

south, stretching round the end of the long Palæozoic ridge from Georgia through Alabama and Tennessee to the Ohio; and reappearing from under the Tertiary formations on the west side of the Mississippi over a large space in Texas and the southwest. Its greatest development is reached in the Western States and Territories of the Rocky Mountain region, Wyoming, Utah, and Colorado, whence it ranges northward into British America, covering thousands of square miles of the prairie country between Manitoba and the Rocky Mountains, and extending westward even as far as Queen Charlotte Islands, where it is well developed. It has a prodigious northward extension, for it has been detected in Arctic America near the mouth of the Mac-kenzie River, and in northern Greenland.

The Cretaceous clays and greensand marls of New Jersey have yielded a tolerably ample molluscan fauna, comprising species of *Terebratula*, *Terebratella*, *Terebratulina*, *Ostrea*, *Gryphæa*, *Exogyra*, *Anomia*, *Pecten*, *Amusium*, *Spondylus*, *Plicatula*, *Mytilus*, *Modiola*, *Inoceramus*, *Trigonia*, *Unio*, *Cardita*, *Crassatella*, *Cardium*, and many other genera.<sup>180</sup> Toward the south over the site of Texas, the Cretaceous sea appears to have been deeper and clearer than elsewhere in the American region, for its presence is recorded chiefly by limestones, among which occur abundant hippurites (*Caprotina*, *Caprina*) and foraminifera (*Orbitolites*).<sup>181</sup> Northward the strata are chiefly sandy, and present alternations of marine and terrestrial conditions, pointing to oscillations which especially affected the Rocky Mountain and western regions. The greatest development of the system is to be seen in the north of Utah and in Wyoming, where it presents a continuous series of deposits unbroken by any unconformability for a thickness of from 11,000 to 13,000 feet. The following table shows the character of these deposits in descending order:

Laramine (Lignitic) group.—Buff and gray sandstones, with bands of dark clays and numerous coal-seams, containing abundant terrestrial vegetation of Tertiary types, land and fresh-water mollusks (*Unio*, *Limnæa*, *Planorbis*, *Helix*, *Pupa*, etc.), and remains of fishes (*Beryx*, *Lepidotus*), turtles (*Trionyx*, *Emys*,

---

<sup>180</sup> R. P. Whitfield, Monogr. U. S. Geol. Surv. vol. ix. 1885.

<sup>181</sup> For fossils see "List of Invertebrate Fossils from the Cretaceous Formations of Texas," R. T. Hill, Austin, Texas, 1889.