

of things is reached\*: for both theory and observation agree in showing that internal heat is almost insensible among the other elements of climate. During the last 2000 years it is calculated that the cooling of the globe has not lowered its surface temperature  $\frac{1}{300}$ th of a centigrade degree; for had this been the case some change in the length of the day would have become perceptible since the era of Hipparchus. This fact has sometimes been urged as an *objection* to Fourier's conclusions, though it is really a corollary from the theory, and its agreement with observation might have been, with equal justice, mentioned in corroboration of its truth.

It is very conceivable that, in the earlier stages of the cooling of the globe, a moderate general warmth of  $30^{\circ}$ ,  $20^{\circ}$ ,  $10^{\circ}$ , &c. might be successively communicated from the interior to the surface; and it has been already seen that this uniform addition to the effects of the solar radiation would supply in northern zones as far as  $70^{\circ}$ ,  $60^{\circ}$ ,  $50^{\circ}$ ,  $40^{\circ}$ , &c. of latitude successively, the temperature requisite to allow of coral reefs in the sea, palms and tree ferns upon the land, and crocodiles and other huge reptiles in the rivers and estuaries.

On the whole, until the *sufficiency* of a peculiar position of land and sea, to meet the phenomena of a change of climate is *proved*, and some *independent* ground of definite *probability* is assigned for the occurrence of such a position, it would be premature to recognise in the present aspect of the hypothesis which proceeds upon that assumption the features of a *true theory*. But it would be equally unjust to condemn it as false, for it is *not disproved*, and no one has shown that such positions of land and sea as Mr. Lyell has contemplated, may not require a determinate *probability* among other consequences of a *general theory*. In the mean time that admirable writer has conferred no small benefit on

\* "Donec quiescentibus causis, atque æquilibratis, consistentior emergeret rerum status." (See Conybeare, *Report on Geology, to British Association*, 1832.)