

for water at 5000 atmospheres²) might explain the combined action of the 2 factors.

But the left hand side of the curves presents a different course and cannot be explained in the same manner. Here a decrease in the salt concentration increases the lethal action of pressure. The second of the 2 factors involved in the combined action appears to be the proportion of distilled water. We found that distilled water kills 50% of the cells in 90 minutes and that the addition of increasing quantities of NaCl makes it less and less injurious. So, taken separately, each one of the 2 factors is injurious and their combined action is more than the action of each factor alone. Whether or not it is equal to the sum of the 2 injurious influences cannot be decided at present and depends on the results of experiments now in progress in which the yeast is left in distilled water or in dilute solutions for various lengths of time before being pressed so that the degree of injury can be determined.

9332 P

Relation of Inclusion BleNNorrhoea to Swimming-Bath Conjunctivitis as Determined by an Accidental Transmission.*†

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That the conjunctivitis of infants designated as inclusion bleNNorrhoea is transmissible to the adult was first demonstrated by Wolfrum¹ when he inoculated successfully 2 volunteers inducing what he considered to be trachoma. The diagnosis, however, based partially on the presence of inclusion bodies in the experimental disease and partially on his conviction of their specificity in trachoma, was not justified by the clinical manifestations. Gebb,² on the other hand, also reporting successful transmission, concluded the condition resulting from the inoculation was not trachoma. There

² Bridgman, P. W., *The Physics of High Pressure*, London, 1931, p. 130.

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

† This report is part of a more extensive study on the etiology of inclusion bleNNorrhoea to be published later in the *American Journal of Ophthalmology* in collaboration with Drs. R. W. Harrison and A. C. Lange.

¹ Wolfrum, M., *Klin. monatsbl. Augenheilk.*, 1910, **48**, 154.

² Gebb, H., *Z. Augenheilk.*, 1914, **31**, 475.

the matter remained until recently when Thygeson³ reported the results of his elaborately conducted and carefully controlled experiments in which material from infants with inclusion blennorrhoea transferred to adults initiated not trachoma but swimming-bath conjunctivitis.

During the course of experiments on inclusion blennorrhoea in this laboratory, the opportunity was afforded to study the progress of an accidental transmission of this disease to an adult. While irrigating the eyes of an infant 11 days old, on the fifth day of suspected gonococcal conjunctivitis, some of the exudate was discharged into the left eye of the attending nurse. Despite immediate and vigorous lavage, a mild conjunctivitis was obvious on the following morning, when Dr. A. C. Lange was consulted. Because of the diagnosis in the case of the infant, optochine was prescribed, and on the fifth day the first appearance of small scattered follicles suggested a mistaken diagnosis in the case of the infant. Scrape smears of the conjunctiva stained by Wright or Gram showed neither inclusion bodies nor gonococci. On the sixth day, smears were repeated and numerous inclusions were found, but not gonococci. Smears made on the same day (11th) of the infant's conjunctiva likewise revealed inclusions without gonococci, thus justifying the diagnosis of inclusion blennorrhoea. The infection in the nurse remained confined to the accidentally inoculated eye and progressed rapidly into swimming-bath conjunctivitis. The symptomatology at the height of the infection consisted of a marked papillary hypertrophy of the conjunctiva which obscured the follicles to some extent, swelling and ptosis of the upper lid, and moderate discharge. Inclusion bodies were found at first with relative ease, and later in less and less numbers. After approximately 6 weeks during which grattage was performed twice, the infection subsided without either extending to the other eye or leaving any trace of its former presence, and inclusion bodies were no longer demonstrable.

Materials from both the infant and the nurse were inoculated in monkeys (*M. rhesus*). Without desiring to enlarge upon the experimental results in the monkey, it is necessary to state at the present time only that there followed with both materials a follicular conjunctivitis, not only indistinguishable from each other but even from that of experimental trachoma. Of 8 monkeys inoculated, 6 were infected, and inclusion bodies were found in only 2. The inclusions numbered one in one instance and 2 in the other, and they were found only on one day early during the experimental disease.

³ Thygeson, P., *Am. J. Ophthalm.*, 1934, **17**, 1019.

The conclusion seems warranted that inclusion blennorrhoea and swimming-bath conjunctivitis are essentially the same disease, the former representing the conjunctival response of the infant, the latter the conjunctival response of the adult to the same etiological agent. Thus, the studies reported on this aspect of the disease by Thygeson receive confirmation from the present observation.

9333 P

Responses of the Kidney to Reflex and Direct Stimulation of the Splanchnic Nerve.

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The intravenous administration of epinephrine, as is well known, results in reduction of the kidney volume by reason of the vasoconstrictor action of the drug. Reversal of this reaction following the administration of ergotamine tartrate in small doses has been amply demonstrated.^{1,2} The experimental results here reported demonstrate the reactions of the kidney to reflex stimulation of its vasomotor nerves by means of other agents and to direct splanchnic stimulation both before and after the administration of ergotamine tartrate.

The experiments have been carried out on dogs under morphine-urethane and cats under nembital anesthesia. Acetyl-beta methylcholine chloride was administered to the dogs by means of iontophoresis. In the cats all the drugs used were administered intravenously. In the experiments carried out on the dogs, the changes in kidney volume, blood pressure and urine output were recorded; in those carried out on the cats the records included changes in kidney volume, blood pressure and limb volume.

The typical effects of acetyl-beta methylcholine chloride administered by iontophoresis in dogs is a very short preliminary rise in kidney volume, followed by a fall corresponding to the fall in general blood pressure, and reduction in the urine output until after a few minutes it consists of an occasional drop. The duration of these

¹ Hamet, R., *Compt. Rend. Acad. Sci.*, 1926, **182**, 1045.

² Wulp, G. A., and Nelson, E. E., *J. Pharm. Exp. Therap.*, 1931, **42**, 143.