appears unreasonable to attach much weight to this source of variation in climate.* The solar heat annually poured upon the earth is stated by Pouillet to be sufficient to melt a coat of ice 14 metres thick, encrusting the whole globe of the earth.

2. The heat of the planetary spaces is a subject on which, Mr. Whewell justly observes, the scientific world has hardly yet had time to form a sage and stable opinion. Fourier has asserted the existence of a definite temperature in these spaces, and ascribes it to the radiation of the fixed stars in every part of the universe. He assumed this temperature at about 50° centigrade below the freezing point, and Swanberg has been led, by a wholly different line of reasoning, to nearly the same result, as to the degree of temperature of the void spaces of our system.

This view of the state of the ethereal spaces is important in the application of the mathematical theory of heat to the present and former conditions of the earth. But M. Poisson, while fully admitting the existence of considerable heat below the surface of the earth, and the comparative cold of the spaces which now surround our globe, assigns the following reason for the high temperature below the surface. The cosmical regions in which the solar system moves have a proper temperature of their own, and this temperature may be different in different parts of the universe. The earth, in whatever part of these spaces it be placed, must be some time in acquiring the temperature of that region, and this temperature will be propagated gradually from the surface to the interior parts. Hence, if the solar system moves out of a hotter into a colder region of space, the part of the earth below the surface will exhibit traces of that higher temperature, which it had before acquired. Thus, without supposing great heat in the whole mass of the interior parts of the earth, the phenomenon of

* See Geol. Trans., 2nd series, vol. iii.; and Geol. Proceedings, vol. i. p. 245.