

Still another lesson may be learned here. It appears that our present climate is separated from that of the glacial age by one somewhat warmer, which was coincident with an elevated condition of the land. Applied to Europe, as it might easily be, this fact shows the futility of attempting to establish a later glacial period between the Post-pliocene and the present, in the manner attempted, as I must think on the slenderest possible grounds, by Prof. Geikie in his late work "The Great Ice Age."

The grandeur of those physical changes which have occurred since the present marine animals came into being, is well illustrated by some other facts to which our attention has been directed. Recent excavations in the Montreal mountain have enabled Mr. Kennedy to observe deposits of Post-pliocene marine shells at a still higher level than that of the old beach above Cote des Neiges, which was so long ago described by Sir Wm. Logan and Sir Charles Lyell. The new positions are stated to be 534 feet above the sea. Let us place this fact along with that recorded by Prof. Bell in the Report of the Geological Survey for 1870-71, of the occurrence of these same shells on the high lands north of Lake Superior, at a height which, taking the average of his measurements, is 547 feet above the sea level. Let us further note the fact, that in the hills behind Murray Bay and at Les Eboulements I have recorded the occurrence of these remains at the height of at least 600 feet. We have then before us the evidence of the submergence of a portion of the North American continent at least 1000 miles in length and 400 miles in breadth to a depth of more than a hundred fathoms, and its re-elevation, without any appreciable change in molluscan life.

Another important and impressive fact in this connection has recently been brought out by Dr. Hunt in a paper on the Geology of the South-eastern Appalachians.* He there shows that in these mountains, which lie to the south of the region of the great Post-pliocene submergence, the gneissose rocks have been decomposed in place to enormous depths, without any of the material being removed—a most striking contrast to the generally bare and scraped condition of similar rocks in the north. I was struck very much with this fact several years ago, when, under the guidance of my friend Dr. Tyson, I had an opportu-

* Proceedings American Association, 1873.