# SCIENCE

VOL. LXII DECEMBER 4, 1925 No. 1614

#### CONTENTS

Chandler: The Teacher and the Chemist: PROFESSOR M. I. PUPIN	499
Chandler and the Columbia School of Mines: DEAN GEORGE B. PEGRAM	501
Scientific Events: The Science Exhibition at the Kansas City Meet- ing of the American Association; Meetings of Section F (Zoology) at Kansas City; Grants of the Carnegie Corporation; Testimonial to Dr. James F. Norris	503
Scientific Notes and News	
University and Educational Notes	
Discussion and Correspondence: A New United States Weed: DR. PAUL C. STAND- LEY. The Primary Foodplant of the Melon Aphid: DR. EDITH M. PATCH. Illiteracy in the College: PROFESSOR T. D. A. COCKERELL. The Purpurin Method of Localizing Calcium: PRO-	
FESSOR A. B. MACALLUM	509
Scientific Books: Bailey's Chemistry of Wheat Flour: Dr. H. W. WILEY	511
Scientific Apparatus and Laboratory Methods: A Rapid Method for Demonstrating the Effects of Plants on a Culture Solution: PROFESSOR P. L. HIBBARD	515
Special Articles: Note on Magnetic Declination: L. S. TAYLOR. Arca Patricia Sowerby, a Miocene Fossil from the Dominican Republic: WENDELL P. WOODBING	
The National Academy of Sciences: Abstracts of papers presented at the Madison meeting	519
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 8, 1879.

#### CHANDLER: THE TEACHER AND THE CHEMIST<sup>1</sup>

THE history of Charles Frederick Chandler's life is an essential part of the history of chemistry and chemical engineering in the United States during the last sixty years. In the early fifties, when young Chandler entered the Lawrence Scientific School at Harvard, chemical science in England and in this country was practically a monopoly of the druggists. Those were the days when the druggists in England were called chemists, and the name has persisted down to the present day. Young Chandler had to leave the Lawrence Scientific School and go to Professor Woehler, of Göttingen, in order to study the science of chemistry. Neither Harvard nor any other college in the United States was equipped in those days for training students in chemistry. When Chandler returned in 1857, decorated with a Göttingen Ph.D. degree, nobody seemed anxious to engage his services. He finally found some odd jobs with the oil men of New Bedford, analyzing their whale oil. His old friend, Professor Joy, of Union College, needed his assistance in the college laboratory, but the trustees were unwilling to appropriate a salary for an assistant in chemistry after they had appropriated five hundred dollars for a janitor of the chemical laboratory. The young doctor of philosophy took the vacant position of janitor. The privilege of giving scientific assistance to the professor of chemistry attracted him to the position of janitor. Nothing can describe better the state of the chemical science in this country in those days than this beginning of Chandler's scientific career. Nothing can describe better the latent energy of the young doctor of chemistry than his willingness to start his career as a janitor.

Who can tell to-day how long Chandler would have had to stay as janitor at Union College, if Professor Joy had not been called to Columbia College in 1857? But Joy stepped out of Union College and the trustees advanced Chandler from janitor to professor. Chandler's biography, entitled "From Janitor to Professor," would furnish a story of eminent value to the history of American science. Chandler soon outgrew his position at Union College and joined his old friend Professor Joy at Columbia College, where

<sup>1</sup> Address delivered at a Memorial Meeting, November 16, 1925, in honor of the late Charles Frederick Chandler.

# BAUSCH & LOMB

# Complete Spectrophotometric Outfit

No. 2675



The Bausch & Lomb Complete Spectrophotometric Outfit consists of a No. 2700 Constant Deviation Prism Type Spectrometer and a Photometric Stand No. 2750 that is completely equipped with a Martens Polarization Photometer No. 2735, a ventilated lamp house with Mazda bulb, specimen tubes with adjustable holders and a double lens and prism system. A front view of the Martens Photometer is shown below. Send for illustrated circular of Spectroscopes.







# Bausch & Lomb Optical Co.

632 St. Paul Street, Rochester, N. Y.

BRANCH OFFICES AND DISPLAY ROOMS New York Chicago Boston Washington San Francisco London Frankfurt



mended.

Ask for Pamphlet No. (0)-1058



Agents for Western States: California, Washington, Oregon, Idaho, Utah, Montana and Arizona

86 Third Street,

SPINDLER'& SAUPPE,

San Francisco, Cal.

#### ELECTRICAL MEASURING INSTRUMENTS

FOR PHYSICISTS AND PHYSICAL CHEMISTS

EQUIPMENTS SUITABLE FOR RESEARCH AND INDUSTRIAL LABORATORIES

We Solicit Inquiries

LEEDS & NORTHRUP CO. 4901 STENTON AVENUE PHILADELPHIA

# **Gas Testing Apparatus**

For Educational, Industrial, Clinical and Research Work Write for further details, stating your requirements

### EIMER & AMEND

Est. 1851

Inc. 1897

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

MODELS OF PROTOZOA Send for the colored catalog and complete price list of Jewell Models for Biology



The Sign of the Turtox Pledges Absolute Satisfaction General Biological Supply House 761-3 E. 69th Place Chicago, Illinois

SCIENTIFIC ARTIST

Line Drawing and Line Rendering of Pencil Sketches a Specialty

H. C. CREUTZBURG

The Wistar Inst. of Anatomy and Biology Philadelphia, Pa,

Second Edition: Bevised and Enlarged THE RAT: DATA AND REFERENCE TABLES Memoir No.6: 458 Pages. Bibliography: 2206 Titles HENRY H. DONALDSON Published by THE WISTAR INSTITUTE Philadelphia, Pa., U. S. A. Price, \$5.00

## McWilliams Selenium Cells

Use McWilliams selenium cells to amplify your Badio with light rays. Our No. 6-A cell is especially adapted to amplifying purposes, developing about 6 milli-amperes of current. Booklet of instructions and diagrams for Badio amplification by light rays furnished free with each cell. Price of booklet only, 50c. prepaid.



## Micro-amp Relay

Will close its contacts for a current change of 10 micro-amperes and maintain its adjustments indefinitely. More sensitive than any other relay known and will not stick on contact.

Prices and descriptive catalag mailed on request

ELECTRIC B. G. PRODUCTS CO. ITHACA, MICHIGAN

WHITE LIGHTNING, a romance by E. H. Lewis, may prove a good CHRISTMAS gift for a young man of scientific tastes. The hypothesis can be tried by sending \$2 to the

> WASHINGTON BOOK CO., 1012 Rush St., Chicago.

## THE MICROSCOPE

By SIMON H. GAGE, of Cornell University Revised Edition (14th) Ready

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.

# THE SCIENCE PRESS PRINTING COMPANY

PRINTERS OF

SCIENTIFIC AND EDUCATIONAL JOURNALS MONOGRAPHS AND BOOKS

A. E. URBAN, General Manager

Correspondence Invited

LANCASTER, PENNSYLVANIA