of Russian and louping-ill viruses as received in our laboratory as similar. Final proof of the identity of these two agents awaits the testing of fresh specimens of virus obtained from Russia and Scotland. Meanwhile we call attention to the possibility that the tick-borne spring-summer virus encephalitis of man in the timber country of Russia and the tick-borne virus encephalitis of sheep in Scotland may be caused by one and the same infectious agent.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

AN INEXPENSIVE DISPOSABLE FILTER FOR BLOOD AND PLASMA TRANSFUSIONS

ACCUMULATION of fibrin and gelatinous material in stored blood and plasma is commonplace despite the use of sufficient sodium citrate solution. The macroparticles become more numerous with increased age of the stored product and are a serious hazard in the administration of blood and plasma.

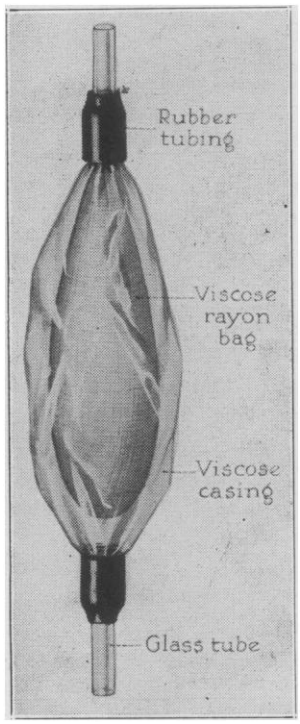

FIG. 1

There is universal agreement among reputable authorities that filtration of blood and plasma must be carried out previous to intravenous administration, and yet an entirely satisfactory filter does not exist. Metal screens in common use are expensive, difficult to clean and are either too coarse to retain the undesirable material or else they are so fine that they become clogged easily. The use of cotton gauze should be condemned, for cotton fibers may be liberated into the filtered product and the open method usually employed allows air contamination with bacteria to take place. Other methods which have been proposed are impractical from the standpoint of breakage and difficulty encountered in cleaning the apparatus.

The essential problem then is the need for a filtering mechanism which will: (1) Yield a filtrate free of fibrin or gelatinous accumulations; (2) not clog or leak while in use; (3) allow continuous filtration during administration of the blood and plasma; (4) allow filtration under aseptic conditions; (5) eliminate the uncertain and laborious cleaning procedures; (6) be relatively inexpensive.

A simple apparatus which fulfils these requirements reasonably well is illustrated in Fig. 1. It consists of a cone-shaped viscose rayon sheer cloth bag made by sewing together two triangular pieces of the material; each piece having a base of 4 inches and an altitude of 8 inches. This allows a large filtering surface and eliminates the possibility of clogging. The bag is attached to a short glass tube by means of a $\frac{1}{2}$-inch piece of rubber tubing and then enclosed in an 8-inch length of $1\frac{5}{8}$-inch viscose sausage casing. The casing is gathered at either end around glass tubing and attached by means of $\frac{3}{4}$-inch pieces of rubber tubing which act as tight-fitting rubber bands. The apparatus may be wrapped separately and autoclaved or attached directly to the transfusion set just above a Murphy drip and sterilized with the set.

Chief advantages of the filter are its efficient and rapid filtering action without clogging made possible by the large filtering area. It does not leak. Its construction is simple and inexpensive so that it need be used but once and then discarded. Its lightness, compactness and disposability are features especially suitable to military conditions.

The cost of labor and materials required to make an entirely new filter for each transfusion is less than the cost of labor and breakage involved in cleaning the metal or glass filters now in common use. The problem of reactions attributed to unclean filters is eliminated. In actual use at the Research and Educational Hospitals of the University of Illinois it is preferred to other types of filters.

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