

4. LARAMIE EPOCH. —

2. *Upper Laramie* or *Denver group*: fresh-water beds of sandstone, conglomerates; and partly of eruptive material (andesytic, etc.); with or without coal-beds.

1. *Lower Laramie*: fresh-water beds of coarse, friable sandstones, often cross-bedded, with clay-beds; occasional fossiliferous brackish-water beds; with beds of bituminous coal, in some places "15 to 20 coal-beds in 1000 feet;" thickness 1000–5000 feet.

3. MONTANA EPOCH. —

2. *Fox Hills group*: sandstones and shales with many marine fossils; maximum thickness, 1000 feet.

1. *Fort Pierre group*: plastic clays, sand-beds often with limestone concretions; marine fossils; maximum thickness 7700 feet.

2. COLORADO EPOCH. —

2. *Niobrara group*: calcareous marls, chalk, shales, sandstones, with limestones; marine fossils; maximum thickness 2000 feet.

1. *Fort Benton group* (near Fort Benton): laminated clays, limestone, with marine fossils; maximum thickness, 1000 feet.

Probably includes the Coalville coal-bed, with 1500 feet of the lower part of the Coalville group.

1. DAKOTA EPOCH. —

Dakota group: sandstones, clays, some lignitic layers, with conglomerates sometimes at base; fossil leaves abundant, and other evidences of fresh-water origin, and little of brackish or marine waters. Probably includes the Bear River coal-beds.

The grouping of the subdivisions adopted above (which accords with the results of Meek's paleontological work) and the terms used are those of G. H. Eldridge. The name, *Lignitic*, used by Meek and Hayden for the Upper division (which they made Lower Tertiary), was changed by King in 1878 to *Laramie*. Subdivisions of the Laramie into Lower and Upper is based chiefly on the work of Cross (1888 and later).

The Cretaceous was the coal period of western America. As Paleozoic time, the era of extended continental submergence, closed with the slow emergence of the *eastern* half of the continent, so Mesozoic time, the era of extensive submergence of the western half of the continent, closed with the slow emergence of this *western* half. And the later coal-beds, like the earlier, mark long periods of small emergence and persistent marshes in the alternating conditions of level. The Upper Cretaceous affords coal at different levels: at Bear River, western Wyoming, and at Mill Creek, British America, in the Dakota group; at Coalville, Utah, in the Colorado group (Stanton); and at Dunvegan, Peace River region ($117\frac{1}{2}^{\circ}$ W., 56° N.) (Dawson); in the Belly River region, north of Montana, on Vancouver Island, at Nanaimo and