

# SCIENCE

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## CONTENTS.

<i>The Nature and Origin of Volcanic Heat:</i> DR. ELIHU THOMSON.....	161
<i>The Geographical Distribution of the Student Body at a Number of Eastern and Western Universities and Colleges:</i> PROFESSOR RUDOLF TOMBO, JR.....	166
<i>Scientific Books:—</i> <i>Montgomery on the Analysis of Racial Descent in Animals:</i> PROFESSOR E. G. CONKLIN .....	173
<i>Scientific Journals and Articles.....</i>	176
<i>Discussion and Correspondence:—</i> <i>Glaciation in the Sonoran Province:</i> DR. W J MCGEE. <i>The Earthquake and Pro- fessor Larkin:</i> D. S. J.....	177
<i>Special Articles:—</i> <i>Time Variation of the Initial Nucleation of Wet Dust-free Air:</i> PROFESSOR CARL BARUS. <i>Use of the Term Permian in American Geology:</i> DR. CHARLES R. KEYES.	180
<i>Quotations:—</i> <i>Professor M'Kendrick and the Progress of Physiology .....</i>	182
<i>Astronomical Notes:—</i> <i>The System of Castor; Reflecting Telescopes of Short Focus; Some Considerations re- garding the Number of the Stars:</i> PRO- FESSOR SOLON I. BAILEY.....	182
<i>Recent Vertebrate Paleontology:</i> H. F. O....	184
<i>The Pure Food Bill.....</i>	185
<i>Scientific Notes and News.....</i>	189
<i>University and Educational News.....</i>	192

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## THE NATURE AND ORIGIN OF VOLCANIC HEAT.

THE hypothesis of a molten or more or less fluid interior, as possessed by the earth, may now be said to have been abandoned, and along with it the supposition that volcanoes constitute vents for the escape, as a consequence of shrinkage and subsidence, of a portion of the molten content lying everywhere under the solid crust. The hypothesis that the interior of the earth, while in the main solid, has cavities containing melted matter which occasionally is forced out in the form of eruptive outbursts is a kindred one which has found some adherents. But a truly solid interior seems to be demanded by the accepted great rigidity of the body of the earth, and Mallet has put forward the idea that extraordinary pressures exerted to crush the rocks would result in their becoming heated and melted. Evidently, however, mere pressure acting alone, however great, would not suffice for this. Incipient fluidity would substantially put an end to the crushing process and heat generation would stop. The observed high temperatures attained by volcanic products during eruption would not be reached. More recently the thermal effects of volcanoes, and the various results thereof, have been ascribed by one authority to the presence of radium, which, as is known, continuously gives out energy in its breaking up. But volcanic lavas have not been found to be sources of radium or of uranium, the amount of which should be

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