

height of the ice was not less than 6500 feet. Mount Mansfield, the highest summit of the Green Mountains, Vt., 4389 feet high, was wholly under ice, as proved by transported boulders. Mount Katahdin, in Maine, has boulders to a height of 4700 feet. The Catskills have marks of glaciation to a height of 3200 feet (Smock, 1873), and Elk Mountain, in northeastern Pennsylvania, to a height of 2700 feet (Branner). It is probable that Mount Katahdin and some peaks in the Catskills were "Nunataks."

Evidence from the pitch required for movement. — From the probable pitch of the upper surface of the ice-sheet required for movement, estimates may be obtained of the height of the ice in other regions.

In Greenland, flow takes place when the slope of the surface of the ice is but $0^{\circ} 26'$, or 40 feet to the mile = 1:132; and Helland obtained for the maximum rate of flow, where the slope of surface was less than half a degree, 20 meters per day. If the rate of slope between the summit over the White Mountains and the southeast side of Martha's Vineyard (which was the course of movement) was only 30 feet per mile, then the height of the ice-surface over these mountains was about 6500 feet; and it would have been a third larger, if 40 feet per mile. A like calculation for the Adirondacks gives a height of about 7000 feet. The height of the ice on the Catskill Mountains, mentioned above, 3200 feet, corresponds with the latter estimate; for the distance of these mountains from the southern limit of the ice, near Perth Amboy, N.J., is nearly one half as great as that of the Adirondack summits. Moreover, drifted stones of hypersthene rock from the Adirondacks occur upon them, as stated by Mather.

The ice of the Adirondack region flowed south-southeastward, over eastern Connecticut, into what might be called the realm of the White Mountains, and it did this notwithstanding the obstructing Green Mountain range on the route; and this is evidence that the Adirondack part of the ice-plateau was the higher. By the same kind of evidence, the height of the watershed between the St. Lawrence and Hudson Bay, toward which the scratches over northern and northwestern New England point, is found to be 13,000 feet. But this part of the Laurentide ice-plateau may have been nearly level for a long distance south of its summit, so that the height may not have exceeded 10,000 feet. Again, Mount Katahdin is 60 miles from the summit of the mountain range that stands between Maine and the St. Lawrence River; and hence the height of the ice over this range was about 6500 feet, if 4700 feet at Katahdin.

Across Wisconsin the distance from the south shore of Lake Superior to the southern ice-limit is not less than 500 miles, and a slope of but 20 feet a mile would give a height at the lake of 10,000 feet. Part of the 10,000 feet was made by the greater height of the land in the Lake Superior region. The difference in elevation now is about 1000 feet. It was probably greater in the Glacial period, through the increased elevation of the Lake Superior region. As reported by C. A. White, a mass of native copper, of 30 pounds weight, was taken from the drift of southern Iowa, Lucas County,