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VOL. 91, NO. 2360

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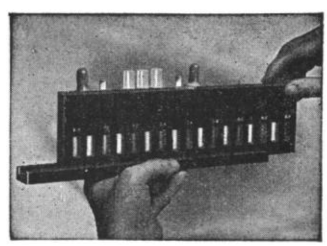

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NEW BOOK AND INSTRUMENT CATALOGUES

AMERICAN LIBRARY ASSOCIATION, Chicago. *A. L. A. Books and Pamphlets, 1940.* Pp. 23.

BURKE AND JAMES, INCORPORATED, Chicago. *Catalog No. 340.* Pp. 83. Illustrated.

CENTRAL SCIENTIFIC COMPANY, Chicago. *Cenco News Chats, February, 1940.* Pp. 22. Illustrated.

DU PONT DE NEMOURS AND COMPANY, INCORPORATED, E. I., Wilmington. *The Neoprene Notebook: Facts About Neoprene for the Engineer. January–February, 1940.* Pp. 90–95. Illustrated.

DUTTON AND COMPANY, E. P., New York. *News of Books and Authors. March–April, 1940.* Pp. 12. Illustrated.

PITTSBURGH PLATE GLASS COMPANY, Pittsburgh. *Pittsburgh Plate Products. January–February, 1940.* Pp. 20. Illustrated.

TENNESSEE EASTMAN CORPORATION, Kingsport. *Tenite: A Thermoplastic Molding Material Made from Eastman Cellulose Esters.* Pp. 28. Illustrated.

VAN NOSTRAND COMPANY, INCORPORATED, D., New York. *A Selection of Van Nostrand Chemistry Books in Widest Demand.* Illustrated.

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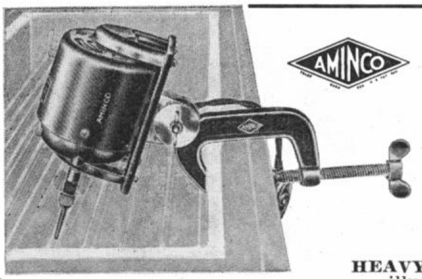

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Beckman pH News

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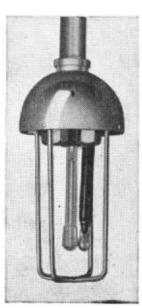
BECKMAN LABORATORY METER USED FOR MARINE RESEARCH

Deep Sea pH Measurements For Study of Plankton

SWEDEN: A Beckman Laboratory pH Meter was recently installed on the research ship "Skagerak" for making sub-surface determinations of pH on sea water. These investigations are to be carried out in the North and Baltic Seas to determine the conditions of temperature, pH, etc., best suited to the development of Plankton. Plankton is an aquatic vegetation which has received consideration as a possible source of food.



An interesting phase of this work will be the use of a special immersion head developed by National Technical Laboratories to permit pH determinations to be made *in situ* on sea water with the Beckman Glass Electrode at depths as great as 100 feet.

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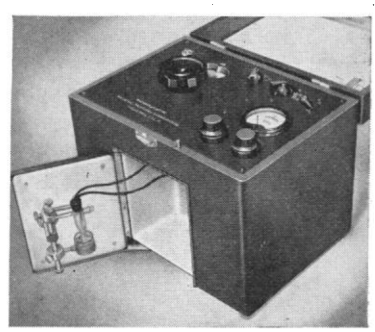
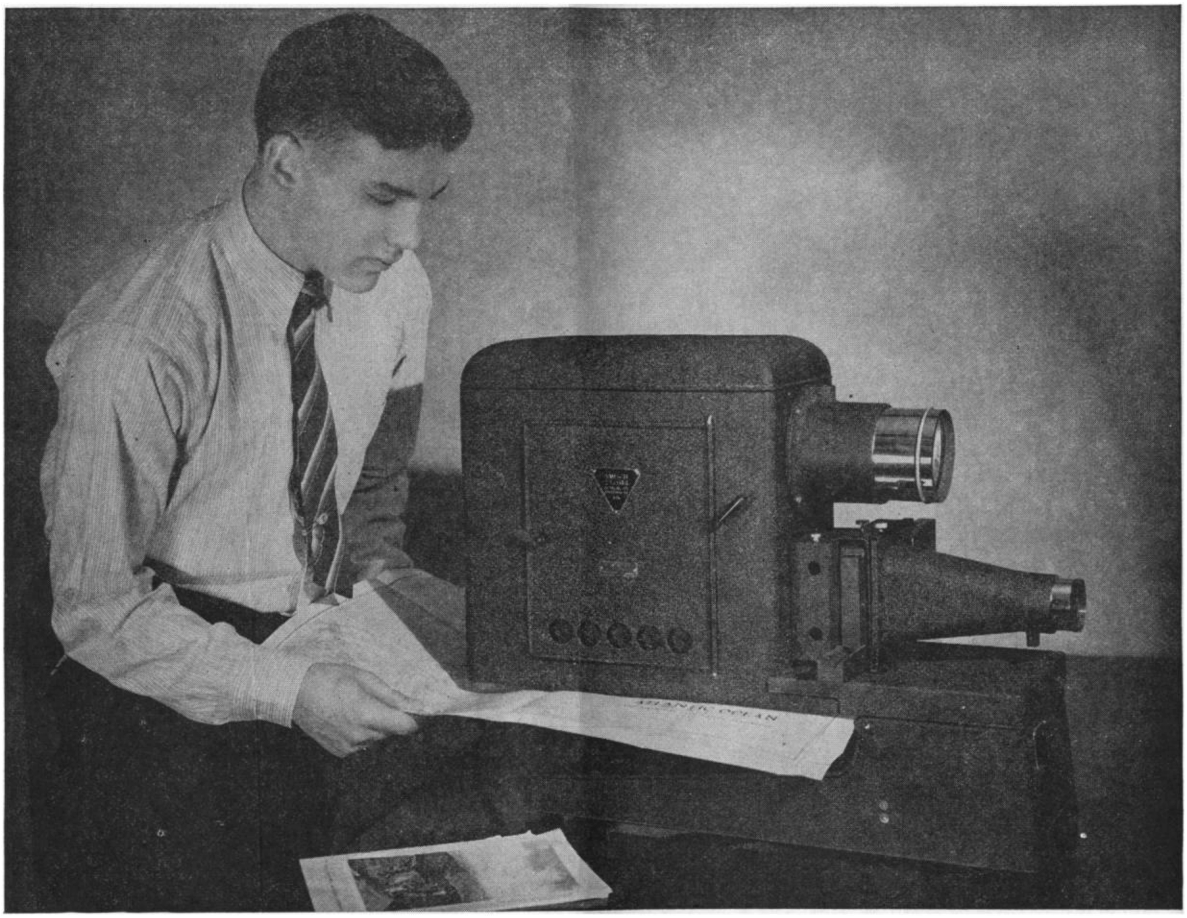
Field tests have shown that this new Beckman High Temperature Electrode possesses unusual resistance to attack by most chemical solutions at high temperatures.



The Beckman Laboratory pH Meter combines extreme accuracy with wide-range versatility.

Complete information on any of the above applications will gladly be sent on request. National Technical Laboratories, 3330 E. Colorado Street, Pasadena, Calif.



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Vol. 91 — Friday, March 22, 1940 — No. 2360

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

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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.

THE CURRENTS OF THE PACIFIC OCEAN AND THEIR BEARING ON THE CLIMATES OF THE COASTS[1]

By Dr. H. U. SVERDRUP

SCRIPPS INSTITUTION OF OCEANOGRAPHY, UNIVERSITY OF CALIFORNIA

I feel greatly honored by addressing you here on this island which was made and made beautifully by man, the shores of which are washed by the waters of the Pacific Ocean, and which now during this great exposition offers a marvelous display of arts, crafts and industries from the many countries around that big ocean.

I stand here, however, with mixed feelings, partly because my personal experiences of the Pacific Ocean are limited and of recent years, and partly because I always feel that it is a shame to reduce winds and waves, the ever shifting sky of the sea, and the vast expanse of the ocean to a series of graphs in black and white such as those which I shall use to illustrate part of my address to-day. However, I can not bring to you the fogs of the Bering Sea, the blue waves of the trade-wind belts or the icebergs of the Antarctic. I have to present my subject in a cut-and-dried fashion, but I feel confident that you will not leave with the impression that the Pacific Ocean is as undisturbed and behaves in so law-abiding a fashion as appears from my graphs. You are familiar with the sea and know that it is ever-changing and tantalizing to those who try to understand its moods, but to-night I must generalize and simplify.

My address will fall into two distinct different parts. In the first place, I wish to give a review of the currents of the Pacific Ocean and, in the second place, I

[1] Address given at the Pacific Science Congress, July 27, 1939. Contributions from the Scripps Institution of Oceanography, New Series, No. 84.

prevented excessive heating of under-cured hay (having a moisture content up to 37.0 per cent. in stacks so far tried).

Three round stacks consisting of approximately 6½ tons, 3 tons and 2¼ tons, and having when built, moisture contents of 37.0, 29.4 and 35.3 per cent., respectively, reached maximum temperatures of 112°, 100° and 76° F., respectively. Ventilation in the 6½ ton stack, provided by a round moulded shaft one foot in diameter, was believed inadequate.

An unventilated 8½ ton stack containing 37.2 per cent. moisture when stacked, reached a maximum temperature of 148° F. and contained considerable moist brown hay when opened.

A fourth stack, rectangular in shape, containing 9 to 10 tons of hay, carrying 21.2 per cent. moisture, was so constructed that half the stack was ventilated and half not ventilated. Maximum temperatures in similar locations in the ventilated (68° F.) and unventilated (92° F.) portions of the stack showed a difference of 24° F. in favor of the ventilated hay. A slight difference in quality of the hay in favor of ventilation was noted.

Frequent velometer readings in the chimney of the ventilated part of the stack showed that the upward flow of air in the ventilator shaft commonly reached a speed of 150 feet per minute with occasional velocities of 250 to 300 feet per minute.

This principle of hay ventilation is believed applicable to most existing hay barns and mows, as well as stacks, and seems to offer a hope of eliminating much of the hazard of spontaneous heating of hay, at small cost for installation and no cost for operation.

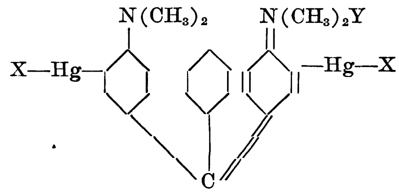
MAYNARD S. GRUNDER
AGRONOMIST,
WESTERN WASHINGTON EXPERIMENT STATION,
PUYALLUP, WASHINGTON

ORGANIC MERCURY DERIVATIVES OF BASIC TRIPHENYLMETHANE DYES

BECAUSE of the distinctive characteristics of the basic triphenylmethane dyes the organic mercury derivatives of these dyes would seem to present interesting bacteriological and pharmacological possibilities. It has proved difficult to mercurate basic dyes directly,[1,2] but I have found that the mercury compounds can be prepared by a two-stage process in which a derivative of the basic triphenylmethane dye is mercurated and the resulting mercury compound converted into the dye. Proceeding in this way, it is possible to prepare series of mercury compounds of both the colorless and colored forms of amino triphenylmethane derivatives.

For example, 4,4′ bis-dimethylamino-triphenylacetonitrile is readily mercurated, and the mercurated nitrile can then be converted into the corresponding mercurated malachite green by means of a photochemical reaction. Both mono- and di-mercuri derivatives are produced smoothly in the mercuration.

The dimercuri malachite green probably has the formula:



Here X and Y are anions, but not necessarily the same anions.

The mercury in this compound is relatively stable to ammonium sulfide, which, in presence of ammonium hydroxide, gives only a colorless organic mercuric sulfide, which remains colorless for some time at room temperature.

When X is an anion which ionizes readily from the mercury the salts of even this dimercurated dye are generally quite soluble in alcohol, and the alcoholic solution, if not too concentrated, may be diluted with water without precipitation of the dye. From such solutions chlorides, even in low concentration, precipitate the insoluble chloromercuri compound. However, dicyanomercuri malachite green—where X is CN^-—has the solubility of the ionizable salts and, in addition, is soluble in presence of moderate concentrations of chloride ion.

Further details of these reactions and compounds will be published elsewhere. The chief purpose of this note is to call the existence of these new substances to the attention of bacteriologists and pharmacologists. I have a little of the dicyanomercuri malachite green and should be glad to supply small samples to interested scientists while my stock lasts.

LYMAN CHALKLEY
POINT PLEASANT, N. J.

[1] F. C. Whitmore and G. J. Leuck, *Jour. Am. Chem. Soc.*, 51: 2782–2784, 1929.

[2] L. Chalkley, *Jour. Am. Chem. Soc.*, 47: 2055–2061, 1925.

BOOKS RECEIVED

GERICKE, WILLIAM F. *The Complete Guide to Soilless Gardening.* Pp. 285. 60 figures. Prentice-Hall. $2.75.

Living Specimens in the School Laboratory. Pp. 93. Illustrated. General Biological Supply House, Chicago. $1.00.

LORD, EUGENE H. *Experimenting at Home with the Wonders of Science.* Pp. xii + 243. 107 figures. Appleton-Century. $2.00.

PERRIER, GEORGES. *Petite Histoire de la Géodésie: Comment l'homme a Mesuré et Pesé la Terre.* Pp. 188. 9 figures. Alcan, Presses Universitaires de France, Paris. 18 fr.

POOL, RAYMOND J. *The Foundations of Plant Science.* Pp. v + 654. 541 figures. Ginn. $3.75.

YATES, RAYMOND F. *Science with Simple Things.* Pp. xv + 245. Illustrated. Appleton-Century. $2.50.