

of the river of the same name, in his account of his voyages of discovery prosecuted during the years 1789 to 1793, says that along the eastern side of the mountains there exists "a narrow strip of very marshy, boggy, and uneven ground, the outer edge of which produces coal and bitumen; these I saw on the banks of the Mackenzie River, as far north as Lat. 66° . I also discovered them in my second journey at the commencement of the Rocky Mountains, in 56° N. Lat.; 120° W. Long.; and the same was observed by Mr. Fiddler, one of the servants of the H. B. Company, at the source of the South branch of the Saskatchewan, in about Lat. 52° ; Long. $112^{\circ} 30'$." He also describes near the Peace River, "several chasms in the earth which emitted heat and smoke which diffused a strong sulphurous stench,"—probably a case of the spontaneous combustion of a lignite bed comparable with those observed in other localities. Sir John Franklin in his second journey to the Polar Sea, noticed what he calls beds of lignite or tertiary pitch-coal at Garry's Island, off the mouth of the Mackenzie River, and also an extensive deposit near the Babbage River, on the coast of the Arctic Sea, opposite the termination of the Richardson chain of the Rocky Mountains. Sir J. Richardson, who accompanied Franklin in the expedition just referred to, was one of those engaged in the search for him in subsequent years, and mentions in his account of a boat voyage on the Mackenzie and in the vicinity of Great Bear River, a species of coal which when recently extracted is massive but shows woody structure, the beds appearing to be made up of pretty large trunks, the fibre of which is contorted. He says that when this coal is exposed a short time to air it splits into rhomboidal fragments, which again separate into thin layers, and much of it eventually falls into a coarse powder. When exposed to moist air, it takes fire and burns with a fetid smell, but with little smoke or flame. Some varieties resemble charcoal, and others are conchoidal like cannel coal. Amber is also noticed to occur, and the beds of coal are often destroyed as exposed by their spontaneous inflammability. This description and the account given of the associated clays and shales might almost as well apply to some localities in the southern part of British America or to the lignite tertiary formation of the Missouri River.

In the United States the first observers of this formation appear to have been Lewis and Clarke, who, in the narrative of