spread of staphylococci, streptococci and related microörganisms from a local focus is the meshwork of fibrin filling interstitial tissue-spaces and plugging regional lymphatics. If this is true, antiseptics which render encapsulating deposits of fibrin relatively insusceptible to streptofibrinolysins would be antiseptics of choice in the local treatment of streptococcal infections. In our hands tincture of iodine is more efficient in reducing fibrinolytic susceptibility than many of the newer antiseptics, a 1:3000 dilution of the tincture rendering fibrin but one-eighth its normal susceptibility to liquefaction by streptococci.

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Ultrafiltration of Virus of Equine Encephalomyelitis (Russian Strain, Moscow No. 2)

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Bauer, Cox and Olitsky[1] have recently determined the filtration end-point of the Eastern and Western strains of the virus of equine encephalomyelitis. Their results have indicated a particle size of 20 to 30 mμ for both types. Previous work by one of us[2] has indicated the immunological independence of a Russian strain (Moscow No. 2) of this virus, and it was considered of interest to compare its size with the results already reported for the two North American strains.

A 20% suspension of guinea pig brain containing active virus was prepared in a diluting fluid consisting of equal parts of hormone broth, ascitic fluid and sterile distilled water as recommended by Bauer, Cox and Olitsky.[1] A 1-100 dilution of the stock suspension in the same fluid was used for the ultrafiltration experiments, while all titrations of the virus whether before or after filtration were regularly made in the same diluent.

The collodion membranes were prepared according to the method of Elford,[3] as modified by Bauer and Hughes.[4] All filtrations were

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1 Bauer, J. H., Cox, H. R., and Olitsky, P. K., PROC. SOC. EXP. BIOL. AND MED., 1935, **33**, 378.

2 Howitt, B. F., *J. Immun.*, 1935, **29**, 319.

3 Elford, W. J., *J. Path. and Bact.*, 1931, **34**, 505.

4 Bauer, J. H., and Hughes, T. P., *J. Gen. Physiol.*, 1934, **18**, 143.

conducted at room temperature under positive pressure of 20 to 50 cm. Hg. The filtrate collected varied from 2 to 4 cc., of which 0.03 cc. was injected intracranially into each of 3 mice for every membrane used.

Dilutions of 1-1,000, 1-10,000 and 1-100,000 of each filtrate were inoculated respectively into each of 2 mice as were similar dilutions of the unfiltered stock suspensions. The Russian strain gave a titer of 1-100,000 for the unfiltered material and 1-10,000 for the positive filtrates.

Comparative experiments with the Eastern (New Jersey) and Western (California) American strains were also made using similar dilutions for both filtered and unfiltered material. The Eastern virus filtrates were positive in a 1-10,000 dilution when passed through the finest membrane (average pore diameter 80 mμ) while the Western virus passed the same size membrane in a 1-100 dilution but was negative upon further titration.

The results of these studies show a sharp end-point for the Moscow No. 2 strain between membranes having average pore diameters of 160 and 180 mμ, and passage of the New Jersey and California strains through membranes having an average pore diameter of 80 mμ. Unfortunately, no membranes with smaller pores were available, and the exact end-point of the 2 American strains was not determined. However, these results supply partial confirmation to the findings of Bauer, Cox and Olitsky.[1] It is to be noted that the filtration end-point of the virus of Borna disease has been placed at 170 mμ,[5] the same figure obtained for our Russian strain of equine encephalomyelitis.

Summary. The Russian strain (Moscow No. 2) of equine encephalomyelitis virus has a particle size of 85 to 130 mμ, using the Elford type of graded collodion membranes and the Elford correction factor. Under the same filtration conditions, the California and New Jersey strains of the same virus have a particle size less than 40 mμ.

5 Elford, W. J. and Galloway, I., *Brit. J. Exp. Path.*, 1933, **14**, 196.