SCIENCE

Vol. LXV MAY 20, 1927 No. 1690

CONTENTS

Recent Discoveries relating to the Origin and An- tiquity of Man: DR. HENRY FAIRFIELD OSBORN	481
Nomenclatural Efficiency: Dr. E. P. FELT	489
Scientific Events:	
Memorial Services to Charles D. Walcott; Activi- ties of the American Museum of Natural History; Meeting of the Sigma Xi Committee and Dedica- tion of the New Physics Laboratory at Union Col- lege; Elections of the American Academy of Arts and Sciences; The Medal Meeting of the Franklin Institute	491
Scientific Notes and News	493
University and Educational Notes	498
Discussion and Correspondence:	
Lability in Ferric Oxide Hydrosols: C. H. SORUM. "Finger Prints" of Minerals: PROFESSOR A. N. WINCHELL. Correlation of Mexican Bean Beetle Population with Original Forest Type: NEALE F. HOWARD. Confusion in Scientific Terminology:	
PROFESSOR R. G. HUDSON	498
Scientific Books:	
Dakin's Elements of General Zoology: Dr. G. K. NOBLE	501
Scientific Apparatus and Laboratory Methods:	001
A New Device for filing Microscope Slides: DR. J. HOWARD BROWN. A Method of handling Small Objects Previous to Sectioning: R. J. BEAN	501
Special Articles:	901
The Chlorides of Ruthenium: PROFESSOR JAS. LEWIS HOWE. Studies in Microbial Thermogene- sis: LAWRENCE H. JAMES	503
The American Association for the Advancement of Science:	
Spring Meeting of the Executive Committee: Dr. BURTON E. LIVINGSTON	506
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.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 8, 1879.

RECENT DISCOVERIES RELATING TO THE ORIGIN AND ANTIQUITY OF MAN¹

In the great drama of the prehistory of man converge all the many branches of science which have been cultivated and encouraged by the American Philosophical Society since its foundation two hundred years ago. In fact, we do not progress very far in this most difficult, as well as most noble, branch of biological research if we pursue pathways which are purely anthropological or purely archeological. It is such specialistic mode of attack which has led more than one generation of man into pitfalls of opinion and of theory from which there is no escape except by direct retreat. In the list of those who have been compelled to reverse engines are the names of many great anthropologists, among them the renowned Hans Virchow, the still more widely known Ernst Haeckel and, probably to your great surprise, no less a name than that of Thomas Henry Huxley. Virchow opposed the recognition of the Neanderthal skull of 1846 with pathologic and theologic preconceptions. Haeckel also eagerly espoused the Ape Ancestry hypothesis by ignoring the profound cleft between ape and man. Huxley failed disastrously in rating the Neanderthal man with recent types of man and threw Darwin completely off the track of this veritable missing link. Huxley, too, failed to visit the Foxhall quarry of Ipswich, site of the greatest discovery in modern times, namely, the fireplace and tool flint quarry of Tertiary man. Even Jupiter nods when the purely specialistic pathway is pursued.

In the triumphs of modern astronomy, four sciences converge, namely, mathematics, mechanics, physics and chemistry; but, in the triumphs of anthropology, beginning with its dawn in the mind of Blumenbach, 1796, and reaching a succession of climaxes in 1927, no less than twelve of the major and minor branches of science converge, as follows:² The astronomy of Croll (1875) and Wallace (1880); the glaciology of Geikie (1894–1914), of Penck and Brückner (1909), of Leverett (1910); the glaciology and river terraces

¹ Address before the American Philosophical Society at Philadelphia, on April 28, on the occasion of the celebration of the two hundredth anniversary of the foundation of the society.

² Osborn-Reeds: "Old and New Standards of Pleistocene Division in Relation to the Prehistory of Man in Europe," p. 413.

Marine Biological Laboratory Woods Hole, Mass.

Facilities for research in Zoology, INVESTIGATION Embryology, Physiology, and Bot-any. Fifty-two private laboratories Entire Year \$100 each and ninety-four private laboratories \$200 each for not over three months. Fifty-six tables are available for beginners in research who desire to work under the direction of mem-bers of the staff. The fee for such a table is \$50.00.

bers of the staff. The ree for such a table is \$20.00. Courses of laboratory instruction iNSTRUCTION June 28 to August 8, 1927 B, 1927 B, 1927 Courses of laboratory instruction with lectures are offered in In-vertebrate Zoology, Protozoology, Embryology, Physiology, and Mor-phology and Taxonomy of the full time of the student. Fee, \$75.00.

SUPPLY DEPARTMENT Open the Entire



šB)

BIOLOGICAL SUPPLIES

For the classroom, museum or collector.

lector. First class preparations. Send for new (1926) Oatalogue No. 1. Zoological and Embryological ma-terial, Life Histories and Habitat Groups.

Catalogue No. 2, Botanical material.

Catalogue No. 3, Microscopic slides.

Address all correspondence regard-ing material and catalogues to: Supply Department, GEO. M. GRAY.

Curator, Woods Hole, Mass. The annual announcement will be sent on application to The Director, Marine Biological Labora-tory, Woods Hole, Mass.

CěB

C&B

Coleman & Bell **Biological Stains**

Are recognized throughout the United States and foreign countries as being DEPENDABLE. This is due to the high standards of quality enforced in the manufacture, purification and testing of these products.

A number of the common stains are now available with the certificate of the Commission on Standardization of Biological Stains.

Complete catalogue of Laboratory Reagents upon request.

THE COLEMAN & BELL COMPANY (Incorporated)

> Manufacturing Chemists Norwood, Ohio, U. S. A.

The Biological Laboratory

ix

Cold Spring Harbor, Long Island, N. Y.

Investigation

Facilities for research in Physiology, Protozoology, Embryology and other branches of Zoology, and Bot-any. Fee for private room \$75. Special equipment for mammalian work. Opportunities for beginning investigators. Fee \$50.

Instruction Six weeks, June 29th to August 9th. Courses in Field Zoology, Physiology, Experimental Surgery, Endocrinology, Field Botany and Plant Ecology.

Endocrinology, Field Botany and Flant Ecology. Tuition \$70. Situated in a region rich in marine, fresh water, woodland and meadow life. One hour from the cen-ter of New York City. For information, address the Biological Laboratory, Cold Spring Harbor, Long Island, N. Y.

LIVING BULLFROGS Safe delivery guaranteed

We are just recovering from the acute shortage due to the unprecedented drouths of 1924 and 1925. Be sure to reserve your next year's supply while in season, March, April or May. Correspondence solicited.

Also headquarters for living and preserved specimens of all types, microscopic slides, life histories, demonstrations, insect collections. We specialize in many important southern species not obtainable elsewhere.

All material guaranteed without reservations. Southern Biological Supply Co., Inc., Natural History Building, New Orleans, La.



JAGABI RHEOSTATS

meet a definite need in Educational, Research and Industrial Laboratories.

By means of sliding-contacts the resistance values can be varied from zero to full rat-ing, in exceedingly small steps.

Est. 1851

We find greatest de-mand for Rheostats with tubes 16" long, as illustrated above. Write for Descriptive Catalog 1140-S

JAMES G. BIDDLE, PHILADELPHIA 1211-13 ARCH STREET

Balances and Weights

Stock includes

Analytical, Assay, Ordinary, Prescription and Specific Gravity Balances

Write for more complete details and prices

EIMER & AMEND

New York, N. Y. Third Ave., 18th to 19th St.

Inc. 1897



WALTER: Comparative Anatomy

By HERBERT E. WALTER, Brown University.

This carefully prepared text will have the breadth of viewpoint, the clearness of style. the teaching qualities, and the human touch which have characterized his other writings. Ready in late summer.

NOYES and BRAY: Qualitative Analysis for the Rare Elements

By ARTHUR A. Noves, California Institute of Technology, and

WILLIAM C. BRAY, University of California. Bringing together the results of investigations during the past thirty years, this new work provides the chemical analyst and advanced student with a simple, accurate procedure for the detection of practically all the metal-forming elements.

Ready July 1st, 8vo, about 470 pages.

Third edition

CREW: General Physics

By HENRY CREW, Northwestern University. An extensive revision of this standard text, presenting enough of the modern physics for the beginning college courses, and stressing in addition the important contacts of physics with chemistry, astronomy, and other sciences.

Ready June 14th, 8vo, about 700 pages.

Second edition

LOVE: Analytic Geometry

By CLYDE E. LOVE, University of Michigan. New problems, an increased number of suggestions to students, references and worked examples, and the omission of some minor or difficult material mark this revision. Emphasis is placed on an understanding of principles rather than mechanical drill.

Ready July 1st, crown 8vo, about 330 pages.

WOODRUFF: Foundations of Biology

By LORANDE LOSS WOODRUFF, Yale University.

BAITSELL: Manual of Biological Forms

By GEORGE BAITSELL, Yale University. The most widely used college text in general Biology, and its accompanying laboratory manual have been carefully revised. Significant recent advances in this science are cov-ered; the growing appreciation of the significance of biological knowledge for human welfare is recognized; illustrations have been revised and amplified, phraseology has been simplified, and the use of unnecessarily technical terms eliminated.

Woodruff: Ready in July, crown 8vo, about 550 pages. Baitsell: Ready in July, crown 8vo, 411 pages.

YOUNG and BAXTER: Mechanics of Materials

By George Young, Jr., and H. E. BAXTER, Cornell University

A basic text for the course on Strength of Materials or Mechanics of Materials, assuming an elementary knowledge of physics and mathematics, written in a simple, direct, and unusually teachable style. The visual appeal is made throughout, and graphical solutions are freely used.

Ready in August, 8vo, about 530 pages.

THE	MACMILLAN COMPANY	:	:	:	60 Fifth Ave. New York City
	Teachers interested in considering the above books for class use will gladly be mailed examination copies on pub- lication. Write now.				

Revised edition

Third edition



San Juan, P. R.

An institution for the study of tropical diseases and their prevention.

New building containing well equipped laboratories and library. Clinical facilities in general and special hospitals. Field work in cooperation with Insular Department of Health.

Courses in bacteriology, mycology, parasitology, pathology, food chemistry, public health and transmissible diseases, open to graduates in medicine and others having equivalent preparation. Number of students limited.

First term of second session begins Oct. 1, 1927; second term, Feb. 1, 1928. Special students and investigators admitted at other times as space and circumstances permit. In all cases arrangement in advance is advised.

For further information apply to

Director School of Tropical Medicine San Juan, Porto Rico.

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.

COURSES FOR GRADUATES

In addition to offering instruction to students enrolled as candidates for the degree of Doctor of Medicine, the School also offers Courses for Graduates in Medicine. In each of the clinical departments opportunity for advanced instruction will be offered to a small number of physicians, who must satisfy the head of the department in which they desire to study that they are likely to profit by it.

Students will not be accepted for a period shorter than three academic quarters of eight weeks each, and it is desirable that four quarters of instruction be taken. The courses are not planned for purposes of review but for broad preparation in one of the lines of medical practice or research. The opportunities offered will consist in clinical work in the dispensary, ward-rounds, laboratory training, and special clinical studies.

The academic year begins the Tuesday nearest October 1 (October 4, 1927), and students may be admitted at the beginning of any academic quarter. The charge for tuition is \$50 a quarter, payable in advance.

Inquiries should be addressed to the Executive Secretary of the School of Medicine, Johns Hopkins University, Washington and Monument Streets, Baltimore, Maryland.

School of Medicine and Dentistry THE UNIVERSITY OF ROCHESTER

Medical School, Strong Memorial Hospital and Out-Patient Department of the University of Rochester and the Municipal Hospital of the City of Rochester, all under one root. Medical, Surgical, Obstetric, Pediatric, Contagious and Neurological patients admitted. Unusual opportunities for school and hospital cooperation in medical and dental teaching.

Admission

Medical and dental candidates must have completed three years of college work with special requirements in chemistry, physics and biology. The entering class will not exceed 40, men and women being admitted on equal terms.

Tuition

Charge for tuition will be \$300 per annum, payable in equal installments at the beginning of each semester.

For information address

The Dean-School of Medicine and Dentistry, Crittenden Blvd., Rochester, N. Y.