of absorption. Size would influence both the amount absorbed and the scattering coefficient, which is maximal for 10 μ radiation when particles are in the size range of 5–15 μ. The evidence, however, is not to be taken as a proof of this theory.

The production of sorbent aerosols may well be related to thermal chipping caused by local temperature rises on the adsorbent surface caused by heats of adsorption of atmospheric moisture and possibly other normal atmospheric gases. A rise in the humidity of the air entering the sorbent, accompanied by increased adsorption of moisture, generally causes some increase in the intensity of the olfactory stimulus.

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A Simple Method of Mounting Gross Biologic Material in Plastic Boxes[1]

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A simple, quick, and inexpensive method of mounting gross biologic material in acrylic plastic[2] should be of wide interest. Gross slices of tissue fixed in formalin or other suitable preservatives are permanently mounted in nonbreakable, transparent boxes. Approximately 20 min is required to prepare each section, and no special equipment is needed. Specimens mounted in this manner three years ago have shown little change in color and no leakage.

A wide variety of biologic materials usually preserved in glass jars may be preserved by this method. Gross brain sections in plastic boxes are of great value in the teaching of neuroanatomy and neuropathology. Many other normal and pathologic human and animal tissues may be similarly mounted. Since the specimens are in nonbreakable containers, they may be handled freely and may be shipped anywhere. Material prepared in this way requires very little space for display in a museum. Indeed, a small museum may be contained in a standard filing cabinet ready for display any time.

The materials and method used in the mounting of gross brain material are presented as an example of one of the uses of this simple method.

[1] Specimens preserved by this method were presented as an exhibit at the meeting of the American Academy of Neurology, Virginia Beach, Va., April 11–13, 1951.

[2] Plexiglas (Rohm & Haas) and Lucite (Du Pont) have both been used.

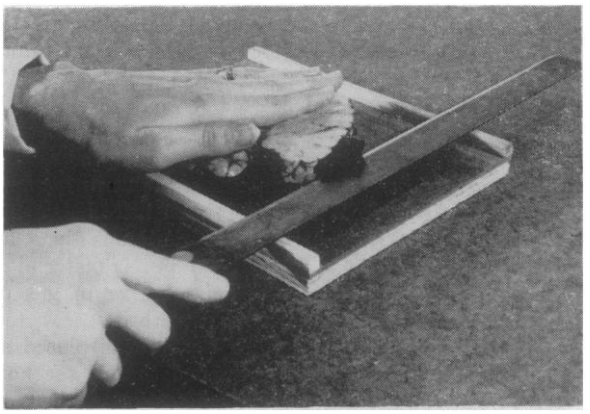

FIG. 1. Specimen being sectioned on a simple cutting board.

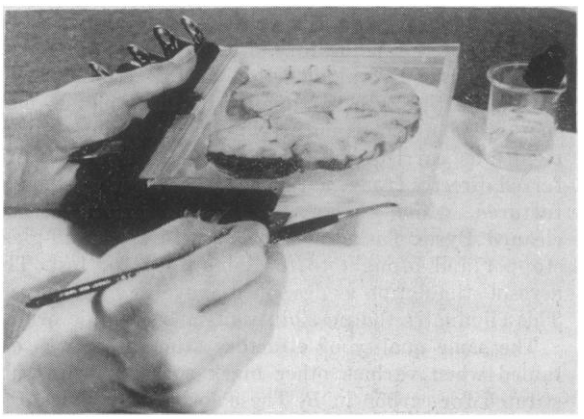

FIG. 2. Specimen is sealed in plastic box.

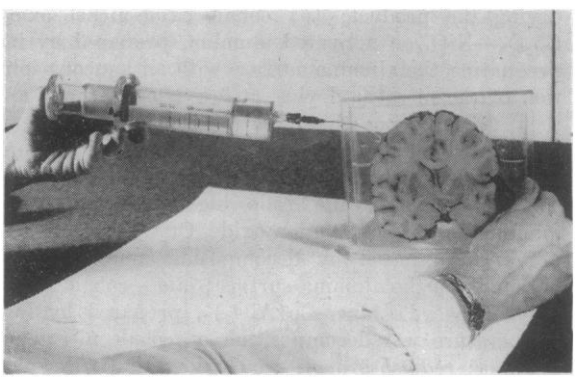

FIG. 3. Filling plastic box with formalin solution.

Transparent plastic boxes with fitted lids were ordered from a local manufacturer of plastic products according to the following specifications for each box:

A. A ⅛" rectangular plastic sheet for the bottom of the box cut in one of the following sizes: 7" × 5¾", 6¼" × 5½", or other size as needed. End pieces ¼" thick and ¼" high sealed to all four margins of the bottom sheet. A hole 1/16" in diameter bored in one of the end pieces.

B. A lid of ⅛" thickness in size identical with the bottom of the box.

Ethylene dichloride, technical grade, was used as a solvent to seal the lids on the boxes.

A viscid plastic-ethylene dichloride mixture was made by placing approximately 10 cc of scrap plastic in an airtight bottle and adding approximately 40 ml of ethylene dichloride. The plastic dissolved in about 24 hr.

Preparation of specimen is shown in (Fig. 1). Brains fixed in 10% formalin solution for 2 weeks were sectioned on the cutting board (masonite bottom; ¼″ guides). With firm pressure on the tissue, sections were actually cut very slightly thicker than the ¼″ guides on the board.

The plastic box (Fig. 2), was washed with detergent dissolved in water and blotted dry with Kleenex. The brain specimen was then centered in a box of suitable size. The top was sealed to the box with ethylene dichloride applied with a brush. Bull Dog Clips, used to exert pressure, were allowed to remain in place for 10 min.

A 50-ml syringe was filled with a 5% formalin solution, which was slowly injected into the box through the 1/16″ hole (Fig. 3). The hole was then sealed with plastic-ethylene dichloride mixture.

The Thromboplastic Activity of Hyaluronate[1]

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Studies of experimental and human arteriosclerosis have drawn attention to the ground substance, or interfibrillar cement, which is an important constituent of blood vessel structure. Such substances are conspicuous in arteriosclerosis and appear to be involved in its pathogenesis (*1*). This led to a detailed study of the mucoid substances in normal and sclerotic blood vessels. In a few instances it was noted that coronary artery thromboses had developed in close relationship to the exposed mucoid materials of sclerotic intimal plaques. This observation led to a study of the possible role of such substances in the mechanism of coagulation.

The sulfate-free acid mucopolysaccharides are viscous substances of high molecular weight and would appear to be ideally situated as agents concerned with the initiation of blood coagulation (*2, 3*). A mucopolysaccharide, hyaluronic acid, is richly present in the subepithelial vascular reticular tissue of the skin and mucous membranes. Many, if not all, capillaries are supported in a mucoid ground substance that is presumably hyaluronate. A similar mucoid material is present in the intima and media of arteries and veins. The exact chemical constitution of the mucoid ground substance in normal or sclerotic blood vessels is not known. We have found, however, that much of this material can be removed with testicular hyaluronidase (*3*).

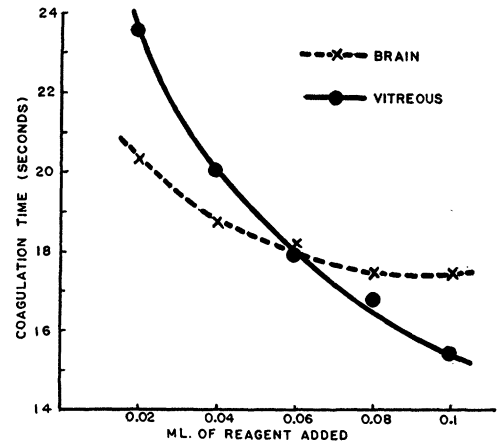

FIG. 1. Comparison of coagulation time of recalcified plasma by human brain thromboplastin and by hyaluronate.

To study the possible thromboplastic role of this mucopolysaccharide, we have used bovine vitreous humor as our source of material. The vitreous humor contains a viscous solution of hyaluronic acid, a minute quantity of an insoluble collagenlike protein ("vitrein"), soluble proteins, and small molecular substances derived from the blood plasma. The "hyaluronate" used in these experiments was the native substance of the vitreous humor removed from frozen beef eyes. After thawing at room temperature, it was centrifuged at low speed for 10 min. That portion too viscous to pipette was removed with a pair of forceps, and the remaining supernatant was utilized as a thromboplastic reagent. Further purification by the method of Meyer (*4*) or of Alburn and Williams (*5*) resulted in depolymerization and loss of thromboplastic activity. The few commercial preparations of hyaluronic acid that we have tested have not been thromboplastic. Three observations, however, cause us to attribute the thromboplastic activity of vitreous humor to the mucopolysaccharide itself: (1) The activity is not affected by centrifugation at 16,000 rpm for 2 hr, as in the method used for separating tissue thromboplastins; (2) the activity is destroyed by incubation with hyaluronidase; (3) known types of thromboplastin are not affected by hyaluronidase. It remains to be proved whether a combination of hyaluronate with native proteins is essential for thromboplastic activity.

The coagulation time of whole blood, measured by a modification of the Lee and White method at 37° C, was shortened from a control time of 12 min 40 sec to 2 min 50 sec by the addition of 0.1 ml hyaluronate, diluted with 0.9 ml water, to 1 ml fresh whole blood. This was a greater decrease than that produced by the addition of an amount of purified beef lung thrombo-

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[2] We are indebted to Walter Seegers, of Wayne University School of Medicine, for supplying the purified prothrombin and accelerator globulin utilized in this study.