Cases I and II died on Tuesday, August 15th; Cases III and IV on Wednesday, August 16th; Cases V and VI on Thursday, August 17th; and Cases VII and VIII on Monday, August 21st. The longest periods of survival from the onset of symptoms were six and a quarter days (Case VII) and five and a half days (Case VIII); the shortest were from fifteen to seventeen hours (Cases I and II).

Of the various means used to help the sufferers, the only one which gave any obvious benefit was morphine, and the relief was only of a temporary character.

With regard to the nature of this outbreak of illness, it was soon possible to set aside early suspicions as to the presence of poisonous berries in the black-currant tart consumed at dinner, and as to lethargic encephalitis. A careful inquiry as to the various articles of food consumed at dinner in the hotel, and at lunch on the loch, on the preceding day, showed that with one doubtful exception (subsequently found not to be an exception), the sufferers had all partaken of certain sandwiches made with potted wild duck. In the course of Wednesday, August 16th, we met in consultation with Dr. Maclean, M.O.H., and Dr. Brodie, school medical officer from Dingwall, Dr. Carnegie Dickson from London, and Dr. Cox from Preston; and all were agreed that the illness was due to food poisoning and that the potted meat was probably the offending substance. In course of time it became quite evident that botulism was the particular form of food poisoning with which we had to deal.

At the public inquiry held by Sheriff McIntosh at Dingwall on September 5th to 7th it was shown that some individuals who had partaken of the wild-duck sandwiches had not suffered any harm. This was accounted for by the fact that two pots of wild duck had been used for the sandwiches on the Monday morning. It also appeared that no other pot prepared by the manufacturers had ever been known to be harmful. The inquiry showed that the infection must have been in the pot when it left the factory, but it failed to show how or where the infection had taken place.

While the symptomatology was of itself sufficient for a diagnosis, there was a general feeling of satisfaction when it was learned that the results of laboratory investigations had removed any possibility of doubt. Dr. Cruickshank of Aberdeen gave evidence that the histological examination of a portion of the brain from Case VII was in accordance with the diagnosis of botulism, and Mr. Bruce White, B.Sc., of Bristol, working for the Scottish Board of Health, stated that he found *Bacillus botulinus* and its toxin in the remains of one of the pots of wild-duck paste.

Among the colleagues whose valuable co-operation we had in examining the patients, in trying to relieve their suffering, or in endeavouring to elucidate its origin, were Drs. Maclean and Brodie (Dingwall), Carnegie Dickson (London), Cox (Preston), Brown Kelly (Glasgow), Colt and Cruickshank (Aberdeen), and Dittmar and Leighton (Edinburgh); and, in addition, Mr. Bruce White (Bristol).

OBSERVATIONS ON THE CAUSE AND CURE OF CHRONIC RHEUMATISM.

BY

E. HARDING-FREELAND, F.R.C.S.ENG.,

HERNE BAY.

THE general characteristics of rheumatism, popularly so called, must be apparent to even the most casual observer. Everyone, I take it, will agree that rheumatism is a disease which is very prevalent, usually very painful, often very disabling, and always very liable to recur in spite of treatment. With such a picture presented to our view it seems strange that rheumatism of the chronic type has from time immemorial been treated with scant courtesy alike by writers of books and practising physicians. The references to this type of rheumatism in the textbooks are usually meagre in the extreme—as a rule the subject is mentioned merely to be dismissed in a few cursory words, while in practice any ache or pain which cannot be conveniently referred to any cause in particular is labelled “rheumatic.”

So it happens that under the term “rheumatism” there have been grouped together a large number of conditions which bear a certain superficial resemblance to each other, as far as their external manifestations are concerned, but differ widely the one from the other when their fundamental nature comes to be investigated. They are due to widely dissimilar

causes, and must therefore be considered to be different and distinct conditions. The result is that the term “rheumatism” has come to be very loosely used, and has come to denote a medley of symptoms rather than any definite disease.

The Nature of Rheumatism.

At the outset we are confronted with the all-important question—What is rheumatism? To this question it is essential that he who sets out to cure the ailment should be prepared to give as definite an answer as possible if he expects his efforts to be rewarded with success. Observation and experience extending over many years have led me to the following conclusions, among others, as to the nature of this disease.

1. That rheumatism is a definite disease.
2. That rheumatism is an infective disease due to the invasion of the part affected by a specific microbe—the *Streptococcus rheumaticus* of Poynton and Paine.
3. That the acute, subacute, and chronic types of rheumatism are variant forms of the same disease, the underlying pathological conditions and essential cause being the same.

To put the matter more concisely, rheumatism is a specific infective disease due to the *Streptococcus rheumaticus*. The validity or otherwise of this proposition I do not propose to discuss here, my present purpose being to show the practical results which may be achieved by adopting this proposition as a working hypothesis and a basis of treatment.

Basis of Treatment.

Every practising physician must be painfully conscious of the futility of trying to cure rheumatism by what may be termed the ordinary methods of treatment. These remedies, it is true, seldom fail to give temporary relief; but equally seldom they fail to prevent a relapse. To my mind, this inveterate tendency to recur in spite of treatment, which must be patent to even the most casual observer, must be considered the outstanding feature of rheumatism. That being so, it follows that any method of treatment which is capable of effecting a permanent amelioration or cure must be not only capable of breaking up the attack in being but also capable of preventing the occurrence of any prospective attack.

In other words, assuming rheumatism to be an infective disease due to a specific microbe, to effect a cure it is essential to compass the destruction of the microbes already lurking in the tissues, and to render the tissues immune to attack by other microbes which may subsequently gain access to the circulation. In the present state of our knowledge the only method of treatment which can be expected to fulfil these conditions is vaccine therapy.

Necessary Preliminaries.

Before, however, undertaking the treatment of a case of alleged rheumatism by vaccines or any other method of treatment it is necessary, as a preliminary, to make sure—or to make as sure as possible—that it is a case of genuine rheumatism with which we have to deal, and not one of its many counterfeit presentments. In other words, we must take pains to determine that the case in question is a true *Streptococcus rheumaticus* infection, and not some other form of infection which gives rise to similar manifestations. To this end all the various conditions which are known to give rise to symptoms closely resembling those of rheumatism should be closely considered and excluded. A careful study of the case in general, its history, course, symptoms, and physical manifestations, and, wherever necessary, the application of appropriate tests, will in the vast majority of cases lead us to a correct conclusion as to its true nature.

Vaccine Therapy.

Having determined the identity of the disease, and that it is a case suitable for vaccine treatment, the subsequent course is comparatively easy going. Practically the only difficulty which presents itself is the question of dosage. This must necessarily vary with the individual, and can only be determined by experience. If the initial dose produces an undue reaction, the subsequent dose should be reduced; if, on the other hand, no reaction is apparent, the subsequent dose should be increased; and so on until a dose is found which produces a minimum of reaction. In other words, the ideal dose is the maximum of vaccine which produces the

minimum of reaction. Once this is found the rest is easy. It is only necessary to repeat the dose week by week until such time as the symptoms have disappeared, or until no further improvement is obtained.

Circumstances of course may occur when it may be considered advisable to increase or decrease the dose or the intervals between the doses, temporarily or permanently. Every case must be treated on its merits.

Supplementary Treatment.

Let it not be thought for one moment that I am advocating vaccine therapy as the be-all and end-all of treatment. On the contrary, with rheumatism, as with all other diseases, no remedial measures should be neglected which help to bring about the best possible results. Experience, however, has led me to regard vaccine treatment as essential, and other remedial measures as subsidiary, but by no means unimportant, seeing that, in the vast majority of cases, they are usually desirable, and often necessary.

Symptoms of various kinds must be treated from time to time as they arise. The general health of the patient must be attended to, and every effort must be made to get him as fit as possible. The state of the digestive organs should be investigated and any tendency to indigestion rectified. The question of diet should not be overlooked, and, although it is seldom necessary to recommend an unduly restricted diet, it is often necessary to formulate a dietary suited to the digestive capacity of the individual. Speaking generally, a somewhat generous but plain and wholesome diet is indicated. Vaccine treatment seems to improve rather than diminish the digestive capacity. For obvious reasons it is essential to ascertain that the bowels, skin, and kidneys are functioning well, and, if not, to regulate their activity by appropriate measures.

Massage, active and passive movements, radiant heat, Turkish baths, resolvent applications, etc., should not be neglected, especially in the more chronic cases, which are often accompanied by much swelling and stiffness.

Such, then, is a brief outline of the method of treatment which I have been accustomed to adopt for some years past in cases of chronic rheumatism.

Analysis of Cases.

The results, which I have recently reviewed and been at pains to verify, are set forth in the following analysis. Only those cases are included in which sufficient time has elapsed to render them of any value in computing results, and in which the results are definitely known. An examination of the cases shows that, with few exceptions—which have not been included—they all fall naturally into five anatomical groups, as shown in the following tabular statement, which also shows the nature and number of the cases treated in each group, and the results obtained.

	Cases.
Articular rheumatism (arthritis)	52
Cured or markedly relieved	42
Slightly relieved or failed	10
Muscular rheumatism (lumbago 10, other forms 14) ...	24
Cured or markedly relieved	20
Slightly relieved or failed	4
Neural rheumatism (sciatica 6, other forms 14) ...	20
Cured or markedly relieved	15
Slightly relieved or failed	5
Pharyngeal rheumatism (tonsillitis)	12
Cured or markedly relieved	12
Cerebral rheumatism (chorea)	4
Cured	4
Total number treated	112
Cured or markedly relieved	93=83%
Slightly relieved or failed	19=17%

Some explanation is necessary with regard to the terms used in describing results. "Cured" means that the symptoms have completely vanished, and that there has been no recurrence for upwards of a year. "Markedly relieved" includes cases of more recent date, which have remained well for from six to twelve months. "Slightly relieved" means that there was no very marked improvement in the condition, or what improvement had occurred was not permanent. "Failed" speaks for itself.

It should be noted that most of these cases were of long standing, and all had lapsed, or were tending to lapse, into the chronic phase, with frequent recurrences; and that the majority had been treated with the ordinary methods of treatment with little or no benefit. The following cases in epitome exemplify the type of case treated.

Articular Rheumatism.

Case 1.—Male, aged 35. Origin, attack of rheumatic fever. Duration, nine months. The condition when first seen included pain, swelling and stiffness of the hips, knees, and ankles; locomotion was only possible with the aid of two sticks; the general health was fair. After three injections the swelling disappeared; pain and stiffness were less; he was able to move about more freely, but still used a stick. After five injections, voluntary movements of the joints were free; he was able to get about fairly well, but his legs were still weak; he could not altogether dispense with a stick, but pain was practically gone; there was still some stiffness after resting. After eight injections all symptoms had gone; he could walk well and returned to work. He was under treatment for seven weeks.

Case 2.—Female, aged 66. Origin, subacute attack. Duration, six years. When first seen all the joints were involved; she was unable to do anything for herself, and was bedridden, with marked deterioration of health. After twelve injections she was able to get about and could use her arms and hands freely. Her general health was much improved, but she was still weak. After sixteen injections all symptoms had disappeared; she could walk well without assistance and use her hands and arms for all practical purposes. Her general condition was good. She was under treatment for four months.

Lumbago.

Case 3.—Male, aged 47. Origin, subacute attack. Duration, three years. His condition included pain in the back, limitation of movements, and stiffness; the pain increased on movement, rendering locomotion difficult. After eight injections all symptoms had disappeared. He was under treatment for six weeks.

General Myalgia.

Case 4.—Male, aged 30. Origin, "chill." Duration, two years. When first seen he had general muscular pains, varying with changes in the weather, worse at night. After five injections the pain had gone. He was under treatment for four weeks. Note: This case is typical of the majority of cases of generalized myalgia treated.

Sciatica.

Case 5.—Female, aged 28. Origin, acute attack, attributed to sitting on a damp seat. Duration, three weeks. When first seen the attack was lapsing into a chronic phase. Ordinary remedies failed to relieve. There was pain along the course of the sciatic nerve trunk and its branches, increased on movement and pressure. She was unable to get about. After four injections all symptoms disappeared; the patient expressed herself as feeling just as well as ever. She was under treatment for three weeks.

Tic Douloureux.

Two cases of this painful and intractable ailment have been under treatment. In one case the result was completely successful, in the other it was a failure. The following is a brief epitome of the successful case.

Case 6.—Male, aged 65. Had always enjoyed good health, except for recurrent attacks of pain over the left eyebrow, which commenced five years previously; at first recurring about every six months, the intervals gradually became less and less. When first seen the attacks recurred every evening about 6 o'clock, persisted throughout the night, and passed off in the early morning, the patient being free from pain during the day. No previous treatment brought any permanent relief, and life was a burden. After four injections the attacks were less severe. After eight injections the attacks still persisted, but the pain was duller and bearable. After twelve injections the attacks, which had been getting less severe and less frequent, ceased. He was under treatment for two months.

Facial Neuralgia.

Three cases of so-called facial neuralgia, apparently of rheumatic origin, have been treated—two with complete, one with only partial, success. The former were cured after six injections at weekly intervals. In the latter, treatment was abandoned after three injections had been given.

Chorea.

Case 7.—Boy, aged 9. Duration, three months. When first seen there were marked involuntary movements of the arms and head, with twitching of the face; there was also a mitral bruit. After four injections the movements ceased. The patient was under treatment for three weeks.

Case 8.—Girl, aged 15. Duration, eight years. She had had recurrent attacks. The mental and physical conditions were much impaired; involuntary movements were general. After six injections the condition was much improved. The movements, which were severe, were now reduced to spasmodic twitchings. After twelve injections the movements had ceased; her physical condition was good, her mentality much improved. The duration of treatment was three months.

Tonsillitis.

These cases occurred chiefly in adolescents and young adults. In all there was a tendency to recurrence in the spring, and autumn, and all were accompanied by symptoms elsewhere, which pointed unmistakably to their rheumatic origin. Otherwise there was nothing to differentiate them, superficially, from ordinary subacute attacks of tonsillitis. Treatment was carried out in the intervals between the attacks. Six injections were administered

in each case. Eight remained well for over a year, and the remaining four for periods varying from over six months to a year, all having passed the period at which a recurrence was due.

CONCLUSION.

In conclusion, it should be noted that the foregoing remarks are not put forward in any sense as a critical study, but merely represent a brief record of individual experience concerning a certain line of treatment, with its results.

TREATMENT OF ORIENTAL SORE BY PHOSPHORATED OIL.

BY

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The treatment of oriental sore (dermal leishmaniasis) which I devised some time ago and have used in three cases during the last six months consists in injections of recently prepared phosphorated oil into the nodule and around it.

Method.—A sterile 20 minims all-glass hypodermic syringe is used; 5 minims of the oil are drawn in and injected into and around the lesion by inserting the syringe in two or three places into the nodule itself and under the skin around the periphery; if the lesion is ulcerated two or three drops of the oil, in addition, are dabbed on the fundus of the ulcer after removing the crust. The injections are given once or twice a week.

The result in all three cases has been very satisfactory, evidence of incipient healing appearing almost immediately after the second or third injection, and an apparently complete cure being obtained within three weeks to two months.

CASE I.

A demobilized army officer, aged 26, contracted oriental sore six months ago in Persia—one large non-ulcerated nodule and a partially ulcerated one, both on the left forearm. Microscopical examination of both lesions showed the presence of *Leishmania tropica* Wright. The patient had had severe malaria and had been treated with large doses of quinine. He had had no treatment of any kind for the sore. I gave him altogether seven injections (5 minims each) of phosphorated oil at rather irregular intervals, as he could not come to see me very regularly. The actual injections were painless; after a few hours there was a slight local reaction, the lesions becoming somewhat oedematous and the surrounding skin slightly reddened. Symptoms of rather severe general reaction occurred once; after the third injection the patient had fever (102°) and felt chilly and unwell, with rheumatoid pains all over the body. The symptoms may have been due in reality to his old malaria, as the temperature fell to normal with sweating within twenty-four hours; I could, however, find no malarial parasites in the blood. The open sore healed very quickly within two weeks, a smooth white scar being left; the non-ulcerated nodule took six weeks to disappear.

CASE II.

A young married woman (British), aged 24, presented on the left wrist a small smooth nodule with a few scales at the apex and no sign of ulceration. Microscopical examination showed it to be an oriental sore, contracted apparently two months earlier in India; the first sign of it appeared during the voyage home. Six injections of phosphorated oil (two a week) were followed by complete disappearance of the lesion within three weeks. The injections were never painful, the local reaction was very slight, and there was never any sign of general reaction.

CASE III.

An Englishman, aged 22, had contracted oriental sore seven months earlier in Iraq. There was one very large nodule on the left forearm ulcerated at the top and covered with a thick crust. Microscopical examination was positive. The patient said that the condition had been treated with intravenous injections of tartar emetic without any benefit; it had also been considered to be of syphilitic origin and treated with salvarsan unsuccessfully. He was given an injection of phosphorated oil (5 minims) twice a week into the nodules and at several places under the skin and around it. The lesion took two months to heal completely.

The method seems to have been successful in these three cases, which are all I have treated. The following points should be kept in mind: First of all, it is essential that the phosphorated oil should be of recent preparation; old phosphorated oil is inert. The phosphorated oil I have used is the oleum phosphoratum B.P. The injections are practically painless, but after a few hours there may be some local reaction, the lesions becoming slightly swollen and the skin around them somewhat reddened; apparently severe general reaction is rare; a reaction lasting twenty-four hours occurred after the third injection in Case I, but the patient was an old malarial subject, and the condition—though I did

not find any malarial parasites—may have been malaria, especially as it terminated in sweating.

Phosphorus is a powerful poison, and its delayed action on the liver should especially be kept in mind; it should therefore be given with care, and every precaution taken. I may say, however, that though I have used injections of phosphorated oil in only three cases of oriental sore, I have used this therapeutic method without any ill effects in several other conditions, since I found, some years ago, that phosphorated oil given by subcutaneous injection was almost painless: I have used it, for instance, without any untoward effect in cases of rickets and of osteomalacia, and in certain cases of very chronic malarial cachexia as an adjuvant to quinine and arsenic.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TRAUMA AND APPENDICITIS.

The two following cases, in which appendicitis appeared to be the result of trauma, came under my care early this year; the injury in each instance occurred on January 2nd.

CASE I.

A young woman, aged 19, a field worker, was walking on the outskirts of a wood when she tripped on a stub and fell flat on the ground, but not upon any projecting object. On raising herself she felt sick and faint, but improved as the day advanced, took her evening meal, and slept well. The next day she felt pain just above the right groin, and could not take her food well. The father, thinking his daughter had received some injury from the fall, asked me to call on the following day.

I saw her at 3.45 on January 5th. She had abdominal facies, anorexia, and complained of pain in the right lower quadrant; temperature 103°, pulse 140. There was scarcely any movement of the abdomen, a resisting area in the right iliac region per rectum, and some tenderness on palpation high up.

From the history, I wrote a note to King's College Hospital (to which the patient was admitted) expressing the opinion that she was suffering either from a large haematoma commencing to suppurate or an acute appendix abscess.

Operation was performed the same evening, and the following note, from Mr. St. J. D. Buxton, assistant surgeon to the hospital, describes what was found: "She had a localized appendix abscess; it was shut off from the general peritoneal cavity with very firm adhesions, but the abscess was very offensive. I took the appendix away and drained the cavity. I took some trouble to avoid opening the general peritoneal cavity, and hope that will be rewarded, so I do not know if there was any free fluid in that. Your note regarding the fall was very interesting."

CASE II.

A farm labourer, aged 59, while standing astride a wooden pole slipped and fell, his whole weight coming on the lower part of the abdomen. He felt sick and faint, and went home. He resumed work the next day, and continued to work daily until January 8th. On this day the district nurse was called in; she decided that it was necessary the patient should see a doctor without delay. He was seen by Major S. H. Smith, who ordered enemata to relieve constipation, and a mixture for what was diagnosed as a reflex asthma. That night the nurse reported no result from the enemata, and proposed giving a high one. This was agreed to, and a request was made that a report on the state of the patient should be submitted early the following morning. No report came, and the patient was not visited again until January 12th. He had commenced to vomit the previous night (mucus and bile), complained of pain in the right inguinal region, and had had no action of the bowels since the high enema on January 8th. The abdomen was immobile and distended.

The patient was removed to Gravesend Hospital on the afternoon of January 12th, and operated on in the evening. A report from Mr. G. R. M. Cordiner states that "his abdominal cavity was found to be full of foul-smelling pus. On search being made, a gangrenous perforated appendix was found."

Farningham.

T. F. HUGH SMITH.

FOREIGN BODY REMOVED FROM THE ORBIT.

Mr. W. was taking an inebriated friend home, a misplaced kindness, which resulted in a severe blow causing a wound below the left eye. Next morning he consulted the local medical man, who stitched the wound, which healed by first intention. Four weeks later Mr. W. was sent to me, and was admitted to the Salisbury Hospital, Southern Rhodesia. There was a scar below the left lower eyelid, and external and superior strabismus on the left side, the eye being displaced outwards and upwards. There was also extensive herniation of the bulbar conjunctiva, which protruded between the lids and hung over the malar region. The pupillary reaction and tension were normal. There was