As regards duodenal ulcer the same criteria apply: remove the ulcer if possible, either by excision or pylorectomy, and re-establish your intestinal tract by means of the Polya method or a gastro-enterostomy.

After-treatment is of course of paramount importance and each gastric or duodenal case should be carefully dieted for at least six months after his operation. Peptic ulcer, instead of being a battleground between physician and surgeon, should be a field where these two sections of the medical profession could advantageously join forces. If a physician and a surgeon agreed to collaborate, I think it would be of the greatest benefit to the patient, and in my opinion it is in the sphere of after treatment that the physician would reap his richest reward.

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THE ALLERGIC DISEASES.

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The term “Allergy” introduced by Von Pirquet, will be used in its broadest sense. Under this heading it is intended to group such terms as anaphylaxis, serum sickness, specific hypersensitivity, protein sensitivity, because the clinical conditions which fall under these various heads all give rise to the same type of phenomena, however different they may seem on a superficial examination.

In 1839 Magendie reported the fact that dogs which had received injections of egg albumin died suddenly on receiving a second injection; and in 1894 Flexner found that animals which had received one injection of dog serum died if a second dose was injected after an interval of some time, although the second dose was sublethal for control animals.

It remained for Richet to show and demonstrate the anaphylactic state and to call the group of signs and symptoms produced by a second injection into a previously sensitised animal “Anaphylaxis”.

Pirquet and Schrek studied this phenomenon in children, and described a condition known as “Serum Sickness” which arose when serum was injected for diseases. This syndrome appeared seven to ten days after the injection of the specific serum. They also observed that these symptoms could be made to appear at once if a small dose of the same serum was injected some time after the original injection of the therapeutic serum.

Rosenau in 1906, by a series of careful experiments, finally and conclusively showed the remarkable effects met with in cases of hypersensitivity.
The experiments showed:—
(a) The danger of a second injection of the sensitising dose, in that it leads to fatal results. Also that the sensitising dose was extremely small.

(b) This condition of hypersensitivity was lasting when once established.

(c) That it could be transmitted from mother to child.

(d) That animal, vegetable and bacterial proteins were the foreign substances responsible for most cases of Allergy or hypersensitivity.

Other points which must be noted in connection with the Allergic phenomena were shown by Richet, Otto and Besredka. This sensitivity to an antigen could be transferred from one animal to another by the injection of the serum of the sensitive animal to another not in this state. It was, however, observed that this passively produced sensitivity was not as lasting as that inherited from father or mother.

Finally, before discussing the practical side of this subject, it will be necessary to mention some further experiments which form the basis of our modern treatment of the Allergic diseases.

This we owe to Besredka, who showed that it was possible to desensitise previously sensitised animals by injecting them with sublethal doses of the protein to which they were sensitive. This condition he called anti-anaphylaxis. He was able to show that the desensitisation could be produced in as short a time as two hours—he produced this state by the injection of minute doses intravenously every few minutes, increasing the size of the dose as he went on. The animals so treated were able to stand without any reaction 1,000 times the lethal dose. Unfortunately, however, this state of anti-anaphylaxis was only of short duration, and this is what we find in the treatment of the Allergic diseases in practical medicine.

In practical medicine the conditions which come under the heading of Allergic states are asthma, hay fever, urticaria, migraine, serum-sickness, and according to some authorities, epilepsy.

Before writing of the actual clinical states met with in medicine, a brief description of an actual anaphylactic shock with fatal result and subsequent post mortem findings, will indicate many characteristic points of the Allergic state.

The subject, a girl aged 25, suffered from asthma of three years duration. The clinical history revealed the fact that eggs produced an asthmatic attack. A skin test definitely proved that this was due to egg white. A 2% solution of egg white was prepared, and a process of desensitisation was decided upon. The girl received 1/100 c.c. of 2% solution subcutaneously. She left the room, but returned in two minutes complaining of tightness of the chest. She was extremely cyanosed. The breathing became shallower and shallower, and the cyanosis deeper and deeper. Violent respiratory efforts were made, but no air entered the chest. Within a minute she fell to the ground, and breathing ceased with a tremendously distended chest. The pulse could not be felt, nor could the heart beat be heard. Art-
The description given above is that of an extreme case of anaphylaxis. Hundreds of examples of milder states are met with. Everybody is familiar with an attack of asthma and hay fever or urticaria. The conditions are produced in exactly the same way.

A previously sensitised person drinks say a glass of milk on going to bed. Shortly he is awakened, and finds that it is becoming more and more difficult to breathe, and he can get less and less air into his chest—he is having an attack of asthma.

Another subject finds that one morning in February or March, on going into the garden, he experiences the most violent attack of sneezing, nasal irritation and itching, tremendous epiphora, with possibly wheezing and tightness of the chest. This man is having an attack of hay fever, and the antigen has gained access to the tissues via the nasal mucous membrane—the antigen being present in the pollen of, say, Cosmos.

The third case notices that shortly after a meal of, say, fish he or she experiences skin irritation, with the formation of raised white areas varying in size from a pin head to the size of a saucer, intensely irritating, and having a reddened margin. These raised areas may attack the face, resulting in most grotesque appearances which so alter the appearance of the face as to make the person quite unrecognisable even by their own relatives. Such a person is having an attack of urticaria.

And so we can go on giving numerous examples of anaphylactic reactions, fundamentally identical, although apparently different in their clinical appearance.

Perhaps at this stage it would be best if the type were mentioned. These bodies are mostly proteins, and they are best placed under the following heads:

(a) Food proteins—vegetable, fish, animal.
(b) Bacterial proteins.
(c) Animal furs, bird feathers, animal emanations, and insect stings, e.g. bees. Case reported by me.
(d) Pollen proteins.

There are, however, other conditions which give rise to the Allergic state, namely physical factors, and some drugs. The physical factors are heat and cold, which give rise chiefly to the urticarial and drugs which strangely also give rise chiefly to the urticarial state.
In my experience I have had cases of Allergy in every one of the above groups. In group (a) one has seen cases of asthma produced by injections of milk, beans, eggs and beef. In group (b) one can only assume a bacterial cause if skin tests made from the bacteria isolated from nasal or bronchial secretion give positive reactions, and if subsequent desensitisation with the specific bacteria leads to cure. This has been my experience in asthma. Regarding urticaria and its relation to bacterial poisons, I wish to put forward that in some cases of urticaria a bacterial protein may be the offending antigen. I have now had three cases which have all cleared up after removal of teeth which had crowns above, and abscesses at the roots. In one case there were five abscess teeth, in another four, and in the third two. Regarding the physical factors, namely heat and cold—one case of mine developed generalised urticaria on running or playing tennis, and also on hot days; another, a small form of generalised urticaria on swimming in cold water. Lastly in relation to drugs and the Allergic state, I have had one very startling experience—the drug in question being arsenic, in the form of Stovarsol. That this was an anaphylactic type of reaction is born out by its mode of onset.

A patient was given Stovarsol for a period of four days, but owing to the onset of a rash, the drug was discontinued. One week later (seven days—the time at which serum-sickness is expected) the drug was again administered. Within one hour the patient's face began to swell, and shortly it had swollen to almost twice its normal size—the whole body began to swell, and he experienced the most intense pruritis. There was also a high fever. This was undoubtedly an anaphylactic reaction.

In group (c) one has found cats responsible, and removal of the offending animal results in a cure. One spinster lady kept nine cats, and suffered the tortures of the damned nightly until the cats had been destroyed. Feathers, chicken or goose down, are also frequent cause. Horse dander is another.

(d) The pollens during the season when the flowers or grasses are pollinating are a common cause of the Allergic state.

On the Witwatersrand I find that two groups are chiefly responsible, namely the grasses (veld), and the compositae flowers. This I showed in a paper read before the Junior Clinical and Pathological Club in 1925.

This observation has subsequently been verified by Pirie in a paper read before the British Medical Association Congress in Bloemfontein in 1928.

I should like to state here that hay fever if untreated, and under prolonged exposure to pollens, frequently gives rise to typical attacks of asthma.

What is the explanation of all these peculiar and typical reactions? All authorities agree that anaphylaxis is a result of antigen—antibody reaction. This reaction is specific—by this is meant that an animal sensitised to one protein will not react to another, no matter how closely related—for example, the different proteins of egg. Doerr and Eisner showed that slight changes in the protein may alter its specific reaction. Eisner uses this fact to explain drug
idiosyncrasies, and state that drug sensitivity may be a result of sensitiveness to a protein altered in the body by the administration of a drug. In what part of the bodies does this anaphylactic reaction take place? Authorities now agree that it takes place in the tissue cells. That it does not take place in the circulating blood is shown by the experiments of Manwaring, who bled sensitised animals and completely replaced the original blood by fresh blood. The sensitivity remained as active after this replacement as before. Work by Vaughan deals with the split protein products and their isolation by repeated digestion of the protein molecule. These substances he found on injection produced Allergic-like symptoms. From this arose the idea that sensitive subjects developed their sensitivity by a similar process of protein splitting with absorption from the bowel. Eustis, a result of this work, propounded a theory that asthma was caused by the absorption of toxic bodies from the intestinal tract. Dale in 1910 isolated a body called histamine, which acted on the involuntary muscle when injected into guinea pigs, and later showed that these reactions closely resembled the anaphylactic reaction. Ackerman about this time showed that histamine was a product of putrefaction of histidine, and as histidine is to be found in all proteins, one can well realise how abundant must be the production of the poisonous substance histamine in the bowel owing to putrefaction. According to these observers we have the source of the poison. All that is now needed is an explanation of the alteration in the state of the colon, allowing the absorption of histamine with the production of the anaphylactic phenomena, which give us the clinical picture of asthma, urticaria, hyperpiesis, migraine or chronic headache.

I have dealt with the discovery of the Allergic state, the peculiar and specific clinical syndromes, and the theories as to mode of action and production of the poisons; there remains now only the treatment.

The treatment of the Allergic state is in certain cases remarkably successful, in others, which unfortunately form the majority, it is most disappointing. To start with asthma. It should be the golden rule that in every case, the offending antigen must be sought for. The skin tests for sensitivity in so far as the proteins of foods, animal furs, vegetables and bacteria are concerned, are very discouraging. One has done hundreds of tests, and the percentage of sensitive cases found are in the region of three to four per cent. Once the true offending antigen has been found, and eliminated from the diet or from contact with the subject, then the asthmatic state ceases. The resensitisation with the offending antigen is fraught with great danger, and should not be undertaken lightly. This method constitutes the specific protein therapy. The first dose must be one-tenth weaker than the test antigen which just gives a positive reaction, and is the strongest dilution which does not give a reaction. Injections are given every three to four days in slowly increasing doses.

The second method of desensitisation is by means of a non-specific protein. This may be of the nature of a bacterial protein (vaccine), or a peptone. The bacterial proteins used are a B.C.C. vaccine, a streptococcal vaccine, a typhoid vaccine or tuberculin. The selection of the vaccine is a matter of choice. Different workers recommend different antigens. Peptone is the most commonly used protein to produce "shock" phenomena.
Van Leeuwen uses tuberculin on the assumption that a relationship exists between hypersensitiveness to tuberculin and allergy. Two types of Peptone are commonly used—Wittes and Armours. Auld is the chief supporter of this method. It may be administered:—

1. As a large single intravenous injection, producing a shock reaction.
2. As an intravenous or intramuscular injection of small quantities in increasing doses—as a rule ten injections constitute the course.
3. Orally.

Now regarding these three methods:—

The first may give rise to a violent reaction, and is a method which cannot be recommended. The second is one which gives most success. Peptone intravenously often clears a case of asthma very quickly, and they remain free from attacks for years. Some patients relapse, requiring a second course, others do not clear up during treatment, but lose their asthma some time after treatment has ceased. The use of an autogenous vaccine in combination with peptone intravenously is very often much more successful than the use of peptone alone. The oral use of peptone before meals is rather disappointing. It is supposed to have its action in preventing a haemoclastic crisis by sending small doses of protein into the circulation before a large quantity reaches the liver after a meal.

In the treatment of hay fever we meet with a great measure of success by using the specific antigen, namely solution of the pollen proteins. On the Witwatersrand two groups are most commonly met with—the gramineae, and the compositae. The methods of desensitisation are two:—(a) Preseasonal. (b) During the season.

The first is the method which holds out most chance of success. Cases can be treated during the season, but the injections must be given daily or tri-weekly. A point of importance is the actual method of injection. Phillips has introduced the intradermal method of inoculation, which is undoubtedly more successful than the subcutaneous method of injection. The treatment of hay fever by this method of desensitisation with the specific protein certainly holds out a certain chance of relief, and in some cases a complete cure for the sufferer.

With regard to urticaria, here again it is essential to find the causative antigen. Once this has been done, its removal from the diet or the prevention of contact with the offending protein such as those of certain flowers and furs, will keep the patient free from attacks. Dental sepsis in my experience is an occasional cause of urticaria. For the relief of urticaria and the discomfort associated with serum sickness, an intravenous injection of 10% calcium chloride is instantly successful. The relief is not lasting and a second injection may be required in a few hours.

Before concluding, a word of warning concerning the Allergic state:—

1. Before giving serum or any foreign protein, find out if a protein of any kind has ever been administered.
2. If a protein has been given at an earlier date, test the patient's sensitivity by an intradermal injection of one or two minims of the diluted antigen which is to be administered.
(3) If the individual is sensitive—desensitise very slowly and carefully by small injections of the dilute specific antigen, gauging your dose by local reactions.

(4) Carelessness in this particular point may lead to a fatal result.

(5) If a reaction is anticipated always have a syringe charged with adrenalin at hand. Adrenalin is almost a specific in the treatment of the anaphylactic reaction.

(6) When injecting a foreign protein intravenously for the first time, be it ever so small, always keep the patient lying down for twenty to thirty minutes after the injection.

(7) The acute anaphylactic shock appears so suddenly and progresses so rapidly that treatment may be of no avail, therefore it is best to avoid the possibility of producing it, by observing the above precautions.

ESSENTIAL ANATOMY.

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No. II.—THE ISCHIO RECTAL FOSSA.

The ischio rectal fossa is a pyramidal shaped space at the side and behind the anal canal. Its surgical significance is considerable.

BOUNDARIES.—

MEDIAL: Levator ani covered by the inferior fascia of the pelvic diaphragm.

Sphincta ani externus.

LATERAL: Obturator internus muscle covered by that part of the parietal layer of pelvic fascia called the obturator fascia.

FLOOR: Skin at the side of and behind the anus.

POST WALL: Sacro tuberous ligament covered behind by the gluteus maximus.

APEX: 2½ inches from the floor. Formed by the junction of the medial and lateral walls.

CONTENTS: A pad of fat which is traversed by fibrous bands. Inferior haemorrhoidal vessels and nerves running through the fat.

Perineal branch of the 4th nerve perforating cutaneous branches of the 2nd and 3rd sacral nerve.

THE FASCIA LUNATA OF ELLIOT SMITH:

There is no deep fascia under the skin which forms the floor of the fossa. Elliot Smith has shown that the fossa is lined on its inner and outer walls by a layer of fascia which he has named the fascia lunata.