THESIS

"A Study of Rheumatism and its allied affections"

by

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Rheumatism is a term which has been used very loosely to indicate almost any affection accompanied by pain and tenderness of joints and muscles, and to include morbid conditions of widely different nature.

Definition: - Rheumatism may then be defined as a general or constitutional morbid state, characterised by shifting inflammation of the fibrous structures, especially those of joints and serous membranes; this involves sometimes other tissues, such as the subcutaneous connective tissue, the skin, and the mucous membrane, and often causes in children disorder of the central nervous system as evidenced in chorea.

History: - Balchonni 1560 is supposed to have been the first to separate gout from acute articular rheumatism. In the following century Sydenham wrote
his book on gout, which has since remained classical. From 1840 to 1850 Garrod made great progress in the study of gout. In 1852 Charles proclaimed the absolute identity of acute, subacute, and chronic rheumatism. Even now the relation of arthritis deformans to rheumatism and to gout is not definitely settled. As regards the treatment of rheumatism many various remedies have been employed at different periods. Sydenham favoured bleeding. Turlin and later sulphate of quinine have both had their supporters. Garrod, Chambers, and others gave large doses of the bicarbonates of potassium or sodium. Bicarbonate of soda and the cyanides have also had their advocates. Iron nearly all these remedies have given place to the alkaline salicylates which were first
employed in the treatment of rheumatism about 1876. An infusion of a species of willow seems to have been extensively used for a long time in South Africa in the treatment of rheumatism.

Etiology: Acute rheumatism or rheumatic fever is a very definite and easily diagnosed disease, but the terms "rheumatism" and "rheumatic" are usually applied to any lesion that can be associated with it. Rheumatism is hereditary in about 27% of cases, and previous attacks proportionally increase the liability to a relapse. Persons of a rheumatic constitution have usually a great tendency to obesity, and are lacking in vigour and power of sustained effort. They have moreover a marked tendency to rheumatic affections of joints, bones, joints,
and serous membranes. Their teeth decay early and they often suffer from acidity of the stomach. Rheumatism is commoner in young people from 16 to 25. More adult males than adult females suffer from it. It appears to be more common in girls than in boys. Outdoor occupation and poverty are predisposing causes of rheumatism; it is more common in certain districts than in others. The most common exciting cause is exposure to cold or wet, a chill after severe exertion often causes it, and it is more prevalent during autumn and winter.

Rheumatism may also suddenly appear after a strain or injury to a joint. Some writers refer an attack of acute rheumatism to derangement of digestion. There is no doubt that the majority of rheumatic subjects suffer from hepatic and gastric
-distinction, this is probably one of the most frequent predisposing causes. Any exhausting illness, such as influenza, may excite rheumatism in people who would otherwise probably have escaped. Anatomical characters:—The post-mortem appearances in acute rheumatism are remarkably negative on the whole; on opening an affected joint, we find moderate hyperemia, with occasional ecchymoses of the synovial membrane and fibrinous tissue connected with the articulation. The synovial surfaces present a somewhat opaque, granular, swollen appearance. A considerable amount of inflammatory effusion occupies the articular cavity. The cartilages of the joint may be involved if the case be a severe one. Small nodules of fibrinous tissue, connected with the fascia or with the tendon sheaths, may be seen sometimes in young subjects.
Classification: The following classification has been adopted as being the most convenient clinically.

1. Acute febrile arthritis.
   A. Acute
   B. Subacute rheumatism.

2. Secondary and pseudo-rheumatism.

Articular

1. Chronic following acute or subacute.
2. Arthritis deformans.

A. Primary: All forms of muscular rheumatism.
   - Some cases of conjunctivitis, iritis, and retinitis.
   - Some cases of neuralgia, sciatica, headache, chorea.
   - Many cases of tonsillitis.
   - Alveolar dental periodontitis.

B. Secondary to other complications:
   - Some general form of rheumatism.
   - Congestive heart failure.
   - Pleurisy, bronchitis.
   - Pneumonia.
   - Some forms of dermatitis.

1. Articular rheumatism may be acute, subacute, or chronic.
A. RUSKÉ RHEUMATIC ARTHRITIS:

This is an acute disease, caused by certain diabetic, climatic, or infective influences; and it is characterized by fever, sweats, and acute shifting inflammation of the joints and related structures. Uncomplicated cases are rare since 50% of cases have some cardiac or respiratory complication.

General symptoms:

In rheumatic fever, there is rarely a distinct rigor at its commencement as in pneumonia or pleurisy. In the majority of cases, a patient gradually sickens for acute rheumatism. He feels ill and anorexia, indisposition to work or eat; he may complain of sore throat, aching pain in the joints, or shooting pain in the limbs. He usually presents a sallow complexion, with may-be conjunctiva of a yellowish color. Gradually the pain is seen to settle in one or more particular joints. Temperature rises, and patient...
becomes very ill. In some cases the acute phase of the disease develops very quickly, that is in twelve or twenty-four hours.

**Classical phenomena**: These naturally vary much; the three most constant are pain, fever, and sweating.

**Swelling**: This is usually considerable and you may be able to elicit fluctuation; in rare cases effusion into subcutaneous tissue around joint is so great as to yield pitting on pressure. Neighboring tendons and their sheaths may be swollen and tender. The patient usually maintains affected joint in a position a few degrees removed from extension. As one joint recovers, often another becomes involved.

**Pain**: This is the most distressing symptom of uncomplicated rheumatic fever. It is always severe but varies with the degree and duration of the arthritis. It commences with
a kind of soreness, and gradually becomes worse until patient is afraid of the slightest movement of the part involved. On recovery this pain gradually gets less, until, finally, only a feeling of stiffness is experienced on moving the limb. In some cases the pain is worse at night.

Tenderness: This is a constant and well-marked symptom of rheumatism. It is almost unbearable in some cases; hence a cradle to protect affected limb is welcomed by patient.

Redness: The color of a rheumatic joint is of a pinkish hue, rarely purplish. It is most marked in the joints of the hands, and feet, knees joints, and ankles.

Heat: The skin over an affected part feels decidedly warmer to the touch than that of the surrounding joints.

Favorite joints: These are the ankles, knees, wrists, shoulders, and
elbows; the hip-joints less frequently than the others.

Small fibrous subcutaneous nodules; these are rare in adults; they are often developed in children and girls in connection with involved joints, tendon sheaths, and bones. They are most commonly met with in the elbows, knees, knuckles, wrists, and ankles; the occipital region frequently presents many of these nodules, and they may occasionally be met with in the tendon sheaths of the forearms and hands. They appear to be more common in cases complicated with severe cardiac mischief.

Neuromcular pains; these are experienced especially at the insertion of muscles and in the fasciae, or the muscles of the whole limb may ache.

Temperature; this is variable in degree, course, and duration;
more especially is this so in complicated cases. In cases of simple rheumatic arthritis it runs a more definite course; here it makes its appearance at mission and remains as long as there are any acute or subacute symptoms. Cases with mild local symptoms rarely exceed 99° to 102° F. In severe cases the temperature varies between 101° to 104° F. The temperature is usually higher in the evening; its advance is generally rapid while its decline is more gradual and regular. There may be a relapse, which is common, when temperature again rises. Hyperpyrexia is a somewhat rare complication of rheumatism. At one time it was termed "cerebral rheumatism," but that name has been abandoned since no visible lesions in the brain have been discovered in cases where hyperpyrexia has proved fatal.
The grave cerebral disturbance accompanying hyperpyresia is rather the effect than the cause of the high temperature. Hyperpyresia may appear in any case, at any time, since it does not appear to be influenced by age, sex, or occupation. In some cases premonitory symptoms may appear as sudden subsidence of joint-pains, or sweating may cease, then after some time patient becomes very restless, and even delirious. The temperature may quickly rise to 105° or 106°F, or in rare cases even to 108° or 110°F, and death ensues. At commencement of delirium there is muscular twitching, the eyes are restless, and patient is with difficulty kept in bed; the face is generally dusky-red, and the tongue dry and tremulous. If the temperature should exceed 107°F, the patient becomes semi-comatose, or even
comatose, a condition always present if the thermometer reach 110°F.. At post-movent examination here shows the solid viscera to present granular degeneration; they are also prone to rapid decomposition.

Skin: - Profuse, sour, acrid sweats constitute one of the characteristic phenomena of acute rheumatism in adults. These profuse sweats are generally absent in acute rheumatism in young children. In adults, the whole body perspires profusely, but this may vary with the severity of the pain. These sweats continue through the whole attack and only disappear on the subsidence of the other symptoms. In severe cases the entire body may be covered with a profuse eruption of miliaria or spondum.

Digestive system: - In acute rheumatism the tongue is usually covered with a thick, white, moist
Jurr; in some cases it may be dry, brown, and cracked. Patients usually complain of great thirst; the saliva is acid to be acidic. The appetite is usually poor until convalescence is established. Sore throat is often complained of as the commencement of the disease, or it may occur later. The tonsils are said by some writers to be involved in 80% of cases. Dyspepsia, with flatulence, is common. There may be diarrhea or constipation during the illness as the bowels are very irregular in rheumatism. Abdominal pains are frequently complained of irrespective of the condition of the bowels. Circulatory system; in uncomplicated cases of rheumatic fever the pulse ranges between 80 and 120; it is usually soft or even diastolic, but it varies much according to the severity of the case. Acute rheumatism is frequently accompanied
Of certain other affections which greatly increase its gravity. The relation of these complications to rheumatism is not always strong; the majority can only be described as having an obscure generic relation to it.

Cardiac complications are the most common in rheumatism; they are present in at least 50% of all cases. Acute cardiac disease is present in about one third of all cases of rheumatic fever. These rheumatic cardiac affections are much commoner in the young rheumatic children rarely escaping disease of the heart.

Liability to cardiac disease appears to increase directly in proportion to the severity of the attack, and women are more prone to it than men. Cardiac symptoms may appear at any time during an attack of acute rheumatism, but they most frequently develop during the ful
ten days of the disease. They may appear at the commencement of the disease or during a relapse. A murmur, once present, is always apt to reappear during a relapse. Cardiac complications are much the most common cause of death in rheumatic cases. Even if they do not prove fatal, they constitute the most disturbing of the remote effects of the disease. They are often overlooked in children, and so may eventually give rise to grave disease in after-life.

Respiratory system: In rheumatic fever the respiration are usually increased. Complications involving the respiratory organs occur in from 1 in 6 to 1 in 16 cases of acute rheumatism. In other cases of acute rheumatism, which prove immediately fatal, are caused by pulmonary mischief alone or along with some cardiac complication.
The most common respiratory disease complicating acute rheumatism is pleuro-pneumonia, then pleurisy alone, then pneumonia alone; severe bronchitis, pulmonary congestion, and laryngitis are more rare. Any of these conditions may appear at any stage of an attack, and they are generally easily diagnosed by the appearance of their several symptoms.

Urineary system:—The urine of patients suffering from acute rheumatism is scanty, highly coloured, and very acid; it is usually loaded with urates. On examination albumen is rarely present, but there is in most cases an excess of urea, uric acid, sulphates, and coloring matter; chlorides are diminished; no excess of lactic acid has been found.

Nervous system:—Consciousness and elements of intellect are usually preserved throughout.
a case of uncomplicated rheumatic fever. Delirium is uncommon except in cases where hyperpyrexia is present. Anxiety of mind, in other than joint attacks, is very marked. This is probably due to patient's knowledge of the severity of the pain experienced in former attacks. Sleep is much interfered with while pain is severe. It is now generally admitted that chorea bears a close relationship to rheumatism. In many instances it is occasionally met with in the course of acute rheumatism; mental derangement is stated to have followed it in a few rare cases.

COURSE, DURATION, TERMINATION, AND SEQUELAE.

The course of acute rheumatism is indefinite. Its natural duration is about three weeks; the average duration of acute symptoms in cases under treatment is 8 to 10 days. A relapse of the disease is common and the new attacks may attain
any degree of severity, complications are more frequent in these cases. Convalescence is usually slow and is sometimes accompanied by partial desquamation. Patients, after an attack of acute rheumatism, often suffer from asthmatic anemia. In many cases affected joints remain stiff, painful, or weak for a considerable time; fibrous nodules may remain for months after acute symptoms have subsided. Most cases of rheumatic fever recover, the mortality being about 4%. Of the immediately fatal cases most are associated with respiratory or cardiac affections, pernicious anemia being the next most frequent cause of death. The sequelae of acute rheumatism are, on the whole, more serious than its immediate effects. Sometimes it is the forerunner of chronic rheumatism.
or rheumatoid arthritis. But
the commonest after-effect of
acute rheumatism is valvular
disease of the heart; this, in its
turn, either predisposes to or
immediately causes many
various conditions which often
subsequently end in death.

Diagnosis:
The diagnosis of acute rheumatism
is generally easy. During invasion
it is liable to be mistaken for
an acute specific fever or
malaria. When one or more
joints are involved, it is to be
diagnosed from gout, rheumatoid
arthritis, gonorrheal rheumatism,
hemophilia, acute synovitis,
and arthritis of a traumatic
or diathetic origin.

Acute gout generally involves
one particular joint and has
a very sudden invasion. Any
history of a previous attack will
greatly assist in the diagnosis;
This may be made with certainty by finding uric acid in the blood serum. Pyaemia is usually associated with some injury or pre-existing disease; these signs are common and fever is milder in milder. Gonorrheal rheumatism is persistent in one or more joints, and conjunctivitis may be present. The valency lakes appear to have little effect on this disease; this should make you suspicious. If any urethral discharge is present, then diagnosis is easy. Rheumatoid arthritis is diagnosed by its insidious course and subsequently by the characteristic deformity of the joint. Glanders, if it should be suspected, is diagnosed by the presence of the Bacillus mallei. Ordinary synovitis is rarely multiple and is persistent. Here enquire as to come, whether
it is Varnmattie or diathetic. 
Haemophilia is hereditary and only occurs in males; therefore, if it is suspected, make careful enquiries as to history. Purpura
spots and haemorrhages are common in Haemophilia. Pul
er rheumatism has also to be diagnosed from Typhoid fever in its earliest stages, from acute osteomyelitis, and from influenza.

Prognosis:
This is most uncertain and should always be guarded. The majority of cases recover, but there is a great tendency to relapses; this is more especially so if the treat
ment be discontinued too soon. In most cases, if properly treated, the pain and fever are gone in a week or ten days; occasionally one particular joint may remain involved for some weeks. Anaemia and debility are almost cont"
sequelae of rheumatism. Should complications, as pleurisy or endocarditis, be present, the patient may be very ill for many weeks. The disease itself rarely ends in death, but some of its complications often give rise to a fatal termination.

Pathology:

The pathology of rheumatism is still obscure; the following are some of the various theories regarding its causation.

1. Lactic acid theory: here it is supposed that lactic acid accumulates in the body, and the symptoms in rheumatism are directly due to the action of this poison upon the system.

   [Brown; Todd; Richardson]

This theory is not generally discredited but it may be that micro-organisms or their products may cause the production of the acid.

2. Nervous theory: a chill, especially
of the skin and joints, causes disturbance of corresponding parts of the central nervous system; and this gives rise to pain and vasomotor or atrophic changes of the same peripheral parts, and to fever.

[Constant; Sect.] 3. Combination of 1 and 2; here it is supposed that a chill causes accumulation or retention of lactic acid; this acts on the central nervous system, and the disordered nervous centres react upon the joints, etc., as in 2. [Senator].

4. Combination of 2 and 1; here it is supposed that a chill disturbs the nervous system; this disturbs metabolism generally; lactic or uric acid, or both, are retained and act as poison. [Fuller; Latham].

5. As a result of a chill, some poisonous product is formed within the system, which, according to individual proclivity
or the nature of the products engendered, excites acute articular affection, or multiple neuritis, or actual spinal paralysis. [Bashan].
6. Infective theory: chills are attended with the entrance of micro-organisms into the system, and endocarditis is the result. The joint-symptoms are secondary and embolic, as in pyæemic arthritis. [Huetter].
7. Germ theory: the disease may be due to the presence in the blood of a micro-organism or a variety of micro-organisms. [Salisbury, Immernan]. These organisms may enter the body by the tonsils, and their morbid activity may be confined to the lymphatic system, particularly the serous and synovial cavities. [Wuat].
8. Follicular Tonsillitis: partially devitalizes a number of leucocytes, which establish disorder of

nutrition and perverted function in distant parts by accumulating within and without the capillaries, particularly when these are contracted by cold or by light. [Stewart]

9. Malarial or miasmatic theory: supporters of this theory contend that shermannation is due to the presence in the system of a poison which is of the nature of a miasm entering from without. This miasm is generically allied to, but specifically distinct from, the miasm of malarial fever [MacLagan]. Its development on the earth may be related to rainy weather; its dissemination to subsequent dry weather. Some writers state that shermannation may become epidemic and even pandemic. Its occurrence in epidemics is very constant. It is very prevalent in Norway, Sweden and Denmark, but it is found in almost all parts of the world. The least number of cases

occur in August; it is most prevalent in January.

It appears most probable that rheumatic fever is due to an organism introduced from without and analogous to that found in pneumonia, tetanus or diphtheria, rather than to those of the more digestive diseases; or it may be caused by a toxin produced within the system by the organism.

The chief arguments in favour of the germ theory are:

1. No somewhat sudden onset and its implication of the throat in most cases at its commencement.

2. No mode of progression.

3. No tendency to relapse.

4. The liability of patients to subsequent attacks.

5. The fact that joints are the seat of most trouble in simple cases.

The chief points against this theory are:

1. The chronic nature of many cases which never have had rheumatic fever.
(2) The fact that no definite incubation period has been differentiated.
(3) The evidence of direct infection is rare and doubtful.
(4) A definite micro-organism has not yet been found in cases of acute rheumatism.

Various writers have stated that they have found micro-organisms in rheumatism, but this has never been sufficiently substantiated.

Sir Dyce Duckworth says: "Rheumatism occurs in predisposed persons, under conditions of lowered vitality, who become the prey of some micro-organism which germinates in the blood, developing a toxin therein."

The three most constant symptoms of acute rheumatism are fever, sweats, and pain. It will be impossible to definitely decide the true pathology of acute rheumatism until our knowledge of the action of organisms.
poisons on the system, whether introduced from without or produced within it. The intermediate products of nutrition are more precise. We must also know more of the intimate relation of the nervous system to the body-heat, skin and nutrition.

**Treatment**:

**General**: The treatment of uncomplicated acute rheumatism is generally easy. The patient should be confined to bed in a warm well-aired room—even in sub-acute cases; a single bed is to be utilized if possible, once the patient can be more easily attended to. A soft hair-bed and spring mattress are to be used if possible. Patient should wear flannel next the skin, and should always be placed between soft thin blankets. A bed-pan should always be used, the patient not being allowed to get out of bed at
any time during the acute stage. Dietetic: In acute inflammation a milk diet should be enforced — for an adult 3 to 5 hours in 24 hours — the milk, being well boiled, should be diluted with equal parts of barley-water or soda-water. In some cases milk is not tolerated; here why should be substituted lemon-water, with rice to cool it, is very useful to alleviate thirst. Farmaceous good may be given in small quantities after temperature has become normal. Should there be any return of the pyrexia or of jaundice, the milk diet should be returned to. After all acute symptoms have disappeared and temperature has been normal for a few days chicken broth, light clear soups, grape, or fruit may be allowed. The patient should be strongly advised to abstain from all nitrogenous foods for some days.
or even for a fortnight, after acute symptoms have subsided. Alcohol is rarely required in cases of simple acute rheumatism.

Medicinal: - during the last twenty years the salicylates, introduced by MacLagan in 1876, have come to be almost exclusively used in the treatment of rheumatism. Prior to this the alkaline treatment, 20 grams of the bicarbonate or acetate of potassium every four hours, was generally adopted, and even now this method of treatment has its supporters. The drugs now most universally used are salicylate, d-salicylic acid, salicylate of quinine, and salicylate of sodium. Salicin is said to have a less depressant action on the heart and to produce toxic symptoms less readily, but the sodium salt is more generally employed. Salicylate of sodium occasionally gives rise to toxic symptoms.
Here patient suffers from nausea, headache, deafness, vomiting, tinnitus aurium, and may be delirium. In a few cases it is stated to have caused albuminuria, erythema, haematuria, and an erythematous eruption of the skin.

I have seen this drug administered to a great many patients, many of them children, during the past four years and I have never seen any marked evil effects from its use. I have seen it give rise to vomiting and headache in a few cases, but I have rarely met with a patient who has had to discontinue its use. If it is not tolerated by the mouth, it may be administered "per rectum", or it may be given in the form of pills or mi cachets.

Most of the evil effects from the use of salicylates of soda are due to the employment of the artificial salt which is much cheaper than the natural drug. The so-called
Physiologically pure preparations, now very extensively used or accompany of its juice, is acid to occasionally cause toxic symptoms.

Prof. Charlton, of Glasgow, in his experiments on rabbits found that the artificial salicylic acid in 10 gr. doses, and sodium salicylate [from artificial acid] in 18 gr. doses, promptly killed rabbits weighing 2½ lbs. He also found that the artificial acid, sold as chemically pure, proved fatal in 15 gr. doses, whilst salicin in 30 gr. doses, and sodium salicylate [from natural acid] in 30 gr. doses, had absolutely no deleterious effect on rabbits weighing 2½ lbs. The dangerous effect of the artificial product is due to the presence of cresylic acid, para-hydroxybenzoic acid and hydroxyisophthalic acid.

Authors are far from agreeing as to the exact mode of action of the salicylates. Salicylate of
sodium is a great antisyphilitic, since physiological ferment, such as pepsin and trypsin, may be preserved from decomposition by adding a little salicylic acid to them. It also increases the elimination of urea, uric acid and other solid constituents of the urine. It liquefies and increases the flow of bile. It is slightly diuretic, a choleretic, and an antithermic; the acid is an antiseptic, and, according to some writers, the salicylates have some analgesic action. They are excreted in the urine as salicyluric acid which is a combination of salicylic acid and glycocoll. The salicylates are contraindicated [as is quinine] in cases complicated by renal disease; they should be administered with caution to aged people. Their precise action in rheumatism is not certain, but they are believed by many to have some specific action.

5.
on that disease just as quinine has in malaria. Dr. J. Mitchell Bruce says, "Salicylic acid, whether administered as such or in the form of its salts, is always converted into salicylate of soda in the blood. In a normal individual there exists an insufficient quantity of carbonic acid in the blood to liberate salicylic acid from its salts, but if pathologically there is an increase of this gas, the acid is freed from its chemical combinations and regains its free state. In a violent inflammation, then, such as is produced by an attack of acute articular rheumatism, a nascent acid is formed at the very seat of the lesion, and a powerful anti-septic action is exerted. This would explain the efficacy of the salicylates in other local inflammations, such as tonsillitis, as well as in the arthritis in acute rheumatism."

Thus indirectly diminishing the chance of cardiac mischief developing.
If the following suggestions be adopted, salicylate of soda will rarely fail to markedly curtail cases of rheumatic fever, and fever relapses will be met with:

1. Use the fine salicylate prepared from the natural acid.
2. Give it preferably without a base or alkali.
3. Put patient thoroughly under the influence of the drug.
4. Give 40 to 80 grs. per day for 10 days after pain and temperature have gone.
5. Keep patient on milk and farinaceous food for a week after evening temperature has become normal.
6. Have patient's bowels moved daily.
7. Keep patient always warm but lightly clothed.

The chief causes of the failure of salicylate of soda in cases of rheumatic fever are:

1. The use of the artificial salicylate.
(2) The administration in too small doses at commencement of the disease. (3) The non-administration of purgatives, such as calomel; a dose or two will prevent the disease. (4) Improper feeding — giving too much deep tea, broth, &c., in the early stages. In cases of acute rheumatism, when the pyrexia declines, the dose of the salicylate should be gradually reduced; relapses are more common if it be discontinued too soon. I generally prescribe the following in cases of uncomplicated acute rheumatism in adults:

1. Soda salicylate, 3 iii.
2. Magnesia sulphate, 3 iv.
3. Hæmorrhage, 3 iv.
4. Inæris vom., m.36.
5. Digitalis acetate, 3 i.
6. Decoct scopolami ad titi.

Sip. One tablespoonful every three hours.

If this be found to have no marked effect on the disease in the course of 48 hours it is advisable to discontinue it as inapplicable to the
case under observation. In these cases we should try salsoin or salophen. In almost all cases I give 2 to 5 grs. of calomel directly. The disease is manifest; I repeat this [1-2 grs.] from time to time during the course of the disease.

The therapeutic properties of soda salicylate have been mentioned. The sulphate of magnesium is a hydragogue cathartic; it thus relieves the intestinal canal of a considerable quantity of serous fluid. The stimulant acts as a cholagogue and stimulant. The mix nux vomica is a powerful nerve and cardiac tonic; it is also said to increase the peristaltic action of the bowels. The acetate of ammonia is a diaphoretic, diuretic, and nerve stimulant.

The scoparum is a powerful diuretic. The action of calomel is disputed by authorities; it certainly increases the output of bile, acts as an intes-
mal antiseptic, and is a purge. Its precise action is not known but some suppose it is by promoting the absorption of fevers; it is especially useful in small doses in cardiac cases where there is frontal congestion. The use of calomel, followed if necessary by salines, is the best adjuvant to the use of the sulphurates in rheumatism. It abates the fever, softens the pulse, and thereby greatly assists in reducing the swelling and lessening the pain.

In acute stage, if pain is severe and restless, 15 grains of Dover's powder will usually secure some hours of quiet sleep for patient. I continue the above medicine so long as acute symptoms remain; it is necessary in some cases to diminish the dose of the sulphate of magnesia and sulphate since some patients require much less purgative medicine than others in
order to produce the same effect. After the temperature has become normal I continue the salicylate mixture for a week, giving ten doses and usually introducing F. digitati or arsenic in place of the acetate of ammonia. The patient should be kept in bed for some time [7 to 14 days] after disappearance of arthritis and polyarthritis. On convalescence cold and damp should be avoided as much as possible. After acute rheumatism the patient is very weak and in most cases anemic. During, and for some time after, convalescence I have found the following medicines very beneficial.

Sy. and nitric hydrochloric acid, 3 1/2.
and hydrocyanic acid, 3 1/2.
In 5 drops laevic acid, 3 1/2.
Syr. Hyposandros No. [Yellow] 3 1/2.
Syr. Spiro Lincaria ad 3 1/2.

Sy. One tablespoonful three times a day after food.
Sj. Twenty drops three times a day after food in water.
Sj. Capsules Ferrum Carb, 5x. 1x.
Sj. One three times a day after food.
This after-treatment should be continued for 2 or 3 weeks after all acute symptoms have subsided.
The heart should be carefully examined from time to time during convalescence. Locomotion should not be attempted too soon and should only be permitted very gradually.

Local: The joints involved in acute rheumatism should be protected from any possible injury. Affected joints should be wrapped round with cotton, wool or flannel, and this should be changed from time to time. In severe cases the bed clothes may have to be raised from involved joints by means of a
eradle. The affected limbs should be kept in a position most con-
mfortable to the patient; the knee extended, while the elbows
should be flexed and supported by a sling. Liniments may be useful
in some cases; they are much used on the continent in the
Treatment of rheumatism.
Various liniments and lotions may
be used to assuage the pain.
Blisters and leeches are not so
frequently used now as formerly.
A liniment of belladonna and quin.
or a lotion of acetate of lead and
quin will generally give some
relief. A most useful lotion is
composed of one part of ipecacuanha
to one part of hot water; this
should be applied on flannel and
covered with Irish fustian.
Esmonde and Hunter advocated
the application of ice to involved
joints. It is not often used
in this country. More recently, the
local application of salicylate of methyl has been advocated. Linossier claims that it, after cutaneous absorption, is converted in the blood into sodium salicylate and thus reverts to its ordinary remedial effects without irritating the stomach and with the additional advantage of producing some local analgesia. It is painted on twice daily and then hermetically covered with moleskin.

Hyperpyrexia and delirium are somewhat rare in rheumatic fever. Cases with hyperpyrexia often recover if promptly treated, or otherwise they often end in death within 24 hours of its first indication; then the respiration become more frequent and shallow, the face more dusky or livid, the pulse rapid and feeble, rales accumulate in the chest, and death ensues. Hyperpyrexia.

is liable to recur and may in this way cause death by exhaustion. Whenever the temperature exceeds 104° or 105° F., then immediate measures must be taken to reduce it. Various antipyretics may be used for this purpose as antipyrine, anti-
-germin, phenacetin, or the calci-
-alates; these may be used alone or in combination with diaphoretics. Stimulants are generally needed in these cases; the aromatic spirit of ammonia, champagne or whisky are the most commonly used.
If antipyretics fail to reduce the temperature, then we must resort to the next phase, cold sponging or cold bath. [colder to 60 or 70° F. by ice]. Patients' relations often have the greatest objection to this form of treatment; but this must be overcome. Patients may be allowed to remain in the bath 10 minutes or until the temperature falls below 100° F. He should then be placed in bed,
Simulant administered, and warm fomentes applied to the extremities. Should the temperature again rise to above 104°F, the cold bath or cold pack should again be brought into use. Delirium generally diminishes as temperature falls. The application of an ice bag to the head or the administration of chloral hydrate will often diminish the delirium.

2. Secondary or pseudorheumatism.

Gonorrheal rheumatism is an arthritis commonly affecting the elbow joint; it is also often seen involving the knee, ankle, wrist, or foot. It may involve many joints at its commencement, but it subsequently, as a rule, becomes limited to one particular joint. You may see complications with it as endocarditis, conjunctivitis, or scleroderma.

Gonorrheal rheumatism is a very delicate disease to treat, since the fatalities appear to have little
venereal effect on it. It often runs a prolonged course and then it frequently leaves some stiffness or even fibrous ankylosis behind. This disease, although in many respects very similar to acute rheumatism, has no pathological connection with that disease. Some writers suppose it to be due to a reflex neurotic disturbance, secondary to irritation of the urethra, by the urethritis, or a centre in the brain or spinal cord. But gonorrhreal rheumatism is most probably an infective joint-disease, secondary to the urethritis, and is caused by the same organisms, or their products, which cause the urethritis. The joint inflammations seen in some cases of scarlet fever and in pyaemia, are local articular affections and are in most cases directly due to the micro-organisms which respectively give rise to these diseases. But rheumatism proper occurs in about 4% of scarlet
fewer cases. There is an intimate clinical resemblance between acute rheumatism and scarlet fever. Rheumatism, occurring in the course of scarlet fever, only lasts a few days usually, and it generally occurs towards the end of the first week of that disease. Usually there is a rise of temperature, but this does not always happen and may be easily overlooked. Hyperspyrexia is not common in these cases. The occurrence of delirium is more common and is important. It occurs during or as joint pains are complained of, and swelling of the joints may be the first thing noticed. Rheumatism may also occur during the convalescent stage of scarlet fever; here it is generally brought on by a chill and is often of a subacute character.

B. Subacute Rheumatism;

Under this head is comprised a variety of cases of the disease. In
most of these cases the duration of the
disease is short and the general
symptoms are usually arrested
before attaining any considerable
severity. In other cases you may
get only one joint affected, here
the general symptoms are mild
and there is frequently a relapse
from time to time. These cases
are often complicated with some
cardiac affection, commonly val-
vular disease, and they often
subsequently become of a chronic
nature. Moreover, patients from
chronic rheumatism often exper-
ience these subacute attacks.
Often the symptoms of subacute
rheumatism, commonly sore
throat and joints in limbs, are
solely attributed to a chill. It
is advisable to always examine
the heart in these cases, since
endocarditis and pericarditis
are somewhat common.

Treatment: rest in bed is neces-
-any if there is any dysuria. Small
doses of calomel [2 to 4 gr.], followed
by a saline purgative, prove
very beneficial in these cases.
Soda salicylate is to be adminis-
tered in 10 to 15 gr. doses every 3
or 4 hours. A light diet, consisting
chiefly of milk and pharmacoeons
food, should be advised in all
these cases for some days.

C. Chronic Rheumatism:
This is usually the result of
repeated acute or subacute attacks,
and it generally occurs in those
of a rheumatic diathesis. In some
cases however it runs a chronic
course from its commencement.
Chronic rheumatism is more common
in males than in females and
generally occurs at middle or
advanced life. The various anatom-
ical changes are similar etio-
logically, but not so marked, to
those in acute cases. In some severe
cases there is a great resemblance
To what is seen in arthritis deformans. Chronic rheumatism may be the result of prolonged action of the rheumatic poison in cases where an acute attack may have subsided to some extent under treatment but not entirely disappeared. In such cases the attack usually takes on a subacute and then a chronic form. The most common exciting cause is exposure to cold and wet. Symptoms: the two chief symptoms of chronic rheumatism are pain and stiffness in the affected joints, recurring indefinitely for any length of time, and aggravated by cold, wet weather. The pain is usually of an aching character, attended by a sense of heaviness and weakness of the limbs. A person afflicted with chronic rheumatism may have attacks of a subacute nature recurring for years; here it moves
from joint to joint, as in acute cases, and there may be some redness and swelling. This usually leads eventually to enlargement or even deformity of the affected joint. In other cases the joints slowly enlarge without much pain. Some atrophy of surrounding muscles is usually to be noted in long-standing cases.

Cause and Termination: This disease generally lasts throughout the life of the patient, and it eventually leads to deformity and great debility. Death, as a direct result of the disease, is rare.

Pathology: This is somewhat similar to that in the acute forms of the disease. In old cases, some erosion of the cartilages is occasionally found.

Diagnosis: Chronic rheumatism proper resembles arthritis deformans in many respects. Some writers maintain that the two
diseases are identical; others contend that they are entirely different as regards their causation. Most authorities agree that they are different types of rheumatism, but that their causation is identical. It is in most cases difficult to diagnose chronic rheumatism from arthritis deformans until the characteristic deformities of the latter disease appear. Previous history of the case and a careful examination of the joints will generally enable you to diagnose chronic rheumatism from gonit.

**Prognosis:** This is favourable as regards life will generally unfavourable as regards any permanent cure.

**Treatment:** This chiefly consists in the relieving of pain and the treatment of the disease proper. To relieve pain emodines, as opium or belladonna liniment, may be
applied to affected joints. Friction
with stimulating liniments, as
camphor, snow, or turpentine liniment,
proves beneficial in some cases. The
application of warm fomentations,
followed by massage, in many cases
will give some relief. Blisters are
often of benefit in the earlier
stages of the disease. Electricity
is also of great benefit in some cases.
Great benefit is always derived
from living in a warm, dry climate,
and this is not within the reach
of the poor who often eventually
find refuge in the various
charitable institutions, since it
then work is almost impossible.
In all cases of chronic rheumatism
the state of the alimentary canal
should always be carefully attended
to. Iron and arsenic, with digitalis,
prove of great value in these cases,
since they are frequently attended
by anemia and some constipation.
Salicylate of soda should always be
vied, also notices of potassium in obstinate cases. Cod-liver oil is often useful in these cases. A simple and nutritious diet should be advised; wines and beer should be avoided, but whisky might be prescribed in those cases suffering from great debility. A course of the mineral waters, with baths and massage, at Bath, Brenton or Salthope, proves invaluable in many cases. A moderate amount of exercise, when weather is favourable, should be advised.

Complications:

Myalgia and neuralgia are frequently associated with rheumatism. Cardiac disease is also very common and is often the greatest source of anxiety in chronic rheumatism. Renal calculi and uric acid are also somewhat common. Gout may sometimes be seen in conjunction with rheumatism. These cases are very
have to become chronic and in such cases the smaller joints are more frequently involved. In these cases the best results seem to be obtained from the administration of the salts of lithium, colchicin, and other remedies commonly used for gout. Rothman and Bronchial frequently occur in those suffering from chronic rheumatism and in those of a rheumatic diathesis. In these cases the best results appear to be obtained from the administration of an anti-rheumatic treatment.

Hepatic dyspepsia: more people with rheumatism, either subacute or chronic, suffer from hepatic dyspepsia periodically. The liver bears a very close relationship to various forms of dyspepsia, and this is only to be expected, seeing their close functional relationship and their blood supply. The liver is a very sensitive organ and any
derangement of it usually involves other systems, but more particularly the nervous system. Hepatic dyspepsia is most frequently seen in those of a rheumatic or gouty constitution, and is often very closely related to these diseases. It is most often seen in those who have indulged in alcoholic excess or over-eating, and in those of sedentary habits.

Symptoms - These are many and various. A sense of weight or actual pain in the epigastric region is often complained of, or pain in right shoulder may be experienced. Thirst and constipation are very common symptoms of this condition, as are also rheumatic pains in various parts of the body. The liver is usually enlarged and markedly tender on palpation. The urine is usually scanty, high-coloured, and loaded with lithate. The nervous system suffers greatly in these cases, since you often see
sleeplessness, supra-orbital neuralgia, and headache resulting from this condition.

Treatment: In the treatment of these cases the diet is of the greatest importance; this should chiefly consist of milk, fresh fruit, and jarriacous food. Alcohol, all fatty and highly seasoned dishes should be avoided. These cases derive great benefit from taking a course of the sulphur and magnesia waters at some of the well-known watering places. Turkish baths and massage are very beneficial in these cases. They are very treated at home by rest, the adoption of a light diet, together with the judicious administration of such home-made medicines as calomel, potassium of magnesia and rhubarb; salicylate of soda should also be given in 10 to 15-grain doses three times a day. As a result of this treatment you get the bowels emptied...
and any portal congestion relieved.

Contraa. Tonic, as digitalis & strychnine,
ae To be used if the case requires
them. If particular be present I
have found carbonate of the
greatest benefit. The after treatment
of these cases is important. Many
patients with chronic rheumatism
are naturally constipated and often
suffer from colicous attacks. I have
found the following powder and
bills of great service in such cases:

B. Magnes. Sulphate, 3 drs.
Magnes. Carbon., 3 dr.

Sig. One teaspoonful in a tablespoon of
hot water an hour before breakfast.

[As often as directed.

B. Sal. Magnes., 3 drs.
Hyoscyamus. S. chloride, 3 dr.
Pub. ipecac. sine emulsion, 3 dr.

Sig. One at night. To be followed by powder

This causes a copious rectal evacuation
within an hour & is administered
and is especially useful in
some phlebomoic people with high tension pulse.
Rheumatoid Arthritis:

This is a joint disease, the nature of which is yet unknown; it is characterized by chronic inflammation and degenerative changes, involving the various articular structures, and leading eventually to deformity. It is most probably a constitutional rather than a local disease; the whole organism is affected. The joint condition is by far the most important, but it is only a symptom and not the whole disease.

Etiology: in many cases rheumatoid arthritis immediately follows ordinary acute rheumatism, or it appears after some years, during which time chronic rheumatism of a milder degree may have been complained of. It is more frequently seen in women, usually between 20 and 25, or at the menopause. In the young it is frequently associated with mental trouble.
and in these cases it is more intractable. The disease is said to be hereditary, in the same form or as acute or chronic rheumatism. This is often present in the family history. The influence of cold or damp as exciting causes is very marked. It may start after an injury to a joint when it is usually monarticular; it is said to occasionally follow gonorrheal rheumatism.

Anatomical characteristics: rheumatoid arthritis generally commences in the interphalangeal joints of the ring and middle fingers or in the wrists. It generally spreads to other joints of the body, but the hips, thumb and big toe joints are rarely involved. An affected joint, at an early stage of the disease is enlarged, the synovial membrane, capsule and ligaments being distended by a considerable amount of effusion. The synovial membrane
is hyperaemic, swollen and thickened; the intra-articular fibro-cartilages, ligaments and tendons are vascular and softened; the articular cartilages are partially removed, leaving a roughened, vascular, porous-looking surface behind. In a more advanced case the effusion is less, or it may be completely absorbed; the capsule and ligaments are much thickened or even partially calcified. The intra-articular structures may have disappeared in great measure, leaving little or no trace behind. Pendulous masses of fibro-cartilage are attached to the interior of the synovial membrane; more rarely these are free. The articular cartilages, where their opposed surfaces are in contact, are replaced by an ivory-like layer of bone. This disease eventually leads to deformity and finally in many
cases to absolute rigidity of the affected joints. There is not true
contracture here but a mere locking. Peripheral neuritis occasionally
accompanies the arthritic lesions. Symptoms: These in advanced
cases are very characteristic. Usually in these cases the patient
complains of pain and stiffness in one or more joints. On examina-
tion these are found to be swollen, more or less deformed and tender.
The skin over an affected joint is usually hot. In the joint itself you have pain, tenderness,
creeping on movement, some impairment of mobility, enlargement,
and deformity; also in most cases there is eventually atrophy of
the associated muscles. This atrophy may be due to their non-
use or to a neuritis involving the nerves in connection with the
affected joints. The reflexes in these
cases are usually normal and
reaction of degeneration is not usually marked. Pain is often severe and usually increases towards midnight, sleep being therefore much disturbed. This pain is greatly aggravated by movements and appears to be much influenced by weather conditions. The knee, elbow, wrist, and knuckles may present considerable intra-articular effusion; the hip, shoulder, and intra-phalangeal joints exhibit more limited swelling and diminished signs. The manille is occasionally involved. The knuckles, when involved, present a curious oblique dislocation of the fingers to the ulnar side, thus giving rise to what is termed the 'seal-fish' hand. The shoulder presents signs of weakness rather than of enlargement due to atrophy of the deltoid and other muscles. The general condition of a patient suffering from rhumatoid arthritis is one of debility and
anemia, the anemia being due to deficiency of hemoglobin rather than to destruction of corpuscles. There may be some degree of pyrexia; temperature may often reach 101°F. at night in some cases. Pulse may rise to 120 or even more. Cardiac disease is present in 5 to 6% of these cases; there is often an apical systolic murmur [anaemic] to be heard. Almost all cases of rheumatoid arthritis, unless treated early, go on to deformity. Death from the disease itself is rare.

Pathology: - great diversity of opinion prevails as to the precise nature of rheumatoid arthritis. Some writers contend that it is related to both rheumatism and gout; other maintain that it is due to some nerve disorder. More recent writers believe it, like other forms of rheumatism, to be of a toxemic origin. Dr. Ballanthyne and Dr. Woolman state they have found: - (1) In the 8. Lancet. April 25, 1895. p. 1128.
synovial fluid of 18 cases an organism that is constant in its characteristics.
(2) This organism is a minute bacillus exhibiting marked polar staining.
(3) This organism can be grown in culture media. (4) It is present in the blood in severe cases. (5) It has not been found in the synovial fluid from distended joints due to other causes.

More recently Ballantyne states that a special organism has been found in 24 out of 25 cases of rheumatoid arthritis.

These organisms may gain access by the tonsils, or by the gastrointestinal or genito-urinary system, but by which is not certain. These organisms invariably select a joint for their habitat. They may generate toxins which act on the body generally and on the nerves especially locally.

Diagnosis: Rheumatoid arthritis has to be diagnosed from gout, chronic rheumatism and from chronic
synovitis. From your it may be diagnosed by the absence of tophi about the joint or ears, by its history, or more definitely by an examination of the blood for uric acid. From chronic rheumatism it is diagnosed by its history and by the amount of deformity which eventually supervenes. It is often very difficult to differentiate between these two diseases in their earlier stages. Chronic synovitis is generally limited to one joint and there may be some traumatic history to assist you in making a diagnosis.

Prognosis: This is unfavorable in most cases. A good deal may be done for these cases if treated early.

Treatment: These cases are generally met with too late to arrest the morbid process, and therefore in the majority of cases we can only see to the general health of the patient and relieve
any distressing symptoms that may arise from time to time. In its early stages benefit may be got from taking the baths and massage at Bath, Buxton and other watering places, but this is only within the means of the wealthier classes. Patients should always wear warm clothing and live, when possible, in a warm and dry locality.

No drug has been found to have any marked beneficial effect on this disease. Cod liver oil, syrup Ferric nitrate, iron, and arsenic have proved of the most benefit; the salicylates and potassium iodide should always be tried. The diet in these cases should be plentiful and wholesome; alcohol is of great service if debility is great.

As regards the local treatment of rheumatoid arthritis, massage often proves of great benefit in its earlier stages. The application of iodine on mercurial ointments may prove of
service in some cases. In more advanced cases anodyne application are usually used to allay the pain. Electricity does not appear to be of much benefit in these cases. Good results have been obtained from applying to the part overheated air for an hour or more twice a day. Here the 'Tallerman-Sheffield' localised hot-air apparatus is usually used. When the part is just put into the apparatus the temperature is 100° to 120° F, and then it is gradually raised to 225° and then upwards to 300° F. in some cases. After this treatment pain usually disappears and the parts so treated become more lax and supple. This application of hot air may be continued for nearly an hour twice a day. After this treatment benefit may be derived from massage of the affected parts with olive oil. This 'hot-air' treatment has many advantages over the ordinary Turkish
both; the chief being that it does not tend to produce cardiac depression, and the portable character of the apparatus enables it to be used even in the sick-room. This form of treatment also proves of great benefit in cases of chronic rheumatism, lumbago and in some forms of sciatica. Nothing appears to have much effect as regards curing the disease and in most cases it only remains for us to relieve symptoms and keep up the strength of the patient as far as possible.

D. Rheumatism in children:-

The various manifestations of rheumatism in children tend to become isolated and to be distributed over some years instead of weeks as is usual in adults. The severe implication of joints seen in rheumatic fever in adults is usually not a marked symptom of the disease in children.
In rheumatism of childhood severe arthritis is the exception; endocarditis is common.

Etiology: This is very similar to that in adults. A chill, to which children are specially liable, predisposes to it. One of the most certain predisposing causes appears to be hereditary tendency.

Rheumatism runs remarkably in families and is passed on from parents to offspring as strongly as is the tendency to goitre or to tuberculosis. Rheumatism is extremely common in early life, far more common than is generally supposed; owing to the slight development of joint symptoms it is frequently overlooked. It is occasionally met with in early infancy, and it becomes more and more frequent up to 7 or 8, continuing from this period up to puberty at about the same relative frequency.
Symptoms: Two of the most prominent symptoms of acute rheumatism in adults are of comparative insignificance in children suffering from that disease. These are arthritis and purpura measles. Many manifestations of rheumatism which, viewing the disease from an adult standpoint, we are accustomed to regard as complications or sequelae of a central joint affection, appear in childhood as initial or chief phenomena. Endocarditis or pericarditis may appear first, or pleurisy, chorea, tonsillitis, subcutaneous nodules, an erythema, or an arthritis, and these may be grouped in any order, in any manner, separated by varying intervals of time. In early childhood the tendency is to isolation and separation of the various phenomena of rheumatism. Arthritis: The comparative slightness of this symptom in the case of
children has already been mentioned. In some cases you may get a little tenderness or swelling of the knees, elbows, or wrists, and this is often limited to a single joint. There may be only slight fever in some cases, recognised afterwards as rheumatic by the development of heart disease. The following case illustrates this form: T.K., a boy 7 years old, was seen by me on Nov. 3rd 1895. He was suffering from headache and tinnity; these being the only definite symptoms. Temperature was 102°F. Two days later temperature was 102.5°F; and he complained of pains in the legs; there was no tenderness or swelling in any of his joints. On Nov. 9th I discovered a soft blowing mitral systolic murmur which persisted for over 3 weeks. He had been given salicylate of soda from my first seeing him and he had been kept in bed. On discovering this murmur
he was put on a milk diet, kept in bed, and was subjected to an anti-rheumatic treatment in general. I also gave him iodide of potassium, with carbonate of ammonia, as a medicine. His bowels were kept regular by small doses of calomel. In ten days the murmur was gradually becoming less distinct, and finally disappeared after the boy had been under treatment nearly a month.

The older a child, the more nearly does the affection conform to the adult type of rheumatic fever. In children the temperature is usually 100° to 101°F.; it may reach 102° or even 103°F.; the pyrexia in most cases only lasts a few days. You rarely or never get hyperpyrexia in rheumatism in children. The pulse rate is in a slightly increased, unless there be accompanying heart affection. The tongue is variable but rarely much coated or dry.
As before stated, sweating is slight and there is not the typical sour smell from it as in adults.

Endocarditis: In cases where you have rheumatic arthritis in children, over 70% of them suffer from endocarditis. Here, generally associated with valvular disease, you very often see subcutaneous nodules developed. Endocarditis is very often overlooked in children and is probably in many cases not discovered until long after when hypertrophy and dilatation and loud murmurs proclaim its existence. Hence the importance of carefully examining the heart in children even when suffering from what often appears to be the ordinary symptoms of a chill. Usually in these cases, the endocarditis is subacute, and it is frequently protracted and relapsing. It often dies down in cases and then reappears again. It usually attacks the mitral
valve, but occasionally the aortic valves are involved as well; in
exceptional cases the aortic valves are alone involved. The first sign
of valvular disease is a soft blowing murmur, usually systolic, at the
apex. This may gradually disappear after a few weeks, or it may increase
rapidly in distinctness, so as to become loud and harsh in the course
of a few days. If mitral stenosis supervenes then you will get a
prenystolic murmur developed.
Endocarditis in children, being
often of a subacute nature, may give
rise to few distinct symptoms.
The only certain sign of its commence-
ment is that which is afforded
by the change in the heart sounds.
Pericarditis is somewhat common
in rheumatism of childhood. Here
it is usually subacute and is
often overlooked; or it may rarely
give rise to pain, dyspnoea, rest-
lessness and diarrhea. The joints m
these cases may reach 120 or even 160. The physical signs are the same as in adults.

Pleurisy occurs in about 10% of cases of rheumatism; when present it is often associated with pericarditis. Pneumonia and bronchitis are both somewhat rare complications of rheumatism in children. Tonsillitis often occurs in an attack of rheumatism in children: it may occur during an attack, or it may follow immediately after it.

Fibrous nodules are common in rheumatic children. They vary in size from a joint lead to that of an almond or even larger. They are rare in adults, and in children they are usually accompanied by heart trouble; they are very tender. These nodules are usually found in the neighbourhood of joints, especially at the base of the elbows, above the margin of the patellae and about the malleoli.
Diagnosis: This is easy when there is well-marked arthritis. In children, however, it is often difficult, since the joint symptoms, high temperature, and profuse sweat are usually absent. Careful enquiring as to the history of the case should always be made, and, if suspicions of rheumatism, careful re-examination of the heart should be made from time to time. We should always regard the occurrence of tonsillitis, nodous or any erythema as indicating the probability of the case being rheumatic in nature.

Prognosis: This should always be guarded in these cases. The mortality of acute rheumatism is about 5 to 7%, but is probably less in children than in adults. The great danger to be feared in these cases is subsequent cardiac mischief. Then again, there is always the danger of a subsequent attack again implying
the heart. If fibrous nodules continue appearing, after the case is under treatment or convalescent, then the prognosis is unfavorable.

Acute chorea, supervening on an attack of rheumatism, is always dangerous. Rheumatism rarely assumes a chronic form in children; rheumatoid arthritis is rare before puberty.

Treatment:—The same general principles are to be observed here as in adults. During the acute stage salicylate of soda, with small doses of grey powder, proves most beneficial. During convalescence the syrup ferri. arsidi gives the best results.

Digitalis and tinct. ipecac are useful on convalescence in cardiac cases. Should there be much pain from spasm, preferably in the form of Dover's powder, may be given, but this is rarely required.
II. Particular Rheumatism:

This group comprises many conditions, the nature of which in some cases is doubtful, which have a close aetiological connection with rheumatism.

A. Primary:—Under this head the following various forms of rheumatism may be placed.

Muscular Rheumatism:

This is a term used to indicate a painful affection of the muscles or fasciae. Their connexion is not generally obvious, but there is little doubt that these cases are of a rheumatic origin. Muscular rheumatism is characterised by great pain on movement of affected parts and by tenderness on manipulation. The onset is often quite sudden, and it may be accompanied by some degree of pyrexia. The constitutional symptoms of this condition are usually slight. There is usually some dyspepsia present, and there
there may be a feeling of malaise. In some cases it only lasts a few days and then goes off without treatment; in others it is of a more chronic nature and may recur periodically for years, especially during cold and wet weather. This affection generally involves a certain muscle or group of muscles; and as certain muscles are particularly prone to it, special names are given to the disease according to its locality.

Rheumatism of the cervical muscles is an affection of the cervical muscles. It is common in the young and markedly recurrent. It has to be diagnosed from spasmodic torticollis, hematomaioid tumour, sprain, tonsillitis, and spinal disease. This condition in the young is sometimes the only manifestation of genuine rheumatism. Tonsillitis is generally associated with it; more rarely, vaginal disease may be developed during an attack.
Pleurodynia: here the inter-muscular structures of the chest wall are the seat of rheumatism. This condition is chiefly met with in adults and usually causes severe pain. It may affect a certain intercostal space or the insertion of some particular muscle, here every respiratory movement causes great pain. This affection is to be distinguished from intercostal neuralgia, and from pleural, pulmonary and cardiac disease. In these cases of intercostal rheumatism a tight bandage or adhesive strapping to the side will give great relief.

Lumbago is a term used for rheumatism involving the erector spine and latissimus dorsi muscles. Any movement accelerates the pain in these cases, therefore rest in bed is usually necessary. This condition often has a very sudden onset. It may simulate abscess, neuralgia, renal disease,
Optimal disease, disease of rectum, ankles or bladder, small-pox at its commencement, sciatica, or rheumatic affections of the hip joint. Ophthalmia affects the shoulder muscles. It is common in delicate subjects when a feeling of weight or pain is experienced generally in the right shoulder.

Rheumatic rheumatism, in which we get the muscles of the abdomen involved, is somewhat rare.

Rheumatic cephalalgia is occasionally met with, as also is rheumatism affecting the hamstring tendons at the back of the knee.

Treatment: In these cases of muscular rheumatism the best results are got from the administration of salicylate of soda, saline aperients, and calomel in small doses. Rest in bed is important in promoting a rapid cure. The diet should almost exclusively consist of milk and farinaceous food for some days.
As regards local treatment, the application of warmth to the affected parts and rest are usually sufficient. Dry heat is very effective in relieving pain in most of these cases. Analgesics or counterirritants prove of great benefit in some cases but they are not usually required. If pain is severe a belladonna plaster or a hypodermic injection of morphia will give relief. Care should be taken to prevent a recurrence by wearing woollen under-clothing and by avoiding damp and draughts.

The state of the liver and alimentary canal should be carefully attended to in all these cases. Conjunctivitis, rhinitis and iritis are in some cases of a rheumatic nature but their relation to that disease is somewhat obscure.

Sciatica is commonly met with in those of a gouty or rheumatic diathesis. It may be that the rheumatic poison in these cases
sets up a neuritis or inflammation of the nerve sheaths in the same way as it seems able to cause an inflammatory process in joints and other structures. Certain cases of neuralgia may be caused in the same way.

Headache is often associated with inflammation in its various forms. The pain in these cases is usually frontal and is worse in the early part of the day. It is more frequently seen in children and young adults; here there is increased vascular tension. Antipyretics often give relief in these cases but more lasting benefit is derived from salicylates and saline purgatives.

Chorea is a disease of the nervous system, characterized by a succession of irregular, clonic, involuntary movements of limited range, occurring in almost all parts of the body. Chorea is a disease of childhood; it is most common between the ages
of 8 and 12, very rare before 6, and rare after 16. It occurs twice as frequently in girls as in boys, and is often associated with poverty and overcrowding as seen in large towns. Chorea is now generally admitted to be closely related to rheumatism; Sir Andrew Clark termed it "rheumatism of the brain."

Many tables have been compiled on the occurrence of rheumatism previous to the onset of chorea. Fletcher gives an analysis of 327 cases showing that 20% of these cases suffered from rheumatism previous to the onset of chorea.

Sir Stinger and Dr. Lee" state that 11.3% of cases of chorea without rheumatism developed the disease within 3 years or 20% within 6 years.

Sir Dyce Duckworth says, "Chorea is itself a variety and a manifestation of rheumatism; that heart trouble both precede and follow it, and is a consequence of the rheumatic diathesis."

12. Lancet, April 7, 1894, p. 89.
Most cases of chorea recover and therefore render the study of its morbid anatomy more difficult. In cases of chorea examined in post-mortem room you find hyperemic foci spread very generally over the brain and spinal cord, with dilated arterioles and small haemorrhages, especially in the basal ganglia. In almost all fatal cases of chorea, which have been examined after death, endocarditis with fibrinous vegetations on the valves has been present.

Chorea has proved fatal from hyperpyresia but this is rare. Opinions differ greatly as to its causation and morbid anatomy. It appears most probable that chorea is in almost all cases due to a rheumatic diathesis and is usually set up by a shock or strain to nervous system. Chorea, like rheumatism, is usually met with in the spring and in autumn, it is more common in girls and in the young.
Semi-lunar chorea and chorea of pregnancy are probably both of a rheumatic nature. The chief arguments in favour of the rheumatic nature of chorea are — (1) The frequent alternation of the two diseases in successive members of the same family. (2) The history of rheumatism in many cases. (3) The seasonal and annual curves of the two diseases are similar. (4) The frequent association of various phenomena — as endocarditis, chorea, various forms of erythema, and subcutaneous nodules, form a diagnostic feature of rheumatism. It may be that chorea is caused by some poison formed by the rheumatic fever organism and that it is analogous to post-diphtheritic paralysis.

Treatment: — all cases of chorea should be confined to bed; most cases have a duration of from 4 to 8 weeks. The diet should be nourishing but easily digested. It is advisable in all
cases to inquire as to any rheumatic history in patient or family. All cases with such a history should be put on an anti-rheumatic treatment.Arsenic should be given in gradually increased doses,—5 minims of Fontenot's solution thrice daily after food, and to increase this by 1 minum daily until it reaches 15 minims. Sulphate of zinc, cinchona [Quina], and the application of the ether spray to the spine have their advocates, but none of these give such favorable results as arsenic, either alone or together with the salicylates. In cases of acute chorea chloral hydrate, with potassium bromide, or a hypodermic injection of hyposcine will quiet the patient. Prolonged rest in bed is to be enforced if heart trouble be present.

Case:—A. G., a girl of sixteen was first seen by me in September 1898. She was suffering from stiffness.
swelling, and tenderness of the knees and ankles. Temperature 101°F.
She had never previously had any arthritis, but 4 years previously she
had had chorea. On physical examination marked signs of mitral
disease, with hypertrophy, were
found, causing palpitation and
dyspnea. This proved to be a sub-
acute rheumatic arthritis and the
treatment consisted chiefly in
improving the heart condition. The
mother of this girl had had rheu-
matitic fever and was at the time
suffering from mitral disease.
In this case the chorea and heart
condition were almost certainly
of a rheumatic nature, the
character of the heart disease and
the subsequent arthritis affording
strong presumptive evidence. The
history of rheumatism in the mother
further strengthens this view.
Tonsillitis; this condition is probably
of a rheumatic nature in many
cases, throat symptoms being present in over 70% of cases of rheumatism. Tonsillitis is usually seen in young persons of a rheumatic diathesis; it is frequently started by a chill, and one attack predisposes to others. The patient first complains of headache and general weariness; temperature in acute cases may reach $104^\circ$ or $105^\circ F$. The tongue is usually coated yellow and patient generally has marked difficulty in swallowing. Tone of voice is usually guttural and nasal; deafness may supervene for a time in some cases. The pain is of a dull aching nature and usually shoots up towards the ear. On examination one tonsil, sometimes both, is greatly swollen and of a deep red colour with a yellow coating on their surface. These cases may go on to suppuration and abscess formation when pain and fever are more severe. They may drun-
Spontaneously or may have to be opened when great relief is experienced and convalescence is speedy. After repeated attacks tonsils tend to remain permanently enlarged and this may give rise to deafness, thickness of voice, and to snoring during sleep. Here they should be partially removed by the knife or tonsillotome.

**Treatment**—all cases of acute tonsillitis should be treated by rest in bed, milk diet, and by the administration of salicylate of soda with calomel and saline purgatives. Poultices or hot fomentations are useful to relieve pain; various gargles and ingestions may be used for the same purpose. If pain is severe a 4% spray of hydrochlorate of cocaine will give relief.

**Case:**—R. J., a boy of 18, was first seen on Jan. 25, 1899. He was suffering from tenderness and swelling of both windo. Temperature 101.3 F. He also had
CONSISTED [both tonsils affected] and cardiac dyspnoea. He had had rheumatic fever three previously last attacks 12 months ago. His hair was originally black but now it was almost grey. On physical examination, marked signs of mitral disease were found - a loud regurgitant murmur, having a loud, excessive precordial dullness, showing the heart disease to be of old standing and not due to present attack. Patient told me he had had a sore throat on each of his previous attacks. The present attack of rheumatism was not of a submarine nature since the tonsils and arthritis disappeared in the course of a week. He was subjected to the ordinary antirheumatic treatment; the heart condition was treated by rest, and by the administration [three daily after food] of Fr. Digitalis (10 min), in urine vom (10 min), with diph. arsenic a (5 min).
I could trace no distinct rheumatic history in any of his immediate relations. It appears probable that most cases of tonsillitis are of a rheumatic nature. This view is supported by the fact that these cases recover more quickly under the influence of the salicylates than when subjected to any other method of treatment.

Meningitis: This condition is said to occasionally occur in the course of rheumatism. It is possible that the serous membrane of the brain may be involved up to inflammation by the rheumatic poison, like other serous membranes.

Appendicitis: This occurs in some cases together with rheumatism. It certainly often occurs in gouty or rheumatic people, and may be of a rheumatic origin in some cases as is tonsillitis. The structure and functions of the two parts are somewhat analogous. Good results are said to have 13. Lancet. March 25, 1875, p. 551.
been got in some cases by appendicitis by the administration of the salicylate. Peritonitis is very rarely of a rheumatic nature.

Sterile dental periodontitis or periodontitis is in some cases of a rheumatic nature. Here the teeth are raised and tender, and the gums around them are congested. Usually in these cases no suppuration occurs.

B. Secondary or complications of some general form of rheumatism.

Endocarditis:

This condition is very common in rheumatism and chorea. It occurs in patches and generally affects the valves first or alone in rheumatism. In the joven endocarditis occurs on the right side, in adults it is limited to the left side of the heart. The valves are chiefly involved on account of their friction with one another. Coats says - "He knows that in acute rheumatism the special

14. Coats' Pathology."
irritant affects the joints where the synovial membranes lie against each other, and in the movements of the joints are moved on one another. It is as if, in addition to the irritants in the blood, the mechanical irritation of friction were necessary to the occurrence of inflammation. This is not always so as regards the joints; a patient who has been confined to bed with rheumatic arthritis of one joint may suddenly find another joint involved. In these cases friction can have little causal connection with the arthritis, since the newly involved joint has often been kept quiet and stationary for some weeks. In adult life the mitral valve is most commonly involved, and on its auricular surface; less frequently the ventricular side of the aortic valve. Probably the venous state of the blood, which
constantly obtains on the right side of the heart during adult life, exerts a controlling influence on all inflammatory processes there. A valve once affected rarely returns to normal. Generally the new growths are converted into fibrous tissue; in the mitral valve this leads to stenosis, or the chordae tendineae may become affected in the same way and therefore become shortened, thus giving rise to incompetence.

More remote results of endocarditis are embolism, embolic abscesses, and aneurism of heart valve. Post-mortem evidence often shows mitral stenosis in those who have never had any well-marked rheumatic symptoms but who have been of a distinctly rheumatic diathesis. Post-rheumatic arthritis, especially after repeated attacks of the disease, is more frequently attended by mitral
regurgitation. Mitral stenosis is much more common in the female and is often associated with anaemia. It is frequently a forerunner of phthisis, since it causes an insufficient blood supply to the general arterial system. The prognosis in these cases of mitral stenosis is bad, the average age at death being 33 years in males and 37 in females.

Symptoms: endocarditis occurs in about half of all cases of rheumatic fever. It may give rise to no new symptoms, or it may cause palpitation, increased pulse rate, or some precordial pain.

On auscultation the first indication of endocarditis will be a slight prolongation or roughness of the first sound at the aortic or mitral areas, according as the one or the other valve is the seat of the inflammation. Within 24 hours it may develop into a
distinct murmur, which accompanies and does not abolish the first sound. If the aortic valve is affected a diastolic murmur may become evident, but this is less frequent. The murmur is generally mitral systolic, occasionally presystolic, and sometimes both may be present. Frequently accentuation of the second sound in pulmonary area is also to be heard. A murmur may entirely disappear in the course of rheumatic fever; while on the other hand it may become louder and harsher, and ultimately persist, thus giving rise to obstruction or regurgitation.

Diagnosis: murmurs of recent acute endocarditis are to be diagnosed from functional murmurs, from murmurs of old valvular disease, and from peri-cardial friction sounds. Murmurs of acute endocarditis are strictly limited to the valves
affected and are generally soft in quality. Functional or tissue masses are generally found over the pulmonary area and are often harsh in quality.

Chronic fibrous endocarditis: This condition is commonly due to rheumatism and usually follows an acute attack. It may give rise to shrinking and incompetence or to adhesions with its resulting stenosis. A common result of this condition is calcification and resulting embolism.

Malignant endocarditis: This condition was formerly regarded as of rheumatic origin. It is probably due to a special organism, a previous rheumatic endocarditis predisposing to it. This form of endocarditis very often proves fatal and may sometimes affect right side of heart.

Treatment of endocarditis: Rest in bed and a milk diet are
to be enforced. During the acute stage, the salicylates should be continued; nitrate of potassium, with carbonate of ammonia and arsenic, is of great benefit in these cases. Cardiac tonics, as digitalis and strychnine, are generally contraindicated during the acute stage; they should be employed after acute symptoms have subsided. A small blister, the size of a half-crown, should be applied over heart apex; this may be repeated over neighbouring areas. These blisters are said to act by stimulating the trophic nerves of the heart. Stimulants are to be ordered should symptoms require them. Patients suffering from rheumatic or endocarditis, more especially children, should be kept very quiet for some weeks after all pain and pyrexia have disappeared. The diet should grad-
- usually get less marked until it disappears entirely. The average duration of treatment of rheumatism with endocarditis is 3 to 6 weeks.

**Pericarditis:**

Rheumatism is the cause of 90% of all cases of pericarditis. [Greenfield].
It usually commences round the vessels or base of heart and then soon spreads over its whole surface.
It often extends to the heart muscle itself, and a common result is the formation of adhesions between its visceral and parietal layers.

**Symptoms:** Temperature may rise somewhat suddenly to 103° or 104°.
The rheumatic symptoms may somewhat obscure any new conditions, but we should always carefully examine from time to time for any cardiac complications in cases of acute rheumatism.
There is often pain, anxiety or distress at the base of the heart, short-
men of breath, and short cough, when pericarditis exists in cases of rheumatism.

Diagnosis: on physical examination the existence of pericarditis is first demonstrated by a slight double sound, corresponding to the systole and diastole respectively, and generally first heard at base of heart. After a short time the sound becomes louder and harsher and friction can often be felt by palpation of the pericardial area. The pericardial dulness is increased in proportion to the amount of liquid in the pericardial sac. These cases of pericarditis in acute rheumatism usually end favorably.

Treatment: the ordinary treatment of acute rheumatism will be continued. Sodic of potash, with carbonate of ammonia, appears to have more beneficial effect upon this condition than any other drugs. Leeches,
Viscères, or punctures may be applied locally. Stimulants, as Opium, wines, vini comici, ammonia, or alcohol, must be administered in cases threatened with cardiac failure. Pericardiocentesis must be performed if effusion should become imminent.

Case 5—

M. R., a girl of 16, was first seen by me on Dec. 3rd, 1898. She was suffering from acute rheumatic arthritis; the knees and wrists were the joints principally involved. Temperature 102.5°. This patient made favorable progress until Dec. 15th, when a mitral lesion was discovered. This was treated. But on Dec. 15½ she developed pericarditis; when extended dulness over cardiac area was made out, with friction at one point. Three days later she developed pleurisy with effusion on the left side. On Dec. 19th she was aspirated and 3 1/2 pints of a considerable quantity of fluid from pleural cavity on left side. The fluid nearly...
extended to the right side; this necessitated aspirating right side on two occasions. The left pleura was aspirated on four separate occasions.

The heart condition was treated by the application of a small blister to its precordial area, and by the administration of potassium iodide and carbonate of ammonia, in addition to salicylate of soda. The bowels were kept regular by means of small doses of calomel.

The most encouraging features of this case were that patient's tongue kept practically clean throughout the illness, and that her temperature never exceeded 104.5. She had no delirium; she took milk well during all the illness. I had on many occasions little hope of this girl recovering, but this she did after a very tedious illness extending over two months. I have since heard that she died 12 months afterwards from acute rheumatism complicated by pneumonia.
Myocarditis:

This condition may be acute or chronic; it is frequently associated with pericarditis and endocarditis by rheumatism. That following endocarditis occurs in localized patches and is usually limited to the papillary muscles; that following pericarditis generally involves the entire area of the heart wall.

Chronic fibroid or interstitial myocarditis is often a sequel of acute myocarditis, and is usually caused by rheumatism or syphilis. This condition is generally associated with dilatation or hypertrophy, or with both of these conditions eventually. The diagnosis of myocarditis is not easy, but, if you find very rapid failure of the heart, then always suspect myocarditis. In such cases the patient suffers greatly from dyspnoea and there is a great tendency to collapse; there is usually extended precordial dulness.
Myocarditis is said to often occur even when arthritis and pyrexia are slight and apart from distinct endocarditis and pericarditis. It is probable that the acute constrictive dilatation produced by rheumatism is analogous to that often resulting from influenza, and that in both cases it is due to the poisonous action of a microbic toxin on the cardiac muscle. Post-mortem records by Dr. Poyntz of 153 cases of fatal rheumatic heart disease in children under 12 showed dilatation in 92 cases, whereas marked pericardial effusion was somewhat rare.

Treatment: here absolute rest, quiet, and a milk diet are essential. In severe cases nitrite of amyl will give relief. The antirheumatic treatment should be continued. Cardiac tonics should be employed in these cases with great caution; strychnine is of great service in the after-treatment of these cases.
Congestion of lungs and Bronchiitis rarely complicate acute rheumatism. They are more often seen in connection with chronic rheumatism and are usually due to some cardiac disease.

Lobar pneumonia:
This is a somewhat rare complication of rheumatism.

Case 1:
M.W., a girl aged 22, first seen Feb 10th 1898. She was suffering from acute rheumatic arthritis of both knees, ankles and wrists were subsequently involved. Temperature 103°F. She also had tonsillitis. She had had previous attack of rheumatic fever two years ago, and now she had well-marked mitral disease as a result of that attack. Patient made favorable progress up to 12th when she had two severe attacks of hemoptysis. Subsequent to this she developed a double pneumonia, with a temperature of 104°6°F, and delirium.
The great danger in this case was cardiac failure. Digitalis, ether, carbonate of ammonia, and alcohol were used somewhat freely until the crisis was passed. This girl eventually got well, but the heart condition greatly prolonged the convalescent stage.

Pleurisy:

This condition and pleurisy pneumonia are somewhat common accompaniments of rheumatism. Pleurisy with effusions when present, is often associated with pericarditis. The pleurisy may be single or double; and, if single, it is more common on the left side. The patient may complain of pain, but the condition is often first noticed by observing the markedly rapid thoracic breathing of the patient.

The pulse in these cases is excited and sharp, and temperature runs from 102° to 104° F., or even higher in some cases. A short and dry cough is generally noticed on the slightest
excretion in form of patient. To diagnose with certainty using needle and draw off fluid.

**Treatment**: in these cases, in addition to the antidyspeptic treatment, you may apply a blister, leeches [67], or hot poultices. Opium may be used to relieve pain, but it is very liable to disturb digestion. If fluid tend to remain or if there is great dyspepsia, then aspirate; if fluid becomes purulent it will be necessary to resect a portion of rib and put in drainage tube. Stimulants are generally required in these cases; potassium nitrate, with carbonate of ammonia, appears to facilitate the resorption of fluid.

Various forms of Dermatitis:

Various forms of dermatitis appear to be closely connected with rheumatism. Such conditions as the erythema, eczema, and psoriasis are distinctly of a joint or rheumatic nature in some individuals.
The skin is one of the excretory organs of the body and a chill temporarily puts a stop to the elimination from the body of the skin of toxic substances; hence the various forms of dermatitis in rheumatic and gouty subjects whose blood is usually surfeited with these toxic substances. The relation of various skin diseases to rheumatism has long been established. The erythema, both deep-seated and superficial, are often preceded by rheumatic aching and pain. Erythema marginatum, erythema papulosum and scarlatiniform dermatitis are common accompaniments of rheumatism in one of its various forms. Sometimes such eruptions accompany acute rheumatism; in other cases the rheumatic symptoms are secondary in appearing to the cutaneous manifestations. Erythema marginatum is a frequent accompaniment of articular rheumatism.
in children, appearing on the body as well as on the limbs.

Case: B. W., a boy aged 10; first seen June 12th 1895. He complained of headache, sore throat, and pain in legs. Temperature was 102° F. Both tonsils were enlarged and inflamed, and he had pain in right knee. Two days later patches of erythema marginatum were evident stretching round neck; no patches on body or limbs. These disappeared in the course of a few days and patient was quite well by end of a week.

This, I think, was a case of subacute rheumatism; the pyrexia, tonsillitis, and erythema being the only symptoms. No heart mischief developed. This boy's mother suffered from time to time from rheumatism of a subacute nature. His father died from heart disease which was brought about by two attacks of rheumatic fever. His elder brother had had acute rheumatism six months previously.
Lupus erythematosus.—This form of rheumatic skin affection exists in the form of large confluent areas of skin being raspberry-red in colour. Its duration is usually 6 to 8 days. Systemic disturbance may be slight, while, on the other hand, much distress may ensue with elevation of temperature, sometimes 104°F., may exist. Malaise, headache, rheumatic fever, rheumatic pains, sore throat, articular swellings with pain, gastric and intestinal derangement, and connective tissue affections, especially iritis and endocarditis, frequently coexist. In these cases the rheumatic symptoms are usually the most frequent and conspicuous. Frequently there is a family history of rheumatism and often the patient has a personal history of the same kind.

Lupus erythematosus nodosum.—This condition has an intimate relation with rheumatism. In 1878 Keasie found that, out of 108 cases, in 13 cases acute and 15. Clinical Society Trans. xix. p. 215. 1896.
in 4 subacute rheumatism were recorded as co-existing with the erythema. In 17 other cases joint pains of a rheumatic character were present. In 5 of these cases there was a history of previous rheumatism, in 4 there was evidence of heart disease, in 2 sore throat, and in 2 a family history of rheumatism. In 10 cases a cardiac murmur, without any history of rheumatism, existed; in 5 other cases murmurs, apparently due to endocarditis, came on during the attack of erythema. Carrod gives a table of 20 consecutive cases of erythema nodosum in 11 of which there were histories of articular rheumatism or joint pains.

Juliancan may be dependent on the gravity of lithium state in some cases. Its relation to rheumatism is not generally admitted by writers, but in some cases there can be little doubt that it is close.

Gossenau has a close relation to gout.
and rheumatism. It appears quite probable that a chill may set up a dermatitis in those of a rheumatic diathesis just as it causes an arthritis or tonsillitis.

Psoriasis is rarely of a rheumatic origin according to some writers; others consider it to be almost always found in those of a gouty or rheumatic diathesis, or as a sequel of syphilis. Most cases of psoriasis are rheumatic or syphilitic in origin.

Purpura hemorrhagica often occurs in connection with rheumatism and is in some cases very closely related to that disease. The subcutaneous hemorrhages which form a conspicuous feature of the eruption are probably due to thromboses of small vessels; this is entirely consistent with the rheumatic connection, for in rheumatism the blood is hyperfibrinons, and thromboses in large veins occur during life, and abnormal coagula after death.
I have found that these various forms of dermatitis, more commonly seen in those of a rheumatic diathesis, improve more quickly when subjected to an anti-rheumatic treatment, together with suitable external applications, than when subjected to any other mode of treatment.

Case 1: T. H., aged 25, height 5 ft. 7 in., weight 11 st., vocation a publican, was first seen by me June 10th 1895. He complained of frequent vomiting on rising in the morning. He was troubled with insomnia, had frequent pain in right shoulder, and had headache. Patient had been indulging rather freely in alcohol since Christmas. He was a great smoker. He had had rheumatic fever 10 years previously and was then confined to bed for nearly two months.

Examination: Teeth good, tongue fleshy, ulcers and almost covered with a thick brownish yellow film. Appetite fitful and had been getting worse for past month. He complained of great thirst, especially in morning. Temperature normal, lo pain.
on discomfor during fasting or after food. Suffered much from flatulence. Bowels irregular. Nothing abnormal was seen on inspection of abdomen. Palpation over anterior face of liver elicited severe pain. He had hemorrhooids and had suffered from them periodically during past five years. Percussion showed anterior face of liver to be enlarged and very tender. Vertical dulness in mammary line extended 15 1/2 inches below costal margin, even when in recumbent position. On exertion he suffered much from palpitation. His excessive sweating would account for this in great measure. He had no organic disease of heart. Pulse was somewhat irregular and not well sustained. Urine dark, deposits numerous on standing, no albumen or sugar. Shin moist, he complained of excessive sweating of feet with very offensive smell [Hronidrosis]. He slept poorly and rarely felt refreshed in the morning.

Diagnosis: hyperemia of liver, hepatic
dyspepsia, and rheumatic pain in right shoulder periodically.

Treatment: he was advised to give up alcohol almost entirely and to greatly curtail his smoking. He was to have a light diet, consisting chiefly of white fish, milk, and farinaceous food. I gave him the following medicines:

By. Soda Salicylas, 3 ℥.
Magnes. Sulphatar, 3 ℥.
Liq. Rhei Crude, 3 ℥.
T. Aescin Vomica, 3 ℥.
Dec. Scoparum ad 3 ℥. mnd.
Siy. One or two doses of these twice a day
one hour before food.

Pulv. Stigmas T. horphas, jv. mnd.
mitte iv.
Siy. one every second night.

Patient made good progress up to 13 Vi
on the evening of which day I was called
in and found him suffering from great
pain in left knee and left ankle; pain
was greatly aggravated on slightest motion.
On examination I found left knee much
swollen and very tender; skin was hot
and of a pinkish colour. The left ankle
was somewhat swollen but here there was
no redness and it was not so painful or tender.
Temperature 102° F. On back of calf of leg a patch of purpura hemorrhagia, of a triangular shape, having its apex at the tendo Achillis and its base half way up calf. The skin over this area was of a bluish-purple colour. Patient was put to bed and he was subjected to the ordinary anti-rheumatic treatment. The left leg was put on a well-padded posterior splint and hot fomentations were applied to knee. On June 16th temperature was 100° F; pain was less, and purpura area was of a lighter colour. On June 17th temperature was normal, knee much less swollen, and there was no pain as long as limb was kept at rest. The purpuric area was now of yellowish-green colour and was diminishing in size. The patient being naturally somewhat anaemic, I gave him the following medicines:

- 1 g. Acid nitric hydrochlorat, q.d., 3 ii.
- Acid hydrastisani. dil., m.1.
- Syr. Hypophosphatus, 3 i.3.
- Inf. Veratrum am., 3 i.
- Inf. I mamaria, ad 3 vi.
- Sig. One tablespoonful three times a day after food.
By: Solis Salinas, cape.

By: Solis Photographs, mst.

By: M.R. June

By: One powder three times a day before food.

Patient was out of bed by 2:35 and did well up to July 9th. I was called in on that date and found him suffering from internal pains and swelling in the muscles of calf of left leg. There was no rise of temperature and no discoloration of the joint. The muscles of calf were quite tense and extension of the joint caused him increased pain. There was no history of any injury to joint. I therefore concluded that patient now had an extensive extravasation of blood in left calf. This proved to be so, since on the 12th I found almost the whole of the posterior aspect of left leg [between] of a dark yellowish-green color. Patient was kept in bed, with foot of bed raised. He continued powers as given previously, and I gave him—

By: Time: 21st October 3:11 a.m.

And: Smith's oil, 3 fl. oz.

By: Arseniates, 3 fl. oz.

By: Cervine, 3 fl. oz.

By: Comp. Calomel to ad 3 fl. oz.

By: One tablespoonful three times a day after food.
The patient, after being in bed a fortnight, made a satisfactory recovery. He has had no recurrence of rheumatism or purpura up to the present time. This man had had a somewhat slight attack of acute rheumatic arthritis involving the knee and ankle of left leg. There was no history of injury to account for the arthritis, and I don't think any effusion of blood into knee joint took place. He subsequently developed both superficial and deep-seated extravasations of blood in left calf. Although the relation of purpura haemorrhagica to rheumatism is unsettled, it appears reasonable to suppose that the rheumatic poison in the blood, whether of microbic origin or otherwise, may cause thromboses in small vessels; or it may exert a debilitating or inflammatory action on the vessels, and in this way allow of the escape of blood into the surrounding tissues.

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