

Effect of Trypsin on the Virus of Trachoma.*

LOUIS A. JULIANELLE.

From the Department of Ophthalmology, Washington University School of Medicine, St. Louis.

In an attempt to separate the virus of trachoma from the mixture of tissues and material accompanying it when obtained from the eye, a number of chemical and physical means were studied without accomplishing the desired result.¹ While filtration is to a measure successful for this purpose, the method is unsatisfactory because of its low frequency of success, irregularity, and loss of virus.² The establishment, however, of the resistance of several viruses to the digestive action of trypsin³ suggested a possible expedient for the liberation in this instance of the infectious agent from the epithelial cell, which in one way or another usually fixes the virus. Accordingly, the infectious tissues scraped from the conjunctiva of patients during operation of grattage were subjected to digestion by trypsin.

Conjunctival scrapings from both eyes of single patients were suspended in 1.5 cc of veal infusion broth, and the suspensions from different individuals were pooled and ground aseptically with mortar and pestle in the absence of abrasive. Equal portions were then removed, and to one was added an equal volume of trypsin prepared in the form of a 1% solution containing in addition 0.2% sodium bicarbonate. The trypsin did not alter the reaction sufficiently to affect the virus. The other portion of ground tissues was diluted similarly with veal infusion broth. Both mixtures were then incubated under different conditions, and the degree of digestion by trypsin was determined by smears prepared at varying intervals and stained by Wright's method. Because of the fragility of the virus, however, it was not possible to modify the basic technic as much as desired. After incubation the mixtures were shaken thoroughly and inoculated in monkeys (*M. rhesus*) by swabbing the conjunctiva of one eye, and pricking the surface of the conjunctiva of the other eye with a charged needle and then injecting subconjunctivally 0.2 cc to 0.5 cc.

* Conducted under a grant from the Commonwealth Fund of New York.

¹ Julianelle, L. A., and Harrison, R. W., *Am. J. Ophthal.*, 1938, **21**, 529.

² Julianelle, L. A., Morris, M. C., and Harrison, R. W., *ibid.*, 1937, **20**, 890.

³ Leviditi, C., and Lepine, C., *Les Ultravirus des Maladies Humaines*, 1938, Maloigne, Paris.

TABLE I.
Effect of Trypsin on the Virus of Trachoma.

Exp. No.	No. of tissues pooled	Technic of digestion	Monkeys infected with tissues	
			Undigested	Digested
1	4	3 hr at 37°C	0 of 3	0 of 3
2	2	2 " " 37°C	3 " 3	0 " 3
3	4	30 min at 37° and 60 " " 25°	2 " 4	0 " 3
4	2	30 " " 37°	3 " 3	0 " 3

Table I describes the variations of the different experiments and illustrates the results obtained. It will be seen that 3 of 4 experiments recorded were successful. Two others were done but not recorded, since the original material was not infectious for monkeys. In the first experiment, complete digestion was allowed to take place, and this required 3 hours, an interval, however, which caused inactivation of the virus in the control material. In the remaining experiments, the period of incubation was gradually reduced to 30 minutes, which was not sufficient for complete digestion of the different cells. In each instance, however, *viz.*, digestion for 2 hours at 37°C, 30 minutes at 37°C, then 60 minutes at 25°C, and 30 minutes at 37°C, the virus was rendered non-infectious for monkeys. While the manner of conducting the experiments was necessarily limited because of the nature of the virus, it is nevertheless evident that measured by the inability to infect monkeys tryptic digestion causes inactivation of the virus of trachoma.

10363

Distribution of Metastases in the Brown-Pearce Tumor. I. In Standard Breeds of Rabbits.*

ALBERT E. CASEY.

*From the Department of Pathology and Bacteriology, School of Medicine,
Louisiana State University, New Orleans.*

During studies on the transplantation of the Brown-Pearce tumor into the testicle of the rabbit, certain variations were noted between standard breeds of rabbits.¹ These variations included (a) the incidence and volume of the primary tumors, (b) the incidence,

* This work was aided by a grant from the International Cancer Research Foundation.

¹ Casey, *Am. J. Cancer*, 1937, **31**, 446.