Researches on Physical Geology.Part I. The Figure and Primitive Formation of the Earth. [Abstract]
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Source: *Abstracts of the Papers Communicated to the Royal Society of London*, Vol. 5 (1843 - 1850), p. 659
Published by: The Royal Society
Stable URL: http://www.jstor.org/stable/110951
Accessed: 20/10/2014 13:08

permanent gas from all liquids, except the metals, when exposed to intense heat.

December 17, 1846.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

"Researches on Physical Geology."—Part I. The Figure and Primitive Formation of the Earth. By Henry Hennessy, Esq. Communicated by Major North Ludlow Beamish, K.H., F.R.S.

The author's investigations of the figure of the earth proceed on the hypothesis of its having originally been a heterogeneous fluid mass, possessing only such general properties as those which have been established for fluids; and independently of the supposition, with which the theory has generally been complicated, that the volume of the entire mass, and the law of the density of the fluid, have suffered no change in consequence of the solidification of a part of that fluid. Assuming the figure of the mass to be an ellipsoid of revolution, the author obtains general analytical expressions for its ellipticity, and for the variation of gravity at its surface. He gives a general sketch of the consequences that may result from the improved hypothesis of the primitive figure of the earth, to physical geology, that is, to the changes occurring upon the external crust of the earth during the process of its solidification, resulting both from calorific and chemical changes taking place among its different parts, and giving rise to a process of circulation throughout the fluid portions of the mass.

The present memoir is only the first of a series which the author announces it is his intention to communicate to the Society on the same subject.

January 7, 1847.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

Sir George Back, Capt. R.N., was elected into the Society.

The following paper was read:—

"Quelques Recherches sur l'Arc Voltaique; et sur l'influence qu'exerce le Magnétisme, soit sur cet Arc, soit sur les Corps qui transmettent les Courants Electriques Discontinus." By M. Auguste De la Rive, Foreign Member of the Royal Society, Professor in the Academy of Geneva, Corresponding Member of the Academy of Sciences of Paris, &c.

In the first section of this memoir the author gives a detailed description of the phenomena exhibited by the luminous voltaic arc produced either in a vacuum or in atmospheric air, or in hydrogen gas, by employing electrodes of different kinds of conducting sub-