

SCIENCE

VOL. LXXI

FRIDAY, APRIL 18, 1930

No. 1842

<i>American Association for the Advancement of Science:</i>		
Professors' Salaries:		
<i>Are Equitable Salaries Paid to Professors?:</i> DR. WILLIAM A. NOYES	397	
<i>Adequate Salaries for College and University Teachers:</i> EDWARD A. FILENE	401	
Discussion: DR. WALTER P. TAYLOR	408	
Obituary:		
<i>Recent Deaths; Memorials</i>	409	
Scientific Events:		
<i>Gift of Crystal to the Smithsonian Institution as a Memorial to Worcester Reed Warner; Fellowships in Chemistry at the Johns Hopkins University; Summer Meeting of the Botanical Society of America; Celebration in Honor of Dr. Welch</i>	410	
Scientific Notes and News	412	
Discussion:		
<i>Cosmical Matter and Stellar Evolution:</i> DR. C. D. PERRINE. <i>Psittacosis Epidemics and Pleomorphic Protoplasm:</i> DR. ELSIE MURRAY. <i>Artificial Bacilli:</i> PROFESSOR CHAS. B. LIPMAN. <i>Action of Bacteria and Enzymes on Carbohydrates and Their Bearing on Plant Synthesis:</i> DR. HAROLD HIBBERT	415	
Special Correspondence:		
<i>The Montana Tick Parasite Expedition to Africa:</i> PROFESSOR R. A. COOLEY	419	
Quotations:		
<i>Dr. Welch's "Apotheosis"</i>	420	
Scientific Apparatus and Laboratory Methods:		
<i>Heat Transmission through Blankets:</i> DR. M. F. WEINRICH	421	
Special Articles:		
<i>The Effect of Colloidal Silica on the Absorption of Phosphoric Acid by Plants:</i> DR. WALTER THOMAS. <i>Segregation (?) in Phoma terrestris:</i> DR. H. N. HANSEN	422	
Science News	x	

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.

PROFESSORS' SALARIES'

ARE EQUITABLE SALARIES PAID TO PROFESSORS?

By Dr. WILLIAM A. NOYES

PROFESSOR OF CHEMISTRY, UNIVERSITY OF ILLINOIS

THE professors in our colleges and universities are not receiving their fair share of the returns coming to others from the rapidly increasing prosperity of the country. No one will claim that professors were overpaid in 1900. In order that they may retain their economic status in comparison with other men and women their salaries must be increased in the same proportion as the income of the average citizen. Salaries have fallen far below this equitable level.

The volume of "Statistical Abstracts" of the United States published by the government in 1928 gives the following numbers in millions of dollars for the values of farm products, mineral products and the

values added to raw materials by manufacture in the years 1900 and 1925:

	1900 Millions of Dollars	1925 Millions of Dollars
Farm products	3,549	13,034
Mineral products	1,110	5,678
Manufacture	5,123	26,778
	9,782	45,490

To avoid an unfair use of the statistics for farm products, it should be stated that the farm population remained stationary during this period, while the total population increased 50 per cent., or from 77.1 millions to 115.4 millions.

¹ A symposium on the salary question arranged by the Committee of One Hundred on Scientific Research, American Association for the Advancement of Science, Shrine Lounge, Des Moines, Iowa, December 31, 1929.

Allegheny School of Natural History

In Allegheny State Park, Quaker Bridge, N. Y.
Fourth Season—July 5 to August 23, 1930

Registration limited to fifty

Field studies in Botany, Zoology, Geology, Birds

Natural conditions favorable in richness and variety, suitable laboratories and equipment, comfortable living in a stimulating climate, guidance from experienced teachers and investigators.

Sponsored by the Buffalo Society of Natural Sciences, the New York State Museum, and the University of Buffalo (with college credit).
For circulars or registration, address *until June 15*:

DR. ROBERT E. COKER, Director
Chapel Hill, N. C.

UNIVERSITY OF MANITOBA**ASSISTANT PROFESSORSHIP
IN CHEMISTRY**

Applications are invited for appointment as Assistant Professor of Chemistry in the University of Manitoba. Salary \$3,500. Duties begin September 1st. Preference will be given to candidates with qualifications in Physical Chemistry.

Applications, accompanied by testimonials or giving references, should be sent to the undersigned by June 1st. A recent photograph would be desirable.

W. J. SPENCE, Secretary, Board of Governors
University of Manitoba,
Winnipeg, Canada,

GEOLOGIST—now teaching desires change of teaching position. Ph.D. Three years teaching experience. Would like place where part of time could be spent in research.

Address "N. F." care of Science, 3939 Grand Central Terminal, New York, N. Y.

SCIENTIFIC MOLLUSCA

Land, Fresh Water or Marine Shells from every part of the world. Collections of any size up to 25,000 species. Over half million specimens in stock. Only the very finest material handled. Keep my catalogue in your files. It is free.

WALTER F. WEBB

202 Westminster Road

Rochester, N. Y.

THE MICROSCOPE

By **SIMON H. GAGE**, of Cornell University

Revised, Dark-field Edition (1927) now Available.

The Old and the New in Microscopy, with a special chapter on Dark-Field Methods and their Application.

Postpaid, \$3.50

COMSTOCK PUBLISHING CO., ITHACA, N. Y.

**► Hy-Speed MIXERS ◀**

Clamp to any tank, operate from light circuit, mix all kinds of liquids. Also used for even temperature baths. Thousands in use.

Write for circular

ALSO ENGINEERING CO.

All Sizes
from
1-10 H.P.
\$37.50 up

47 W. 63rd St.

New York

**JOHNS HOPKINS UNIVERSITY
SCHOOL OF MEDICINE**

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

ADMISSION

Candidates for admission must be graduates of approved colleges or scientific schools with 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 a maximum of 75 students, men and women being admitted on the same terms. Applications may be sent any time during the academic year but not later than June 15th.

If vacancies occur, students from other institutions desiring advanced standing may be admitted to the second or third year provided they fulfill the 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 for 1930-31 will be \$600 per annum, payable in two installments. There are no extra fees except for certain expensive supplies, and laboratory breakage.

Inquiries should be addressed to the

Executive Secretary of the School of Medicine, Johns Hopkins University, Washington and Monument Sts., Baltimore, Md.

Graduates in Medicine who satisfy the requirements of the heads of the departments in which they desire to work are accepted as students for a period not less than three quarters. Tuition charge is \$50 a quarter.

BIOLOGICAL and NATURAL**HISTORY MATERIAL**

Zoological Groups
Embryological Slides
Botanical Life Histories
Drosophila cultures

Lamprey larvae (Ammocoetes)
Prices on demand

Catalogs on request: Address

Geo. M. Gray, Curator

Supply Department

MARINE BIOLOGICAL LABORATORY

Woods Hole, Mass., U. S. A.

**PHOTOELECTRIC CELLS**

In the world of science G-M "VISITRON" photoelectric cells are daily helping to solve many new and important problems. If you would know more about G-M "VISITRON" photoelectric cells and their many interesting applications, write for Bul. PE-14—It's free.



G-M LABORATORIES INC

1808 Grace St.

Chicago, U. S. A.

PHONELESCOPE

Teaches Through the Eye

SOUND, ELECTRICITY

CAPITAL APPARATUS WORKS

Box 835

Washington, D. C.

Revised--GENERAL CHEMISTRY

By HARRY N. HOLMES, *Professor of Chemistry, Oberlin College*

AFTER seven or eight years a revision of any text on Chemistry must be radical, and this second edition of Holmes' GENERAL CHEMISTRY is a very genuine revision, with new material introduced throughout. It is larger by about a hundred pages than the previous book, and differs more markedly than before from the author's INTRODUCTORY COLLEGE CHEMISTRY.

A few entirely new chapters have been added, such as the one on Photochemistry. This is not simply a study of photography, but deals broadly with the chemical effects of all sorts of radiations, a subject of rapidly increasing importance. Another new chapter takes up Nitrogen Fixation. New material has been interspersed throughout the text.

The treatment of certain difficult subjects has been clarified and the entire content has been thoroughly modernized. Industrial applications dated to the last minute make a strong appeal to the student.

Important changes in the order of treatment have been made. Radioactivity is treated early in the book in connection with the periodic system as a logical foundation for a discussion of modern theories of atomic structure. While using modern conceptions of the atom, the author makes it clear that our present theories of atomic structure are constantly subject to modification.

A great increase in the number of problems and references has been made.

Many illustrations, including some exceptionally fine half-tones, have been added.

To be published in April

HIGH LIGHTS OF THE NEW EDITION

A startling new chapter

PHOTOCHEMISTRY

Material on

Bonhoeffer's recent work on para hydrogen

Langmuir's atomic hydrogen flame.

The Debye-Hückel theory of complete ionization

Werner's coördination theory

The Lewis-Langmuir and the Bohr theories of atomic structure

Adequate treatment for the first time of

Beryllium

Tungsten

Nitrogen Fixation

'Bacteria as

Chemists'

Vitamins

Cellulose and its Esters. Rayon.

Examination of new industrial processes:

Sulfuric Acid Manufacture

Slag method of wrought iron production

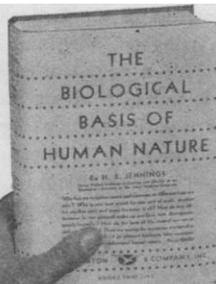
The Bergius method of hydrogenating coal

Spray drying

New statistics throughout

The costs of chemicals clearly shown

THE MACMILLAN COMPANY 60 Fifth Ave.
New York



Selected by

The Scientific Book Club

THE BIOLOGICAL BASIS OF HUMAN NATURE

By H. S. JENNINGS

*Professor of Zoology,
Johns Hopkins University*

Vernon Kellogg writes:

“An intelligible and authoritative expression of what is known up to the minute about the fundamental biological basis of human make-up and behavior. It discusses with much originality the varying biological factors that help to mould man’s individual and societal life. Its treatment of the age-old problems of heredity and environment, especially in their relation to man, is truly revelatory.”

Secretary, National Research Council

E. G. Conklin writes:

“It is easily the best book that has yet appeared on the application to man of our new knowledge concerning heredity and environment.”

Professor of Biology, Princeton University

51 illustrations 384 pages

Send the order form below for your copy. If you are a teacher, attach order to your official stationery to get educational discount off the list price of \$4.00.

W. W. NORTON & COMPANY, INC.

70 Fifth Avenue, New York

Please send me THE BIOLOGICAL BASIS OF HUMAN NATURE.

() I enclose \$4.00.

() Send C. O. D.

Name

Address

INORGANIC CHEMISTRY FOR COLLEGES

by

WILLIAM FOSTER, PH.D.

Professor of Chemistry, Princeton University

A thorough textbook for the course in general chemistry . . . written to interest students, and to teach them the fundamentals of chemistry.

The text is arranged in four parts: Introductory; Non-Metals; Metals; and Carbon Compounds. This organization enables the professor to take up the subject matter in the order he prefers.

Questions and problems follow each chapter, to test both the student’s knowledge of the subject-matter and his ability to reason.

“Inorganic Chemistry for Colleges” furnishes adequate material for a year course of 3 to 5 hours weekly. The laboratory work accompanying the study of the text may occupy from 3 to 6 hours weekly.

875 pages

\$3.90

Send for an examination copy today

D. VAN NOSTRAND COMPANY, INC.

250 Fourth Avenue

New York City

CARNEGIE INSTITUTION OF WASHINGTON

Publications of the Institution present in monographic form the results of its own research activities, and include a few books on other subjects.

Nearly 600 volumes have been issued, representing studies in the following fields:

Archaeology	History
Anthropology	Literature
Astronomy	Mathematics
Biology	Nutrition
Botany	Palaeontology
Chemistry	Palaeography
Ecology	Philology
Economics	Physics
Embryology	Terrestrial Magnetism
Genetics	Zoology
Geology	

Descriptive lists and prices may be obtained by addressing:

CARNEGIE INSTITUTION OF WASHINGTON
WASHINGTON, D. C.