

# SCIENCE

VOL. 77

FRIDAY, MAY 5, 1933

No. 2001

<i>The Significance of Professor Thomson's Work in the Development of Electrical Engineering:</i> DR. KARL T. COMPTON .....	415
<i>In Honor of Professor Elihu Thomson:</i> DR. VANEVAR BUSH .....	418
<i>Scientific Events:</i>	
<i>Industrial Research Laboratories; The Field Museum of Natural History; Centenary of the British Entomological Society; Award of the Loubat Prizes; The National Academy of Sciences</i> .....	420
<i>Scientific Notes and News</i> .....	423
<i>Discussion:</i>	
<i>The Crisis in Scientific Research and the Way out:</i> PROFESSOR DR. SERGEI TSCHACHOTIN. <i>A Compendium of Culture Methods for Invertebrate Animals:</i> PROFESSOR JAMES G. NEEDHAM. <i>Reversal of the Pinhole Image:</i> PROFESSOR ERNEST C. BRYANT. <i>The Adrenal Glands in an Editor's Office:</i> DR. J. MCKEEN CATTELL .....	426
<i>Scientific Apparatus and Laboratory Methods:</i>	
<i>A New Form of Centrifuge-Microscope for Simultaneous Observation of Control and Experimental Material:</i> PROFESSOR E. NEWTON HARVEY. <i>The Agitation of Material in Aerated Water:</i> PROFESSOR H. B. SIFTON .....	430

<i>Special Articles:</i>	
<i>The Atomic Weight of Lead from Katanga Pitchblende:</i> PROFESSOR G. P. BAXTER and C. M. ALTER. <i>Free Positive Electrons Resulting from the Impact upon Atomic Nuclei of the Photons from Th C'':</i> DR. CARL D. ANDERSON. <i>Method of Extraction of Suprarenal Cortical Hormone-like Substance from Urine:</i> DR. DAVID PERLA and DR. J. MARMORSTON .....	431
<i>Science News</i> .....	8

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

## THE SCIENCE PRESS

New York City: Grand Central Terminal  
Lancaster, Pa.                      Garrison, N. Y.  
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.

## THE SIGNIFICANCE OF PROFESSOR THOMSON'S WORK IN THE DEVELOPMENT OF ELECTRICAL ENGINEERING<sup>1</sup>

By Dr. KARL T. COMPTON

PRESIDENT OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

ANY one with the misapprehension that engineering practise consists in following a set of fixed formulas, rules and specifications will do well to consider that electrical engineering and the art of useful application of electricity has developed almost entirely during the lifetime of Professor Elihu Thomson. The basic scientific discoveries of electromagnetic induction by Faraday and Henry had been made during the decade just preceding his birth, as had the first crude form of telegraph. But generators, motors, transformers, transmission lines, electric meters and regulators, electric lights, telephones, x-rays, electric discharges through high or partial vacuum, lightning protectors, converters, rectifiers, electrical insulators, wireless, radio and all the theory and practise of electrical networks are the product of science and in-

vention since Thomson's birth on March 29, 1853. These things, and the economic problems associated with them, constitute the field of electrical engineering. Some of them Professor Thomson has himself invented, a majority of them owe much of their development to him, and there is scarcely a one on which he has not left his imprint in one way or another. Yet I suspect that he himself would be the first to maintain that we are as yet only at the threshold of the possibilities which are inherent in electricity for the services of man, and that no one would more stoutly advocate the continued endeavor to discover these possibilities and make them effective.

Granted this, it must nevertheless have been a particularly thrilling experience to be connected with the early engineering and industrial developments of electricity, in the early 1880's, when it first became evident that in electricity lay a mighty force whose

<sup>1</sup> Address given on the occasion of the eightieth birthday of Professor Elihu Thomson at the Massachusetts Institute of Technology, March 29, 1933.

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