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Attempts to separate the active constituent of ragweed pollen.

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As ragweed appears to be the chief cause of hay fever in this country it seemed desirable to attempt to separate the substance in the pollen which is responsible for the sensitization of hay-fever patients.

A number of the constituents have been characterized by Heyl, but this author did not attempt to test systematically the various fractions which he isolated. Recently Coca and assistants subjected ragweed extract to the action of trypsin. On dialysis most of the nitrogenous constituents diffused through the membrane while the residue retained its activity; therefore the authors conclude that the active substance is not a protein.

Having found that 3 per cent ammonia was a useful solvent for the preparation of horse dander and other proteins used in clinical work, we also employed it for the extraction of ragweed pollen. Ammonia possesses certain advantages. It is a weak alkali with little racemizing or hydrolyzing effect and the protein obtained by precipitation of the ammonia extract with acetone is readily freed from alkali by drying *in vacuo* over sulfuric acid.

As the thick hard capsule is said to form 65 per cent of the pollen (Heyl) it was thought that extraction would have to be preceded by thorough grinding, but it was found that ammonia penetrated the capsule and completely extracted the active substance.

The preparations were tested by the cutaneous reactions on patients sensitive to ragweed. The varying sensitiveness of patients had to be considered in the interpretation of reactions.

The following results were obtained with the ammonia extract:

<i>Nature of the material</i>	<i>Reaction</i>
1. Pollen residue after 3 ammonia extractions	None
2. Precipitate on adding acetone to ammonia extract	Strong
3. Filtrate from 2	None
4. Precipitate on saturating ammonia extract with ammonium sulfate dialyzed	Moderate

5. Filtrate from 4	None
6. Precipitate on half saturation with ammonium sulfate "globulin fraction"	Moderate
7. Filtrate from 6	Very slight
8. Precipitate on 1/4 saturation with ammonium sulfate	Moderate
9. Filtrate from 8	Very slight
10. Ammonium sulfate precipitate redissolved and twice reprecipitated with ammonium sulfate	Strong
11. Ammonia extract dialyzed against 5 per cent sodium chloride solution for three days	Strong
12. "Globulin fraction" undialyzed	Strong
13. "Globulin fraction" dialyzed	Strong
14. "Globulin fraction" dialysate	None
15. "Albumin fraction" undialyzed	Slight
16. "Albumin fraction" dialyzed	Slight
17. "Albumin fraction" dialysate	Slight

COMMENT.

It would appear that the active substance can be completely extracted from ragweed pollen with 3 per cent ammonia and that it can be quantitatively removed from the ammonia extract by precipitation with acetone. As prolonged dialysis of the ammonia extract against 5 per cent sodium chloride fails to remove the active substance it is to be inferred that it is in the form of a large molecule or aggregate.

The "globulin fraction" seems to be the more active even when dialyzed for a number of days in collodion sacs and it is to be hoped that more data may be obtained by a study of the behavior of this fraction.

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The reaction of the blood in epilepsy.

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The hydrogen ion concentration of the blood in epilepsy has been determined in thirty-eight cases. In order to be able to ascertain the significance of any changes found, we have also studied the hydrogen ion concentration in the blood of twenty-eight normal individuals. In conjunction with the work of Hastings and Cullen, who have also made a certain number of observations on the pH of normal individuals, we find