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CONTENTS

<i>Presentation of the Nobel Prize to Robert A. Millikan: ALLVAR GULLSTRAND</i>	325
<i>Genetics and Plant Taxonomy: PROFESSOR E. B. BABCOCK</i>	327
<i>Investigations concerning Imported Biological Stains: DR. H. J. CONN</i>	328
<i>Scientific Events:</i>	
<i>Paul Ehrlich; The American School of Prehistoric Research; The Cold Spring Harbor Biological Laboratory; The Forest Research Council; The Physical Society of London; Dinner in Honor of Mr. Garvan</i>	331
<i>Scientific Notes and News</i>	333
<i>University and Educational Notes</i>	336
<i>Discussion and Correspondence:</i>	
<i>Paleobotany at the New York State Museum: PROFESSOR EDWARD W. BERRY. The Infection of Tobacco Plant Beds by Spitting: W. D. VALLEAU. Mercuric Chloride as a Preventive of Certain Damping-off Fungi: HUGH GLASGOW and W. O. GLOYER</i>	336
<i>Scientific Books:</i>	
<i>Fisher on Frequency Curves and their Application: PROFESSOR EDWIN B. WILSON. Stejneger and Barbour's Check List of North American Amphibians and Reptiles: PROFESSOR ALEXANDER G. RUTHVEN</i>	338
<i>Laboratory Apparatus and Methods:</i>	
<i>The Emanation Method for Radium: DR. FRANK E. E. GERMANN. Use of the Binocular Microscope: DRs. GEORGE H. NEEDHAM and CARL R. FELLERS</i>	340
<i>The American Association for the Advancement of Science:</i>	
<i>Financial Report of the Permanent Secretary: PROFESSOR BURTON E. LIVINGSTON. Report of the Treasurer. Report of the Secretary-treasurer of the Pacific Division: W. W. SARGEANT</i>	342
<i>Science News</i>	x

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PRESENTATION OF THE NOBEL PRIZE TO ROBERT A. MILLIKAN¹

THE Royal Academy of Sciences has awarded this year's Nobel prize for physics to Dr. Robert Andrews Millikan for his work on the unit of electrical charge and on photoelectric effect.

We speak of an electric charge when electricity is accumulated on a body, and of an electric current when it spreads along a metallic wire. But when electricity passes through water or water solutions there is no current in the same sense of the word: there is a convection of charges combined with chemical decomposition—electrolysis. Thus water is decomposed into its constituents, hydrogen and oxygen, and metallic silver is deposited from solutions of silver salts. If one and the same current is used to cause these decompositions, the weight of hydrogen liberated in a certain time bears the same ratio to the weight of silver deposited as the atomic weight of hydrogen to the atomic weight of silver, and a current of a given strength in a given time always causes the appearance of a constant quantity of hydrogen and the depositing of a corresponding quantity of silver. As the strength of the current indicates the quantity of electricity passing through the fluids in a given time, it follows that the hydrogen atom and the silver atom carry the same charge, and this charge is what is meant by the unit of electric charge. The same laws hold good for all electrolytic processes, different atoms carrying as many units as are indicated by their valency. The charged atoms are called ions, but this word is also used in a wider signification.

It follows from these laws of electrolysis that it was possible to calculate the unit of electric charge with the same degree of probability with which the number of atoms in a gram of hydrogen could be estimated, and as early as 1874 an approximate value of the unit was arrived at in this way, equalling about two thirds of the exact value now known through the researches of Millikan. The word electron was proposed later as a name for the unit of charge, but now that the discovery of cathode rays has brought to our knowledge free units of negative electricity an electron

¹ Address of the president of the Nobel committee of physics, Royal Academy of Sciences of Stockholm, on presentation by the king of Sweden to the U. S. minister of the Nobel prize in physics, Stockholm, December 10, 1923.

Cornell University Medical College

First Avenue and Twenty-eighth St.
NEW YORK CITY



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also offered at Ithaca, N. Y.,
subsequent years at New York
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For information address
THE SECRETARY

Johns Hopkins University Medical School

The Medical School is an Integral Part of the University and is in the Closest Affiliation with the Johns Hopkins Hospital.

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Candidates for admission must be graduates of approved colleges or scientific schools with at least two years' instruction, including laboratory work in chemistry, and one year each in physics and biology, together with evidence of a reading knowledge of French and German.

Each class is limited to 75 students, men and women being admitted on the same terms. Except in unusual circumstances, applications for admission will not be considered after July 1st.

If vacancies occur, students from other institutions desiring advanced standing may be admitted to the second or third year provided they fulfill our requirements and present exceptional qualifications.

INSTRUCTION

The academic year begins the Tuesday nearest October 1, and closes the second Tuesday in June. The course of instruction occupies four years and especial emphasis is laid upon practical work in the laboratories, in the wards of the Hospital and in the dispensary.

TUITION

The charge for tuition is \$300 per annum, payable in three installments. There are no extra fees except for rental of microscope, certain expensive supplies, and laboratory breakage.

The annual announcement and application blanks may be obtained by addressing the

Dean of the Johns Hopkins Medical School,
Washington and Monument Sts., Baltimore, Md.

Summer Work for Graduates in Medicine

Beginning Monday, June 2d, and ending Saturday, July 12th, a course in medical diagnosis, including laboratory exercises in clinical pathology and demonstrations in pathological anatomy, will be offered. The course will be limited to thirty students, fee \$100. Applications should be made to the Dean's Office.

School of Medicine Western Reserve University

of Cleveland, Ohio

HIGH STANDARD OF ADMISSION*
RESTRICTED CLASSES
THOROUGH INSTRUCTION
LARGE CLINICAL FACILITIES
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* Admission confined to students having academic degrees and to Seniors in Absentia.

For information address:

THE REGISTRAR

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OF THE UNIVERSITY ARE AVAIL-
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Dean, Yale University School
of Medicine

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BOSTON UNIVERSITY SCHOOL OF MEDICINE



ORGANIZED IN 1873

ANNOUNCEMENT

may be obtained by application to

WESLEY T. LEE, M.D., Registrar

80 East Concord Street,

Boston, Massachusetts.

Stanford University California

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Second half begins 28 July

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Information from Office 53,

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RESEARCH FOUNDATION—The James A. Patten Endowment for Research affords unusual opportunities for advanced students of Medical Science to pursue special investigations.

RESEARCH FELLOWSHIPS—Four fellowships of the value of \$500 each are awarded annually to promote scholarly research.

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Next session begins September 26, 1924.

For information address

C. W. PATTERSON, Registrar
2421 South Dearborn St. Chicago, Illinois

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12, 1924

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GEO. M. GRAY,

Curator, Woods Hole, Mass.



The annual announcement will be sent on application to The Director, Marine Biological Laboratory, Woods Hole, Mass.