

tion or flow only sets in when the stresses exceed a certain limit." ⁶⁹

In speculating on the plication of the earth's crust, we ought not to forget that, from the earliest times, the existing continental regions seem to have specially suffered from the efforts of the planet to adjust its external form to its diminishing diameter and lessening rapidity of rotation. They have served as lines of relief from the strain of compression during many successive epochs. It is along their axial lines—their long dominant mountain-ranges, that we should naturally look for evidence of corrugation. Away from these lines of weakness the ground has been upraised for thousands of square miles without plication of the rocks, as in the instructive region of the Western Territories of North America. Nor is there any proof that corrugation takes place beneath the great oceanic areas of subsidence.

It appears highly probable that the substance of the earth's interior is at the melting-point proper for the pressure at each depth. Any relief from pressure, therefore, may allow of the liquefaction of the matter so relieved. Such relief is doubtless afforded by the corrugation of mountain-chains and other terrestrial ridges. And it is in these lines of uprise that volcanoes and other manifestations of subterranean heat actually show themselves.

§ 4. Age of the Earth and Measures of Geological Time.—The age of our planet is a problem which may be attacked either from the geological or physical side.

1. The geological arguments rest chiefly upon the observed rates at which geological changes are being effected at the present time, and is open to the obvious preliminary objection that it assumes the existing rate of

⁶⁹ Prof. Darwin in a letter to the author, 9th January, 1884.