

lations of level in the Moose river basin like those in the great lakes region during the interglacial period. The shell beds are now at least 300 feet above sea level.

The nearest point of the lignites is about 400 miles north of Toronto; and they are known to extend eastward to within 300 miles of the center of the Labrador ice sheet. Deposits of stratified materials 70 feet thick including sometimes ten feet of peaty or lignitic beds must have required a long time to form; but thus far we have little information as to the events which took place during the interglacial time except the shifting of level proved by the marine shells. Before the lignite bed was formed the region now 70 miles west of James bay, was under a shallow sea, then the land rose sufficiently to allow peat bogs to grow. The level was rising therefore during the Moose basin interglacial formation as it was during the earlier part of the Toronto Formation, the changes in the two regions probably being synchronous, just as both regions are rising at the present day.

If the interglacial period of the Toronto Formation reached James bay and lasted long enough to allow important changes of level in that region and the deposit in some places of thick sedimentary beds accompanied by lignite, the assumption of a lingering ice sheet a little way to the northeast becomes still more unlikely, and may be dismissed altogether. The total retreat of the ice from the west end of lake Erie to the Hudson bay slope, in case all the interglacial deposits described in Ontario are of the same age, was not less than 600 miles.

#### CONCLUSIONS.

From the account just given it will be seen that extensive interglacial beds of at least three ages occur in Canada, the oldest in British Columbia and Alberta; two later ones, probably between the Illinoian and Iowan, and the Iowan and Wisconsin ice ages, in southern and northern Ontario. Extensive interglacial periods have not yet been disclosed in eastern Canada, though an interesting lignite bed in Cape Breton island is probably interglacial. The most thoroughly studied interglacial