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MICROPALAEONTOLOGICAL REPORT ON ROCK SAMPLES
FROM THE OPAL FIELDS AT ANDAMOOKA AND
COOBER PEDY, SOUTH AUSTRALIA.

By

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COOBER PEDY, SOUTH AUSTRALIA.

Report No. 1948/55
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A. ANDAMOOKA FIELD.

(20 miles north of Andamooka Homestead)

- C/1 Approximately 20 feet below top of hill E.S.E. of
German Gully Workings.

Whitish siliceous clay. No microfossils.

Wake's Shaft, German Gully Workings.

- C/2 2 feet below surface.

Limonitic sandstone with gypsum, and angular quartz grains.

- C/3 4 feet below surface.

Ochreous to whitish sandstone with gypsum, and quartz grains, chiefly fine and angular.

- C/4 6 feet below surface.

Ochreous to creamy fine-grained sandstone with fine angular quartz grains.

- C/5 8 feet below surface.

Gypsum.

- C/6 10 feet below surface.

Creamish siliceous clay with fine angular quartz grains and gypsum.

- C/7 12 feet below surface.

Creamish siliceous clay with gypsum.

- C/8 14 feet below surface.

Ochreous to cream, fine grained sandstone with fine angular quartz grains and minute foraminifera.

Foraminifera: Ammodiscus cf. crotacea, Haplophragmoides
sp., Spiroplectammina cushmani, Trochammina parvulus.

- C/9 16 feet below surface.

Whitish, fine grained sandstone with foraminifera.

Foraminifera: Spiroplectammina cushmani, Globigerina
sp., cf. Anomalina sp.

- C/10 18 feet below surface.

Cream fine grained sandstone with mica, gypsum and minute foraminifera.

Foraminifera: Planulina crotacea, Planulina sp.

C/11 20 feet below surface.

Moderately hard creamy fine sandy clay.

C/12 22 feet below surface.

Creamy fine sandy clay with minute quartz grains, gypsum and small foraminifera.

Foraminifera: Ammobaculites sp., Spiroplectammina cushmani, Trochammina parvulus.

C/13 25½ feet below surface in hard band overlying 2"-3" gypsum.

Pinkish sandy clay with gypsum. No microfossils.

C/14 26½ feet below surface. Opal horizon.

Pinkish clay. Impossible to make thin section of rock for micro-examination.

Treloar's Hill

C/15 Specimen mislaid.

Cliff Section in Opal Creek, approximately 200 yards S.W. of Four Corners Hut.

C/16 Fine whitish sandstone with angular quartz grains.

C/17 Creamish fine grained sandstone with gypsum, and fine angular quartz grains.

Small tributary of Opal Creek between Treloar's and Boundary Rider's Hills.

C/18 Moderately coarse sandstone.

Opal Creek S.E. of Steven's Gully workings in vicinity of fault "scarp" marked on Segnit's map.

C/19 Creamish sandstone, moderately coarse in texture.

B. COOPER PEDY FIELD.

Flat Hill. W.S.W. of Post Office Hill.

C/20 Moderately fine quartzite, consisting of very fine angular quartz grains, with a few rounded quartz pebbles.

C/21 Fragments of gypsum and fine sandstone.

Campbell's Shaft. Flat Hill.

C/22 Approximately 30 feet below tableland level.

Whitish shale.

C/23 Approximately 40 feet below tableland level.

Whitish shale. No microfossils.

C/24 Approximately 50 feet below tableland level.

Whitish to reddish siliceous clay with numerous minute rounded cavities, ? dissolved tests of radiolaria, and fine angular quartz grains.

C/25 Approximately 60 feet below tableland level.

Pale pinkish shale with flecks of dark reddish brown material and gypsum.

C/26 Approximately 70 feet below tableland level, and 6 inches below band of fibrous gypsum.

Pinkish, fine grained siliceous clay with fine angular quartz grains, a few poorly preserved foraminifera and radiolaria.

C/27 Approximately 70 feet below tableland level.

Mauve to ochreous shale with indeterminate pelecypod replaced by opal. Minute foraminifera also present.

Foraminifera: cf. *Nodosaria*, cf. *Cibicides*.

8 mile Flat, 8 miles west of main Field.

C/28 Cherty rock containing numerous radiolaria of the Spumellarian group and a few indeterminate foraminifera.

Koska's Hill, near Post Office Hill.

C/29 Purplish shale with cast of pelecypod.

Pelecypoda: cf. *Corbicula maeki*.

Conical Hill north of Big Flat and N.W. of Post Office Hill.

C/30 Whitish shale with fragments of cherty rock (? Porcellanite) Section of cherty rock shows veins of opaline silica, fine angular quartz grains, abundant poorly preserved radiolaria of the Spumellarian group, and minute spicules (? spines of radiolaria).

Between Store and Transceiver Dugout, approximately 20 feet below tableland level.

C/31 Whitish to reddish siliceous clay similar to C/24.

STRATIGRAPHIC NOTES.

A. Andamooka Field.

The Andamooka Opal Field is situated on the western side of Lake Torrens. The samples forwarded for micro-examination are numbered C/1 to C/19 and come from localities mentioned in Segnit's report on the field (S. Aust. Min. Rev. No. 62, p.51, 1935).

The specimens include whitish siliceous clays, fine grained sandstones, moderately coarse sandstones and gypsum. The samples C/1 to C/17 are regarded as belonging to one series and are Lower Cretaceous in age. Some of these, C/8, C/9, C/10, and C/12 contain species of foraminifera which are found in the Lower Cretaceous sediments in Boreas in the Great Artesian Basin and in surface outcrops at Roma in Queensland. The species include *Spiroplectammina cushmani*, *Ammodiscus* cf. *cretacea*, *Trochammina parvulus*, and *Planulina cretacea*.

Samples C/18 and C/19 are coarse sandstones which contain no fossil evidence as to age. Segnit suggested a Jurassic age for certain sandstones in the area but as far as is known, there is no palaeontological evidence for this.

B. Coober Pedy Field.

The Coober Pedy Opal Field is situated in the Stuart Range area in Northern South Australia.

The rocks forwarded for micro-examination are numbered C/20 to C/34. They consist of quartzite, sandstones, shales, siliceous clay and cherty rock (?porcellanite). No age is suggested for C/20 which represents the "duricrust" in the area, but the others are referred to the Lower Cretaceous.

Foraminifera are rare in the samples and where recognised, are poorly preserved. However, radiolaria are common especially in C/26, C/28 and C/30. The characteristic type of rock is a porous, siliceous clay, the minute cavities being rounded in shape. It is suggested that these cavities are the result of the dissolution of the tests of radiolaria and further investigations may show the source of much of the silica in these beds is from these minute fossils. The porcellanite type of rock is common in various parts of the Northern Territory where it has been found that the radiolaria are widely distributed in the Lower Cretaceous beds.

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