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Concerning anaphylaxis following the administration of diphtheria antitoxin.

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Sensitiveness of human beings to horse protein is fairly widespread as indicated by numerous reports of cases of serum sickness following administration of various therapeutic sera. The impression is, however, that in diphtheria the danger from this source is particularly slight. This comparative freedom of complications of anaphylactic nature following the administration of diphtheria antitoxin in emergency during the War has led to abandoning the preliminary skin test for sensitiveness in certain medical units.¹

We attempted to approach experimentally this question of apparent tolerance to anaphylaxis during diphtheria intoxication. We have observed that sensitized guinea pigs receiving subcutaneously large excess of diphtheria toxin withstand the intravenous injection of at least five lethal doses of the antigen to which they were previously sensitized. This apparent resistance appears about 12 to 14 hours after the administration of toxin and just about the time when the outward symptoms of intoxication begin to manifest themselves.

With the view of eliciting the mechanism of this phenomenon we have made thus far the following observations:

The antitryptic titer of the blood of guinea pigs injected with the toxin does not appreciably deviate from normal up to the time of death. The mechanism regulating the antitryptic titer of the blood remains unimpaired in these animals, however, since an injection of antigen to which they are sensitized is followed by a typical rise of antitrypsin. This rise of antitrypsin, incidentally can be interpreted as indication that the humoral phase of the anaphylactic response of the animals is not abolished by the previous injection of toxin.

¹ Personal communication.

If the same dose of toxin is overneutralized with antitoxin in vitro before injection, it does not protect the sensitized guinea pigs from immediate death when even a single minimal lethal dose of antigen is introduced intravenously. On the contrary the same dose of toxin heated for thirty minutes at 80° C. protected guinea pigs from anaphylactic shock just as unheated toxin did. Heating of the toxin for 30 minutes at 100° C., however, destroys this property of toxin even if much a larger amount of such toxin is injected.

Since the culture medium containing toxin contains also 1 per cent. peptone, a control sensitized guinea pig, instead of toxin received peptone in the amount ten times that present in culture medium carrying the toxin. This guinea pig died immediately after the intravenous injection of antigen, thus showing no protection. It seems thus that the clinical observation concerning apparent diminution of anaphylactic reactivity during diphtheria intoxication is borne out by this preliminary experiment.

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Studies in the physiology of vitamins: Is water soluble vitamin identical with secretin?

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A similarity in the physiological effects of vitamin B and substances which promote secretion has been alleged by several investigators.¹ We have examined a number of solutions such as extracts of rice polish, wheat embryo, navy bean and yeast, and neutralized tomato juice, demonstrated to contain vitamin B, for their possible action on the secretory function of the pancreas and liver. The products used were tested for vitamin B content on polyneuritic pigeons, and on dogs which had lost their appetite for several days after having been fed a diet lacking this dietary

¹ Voegtlin and Myers: *Jour. Pharm. Exper. Therap.*, 1919, xiii, 301.

Uhlmann; *Zeitsch. f. Biol.*, 1918, lxviii, 3.