Summary: Tests with chemically different fractions of ragweed pollen have been shown to give varying (or no) degrees of positiveness in cases of hay fever: used as antigens in experimental anaphylaxis, there would seem to be comparatively slight evidence of cross sensitization.

Such results suggest that clinically more satisfactory desensitization might be achieved if the preparations of ragweed used were made to correlate with the results of the tests in the individual case.

TABLE 1.
Results of skin tests in selected ragweed cases.
(Figures given are millimeter measurements of wheal.)

| Ragweed fractions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Alcoholic Ext. | 8x8 | 7x5 | 20x15 | neg. | 15x8 | 4 | 6 | 8 | neg. | neg. |
| Glutenin | neg. | 16x6 | neg. | 10x8 | neg. | ? | neg. | neg. | 8x6 | neg. |
| Alb. and Proteose | 18x15 | 11x11 | 12x10 | 10x7 | 18x15 | 8 | 18x12 | 18x15 | 25x25 | 7x6 |
| Proteose | 5 | 10x8 | 10x8 | neg. | neg. | 10 | 4x4 | 5x5 | 15x8 | neg. |
| Controls Glycerin Salt Ext. | 8x8 | 5x6 | — | — | — | 10 | 7x6 | 8x8 | — | — |
| Aceton ppt. bodies | 16x11 | — | 10x10 | 14x14 | 6x6 | — | — | 16x11 | — | — |
| Pollen | 11x10 | 8x6 | 7x7 | 5x5 | 7x7 | 8 | 7x7 | 11x10 | 7 | 3 |

2820

## Influence of nutritive condition on initial fall in blood sugar after insulin.

MAX TIITSO (Introduced by J. J. R. MacLeod).

[*From the Laboratory of the Insulin Committee, University of Toronto, Toronto, Canada.*]

In order to investigate whether prolonged starvation has any influence on the initial fall in blood sugar after subcutaneous injection of insulin, rabbits were starved for 1 or 2 weeks, and the results obtained were compared with rabbits well fed with carrots.

All the rabbits were injected with the same dose of insulin, namely 3 units per 2 kilo body weight. The blood was taken every ten minutes after injection for an hour. The blood sugar was determined by the Shaffer-Hartmann method. After the

last sample of blood had been taken, the animal was instantly killed by stunning, and the liver and muscles of the leg removed for determination of glycogen. The glycogen was determined by Pflüger's method.

I. *Rabbits fed with carrots.*

3 hours previous to experiment, animals starved in order to decrease any absorption from the intestine.

| Norm. | 10 mins. | 20 mins. | 30 mins. | 40 mins. | 50 mins. | 60 mins. |
|---|---|---|---|---|---|---|
| 0.1365% | 0.140% | 0.097% | 0.075% | 0.072% | 0.074% | 0.062% |

Average glycogen in the liver 5.5%, and in the muscle 0.24%.

II. *Rabbits starved for* 1 *week.*

Average for 7 animals.

| Norm. | 10 mins. | 20 mins. | 30 mins. | 40 mins. | 50 mins. | 60 mins. |
|---|---|---|---|---|---|---|
| 0.130% | 0.135% | 0.121% | 0.107% | 0.096% | 0.082% | 0.076% |

Average glycogen in the liver 0.83%, and in the muscles 0.125%.

III. *Rabbits starved for 2 weeks.*

Average for 3 animals.

| Norm. | 10 mins. | 20 mins. | 30 mins. | 40 mins. | 50 mins. | 60 mins. |
|---|---|---|---|---|---|---|
| 0.141% | 0.140% | 0.118% | 0.100% | 0.104% | 0.101% | 0.093% |

Average glycogen in the liver 0.24%, and in the muscles 0.021%.

An examination of the curves shows that there is in some cases a slight rise in blood sugar 10 minutes after the injection of insulin. This rise is probably not caused by insulin, but by emotional disturbance. It is commonly seen in rabbits that are not injected with insulin, and usually amounts to between 5 and 14 mg. In the next 20 minutes the sugar fell much more rapidly in the fed than in the starved animals. The decrease in the fed animals was 61.5 mg., and in the starved 23 and 41 mg. per 100 cc. of blood.

The starved animals were apparently more resistant to insulin an hour after injection than the fed ones, and this resistance increased with the duration of starvation.

In fed animals the blood sugar fell in an hour by 74.5 mg.; whereas in starved ones, only by 54 mg., or 48 mg. per cent.

Abderhaldvn and Wertheimer[1] have found that rats fed with carbohydrate-rich diet are much more susceptible to insulin than are rats fed with carbohydrate-free diet. The fall in the blood

[1] Pflüger's Arch., 1924, 203 and 205.

sugar was greater in the carbohydrate rats than in rats fed with carbohydrate-free diet.

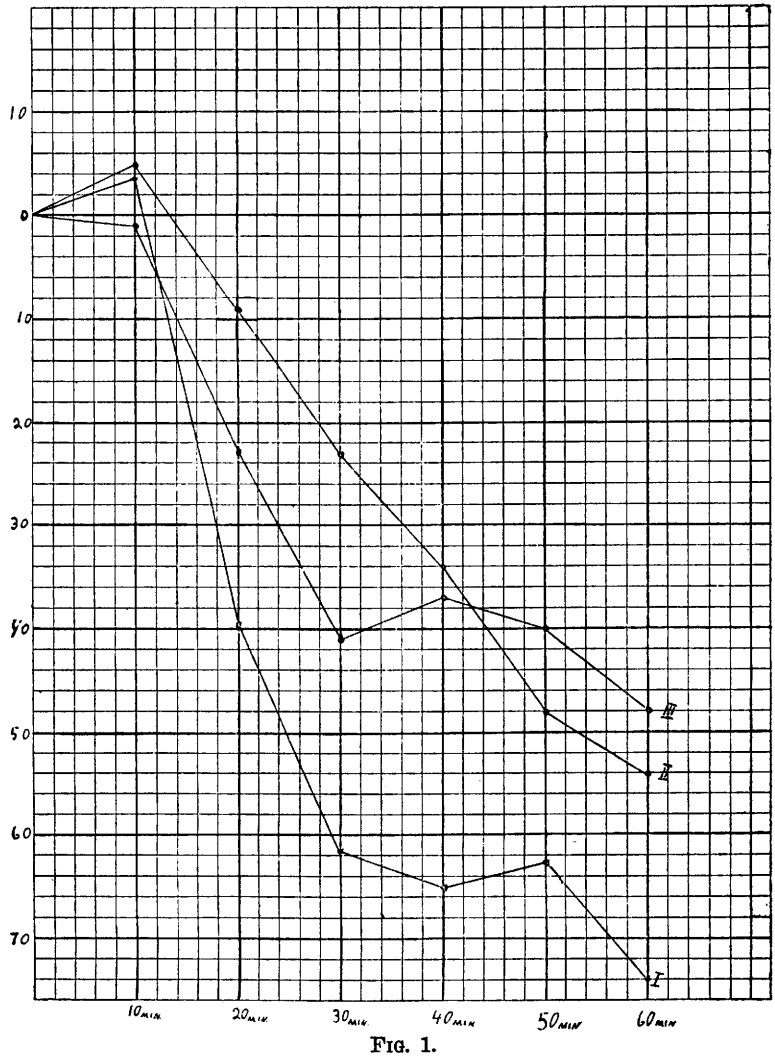


FIG. 1.

Curves of results recorded in tables. The ordinates indicate fall in blood sugar in mg. per 100 cc. blood. The abscissæ time in 10 minute intervals. The curves show the average blood sugar: I, in 7 rabbits fed with carrots; II, in 7 rabbits from which food was withheld for one week; III, in 3 rabbits similarly treated for two weeks. All results are brought to the same value to start with.

It seems, therefore, that ingestion of carbohydrates makes the organism in some way more susceptible to insulin; whereas absence of carbohydrate obtained by starvation, or administration of carbohydrate-free diet, decreases the hypoglycæmic effect of insulin.

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## Fate of non-native varieties of colon-aerogenes in intestinal tracts of young chicks.

MILDRED WINCHESTER (Introduced by Emerson Megrail).

[*From the Department of Hygiene and Bacteriology, Medical School, Western Reserve University, Cleveland, Ohio.*]

Starting with sixteen 24-hour-old chicks, the feces were examined for the presence of citrate and non-citrate-using members of the colon-aerogenes group of bacteria for a period of one week. No growths of colon organisms having the ability to utilize citrate as a sole source of carbon were obtained, but small numbers of citrate-using *B. aerogenes* were found in the feces of nearly all of the chicks.

Eight of these chicks were fed "non-fecal" (citrate-using) *B. coli* at the rate of two agar slants per chick per day, the organisms being washed off into the milk at the morning and night feedings. All bacteria used were growths from single cell isolations, the coli being soil organisms of the Koser type,[1] and one culture was furnished by Dr. Koser.

During the first three weeks the experiment was conducted under sterile conditions in so far as the colon-aerogenes group was concerned; all food was thoroughly pasteurized, all dishes were sterilized at each feeding, and the chicks were kept in sterile cages containing sterile sand and a layer of sterile shavings. During the latter part of the experiment, sterilization was discontinued since the number of colon-like organisms present in the food, etc., before sterilization was too small to make any difference in the enormous amounts fed to the chicks.

[1] Koser, S. A., *J. Bact.*, 1924, ix, 59.