

on the unglaciated area. This resulted partly from the southward growth of the glacier, and partly from its southward motion. In its motion, it prostrated the standing forest, and the ruins were mingled with the rock-ruin which the ice-mass stirred and transported. The march of the glacier's southern border continued until it reached New York, Louisville, St. Louis, and Topeka. It passed over Long Island Sound and reached the ocean shore. Westward, over the Great Plains, its footmarks are not traced. Perhaps the precipitation there, as now, was insufficient to enable the snow to outlast the summer heat. Further west, the glaciation seems to have been restricted to mountain ranges. But glaciation was far from unknown, even to the Pacific slope. Northward, the extent of the glaciation increased, as far as Alaska.

Now the geologic winter was marked by an "open" spell. It probably lasted for centuries. The ice dissolved, and the border of the glacier retreated perhaps, to the latitude of Marquette. Over the uncovered area, it was a new spring-time. Vegetation sprang into existence, and a fresh soil accumulated. Then came a recurrence of cold. The old glacier resumed its southward movement. In saying it was a "continental" glacier, it is not meant that an ice-field continent-wide moved with a consentaneous movement. The ice-sheet felt the influence of the underlying topography. Its motion tended everywhere to the lower level and warmer situation. Seldom was that direction precisely south. In the valley of the Connecticut, the movement was south. In the valley of the Mohawk it was eastward. Through the valley now occupied by Lakes Ontario and Erie, it was south-west as far as Indianapolis, and south as far as Columbus. Another glacier stream flowed through the valley destined to be the basins of Lake Huron and Saginaw Bay. Its southern border joined the Lake Erie glacier; and the long broken chain of sand and boulder hills passing through Ann Arbor, shows where the joint rubbish of the two glaciers was left. Another glacier stream passed along the valley of Lake Michigan; another down the valley of Green Bay and its continuation to