

At the height of the Ice Age there were large glaciers in the Rocky Mountains, of which the small glaciers found some years ago among the Wind River Mountains in Wyoming are some of the last lingering relics.<sup>52</sup> But though the ice filled up the valleys to a depth of 1600 feet or more, and transported vast quantities of detritus which now remains in prominent moraines and scattered boulders, it never advanced into the plateau of the prairie country to the east. Whether or not the glaciers at the north end of the Rocky Mountains merged into and were turned aside by the southward-moving ice-sheet has still to be ascertained. Even far to the west, the Sierra Nevada nourished an important group of glaciers.<sup>53</sup>

The loose deposits or drifts overlying the lower unstratified boulder-clay belong to the period of the melting of the great ice-sheets, when large bodies of water, discharged across the land, levelled down the heaps of detritus that had formed below or in the under part of the ice. This remodelled drift has been called the "Champlain group."<sup>54</sup> Lower portions are sometimes unstratified or very rudely stratified, while the upper parts are more or less perfectly stratified. Toward the eastern coasts, and along the valleys penetrating from the sea into the land, these stratified beds are of marine origin, and prove that during the Champlain period there was a depression of the eastern part of Canada and the United States beneath the sea, increasing in amount northward from a few feet in the south of New England to more than 500 feet in Labrador. The marine accumulations are well developed in eastern Canada, where the drift-deposits show the following subdivisions:

Post-glacial accumulations.

Saxicava sand and gravel, often with transported boulders (Upper Boulder deposits, St. Maurice and Sorel Sands). Shallow-water boreal fauna, Saxicava rugosa, bones of whales, etc.

Upper Leda clay (and probably "Sangeen clay" of inland); clay and sandy clay with numerous marine shells, which are the same as those now living in

<sup>52</sup> F. V. Hayden's Twelfth Report, U. S. Geol. and Geog. Survey of the Territories.

<sup>53</sup> J. Leconte, Amer. Journ. Sci. (3) ix. 1875, p. 126. See Amer. Naturalist, 1880, for a paper on the ancient glaciers of the Rocky Mountains.

<sup>54</sup> See J. D. Dana, Amer. Journ. Sci. x. 1875, p. 168, xxvi. 1883, xxvii. 1884; Winchell, op. cit. xi. 1876, p. 225.