

SCIENCE

Vol. 92

FRIDAY, SEPTEMBER 6, 1940

No. 2384

<i>Radioactivity</i> : SIR JOSEPH THOMSON	207	<i>ulin</i> : DR. F. D. W. LUKENS and DR. F. C. DOHAN.	
<i>The Origin of the Earth's Land Formations</i> : DR. C. D. PERRINE	210	<i>The Neuro-Motor Mechanism of the Small Blood Vessels of the Frog</i> : GEORGE P. FULTON and DR. BRENTON R. LUTZ. <i>Egg-white Injury in Chicks and Its Relationship to a Deficiency of Vitamin H (Biotin)</i> : ROBERT E. EAKIN, WILLIAM A. MCKINLEY and PROFESSOR ROGER J. WILLIAMS	222
<i>Scientific Events</i> :		<i>Scientific Apparatus and Laboratory Methods</i> :	
<i>The Biological Research Institute of the Zoological Society of San Diego; The Great Smoky Mountains National Park; The Marine Biological Laboratory at Woods Hole; The Detroit Meeting of the American Chemical Society. Recent Deaths</i>	212	<i>Molecular Weight by Isothermic Distillation</i> : PROFESSOR JOSEPH B. NIEDERL and ARTHUR M. LEVY. <i>A Simple Stain for Tissue Cultures</i> : JANE STANLEY CRAIG	225
<i>Scientific Notes and News</i>	214	<i>Science News</i>	10
<i>Discussion</i> :			
<i>The First Thousand Mathematical Works Printed in America</i> : PROFESSOR G. A. MILLER. <i>Practical Suggestions for Reducing the Labor of Indexing a Text-book</i> : DR. LEON HUGH WARREN. <i>The Incidence of Hydrogen Sulfide at Kilauea Solfatara Preceding the 1940 Mauna Loa Volcanic Activity</i> : DR. JOHN H. PAYNE and DR. STANLEY S. BALLARD	216		
<i>Scientific Books</i> :			
<i>A Geological Expedition to the Sunda Islands</i> : PROFESSOR REGINALD A. DALY. <i>The Invertebrates</i> : DR. WILLIAM F. DILLER	219		
<i>Reports</i> :			
<i>Summarized Proceedings of the American Association for the Advancement of Science from 1934 to 1940</i> : DR. F. R. MOULTON	221		
<i>Special Articles</i> :			
<i>Morphological and Functional Recovery of the Pancreatic Islands in Diabetic Cats Treated with In-</i>			

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. MCKEEN CATTELL and published every Friday by

THE SCIENCE PRESS

Lancaster, Pa. Garrison, N. Y.

New York City: Grand Central Terminal

Annual Subscription, \$6.00 Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary in the Smithsonian Institution Building, Washington, D. C.

RADIOACTIVITY¹

By the late SIR JOSEPH (JOHN) THOMSON, Master of Trinity College, Cambridge

I NOW pass to a very brief consideration of one of the most important and interesting advances ever made in physics, and in which Canada, as the place of the labors of Professors Rutherford and Soddy, has taken a conspicuous part. I mean the discovery and investigation of radioactivity. Radioactivity was brought to light by the Röntgen rays. One of the many remarkable properties of these rays is to excite phosphorescence in certain substances, including the salts of uranium, when they fall upon them. Since Röntgen rays produce phosphorescence, it occurred to Becquerel to try whether phosphorescence would produce Röntgen rays. He took some uranium salts which had been

made to phosphoresce by exposure, not to Röntgen rays but to sunlight, tested them, and found that they gave out rays possessing properties similar to Röntgen rays. Further investigation showed, however, that to get these rays it was not necessary to make the uranium phosphoresce, that the salts were just as active if they had been kept in the dark. It thus appeared that the property was due to the metal and not to the phosphorescence, and that uranium and its compounds possessed the power of giving out rays which, like Röntgen rays, affect a photographic plate, make certain minerals phosphoresce, and make gases through which they pass conductors of electricity.

¹ Concluding portion of the address of the president of the British Association for the Advancement of Science, given at Winnipeg in 1909. Reprinted from the issue of SCIENCE for August 27, 1909. Sir Joseph Thomson died on August 30.

Niepee de Saint-Victor had observed some years before this discovery that paper soaked in a solution of uranium nitrate affected a photographic plate, but the observation excited but little interest. The ground had