sodium carbonate. The solution was tested, using about 0.4 cc. from a total volume of 25 cc. representing the original 0.5 gm., on human uterine muscle obtained from Caesarian sections at term. Twenty-five strips of muscle were used. The muscle was set up as described by Kurzrok and Lieb.[4] The result with the material from each of the 13 samples was a prompt and sustained contraction. When the solutions were tested on non-pregnant human uterine muscle (55 strips, obtained at various times of the menstrual cycle), there was no effect or a slight increase of tonus causing the normal contractions to occur with slightly more vigor. Control experiments were made, using material prepared by the same procedure from 2 10-liter samples of urine of male patients and 3 from non-pregnant women. These control materials, tested on parallel strips of muscle from the same pregnant (25) and non-pregnant (55) uteri as were used for the experimental materials, gave negative results, although a few gave slightly increased tonus.

The active material was tested by Dr. Mulinos, of the Department of Pharmacology, for its action on the water balance of the frog, and the result indicated that the substance has a pitocin-like action. The controls when tested in the same way had no significant effect.

The crude material is now being purified for clinical tests. Studies are in progress to determine how early in pregnancy these oxytocic substances appear and what effect they have on the uteri of early pregnancy.

7224 P

Prausnitz Küstner Reaction with Sera of Ragweed Hay Fever Patients to Ragweed Carbohydrate Fraction.

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In the course of a correlated series of laboratory and clinical investigations, which will later be reported upon in full detail, with carbohydrate obtained from ragweed pollen, certain results were obtained with the Prausnitz Küstner reaction (local passive transfer) which seem worth recording at this time.

In skin testing ragweed sensitive hay-fever patients to this carbo-

[4] Kurzrok, R., Lieb, C. C., PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 268.

hydrate material it was found that a percentage gave positive skin reactions to the carbohydrate about as large as was obtained with the whole pollen or any protein fraction thereof, and also that a percentage gave no reaction on skin tests to the carbohydrate.

Serum for the Prausnitz Küstner reaction was taken (A) from those who showed the most marked reaction (relative to the results obtained with the pollen or other protein fractions thereof), (B) from those who showed no reaction to the carbohydrate although the results with the other ragweed preparations might be equal or thereabouts to those obtained in Group A.

With the sera of Group A it was found that the sensitized areas in the recipient would give a local reaction to the carbohydrate solution whereas with the sera of Group B no reaction was obtained.

The possibility of some peculiarity or exceeding susceptibility of the recipient was ruled out by obtaining the contrast of serum from Group A on one arm of the recipient (which gave a positive Prausnitz Küstner to the carbohydrate) and the serum from Group B (which was negative) on the other arm. This at the same time that the reactions obtained with both sera to whole pollen solution would be equal.

The age-old contention of there being a percentage of protein contaminant in what is labelled as "purified carbohydrate" and that the reaction was due to the presence of this protein fraction is ruled out by (a) the fact that positive and negative reactions to the carbohydrate are obtained with the same recipient. (b) while at the same time about equal reactions are obtained in this same recipient to both A. and B. sera against other whole pollen solutions. (c) in guinea pigs sensitized with whole pollen solution, no type of anaphylactic reaction could be obtained with the carbohydrate solution as the toxic dose, including the most sensitive, namely the Dale uterine horn method.

These contrasting results as between carbohydrate skin positive and carbohydrate skin negative hay fever individuals have been obtained repeatedly not only with the standard Prausnitz Küstner reaction but with a modification which I find has been used by others. This consisted of injecting (1) serum alone, (2) serum mixed with whole pollen solution and allowed to stand for 2½ hours, and (3) serum mixed with pollen carbohydrate solution and similarly treated as in 2.

With what one might label as carbohydrate positive (Group A above) serum, reinjection 24 hours later with whole pollen extract gives a positive reaction in sites 1 and 3 (which latter is usually

somewhat smaller than that obtained in site 1). Site 2 is negative. In a duplicate set of prepared areas called respectively sites 4, 5 and 6, reinjection with ragweed carbohydrate solution gives a positive result in site 4 only. The size of the reaction in site 4 has hitherto always been a little less than that obtained in site 1.

The difference when carbohydrate negative serum is used for passive transfer is that no reaction is obtained in site 4 and usually the results in sites 1 and 3 are identical.

The solution of ragweed carbohydrate was made by dissolving 100 mg. in 50 cc. saline solution and diluting this 100 fold. 0.05 cc. was injected intradermally of all single solutions and 0.1 cc. of all mixtures.

It is not the intention to suggest that these observations prove that carbohydrate functions as a true antigen. That is not the interpretation. They do suggest that carbohydrate has its own type of specific immunological activity in a percentage of cases and that this can be demonstrated in those cases by the Prausnitz Küstner reaction.

7225

Hodgkin's Disease. I. Negative Skin Reactions to Gland Extracts.

E. M. CHAPMAN. (Introduced by Louis Dienes.)

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Because of the recent interest aroused by Frei[1] in demonstrating a diagnostic skin reaction to the whole extracts of glands in the virus disease lymphogranulomatosis (4th venereal disease) it was decided to observe the skin reactions on patients with Hodgkin's disease to the extracts of Hodgkin's diseased glands. Although the etiology of this disease remains obscure there are some[2] who believe it may be due to a virus. Skin reactions can be obtained with the extract of skin lesions in small pox and vaccinia, a virus disease.

The injection of filtrates of Hodgkin's glands has been used in treatment of the disease but the skin reactions to these filtrates have not been described adequately. Skin reactions to a preparation from

[1] Frei, Wm., *Klin. Wchnschr.*, 1925, **4**, 2148.

[2] *Annales d'Anat. Path.*, 1931, **8**, 815.