

TR4-59-61

## TERTIARY DEPOSITS AT PARKERS FORD

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The property of A. & J. Barnes is situated on Muddy Creek several hundred yards upstream from Parkers Ford, Port Sorell. The bedrock in this area is dolerite, but it is only exposed on the hilltops, the flanks of the hills and the valley floors being covered by a thick blanket of Tertiary deposits. A section through these deposits is exposed in small pits and prospecting openings along a small creek which flows through the Barnes' property.

The small creek joins Muddy Creek in a small ti-tree swamp, and here a shaft has been sunk about 16 feet. The shaft bottoms on a green, deeply weathered basic igneous rock, which in view of outcrops about 150 yards down Muddy Creek, is Tertiary basalt. Overlying the basalt is a bright green clay, which was examined by the Cement and Ceramics Section of the C.S.I.R.O. and identified as a chlorite-type clay mineral. A petrological examination (sample registered No. 1415) shows it is a mixture of detritus from weathered basalt, consisting of fine shreds and particles of the green clay,

derived from decay of ferromagnesian minerals, with grains of feldspar and quartz present, mostly coated with fine opaque layers of clay minerals. A chemical analysis shows a good deal of siliceous matter is present, much iron, and only traces of copper and nickel. It has been suggested that the material contains garnierite, but in any case only a trace of nickel is present, and the deposit does not constitute a nickel prospect. With regard to its use as a cleaning aid, the C.S.I.R.O. reports that it is an absorbent powder like most clays, but the presence of feldspar and quartz could cause abrasion.

Overlying or intermingled with the green clay is a grey clay, identified by the C.S.I.R.O. as a bentonitic clay. Portions of this swell on immersion in water. Within the clays are fragments of white material, resembling zeolites, but after brief heating they become strongly susceptible to a magnet.

These friable clays are weathered basalt or tuff, and become brown and yellow on exposure to oxidation. The colour and composition of the clay may be due to weathering in the swamp water, an analysis of which shows (Sample No. 734, Government Analyst) it is slightly hard, with a pH of 7.7 (alkaline), and with a moderate amount of free ammonia due to decomposition of organic matter. The total thickness of this clay above the top of the shaft is about 20 feet.

Overlying this is a bed of blue clay about five feet thick. This contains tubules of pyrite, averaging a quarter of an inch diameter two inches long, infilling worm tubes or plant roots. Analysis (Sample 227, Mines Department, 21/3/55) shows it consists solely of pyrites. The clay is blue when fresh, but becomes brown or yellow on oxidation. Tested as a clay (reg. No. 1191, 5/12/58) it shows high contraction, poor colour and poor brightness.

On top of the blue clay is about 18 inches of brown lignitic clay with abundant plant remains including well preserved fossil plant stems. When dried the material grows flowers of sulphur. This has been tested as clay (sample reg. No. 1192) and shows high contraction, poor colour and brightness. The carbon content is not high, the total carbon and combined water being about 27%. This brown clay may be similar to the lignitic clays encountered in boreholes in the Wesley Vale district.

At about the same level as the blue clay, and about 100 yards north, a white clay has been located and identified (reg. No. 1190) as a highly siliceous kaolin.

Overlying the brown clay are several hundred feet of sand, with layers of clay and ferruginous sandstone. The latter was analysed on 21/3/55 (reg. No. 228) and shown to be limonite without economic minerals. The basal ten feet or so of the sand is coarse (granule size) with interstitial clay and lenses of fine sand. The sand dis-aggregates and washes easily, the washed product appearing very suitable for making concrete. A black sand from the bottom of the sand pit was examined on 24/2/55 (reg. No. 117) and shown to consist of 67% ilmenite, and a small amount of rutile.

This is the best section known in the Tertiary beds of this area. It consists of several hundred feet of sand, coarse at the base, and containing clay layers overlying about 18 inches of brown, lignitic clay, five feet of blue clay with pyrite nodules, overlying about 40 feet of weathered tuff or basalt forming a chloritic, bentonitic, friable

clay, with the base of the section basalt. The basalt outcrops sporadically through a wide area on the west side of Port Sorell, and at Squeaking Point contains fossilised tree trunks.

The coarse sand is the only material with economic value.