

absence of testacea in the deep sea, where the undisturbed accumulation of boulders melted out of coast-ice and icebergs may take place. In the *Ægean* and other parts of the Mediterranean, the zero of animal life, according to Prof. E. Forbes, is approached at a depth of about 300 fathoms. In tropical seas it would descend farther down, just as vegetation ascends higher on the mountains of hot countries. Near the pole, on the other hand, the same zero would be reached much sooner both on the hills and in the sea. If the ocean was filled with floating bergs, and a low temperature prevailed in the northern hemisphere during the glacial period, even the shallow part of the sea might have been uninhabitable, or very thinly peopled with living beings. It may also be remarked that the melting of ice in some fiords in Norway freshens the water so as to destroy marine life, and famines have been caused in Iceland by the stranding of icebergs drifted from the Greenland coast, which have required several years to melt, and have not only injured the hay harvest by cooling the atmosphere, but have driven away the fish from the shore by chilling and freshening the sea.

If the cold of the glacial epoch came on slowly, if it was long before it reached its greatest intensity, and again if it abated gradually, we may expect to find the earliest and latest formed drift less barren of organic remains than that deposited during the coldest period. We may also expect that along the southern limits of the drift during the whole glacial epoch, there would be an intimate association of transported matter of northern origin with fossil-bearing sediment, whether marine or freshwater, belonging to more southern seas, rivers, and continents.

That in the United States, the *Mastodon giganteus* was very abundant after the drift period is evident from the fact that entire skeletons of this animal are met with in bogs and lacustrine deposits occupying hollows in the drift. They sometimes occur in the bottom even of small ponds recently drained by the agriculturist for the sake of the shell marl. I examined one of these spots at Geneseo in the state of New York, from which the bones, skull, and tusk of a Mastodon had been procured in the marl below a layer of black peaty earth, and ascertained that all the associated freshwater and land shells were of a species now common in the same district. They consisted of several species of *Lymnea*, of *Planorbis bicarinatus*, *Physa heterostropha*, &c.

In 1845 no less than six skeletons of the same species of Mastodon were found in Warren county, New Jersey, 6 feet below the surface, by a farmer who was digging out the rich mud from a small pond which he had drained. Five of these skeletons were lying together, and a large part of the bones crumbled to pieces as soon as they were exposed to the air. But nearly the whole of the other skeleton, which lay about 10 feet apart from the rest, was preserved entire, and proved the correctness of Cuvier's conjecture respecting this extinct animal, namely, that it had twenty ribs like the living elephant. From the clay in the interior within the ribs, just where the contents of the stomach might naturally have been looked for, seven bushels of vegetable matter were extracted.