parts of Tyrode solution to reduce the protein percentage approximately to that of lymph from an extremity escapes relatively slowly. When in undiluted serum, it is long retained, as would follow from the influence of the serum proteins.

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The Breakdown of Lymph Transport.

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The method described in a preceding paper to render visible the lymphatics coursing through normal tissue has provided us with the opportunity to study the permeability of the lymphatic wall under pathological conditions. Lymphatic permeability is greatly altered by slight causes, as can be shown by following the escape into the tissue of vital dyes ordinarily retained within the lymph channels.

When Pontamine blue or Chicago blue 6B, dyes having the requisite character, are introduced into the lymph, one sees the lymphatics of the ear as dark blue channels much broader in general than the blood vessels, and having the alternation of pear-shaped dilatations and constrictions seen in specimens injected after death. Their outlines are sharp because the dye does not pass from them into the tissue that they traverse. But a mere gentle stroke across their course, with a blunt instrument, at this time or just prior to the dye injection, results in an immediate escape of color into the region directly affected. This escape is closely localized to the line of the stroke and it endures for some minutes.

Greater degrees of disturbance of the lymphatics have proportional results. When unfiltered light from an arc is allowed to fall for a fraction of a minute upon a small area of the ear, there results an immediate and abundant escape into the tissue of the colored lymph. A similar phenomenon is to be seen when local inflammation has been produced with xylol.

These observations prove that the lymphatic wall becomes more permeable upon relatively slight stimulus, letting substances through into the tissues, which ordinarily it would retain. That the small blood vessels do this upon occasion is well known; and the process is held to be mainly responsible for urticaria, especially factitious urticaria. Incompetence of the lymphatics of urticarial regions may

very well be one cause for the accumulation of fluid in them. The wall of the lymphatics of regions that are inflamed may become so permeable as to fail largely, if not entirely, in the function of drainage.

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A Non-Metal Cage for Small Animals.

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The increasing use of small laboratory animals, especially the albino rat, in studies involving precise measurements has emphasized the importance of the care required in the technic of caging and feeding. Largely in response to the demands imposed by the recent investigations of nutritional anemia, several suggestions have been made for the design of cages in which the experimental animal has no access to metal. In connection with metabolism studies with a dietary regime extremely poor in inorganic salts, the same need for a metal-free cage arose in this laboratory and, because of the difficulty in cleaning the cages of the designs already suggested, the one herein described was devised. It has the advantages of being simple in construction, easy to wash and sterilize and consisting of parts which are standard and easily replaced (see accompanying illustrations).

The main portion of the cage consists of a Pyrex cylinder 21 cm. inside diameter, 22 cm. outside diameter and 16.5 cm. high. This rests on a grid made of a circular collar of galvanized iron 22.8 cm. in diameter and 5 cm. high, across which are bars consisting of glass tubing 3 mm. outside diameter. Copper wire No. 20 is run through the tubing for support and added strength and passes through holes in the collar at a distance of 1.5 cm. below the upper edge. There is a space of 0.7 cm. between the tubes forming the grid; this, however, can easily be varied to suit experimental conditions. The tubes are slightly bent so that urine dropping upon them tends to flow towards the center. A similar grid forms the top of the cage. If care is taken to make the tubes touch the metal collar, the animal has no opportunity to lick or chew metal.

The glass cylinder with the grids above and below sets in a heat-resistant pie plate, "Save all pie plate, Glassbake 600". In this plate