

SCIENCE

VOL. 88

FRIDAY, AUGUST 26, 1938

No. 2278

The British Association for the Advancement of Science:
Vision in Nature and Vision Aided by Science;
Science and Warfare: LORD RAYLEIGH 175

Scientific Events:

Agricultural Research at Rothamsted; Research Laboratories Authorized by the Agricultural Adjustment Act; Sylvatic Plague Laboratory of the University of California; The Scripps Institution for Medical Research; The Semi-Centennial Meeting of the Geological Society of America; Recent Deaths 181

Scientific Notes and News 184

Discussion:

An Algonkian Jellyfish from the Grand Canyon of the Colorado: PROFESSOR NORMAN E. A. HINDS.
A Rainbow at Night: PROFESSOR A. K. LOBECK.
A New Locality for the Venus' Flytrap (Dionaea muscipula): AUSTIN H. CLARK 186

Scientific Books:

Tray Agriculture: JEROME ALEXANDER 188

Special Articles:

Isolation of a Filtrable, Transmissible Agent with "Neurolytic" Properties from Toxoplasma-in-

fected Tissues: DR. ALBERT B. SABIN. *Intercellular Wound Hormones Produced by Heteroauxin:* DR. JOHN R. LOOFBOUROW and SISTER CECELIA MARIE DWYER. *Changes in Wheat Metabolism Caused by Powdery Mildew:* PAUL J. ALLEN and PROFESSOR DAVID R. GODDARD 189

Scientific Apparatus and Laboratory Methods:

A Practical Bellows Recorder: DR. WALTER L. MENDENHALL. *"Props" for Cover Glasses:* HERTHA M. CORDTS 193

Science News 8

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.

VISION IN NATURE AND VISION AIDED BY SCIENCE; SCIENCE AND WARFARE¹

By The Rt. Hon. LORD RAYLEIGH

PRESIDENT OF THE ASSOCIATION

I. VISION, AND ITS ARTIFICIAL AIDS AND SUBSTITUTES

THE last occasion that the British Association met at Cambridge was in 1904, under the presidency of my revered relative, Lord Balfour, who at the time actually held the position of Prime Minister. That a Prime Minister should find it possible to undertake this additional burden brings home to us how much the pace has quickened in national activities, and I may add, anxieties, between that time and this.

Lord Balfour in his introductory remarks recalled the large share which Cambridge had had in the development of physics from the time of Newton down to

¹ Address of the President of the British Association for the Advancement of Science, Cambridge, August, 1938.

that of J. J. Thomson and the scientific school centered in the Cavendish Laboratory, "whose physical speculations," he said, "bid fair to render the closing year of the old century and the opening ones of the new as notable as the greatest which have preceded them." It is a great pleasure to me, as I am sure it is to all of you, that my old master is with us here to-night, as he was on that occasion. I can say in his presence that the lapse of time has not failed to justify Lord Balfour's words. What was then an intelligent anticipation is now a historical fact.

I wish I could proceed on an equally cheerful note. The reputation of the scientific school in the Cavendish Laboratory has been more than sustained in the interval under the leadership of one whose friendly pres-

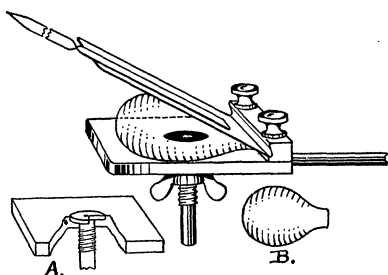


FIG. 1. Bellows recorder.

Fig. 1 is a mechanical drawing of the bellows. Recently we have adopted latex for our balloon material. With this material one can make the balloon any desired shape or size. It is especially desirable to make the balloon smaller in diameter where it passes under the block. Such a shape reduced in size is shown at B in the illustration. At A is a detail drawing of the countersunk depression in the base plate with the brass tube in position. The base plate of the recorder measures 4 cm \times 5 cm and is 5 mm thick. It can be made in any shop where tools and a mechanic are available and can be made any desired size. One point indicated in the drawing which might be advantageously changed is the shoulder on the threaded tube which may be made square or, if left round, may be fitted with a tongue which would sink into a corresponding groove in the brass plate. This is to prevent the threaded tube from turning when the wing-nut is tightened, thereby skewing the rubber condom somewhat.

This apparatus has been used in several laboratories, and I have been asked many times to publish a description of it. Dr. Charles Gruber, of Jefferson Medical College, Dr. G. H. Miller, of Iowa City Medical School, and Dr. Fredrick F. Yonkman, of Boston University School of Medicine, have used the bellows and published their results. The bellows was demonstrated at the meeting of the American Society for Experimental Pharmacology and Therapeutics held in Rochester, N. Y., in 1927.

WALTER L. MENDENHALL

"PROPS" FOR COVER GLASSES

A SIMPLE method for "propping up" cover glasses in preparing total mounts of chick embryos, small insects and other specimens requiring raised cover glasses makes use of small bone "curtain rings" which are available in $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ " and $\frac{7}{8}$ " diameters, corresponding to standard sizes in round cover glasses.

The bone ring is ground with sandpaper or emery wheel on top and bottom to produce flat adhering surfaces for slide and cover slip. The ground ring is then treated in the same manner as the specimen to be mounted; *i.e.*, washed in distilled water, run through

the alcohols, xylol, and impregnated with thin balsam. This procedure is important, especially dehydration, in order that no air or moisture remains in the bony structure to cause "bubbles" or fogging of the balsam after mounting. The rings may be stored in the balsam for later use.

When ready for use, the rings are placed on the slide with sufficient balsam adhering to make a good seal, and then allowed to dry for 24 to 48 hours in a dust-proof cabinet or box. In mounting the specimen, the ring is filled with thick balsam, care being taken to avoid bubbles on the inner and lower periphery of the ring. After placing the specimen in the balsam, more is added until the ring is filled and "heaped" but not overflowing. The cover slip is placed directly over the ring without being pressed down, as the light tension of the cover glass will permit any small bubbles formed to work out and permit some shrinkage of the balsam in drying.

After drying for several days, the ring is "painted" with heavy balsam to form a smooth, even surface finish, and to prevent bubbles of air creeping in as the balsam continues to shrink in drying. An occasional similar application of balsam will make these mounts long-lasting and uniformly neat laboratory slides.

HERTHA M. CORDTS

NEW YORK, N. Y.

BOOKS RECEIVED

- BERLAND, L. and F. BERNARD. *Hymenopteres Vespi-formes*. Pp. vii + 145. 241 figures. Lechevalier, Paris.
- BLUEMEL, C. S. *The Troubled Mind; A Study of Nervous and Mental Diseases*. Pp. ix + 520. Williams and Wilkins. \$3.50.
- DEBEER, G. R., Editor. *Evolution; Essays on Aspects of Evolutionary Biology Presented to Professor E. S. Goodrich on His Seventieth Birthday*. Pp. viii + 350. Illustrated. Oxford University Press. \$5.00.
- FRY, WALTER and JOHN R. WHITE. *Big Trees*. Revised edition. Pp. xvi + 126. Illustrated. Stanford University Press. \$1.50.
- HAAS, ARTHUR E. and IRA M. FREEMAN. *Elementary Survey of Physics; A Non-Mathematical Presentation with a Special Supplement for Pre-Medical Students*. Pp. x + 203. Dutton. \$1.90.
- HOHAGEN, JORGE. *Boletin del Cuerpo de Ingenieros de Minas del Peru, No. 120; Las Exportaciones Mineras en el Peru, 1937*. Pp. xvii + 396. Imprenta Americana, Lima.
- Les Classiques de la Découverte Scientifique: Détermination des Poids Moléculaires; Mémoires de MM. Avogadro, Ampere, and others*. Pp. xvi + 165. 7 figures. *La Dissolution; Mémoires de MM. Lavoisier, Gay-Lussac, and others*. Pp. xvi + 148. 7 figures. *Halogènes et Composés Oxygénés du Chlore; Mémoires de Scheele, Berthollet, and others*. Pp. xiv + 147. Illustrated. *Les Métaux Légers; Aluminium, Glucinium, Magnesium, Métaux Alcalins; Mémoires de MM. Henri Sainte-Claire Deville, Héroult, and others*. Pp. xviii + 166. Illustrated. Gauthier-Villars, Éditeur, Paris. 21 fr. each.
- Report on the Agricultural Experiment Stations, 1937, U. S. Department of Agriculture*. Pp. 226. Superintendent of Documents, Washington. \$0.25.

*Recent***McGRAW-HILL BOOKS***New Third Edition*

TIMM'S

AN INTRODUCTION TO CHEMISTRY

By JOHN A. TIMM

Assistant Professor of Chemistry, Yale University

*International Chemical Series***568 pages, 5½ x 8. \$3.50**

As in the preceding editions of this standard text, the present revision is designed especially to give a cultural appreciation of the methods and philosophy of chemistry to the student whose major interest lies elsewhere, in order that he may understand the application of chemical theories to the development of natural resources, to the problems of industry, and to situations in the daily life of the individual.

The entire text has been brought up to date. In addition, the author has introduced the generalized definitions of acids and bases and has written a new chapter on nuclear chemistry.

Other Important Books in Chemistry**Desha and Farinholt—EXPERIMENTS IN ORGANIC CHEMISTRY**

By LUCIUS JUNIUS DESHA and LARKIN HUNDLEY FARINHOLT, Washington and Lee University. *International Chemical Series.* 233 pages, 5½ x 8. \$2.75

Huntress—PROBLEMS IN ORGANIC CHEMISTRY

By ERNEST HAMLIN HUNTRESS, Massachusetts Institute of Technology. *International Chemical Series.* 270 pages, 5½ x 8. \$2.25

Morton—LABORATORY TECHNIQUE IN ORGANIC CHEMISTRY

By AVERY A. MORTON, Massachusetts Institute of Technology. *International Chemical Series.* 243 pages, 5½ x 8. \$2.50

Schoch and Felsing—GENERAL CHEMISTRY

By EUGENE P. SCHOCH and WILLIAM A. FELSING, University of Texas. *International Chemical Series.* 524 pages, 5½ x 8. \$3.25

Soule—LIBRARY GUIDE FOR THE CHEMIST

By BYRON A. SOULE, University of Michigan. *International Chemical Series.* 285 pages, 5½ x 8. \$2.75

*Send for copies on approval***McGRAW-HILL BOOK COMPANY, INC.**

330 West 42nd Street, New York, N. Y.

Aldwych House, London, W.C.2