

over a long period is obvious, especially in transporting cultures over great distances.

CONCLUSION

Yeast-agar, a simple medium, easily prepared, prolongs the viability of the meningococcus for at least a month.

RAGWEED DERMATITIS

A NEW TREATMENT, WITH PRELIMINARY REPORT OF A CASE

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In submitting this report, I offer a new method for the treatment of certain dermatoses. The application of remedies in diseases of the skin so often involves such a great expenditure of time, patience and money that any quicker method for promising relief or cure should be most acceptable. Having seen no previous references to the treatment of plant dermatitis by the use of pollen extract, I believe that the method, as applied in this case, is original.

REPORT OF CASE

History.—Mrs. W. E. M., aged 49, a widow, of Wadley, Ga., housekeeper, was referred to me by Dr. N. J. Newsom, who for some months had treated her for gastro-intestinal complaint and other symptoms, which seemed to bear some causative relation to her skin trouble. October 10 of last year, her case was referred to me for further diagnosis, at which time she came under my care. I at once tried to ascertain the specific cause of the cardinal symptoms, which were, itching of the skin and nervous distress. The history of the case is purposely detailed, because the information was essential to the discovery of the cause and to the treatment of the condition.

The family history is of no significance other than that the patient's grandmother had some kind of skin affection and was sensitive to what she termed the "yellow weed." The patient had had palpitation and shortness of breath for eighteen years previously, during which time she had also suffered from both muscular and articular rheumatism. She had always been of a nervous temperament, and seven years previously had begun to have severe attacks of nervousness together with hot flushes. She had never been free from indigestion.

The patient's chief complaint was an itching, inflamed rash, which began five years ago, appearing for the first two years only during the summer. The eruption occurred first on the neck, then extended to the outer and anterior surfaces of the arms and to the breasts, and since the past summer had extended to all parts of her body, excepting the hands, which have never been affected. During the last three years she had not been at any time entirely free from the rash, although there were periods of improvement when her general condition responded to treatment. The itching, the sensation of heat, and the nervous distress were intensified by physical exertion, especially after perspiring, and in keeping with the rash, were also more pronounced during the late summer and autumn months. All symptoms were worse at the menstrual periods, which for the past year had been irregular and abnormal, and accompanied by hot flushes and dizziness. The patient was almost crazed from nervousness at these periods, so that her condition became distressing to her family. Only absolute rest in bed, with hypnotics, afforded relief during the severe attacks.

In relating her history the patient referred significantly to the fact that her rash from its very onset became inflamed whenever she attempted to shuck corn or came in contact with certain weeds or plants. She noticed particularly that she was sensitive to pea vines, okra and hay. Her premises,

as it developed, were covered with ragweeds. This information, together with knowledge of favorable reports on the treatment of hay-fever with pollen extract, caused me to make a trial of the pollen method of diagnosis and treatment.

Examination.—There was a dermatitis, exhibiting minute papules, erythema, tumefaction, vesiculation and incrustation where the skin had been scratched. It was present on the body, neck and limbs, and was exaggerated over the flexor surfaces of the joints.

Routine examination of the blood, urine and feces proved negative. The physical examination revealed aortic stenosis and arterial hypertension.

Diagnosis.—With the idea of making a specific diagnosis, I applied three intradermic tests, using pollen extracts of ragweed, corn and timothy, prepared by the H. K. Mulford Company, and marketed in the form of individual test syringes. The results of the tests were a decidedly positive reaction to ragweed, a faint reaction to corn, and no reaction to timothy. Positive results were indicated by a slightly elevated area of redness, without induration, surrounding the point of injection and varying in diameter from one-fourth to three-fourths inch. Reaction to the test, which was entirely local, was complete within eighteen hours and disappeared within twenty-four hours. The only discomfort resulting from the injections was a slight tenderness on pressure over the erythematous area, probably due to the needle puncture. The tests were applied to the upper and outer parts of the arm, and the injections were introduced between the layers of the epidermis. In the treatment of this case I employed the fall pollen extract, which combines the ragweed with corn and one other pollen, but very probably the ragweed extract alone would have met all the indications, as the skin test indicated the ragweed to be the offending plant.

Treatment and Results.—During the first eight days of the patient's stay in the hospital, she was kept in bed, being denied any visitors, and was given medicinal remedies, such as had been employed in the past, for nervousness, rheumatoid pains, and gastro-intestinal symptoms. These measures afforded very little relief, and the itching of her skin at times became so agonizing that powerful sedatives were required for relief.

Being impressed by her intolerance for certain plant emanations and by the long period of suffering she had experienced, with only very temporary relief from other methods of treatment, I felt convinced that her distressing symptoms were due to a sensitization, or anaphylaxis, of her skin to certain pollens; also I reasoned that, if the extracts from such pollens had proved in a measure successful in the treatment of hay-fever and asthma, there should be some hope of success by their administration in this case, which seemed only a different manifestation of a specific reaction. Accordingly, October 18, I injected subcutaneously one third of Syringe A, Fall Pollen Extract-Mulford, representing about 0.0008 mg. of pollen protein-nitrogen. The following day I was surprised to find my patient up and entirely relieved of the itching, and, to a great extent, of the nervousness. The rash had almost completely disappeared over night, and the patient felt so well she asked to be allowed to return home. I insisted on her remaining for a while under observation in the hospital, and the next day I found her still greatly relieved, but having a slight itching and a reappearance of the rash. The third day, a second injection of the remaining contents of Syringe A, which represented about 0.0016 mg. of protein-nitrogen, was given, after which all evidences of the rash again vanished and the symptoms subsided. After the initial dose of pollen extract the patient was able to rest and to sleep soundly at night for the first time in several months, without the aid of hypnotics. She continued, however, to feel somewhat nervous and to have hot flushes, which, with her age and menstrual irregularities, suggested the approach of the menopause. To relieve this condition, she was given 10 grains of lutein three times a day. A third injection of the entire contents of Syringe B (0.005 mg.) was administered October 26, six days following the previous injection, and the patient was then discharged from the hospital. At the time of her dismissal, all symptoms, including the hot flushes, had disappeared and her skin had

assumed a normal condition. She was instructed to return to the office at intervals of a week, or less time if necessary, for treatment, and was given a supply of lutein tablets to be taken in doses of 10 grains three times daily as long as required.

Subsequent injections of pollen extract (prepared in bulk) were given at the office: October 31, 0.01 mg.; November 4, 0.02 mg., at which time she exhibited a mild recrudescence of the rash on her face and neck, which she attributed to overexertion at her household duties and to indiscretion in diet; November 15, 0.02 mg.; November 20, 0.02 mg.; November 25, 0.04 mg.; December 3, 0.04 mg.; December 16, 0.04 mg.; January 6, 0.08 mg.; January 21, 0.12 mg.; February 28, 0.12 mg.

With the exception of a recurrence on November 4, the patient has been free from the skin eruption since leaving the hospital, although on two occasions she reported having experienced a slight stinging of the skin following unusual exertion. It has now been more than thirty days since the last injection was given, at which time she stated that in the future she would come for treatment only when she felt a recurrence of her symptoms. As she has not returned up to the present date, we may assume that the injections have afforded complete relief for a period of at least a month. Even more remarkable is the fact that she has been able to do all of her work, such as cooking, washing and housecleaning, and to eat some meat and other solid foods, which her condition had prohibited during the past year. She continues to take the ovarian extract and states that her periods are now regular and normal.

COMMENT

As to the permanence of results in this case, I am not prepared to say, as it might require quite an extended period of time, through the various seasons of the year, to determine all of the specific pollens to which the patient is sensitized. However, two conclusions may be advanced, namely: (1) that the basis of treatment of certain skin diseases with pollen extracts is scientific, being founded, as is bacterin therapy, on the theory of the production of antigens and antibodies, and should offer prospects of immunity or cure comparable to those of vaccines in general, and (2) that the immediate and complete relief afforded in the instance reported indicated a definite response to the injections of a foreign protein in the form of a pollen extract. If this method, by hypodermic injections at intervals varying from one to two weeks, proves applicable to other cases—which I see no reason to doubt, when a proper diagnosis is made—it is far preferable to the continuous ingestion and topical application of various medicinal remedies. I myself believe that when all of the specific pollens to which the individual is susceptible can be ascertained, this method of treatment offers the probability of relief and the possibility of a cure. If one can determine from the history of a patient, or from a botanical survey of his home surroundings the offending plants, an extract for both diagnostic and therapeutic use could be prepared.

I am now administering the spring pollen extract to a patient troubled with a rash apparently identical with that in the case reported, though milder, and after the first injection, she states that she has experienced decided relief. In all, she has received four injections, and since the last—now four days ago—the eruption has entirely disappeared, not returning even after perspiring, when the eruption would formerly always reappear. The size of the last dose was 10 c.c., representing 0.2 mg. of pollen protein-nitrogen, as she did not respond so readily to doses of 0.1, 0.05 and 0.02 mg. No results had been achieved by the

previous administration of the fall extract in this case. This patient informs me that she has noticed that her skin is very sensitive to contact with tomato leaves, but as yet I have not applied the extract of this plant for diagnosis. She was, however, by the intradermic test susceptible to orchard grass, but was not susceptible to other spring and fall pollens.

The only negative phase I have observed after pollen extract injections was a slight headache.

ACQUIRED IMMUNITY TO INFLUENZA

AS INDICATED BY A RECURRENT EPIDEMIC
IN AN INSTITUTION

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During the early part of November, 1918, there occurred an epidemic of influenza in the State Training School for Girls at Mitchellville, Iowa. At this time seventy-six of the girls had the disease. The second epidemic occurred in January.

The State Training School for Girls has approximately 180 students. They are housed in six cottages, about thirty girls residing in each cottage. By strict isolation, the epidemic was limited entirely to Cottages 2, 3 and 4. This epidemic subsided about November 15. From this time until January 6, the institution was entirely free from influenza. During this time there was in force rigid quarantine against the outside world.

It has for years been the practice of the institution to isolate in a detention hospital for two weeks all new arrivals. This practice has given the institution an enviable record so far as acute, infectious diseases are concerned.

One of the teachers in the institution was permitted to spend the week end of January 5-6 away from the institution. On the 6th and 7th she complained of feeling ill; she did not, however, go to bed, but continued her routine duties as teacher in the training school. This teacher lived in Cottage 6.

January 8, four students who were housed in Cottage 6 were sent from school sick. They had opportunity before being sent from school to disseminate the infectious agent to all students who attended school on that date. All the cottages of the institution were represented in the school in which these cases developed. Therefore all the families were theoretically equally exposed to the infectious agent.

Additional cases developed very quickly. January 10, twenty-nine cases were reported; the 11th, sixteen cases; the 12th, twelve cases; the 13th, six cases; the 14th, seven cases; the 15th, three cases; the 16th, three cases; the 19th, one case; the 23d, one case; total, eighty-two cases.

The distribution according to families was: Family 1, 16 cases; Family 2, 3; Family 3, none; Family 4, 2; Family 5, 33; Family 6, 28.

We see, therefore, that the epidemic is practically limited to the cottages that had escaped the ravages