

diameter. The descent of the crust gives rise to enormous tangential pressures. The rocks are crushed, crumpled, and broken in many places. Subsidence must have been the general rule, but every subsidence would doubtless be accompanied with upheavals of a more limited kind. The direction of these upheaved tracts, whether determined, as Prof. Darwin suggests, by the effects of internal distortion, or by some original features in the structure of the crust, would be apt to be linear. The lines, once taken as lines of weakness or relief from the intense strain, would probably be made use of again and again at successive paroxysms or more tranquil periods of contraction. Mallet ingeniously connected these movements with the linear direction of mountain-chains, volcanic vents, and earthquake shocks. If the initial trend to the land-masses were given as hypothetically stated by Prof. Darwin, we may conceive that after the outer parts of the globe had attained a considerable rigidity and could then be only slightly influenced by internal distortion, the effects of continued secular contraction would be seen in the intermittent subsidence of the oceanic basins already existing, and in the successive crumpling and elevation of the intervening stiffened terrestrial ridges.

This view, variously modified, has been widely accepted by geologists as furnishing an explanation of the origin of the upheavals and subsidences of which the earth's crust contains such a long record. But it is not unattended with objections. The difficulty of conceiving that a globe possessing on the whole a rigidity equal to that of glass or steel could be corrugated as the crust of the earth has been, has led some writers to adopt the hypothesis already described (*ante*, p. 105), of an intermediate viscous layer be-