## INTERGLACIAL PERIODS IN CANADA.

beds, at least 190 feet, could not have been laid down under 1,000 years, and probably required many thousand years. The length of time after the Illinoian ice sheet set the basin free until the Don beds began to form in a lake not unlike Ontario at present probably equalled the time since the last ice sheet vanished from our region, variously estimated at from 7,000 to 35,000 years. The time required for the interglacial lake Ontario to rise to 150 feet above the present level, and then to sink to a point considerably more than 150feet below it is hard to estimate; but the rising and sinking of the outlet of the basin causing these changes of level were probably very deliberate operations. The time required to cut the interglacial river vallevs and soften down their slopes to what we see at the Dutch Church must have been greater than that since the last ice age. The total interglacial period therefore can hardly have been less than three times the life of Niagara, say from 20,000 to 100,000 years, with the probability strongly in favor of the larger number.

As to climate we may supose a somewhat gradual rise of temperature while the rich forest, reminding of Pennsylvania, slowly spread northwards till the Don valley was filled with oaks and elms and basswoods and hickories, as well as osage oranges and pawpaws. There must have been warm and fairly dry summers, like those of the States south of the Great Lakes. How long the warmer climate lasted is unknown, but there was a perceptible cooling while the Scarboro delta was forming, giving a climate like that of northern Ontario. At last came the advancing chill of the next ice age, and finally the basin of Ontario was filled by the glacier, which climbed over its southern bank and advanced far to the south. The climatic cycle was complete. The length of time the ice remained and the complexity of its advances and retreats, as shown in the succession of boulder clays and stratified beds of the Scarboro cliffs, need not be discussed here. The last interglacial period disclosed in the cliff seems to have been connected with a recession of at least 100 miles, which must have demanded hundreds of years of retreat and advance.

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