

# A P P E N D I X.

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## NOTE I., page 50.

The doctrine of the central igneous fluidity of the earth is generally accepted by geologists. The hypothesis of intense chemical action as the cause of existing internal heat—a hypothesis first enunciated by Sir Humphry Davy\*—is, however, revived from time to time under some novel modification. Dr. T. S. Hunt, while admitting the primordial incandescence of our planet, has maintained, in a series of lectures before the Lowell Institute of Boston, that the solid crust is probably not less than 2000 miles in thickness, and envelops a solid nucleus, with a comparatively thin belt of material between the two, which has been reduced to a soft and pasty condition by the combined action of heat, water, and chemical affinity. In his lecture on “Primeval Chemistry,” more recently delivered before the American Institute in New York, he is reported as saying that “the earth must have a crust several hundred miles in thickness;” that “granite is in all cases a secondary rock, derived from sediments crystallized through the agency of water and heat;” and that “the theory which ascribes volcanic products to the supposed uncooled liquid centre fails entirely to account for the great diversity in composition of these products, all of which, wherever found, are represented in rocks of aqueous origin.”

Mr. N. S. Shaler has attempted to show, in an ingenious paper read before the Boston Society of Natural History (Proceedings, vol. xi., p. 8), that the solidification of the earth began at the centre and proceeded toward the periphery—that finally solidification began at the periphery and proceeded toward the centre, leaving, within the era of recognizable geological events, but an insignificant portion of the earth in its primordial fluid state.

\* Unless, indeed, Milton can be said to have first suggested it in the following words:

“The force  
Of subterranean wind transports a hill  
Torn from Pelorus, or the shattered side  
Of thundering Ætna, whose combustible  
And fueled entrails thence conceiving fire,  
Sublimed with mineral fury, aid the winds,  
And leave a singed bottom all involved  
With stench and smoke.”—*Paradise Lost*, i., 230.

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