

A few miles further north, near Duck River, similar gravel ridges are found to obtain, though here, instead of being generally open and grassy, they are covered in part with a scattered growth of small Bankian pines. Looking southward from Duck River along a ridge, the height of which is given on the profile of the old location of the Canadian Pacific as 1,201 feet, a high knoll is seen to rise above and just to the westward of it. This knoll, when reached, was found to be the northern end of a gravel ridge running off to the southward, and rising sixty feet above the ridge immediately to the east of it. Its face is steep, the slope being apparently as great as that at which the gravel would stand. The point is bent around to the westward in the form of a knob or hook, the whole appearing as if it had projected out into the lake as a gravel spit or hook, as the land behind as well as in front of it is from fifty to sixty feet below its summit.

Beaches pine-covered.

End of beach.

This point was somewhat peculiar in being scattered over with a great number of large gneissoid boulders, lying on a surface of sand filled with rounded, waterworn pebbles of gneiss, limestone, ironstone, etc. As a rule, the ancient beaches are composed entirely of small rounded pebbles, in this particular differing very materially from the beaches of the lakes which now occupy the lower levels of the Winnipeg basin. On the existing lakes the shores are very thickly strewn with gneissoid boulders, which in winter have been, and are still being, frozen into the ice, and then shoved outwards by its expansion till they are placed up beyond its reach, or packed into a very regular wall. Many of the boulders on the above mentioned ancient gravel bar or spit have probably been placed there in a similar way, the bay to the westward having doubtless been frozen over during the winter, while the general absence of boulders on the long straight beaches would seem to indicate that the whole lake was never covered with ice.

Gneiss boulders

North of Duck River the higher ridges, which alone have been followed here, bend sharply round the north-east corner of the Duck Mountain into the valley of Swan River.

Abrupt change of direction.

The presence of these ridges-influences in a very marked degree the character of the country they traverse. Although they furnish magnificent natural highways they also act as dams in preventing the ready drainage of the country down its easy natural slope, except in a few places where these dams are broken through by streams such as the Duck and Fork rivers. There is very commonly a marsh or marshy lake just above or west of the ridge, or a little sluggish stream may flow northward or southward beside it. The country in the latter case is somewhat better drained and generally supports a close growth of small black spruce and tamarac. The lower side of the ridge is drier and sometimes supports a growth of poplar, but

Ridges serve as natural dams.