SCIENCE

Vol. LXV

MAY 13, 1927

No. 1689

CONTENTS

Charles Doolittle Walcott: Professor Charles Schuchert	455
New Lights on Evolution: PROFESSOR EDWARD C. JEFFREY	458
Science as Culture: Williams Haynes	462
Scientific Events: The Putnam Baffin Island Expedition; The Annual Meeting of Science Service; The Fortieth Anniversary of the Denison Scientific Association; The Reno Meeting of the Pacific Division of the American Association	464
Scientific Notes and News	466
University and Educational Notes	470
Discussion and Correspondence: Humidity and Chronometry: Dr. P. G. Nutting. Names under Consideration for Inclusion in the Official List of Generic Names: Dr. Ch. W. Stiles. Curiosities of Anthecology: Charles Robertson. An Early Book on Algology: Dr. Arthur P. Kelley	471
Scientific Books:	
Shaw's Manual of Meteorology: Professor Alex- Ander McAdie. Cushman's Outline of a Reclassi- fication of the Foraminifera: Dr. R. S. Bassler	473
Special Articles:	
Notes on the Mechanism of Fermentation: Dr. F. F. Nord. Proteus Henricensis Nov. Spec.: Dr. Frederick W. Shaw. The Relation of Temperature to Hydrogen-Ion Concentration of Buffer Solutions: Aksel G. Olsen	474
The National Academy of Sciences	
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.

CHARLES DOOLITTLE WALCOTT PALEONTOLOGIST—1850-1027

CHARLES DOOLITTLE WALCOTT, of Shropshire and New England ancestry, was born on March 31, 1850, at New York Mills, New York, and died of apoplexy at Washington, D. C., on February 9, 1927. Standing about six feet two inches in height, slight, but of athletic build, he had a commanding presence that attested a magnificent physique. Confident, quick of decision, with a matter-of-fact face, Walcott suggested the administrator rather than the savant, and yet he "achieved in scientific circles an exalted position attained by few."

Walcott's first paper, on a new species of trilobite, appeared in 1875, and his last one, on the Cambrian, two months after his death. His strictly paleontological and geological bibliography appears to have over 170 titles, and of these about 110 have to do with the Cambrian. The list of his complete writings will rise into the hundreds.

Walcott's education was that of the local public schools, and then of the academy at Utica, an institution in which other leading geologists received their first lessons in science. As a paleontologist and geologist, however, he was virtually self-educated, first by direct contact with nature, and then from books and colleagues. In 1868 he left the academy and during the following two years was a clerk in shops. In 1871, at Indianapolis, he met the state geologist, Professor E. T. Cox, who restimulated him to take up the study of paleontology, which had been dear to him ever since his fourteenth year, when he found his first fossil. The actual meaning of fossils, however, came to him through meeting in 1864 Colonel E. Jewett, one of New York's earliest paleontologists, who advised him and helped him to obtain

Following Cox's advice, Walcott took up residence in 1871 on a farm near the picturesque and highly fossiliferous region of Trenton Falls, which is about 15 miles to the northeast of his birthplace, and between times he collected the fossils turned up by the plow and quarried for others. In the course of two years he had amassed a large collection of Trenton specimens that was wonderfully rich in trilobites. This collection he sold in September, 1873, to Louis Agassiz, and now he came directly under the magnetic influence of that great man. Among the trilobites, there was a specimen of Isotelus platycephalus that showed, even if imperfectly, some of the ventral

Two New Books for Nature Lovers

THE BEAVER: Its Work and Its Ways—By Edward H. Warren.

The second in the series of monographs sponsored by the American Society of Mammalogists.

The first comprehensive work on the beaver issued in fifty years, Mr. Warren's study is based on long, close personal observation of the beaver in its natural environment. While scientifically correct, the book is written in non-technical style that every amateur naturalist can understand and enjoy.

DeLuxe Vellum 144 Illustrations Bibliography

Price, \$3.00

FOGS AND CLOUDS—By W. J.

Humphreys, U. S. Weather Bureau, Author of "Weather Proverbs and Paradoxes"; "Rainmaking," etc.

"A very remarkable book presenting a system for specific cloud identification. Contains the best collection of cloud photographs ever assembled in one book."

—The Nautical Gazette.

"All who have occasion to watch the sky will enjoy the photographs and accompanying text."

-Science News Letter.

"Very few people can have any idea of the fascination and scientific importance of cloud study. Mr. Humphreys gives us 93 remarkable pictures to illustrate his account of fogs and clouds."

-The Forum.

Art Binding

325 Pages

93 Photographs

Price, \$4.00

The Williams & Wilkins Company

Baltimore, Maryland

Publishers of Scientific Books and Periodicals

BOTANICAL PUBLICATIONS

OF

The Philippine Bureau of Science

VEGETATION OF PHILIPPINE MOUNTAINS. The relation between the environment and physical types at different altitudes. By Wm. H. Brown. 434 pages, 41 plates, and 30 text figures; postpaid, \$2.50.

A FLORA OF MANILA. By E. D. Merrill. 490 pages; postpaid, \$2.50.

SPECIES BLANCOANAE. By E. D. Merrill. 424 pages; postpaid, \$2.25.

AN INTERPRETATION OF RUMPHIUS'S HER-BARIUM AMBOINENSE. By E. D. Merrill. 596 pages, 2 maps; postpaid, \$3.00.

PHILIPPINE DIPTEROCARP FORESTS. By Wm. H. Brown and Donald M. Matthews. Reprinted from The Philippine Journal of Science, Sec. A (1914), 9, Nos. 5 and 6. 149 pages; 13 plates; 12 text figures and 1 map; postpaid, \$1.00.

THE PHILIPPINE JOURNAL OF SCIENCE, a monthly, issued in three volumes a year; per year, \$5.00.

A list of the publications of the Philippine Bureau of Science and a sample copy of the Philippine Journal of Science will be sent upon request.

Subscriptions and orders for publication should be sent to

THE BUSINESS MANAGER Philippine Journal of Science

Bureau of Science,

Manila, P. I.

Just one of our Superior Methods

In producing Analysis-Certified Chemicals, we are determined to adopt every reasonable expedient that will give our customers unusual quality or convenience.

An example is our new square-necked wax bottle for Hydrofluoric Acid. This sensible shape for the opening gives the user—no matter how he



happens to pick up the bottle—a groove through which he can pour the acid just where it is wanted, without waste or danger of spattering this corrosive acid on the user. Square stopper fits snugly.

You will be delighted with Sterling's service on Analysis-Certified Chemicals.

Send for Price list.

Sterling Products Company, Dept. 8 Easton, Pa.

Wax with Square Neck

Marine Biological Laboratory Woods Hole, Mass.

INVESTIGATION Embryology, Physiology, and Botany. Fifty-two private laboratories \$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 members of the staff. The fee for such a table is \$50.00.

INSTRUCTION

June 28 to August

8, 1927

Beginning for such a table is \$50.00.

Courses of laboratory instruction with lectures are offered in Invertebrate Zoology, Protozoology, Embryology, Physiology, and Morphology and Taxonomy of the algae. Each course requires the full time of the student. Fee, \$75.00.

BIOLOGICAL SUPPLIES

SUPPLY DEPARTMENT Open the Entire

Year



For the classroom, museum or collector.

First class preparations.
Send for new (1926) Catalogue No. 1.
Zoological and Embryological material, 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.

The Biological Laboratory Cold Spring Harbor, Long Island, N. Y.

Investigation
Facilities for research in Physiology, Protozoology,
Embryology and other branches of Zoology, and Botany. 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.

Situated in a region rich in marine, fresh water, woodland and meadow life. One hour from the center 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.

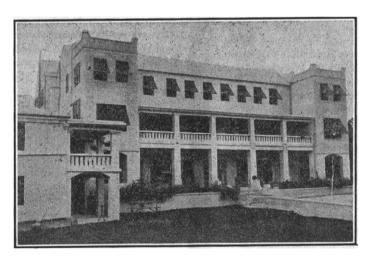
Also headquarters for living and preserved specimens of all types, microscopic slides, life histories, demonstrations, insect collections. We specialize in many important southern species not obtainable elsewhere.

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

Access to Four Waters

> Tennis Court

Bathing



Aquarium and site for new laboratory twenty minutes distant by bicycle.

Row boats for collecting can be obtained from the Hotel.

THE HARRINGTON HOUSE

Bailey's Bay, Bermuda

An ideal location for those engaged in research and biology.

A large room can be provided for laboratory purposes with running salt and fresh water.

Special rates given to groups of ten of those who wish to accomplish research



School of Medicine

NEW ADMISSION REQUIREMENTS

At least three years of approved college work including specified requirements in the sciences.

DEGREE OF B.S. IN MEDICAL SCIENCE

This degree may be awarded at the end of the third or fourth year to students fulfilling certain conditions including the preparation of a thesis

DEGREE OF DOCTOR OF MEDICINE

Upon satisfactory completion of prescribed four-year course.

For catalogue and information, address
THE DEAN, Washington University
School of Medicine, St. Louis,
Missouri

School of Tropical Medicine

of the

University of Porto Rico

under the auspices of COLUMBIA UNIVERSITY

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.

BOSTON UNIVERSITY SCHOOL OF MEDICINE

ORGANIZED IN 1873

ANNOUNCEMENT

may be obtained by application to

THE REGISTRAR

80 East Concord Street,

Boston,

Massachusetts