

am inclined to hold that there is a wide segment of truth embodied in the views of the metamorphists ; but there seems to be also a segment of truth on the other side ; and so I must likewise hold with their antagonists, that there existed long periods in the history of the earth in which there obtained conditions of things entirely different from any which obtain now,—periods during which life, either animal or vegetable, could not have existed on our planet ; and further, that the sedimentary rocks of this early age may have derived, even in the forming, a constitution and texture which, in present circumstances, sedimentary rocks cannot receive.

The scientific world is subject, like the worlds of politics and trade, to its periods of action and re-action. Those who hold that the earth was once a molten mass throughout,—nay, that at a certain not very profound depth its matter may be still in an incandescent state,—may have perhaps driven their theory too far ; and the current at present seems to have set in against them. Mr. Hopkins' profound deductions on the phenomena of Precession and Nutation have been held to establish that the crust of the earth is at present a solid unyielding mass to the depth of at least a thousand miles from the surface. 'Nay, there is nothing in this inquiry,' says Professor Nichol, in referring, in his late admirable work, *The Planetary System*, to the problem of Mr. Hopkins,—'there is nothing in this inquiry rendering it impossible that the globe is solid throughout ; and assuredly a distinct negative is given to a whole class of prevalent geological conceptions, on grounds vastly more solid than any which appear to sustain them.' And I find Sir Charles Lyell, in the latest edition of his *Principles*,—that of last year,—suggesting the existence of a circle of superficial action in the earth's crust, quite sufficient to account for an intermittent igneous activity altogether independent of central heat, and which might go on by fits