ON THE

PATHOLOGY,

SYMPTOMATOLOGY

AND

TREATMENT

OF

ACUTE RHEUMATISM,

BY

ROBERT ANDERSON.
On

Acute Rheumatism
Acute rheumatism may be defined, as a state of high febrile excitement, induced by the accumulation in the blood, of a peculiar matteries morbi, causing inflammation of the parts lying around, or entering into the compositions of one or more of the larger joints of the body, generally of several at the same time, or in succession, with a disposition to shift from one joint to another, or to certain internal organs, and especially to the membranes of the heart.

Both from the frequency of its occurrence and its severity, scarcely any disease demands so strict investigation, and thorough appreception of its true nature, symptoms and treatment, as does this most painful
Melady, acute rheumatism. And the more to do it require our attention, when we know how often it is the precursor of those numerous and fatal diseases of the central organ of circulation, the heart. Its importance however does not rest in a physiological point of view but in the mystery and obscurity which has hitherto excluded its cause from the most persevering researches. For neither has its origin been discovered, its subsequent course mapped out, its phenomena explained, nor its treatment agreed upon. By universal consent it has been ascribed to a cause, which neither leads us to the discovery of its origin, nor guides us in its treatment. The majority of observers attribute its superintreatment to exposure to cold, checking the secretion from the skin, and in this way causing an accumulation of morbid matters in the blood. But it is by no means uncommon to have the function of the skin if not altogether, at least almost suspended by disease and yet no rheumatic affeotion occurs.
And again when it has occurred, the establishing of the action of urin does not at once check its further progress. We must therefore resort to some other theory to account for the occurrence of Rheumatism in persons previously healthy. Of the hereditary nature of Rheumatism, there can be no doubt. M. Chovwel distinctly traced its hereditary transmission in one half of the cases admitted into the Hotel-Dieu. Dr. Fuller ascertained it in nearly 29 per cent. of the cases admitted into St. George’s Hospital.

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But hereditary transmission does not account for all the cases of acute Rheumatism that occur, and of late years a theory has been propounded which accounts for its origin and subsequent phenomena. Very satisfied with this theory accounts for the occurrence of Rheumatism by referring it to an irritant material in the blood which may...
probably be the result to a certain extent, of imperfect action of the skin but is rather a product of malabsorption. That this accounts for the phenomena of rheumatism better than mere exposure to cold is evident. He does not find direct exposure to cold giving rise to any of the more ordinary symptoms of rheumatism, unless indeed in a person having the rheumatic diathesis, it produces no wandering pains in the joints, no redness, tenderness or swelling, nor any of the other prominent symptoms of the complaint.

Again we find travellers in cold countries stating that even in the most rapid variations of temperature, rheumatism never occurred. Cold may undoubtedly prove a very potent exciting cause where the predisposition yields, but the cold never prove the ultimate or essential cause of the disease. The articular affections are also of a very migratory nature, and if they were the result of cold directly applied, they would undoubtedly remain stationary, as all local symptoms depending
upon local causes, have a tendency to do. We therefore must have recourse to the circulatory system for the true explanation of the cause of acute rheumatism. How do we explain its cause by the circulatory system? If we can only account for the erratic nature of the articular affection, as the blood permeates every tissue of the body it is thus most likely to carry the " materiæ morbi" to various parts of the system, afflicting all the tissues more or less and giving rise to its various symptoms. In some cases, fever is elicited in the first instance, which is followed by the inflammatory affection of the joint, and in others, the affection of the joint precedes the fever. Or again the fever may be the only symptom present, and in some cases the articular affection may be the only sign, showing the constitutional derangement. Where they both occur together, the fever may bear no relation in severity to the morbid state of the joints.

The migratory nature of the articular affection has been attempted to be explained
by metastasis, as also have the affection of the pericardium, endocardium, pleura and membranes of the brain. We however cannot admit this explanation for one moment, as we see in this disease the remarkable tendency manifest for the poison to attack the fibrous tissues of the body, and in the joints and the investing membranes of the heart and brain all present--this anatomical structure, we cannot doubt but that this is the true explanation of the occurrence. Again the symptoms which we usually observe, when metastasis does in reality take place, do not in any particular agree with what we find occurring in any of the afections of the membrane in ulceration. When true metastasis does present itself (and unquestionably it does sometimes occur under certain circumstances) we find the locality where the affection previously existed, at once left and the morbific action located in another place. But in ulceration, when pericarditis or endocarditis,
do set in— which they most frequently do, forming the most formidable of all complications to the otherwise comparatively harmless disease, acute rheumatism. We do not find that the action in the joints subsides or altogether leaves them, but persists, with all its former virulence, or that any new crisis occurs followed by an increase in the febrile symptoms.

Where does the poison of rheumatism arise? How does the blood become vitiated? Immeasurable facts go to prove, the truly constitutional nature of rheumatism.

Many persons, when considering themselves in tolerable health, are apt to experience symptoms of functional derangement. They are prone to perspire, and their perspiration has a very disagreeable sour odour. Dr. Fuller mentions a case where a rheumatic gentleman was unable to carry a knife or other steel instrument in his pocket, in consequence of it becoming rusty, from the acidity of the perspiration. Their urine, though usually clean and free from deposit, frequently deposits a
Cocking, a red brick dust sediment, consisting of lichens &c. - The occurrence of these symptoms has received the name of the rheumatic diathesis, or a state of constitution peculiarly prone to become affected with rheumatism.

Again where persons opposed exactly to the same circumstances, as being of the same age and sex &c., as the rheumatic, but not having this peculiar diathesis, remain quite unbrittle. If the disease depended upon a poison introduced from without, we should have its prevailing epidemically, running a regular course, and conferring upon its victims, a perfect immunity from any further attack.

What then is the poison or materie morbi of rheumatism? -

Dr. Port first suggested the possibility of it being lactic acide, which was developed too freely in the system, in consequence of imperfect assimilation and accumulating in the blood, in consequence of defective cutaneous secretion —
"It is no wonder," says Dr. Todd, "that as lactic acid is imperfectly secreted through its natural channels, in consequence of the cold checking preprivation, and is too freely developed in the alimentary canal, it should accumulate in the blood and become eliminated at every point. Moreover, the long continuance of the causes which produce the defective cutaneous secretion and the abnormal gastric, will give rise to the development of lactic acid in the secondary process of assimilation, thus infecting the blood from every source, and tending to perpetuate the diasthesis."

The development of lactic acid in the blood has been accounted for by Dr. Headland, in the following manner: — "The well-known physiological fact that the starch, which as food, before it can go to maintain the animal heat, must be converted into lactic acid, then again combines with oxygen and is utilized by the lungs, in the form of carbonic acid and water. Now, says Dr. Headland, anything which interferes with this utilization..."
of the lactic acid, must lead to its excessive accumulation in the system. We suggest that the want of vital energy or nervous force, or a failure of some natural principle which is gifted with the control and direction of the chemical change which goes on in the blood, or any disturbing cause, whatever it be which prevents the normal change occurring, leads ultimately to undue accumulation of lactic acid in the blood, as to give rise to all the prominent symptoms of acute choreatodes. This theory should be correct entirely removes the blame from the ordinary conjecture. Dr. Fuller thinks this theory to be most reconcileable with known fact.

An objection to it rests in the fact, that were the lactic acid produced in the lungs, as the theory says, we would naturally expect to find the lining membrane of the pulmonary veins affected, as well as the lining of the atrium in choreatodes. Also would the heart, for a certain distance along its course at least. It accounts however very well for the incoercative being
almost invariably confined to the left cavities of the heart.

This poison of Rheumatism, of which so much has been said theoretically, is however not altogether confined within the limits of theory, but has been satisfactorily demonstrated experimentally, although it has as yet eluded all attempts to show it in a purely practical sense, i.e. existing in the blood of the Rheumatic patient. These experiments, I think, have almost placed the matter beyond a doubt.

Dr. Richardson of Grosvenor Place School, London, made some very important and no less interesting experiments on the subject. They were these:

"On the 8th of July, 1864, the injectio into the peritoneum of a healthy cat 1 drachm of a solution of lactic acid with 2 ounces of distilled water. The operation was performed without accident. The opening was made calcaneum and only sufficiently large to admit the tube of a small injecting syringe. Two hours after the operation the action of the heart became irregular. The animal was
left for the night. About 10 hours after operation, and in the morning was found dead. The inspection showed no peritoneal mischief, but the most marked endocarditis of the left side of the heart. The mitral value, thickened and inflamed, was ejected on its free border with firm fibrous deposit. The whole surface of the endocardium of the ventricle was intensely vascular. Dr. Richardson, afterwards experimented, on two dogs. The first one was subjected to the operation on a Monday and on the Wednesday died. A post-mortem examination being made the most striking signs of endocarditis were revealed. The mitral value was inflamed and swelled to twice its ordinary size. The aortic value, swollen and inflamed, was located on its free border, with fibrous heads. The endocardial surface was generally not free vascularity. The pericardium was dry and injected. As before the peritoneum escaped injury. The joints were not affected but there was distinct arteritis of the left eye.

In November, 1837, Dr. Richardson demonstrated
to the Medical Society of London: the curious appearance of the artificial endocarditis produced by lactic acid. The heart presented the usual acute valvular disease of both sides. The segment of the tricuspid valve, swollen several times, before its usual size, and having a pale red appearance was found by recent additions firmly clung to the cardiac wall. The mitral was swollen and vascular. Above around the upper margin it was studded with fibrinous deposits. The animal had been subjected to the acid on three different occasions 75 yrs. of the acid with 4 ounces of water having been thrown in each time at intervals of two days. Twenty-four hours after the first injection the heart was embarrased and the first sound prolonged. Forty-eight hours after the second injection a well marked systolic thrill came on and continued till death. (Med. Times & Gazette.)

Several such experiments were performed and in all the same results were found. From these experiments, I am not inclined to
come to the conclusion, that lactic acid in the maternal blood of chimpanzees, and also Dr. Richardson's reaction of lactic at once, but if they prove anything at all, they prove thus much, that lactic acid in the blood was sufficient to produce a quiescent condition. As the heart experiments on it will be observed that both sides of the heart were alike affected, a very rare occurrence; this is accounted for however by the way in which the poison was introduced into the circulation. Or, by the platinum, it is in this way reaching the right side of the heart first. The reason why the right side is invariably unaffected is given by two propositions viz.: 1. That the effect of the poison is local, testing a direct influence of the endothelial surface. 2. That the ordinary schenmatic poison is evidently a product, as Dr. Headland has shown, of the pulmonary circulation; it being in the circulation, that the change, whereby the lactic acid is decomposed and given off, is insufficiently performed. And after the toxic
poisoned blood has been carried over the left 
ventricular surface and has affected its mus-

cle. Changes here, it is carried into the systemic 
circulation and there get rid of, or if it does 
return by the veins, it goes to be主体 as 
modified and neutralized forms, as the in-
capable of producing its morbid action.

Thus comes for the pathology of acute chadh- 
amy, we shall now return to its symptoms:

This disease, depending as we have seen on a 

specific focus, we would naturally expect to pre-
sent very specific & marked character and 
symptoms, and so we find it does. From its 

start in a functional derangement and place, 
to its termination either in complete recovery or 
in leaving the patient doomed to live after it 
flies a base victim to its agitating and too 

often false segue - heart disease. As dis-

ease of a specific petitie nature, probably follow 
a more marked or definite course, than does 

acute chaimy.

In its commencement it sometimes varies a 

little. Thus the attack may be preceded by 

considerable gastric or other derangement, in
some cases; whereas in others no such precursor is observed, but the patient may be, while in tolerable health, seized with slight stiffness or pain in the joints; this gradually increase in severity, and in the course of a very short time they may present a swollen, red appearance and excessively tender to the touch. In the majority of cases however, the patient; although not altogether feverish, for some days feels very much out of sorts; he feels chilly, languid, restless, and uncomfortable, and may occasionally feel the slightest migratory pains in various of his joints. His temper probably is irritable, and he has a capricious appetite. His complexion is unusually pallid, the eyes dull, and the conjunctiva slightly jaundiced. His pulse is normal, his tongue is white and cracked. His urine is diminished in quantity, dark colored, and usually contains bile. His bowels are irregular, and a very important symptom is present, characterising the premonitory stage of this from all other contained poisons, viz. the feeling of a sour taste constantly in the mouth.
This is the premonitory stage of rheumatic fever, usually terminated by a fit of chivering and chilliness, where the patient, probably for the first time confines himself to bed. The pains in the joints and limbs now become more severe, and not so migratory in their action, while symptoms now declare themselves, and the attack is fairly established.

Should the reactions of the patient be at this time examined, they will be found all in an abnormally state. Thus, the urine, which in health is either slightly alkaline or neutral, is in rheumatism very markedly acid in its reaction. The perspiration is also observed to be intensely acid, so much so that on turning down the bed clothes, a strong, peculiar acid odor escapes from the skin of the patient. The urine is also extremely acid. The exuviae from the bowels also of the patient will be found to have an acid reaction.

This state of the secretion undoubtedly confirms the view we entertained regarding the pathology of this disease, that the mucous membre is at least an acid. It also their
as that nature is endeavouring to eliminate from the system some substance of an acid nature, by all the natural excretions.

The pulse in phthisis, probably more than in any other febrile complaint, is most characteristic, it being extremely full and rapid, varying in its rapidity from 80 to 130, or 140 beats in the minute.

The fever, though sometimes dry and hot, is more commonly bathed in a most profuse perspiration, as I have said of an acrid fever. There is usually very little thirst throughout the whole course of the disease.

The expression of the countenance is usually very characteristic of intense suffering, not being dull and listless, as in other continued fevers.

Provided there be no inflammatory affection of the brain or its membranes, or other internal organs, the intellectual powers remain quite unclouded, throughout the duration of the malady. The patient very frequently complains of great sleeplessness, from the intense pains in the joints.
The local affection so characteristic of rheumatism, viz., the inflammatory attacks on the joints are very peculiar and demand a special remark or two.

First with regard to their nature.

They first supervene, as I have observed, they are of a migratory nature, and beginning in the lower joints of the body, gradually spread upwards. The ankles are usually the first joints affected. The appearance that this joint: present is quite conclusive, as to the truly inflammatory nature of the affection, viz., pain, heat, redness & swelling. Also an effusion into the synovial sac of the joint.

Concerning the pain experienced by the patient, no conclusion of circumstances could be more typical of intense injury. The patient lies usually on his back, pinioned in every joint, afraid even of the slightest touch from a friendly hand, and shrinks from the very approach of any one to his bedside, lest they should shake or jolt him in any way, scarcely can he bear the weight of the
Best. Clothing on the limbs, is intensely painful and sensitive are the affected parts.

The heat and tension of the joints are perfectly intolerable. The swelling is caused by theiquilations being poured into the synovial sac, and distending it so as to fill up every depression, normally existing in the neighborhood of the affected joint. The fluid can also be poured into the surrounding cellular tissue.

The pain often wandering about from joint to joint for some time at last settle down and that especially in the larger joints like the ankles, knees, hips, elbows and shoulders.

Secrecy with respect to the seat of the in-
flammations.

About this there has been great difference of opinion among writers on the subject—
tone, and especially the older writers such as Bartholomew Pyle referred it to the muscu-
lar tissue and thus again to the ligaments.

Others have given it wider limits and referred it seat to any or all of the
fibrous tissues. Various authors and especially those who were unwilling to admit its constitutional origin have referred it to the fasciae and perineuritic sheaths, and endeavor in this way to account for its migratory nature, rather than by its constitutional nature.

Conflicting as all these various theories appear at first sight, they are nevertheless quite reconcilable when we consider that the cause of all the disease is in the blood, and it is quite reasonable to suppose, that that fluid permeating as it does every tissue of the body, tends to eliminate its noxious ingredient at the various joints, and thus accounts for the migratory disposition of the achesiatic inflammatory process. But structures, other than those of the joints, fall a prey to the noxious poison, as the pericardium, endocardium, pleura, dura mater, the sclerotic coat of the eye, the skin, and the membranes of the ophical ducts.

And not only does the achesiatic thus obey the ordinary rules of all blood poisons, but it also manifests a partiality for certain textures,
As for example, the white fibrous tissue which appears to be the anatomical structure most liable to be affected with the materic morbi of deficiencies. And in all the localities where we find the poison acting, it is to be found this element of the tissues, as the joint and their surrounding structures, the valvular apparatus of the heart, the fibro-vasal covering of the heart and the sac of the peri-

cardium. — Dr. Fuller when speaking of this subject remarks. "That the tissues most commonly affected in deficiencies are the examples of the albuminous and gelatinous tissues, from the decomposition of which, in the near and clear of the body are formed those secondary organic compounds the bile and biliary acids, with which gastric and deficiency are intimately connected." —

As the affection of the joints in deficiencies, it has been noticed that those joints which have been most used and exercised during health, by the patient, than any of the others, are by far the most liable to suffer and that most severely. Thus the fingers of the
washed woman, the shoulders and elbows of
its blacksmith. Dr. Burke also first
brought attention to the invariable, symmetrical
affection of the joints of the body, thus both
shoulders, both elbows, or wrists, &c. This again
I think points most unquestionably to the
constitutional nature of the affection. And
Dr. Fuller remarks—"It is only surprising
that any one should hesitate to assign a
constitutional origin to a disease, presenting
features, so strongly indicative of a poisoned
condition of the blood."

The disease may run its whole course with
out affecting any internal organ; and no
doubt this may also be avoided artificially,
by endeavouring as quickly as possible in
our treatment to counteract the morbid condi-
tion of the blood.

Having thus briefly considered the pathology
and symptoms, I shall now mention a
few of the more prominent and important
facts regarding the treatment of rheumatism.
If we are to take the variety of methods
of treatment which have been adopted by
Various authors, in this disease as a criterion
of its importance and legitimacy, certainly no
malady at first sight seems more alarming,
and more worthy of our closest study.
It has been treated in the most different
ways by the practitioners. Some have accepted
bloodletting as their chief weapon, others again
have clung to calomel or opium as the only
trustworthy remedies, in the materiae. And
if we were to receive the testimonies of the
upholders of these various, and so much op-
posed measures, we would have the most
conflicting, and directly opposed doctrines, and
conclusions respecting the virtues of each.
But we shall find that it is not the adop-
tion and exclusive use of any one of these
remedial agents that is to guide us in the proper
treatment of the disease, but rather a judg-
ments and rational selection of several, and
the proper application of them in individual
cases.

Now first as to bloodletting;
We know how extremely common the use
of this agent formerly was, in continued
years and rheumatic pain did not unfort-
nately prove an exception to this rule. For
up till very late in this, the 19th Century, do
we find authors of the very highest Eminence,
strongly advocating its use. Thus, Sir
Charles Lushington in 1814 wrote, "That-
its control over the violence of the disease, is
more immediate and effectual than
any other remedy." And Sir John Bingle
wrote that "the cure is only to be ob-
tained by repeated and almost daily bleed-
ings, till the patient is without pain, and
the pains are, either entirely removed or
become easier." This indeed would be
unreal practice, for what state could a
patient be in, after passing days with
the vital fluid, almost continually flow-
ing from the veins, "in pace vivo." -

Dr. Roderick Hill, again in 1834, one
of the most vigorous advocates for free blood-
letting in Ulcers, Attaque, "That on any
assumee, not only is bleeding injurious,
but that acute Rheumatism can never be
last shut by it. How I suspect the days on to
day that of those who give a truly hopeful
but opinion upon this point, very few have
tried the method they condemn. The justi-
a case as follows: In the winter of 1834
a patient labouring under acute Cholera
atination was brought into St. George Hospital.
He presented great thirst, pain and
redness of the left hand and face, and of only
36 hours' standing. I had been in the
habit of bleeding in cases such as this for the
extent of 12 or 16 ounces and following up the
depletion with calomel and opium, but a very
intelligent young physician then attending
the hospital having stated that the shade
often bleed his father cure acute Cholera Thumation
very rapidly by copious evacuation without
anything else, I ordered the patient to be
bled largely (thirty ounces) and no medici-
ine to be given internally. In this case
the remarks that the disease was literally
exhausted, for the patient was at once
recovered entirely of this pain and the swelling
rapidly disappeared.
Now in this case, observe what such remedy
treatment was made use of for, simply for the
transfixation, and absence of the left hand and
wrist. A practice I think to be denounced
and less for its Cruelty, than for its inefficiency
to obtain its purpose. I think among the
majority of the profession at the present
time, we may ascribed to bleeding the Choleric
patient. Even Félix, who we know
to be the most universal employee of bleed-
ing (if we are to judge by his teaching)
draws, "Thal-although he is in the daily habit
of treating this disease, rarely prescribes pulse
boiling;"

If the pulse is to be taken as a guide to
the employment of bleeding, and it is
the most valuable, certainly in this dis-
ease is the symptom more indicative of any
line of treatment. But from the absence
of the tendency in the Choleric inflammation
to go on to suppuration, we rarely if ever
require to have recourse to the lanceet, to
avert this result, as it can neither cut
short the disease, when once established,
nor palliate its symptoms.
It would therefore be in very exceptional cases indeed that I would employ it. In cases where great phlegmatism existed, with a full bounding pulse, rapid fever and much pain a small abstraction of blood might reduce the state of the constitution so much, as to make the disease more amenable to remedies which would follow. It is as Dr. Salham recommends "neatful in all cases, but effective in some."

The next mode of treatment used in this disease is its treatment by purgatives. By the upholders of this method it is recommended to give large doses of calomel, with other purgatives, so as to produce copious evacuations from the bowels, and in this way, to establish a drain from the system, whereby a quantity of the phlegmatic poison may be carried off. Now this mode of treatment—which I have no doubt would answer its purpose very well, at once lays itself open to the three objections, especially if continued throughout the whole
Course of the disease.) One, first, because it is not essential for the cure of the patient, tends to reduce his strength and prolong his illness; second, because by this method the patient is necessarily called upon often to move and expose himself, things which are to be avoided considering the amount of pain they would cause. And thirdly, from the frequent purgation that the patient is invariably in making him much more liable to catch cold in obeying the calls of nature. The only circumstances and time in which I would be inclined to use purgatives would be when the patient's bowels were constipated, and his stomach deranged at the beginning of the attack; when of course I would obtain as perfect a cleaning out of the alimentary canal as possible, but after that I do not think it necessary to keep the bowels moderately open.

The best remedy recommended is spirits, and certainly from the great prominence
Of the symptoms, nothing seems more rational to most accurately be valuable where the pain is extremely severe and prevents sleep. Its external application in the form of ointments is, however, more useful and successful than its internal administration.

Larcure strongly recommended Tincture Eumertin, and no doubt it may be extremely useful in the early stage of the disease. And more especially plethoric individuals as it will tend much to depress the circulatory system. In weak persons, it lowers the system too much, which is always the worstward event in acute diseases. It however is a good precursor to other remedies, and cleans out the stomach giving a more favourable condition for their operation.

Dr. Haygarth strenuously advocated the use of cinchona bark. From his published statistics however, it appears to have a tendency to produce delirium, a most unfavourable concomitant to any febrile affection. The fact of it causing delirium it Fuller observes is a fearful commentary on this
no less inconsistent, than empirical modes of treatment."

Dr. Owen Pears again proposed the use of fever pitch. After an ample trial however, it has thoroughly abandoned.

Forced perspiration by various means, such as hot baths has also practised. But throughout the whole course of this disease there is almost invariably very profuse sweating and this generally weakens the patient sufficiently, without the adoption of any artificial means for its increase. At the commencement of the attack however, were the skin dry and hot, I would have no hesitation in starting the efficient remedial for elimination, by administering probably an nephritic, diaphoretic, which would in all probability act as an anode at the same time, in any further than this however I would not feel inclined to go.

Another medicine has been within the last few years proposed and advocated by Professor Simpson, viz. the Action Phsceadia. This given in the form of a tincture in doses of 1-0 drachm.
Having had but very few opportunities of seeing this medicine tried, I can not speak with any confidence in its efficacy. I have not been able either to get any statistics regarding its results. From the reports above-mentioned, its efficacy appears as good, and from the high authority who advocates it in this country, it is certainly worthy of a fair trial. Chlorophyll is also recommended by the same author.

Other again and among them I lay considerable stress on the use of potassium. But this appears to be much more effectual in the sub-acute and chronic forms of the disease.

The last method I would mention which has been proposed for the treatment of acute hemorrhage is the alkaline mode of treatment.

From the chemical nature of the poison of the disease, viz. an acid, it is only common sense to suppose that if we can administer sufficient quantities of alkalis and in a proper form we should be able thus to neutralise the poison and under it innocuous, we would prevent its further morbid action on the system at large.
This accordingly has been a favorite and a
most effectual mode of treatment ever since
Dr. Jarvis first proposed it. It possesses none
of the injurious effect of either mercury or
bloodletting but has besides its own chemical
action on the poison the good therapeutic action
of being a diuretic mode of treatment which
is a very favorable thing in Rheumaticc
as the Kidneys are one of the great means
whereby poisons can be eliminated from the
system. And again as Chemists tell us the
alcalies prevent the fibrin of the blood from
coagulating readily, in this way averting the
two frequent results of Rheumatic Deaeracute,
Deposit of fibrin on the Cardiac valves giving
rise to vegetation...

The most suitable forms for administering
these is still however a question. Dr.
Jarvis very largely and fairly treat the bi-
carbonate of potash in solution, giving an
average two spoons of the salt every two
hours, night and day and continuing this
for several days...

Dr. Fawcett, Bird, again speaks very highly of
the acetate of potash, given largely diluted to
the amount of half an ounce in the twenty-
four hour. —
Some again prefer the nitrate of potash in very
large doses. —
Altogether, I think it is a mere matter of
taste, as they all answer the end equally well.
Although there are certain forms more agreeable
to the patient than others, and these forms are
undoubtedly are the bicarbonate or the acetate
of potash; giving if there are or two
draughts every two hours or so. Should
this form be disagreeable to the patient,
they may be given in the form of an eff-
erosive drink; as the draught of the
bicarbonate of potash, two draughts of the
acetate of potash, and one draught of
citric acid; to this, eight or ten drops of the
wine of citricum may be added for every
dose. Should the pain be severe a few
drops of opium may be joined with this.
In usual cases by this draught being
repeated every 2 or 3 hours the symptoms
abate in twenty four hours. As soon as
The symptoms begin to yield the medicine may be given at longer intervals. They should however never be entirely discontinued as they both aid in the cure of the disease being curable and also help to ward off the recurrence of endocarditis or pericarditis. In cases of a relapse taking place it is considered advisable to pursue the treatment by alkalies and increase the dose of the colchicine.

External applications to the inflamed joints are particularly beneficial and grateful to the patient. The best external application appears to be a lotion consisting of a solution of the bicarbonate of soda or potash to twelve drams of water. This is applied by first soaking in it and covered with gauze gauze to prevent evaporation. It also acts as a last bath, causing increased perspiration from the part and thus elimination. These are of course to be applied to the inflamed joint. Where much pain exists it is advisable to add a few drops of quinine to the lotion. To Chlorodyne or Ratliff's solution solution.