

believe that in the Glacial age the whole continent of North America, as far south as the latitude of  $40^{\circ}$ , was covered with a continuous glacier, having a wide front, and thousands of feet thick, we may well ask, first, what evidence there is that Greenland or even the Antarctic continent is at present in such a condition ; and, secondly, whether there exists a possibility that the interior of a great continent could ever receive so large an amount of precipitation as that required. So far as present knowledge exists, it is certain that the meteorologist and the physicist must answer both questions in the negative. In short, perpetual snow and glaciers must be local, and cannot be continental, because of the vast amount of evaporation and condensation required. These can only be possible where comparatively warm seas supply moisture to cold and elevated land, and this supply cannot, in the nature of things, penetrate far inland. The actual condition of interior Asia and interior America in the higher northern latitudes affords positive proof of this. In a state of partial submergence of our northern continents, we can readily imagine glaciation by the combined action of local glaciers and great ice floes ; but in whatever way the phenomena of the boulder clay and of the so-called "terminal moraines" are to be accounted for, the theory of a continuous continental glacier must be given up.

The great interior plain of western Canada, between the Laurentian axis on the east and the Rocky Mountains on the west, is seven hundred miles in breadth, and is covered with glacial drift, presenting one of the greatest examples of this deposit in the world. Proceeding eastward from the base of the Rocky Mountains, the surface, at first more than 4,000 feet above the sea level, descends by successive steps to 2,500 feet, and is based on Cretaceous and Laramie rocks, covered with boulder clay and sand, in some places from one hundred to two hundred feet in depth, and filling up pre-existing hollows, though itself sometimes piled into ridges. Near the Rocky