

although the chief polishing and furrowing of the rocks and transportation of erratics in Europe and North America may have taken place contemporaneously, according to the ordinary language of geology, or when the same testacea and the same post-pliocene assemblage of mammalia flourished, yet the extreme development of cold on the opposite sides of the ocean may not have been strictly simultaneous, but, on the contrary, the one may have preceded or followed the other by a thousand or more than a thousand centuries.

It is probable that the greatest refrigeration of Norway, Sweden, Scotland, Wales, the Vosges, and the Alps coincided very nearly in time; but when the Scandinavian and Scotch mountains were encrusted with a general covering of ice, similar to that now enveloping Greenland, this last country may not have been in nearly so glacial a condition as now, just as we find that the old icy crust and great glaciers, which have left their mark on the mountains of Norway and Sweden, have now disappeared, precisely at a time when the accumulation of ice in Greenland is so excessive. In other words, we see that in the present state of the northern hemisphere, at the distance of about fifteen hundred miles, two meridional zones, enjoying very different conditions of temperature, may co-exist, and we are, therefore, at liberty to imagine some former alternations of colder and milder climates on the opposite sides of the ocean throughout the post-pliocene era of a compensating kind, the cold on the one side balancing the milder temperature on the other. By assuming such a succession of events we can more easily explain why there has not been a greater extermination of species, both terrestrial and aquatic, in polar and temperate regions, during the glacial epoch, and why so many species are common to pre-glacial and post-glacial times.

The numerous plants which are common to the temperate zones N. and S. of the equator have been referred by Mr.