

The lower part of this formation, however, in Nebraska, and on the Missouri river, seems to show an attempt at the production of beds of fuel. Beds of "impure lignite" of small thickness and of "carbonaceous clays" are met with there, especially in Hayden's lowest, or *Dakota Group*. Fossil leaves and stems are also found associated with these beds, and one lignite occurring in beds believed to be transitional between the *Dakota Group* and the *Fort Benton Group*, next above it, is even stated to have been worked to a small extent, and to have been "used by blacksmiths with some success."

There is therefore a possibility that the eastern edge of the Cretaceous in some regions may yet give a supply of fuel; and in Manitoba, the lower beds, and those in which the deposits above mentioned occur further south, probably lie east of the escarpment of Pembina mountain, and further east than the Cretaceous formation is made to extend in Hind's Geological Map, which has hitherto been the authority for the region. These lower beds, if they still exist beneath the alluvium of the Red River valley, are nowhere exposed, and cannot be explored except by boring operations. The possibility of the existence of fuel in the representative of the *Dakota Group* in Manitoba is much increased if the coal beds of the Upper Saskatchewan, examined last summer by Mr. Selwyn, are, as he supposes, of Lower Cretaceous age also, for in this case there would appear to be a tendency in the Lower Cretaceous formation east of the Rocky Mountains to become coal-bearing northwards.

Dr. Hector, many years ago, referred lignite beds observed by him in this region, to the same period. In view of these facts the position and character of the Cretaceous rocks occurring in Manitoba and the neighbouring country, becomes an interesting and important subject of inquiry.

Fortunately, however, the advance of settlement and civilization on the Western plains need not wait for the development of these possibilities, or for the tedious process of the planting and growth of trees suitable for fuel. A great deposit of fossil fuel, of still later age than the Cretaceous, has of late years been prominently brought to notice in the Western States, and the northern extension of this lignite formation of Tertiary age is largely developed in the Canadian Northwest. The existence of these fuels on the eastern side of the Rocky Mountains has long been known in a general way. Sir Alexander Mackenzie, the explorer