman

Cibicides vortex Dorreen

Cibicides sp. nov.

Anomalina spp.

Globigerina bulloides d'Orbigny

Gumbelina sp.

Gumbelitria sp.

Heronallenia pusilla Parr

Sherbornina atkinsoni Chapman

Correlation: This is the same limestone as F.4/57.

F.11/57 (C.S.I.R.O. - 12)

Cooke's Plains - Coomandook - Section 408W. Hd. Coolinong  
Cream-yellow sandy limestone, with medium subrounded to  
subangular quartz grains.

Megafauna.

"Lovenia forbesi T. Woods"

Ostrea sp.

Serripecten yahliensis (T. Woods)

Spondylus pseudoradula McCoy

Microfauna

Triloculina trigonula Lamarck

Cibicides sp.

Elphidium sp.

Correlation: This is one of the mid-Tertiary limestones,  
there being insufficient material to determine which one.

F.12/57 (C.S.I.R.O. - 15 P.46)

ENC.1; 6092; 9. Sec. 67, Hd. Nangkita.

Travertinized sand with shells at 41".

Pelecypoda

Eumarcia fumigata Sowerby

Macoma deltoidalis (Lamarck)

Notospisula sp.

Species of Leptonidae

Gastropoda

Assiminea granum Menke

Foraminifera

Quinqueloculina costata d'Orbigny

Angulogerina sp.

Lagena distoma - margaritifera Parker and Jones

Discorbis cycloclypeus Howchin and Parr

Globoquadrina sp.

Elphidium cf. simplex Cushman

Elphidium sp.

"Rotalia" beccarii (Linne) - abundant

Conditions of Deposition: The mollusca in this sample are Recent estuarine species, living between tide-marks. The foraminiferal assemblage commonly inhabits very shallow or brackish water. The material is presumably from a Pleistocene shore-line deposit.

F.13/57 (C.S.I.R.O. - 14 P.46B)

ENC.1; 6092; 9. Section 67, Hd. Nangkita, 24-41".

Travertinized sand, with Amphidesma angusta Reeve, a small pelecypod burrowing between tide-marks. One small Coxiella is present on the surface; "Rotalia" beccarii (Linne) and Elphidium cf. simplex Cushman, which inhabit shallower brackish water, are present. The sand is considered to be a shore-line deposit.



## F.14/57 (C.S.I.R.O. A679)

Section 301, Hundred of Goolwa, 42".

Dark grey carbonaceous silty sand.

Washings consist of subrounded to subangular quartz grains, plant remains, carbonized wood fragments, pyrite, resin.

One oogonium of Chara sp. is present and the foraminifer: Trochammina inflata Montagu.

The material was deposited in brackish swamps.

## F.15/57 (C.S.I.R.O. A675)

Ewe Island, north of barrages, 12-24".

Grey silty sand and sandy clay.

Washings of fine angular to medium quartz grains, occasional mica flakes, some obscure worn bryozoal fragments.

Microfauna:

Sponge spicules - common

Foraminifera

Trochammina inflata Montagu

Discorbis sp.

Globigerina bulloides d'Orbigny

Planorbulina mediterraneensis d'Orbigny

Elphidium macellum (Fichtel & Moll)

Elphidium sp.

"Rotalia" beccarii d'Orbigny

Deposition took place in a brackish or salt swamp environment.

## F.16/57 (C.S.I.R.O. A674)

Tawitchere Island 4-7".

Grey silty sand and clay.

Washings consist of fine angular to subangular quartz grains, with occasional large subrounded grains, gypsum crystals, mica flakes.

Microfauna consists of Trochammina inflata Montagu and two species of arenaceous foraminifera not identified.

Deposition took place in brackish water.

F.17/57 Section 306, Hundred of Malcolm, 42-45".

Grey and yellow fine silty sand, with angular to subrounded fine quartz grains, limonite carbonized plant remains, and flakes of white mineral described by the Petrology Section as follows:

"The sample is composed of fine flakes of clayey mineral - vermiculite, completely altered feldspar, quartz, chalcedony, opal, calcareous material, altered biotite, a few grains of zircon and opaques".

No foraminifera are present and deposition appears to have taken place in fresh water.

F.18/57 Section 306, Hundred of Malcolm, 72-75".

Greenish fine silty sand with Chara and plant remains. Deposition appears to have taken place in fresh water.

F.66/57 C.S.I.R.C. - 13.

ENC.1; 6032. Section 59, Hundred of Nangkita.

Travertinized aeolianite with Amphidesma angusta Reeve, a pelecypod burrowing in sand between tide-marks.

F.67/57 C.S.I.R.C. - 16.

ME5; 6420; 3. Section 214, Hundred of Bonney.

Travertinized calcareous sand with Succinea shells and one specimen each of the foraminifera Lagena, Cassidulina, Rotalia, Globigerina.

The conditions of deposition of this sample are not clear from the material available.

3/4/57.

*N. H. Ludbrook*  
(N.H. Ludbrook)  
PALAEONTOLOGIST