SCIENCE

Vol. LX

NOVEMBER 21, 1924

No. 1560

CONTENTS

Address at the Edward Hart Celebration: Dr. EDGAR	
F. SMITH	461
Fifty Years of Chemistry in America: Dr. Wm.	
H. Nichols	464
Members of the American Association for the Ad-	
vancement of Science per Million of Population:	
Dr. Burton E. Livingston	467
Scientific Events:	
Collection of Paleolithic Material at Beloit Col-	
lege; The Pan-American Conference on Standard-	
ization; Fourth Annual Meeting of the Highway	
Research Board; The Carnot Centenary	469
Scientific Notes and News	471
University and Educational Notes	475
Discussion and Correspondence:	
The Quantum Numbers of the Bohr Orbits in the	
Alkali Atoms: R. BRUCE LINDSAY. White Indians	
of Darien: Clarence Quinan. Estimation of the	
Age of Shad: Dr. N. Borodin. The Fresh Water	
Jellyfish in Kentucky: Professor Harrison Gar-	
MAN. The Peanut Plant: E. L. REED	475
Scientific Books:	
Herrick on Neurological Foundations of Animal	
Behavior and Child on Physiological Foundations	
of Behavior: Professor S. J. Holmes	478
Special Articles:	
Enzymes of Thermal Algae: Professor R. B.	
HARVEY. The Production of Hydrogen Sulphide	
by Yeast: C. B. Morison	481
Meeting of the Optical Society of America: Pro-	
FESSOR F. K. RICHTMYER	483
American Mathematical Society: Professor R. G.	
D. RICHARDSON	484
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

Lancaster, Pa. Garrison, N. Y.

New York City: Grand Central Terminal.

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 3, 1879.

ADDRESS AT THE EDWARD HART CELEBRATION¹

This is a grand occasion, yes, that and much more! And those gathered here are happy. Especially is this true of the chemists in the audience, because it is one of their guild whose completion of the fiftieth milestone in his career as teacher, investigator, printer and manufacturer is at hand, and they proudly rejoice for

Judge him by no more than what you know Ingenuously, and by the right laid line Of truth, he will indeed all styles deserve Of wise, just, good and true!

But they who've so affectionately arranged this assemblage advised the speakers of the hour to tell something of chemistry in America. Heeding this injunction—free to descant on any phase of the huge, all-embracing subject—this particular speaker, craving your sympathetic indulgence, will hie him back—pretty far back—into the past, for there are some things which "if gathered from the ashes of obscurity" prove interesting, illuminating and worth while.

The wily Subtle, in Ben Jonson's "Alchemist," shrewdly said:

All arts have still had, Sir, their adversaries; But ours the most ignorant,—

True! For there were innumerable, unconscionable charlatans among the professors and practitioners of the alchemic art, whose shameful practices brought the craft into general disrepute. They were the adversaries of the simple, sincere devotees who had learned to scorn delights and live laborious days in search of the all-powerful transmuting agent, vet not blind to other new and marvelous changes occurring in their crude, primitive furnaces. Nor did these enthusiasts live in European lands alone. They existed here in America. We who've taught chemistry probably never knew this. We imagined that our science, freed from its early shackles of ignorance, and superstition, proudly stalked through the land untouched, untainted by those "close deeds of darkness, that shun the light!"

No, it is recorded that John Winthrop, the younger, erstwhile governor of Connecticut, living in New London, somewhere in the late sixteen hundreds, used to resort with his servant to Governor's Ring—a

¹ Address delivered on the occasion of the Edward Hart celebration at Lafayette College, October 16, 1924.

Marine Biological Laboratory Woods Hole, Mass. Biological Material



1. ZOOLOGY. Preserved material of all types of animals for class

work and for the museum.
2. EMBRYOLOGY. Stages of some invertebrates, fishes (including Acanthias, Amia and Lepidosteus), Amphibia, Reptiles and some mammals.

3. BOTANY. Preserved material of Algae, Fungi, Liverworts, Mosses, Ferns and Seed Plants.
4. MICROSCOPE SLIDES in

Bacteriology, Botany and Zoology.
5. LIFE HISTORIES, Germination Studies and Natural History Groups.

Catalogues furnished on application to

GEORGE M. GRAY, Curator
WOODS HOLE MASSACHUSETTS

SCIENTIFIC PERIODICALS

Chemical, Medical and allied subjects. Complete files, volumes and copies, bought and sold. Kindly send us a list of your wants and items of which you may wish to dispose.

B. LOGIN & SON

29 East 21st Street

New York, N. Y.

M. U. Electric Furnace

For All Laboratory Purposes Economical and Efficient

Ask for Bulletin 267 and Hevi-Duty Circular

EIMER & AMEND

Third Avenue, 18th to 19th Street New York, N. Y.

PITTSBURGH, PA. Agent, 4048 Franklin Road, N-S.



JAGABI RHEOSTATS

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

By means of slidingcontacts the resistance values can be varied from zero to full rating, in exceedingly small steps. We find greatest demand for Rheostats with tubes 16" long, as illustrated above. Write for Descriptive Bulletin S1040.

JAMES G. BIDDLE, PHILADELPHIA
1211-13 ARCH STREET



COMPLETE EQUIPMENT SERVICE

4

Explorers—Engineers—Travelers— Scientists

The only place in the U.S. where every unit of the correct outfit may be obtained.

Fiala Patent Sleeping Bag

The only light weight, scientific bag made—keeps in the heat, allows body moisture to escape.

Single and double barreled Rifles for Alaskan and African big game

Write for descriptive circulars

GURLEY'S celebrated Transits, Levels, Alidades, Water Meters and Registers.

TOPOGRAPHICAL ENGINEERS AND GEOLOGISTS
One Man Can Do the Work of Two

With the new Leveling Instrument of the PAULIN SYSTEM. An Aneroid as accurate as a Mercuric Barometer graduated in 2 foot intervals and reading accurately to six inches.

FIALA OUTFITS INC.

ANTHONY FIALA 25 Warren Street, New York



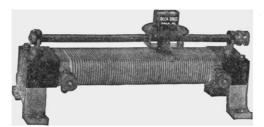
"C. P. HAS IT!"

Let us demonstrate what C. P. Service is. Send a list of your current requirements to Dept. S. C. C. IF you are in need of filter paper, glassware, a new balance—or a photometer of unusual accuracy—"C. P. Has It." We are able to meet your requirements in all routine laboratory supplies, reagents and apparatus, but we wish to place particular emphasis on our unequalled stock of rare chemicals and metals, and highly specialized apparatus and instruments. When you want the latest and best in anything required for your laboratory whether it be a monochromator, or an unusual reagent—remember that "C. P. Has It!"





"BECBRO"



LABORATORY SLIDE RHEOSTATS

We carry a large stock of the Sliding Contact Rheostats—wound upon Enameled covered tubes (lengths of 8", 16" & 20") and also wound upon rectangular stone pieces (lengths of 9" & 16").

Also rheostats of the Carbon Compression Type for use in the very fine and uniform regulation of current. Four (4) sizes carried in stock with ratings of 250, 1000, 1500 & 3000 Watts.

Rheostats of Special size and construction made according to specifications submitted to us:

Write for Catalog C-10

BECK BROS.

3640-42 N. 2nd St.

Philadelphia, Pa.

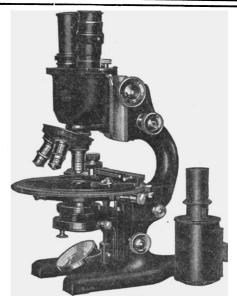
Fork Substage

WITH FINE ADJUSTMENT FOR THE CONDENSER

Providing capacity for every conceivable substage accessory

Is the latest and greatest advancement in microscope construction

Every modern research microscope should have it



Spencer Microscope No. 7h



SPENCER LENS COMPANY

Manuracturers
Microscopes, Microtomes, Delineascopes, Optical Glass,
Optical Measuring Instruments, Scientific Apparatus

BUFFALO, N. Y.

