

remaining on the surface continue angular. When the glacier retreats in the summer, the medial moraine, composed of angular fragments, is spread out over the surface of the lateral and terminal moraines, composed of rounded fragments; and it is by these characters that we have proved the existence of moraines in Scotland, Ireland, and the north of England. There are moraines in the Alps 200 feet wide, composed of boulders several feet in diameter.

Mr. LYELL spoke of the size of moraines, and the way in which they might, under certain circumstances, attain any magnitude. A glacier has been known to retire half a mile in a single summer, [a number of] moraines have been in succession left, and in severe winters all these might be driven successively into one by the downward motion of a glacier.

Mr. GREENOUGH spoke of the arguments derivable from analogy, &c., and objected to the mode in which the Geological Society was in the habit of accounting for phenomena. Instances of accumulations of travelled rocks [occur in] North Germany; from a careful comparison some of these must have crossed the Baltic. In the valleys of Switzerland some deposits must have crossed Lake Geneva, and ascended very high mountains. Does Professor Agassiz suppose that the Lake of Geneva was occupied by a glacier 3,000 feet thick? (AGASSIZ.—‘At least!’) [Mr. Greenough then referred to the] changes of climate necessary to account for these phenomena [and to the] objection from the tropical nature of remains in recent deposits. [He considered it to be the] climax of absurdity in geological opinions. In one period, the Crag, we have three opposite conditions blended: corals, tropical; peat, temperate; shells, pronounced by Dr. Beck, arctic!

Mr. LYELL.—Mr. Greenough confuses four distinct epochs under the name of Crag. The first comparatively tropical (Coralline Crag), the others temperate (Red and Norwich Crag), and the period of the peat bogs (Lacustrine deposits) more recent than any.

Mr. JOHN EDWARD GRAY.—The corals of the Crag appear to me as arctic as the shells. I know no reason for making them tropical.

Mr. GREENOUGH [remarked] on the size of the blocks on mountains, the agency of floating ice, and on mountains as the physical boundaries of different kinds of diluvium.

Dr. MITCHELL inquired if Dr. Buckland confined the glaciers to the Highlands or whether he made them descend to the Lowlands.

Dr. BUCKLAND expressed himself ready to answer any question on the subject under discussion, or any involved in his paper, but considered the present question irrelevant.

Dr. MITCHELL considered his question relevant to the subject.

Dr. BUCKLAND rose to reply, but Mr. WHEWELL rose. (Cheers, and ‘Mr. Whewell!’)

Mr. WHEWELL.—At this late hour it is impossible to go into the question of the physical changes necessary to allow of the existence of