

a constant to our present climates, leaving the differences to remain, as at present, to be accounted for by latitude and distribution of land and water. The astronomical theory of Herschel, also, which would account for former changes of climate by changes in the radiating power of the sun, would only increase the temperature at each latitude, leaving the differences as at present.

The only speculation with which I am acquainted, which is capable of solving this *opprobrium geologicorum*, is the hypothesis of a change in the axis of rotation of the earth, the admission of which, as a geological possibility, is mathematically demonstrable, and which has recently had some singular evidence in its favor advanced by geologists. In 1851, I brought forward, at the Geological Society of Dublin, a case of angular fragments of granite occurring in the carboniferous limestone of the County Dublin; and explained the phenomena by the supposition of the transporting power of ice. In 1855, Professor Ramsay laid before the Geological Society of London a full and detailed theory of glaciers and ice as agents concerned in the formation of a remarkable breccia, of Permian age, occurring in the central counties of England; and still more recently the same agent has been employed by the geological surveyors of India to account for the transport of materials at geological periods long antecedent to those in which ice transport is commonly supposed to have commenced. The motion of the earth's axis would reconcile all the facts known, and it must be regarded as a geological desideratum to determine its amount and direction, and to assign the cause of such a movement. The solution of this problem I regard as quite possible.