

tance wire carrying current to emerge from liquid surface, and to insure against this possibility it may be desirable to provide a constant level device. Other

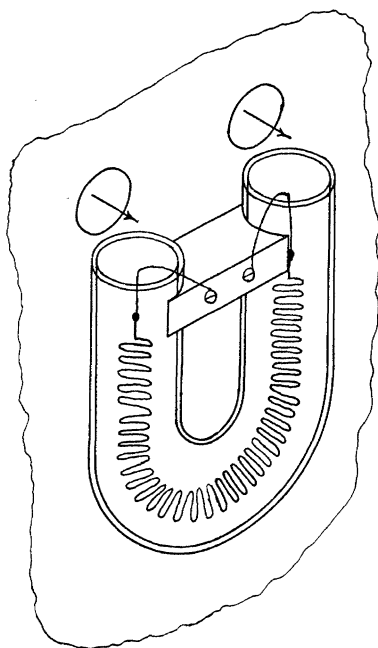


FIG. 1.

adaptations may provide convenient means of vaporizing propylene glycol or other non-conducting fluids in experimental air disinfection.

W. F. WELLS

LABORATORIES FOR THE STUDY OF  
AIR-BORNE INFECTION,<sup>1</sup>  
UNIVERSITY OF PENNSYLVANIA  
SCHOOL OF MEDICINE

## HEAT INACTIVATION OF WHEAT MOSAIC VIRUS IN SOILS

WHEAT mosaic virus *Marmor tritici* H.<sup>1</sup> is of interest not only because of the economic losses induced in winter wheat in certain wheat-growing areas of the Midwest, but also because it may be directly transmitted from the soil. Previous studies<sup>2, 3, 4</sup> on the relationship between soil and virus suggested an investigation to determine the resistance of the virus in the soil to heat. Virus-infested soil at optimum moisture content was passed through a screen of  $\frac{1}{4}$ -inch mesh,

<sup>1</sup> These laboratories are supported by a grant from the Commonwealth Fund to the University of Pennsylvania for studies in the prevention and control of air-borne infection.

<sup>2</sup> F. O. Holmes, "Handbook of Phytopathogenic Viruses." Minneapolis, Minn.: Burgess Publishing Company.

<sup>3</sup> H. H. McKinney, U. S. Dept. of Agr. Bull. 1361, 1925.

<sup>4</sup> R. W. Webb, *Jour. Agr. Res.*, 35: 587-614, 1927.

<sup>5</sup> R. W. Webb, *Jour. Agr. Res.*, 36: 53-75, 1928.

placed in stoppered test-tubes 3 cm by 20½ cm in size and tamped lightly. Twenty-five soil samples contained in these tubes were heated at each of the temperatures: 40°, 50°, 60°, 70° and 80° C. A thermometer was inserted into the center of one tube in each series of tests and the samples immersed in an electrically heated and thermostatically controlled water bath. The tubes were spaced and the water forced to circulate freely between them by means of an electric stirrer. After the soil had reached the desired temperature in the tube containing the thermometer, a 10-minute exposure was given, after which the tubes were removed and immediately cooled in running tap water. The soil was then emptied into No. 10 tin cans. Wheat seeds of variety Purdue No. 1 were planted in the treated soil and the young plants kept outdoors over winter. After dormancy was broken it was found that all wheat plants grown in soil heated at 40° and 50° C were affected with mosaic, while all plants in the remaining series were healthy. These results indicate that wheat mosaic virus is inactivated in the soil between 50° and 60° C at an exposure of 10 minutes.

FOLKE JOHNSON

DEPARTMENT OF BOTANY,  
OHIO STATE UNIVERSITY

## BOOKS RECEIVED

- Annual Review of Physiology.* Edited by JAMES MURRAY LUCK. Pp. 709. American Physiological Society and Annual Reviews, Inc. \$5.00.
- BENEDETTI-PICHLER, ANTON ALEXANDER. *Introduction to the Microtechnique of Inorganic Analysis.* Pp. vii + 302. Wiley. \$3.50.
- BOWLBY, JOHN. *Personality and Mental Illness.* Pp. viii + 280. Emerson Books. \$2.75.
- Bulletin of the Health Organization.* Vol. IX, No. 4. Pp. 371-491. League of Nations, Geneva. \$1.00.
- CLARK, PAUL F. and ALICE SCHIEDT. *Memorable Days in Medicine.* Pp. 305. University of Wisconsin Press. \$2.00.
- DEMING, HORACE G. *Introductory College Chemistry.* Second edition, revised. Pp. xii + 521. Wiley. \$3.00.
- GANN, ERNEST K. *Getting Them into the Blue.* Pp. 154. Illustrated. Crowell. \$2.00.
- HOGG, JOHN C. and CHARLES L. BICKEL. *Laboratory Manual to Elementary General Chemistry.* Pp. x + 283. Van Nostrand. \$1.60.
- JOHNSON, FREDERICK. *The Boylston Street Fishweir.* Pp. xii + 212. 16 figures. 14 plates. Phillips Academy Foundation.
- PEPPER, STEPHEN C. *World Hypotheses.* Pp. xiii + 348. University of California Press. \$2.50.
- Proceedings of the Eighth American Scientific Congress.* Volume I. Edited by PAUL H. OEHSER. Pp. 539. Department of State, Washington, D. C.
- SAMPSON, KATHLEEN and J. H. WESTERN. *Diseases of British Grasses and Herbage Legumes.* Pp. 85. 15 figures. 8 plates. Macmillan. \$1.50.
- SARGENT, PORTER. *Education in Wartime.* Pp. 224. Sargent. \$1.50.
- SHELDON, WILLIAM H. *The Varieties of Temperament.* Pp. x + 520. Harper. \$4.50.
- TENNENT, DAVID HILT. *The Photodynamic Action of Dyes on the Eggs of the Sea Urchin, Lytechinus Variegatus.* Pp. 153. 40 figures. 8 plates. Carnegie Institution of Washington. Paper, \$1.25. Cloth, \$1.75.