It seems probable that an interaction of both of these factors plays a rôle in most allergic tissue reactions.

The failure to obtain a release of histamine in assayable quantities in 2 patients previously treated with hyposensitizing ragweed injections tends to substantiate clinical observations that this treatment chiefly raises the threshold for the amount of allergen necessary to cause a histamine release, and not the threshold to released histamine.

Summary. Cantharides blisters were produced on the skin of allergic human subjects. After removing the stratum corneum over the blisters, the denuded areas were covered with saline, and the release of histamine and protein into the saline was determined before and after production of local allergic reactions by injection of antigen. Both the histamine and the protein content of the saline rose sharply within a few minutes after injection of the allergen and fell to the original level within 60 minutes. An increase in exudation of fluid and the appearance of a substance similar to the "slow reacting substance" were also observed.

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Acute Toxicity of Propionin in Rats and Mice.*

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Propionin is easily hydrolyzed by bacteria[1] and presumably also by the mammalian digestive tract; its toxicity may therefore be due to the effects of propionic acid or soluble propionates. Thus, Ozaki[2] reported that rats ingesting daily about 2.5 g of propionin per kg body weight died in 1 to 3 days. However, when rats were given about 1.4 g of propionin per kg per day, the only toxic effect was a marked regression of growth. Since these findings represent the current knowledge of the toxicity of propionin, this report is presented, not as an exhaustive study but to supply additional information on the acute toxicity of this compound.

Acute Toxicity for Mice. The detailed procedure will be given

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1 Collins, M. A., and Hammer, B. W., *J. Bact.*, 1934, **27**, 473.

2 Ozaki, J., *Biochem. Z.*, 1926, **177**, 156.

elsewhere. Propionin was administered intraperitoneally to groups of 3-months-old, male, albino mice (average weight, 20 g). From a statistical study of the data,[3] the dose to kill the average mouse is calculated as 1.7 ml of propionin (density of propionin, 1.1[4]) per kg body weight (Table 1-A). The mice remained quiet for a period of perhaps 10 minutes after receiving the intraperitoneal injection of propionin, then they became excited, squeaked and hopped around as if inebriated. Following the excitement, they became stuporous and sometimes died in less than an hour. It is interesting to note that propionin is somewhat more toxic than triacetin; the L.D. 50 of triacetin for albino mice (of comparable weight) was recently reported as 2.3 cc per kg body weight.[5]

Acute Toxicity for Rats. Propionin was administered by stomach tube to groups of albino rats of average body weight about 150 g. The dose required to kill the average rat is calculated as 15.3 ml of propionin per kg body weight (Table 1-B). After receiving propionin, the rats became quiet and appeared anesthetized for several hours. Those which recovered frequently showed a severe diarrhea. The data given are for deaths within 24 hours, a few of the rats which received doses of 2 ml or greater died on the second or third days.

TABLE I.

A. Mortality Following Various Doses of Propionin Given Intraperitoneally to Mice.

No. mice	Dosage, ml	No. dead	Mortality, %
24	0.03	8	33
24	0.04	16	67
24	0.05	22	92
24	0.07	24	100

For probit kill*—5.0, L.D. 50—0.034 ml.

B. Mortality Following Various Doses of Propionin by Stomach Tube to Rats.

No. rats	Dosage, ml	No. dead	Mortality, %
15	1.4	2	13
15	1.8	2	13
15	2.2	8	52
15	2.6	9	60
15	3.0	14	91

For probit kill*—5.0, L.D. 50—2.3 cc.

*"Probit kill—5.0" expresses in probability units, the figure corresponding to a 50% mortality. For details see 3.

[3] Bliss, C. I., *Ann. Appl. Biol.*, 1935, **22**, 134.

[4] Simons, F. L., *J. Am. Chem. Soc.*, 1926, **48**, 1991.

[5] Li, R. C., Sah, P. P. T., and Anderson, H. H., PROC. SOC. EXP. BIOL. AND MED., 1941, **46**, 26.

Summary. Propionin injected intraperitoneally in mice has an L.D. 50 of 1.7 ml per kg. Propionin administered by stomach tube to rats has an L.D. 50 of 15.3 ml per kg.

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Non-Accumulation of Pectin Intravenously Injected into Rabbits.

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(Introduced by C. A. G. Wiersma.)

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A number of materials have been used as substitutes for blood in the treatment of shock and hemorrhage. Acacia solutions were used rather extensively for this purpose during World War I, mainly as a result of the work of Bayliss.[1] Later investigators have shown that there are many dangers attendant upon the intravenous use of acacia. Andersch and Gibson[2] reported that about one-half of the injected acacia accumulated in the liver. Yuile and Knutti[3] found that after repeated injections of acacia in dogs the liver weight increased 5 or 6 times and that sometimes as much as 8 to 10% of acacia (by weight) was found in the liver.

Pectin sols, having physical properties similar to those of acacia, should show the same advantages for transfusion purposes and yet, due to their different chemical constitution, might not cause damage by storage in the liver. The characteristic constituent of acacia, a gum exudate from certain tropical trees, is aldobionic acid which is unusually resistant to hydrolysis. Pectin, however, is a normal constituent of fruits and vegetables used for human food and is rather easily hydrolyzed in mildly acidic or alkaline systems and by many enzymes. Its molecule, with a weight of 150,000 to 300,000 is composed of chains of partially esterified galacturonic anhydride units.[4]

A general study of the effect of pectin in the circulatory system of rabbits has been in progress in this Department for the past 3 years. Various types of pectin in solutions of different concentra-

1 Bayliss, W. M., *Proc. Roy. Soc. (London) B.*, 1916, **89**, 380.
2 Andersch, M., and Gibson, R. B., *J. Pharm. Exp. Therap.*, 1934, **52**, 390.
3 Yuile, C. L., and Knutti, N. E., *J. Exp. Med.*, 1939, **70**, 605.
4 Joseph, G. H., *Bull. Natl. Formulary Comm.*, 1940, **9**, 18.