was to raise money and call on other highly specialized organizations in emergency, and if the American Public Health Association not only carried on the type of work that it now does, but took over all the other national societies such as have been organized for the study and prevention of cancer, tuberculosis, red plague, mental hygiene societies, conservation of vision, and child welfare. The child welfare situation most strikingly has shown the futility of a multiplicity of organizations without an effective head. The move to unite seventy-eight national societies, organized to further some form of child welfare, is certainly a good illustration of the need for unification of effort.

The National Society of Industrial Physicians and Surgeons could cover the whole of the field. This society is certainly America's most efficient organization for solving the deplorable problems of sickness among the working classes-problems that have been presented in various European countries under the name of Social Health Insurance.

Finally, of course, there is the American Medical Association which represents the greatest influence for developing medicine by the physicians at large.

Where each problem is represented by one dozen different organizations no one is as effective as it would be if it were properly organized after efficient business methods. We want standardization and we want conservation of effort.

With the American Public Health Association doing its present work and enlarged to include the intensive study of preventable and other diseases like cancer and mental disturbance; with the National Association for Industrial Physicians and Surgeons taking care of the great problem of the health conditions attending industry; with the American Medical Association to study standards and advance the educational side; and with the Red Cross to raise money to meet emergencies and subsidize special investigation that seemed urgent, I believe that we should make better progress in this country, without the deteriorating influence of a state or national health insurance plan, than we are doing under present conditions where each individual organization is attempting all.

DOCTOR SHEPARD (closing).—This discussion seems to bring out one important problem which all trained industrial hygienists have to face. That is, "what to do with the part-time industrial medical man who is chiefly interested in industrial surgery." I would point out that the problem which you face is quite similar to the problem of the part-time health officer interested mainly in his private practice. This has been at least partially solved in many places, and particularly in this state, by the formation of a health officers' organization. Under the able leadership of Dr. Walter M. Dickie, state health officer of California, the parttime health officers of the state have been brought into the Health Officers' Section of the California League of Municipalities, and have been made to feel that this is their organization. They have been given a voice in the councils of this organization and have without doubt both helped one another, and in turn been helped by the comparatively few full-time health officers who are included in the section. I believe that by skillful guidance and some statesmanship the trained industrial physicians of this state could carry out a similar project through some central organization.

The name of the organization and its affiliations are less important than its leaders. The group of men who belong to this section comprises a nucleus upon which a western industrial hygiene organization can be built.

# ABDOMINAL FOOD ALLERGY\*

ITS HISTORY, SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT

> By ALBERT H. ROWE, M. D. Oakland

DISCUSSION by Clifford Sweet, M.D., Oakland; Hyman Miller, M.D., Los Angeles; George Piness, M.D., Los Angeles.

POOD allergy is a frequent cause of mild or severe abdominal symptoms.1 That this is not appreciated by the medical profession is evidenced by the lack of its emphasis in the literature. Reference is made to abdominal food allergy in a casual way in many contributions on allergy, but other than the excellent articles of Duke,2 this important cause of abdominal pain and gastrointestinal symptoms has received little attention. The writer has studied a group of eighty of these cases of abdominal allergy with or without migraine, over a period of several years, and in this article will extend his observations especially in regard to symptoms, diagnosis, and treatment.

#### CASE REPORT

A brief record of the following case exemplifies many of the possible symptoms of abdominal food allergy. This also illustrates the unsatisfactory experiences such patients often have with medical and surgical diagnosis and treatment, and outlines the method of allergic investigation and therapy with "elimination diets" which will be described in this article.

Mrs. W., age 39, had suffered from sick headaches and chronic indigestion for eighteen years. These symptoms had increased in frequency from once a month to one to three times a week during the last three years. Abdominal pain, cramping and pulling-in type, had recurred throughout the abdomen every few days, and for one month it had been constantly present. Pain in the sacral region and over the liver was also present. Severe constipation had been constant, and menstruation had been painful and associated with sore breasts. She was subject to marked depression, irritability and emotional instability.

She disliked no foods, but knew that cream, gravy, potato, and chocolate disagreed with her, and was uncertain about others. Eczema on the hands for twenty years showed an allergic tendency.

Family history was negative for allergy. An appendectomy and uterine suspension nine years ago and a gall-bladder drainage and removal of ovarian cysts two years ago because of abdominal symptoms and headaches had given absolutely no relief.

Physical examination including blood, urine, stool, and stomach analyses and gastro-intestinal roentgen ray studies were negative.

Skin tests with foods by the cutaneous and intracutaneous methods showed no positive or delayed

Treatment.—Complete relief from all the above symptoms has been present for one year with the use of an "elimination diet" as detailed in this article, and subsequent addition of foods other than rye, wheat,

<sup>\*</sup> Read before the General Medicine Section, California Medical Association, at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

bacon, peanuts, eggs, and chocolate. The taking of these has reproduced former symptoms.

Data on the seventy-nine other cases of indigestion, abdominal pain or migraine due to food allergy are to be reported in a forthcoming article.

#### FAMILY AND PERSONAL HISTORY OF ALLERGY

What should make the physician suspicious of food allergy as a cause of abdominal symptoms? Above all else, a family or personal history of allergy is most important, since a positive history of allergy in the family is obtained in upward of 75 per cent of these patients. Thus the occurrence of asthma, hay fever, eczema, urticaria, angioneurotic edema, migraine, and repeated colds, catarrh or bronchitis in any relative in the two preceding generations or in the patient's progeny should be carefully ascertained.

In like manner, the occurrence of any of these allergic manifestations in the patient's past or present history should make one consider allergy as a cause of gastro-intestinal disturbances or abdominal pain. Moreover, a careful inquiry into food dislikes or food disagreements in adult life as well as in childhood is most important because of the help such information frequently gives regarding foods to which the patient is actually sensitive. Thus the personal history of the patient becomes an important link in the establishment of the possibility of a food allergy.

As a general routine, in the recording of every patient's history, the writer feels that the presence of a possible allergy in the family or personal history should be very carefully determined. Allergy is at the basis of human symptomatology so frequently (it is variously estimated that 15 to 25 per cent of all people have some allergic symptoms), that it has to be considered in the diagnosis of every patient by the internist, surgeon, nose and throat specialist, neurologist and other physicians.

# MANIFESTATIONS OF ABDOMINAL ALLERGY

The most frequent symptoms in the abdomen resulting from food sensitization are given below.

- 1. Pain in varying parts of the abdomen, either cramping, knife-like or aching, diffuse or remarkably localized, is often due to allergy. Pain or soreness over the liver area simulating gall-bladder disease is frequently present in these food-sensitive patients, and is probably due to hepatic congestion or edema resulting from the entrance of food proteins into the portal system. Symptoms that simulate appendicitis may be due to food allergy, as Lintz has emphasized, and may lead to needless surgery.
- 2. Indigestion characterized by nausea or vomiting, epigastric distress associated with distention, belching or regurgitation, heaviness in the stomach, and abdominal restlessness are often due to sensitization to foods.
- 3. Constipation or diarrhea, accompanied at times, by mucous colitis,<sup>8</sup> may be due to food allergy and may be relieved on the basis of such diagnosis and treatment.
- 4. Pyrosis is a marked symptom of food allergy in some patients. These patients frequently expe-

rience burning in the stomach after eating certain foods indicating the possibility of a mild or severe sensitiveness to many foods included in the diet.

Patients suffering with food allergy are subject to many manifestations of such sensitization other than those referable to the gastro-intestinal tract or abdomen.

Migraine, either alone or associated with nausea and vomiting, is one of the most important of these and has gradually gained recognition as an allergic condition. This was recently emphasized by the writer and also by Vaughan. Many patients have concomitant asthma, hay fever, urticaria, or eczema along with their abdominal allergy. Many have coated tongues, foul heavy breaths, recurrent nasopharyngeal congestions, and canker sores or recurrent white patches on the buccal mucous membranes. Weakness, mental confusion and generalized body-aching and anorexia are frequent. Pains in the mid or lower back referred from the abdominal disturbance may also be due to food allergy. The writer has studied a number of patients, with unexplained fevers which have been due to food sensitization. Malnutrition, underweight and short stature also are common.

The cause of these manifestations of food allergy may be edema of the intestinal mucosa or spasm of the smooth muscle in the intestine itself. Irritations of the mucous membrane analogous to urticaria or dermatitis of the skin may occur in varying parts of the intestinal tract and could explain the canker sores and the recurrent pharyngeal lesions. Angioneurotic edema of the intestine probably explains some of the severe abdominal pain due to food allergy, and at times undoubtedly leads to unnecessary abdominal surgery such as was reported by Harrington.<sup>5</sup>

## DIAGNOSIS

What are the important criteria for the diagnosis of an abdominal food allergy?

- 1. Family and personal histories, as stated before, will often reveal an allergic tendency which points to the possibility of allergy in the etiology of the patient's problem.
- 2. The history of food dislikes or disagreements is extremely important. These have usually been ignored by the physician heretofore being ascribed to whims or fancies. Whereas this is true in some cases, such opinions of patients must be more seriously considered in view of the recent recognition of food allergy. However, the patients may not realize which foods, especially the common ones, cause allergic disturbances. Therefore the determination of the offending foods must be made by skin-testing with "food proteins" and frequently by the use of "elimination diets" and food trial.6
- 3. Routine skin-testing of a patient suspected of food allergy with all foods and condiments is advisable. It is frequently helpful to test with other types of antigens, such as those of pollens and others, since positive reactions would indicate an allergic status in the patient. The scratch test frequently gives negative reactions to foods to

which the patient is sensitive as originally shown by Schloss, and emphasized by Duke,<sup>2</sup> and the writer.<sup>7</sup> Sensitization to such foods may be shown by the intradermal test though this method also fails to reveal food allergy in many cases. Much evidence, moreover, is against the routine use of this intradermal method by the average physician as stated by Vaughan.<sup>8</sup>

The writer therefore feels that much food sensitization must be determined by dietary trial in the presence of negative skin reactions. This procedure is also necessary with foods giving positive tests, as stated by Andresen, since the skin may indicate a potential sensitization which does not affect the gastro-intestinal tissues.

4. By the use of "elimination diets" and consequent broadening of such diets as detailed in the following section of this paper, foods productive of abdominal allergy or migraine may usually be discovered. This dietary trial is necessary in every patient suspected of food allergy, especially where skin tests are negative.

#### NECESSITY OF A GENERAL DIAGNOSTIC STUDY

In studying the patient from the viewpoint of a food allergy it must be emphatically stated that a careful and painstaking analysis of the patient's condition must be made. This should include a careful general history and complete physical examination, as well as various laboratory examinations such as blood, urine, stool, and stomach analyses as well as roentgen-ray studies of the gastro-intestinal tract and of the gall bladder and colon, if indicated. If some pathological condition in the abdomen is revealed, treatment should first be directed toward such a condition unless the likelihood of a food allergy indicates the adjustment of the diet at the same time. If such treatment of the pathological condition does not give relief a thorough trial of various "elimination diets" should be made before food allergy is ruled out and especially before surgery for indefinite pathology is done. Duke has emphasized the presence of pathology in patients suffering with food allergy suggesting the possibility that one condition predisposes to the other.

#### TREATMENT

#### 1. Based on history or food reactions.

When a patient gives a definite history of sensitization to wheat, milk or eggs or to any other food, or gives definite skin reactions to foods, simple exclusion of such foods frequently gives prompt relief to the abdominal symptoms or migraine. Exclusion of such foods must be absolute. Return of symptoms is usually due to breaking of the diet, even to a slight extent.

2. Based on food trial with "elimination diets."

The trial of various diets is often necessary to determine the foods to which the patient is sensitive, especially when no skin reactions and no history of food dislikes or disagreements are obtained. The writer has found that such food trial is greatly helped by the use of "elimination diets."

These "elimination diets" include only a few foods so that the effect of individual ones can be carefully observed. In order to obviate the harm resulting from starvation or an unbalanced diet, one or two starches, two to four vegetables and fruits, oil and sugar, have been included in each diet and should be taken in amounts sufficient to assure enough protein, calories, vitamins, and mineral salts to meet body requirements. This is especially important if it becomes necessary to try different "elimination diets" to diagnose and properly control an obscure food allergy. Foods to which patients are most often sensitive, such as wheat, milk, eggs, chocolate, orange, banana, tomato, potato and others, in their order of frequency as determined by a recent analysis of 175 food-sensitive patients by the writer, have been excluded from these diets. However, where no obvious sensitization to milk is present it may be used during the preliminary trial period. If symptoms are not relieved, one or more diets without milk should be tried before excluding a suspected food allergy. Patients are at times sensitive to all fruits, all vegetables or all foods in other groups, in which cases individual "elimination diets" must be formulated of the type outlined above.

Four "elimination diets" are suggested for routine use by physicians. The one selected should depend on the history of food idiosyncrasies and positive skin reactions. Diet No. 1 has been most useful as a basis on which to build the final "elimination diet." A suggested menu shows the possibility of serving a palatable meal with the few foods included in this diet No. 1. If the patient gives a history of disagreement or gives skin reactions to definite foods in the diet, or if the patient realizes that certain foods cause distress, substitutions of foods similar to those under suspicion must be made.

If relief is obtained inside of a week, with such an "elimination diet," the addition of one or two vegetables or fruits, to which no evidence of sensitization exists, is made every four to five days. If relief persists after two weeks, meats, cereals and other foods may be gradually added by the physician, excluding any which cause symptoms.

Wheat, milk, and eggs should not be added for several weeks. Of these milk should be tried first, especially in children, providing there is no definite evidence of milk allergy. If milk is excluded the calcium content of the diet is apt to be deficient, indicating the use of two to four grams of calcium lactate a day. Such milk sensitization often contraindicates butter in which case emulsion of cod-liver oil will supply calcium, phosphorus, and the deficient vitamin D.

Eggs frequently produce gastro-intestinal symptoms and their addition must be carefully watched. The writer, as well as Vaughan, has emphasized the importance of wheat in the production of abdominal allergy as well as migraine, angioneurotic edema and other allergic conditions, and it should be the last addition in most cases. For proper relief it must be emphasized that the exclusion of foods to which the patient is sensitive must be absolutely complete, as even the slightest

amount of such foods may produce severe allergic symptoms.

In certain patients sensitization to foods is so extensive that a very narrow diet must be taken, the mineral content of which should be determined and increased to the normal requirement by the addition of calcium or iron or phosphorus if necessary, the vitamin intake being fortified by the addition of yeast or cod-liver oil. When sensitization to cod-liver oil is present, the use of irradiated 9 olive, cottonseed, or corn oil will supply vitamin D.

#### GENERAL MEASURES

The use of peptone before meals has long been recommended 10 for nonspecific desensitization to various foods. The writer has used peptone for several years in an attempt to desensitize against marked food allergies, without satisfactory results. However, there are undoubtedly individuals who are mildly sensitive to certain foods, symptoms of which are alleviated by the use of peptone by mouth, in one-half dram doses, thirty to forty-five minutes before meals. The hypodermic injection of peptone or its intravenous administration as recommended by Miller, 11 especially in migraine, has not yielded results comparable to those obtained by the use of the elimination diets already described. Vallery-Radot 12 has recently recommended the use of peptone (50 per cent) intracutaneously, but the good results obtained required daily administration which militates against its use as compared to the regulation of the diet

The administration of calcium salts by mouth or vein has been disappointing in the writer's experience, and quartz-light therapy has been ineffective in the control of abdominal food allergy though it is recommended for its general constitutional benefit.

#### DESENSITIZATION TO FOODS

Patients frequently become desensitized to foods which have been excluded from the diet for several months. In some instances, however, such loss of sensitization requires years and may never occur. The feeding of increasing amounts of food, beginning with 1/100 or less of a drop of milk or egg, for instance, and the slow increase of the daily dose until one-half cup of milk and one-half of an egg is being taken at the end of several months may be successful. The reappearance of symptoms indicates too rapid an increase and some patients apparently cannot be desensitized by the feeding of the food to which they are sensitive. The hypodermic desensitization to common foods has been generally unsuccessful in the hands of various specialists in allergy.

#### SUMMARY

Food allergy as a common cause of gastrointestinal symptoms, especially gastric distress, cramping, and abdominal pain and constipation, needs more general recognition by physicians.

Migraine is frequently due to food allergy and

may be associated with abdominal disturbances due to a like cause.

A family or personal history of allergy or a dislike or disagreement for various foods should make the physician consider food allergy in the etiology of abdominal symptoms.

Skin tests are frequently negative to the extracts of foods to which the patient is sensitive.

"Elimination diets," several of which are appended to this article are helpful in determining the presence and type of possible food sensitizations when skin reactions are negative.

Abdominal allergy is frequently relieved by exclusion of foods from the diet to which the patient either gives positive or delayed reactions or a definite history of a dislike or disagreement. In many cases, however, diet trial by the use of menus similar to the "elimination diets" suggested in this article, with subsequent additions according to the plan here specified, is necessary for the treatment of patients afflicted with abdominal allergy. Though skin reactions are of help in indicating possible food sensitization it is possible for the physician to diagnose and treat abdominal food allergy as well as other manifestations of food sensitization such as certain cases of migraine, asthma, eczema, urticaria and angioneurotic edema with "elimination diets" such as have been outlined.

# COMMENTS ON ADMINISTRATION OF ELIMINATION DIETS

- 1. Absolutely no foods other than those specified in each diet can be used. Thus in Diet No. 1. rice must not be fried with butter or lard, but only with the fat specified, which was olive oil. Absolutely no bread, milk, cream, or other nonspecified foods can be used.
- 2. Prescribed fruits can be used in drinks, salads, for desserts and jams and sauces.
- 3. Gravies for meats and sauces for vegetables can only be thickened with flour allowable, *i. e.*, rice flour in Diet No. 1; cornstarch in Diet No. 2; etc.
- 4. Olive oil in Diet No. 1, corn oil in Diet No. 2, cottonseed oil in Diet No. 3 are indicated according to sensitizations to olive, corn or cottonseed antigens.
- 5. Calories must be increased by plenty of sugar, oil and starch prescribed. Vitamins must be assured by plenty of vegetables and fruits prescribed.
- 6. In Diet No. 2, baked corn pone made with cornmeal and water, or cornmeal mush fried in Mazola oil or bacon fat, eaten with prune or apricot juice or plain sugar syrup, would be in order.
- 7. In Diet No. 3, tapioca, baked with peaches and sugar and flavored with orange or orange peel may be suggested.
- 8. In Diet No. 4, if patient is sensitive to fish but not to eggs, eggs may be substituted.
- 9. These diets are models on which other diets composed of foods indicated by history of food sensitizations and skin tests may be formulated if desired by physicians. Diet No. 1 has been found

### I. "ELIMINATION DIETS"

	Diet No. 1	Diet No. 2	Diet No. 3	Diet No. 4	Diet No. 5
Cereal	rice*	corn	rice tapioca	rice rye	Milk alone for the test
Bread	none	corn pone†	none	rye rice‡ Ry Crisp	period. Two to three
Meat or Fish	lamb	bacon chicken	beef	cod, halibut and white fish	quarts a day.
Vegetables	lettuce spinach carrots	squash asparagus peas artichokes	tomatoes celery string beans	lettuce carrots peas beets	
Fruits and Jams and Fruit Drinks	lemon pears peaches	pineapple apricot prunes	grapefruit pears peaches	pineapple apricots pears	
Miscellaneous	sugar olive oil salt olives (unstuffed) maple syrup gelatin	sugar Mazola oil salt	sugar Wesson oil salt gelatin maple syrup	sugar olive oil olives (unstuffed) salt	

<sup>\*</sup> Natural Rice is preferable because of vitamin content.

<sup>‡</sup> Rye rice bread.

1/3 cup rye flour	1/4 tsp. salt
2/3 cup rice flour	2/3 cup water
6 level tsp. baking powder (Royal)	1/2 tsp. shortening
4. level tsp. sugar	

This recipe makes eight small muffins. This recipe doubled can be made into a loaf. Perhaps more palatable if toasted. Royal Baking Powder contains no egg.

# 2. SUGGESTED MENU FOR DIET NO. I

#### BREAKFAST:

Rice Boiled, natural, served with peach or pear juice and sugar.

Fried in olive oil and served with sugar or maple syrup.

Pears or peaches Large helping, fresh or canned.

Drinks Lemonade with plenty of sugar.

#### LUNCH AND DINNER:

Soup . Lamb broth with rice and carrots.

Salad Lettuce with pears or peaches with olives and olive oil and lemon.

Green or ripe olives, unstuffed.

Meats Roast lamb with gravy made with rice flour.

Broiled lamb chops.

Vegetables Spinach or carrots. Boiled natural rice.

Dessert Lemon gelatin or pears or peaches.

Drinks Lemonade with plenty of sugar.

especially useful either as it is or with foods substituted for those to which patients were sensitive.

10. The "elimination diet" found to relieve patient's symptoms can be increased by gradual addition of foods to which the patient is found to be nonsensitive as outlined in this article.

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<sup>†</sup> Corn pone is made with cornmeal, salt, water, and Crisco.

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#### DISCUSSION

CLIFFORD SWEET, M. D. (242 Moss Avenue, Oakland). Abdominal symptoms that have as their basis an allergic reaction to protein are sufficiently common to demand our attention. If anyone approaches the problem of explaining the cause of distress in the abdominal region without giving protein sensitiveness due weight he will in a considerable number of cases fail to arrive at the correct result. This, it seems to me, is in substance all that Doctor Rowe claims, and he has rendered valuable service by this and his other contributions to the subject.

For several years my work has been entirely with children, but at the moment I recall adults who suffered from severe abdominal distress as the result of the ingestion of certain foods. One in whom honey caused severe epigastric pain; another in whom even a trace of garlic caused severe abdominal discomfort and a migraine with vomiting so severe that a day's rest in bed was necessary; and another in whom English walnut brought on a crisis of abdominal pain, accompanied on one occasion, when a large amount was taken, by an edema of the glottis that was all but fatal.

In infants the process of adjustment between the individual and the proteins that are ingested and inhaled is smooth or rough according to his allergic inheritance. The colic of infancy is often the noise of battle resulting from the abdominal discomfort that arises from incompatible protein. Having this explanation in mind has often helped me to solve a difficult feeding problem, and very frequently the correctness of the diagnosis has been borne out, not only by symptomatic relief, but by the later appearance of other allergic manifestations such as asthma.

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HYMAN MILLER, M. D. (1136 West Sixth Street, Los Angeles).—Doctor Rowe's statement that a syndrome which might be termed food allergy with abdominal symptoms actually exists, I can well substantiate. However, Doctor Rowe's statement that such a syndrome is common or, to use his own words, "often occurs" appears to me a bit exaggerated. Were this the case many asthmatic or hay fever patients sensitive to foods would be expected to exhibit abdominal symptoms, and anyone who has had experience with

any number of such individuals knows that this is not so. I also object to the statement that migraine may be the result of sensitization to foods since, in my mind, migraine is a very definite syndrome which in our experience may be present in an allergic individual, but no more commonly than in the general population.

George Piness, M.D. (1136 West Sixth Street, Los Angeles).—Doctor Rowe would lead one to believe that abdominal allergy is a very common condition. I wish to take exception with him on this point, as our observations on several thousand patients thoroughly and carefully studied do not corroborate his findings although it is admitted that abdominal allergy does exist and may result from sensitizations to proteins other than those derived from food.

The use of elimination diets in my opinion is a roundabout and cumbersome method at the cause of symptoms, and even though the patient may be relieved of symptoms, is no proof that the symptoms were allergic in origin.

Doctor Rowe (closing).—The frequency of abdominal food allergy alone or associated with other allergic conditions such as asthma can only be appreciated by physicians who will study their patients intensively from the allergic viewpoint as outlined in my article. Failure to recognize food allergy as a not uncommon cause of abdominal pain, indigestion, mucous colitis, and other gastro-intestinal symptoms will handicap the physician in the diagnosis of his patient and, what is especially important, deny patients much-needed relief from symptoms which at times have resisted medical treatment for years.

Determination of food sensitization, it seems advisable to repeat, cannot depend on skin reactions alone and must often be ascertained by diet trial. Duke in his book on "Allergy," as well as other allergists, has stated that skin reactions, especially of the cutaneous type, are frequently negative in food allergy (and to a less extent in other types of allergy such as pollen) and when positive must be taken as a clue. Food sensitization as a cause of clinical symptoms, therefore, must be determined finally by diet trial even when skin reactions are positive. Though food sensitization can be diagnosed and controlled with my "elimination diets" without the aid of skin reactions, when reactions are obtained at the original sitting or, as often occurs, with retesting, they are of definite help in the problem.

My opinion that many cases of migraine as well as recurrent headache are due to food allergy is based on my successful control of such cases, thirty of which were reported at the recent meeting of the American Medical Association in an article on "Food Allergy." Vaughan in his article on "Allergic Migraine," already referred to, as well as Andresen arrive at the same conclusion. Miller and Raulston in 1923 felt that migraine was allergic in origin, but offered no plan for specific diagnosis or therapy. Food allergy cannot be said to be the only cause of migraine, but it is one which must be definitely considered.

It is hoped that my suggestions in regard to the diagnosis and treatment of food allergy will be of as much help to physicians and especially to those interested in gastro-intestinal disease as they have to me in my care of patients with such allergy. Decision as to the frequency of abdominal food allergy or as to the value of the method of its control by "elimination diets" must be formed after a thorough study of a considerable number of cases with the method I have described.