

FIG. 1. a and b.  
(a) 2/1/33 before injections; (b) 2/6/33 after six daily injections of 15 cc. anterior pituitary extract.

no time have any toxic symptoms been noted, even though as much as 40 cc. of the extract has been injected in one day to determine this effect. Further, these results have been checked on virgin cows and dogs; one cow is now giving 15.5 pounds daily.

In collaboration with Dr. I. P. Earle, we are making chemical examinations of the protein fractions of the first milks from these virgin goats and cows. Preliminary observations indicate that the first milk secreted under these experimental conditions (anterior lobe extracts) strongly resembles colostrum (globulin fractions, casein, percentage of total nitrogen, R.B.C.'s). These data present evidence that the secretion of colostrum may be controlled by the anterior lobe through its effect on the permeability of the blood vessels of the mammary gland.

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### Saliva and Coagulation of Blood.

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Following the observation that saliva markedly decreases the coagulation time of the blood,<sup>1</sup> studies were made to investigate the

<sup>1</sup> Bellis, C. J., Birnbaum, W., and Scott, F. H., *PROC. SOC. EXP. BIOL. AND MED.*, 1932, **29**, 1107.

specificity of this substance. In our previous work we showed that human saliva collected from the mouth hastens the coagulation of dog, bovine, and human blood.

Dog saliva drawn from the cannulated Wharton's duct has the same accelerating effect, a fact also noted with bovine saliva. With a recalcification time of 6' 15", 1 cc. of bovine saliva added to 3 cc. of plasma gave a coagulation time of 4' 40", a reduction of 25%. The coagulant in saliva is, therefore, non-specific either in regard to its source or the source of the blood. This fact is strikingly manifest in the case of hemophilia. Hemophilic blood, whose inability to clot is attributed both to a delay in the rupture of platelets to yield "tissue extract" and to a delay in the rate of conversion of prothrombin to thrombin, can be readily clotted by the addition of small amounts of saliva, either his own or that of normal individuals. In one individual, who had a clotting time of over 2 hours, the addition of 1 part saliva to 4 parts of his blood gave a solid clot in 3 minutes. Using the same volumes, but diluting the saliva 1:100 with 0.9% NaCl, the clotting time was 7 minutes with a normal retraction at the end of 45 minutes.

Similar to the effect of any injected animal secretion, a fall in blood pressure with an accompanying hyperpnoea was observed when 5 cc. of human saliva was injected intravenously into an etherized dog. The effect is quickly lost, and the pressure and res-

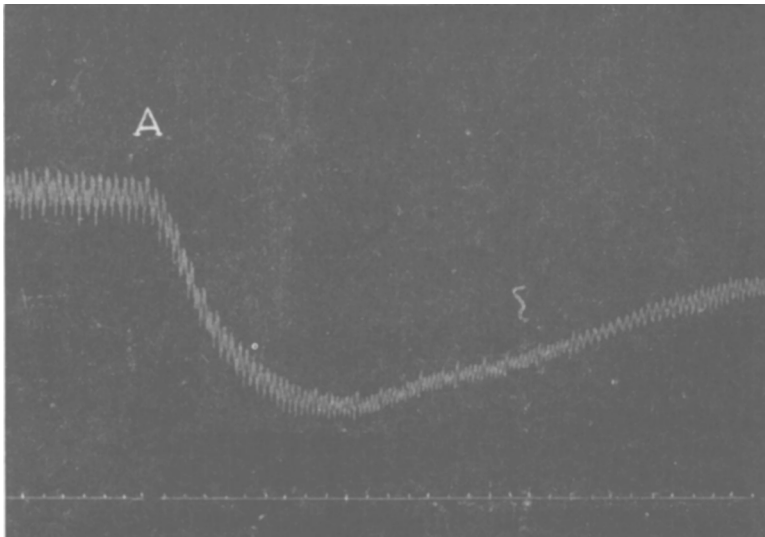


FIG. 1.

piration return to normal, whereupon the same effects may be elicited by repeating the injection. Fig. 1 represents the blood pressure effect on a dog, 5 cc. of human saliva having been injected at "A". The coagulation time of the animal's blood drawn after the injection shows a lengthening, rather than a shortening. This effect is probably similar to that observed after the injection of Witte's peptone or during the negative phase following injection of tissue extracts. The injection of large quantities of saliva subcutaneously in the dog (200 cc.) similarly delays coagulation.

TABLE I.

(a) Ratio of human peritoneal fluid to bovine blood and coagulation times.						
Normal	2:3	1:3	6:3	4:3	2:3	1:3
8'00"	4'40"	4'30"	4'10"	3'50"	2'00"	3'00"
(b) Ratio of human cerebro-spinal fluid to bovine blood and coagulation times.						
8'00"	—	4'45"	3'15"	3'00"	2'45"	3'30"

Fluid obtained by abdominal or intrathecal paracentesis shows the same coagulative properties as saliva. This is shown in Table I. It is evident that saliva is but one of several secretions which have the property of hastening coagulation.

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### Concomitant Clearances of Creatinine, d-Xylose, Urea and Chlorides During Diuresis in Congestive Heart Failure.

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To get evidences of the mechanisms by which diuresis is accomplished in the edematous patient with heart disease, studies have been carried out on the concentration of various substances in the blood and in the augmented output of urine. Creatinine, or the total chromogenic clearance has been advocated by Rehberg<sup>1</sup> as a measure of the amount of glomerular filtration. The validity of this contention has been attacked by several investigators. Marshall<sup>2</sup> and Jolliffe, Shannon and Smith<sup>3</sup> have advocated the use of sugars and especially of d-xylose excretion and concentration as the index

<sup>1</sup> Rehberg, P. B., *Biochem. J.*, 1926, **20**, 447.

<sup>2</sup> Marshall, E. K., *Am. J. Physiol.*, 1930, **94**, 1.

<sup>3</sup> Jolliffe, N., Shannon, J. A., Smith, H. W., *Am. J. Physiol.*, 1932, **100**, 301.