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Observations on a Physiologically Active Substance Appearing During Anaphylactic Shock.

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We have previously reported[1] observations on the appearance of a physiologically active substance in the thoracic duct lymph and the inferior vena cava blood of dogs during anaphylactic shock. It was reported that this substance had the property of contracting the smooth muscle of the guinea pig intestine, and that this contraction was observed equally well in the intestine of guinea pigs immunized to the antigen used in sensitizing the dogs. In this respect the nature of the active substance appears to be somewhat different from the "hepatic anaphylatoxin" of Manwaring and his coworkers.[2]

Preliminary observations on the nature of the active substance occurring in the thoracic duct lymph and the inferior vena cava blood show it to have the following characteristics. The active substance is dialyzable, indicating that it has a small molecular size. Using a 3-compartment electro-dialyzer the active substance concentrates in the basic compartment showing it to be of basic nature. The intensity of physiological activity and the Pauly reaction are parallel and the physiological activity is neutralized after condensation with diazotized sulphanilic acid. This indicates that the activity is associated with an imidazole compound. Pharmacological observations with the active substance indicate that it depresses the blood pressure of an etherized, atropinized cat; and while contracting the smooth muscle of the guinea pig intestine has no effect on the intestine of the mouse. In this respect it resembles histamine.[3] A characteristic wheal is produced in human skin by endermal inoculation of an active dialysate. Additional chemical and pharmacological investigations are in progress, but it may be stated that at the present time we have made no observations which are incompatible with the assumption that the active substance may be histamine.

[1] Dragstedt, C. A., and Gebauer-Fuelnegg, E., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 891.

[2] Manwaring, W. H., Marino, T. C., McCleave, T. C., and Boone, T. H., *J. Immunol.*, 1927, **13**, 319.

[3] Wedum, A. G., and Gebauer-Fuelnegg, E., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 888.