

Young virgin guinea pigs were sensitized by inhalation to dry horse dander dust. After a suitable incubation period, a laparotomy was performed under ether anesthesia and the uterine strip was removed. This strip was suspended in an oxygenated bath of Locke's solution and the Dale experiment was carried out in the usual manner, using an extract of horse dander as antigen.¹ After the excision of the uterine strip, the abdomen was sewed up and the animal allowed to completely recover from her anesthesia. When the animal was apparently normal again it was given an intravenous injection of the same solution used for the Dale experiment. By this method we were able to show in the same animal a positive uterine contraction and a typical anaphylactic death after intravenous injection. This was shown in 11 out of 39 animals.

This demonstrates that an animal sensitized by inhalation may develop a systemic as well as a local hypersensitiveness.

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Transmission of Fowl-Pox by Mosquitoes.

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The mode of transmission of certain virus diseases of chickens is still obscure. Fowl-pox as well as fowl plague are common diseases of the barnyard, both, according to reports, occurring during the spring and fall months. Many workers^{1, 2} state that attempts to infect by contact or by ingestion of infected foodstuffs usually fail. These facts suggested the possibility of insect transmission.

Since fowl plague is not prevalent in this country our experiments were conducted with fowl-pox. Using *Culex* and *Aedes* mosquitoes it was possible to transfer the disease from infected to healthy fowls with considerable regularity by interrupting the mosquitoes after they began feeding on infected areas of the diseased chicken and allowing them to complete their meal on the comb or wattles of healthy ones. Positive transmission of the disease was obtained even when the interval between feedings was 2 hours. As a rule,

¹ Goodpasture, E. W., "Filterable Viruses," T. M. Rivers, Williams and Wilkins Company, 1928.

² Todd, C., I. *Brit. J. Exp. Path.*, 1928, ix, 19.

7 days after the feeding, typical minute vesicles appeared on the normal fowl wherever the proboscis of the insect had been inserted.

In one experiment transmission was obtained under conditions approximating those existing in nature. Two healthy and one infected chickens were placed in a box covered with fine-mesh copper screen. Four freshly hatched *Culex* mosquitoes were released in this box. After 7 days 2 typical discrete lesions appeared on the left wattle of one of the healthy fowls. In a control group without mosquitoes none of the chickens showed evidences of infection after a period of 17 days.

It seems, therefore, that where the lesions are superficial, as in fowl-pox, interrupted feedings by mosquitoes and possibly also by blood-sucking flies may play an important, if not the most important rôle in the dissemination of the disease. Our experiments thus far indicate that transmission of this kind is a mechanical transference of the virus; consequently it is not essential that the infectious agent be able to establish itself in the insect. In diseases where the virus is present in the circulation in high concentration, as in fowl plague, mechanical transference of the virus by interrupted feedings of insects may also be an important factor in the dissemination of such infections.

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Determination of Tertiary Dissociation Constant of Phosphoric Acid.

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Quantitative studies of the mechanism of calcification require a knowledge of the physico-chemical constants of the blood equilibria involved in the process. The tertiary dissociation constant of phosphoric acid, K_3 , thus far available seems incompatible with the apparent dissociation constant pK_3 from the dissociation curve for the phosphates which is of an order of 1×10^{-12} .

The value of K_3 was determined experimentally from a study of aqueous systems of the tertiary sodium and potassium phosphates at equilibrium, from the standpoint of hydrolysis. The value thus obtained was correlated with calculations made from the data obtained by the electrometric titration of phosphoric acid.