

Between the base of Mount Goodenough and the Huskie river, and at a distance of about a mile from the river, remnants of an old beach occur. This appears as an abrupt rise of twenty feet above the floor of the delta plain, or forty-five feet above the level of the water, and probably marks a former shore line of the Arctic sea.

GEOLOGY OF THE PEEL RIVER.

The upper cañon of the Peel river is cut in a series of tilted black slates, often dipping up stream. The strata of which it is composed, are alternately thick and thin bedded containing concretionary nodules with crystals and veinlets of pyrite and some bituminous matter disseminated through the rocks. This formation extends for a distance of three-quarters of a mile below the mouth of the Wind river, where it is replaced and overlaid by Tertiary clays and sandstones. The contact is not so well shown on the Peel river as it is on the Wind, though the unconformity between the two is plainly evident. These slates out-crop again fifteen miles below in the lower cañon of the Peel river, so that they border the Tertiary rocks both to the east and to the west. A small outcrop of bituminous limestone, overlaid by the red clay and sandstone of the Tertiary, is exposed one mile below the cañon on the south bank of the river.

When cut through by the Peel river, the Tertiary basin is thirteen miles in width. The rocks of this basin consist of thick beds of soft sandstone, with some thin seams of lignite, overlaid by more sandstone containing pebbles, with clay and some very thick beds of lignite. The whole series has been gently folded into a number of anticlines and synclines. One lignite bed near the top of the series is thirty feet in thickness and fairly persistent, appearing in two exposures four miles apart with a shallow syncline between. This bed rises in an anticline, the top of which has been truncated by later erosion, and beyond, it dips again and disappears beneath the bed of the Bonnet Plume river. Where it appears in the anticline it has been ignited by some cause or other and is now burning. It has been burnt for some distance along the bank of the river, and even across to the east side of the Bonnet Plume river, and has so undermined the overlying glacial drift as to cause extensive landslides. The large seam of lignite contains a fair quality of brown coal, which when dry burns readily, leaving a great deal of ash. The upper layers are separated by thin seams of clay, but the lower part is very pure. The heat of the burning lignite has baked the layers of clay to a bright brick red, which softens and dissolves in the water. Some of it turns a pure white or pinkish colour and is very hard.

Underneath the thirty foot lignite seam, and separated from it by a thick bed of sandstone, is another seam eight feet in thick-