CHIEF GEOLOGIST

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RECORDS.

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SOME DIATOMITE DEPOSITS, NORTH QUEENSLAND

by

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Bureau of Mineral Resources, Canberra

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During a joint regional geological survey carried out by the Bureau of Mineral Resources and the Geological Survey of Queensland in 1958 in the Herbert River area, North Queensland, five localities of diatomite were recorded. One of these at Conjuboy (previously referred to as Cunjeboy) has been mentioned in earlier literature (Crespin, 1946, 1947); the other localities have not been previously noted.

The diatomite localities examined are as follows:

1. Cashmere Station
2. Gleneagle Station
3. Princess Hills
4. Conjuboy
5. Lake Walters

The diatomite is associated with Tertiary to Recent basalts, which have been described by Twidale (1956) as forming the "McBride Basalt Province".

The diatomites are of freshwater origin. Mostly deposits are situated near the edge of the basalt province, where they were deposited in lakes formed by the damming of streams by basalt flows.

One of us (I.C.) has made a micropalaeontological examination of samples from the above deposits and the diatom content found in these is given in the short description of each deposit. The density and porosity determinations have been carried out by M.C. Konecki of the Petroleum Technology section of the Bureau.

Description of the Deposits

1. Cashmere

The deposit is situated about half a mile west of Cashmere Station behind the public camping ground. It is reached by a good dirt road of some 54 miles from Mt. Garnet via the Gunnawarra-Wairuna road, which turns off a few miles south of Mt. Garnet, and the Cashmere-Gleneagle road which turns off east about 35 miles along the Gunnawarra-Wairuna road. The deposit is situated about 200 yards west of the camping reserve on the western bank of the Herbert River, after travelling about 19 miles along the Cashmere-Gleneagle road.

The diatomite is overlain by basalt, which is possibly a part of the Older McBride Basalts (Twidale, 1956) of late Miocene to early Pleistocene age. The deposit is exposed over a length of 300 feet with a width of 60 feet and a thickness of about 10 feet.

The diatomite is chalky white in colour and of fairly high grade. It has a porosity of 73.75 per cent., a dry bulk density of 0.72 and grain density of 2.74. It is composed almost entirely of the cylindrical diatom Melosira.

2. Gleneagle

This deposit is situated about two miles south of the Cashmere deposit. It is reached by the same road as the Cashmere

deposit via the turn off to Gleneagle Station, which is 18 miles along the Cashmere-Gleneagle road. The diatomite occurs about a quarter of a mile west along the bed of the first creek crossing before entering the firstgate to Gleneagle Station. The diatomite is overlain by basalt. The deposit measures about 150 feet in length with a width of 15 feet and thickness of 10 feet.

The diatomite is chalky white in colour and is of fairly good grade. It has a porosity of 72.17 per cent., a dry bulk density of 0.74 and grain density of 2.67. It is composed almost entirely of the cylindrical diatom, Melosira.

3. Princess Hills

This deposit was not examined but it was reported by local inhabitants to be situated in Flaggy Creek, a tributary of the Herbert River, about 8 miles north-east of Princess Hills Station.

The diatomite is of poor grade. It has a porosity of 80.47 per cent, a dry bulk density of 0.62 and grain density of 3.15. Melosira is the predominant diatom but the majority of the frustules are broken.

4. Conjuboy

The deposit of diatomite at Conjuboy is the largest known in North Queensland. It is well exposed in Wyandotte Creek near its junction with Fig Tree Spring, about 4 miles north of Conjuboy Station. The deposit is not readily accessible. It is reached by a rough bush track which turns off east from the Hann Highway about 4 miles north of the Conjuboy Station. This track can only be traced for four miles over low stony basalt rises to the Mount Surprise Telephone Line. From this point the diatomite is reached after travelling one mile in a south-easterly direction over rough basalt. The deposit is overlain by older basalt of the McBride Basalt Province and it has a thickness of at least 50 feet. It is estimated that about 1,000,000 tons of diatomite are exposed in Wyandotte Creek.

The diatomite is chalky white in colour. It has a porosity of 74.36 per cent., a dry bulk density of 0.67 and grain density of 2.62. It is composed chiefly of cylinders of Melosira. Other diatom genera noted were few and included Stauroneis, Pinnularia, Navicula and Eunotia.

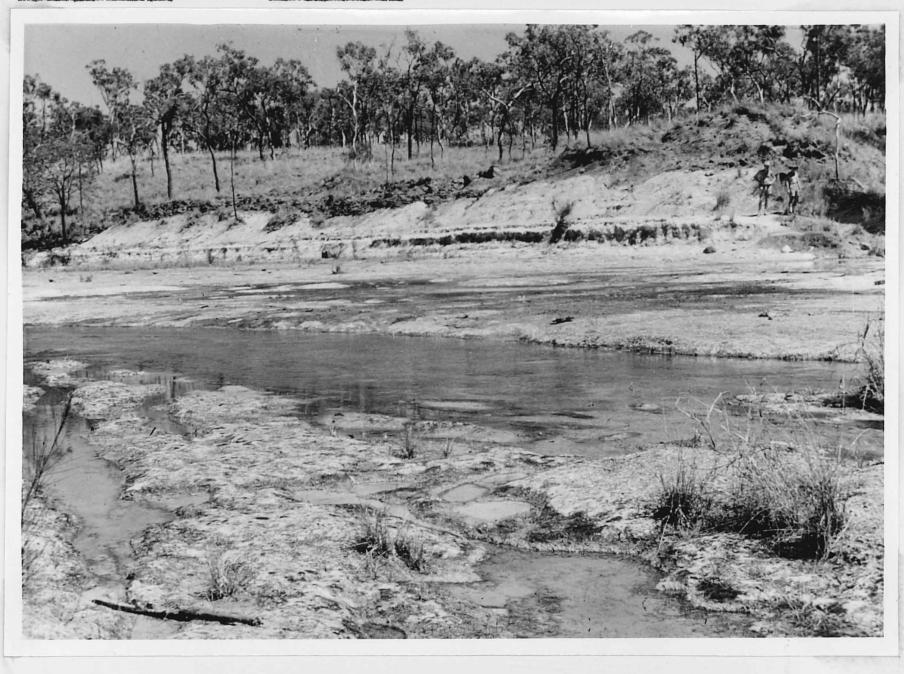

Figure 1. General view, Diatomite deposit at Cunjuboy.

Figure 2. Diatomite deposit at Cunjuboy, showing the overlying basalt.

5. Lake Walters

This deposit is situated on the western margin of Lake Walters, which is about 16 miles south-east of the Cashmere and Gleneagle deposits and about 50 miles south of Mt. Garnet. It is easily accessible by the Gunnawarra-Wairuna dirt road. The north-western edge of the lake is reached after travelling 50 miles along this road. The diatomite occurs in a small creek which drains into Leichhardt Creek, which is reached by an unmade bush track skirting the western edge of Lake Walters for about 3 miles.

The diatomite is impure, containing intercalations of coarse clayey sandstone. It is well stratified. The deposit is obviously part of the freshwater deposits formed by Lake Walters and is most probably Sub-Recent to Recent in age. The diatomite has a porosity of 68.93 per cent., a dry bulk density of 0.91 and grain density of 2.92.

Diatoms are not common in the rock. The assemblage is similar to that found in the Recent deposits at Lake Gnangarra, north of Perth, Western Australia. The diatoms include Cymbella ventricosa, Epithema turgida, Navicula maculata and numerous broken fragments of the needle-like genus Synedra.

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