Acute Rheumatism
by Geo. Hood
Acute Rheumatism

Etiology, Pathology, Treatment

The importance of this subject must at once be apparent to all, for not only is it a disease in which the patient suffers most acutely, but also owing to the frequency with which it is complicated by disease of other vital organs, the brain or heart, either immediately proving fatal, or in the many cases of cardiac lesion, only allowing the patient to prolong a miserable existence for a few years. Again, look at the many aged cripples one meets every day in our streets, supporting themselves with stools while they move with care or difficulty their stiffened limbs.

Chronic, articular rheumatism has here done its work, not impairing life by any
sudden attack, but from day to day, or from year to year, continuing to form deposits around the joints, which restrict their motion and give rise to pain, rendering the patient life anything but comfortable. The sudden changes which occur in our variable climate render rheumatism a very common disease among us. No class of the community is safe from its attacks, but the peculiar habits and necessary exposures of our working population lay them more especially open to its ravages. And as this malady is seldom or never limited to one attack and the centre of the circulation may be permanently affected, during any one of these, it ought to be guarded against as though it were a malignant fever, but here again the very nature of the employment...
of the labouring man, makes this nearly impossile. Now reeking with sweat, now chilled, with cold, the poor man labours on, and only stops to find, himself in a burning fever. Accordingly during the winter and spring months our hospitals are crowded with these poor unfortunate. Now important is it then, that we should rightly understand, the nature of this disease, the best and quickest mode of treatment and liberate the poor sufferers from the thralldom of their sickbeds. As with them time — literally is money, since owing to the proverbial improvidence of this class of patients, their families are generally in a state of utter destitution during the sickness of one, and it may be their only supporter.
Rheumatism seems to have been unknown to the ancient Greek physicians or at least they did not draw a distinction between it and gout. Ballonius, a writer of the seventeenth century, seems to have been the first who pointed out its distinguishing peculiarities, and he appears to have had a pretty accurate idea of its pathology.

Predisposing Causes

Among these, may be reckoned what has been called, by many writers, the rheumatic delirium. Professor Laycock remarks that there are two forms of this, the vascular and asthmatic. However, this may be, we can have little hesitation in admitting that some families have a remarkable tendency to suffer from this disease.

Thus, Chomel states that one half of the
Rheumatic patients admitted into La Charité Hospital were the offspring of parents who had suffered from the same disease.

2. Age may be considered as one of the predisposing causes, since we find a period of life at which the patient is most liable to suffer from this disease.

The majority of patients are between the ages of fifteen to thirty when they are first attacked by this malady.

Sex. Males seem to be more prone to suffer from Rheumatism than females. How far their greater exposure to damp and cold may account for this still remains I think to be ascertained.

Excesses of whatever kind, improper diet, and previous attacks seem to be among the most potent causes of
predisposition,

Exciting Causes. These although conceived by some of our older writers merely attributable to malavial and other obscure causes, yet in my opinion exposure to damp or cold, the body being previously heated or fatigued, or it may be both, are if not the only, the chief exciting Causes of this Disease, the chief peculiarities of which is my intention to describe.

Nature of the Disease

Opinions held by different Authors

Balunius considered that the disease arose from a vitiated, state of the blood, & therefore he thought venesection the only proper mode of treatment. This theory although vague and unsatisfactory, appears to be far
more correct than those professed by later writers.

Cullen defines the disease in the following terms: "Morbis ab externa, et pleurumque evidente causa, impressa, dolor circa articulos, musculorum tractum sequens, genua et reliquis majoribus, potius quam pectum vel manuum, articulos infectans calore, exterino autem."

Sir Charles Pendamore says that "Rheumatism is a peculiar species of inflammation, affecting parts with a fibrous texture and most frequently the synovial membranes, producing much irritation in the constitution and fever of the inflammatory type."

Although much might be said in opposition to the opinions of these learned writers yet I consider that will be best
done by showing the true pathology of the disease as laid down by recent authors.

Dr. Watson remarks that "Acute Rheumatism is a blood disease, the blood conveying with it a poisonous material, which by virtue of some mutual or elective affinity falls upon the fibrinous tissues in particular visiting and putting them with a variable ness that resembles caprice, but is ruled, no doubt by definite laws to us as yet unknown".

Williams believes that the perspiration being checked by the external application of cold, the lactates or free lactic acid are prevented from being excreted, and act as a ferment, causing the production of more of this deleterious compound, which
then cause all the morbid phenomena exhibited in Rheumatism.

These two last theories appear to me to contain all that is yet known on the subject, although we might object to the fermentation theory advanced by Williams, yet that the poison is lactic acid (which was first suggested by Dr. Pront) is tolerably clear from the following proofs.

1st Because lactic acid is abundant in the sweat of Rheumatic patients, and other excretions are likewise strongly acid.

2nd As soon as the excessive acidity of these excretions is checked by alkalies or other suitable treatment, the disease begins to abate. This last statement appears to me to be quite conclusive, yet if other proofs
were wanting we have the experiments of Dr. Richardson who injected lactic acid into the peritoneal cavity of the lower animals, and he soon found, the heart began to exhibit all the symptoms of the rheumatic complication. Although allusion might have been made to opinions held by different authors, yet as these are in no important respect opposed to those already advanced; I have deemed it unnecessary to notice them here; since, it would be only a repetition of what has been already stated. The lactic acid theory seems to account satisfactorily enough for all the morbid phenomena witnessed in this disease, as it is organic chemistry; it may point out a materia medicamentosa.
morbid blithe to unsuspected.

Rheumatic fever now comes to be described as rheumatic, in frequency with rigors, but sometimes there are absent. Swaying pains about the larger articulations and headache.

As the fever begins to become more decided, the pain becomes more severe and localize.

The joints swell and are exquisitely painful, to the touch, the skin is eddened, the body full and bounding but easily compressible.

The tongue is covered with a soft, thick, creamy fur. The patient complains of great thirst, and exhibits an anxious expression of countenance. All these symptoms are more or less subject to nightly exacerbations, and the patient suffers greatly from want
of sleep. Profuse perspiration is a common symptom, it has a peculiar disagreeable sour smell and an acid reaction on colouring matter owing to the presence of free lactic acid. Contrary to what might be expected these sweats commonly have no beneficial effect, but on the other hand generally leave the patient more exhausted or less able to hold out against the disease.

The urine during the progress of the disease is of a high specific gravity, dark coloured, and precipitates a large amount of lithates.

The patient may be more or less delirious in the course of the disease, but the delirium is generally of a mild nature and need not cause any unnecessary
alarm in the minds of the practitioners.

The chief organ which we must regularly watch is the heart which should be examined, at least once in the twenty-four hours as it is only by early and decided treatment that we hope to avert the serious mischief that may accrue.

The lungs and pleura may be affected by the materia morbi, so that they should be examined from time to time. This however is a rare complication.

Nothing can be more variable than the duration of Rheumatic fever, for on the one hand it may last only a few days, on the other it may continue for as many weeks.

The joints of the lower extremities are much more liable to be affected than those of the upper, and the larger joints are far
more frequently seized, than the smaller ones. Again the joints of the hand are more commonly affected, than those of the foot. Sometimes we have this malady developed, without any affection of the joints, or less frequently the heart may be the organ primarily affected; but both these forms are rare or at least they have not often been recognized.

Rheumatic fever as from its nature you might expect has a tendency to leave one joint and attack another, and not infrequently we find the joints on both sides of the body similarly affected. As the disease begins to abate the pain, swelling or leave the parts, and only a little stiffness remains, which however soon disappears, on the joints being gently
exercised from time to time. All the above symptoms may continue in a minor degree and the disease is now designated Chronic Rheumatism.

The recurrence of rheumatic fever is too frequently met with, but these attacks are generally of a milder character, although the tendency to cardiac complications is by no means modified.

Pericarditis and Endocarditis

These dreaded complications of this disease are to be feared when the pulse becomes irregular and intermittent, and the impulse of the heart feeble. Delirium, may or may not be a concomitant symptom, although it is present as a rule. The face generally bears an expression
of anxiety, and as the disease proceeds we have more or less dyspnea, edema, of the face or lower extremities, and the patient is unable to lie on his left side.

Physical on percussing over the region of the heart we find the cardiac dulness much increased, both laterally and upwards. On applying the stethoscope we hear a friction sound, which, Dr. Watson has happily termed, a "friction friction sound", all these signs indicate the presence of a pericarditis. The following signs will indicate the presence of an endocardial lesion. The cardiac dulness may or may not be increased, but if the disease be of some standing, the probability is that it will...
owing to the hypertrophy of the left ventricle. On auscultation we hear a sound
 loudest at base or apex, with diastole
 or systole according to the valves
 which are affected, "blowing murmur."
 Pericarditis and Endocarditis
 seldom prove fatal during their
 first invasion, for in the former
 gradually the serous effusion which
 has been thrown out within the bag
 of the pericardium becomes absorbed,
 and this membrane itself becomes
 united to the surface of the cardiac
 organ, thus putting a stop to the friction
 murmurs. This was supposed formerly
 to be a very rare morbid appearance,
 but since more extended investigations
 have been made in morbid anatomy
it has been shown that is not at all rare, and in fact is the only way in which a cure can be established. Although a temporary cure is accomplished in this fashion, yet it must be self-evident, that so marked a deviation from the normal state of matters, must in no small degree interfere with the rhythmical contractions and dilatations of the heart. The unperturbed action of which is so essential to the welfare of the whole economy. And on the other hand anything that distorts or retards its free action, is certain to be the cause of a whole series of other organic lesions. The sequelae of pericarditis have been investigated by many able physicians.
Yet from the difficulty of watching a case during its whole progress, much still remains abounded in mystery. The sounds heard in Endocarditis are explained by the post mortem appearances, and they may be described generally by stating, that they arise either from an excudation of lymph, beneath the valves lining of the valves, or from warty like excudations on their exterior. Both of these lesions prevent the perfect adaptation of the valves to each other, and so allow of regurgitation of the blood, which produces the so called "Bellows murmurs," by far the most common. The frequency with which Acute Rheumatism is complicated
with either pericarditis or endocarditis may be ascertained by throwing a glance over the following tables.

### Pericarditis in Acute Rheumatism

<table>
<thead>
<tr>
<th>Authorities</th>
<th>No. of Cases</th>
<th>Proportion per cent which pericardium was affected</th>
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<tbody>
<tr>
<td>Dr. Fuller</td>
<td>246</td>
<td>1 in 6.3</td>
</tr>
<tr>
<td>Dr. Bachan</td>
<td>66</td>
<td>1 in 4.7</td>
</tr>
<tr>
<td>Wm. Budd</td>
<td>43</td>
<td>1 in 8.6</td>
</tr>
<tr>
<td>Latham</td>
<td>136</td>
<td>1 in 6.12</td>
</tr>
<tr>
<td>McLeod</td>
<td>307</td>
<td>1 in 5.7</td>
</tr>
<tr>
<td>Taylor</td>
<td>49</td>
<td>1 in 6.1</td>
</tr>
</tbody>
</table>

### Rheumatic Endocarditis

<table>
<thead>
<tr>
<th>Authorities</th>
<th>No. of Cases</th>
<th>Proportion per cent in which endocardium was affected</th>
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</thead>
<tbody>
<tr>
<td>Dr. Fuller</td>
<td>--</td>
<td>1 in 2.3</td>
</tr>
<tr>
<td>Budd</td>
<td>--</td>
<td>1 in 2.48</td>
</tr>
<tr>
<td>Latham</td>
<td>--</td>
<td>1 in 2.09</td>
</tr>
<tr>
<td>Taylor</td>
<td>--</td>
<td>1 in 1.92</td>
</tr>
</tbody>
</table>
Pulmonary Complications

Dr. Satham found that this complication existed in twenty-four out of one hundred and thirty-six cases of acute Rheumatism. And these were divided as follows:

Two of Pleurisy, four of Bronchitis, and eighteen of Pneumonia. Now although this may appear to be a high estimate, yet from the well-known accuracy of that observer no one can doubt its truth.

Hence we should be on our guard, and try if possible by actively treating the disorder to obviate the tendency of them to occur. For however manageable we may find these maladies as primary affections, we must not expect to find them so amenable to treatment occurring as complications of a disease which,
is sufficiently grave in its nature without any other superadded lesions all of these may co-exist with pericarditis or Endocarditis but sometimes they occur alone. Pleurisy may result from the inflammation spreading from the contiguous pericardial membrane, but of course this cannot be the source of the pleurisy when no pericarditis exists.

Disorganization of the Affected Joints

This is fortunately uncommon, and is only to be apprehended when the inflammation is very severe, and remains obstinately persistent in the joints, and not changing from one to another as it generally does. Suppurative may occur, and finally
Craniæl Complications

Any change in the contents of the cranium is very rare in this disease, and only a few cases have been recorded, in which unequivocal marks of inflammation manifested themselves, or a post mortem examination, thus Dr. S[t]eele mentions a case (in London Medical Gazette) in which suppuration had actually occurred. Dr. Morrovs details a series of cases, in which the cardiac lesion brought on symptoms which, simulated Inflammation of the Brain, but after death no inflammatory change could be recognised, and only a little congestion of the cerebral membranes.
rarely manifest themselves in any great degree, except there is a cardiac lesion present, we may regard Dr. Burrows's explanation of their occurrence as probably the correct one: he believes that the cardiac disease retards the return of the venous blood from the head, and so produces a congestion within the cranium more or less extensive according to circumstances. When there is no heart disease, the delirium may be well enough accounted for by the intensity of the pain, which is always very great in these cases. The delirium should always be looked upon as a bad symptom (not of itself) but as the harbinger of a worse affection viz. that of the heart.
Treatment

Blood-letting was long regarded as one of our best remedial agents in this, as well as, in all other inflammatory affections. Thus Cullen thought that the patient ought to be bled largely and frequently, particularly if the fulness of the pulse seemed to indicate it. Yet even he set some bounds to this practice, for he says, "profuse bleeding causes a slow recovery." Sydenham believed it to be the chief remedy which should be employed in the cure. Sir John Pringle states that blood-letting "weakens less in this disorder than in any other." Dr. McLeod recommended one copious and early abstraction of blood, before the exhibition of other medicines. More recently this practice has been renewed by M.
Boullardo, who bleeds every case of Pneumatic fever until the patient faints, this is repeated, time after time (Coup sur Coup) until he has produced the desired effect. The results of this practice have not induced many to follow his example, for it has been noticed that there are a surprising number of fatal cases in his wards. Many however of British practitioners recommend a moderate bloodletting in subjects who are young and plethoric, and who have been attacked for the first time. Now even this I think should be practiced with extreme caution; since we know that the effect of bloodletting is to make the heart irritable and irregular in its action very likely therefore to induce an uninterrupted
implication of that organ. Again there are some cases in spite of the advantages of our modern treatment, will linger on for some weeks, and therefore it is in the highest degree reprehensible and un-judicious to weaken our patients in the slightest degree. It may be remarked, however, in the acute variety of pericarditis that the application of one or two leeches, or the removal of a few ounces of blood, by cupping, seems to alleviate the suffering of the patient in a most marked manner. However much we might be disposed to deny this in theory, yet the fact remains undisputable, and therefore it is our duty to have recourse to it in such a case—Purgatives. If the bowels be constipated
as they generally are, a good, smart purge is generally productive of a beneficial effect. As there is good reason to suppose that the materies morbi may be excreted from the intestines. I think a good effect may accrue, from a persistent exhibition of purgatives, especially indeed, when the kidneys are in such a state that it would be improper to increase their action by diuretics.

Emetics. These have been administered at the first onset of the disease, on the principle that they may lower the circulation, and secondly to relieve the stomach from any undigested matters which may be there.

Sudorifics. This class of remedies were, formerly given in large doses, but latterly
they have been abandoned as experience has shown, that they do not tend to shorten the disease. Theoretically one would think that this would be one of the best plans of treatment; perhaps it may be accounted for in this way, that these agents may cause a greater secretion of the watery parts of the blood, but do not eliminate the superabundant lactic acid, which we formerly demonstrated was to be considered as the real cause of Rheumatism. Opium, this remedy has been extensively employed by Dr. Corrigan of Dublin who gave no less than twelve grains within the twenty-four hours. This is a useful medicine to alleviate pain, but if the preceding views regarding the pathology of the disease be correct, this cannot limit it
Opium however is very useful in combination with Calomel when Rheumatism is complicated with a cardiac affection preventing the Calomel from acting on the bowels and so allowing its constitutional effect to be more speedily manifested.

Colchicum. This drug is found to produce good effects according as the affection resembles gout. In the opinion of some it should be given until its physiological action is excited but this has been disputed by others, and I think upon very good grounds.

Lemon Juice. This is employed by Dr Owen Reeves who gives half an ounce two every hours but on being tried by Dr Bennet it failed to produce the
good effects obtained by other remedies.

Alkaline Remedies

This class of drugs have been found to be by far the most efficacious, and accordingly have been largely employed in this city, and elsewhere. Nitrate, acetate of Potash, the aqua Potassae, and the Carbonates have all been employed with more or less success; they appear to enter the blood in the form of carbonates. Dr. Golding Bird highly recommends the employment of the acetate, remarking that if the patient urine be rendered alkaline, he believes that the tendency to cardiac complications is very much lessened. It ought to be given in comparatively large doses, six to eight drachms being administered within twenty-four hours.
largely diluted with water, and these
continued for a series of days. This
class of remedies along with other
diuretics seem to be strongly indicated,
and accordingly we find the results
very satisfactory. Thus Dr. Gavrodi,
treated fifty-one cases with Potassa,
Bicarbonas, the average time under
treatment was six days, and the whole
length of the disease was shortened to
fourteen. Dr. Mennet has obtained similar
results with the nitrate, and Dr. Negtie
with the acetate in the Royal Infirmary.