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THE KEILOR FOSSIL SKULL: GEOLOGICAL EVIDENCE OF ANTIQUITY.

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The following is a brief epitome of evidence concerning the age of the river terrace in which a human fossil skull was found near the junction of Dry Creek and the Maribyrnong River, a mile north of Keilor. The skull was unearthed beneath undisturbed strata at 18 ft. below the surface of the terrace, and skull and terrace are evidently contemporaneous.

These notes are based on field work carried out by R. A. Keble and Miss Hope Macpherson, but the inferences are my own. Mr. Keble is preparing a detailed paper on the subject, and he may interpret the evidence differently.

The area at the junction of Dry Creek and the Maribyrnong River was geologically mapped. In this locality there are fragments of three terraces which will be referred to as the Keilor, the Braybrook and the Maribyrnong Park Terraces. The surface of the Keilor Terrace, in which the skull was found, is on the 103 ft. contour and is 45 ft. above the adjacent river bed. The Braybrook and the Maribyrnong Terraces are respectively 36 ft. and 27 ft. above the river bed. The river is very shallow.

These terraces were traced downstream in the valley of the Maribyrnong River and their surface levels were determined at intervals with a dumpy level and between these points with an Abney level. The datum to which heights were referred is low water mark at Williamstown (L.W.M.), an official datum used in Victoria. The mean diurnal rise and fall of tide at Williamstown is 2 ft.

All the terraces are paired in some localities; in others erosion has reduced their area and in many places only fragments remain.

Keilor and Braybrook Terraces extend as far as Ascot Vale Gap, where the tidal portion of the river flows between two isolated basalt-topped hills about a mile apart. Maribyrnong Park Terrace extends about half a mile further and follows the old course of the river east of Quarry Hill, the eastern hill of Ascot Vale Gap.

Keilor Terrace between Dry Creek and Keilor is about a mile in length and a quarter of a mile wide, but its surface is disturbed by cultivation. Downstream, near the point where the electric transmission line crosses the river, it is about 150 yds. wide and it retains its natural surface. Its most southern portion is about 60 ft. above L.W.M.

Braybrook Terrace at Dry Creek is 7 ft. lower than Keilor Terrace, and at Chinaman's Ford, where the river becomes tidal,

the difference in level is 14 ft. The largest surviving fragment is about a mile long and a third of a mile wide and is situated at Braybrook near the western hill of Ascot Vale Gap. Its surface level is here 52 ft. above L.W.M.

Maribyrnong Park Terrace at Dry Creek is 18 ft. lower than Keilor Terrace and at Chinaman's Ford the difference is 35 ft. The largest remaining portion extends from a little above Ascot Vale Gap east and south of Quarry Hill and is about one mile by half a mile in area. Maribyrnong Park is situated on it. The surface level in this locality is 32 ft. above L.W.M.

Below Ascot Vale Gap, the river has formed an extensive alluvial estuarine flat, the surface of which is about 10 ft. above L.W.M. and the adjacent tidal portion of the river. Flemington Racecourse is situated on it, and it may be named the Flemington Terrace. It merges into the Yarra Delta, the surface of which is about 8 ft. above L.W.M.

The delta deposits are up to 50 ft. thick (Selwyn, 1854) and occupy a drowned valley (Hall, 1909). At Coode Canal, *Arca trapezium*, a species now rare in Port Phillip Bay, is very abundant at 23 ft. below the surface (Lucas, 1887) and remains of *Diprotodon* were found at 35 ft. in estuarine sand in the Moonee Ponds Creek valley a mile north of the Footscray railway (Pritchard, 1899). These organisms suggest some antiquity but do not prove the delta deposits to be Pleistocene in age.

Age of the Terraces

An outstanding feature of Pleistocene times is a series of eustatic changes in sea level. Relative to present sea level, the level fell during glacial phases and rose during interglacial phases. In Holocene times it fell 10-20 ft. owing to a slight fall in temperature some thousands of years ago (Daly, 1934).

Bearing these facts in mind, the following tentative correlations are made.

The surfaces of the Flemington Terrace and the Yarra Delta were slightly below sea level immediately before the Holocene eustatic fall.

The drowned valley occupied by Flemington Terrace and the Delta represents the eustatic fall in sea level during the most recent glacial phase, the Würm.

Keilor, Braybrook and Maribyrnong Park Terraces represent the eustatic rise of sea level during the Riss-Würm interglacial phase. Their heights above sea level correspond to the 40-50 ft. raised beaches of northern Tasmania which Edwards (1941) correlated with the Riss-Würm interglacial phase. Their differences in

elevation may represent eustatic fall in sea level caused by decreasing temperatures towards the end of the Riss-Würm interglacial phase.

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