that they were then excreted, as it is well known that the kidneys are permeable to foreign proteins. With these points in view attempts were made to secure larger quantities of this liver protein by animal passage. Solutions containing proteins extracted from dog livers were prepared and freed of non-protein material by dialysis as previously described.[1] This solution contained 0.16% protein. It was injected intravenously into dogs and large amounts of protein were passed in the urine which gave no reactions to blood antisera undiluted, but reacted to liver antisera in dilutions up to 1/100,000.

Injections up to 200 cc. of this solution can be used. Larger amounts tend to produce a blood protein excretion. The proteinuria is slow to begin, reaches its maximum in 12 to 24 hours and subsides after 48 to 69 hours. Reinjection of the same animal will produce a blood proteinuria.

[1] Loc. cit., 1927, xxv, 102.

[2] *Arch. Int. Med.*, 1927, xi, 548.

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Passage of Living Bacteria Through the Intact Intestinal Mucosa.

LLOYD ARNOLD AND LOUIS BRODY.

From the Departments of Bacteriology and Pediatrics, University of Illinois College of Medicine, and Illinois State Department of Public Health, Chicago.

A canula was placed in the thoracic duct of dogs under local anesthetic. Lymph was collected for 5 to 10 minutes. The duodenum was exposed through the anterior median line incision in the abdominal wall after local anesthetic had been applied. Forty cc. of solution containing suspended bacteria were injected with proper care and precautions into the lumen of the duodenum. Lymph was collected continuously and divided at 5 minute intervals in separate sterile tubes. The duodenum was immediately replaced and the small incision closed. The experiment was continued for 2 hours. Autopsy was performed to exclude injured duodenal mucosa. Phosphate buffered solutions (pH 8.0) and normal salt solutions were used. Fresh egg white, dog's serum and bile were added to these solutions to make a 10% concentration. *B. prodigiosus* and *B. coli* were suspended in these solutions. The table gives results of experiments with 40 dogs, approximately 5 dogs for each set of experiments.

TABLE I.

Solution injected with bacteria	Average number of bacteria in lymph per cc.	Time of appearance after injection
Alkaline solution and egg white	500 to 1000	1st 5 min. and lasting for 30 min.
Neutral solution and egg white	None	
Alkaline solution	None	
Neutral solution	None	
Alkaline solution and bile	50 to 100	1st 5 min. and lasting for for 20 min.
Neutral solution and bile	3 to 5	During first 30 min.
Alkaline solution and dog's serum	None	
Neutral solution and dog's serum	None	

The duodenum is permeable to living bacteria when the contents are suddenly alkalinized in the presence of a foreign protein; this also takes place when alkalinized bile is placed in the lumen of this part of the intestinal tract. Bile and normal salt solution with bacteria are associated with a slight degree of permeability. This is a preliminary report upon the problem of vaccination by oral ingestion of the antigen.

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Simplified Electrical Method to Distinguish Toxigenic from Non-Toxigenic Diphtheria Bacilli.

I. S. FALK, L. B. JENSEN AND J. H. MILLS.

From the Department of Hygiene and Bacteriology, University of Chicago.

In an earlier paper, Falk, Tonney, White and Jensen[1] reported some details concerning the use of a simple cataphoresis apparatus to distinguish toxigenic from non-toxigenic diphtheria bacilli. There are four shortcomings of the technique: (1) Use of pure cultures; (2) at least 48 hours' incubation; (3) three washings of the bacteria with distilled water; and (4) focussing the microscope on the "stationary level," which have been eliminated by modification of the method.

We now cultivate the suspected culture from the swab on Löffler's blood serum at 37° C. for 12 to 24 hours. The growth is taken off with a sterile, clean wire loop or wooden applicators, and is emulsified in a little distilled water. A little of the emulsion is used for a stained preparation and examined under the microscope. If diphtheria-like organisms are observed, the remainder of the emulsion is used in the capillary tube of the new cataphoresis apparatus.