SCIENTIFIC APPARATUS AND LABORATORY METHODS

USE OF GELATIN IN THE INFLUENZA RED CELL AGGLUTINATION TEST[1]

THE red blood cell agglutination test has greatly facilitated laboratory studies of influenza by simplifying measurements of virus concentrations and antibody levels. A method utilizing the pattern of the cells settling on the bottoms of serological test-tubes as the criterion of agglutination has previously been reported by us.[2] To determine a virus agglutination titer by this technique, 0.5 cc of each two-fold virus dilution was mixed with 0.5 cc of a 1 per cent. solution of normal rabbit serum in saline, to which was then added 0.1 cc of a 0.75 per cent. suspension of washed human type "O" red cells (or chicken cells, if readily available). The inclusion of the 1 per cent. normal rabbit serum prevented the formation of a film of cells on the bottoms of the tubes which interfered with the reading of negatives and controls. It is the purpose of this note to report that a 0.1 per cent. gelatin solution in saline is a satisfactory substitute for the 1 per cent. rabbit serum. A stock solution, which can be made by dissolving the pure gelatin capsules used in pharmaceutical preparations in the proper volume of warmed saline, will keep in the refrigerator for at least one week.

When running agglutination-inhibition titrations on immune serum samples with the technique as reported in our original publication, a constant serum dilution of 1 : 100 was titrated against increasing dilutions of the agglutinating virus. In a few cases the antibody potency of the immune serum at this dilution has been sufficient to inhibit completely the agglutinating action of a 1:10 dilution of virus, the highest concentration used. In such cases the serum may be diluted to 1:200 or 1:400, or further, if necessary, by the addition of 0.1 per cent. gelatin, and retitrated to determine the end-point. From this titration the theoretical end-point of the serum in a 1:100 dilution can be calculated, since we have found that a two-fold increase in serum dilution resulted in a corresponding two-fold increase in the highest virus dilution showing inhibition of agglutination. We have expressed immune serum titers in terms of the fold-difference between the agglutination end-points of the virus-gelatin control titration and the virus-test serum titration.

Summary: A 0.1 per cent. gelatin solution has been found to be a satisfactory substitute for the normal rabbit serum included to facilitate the reading of agglutination in red blood cell tests with influenza virus.

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[1] The opinions advanced in this paper are those of the writers and do not represent the official views of the Navy Department.

[2] Personnel of Naval Laboratory Research Unit No. 1, *U. S. Naval Medical Bulletin,* XLI: 114–128, January, 1943.

A SIMPLE PIPETTE HOLDER

IN the course of chemical analyses it is frequently desirable to put pipettes aside for reuse at a later time. Although there are a number of pipette racks on the market, they all involve putting the pipette through several holes with a consequent contamination of the sides of the pipette—for the racks, obviously, can not be chemically cleaned.

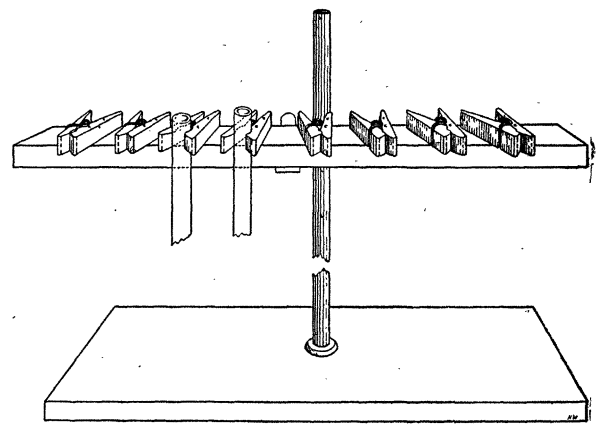

FIG. 1

This pipette holder is made by attaching eight spring type clothes pins to a board, which in turn is attached to a ring stand by a rod and common laboratory clamp. Two nails through one of the sides of the pin serve to attach it to the board. The other side is left free for operating the spring.

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BOOKS RECEIVED

AUBLE, ROBERT NEIL. *Shop Job Sheets in Radio.* Illustrated. Pp. vii + 128. The Macmillan Company. $1.50.

HARRISON, GEORGE RUSSELL. *Atoms in Action.* Illustrated. Pp. xii + 401. Garden City Publishing Company. $1.49.

RODGERS, ANDREW DENNY. *John Merle Coulter.* Missionary in Science. Pp. viii + 321. Princeton University Press. $3.75.

SUMNER, JAMES B. and G. FRED SOMERS. *Laboratory Experiments in Biological Chemistry.* Illustrated. Pp. vi + 169. Academic Press, Inc. $2.60.

The Philosophy of Bertrand Russell. Edited by PAUL ARTHUR SCHILPP. Pp. xv + 815. Northwestern University. $4.00.

TOKAY, ELBERT. *Fundamentals of Physiology.* Illustrated. Pp. xiv + 336. The New Home Library. 69¢.