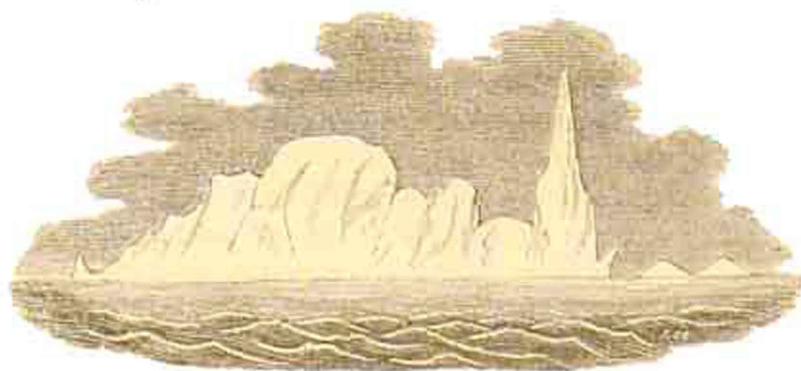Fig. 2.



Iceberg seen off the Cape of Good Hope, April, 1829.
Lat. 39° 13′ S.   Long. 48° 46′ E.

since it is ascertained, by experiments on the buoyancy of ice floating in sea water, that for every cubic foot seen above, there must at least be eight cubic feet below water.*   If ice islands from the north polar regions floated as far, they might reach Cape St. Vincent, and there, being drawn by the current that always sets in from the Atlantic through the Straits of Gibraltar, be drifted into the Mediterranean, so that the serene sky of that delightful region might soon be deformed by clouds and mists.

Before the amount of difference between the temperature of the two hemispheres was ascertained, it was referred by many astronomers to the precession of the equinoxes, or the acceleration of the earth's motion in its perihelium ; in consequence of which the spring and summer of the southern hemisphere are now shorter, by nearly eight days, than those seasons north of the equator.  But Sir J. Herschel reminds us that the excess of eight days in the duration of the sun's presence in the northern hemisphere is not productive of an excess of annual light and heat; since, according to the laws of elliptic motion, it is demonstrable that whatever be the ellipticity of the earth's orbit, the two hemispheres must receive *equal absolute quantities* of light and heat per annum, the proximity of the sun in perigee exactly compensating the effect of its swifter motion.†  Humboldt, however, observes, that there must be a greater loss of heat by radiation in the southern hemisphere during a winter longer by eight days than that on the other side of the equator.‡

Perhaps no very sensible effect may be produced by this source of disturbance ; yet the geologist should bear in mind that to a certain extent it operates alternately on each of the two hemispheres for a period of upwards of 10,000 years, dividing unequally the times during which the annual supply of solar light and heat is received.

* Scoresby's Arctic Regions, vol. i. p. 234.

† This follows, observes Herschel, from a very simple theorem, which may be thus stated :—" The amount of heat received by the earth from the sun, while describing any part of its orbit, is proportional to the angle described round the sun's centre."  So that if the orbit be divided into two portions by a line drawn *in any direction* through the sun's centre, the heat received in describing the two unequal segments of the ellipse so produced will be equal.  Geol. Trans. vol. iii. part ii. p. 298. ; second series.

‡ On Isothermal Lines.