SCIENCE

NEW SERIES
VOL. 91, No. 2358

FRIDAY, MARCH 8, 1940

SUBSCRIPTION, $6.00
SINGLE COPIES, .15

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., U. S. A., under the Act of March 3, 1879.

SCIENCE

VOL. 91 FRIDAY, MARCH 8, 1940 No. 2358

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.

NEW METHODS IN SPECTROSCOPY[1]

By Professor GEORGE R. HARRISON

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

IN expressing my appreciation of, and gratitude for, the high honor which is bestowed in the award of the Rumford Medals, I am mindful of the obligation which is laid upon a medallist to hold in mind the true significance of such an award. In all human affairs there are values which are of so intangible a nature as to require frequent concrete symbolization if we are to keep their import before us; this is an occasion of such symbolization. I accept these medals, not as a reward for accomplishment, but as symbolic of a vast array of aspirations which we are gathered here to celebrate: the determination of our society that the search for truth shall be prosecuted diligently; the desire that men shall be encouraged in that prosecution; the hope that opportunity for such search may continue in constantly increasing measure; the conviction that every addition to our knowledge of the world in which we live, no matter how slight, brings one step closer the day when men shall be freed from the terrors which have beset them all through the ages—terrors which, though at times they may seem overwhelming, do in fact gradually become less.

Not the least of our duties of realization this evening is the appreciation of the progress which has taken place since 1839 in one of those branches of physical science which Count Rumford desired to further when he arranged for the provision of medals in recognition of researches on heat and light. Later it will be my pleasant duty to recount some of the recent developments in the study of light with which I have had the good fortune to be associated, but before I come to the specific portion of my address which deals with

[1] Address on the occasion of the Award of the Rumford Medals, of the Academy of Arts and Sciences, Boston, October 11, 1939.

After the required growth has been reached, the test pieces are moistened by adding a known amount of sterile water to each one by means of a sterilized pipette. The pieces are then placed in position over the glass tube with one of the $1\frac{1}{2} \times 2$ inch faces in contact with the fungus mat. From 8 to 10 test pieces can be placed in a jar at one time. With care in preventing contamination of the cultures, they can be used over again as soon as the vigor of the fungus is renewed on the V boards.

The method provides a much greater capacity for test pieces than does the Kolle flask and the jars are easily prepared and cleaned. The preparation and sterilization of agar media is eliminated with considerable saving in cost. By growing on their natural substrate, wood, the test fungi maintain their vigor and can be used over again in the cultural jars so long as they remain contamination free and show vigorous growth. The moisture requirements are easily met, as the cultures grow older, by adding sterilized water to the wood medium or to the bottom of the jar.

For preliminary tests of new toxicants in wood, for testing sections cut from treated millwork or other wood products to determine the effectiveness of the preservative treatment, and for testing the relative resistance of various species of wood to decay, this method has proved of real value.

ERNEST E. HUBERT

WESTERN PINE ASSOCIATION,
PORTLAND, ORE.

FILING PHOTOGRAPHIC COPIES OF ARTICLES

IN view of the recent article by Harold P. Brown and James A. Austin in SCIENCE, December 15, 1939, a few notes on the methods developed by this library during the past year for filing photographic copies of original literature articles may be of interest.

Our library is the main library devoted largely to industrial chemical research for a medium size corporation. In building up photographic files, our policy has been to get photostat copies of articles under five pages and film copies of the longer ones. In the files, we have found that it is more convenient to interfile the films and photostats as a skeleton journal file—alphabetically by journal and then chronologically. This is expansible to almost any degree and eliminates extensive cataloguing, since *Chemical Abstracts* serves as a useful index. In the future, the abstract in *Chemical Abstracts* will be stamped "Filed" in the margin to show that a copy of the article is available in our library.

We have found, as did Brown and Austin, that the majority of technical articles are comparatively short, and the following scheme was devised for film strips: Correspondence size manila folders were lined with lengthwise stitched (and backstitched one half inch to eliminate ripping) pockets of good quality rag paper, 5 pockets to each side of the folder, or 10 pockets in all—giving an average storage capacity for each folder of the equivalent of 110 pages of magazine or book material when 35 mm film is used. Since the use of paper for the pockets eliminates the necessity of separate labels; identification may be made directly on each pocket. If articles need to be cut to fit the folder length, identification (if not already on each strip of film as order blank duplication) is marked with India ink on the leader strip, as well as on the pocket.

An illuminated hand viewer is almost a necessity in identifying film strips which are ready for filing or for rapid location of data in tables, when only one or two figures are wanted. Also we have found that a small movable table for the reading machine simplifies the problem of use. It is ordinarily kept near the desk of the bibliographer where it can be used for reading or placed directly behind the typewriter to copy data.

ELMA T. EVANS
R. MAX GOEPP, JR.

ATLAS POWDER COMPANY

BOOKS RECEIVED

ARRAUD, C.-A. *Diathermie Chirurgicale.* Pp. 216. 52 figures. Gauthier-Villars, Paris. 50 fr.

BOAS, FRANZ. *Race, Language and Culture.* Pp. xx + 647. Illustrated. Macmillan. $5.00.

BOUNOURE, L. *L'Origine des Cellules Reproductrices et le Problème de la Lignée Germinale.* Pp. xii + 271. 85 figures. Gauthier-Villars, Paris. 100 fr.

Bulletin géodésique Organe de L'Association de Géodésie, No. 61, Janvier-février-mars, 1939. Pp. 378. Illustrated. J. Hermann, Paris.

Cambridge Philosophical Society, Proceedings. Vol. 36, Part 1, January, 1940. Pp. 130. Illustrated. Cambridge Univ. Press, London. 10/6.

HYMAN, LIBBIE H. *The Invertebrates: Protozoa through Ctenophora.* Pp. xii + 726. 221 figures. McGraw-Hill. $7.00.

Institutum Divi Thomae, Studies of the. Vol. II, No. 2, November, 1939. Pp. viii + 156–286 + vi. Illustrated. Institutum, Cincinnati.

National Research Council of Japan. *Report; Vol. II, No. 8, April, 1938–March, 1939.* Pp. ii + 609–728. Illustrated. The Council, Tokyo.

National Society for the Study of Education. The Thirty-Ninth Yearbook. Intelligence: Its Nature and Nurture. GUY MONTROSE WHIPPLE, Editor. *Part I, Comparative and Critical Exposition.* Pp. xviii + 471. *Part II, Original Studies and Experiments.* Pp. xviii + 409 + xxxvii. Illustrated. Public School Pub. Co.

OTTO, R., K. FELIX and F. LINKE. *Organismen und Umwelt.* Pp. xiv + 275. Illustrated. Theodor Steinkopff, Leipzig. RM. 15.–.

RASHEVSKY, NICOLAS. *Advances and Applications of Mathematical Biology.* Pp. xiii + 214. 58 figures. Univ. of Chicago Press. $2.00.

REED, WILLIAM V. and ELIZABETH OGG. *New Homes for Old; Public Housing in Europe and America.* Pp. 112. Illustrated. Foreign Policy Assoc., New York. $0.25.

ZWORYKIN, V. K. and G. A. MORTON. *Television: The Electronics of Image Transmission.* Pp. xi + 646. Illustrated. Wiley. $6.00.