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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

PRELIMINARY ANNOUNCEMENT OF THE NEW YORK MEETING

Edited by Dr. F. R. MOULTON

PERMANENT SECRETARY

THE one hundred eleventh meeting of the association will be held in New York City from next December 28 to January 2, inclusive. This will be the sixth meeting of the association in New York, the first having been held in August, 1887, thirty-nine years after the association was organized; the second in June, 1900; the third in December, 1906–January, 1907; the fourth in December, 1916; and the fifth in December, 1928–January, 1929.

All earlier meetings of the association in New York City were held while the United States was at peace, though in December, 1916, the first World War was in its third year, and it was becoming evident that the United States would be drawn into it. Now this country is involved in a war that is making unparalleled demands upon all its resources. Under these conditions obviously no scientific meeting or other convention should be held unless it contributes much to the current war effort and begins to look forward to the post-war future. Fortunately a large meeting can be held in New York City with a minimum of railroad travel because about 3,000 members of the association live in the City and about 10,000 within three or four hours' travel.

In order to compare the coming meeting of the association with earlier meetings held in New York City, a few statistics will be presented. The membership for 1942 is as of September 30, the end of the

infected fluid is frozen and then thawed contains the bulk of active virus and have employed the procedure for the concentration of influenza virus.

Certain technical difficulties accompany concentration by precipitation. Care must be taken, while harvesting the fluid, not to rupture the blood vessels since adsorption of virus by red cells results in an appreciable diminution in titer of the fluid. The temperature during the collection of the precipitate must be maintained at or about 0° C. and agitation must be carefully avoided. The procedure for concentration of the Lee strain of Type B virus requires an adjustment in pH. There is a bulk of non-specific material in the precipitate, only part of which is soluble. After drying *in vacuo* the insoluble residue increases.

It appeared that utilization of embryonic red cells for the concentration of virus might eliminate some of these difficulties if satisfactory adsorption and elution could be obtained without loss of activity. This has been possible. The essential features of the procedure adopted are as follows: Into the allantoic sac of hen's eggs, containing embryos in the eleventh or twelfth days of incubation, is inoculated 0.1 cc of a 10^{-3} dilution of infected allantoic fluid in physiological salt solution. Either the PR8 strain[7] of type A or the Lee strain[8] of type B virus has been used. The extra-embryonic fluids are harvested 48 hours later. The shell over the normal air sac is removed, the shell and chorioallantoic membranes and the blood vessels are torn with sterile forceps; the amnion and its main vessel are also torn. The embryo is allowed to bleed into the fluid while the egg is rotated so as to obtain mixing and to prevent the formation of clots. The bloody fluid is removed by aspiration with needle and syringe and collected in a 250 cc centrifuge bottle immersed in an ice-water bath at a temperature of 4° to 6° C. Chilling is important, since it increases the degree of adsorption and limits the elution which occurs rapidly at higher temperatures. The fluid from additional eggs is collected in the same manner and added. The red cells agglutinate while still in the egg and form coarse clumps in the collecting vessel. Since adsorption occurs very rapidly the process reaches its maximum in the time required to harvest the fluid from a few eggs.

When the desired volume of fluid is collected, the red cells, constituting 2 to 2.5 per cent. of the total volume, are separated by centrifugation in a chilled cup for three minutes at 500 to 1,000 r.p.m. The supernatant fluid and any light fibrinous aggregates are poured off and discarded. At this stage the cells are strikingly cohesive and resemble a disc of soft gelatin. The surface of the sediment is gently rinsed with cold (4° C.) 0.85 per cent. sodium chloride solution. No effort is made at this time to break up the agglutinated cells, since it tends to induce hemolysis. The wash fluid remains clear. To the washed, sedimented cells physiological salt solution is added in an amount equal to one tenth the original volume or less, depending upon the degree of concentration desired. The mixture is placed in a water bath at 37° C., agitated gently until the temperature is raised and the suspension is then placed in an incubator at 37° C. for two and one half hours. The clumps of agglutinated cells gradually disperse as the virus is released. The red cells are then centrifuged from the suspension and the supernatant fluid which represents the concentrate is removed. The preparation is usually slightly opalescent with a faint pink tinge.

In this manner approximately tenfold concentration of both the PR8 and Lee strains of virus has been obtained consistently. The infectious and agglutinating titers of the concentrate have remained essentially constant for at least three weeks in the refrigerator. Evidence points to the fact that the major portion of the inert chick protein is eliminated in that no significant precipitate is observed when the material is thawed after freezing with CO_2 ice nor after prolonged standing in the refrigerator. On rehydration after freezing and drying a small amount of finely suspended material remains undissolved.

The results indicate that the simplified procedure of adsorption and elution from embryonic red cells is as effective as precipitation in concentrating influenza virus from infected chorioallantoic fluid and takes advantage of technical features which serve as sources of difficulty in the precipitation process. Experimental results will be presented in detail in a subsequent publication.

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BOOKS RECEIVED

A.S.T.M. Standards on Petroleum Products and Lubricants. Illustrated. Pp. x + 442. $2.25. *A.S.T.M. Standards on Textile Materials.* Illustrated. Pp. xiii + 408. $2.25. American Society for Testing Materials, Philadelphia.

AGNEW, RALPH PALMER. *Differential Equations.* Pp. vii + 341. McGraw-Hill. $3.00.

ARTHUR, PAUL and OTTO M. SMITH. *Semimicro Qualitative Analysis.* Pp. xi + 322. McGraw-Hill. $2.75.

MEAD, MARGARET. *And Keep Your Powder Dry.* Pp. x + 274. William Morrow and Company. $2.50.

ROGERS, J. SPEED, THEODORE H. HUBBELL and C. FRANCIS BYERS. *Man and the Biological World.* Illustrated. Pp. x + 607. McGraw-Hill. $3.50.