

country. All the mountain peaks east of the Rocky Mountains are covered by its relics, except several hundred feet of the conical summit of Mount Washington, in New Hampshire. This summit is covered with angular fragments of rock which have never been removed, except by frost.

In some parts of Europe the drift agency did not extend to the tops of high mountains, nor was that upper limit horizontal. In the Alps this upper limit varies from 3,000 to 8,000 feet, and its inclination is never quite three degrees.

But the lowest level of drift agency is unknown. The striæ left by it are seen descending beneath the ocean, where it is impossible to trace them any further. The detritus from icebergs may cover the bottom of the present northern ocean, several thousand feet below the surface.

FORMER EXTENT OF GLACIERS.

The researches of Venetz, Charpentier, Agassiz, Guyot, Forbes and others, have brought to light marks of ancient glaciers in the Alps at a much lower level than those now existing, and in advance of them. The evidence consists of moraines, insulated blocks, and especially of smoothed, striated, and rounded rocks in place, produced by a force crowding down the valleys that descend from the summits of the Alps.

The theory of Charpentier, Agassiz and others, is, that the great valley of Switzerland was once filled with ice, and the blocks were carried by its motion from the Alps to the Jura. Fig. 105 will show how small must have been the declivity, much less than is now sufficient to cause a glacier to move,—none of them making much progress where the slope is not over 3° . Hence, Sir Charles Lyell and Mr. Darwin suppose that when the great valley of Switzerland was beneath the ocean, and the Alps were raised above it, and the Jura formed an island,

Fig. 105.

Jura

Lake Lemman

Valley of Switzerland

Mount
Blanc