The

Acute & Chronic Forms

of

Gout

An internal accurate account of poisons in the principal forms, pathologic & c.
In introducing the subject of joint, I should apologize for the absence, in my paper, of any original information, being due to the fact that the subject has already been well worked out. Besides, that during the short time which the generality of students have to complete their essential medical studies, there is little opportunity for them entering upon any new investigation, without neglecting some one or more of the other departments of Medical Science. I have endeavoured to give a correct account of joint in its Acute & Chronic forms, gleaned from various sources; which for the most part, however, are acknowledged. With this brief introduction allow me to enter upon my task.

This disease, joint, had different names given to it by the Greek physicians, according to the situation in which it occurred: for example, when the foot was attacked, it was named Podagra (ποδάγρα, from πόδις, the foot, and ἄγρα, a seizure, — τὰς πόδας ἄγρα, Lucian); when the hand, Chiasagra (χιασάγρα, from χίαστος, the hand, and ἄγρα); when in the knee, Gymagra (γυμαγρα, from γύναικα, the knee); Σεμαγρα, Cleisiagra, Pekytagra, Lentagra, i.e., when either the shoulder, clavicle, elbow, teeth, &c., became the special seat of the disease. When, however, many joints were simultaneously affected, the term Arthritis (ἀρθρίτις, a joint) was more commonly applied.
The word gout appears to have been introduced into medicine about the end of the thirteenth century, by Radulpho, & it probably owes its origin to the idea which has been very prevalent in all ages, that the disease was caused by the presence of some peculiar humour in the blood, which was known not, or, as it were, distilled into the joints drop by drop.

Hence in different modern languages terms expressing the same notion are employed, terms in fact corresponding to our word gout; thus, by the French, the disease is called "goutte," by the Germans "Gicht," by the Italians "Gotta," & by the Spaniards "Gota," & so forth.

Gout is a disease which has long been the subject of earnest consideration, the nature, treatment of which was extremely well known by the Ancients. It is, however, only in more modern times, that the morbid relations and consequences of the disease, & its various modifications have been more fully elucidated; & its treatment assigned accordingly with greater precision. Amongst those who have contributed to the literature of gout, may be mentioned Cullen, Lydenham, Sir E. Seundamore, Helveticus, St. Williams, Buck, Panckock, Dr. Port, & Dr. Todd, besides several others especially London Physicians with whom this subject seems to have been a favourite study; no doubt from the greater prevalence of it there. In
fact, no other city in the world presents a more ample field than London, nor other country than England, for the study of this important disease. Owing to the comparatively greater number of cases of gout in England, especially the South, than in Scotland, there is a result a great variety in the views & practice of medical men in these two countries. In the former, gout is traced in almost every complaint to which the human body is liable, not only in its consequences of bilious & urinary symptoms, but in a great number of other diseases of the heart, liver, hydro-thorax, dropsy &c., whilst in the northern sphere, on the contrary, the same disease, interconnected with gout, which is extremely rare, considers them as separate entities, however allied.

Gout is a disease belonging to the high-born & luxury, it has been considered a sign of wealth & sensuous. Hydenham alluding to this says, "For humble individuals like myself, there is one poor comfort, which is this, via that gout, unlike any other disease, kills more rich men than poor, more wise men than simple. Great kings, emperors, generals, admirals, & philosophers have all died of gout. Hereby nature shows her impartiality: since those whom she favours in one way, she afflicts in another - a mixture of good & evil, pre-eminently adapted to our frail mortality."

"... Stil est ab omni parte beatum."
"The term "rheumatism" was first employed by the disease to be paralleled from the arthritis of old authors, by Ballonius, in his treatise "De Rheumatismis et Pleuritis durali." 1843."
The following is Dr. Cullen's excellent definition of this affection: "An hereditary disease, arising without any obvious external cause, but preceded by some unusual disturbance of the stomach; fever, pain affecting some joints, but especially those of the feet & hands; returning at intervals, & for the most part alternating with affections of the stomach, or of some other internal structure." This disease, although possessing many peculiarities, is, in a pathological point of view, connected with Rheumatism, especially its acute form. They were first accurately distinguished about 200 years ago. Although it can be easily understood how the diagnosis is, for various reasons, of great importance, still it must not be forgotten that there is an intimate relation between these two diseases, that they run into each other by insensible degrees, that the term Rheumatic fevers, so frequently employed by physicians & in common life, is at the same time strictly scientific.

The general features of resemblance between joint & Rheumatism may be traced in the identity of the structures which are attacked, in the similarity of the termination of the two diseases, & in their mutual tendency to affect some internal organ by metastasis. The leading points of difference are to be found in the joints principally affected, in the progress of the symptoms, in the predisposing cause.
In gouty people there exist the following peculiarities:

1. Predisposition to excess of uric acid in the system.
2. Many indications of constitutional disorder, especially disorder of the stomach, namely acidity & flatulence, which usually precede an attack of gout.
3. Functional derangement of the heart.
4. Hypochondriasis with a peculiar sensation like that of itching under the skin.
5. A dry & harsh condition of the skin; itching over the whole surface of the body, & tendency to various forms of cutaneous disorders, namely urticaria, erythema, herpes, eczema, lepra, & psoriasis.
6. A tendency to the deposit of urate of lime either with or alternating with uric acid.
7. Tendency to congestion of important organs especially of the liver & kidneys indicated by various symptoms, also by tendency to haemorrhage, especially the hemorrhoidal flux, this last is often salutary, as the progress of inflammatory gout has been seen to be arrested by the occurrence of this flux.
8. Changes in fingers & toes which may also take place independently of any attack of gout. Tendosities of the joints or knots are the products of purgy blood, & it is not necessary for the development of acute gout for there to
be present; they are deposited in the sheaths of tendons & muscles, also in the cheeks of the ear in the form of in are of soda. and chiefly amongst the upper classes.

9. Tendency to deposit of fat both under the skin, in internal organs - fatty degeneration of the heart, & certain tunic of the eye, especially of the cornea.

10. In females there is great tendency to uterine disarrangement.

11. In brains describes some examples of disease of the spinal cord, connected with apparently caused by gout.

Varieties of Gout.

As to the varieties of gout, owing to the numerous affection which attack this diathesis, the divisions established by not a few modern authors are somewhat perplexing. In fact this is one of the greatest objections which is stated can be urged to the works of Dr. Graves, Gilbert & some others. The arrangement of Allen & Good nearly agree, that of Sir E. Tennant & of Sir R. M'Intosh is quite same. I shall in this paper confine myself to two forms of gout, names:

(1) Acute. (2) Chronic.

I. Acute Gout.

Symptoms. — although the gouty paroxysm may come on suddenly, & attack the person when apparently in good health, especially if it be a first attack,
it is far more frequently preceded by symptoms of disorder, referable chiefly to the digestive organs. And I am of opinion that if the cases in which the disease is stated to have occurred suddenly, had been properly investigated it would have been ascertained that some or less disorder had existed for some days before the seizure, although not so as to have excited any concern in the mind of the patient.

The premonitory symptoms, which, however, vary in different persons, depend much upon idiosyncrasy, are for the most part as follows: namely - diminished appetite, flatulence, oppression after a meal, heartburn, with acidity of stomach, sometimes with acid or acid excitations, dull pain in the left side of the chest, with inability of the patient to lie on that side; constipation, irregularity, or more rarely, an unstable state of the bowels; scanty, deep coloured urine, becoming turbid or thick on cooling, or sometimes copious or pale urine. There are also symptoms of impeded cutaneous action, the skin being dry; that is, sometimes affected with scaly eruptions or urticaea; restless or unrefreshing sleep; general lassitude of deprision of spirits. In some persons, the symptoms of gastro-intestinal irritation are still more manifest, the tongue being loaded, red at its point and edge, the epigastrium tender, the stomach oppressed after a meal. The appetite
is frequently craving; & when indulged, is often followed
by nausea, or vomiting of eructated matter, or by heartburn.
Dr. Mackintosh justly remarks, that persons subject to
such are warned of a fit by some sensation or symptom
peculiar to themselves individually; one feeling heat, pain,
some drying of the eye; another, heat, redness & swelling of the
nose; a third an unusual craving after some particular
kind of food, or some peculiar feeling at the stomach.

For an excellent description of acute or regular gout
I shall take the liberty of quoting here that one given
by Sydenham, who for several years suffered from this
disease. — He says: "Concerning this disease in its most
regular & typical state, I will now discourse. As often as gout
in regular it comes on thus: Towards the end of January
or the beginning of February, suddenly, without any
premonitory symptoms, the disease beats out. Its only
forerunner is indigestion & coryza of the stomach, of
which the patient labours some weeks before. His
body feels swollem, heavy, & windy; symptoms which
increase till the fit breaks out. This is preceded
a few days by torpor & a feeling of festiveness along the leg
& thighs. Besides this, there is a goutmodic affection,
whilst the day before the fit the appetite is naturally
leasty. The victim goes to bed & sleeps in good health.
About two o'clock in the morning he is awakened by a severe pain in the great toe, more rarely in the heel, ankle, or instep. The pain is like that of a dislocation, yet the parts feel as if cold water were poured over them. Then follow chills, shivers, and a little fever. The pain which was at first moderate becomes more intense. With its intensity the chills and shivers increase. After a time this comes to its height, accommodating itself to the bones and ligaments of the tarsus and metatarsus. Now it is a violent stretching, tearing of the ligaments; now it is a gnawing pain, a severe contraction. Simultaneously lingers meanwhile is the feeling of the part affected, that it cannot bear the weight of the bedclothes, nor the jar of a person walking in the room. All night is passed in torture, sleepless, turning of the part affected, perpetual change of posture; at times about of the body lying as if possessed as the pain of the tortured joint, it being worse as the fit comes on. Hence the main efforts, by change of posture, rest in the body, in the limbs affected, to obtain an abatement of the pain. This comes only towards the morning of the next day, each time being necessary for the moderate aeration of the attendant matter. The patient has a sudden and slight respite, which he falsely attributes to the last change of position. A
Jeune perspiration is succeeded by sleep. He awakens free from pain, finds the part recently swollen. Up to this time the only visible swelling had been that of the veins of the affected part. Next day (perhaps for the next two or three days) if the generation of the squy matter have been abundant, the part affected is painful, Feeling sore towards evening & better toward the morning. A few days after, the other foot swells, & supplies the same pains. The pain in the foot second attacked regulates the state of the one first attacked. The more it is violent in the one, the more perfect is the abatement of this suffering, & the return of strength in the other. Sometimes during the first day of the disease, the squy matter is so exuberant, that one foot is insufficient for its discharge. It then attacks both, & that with equal violence. Generally, however, it takes the feet in succession. After it has attacked each foot, the fit become irregular, both as to the time of their occurring & duration. One thing, however, is constant—the pain increases at night & remits in the morning. As the disease goes off, the foot clothes involuntary, most between the toes; the cuticle scales off, & the feet desquamate, as if removed. The diseases being disposed of, the circums & appetite of the patient return, & this in proportion to the violence of the last fit.

Peculiarities of an Attack.

A person having, in an ordinary state of health,
some what, & perhaps having intuited somewhat before day
is, is awakened, generally about 2 o'clock in the morning, by a
severe pain in one of his feet.

The tendency of joint to come on unexpectedly & during the night, &
the desire of the patient, at least in former times, to attribute the affection
to some strain or injury, is well illustrated in the passage (Lucian)
where the tutor tells the physician that his patient Jeepus has
endeavoured to deceive him

Mendacia tibi dicta, quaeque dicta sunt;
scire num factum, quae cursum, quid indicat
sperasse tibi est: ab hinc oneri credita.
Porta, qui dem valise primo venit domum
Bene tum satiatus, affatum positis, unus
Ad lectum jacens, commun iacet capitis.
Jam quia testes sensus, clamat eunctum
apinquit aedibus: et loquitur situm
venit que, non mihi! unde tanta hos malis?
Invenit quis pedem tenens ritua capit?
Invenit modo acerbat, friget omnia
sum aetate omnes abandonat omnia.

"A leap of lies he has told, more will tell
for as nothing he said, so him belief;
first one he asked poorly had a pain,
Yet in hurry lies received a train;
But full of wine & armed with tresses fair,
Wounded, in hearty health, did first repair;
Then as the wretch enjoyed his rest alone
Sitting at midnight with a hideous ONIAN
Truth as it were from heaven alarm'd with
And, gods! my feet, my feet, aloud did rail;
But what he now has told is all a flam
To come o'er his suffering to blame."

The pain however may be variously seated, but
chiefly, especially in first attacks, first upon the ball of the great toe. With the occurrence of this, there is more or less swelling of the part, which may be accompanied by heat and throbbing, of the part, stiffening of the joint, together with feverishness and restlessness. At length, after a few hours, the pain subsides, and the patient falls asleep. A perforation at the same time breaking out. If the joint be now examined, it will be found swollen, the skin over it, presenting a characteristic deep red, shiny, distinct appearance, contrasting, in this respect, much with that in acute rheumatism. The part affected is excruciatingly painful and tender, by far more than in rheumatism; thus been thus humorously described by a Frenchman: "Place (said he) your joint in a vise, I swear the vise will not you can endure it no longer. That may represent rheumatism. Then give the instrument another twist, I will obtain a notion of the joint." There is also nervous congestion, giving a slight appearance of lividity of the part. The bed clothes cannot be borne, not shaking of the bed by a person walking in the room. In a vain search after comfort the patient is perpetually shifting his foot from place to place, from posture to posture. The pain may subside in a few hours, but often there is a continuation of this symptoms till the approach of the
Second morning, & then mitigates. The attack lasts for various periods, in different persons, according to circumstances, & then abruptly terminates.

The Urine

is scanty, being passed in diminished amount, & dark coloured, in some cases it is clear, but more frequently even to the deposit of urate which is often taken place, it presents the former character. This deposit is a marked characteristic of gout. The acidity of the urine is increased, uric acid being deposited in the form of crystals. Now uric acid may be deficient in amount in the urine, but then it is found both in urine & in the blood.

Appetite & Digestion

are impaired as long as the pain lasts, but with cessation of this they regain their normal power. Thirst is excessive. The bowels are constipated.

Twitchings & Cramps

in the limbs are very apt to occur when the patient is on the point of falling asleep, keeping them restless & watchful. — Sir W. Landamore states, that of 120 cases, cramps occurred in 90, with more or less frequency, either upon the accession of the paroxysm, or during its height, or at its close, or even during all three periods. These also may take place in rheumatism.
As the attacks decline, changes in the affected part may be observed to take place. Thus, swelling & redness disappear, moisture itching occurs, followed by desquamation of the cuticle, almost as great an extent as in erysipelas. Some of these phenomena are characteristic in rheumatism. The joint, generally, remains tender for some time after the attack.

Gout may attack first one joint then another. There may exist a condition of local edema, caused by putting of the part on pressure. There may be more or less pain & redness and diffuse swelling is not unlikely to occur, especially in weak people when the disease takes on its asthenic form.

Seat of Gout

The inflammatory action most frequently invades the ball of the great toe, & especially is this true of first attacks to such an extent that, when we observe evidences of gout in other parts, we immediately suspect there has been a previous attack. Expectations similar to this exist & which may perhaps be thus accounted for. I believe it is generally understood that gout attacks the joints of the big toe, because it is in a more impoverished condition than any other part of the body; if then any other joint from disease or any other cause, become more weakened & impoverished than those of the great toe, in all
probability it will be the seat of attack.

Sir C. Tennant more drew up the following as a list of the seats of pain:

Out of 546 first cases of pain:

- Only the great toe of one foot was affected in 314.
- The great toe of each foot was affected in 27.
- The ankle & great toe of the same foot were affected in 11.
- The outer side of one foot was affected in 10.
- The middle one or both were affected in 31.
- The ankle one or both were affected in 29.

While in the remainder the part was either the knee, the tendo Achillis, the femur, knee, wrist, thumb, or fingers.

As the disease recurs it attacks other parts of the body, approaching nearer the trunk. The ankle second to the great toe is most frequently affected, then the instep, outer side of the foot, then the knee. The upper extremity is rarely the seat of pain in first attacks.

Character of the Inflammation

The pain is intense, about this there can be no doubt. It is however less violent in some cases than in others, apparently depending upon peculiar flexibility of constitution - some being better able to endure pain than others. The nearer the trunk the more painful the disorder,
Thus in first attacks it is the painful than in subsequent ones, owing to the tendency, as before mentioned, of repeated attacks to approach nearer the centre of the body.

Gout is generally a painful toe, in the foot than in the hand. The pain has been likened to the gnawing pain of some animals.

The redness is of a deep fiery hue, & the skin shining & keen. In account of the tension, oedema of the part is not so well seen till the redness is disappearing, when, on prepare, pitying will be observed to take place. This is a marked feature of joint, being evidently connected with impure condition of the blood in this disease.

Oedema does not usually occur in rheumatism.

**Desquamation of the Cuticle**

When it takes place bears relation to the amount of oedema. Dr. E. Iudamore mentions several cases in which no desquamation occurred. It is most marked in the feet & is accompanied with considerable itching as a result of cutaneous irritation.

**Temperature of part.**

Patient usually complains of great heat, in fact more than really exists, as indicated by the thermometer, which is rising by amount, to preventd nervous function.
Gouty inflammation, let it be borne in mind, never terminates in suppuration. Cases, however, have been mentioned by Dr. Leacavale where suppuration was observed; but nevertheless not as a result of gouty inflammation, but may be explained by the following fact, that when deposits of urate of soda have taken place from the blood, acting as a foreign body, inflammation & suppuration sometimes occur in the vicinity; but now indeed, the attacks of gout are rare, & cannot consequently be caused by it. It is then not the result of the inflammation of gout, but of a secondary inflammation, of Donray is termed it, the result of a foreign body in the tissues. Dr. Leacavale says he found suppuration in eight instances, but in all these there was an abundant secretion of urate of soda, & thus it may be accounted for. Dr. Sarrad says he never knew a joint attacked of gout accompanied with the formation of pus.

Nature of the Constitutional Disturbance

Pains with the severity of the attack & previous health of the patient. Fever is generally present accompanied by restlessness, thirst, & loss of appetite. Pulse rapid, generally full or hard, but it varies. The tongue is furred, the papillae erect, & the edges pointed.
The pain is acute during a paroxysm, but slowly subsides,
contrasting strongly with rheumatism in which the perspira-
tion is profuse. The fever is increased with increase of pain
in the part affected.

The disease runs either sooner or later according to the
presence of exciting causes, most commonly after eighteen
months or two years. - As it advances the attacks are more
frequent I believe, the disease acquiring, at the same time, a
more general character, & a great tendency to pass upwards
from the foot towards the trunk.

**State of Mind during Attack**

There is great irritability of temper & impatience
on the part of the sufferer. The mental faculties are over
labor often obscured, in fact the capacity for mental may be
even increased. I have heard a case related where con-
stant study was the only effectual cure of the malady.

**Sequela**

After early attacks of pain the patient generally
enjoys better health than before, owing, no doubt, to the de-
tination from the blood of the materia morbii which
had probably been lurking there for some time. Hence, there
prevailed a notion formerly that gout was a curable
disease, & one capable of removing all others. But the error
of this opinion is readily demonstrated, it is well
Known that every attack of gout is attended with more or less permanent local mischief. This opinion is now being abandoned, even by the public, intelligent hydropicans having exposed it fallacy, I have combated it, as shown by the following passages from Heberden's Commentaries & Les Traités practiques de la Goutte. 

Heberden thus remarks: "Some, indeed, in the first attack of gout, congratulate themselves upon the completion of their wishes, & during the honey-moon of the first fit, dreaming of nothing but perfect health & happiness, persuade themselves they are much the better for it; for new medicines, & new methods of cure, always work miracles for a while.

Of such we must not enquire, but of those who have had it their companion for a great part of their lives. Now, among those souls which I have had an opportunity of seeing, I find by the notes which I have taken, that the patients, in whom they have experienced other disorders without relieving them, or where they have been thought to bring on new diseases, are at least double the number to those in whom they have been judged to injure the constitution; & it has appeared some, that the mischief which has been laid to their charge, was more certainly owing to those from the good which they had the credit of doing.

Other disorders will, indeed, be suspended upon an
attack of the gout, I see they will by palpius, fever, asthmas, small-pox, & madness, of which I have been many instances, but then the gout has often come on when persons were labouring under restless, shortness of breath, loss of appetite, & abortion of spirits, without affording the least relief, & sometimes it has manifestly aggravated them; nay, these complaints in some patients have always come on with the gout, & have constantly attended it during the whole fit. If the gout return but seldom, & its stay be but short, the patient may be very little the worse for it, just as he might have had an epileptic fit once a year, & yet might die in a good old age. However, the health, as I have observed will sometimes begin to decline even from the first fit, & gradually decline; from that time, under the usual signs of an insensibly shattered constitution; when, though there might be some doubt whether the gout occasioned the mischiefs, yet there could be none that it did not prevent it.

Mr. Coste writes to the following effect - "A popular error, which I wish to expunge in a few words, is this prejudice, to which has already lasted more than two thousand years, which has reached even the courts of princes, where the disease commonly shows itself, viz., that gout prolongs life (Que la goutte prolonge la vie)."
This error, says he, has taken the current method of introducing itself, by making flattering promises, by persuading its victims that there is a singular advantage in having gout, & that the malady drives away all other ills, & that it ensures long life to those whom it attacks.

Occasionally it happens that a patient does not enjoy good health after an attack as above stated; for the system may not have been thoroughly cleansed from its impurities, & depurative remains, a very slight exciting cause may bring on another attack. Again, the part affected may remain exquisitely tender for a long period of time, although no appreciable structural mischief has taken place; & besides this may remain a considerable tenderness to edema, & moreover especially if the fit has been of long duration.

Local Changes

Every fit of gout is liable to be accompanied with local changes of an important nature. The effused fluid being imperfectly removed from the part, & deposit or chalk, stones, as they are called, forming, interfere with motion of the part, & even permanent stiffness, or complete ankylosis of the joint.
may take place; & this will occur without any or very little accompanying enlargement, or appearance of chalk-stones, though attended with various changes in the deeper structures. Chalk-stones is a wrong expression for scanty deposits, consisting as this do of water of soda & not of carbonate of lime. Triflu or topaceous are the terms applied when the deposits are soft.

All joints are apt to have these deposits, but they take place most frequently in the upper extremity, which may be accounted for, perhaps, by the fact that in the lower extremity the disease is most frequently quite cleared from.

The ears not unfrequently are beats of these deposits.

When formed they generally point towards the surface, till ultimately the thin fins way of the deposits become exposed; & in this way fictitious openings into the joint may be formed.
Chronic Gout.

The boundary between acute & chronic gout is quite arbitrary, still when the attacks are numerous, & the constitution impairs by them, the disease is generally spoken of as chronic gout. The actual pain, perhaps, is less severe than in the acute form, but more lasting; & the distortion & rigidity of the joints, which are swollen, stiff, & difficult to move, together with the impairment of the various digestive organs, the effect upon the kidneys, render these cases very serious. These conditions, with, in addition, the formation of chalk-stones, render the patient's life miserable, though an extent that as Herderen forcibly remarks: "We can hardly be reckoned one of the disadvantages of the gout; that, after destroying all the comforts of living, by this height of misery, or by bringing on a paralysis or apoplexy, it immutably extinguishes the power of life." — But, however, does not always lead to such consequences; for, when the constitution has been originally good, & proper as great amount of temporary fainting has not been impoverished. Threatened by improper treatment, the patient may ultimately, though slowly, under proper regimen & application of medicines, recover. As far as health, the remainder of his life tolerably comfortably. In other cases, however, the disease gradually becomes
more frequent & irregular in its occurrences, & instead of appearing annually, only a month or two may elapse between the attacks, which sometimes recur so rapidly that the patient is scarcely ever free from them.

The joints as mentioned just now are usually swollen from effusions having taken place into them; they are likewise stiffened & difficult to move; there is generally a redness or heat of the parts & a sense of feverish excitement, except perhaps a little at night. There is great tendency for the muscular & nervous systems to become affected, as evidenced by muscular & nervous pains, also by cramps of the lower limbs, which occur chiefly at night when the patient is falling asleep. There are symptoms of dyspepsia in all its varieties, evidenced by acidity, heartburn, pyrosis, flatulence, weighty spasm after food, palpitation of the heart, constipation, deficient or depraved secretion of bile & Bowels of spirits, after a time leading to great impairment of the general health, pallor of the complexion, & emaciation.

The urine is not of so high a colour as during an acute attack, does not deposit so much sediment as before; it is not however unapt to be albuminous, thus indicating important changes in the kidneys.
Chronic gout may be confined to one, or more joints, but
unfrequently metastasis of it occurs from one joint to
another, or, as sometimes it does, it may pass to more
important internal organs, the heart & stomach become
affected. When stationary, disorganization of the joint
is liable to be produced; when it assumes the eratite form
the serious results just mentioned are prone to occur.
The alterations which chronic gout when stationary gives
rise to, are either partial or complete ankylosis of the
joint, a deposit of the so called chalk stones around the
articulations, or in other parts of the body. These white
deposits are distinctive of gout, recurring in no other disease.

Nature of Gouty Deposit.

These deposits were named chalk stones by the old
writers, owing to their ignorance of the nature & composition
of them. The consistence of these tophi (as they are also
described) varies; at first, they are quite soft to the touch,
but afterwards become as hard as chalk itself. If for the
purpose of ascertaining the characters of these, we puncture
one that has been recently formed, a semi-fluid cream-like
substance escapes, containing circular crystals,
which are easily seen under a microscope & consist
of urate of eryda. If this matter be treated with a
few drops of dilute nitric acid upon a porcelain dish,
when, almost dry, exposed to the vapour of ammonia, a
beautiful purple colour is produced from the formation of
ammonia, or purpurate of ammonia. Again, if a solid
portion of the white deposit be dissolved in hot water; on
cooling, deposits of needle-like crystals of urate of soda again
take place, usually, in the form of balls or tufts. These de-
positions are probably thrown out at first in the form of a
limpid fluid, which soon acquires a milky appearance
from the formation of crystals of urate of soda. The fluid
portion is then slowly absorbed, then the crystals gradually
form & become hardened, until they acquire a very firm con-
distence. Many analyses have been made of these con-
trons, all of which agree in showing that urate of soda is
their most abundant constituent; one by Dr. Hanley, of
a deposit near the femur, close to the knee joint, was found
to consist of:

<table>
<thead>
<tr>
<th>Substance</th>
<th>%</th>
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<tbody>
<tr>
<td>Urate of soda</td>
<td>34.20</td>
</tr>
<tr>
<td>Urate of lime</td>
<td>2.12</td>
</tr>
<tr>
<td>Carbonate of ammonia</td>
<td>9.56</td>
</tr>
<tr>
<td>Chloride of sodium</td>
<td>14.12</td>
</tr>
<tr>
<td>Animal matter</td>
<td>32.53</td>
</tr>
<tr>
<td>Water</td>
<td>6.80</td>
</tr>
<tr>
<td>Ash</td>
<td>2.37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.00</td>
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Lehman gives the following analysis of a concretion from the metacarpus of a young man who had suffered from gout:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urate of Soda</td>
<td>52.12</td>
</tr>
<tr>
<td>Urate of Lime</td>
<td>1.26</td>
</tr>
<tr>
<td>Chloride of Sodium</td>
<td>9.84</td>
</tr>
<tr>
<td>Phosphate of Lime</td>
<td>4.32</td>
</tr>
<tr>
<td>Cellular Tissue</td>
<td>20.49</td>
</tr>
<tr>
<td>Matter Left &amp;e</td>
<td>3.98</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

From these observations, as well as those of Langen, Murrey, & Etheridge, there can be no doubt that the essential component of gouty deposits is urate of soda, which always appears in a crystalline form; other matters indeed are often present, but, however, in relation to the disease, but as the result of inflammation of the surrounding tissues set up by the presence of urate of soda.

Partial or complete analyses may determine upon chronic cases, & when there is no bulging or enlargement of the joint, or the appearance of any deposit, peculiar distortions of the joint take place which are nevertheless sufficiently pathognomonic of the disease. Although few gouty patients become the subject of visible chalk-stones, still from the observations of St. Paul and others, I am inclined to think their existence has been much overlooked.

Sir C. Standenmore stated that in five hundred
cases of gout he only found them fifty forty-five times, or in less than 10 per cent. Dr. Garrod's experience gives a far higher proportion than this. In 38 similar patients we once examined 4 per cent to ascertain the presence or absence of concretions of urate of soda upon the surface, or in such situations as the undoubtedly recognized, it was noted, that they were present in 17 cases, absent in 20. X % in the above 17, they occurred in the ears alone, in 9 cases, in the ears & around the joints in 9, in one case only, and they be recognized in other parts of the body, without being present in the ears also. From this it also appears that the ears are frequently the seat of these deposits; in this situation they vary much both in number & size, sometimes only one exists, at others as many as eight or ten; in size they generally equal a split pea, often they are not larger than a pin's head, &on. They are generally situated about the field of the helix; sometimes they present a gritty hardness; but often are soft, when punctured give rise to a milky or cream-like fluid.

In concluding this description of chronic gout, allow one once more to quote from Lydénham: 'In so doing, take leave of that most excellent physician, in regard to this subject...his account of its progress &c., if we take into consideration the state of pathology in his
day, & at the present, is still full of information & interest.

When either undue treatment or the prolonged delay of
the disease has converted the whole body into a focus for the
pelvic matter, when nature is incompetent to its elimi-
nation, its course is different. (This he says after speaking
of a curé goit.) The true seat of the disease is the foot, so
one as so, that when it appears elsewhere its character is
changed, or else the constitution is weak. Then, however, it
attacks the hands, wrists, elbows, knees, & other parts, the
pains being as pains of the feet. Sometimes it distorts the
fingers, then they look like a bunch of parsnips; I become
stiffened & immovable. This is from the deposit of chalk-
stone concretions about the ligaments of the knuckles.
The effect of these is to destroy the skin & cuticle. Then
you have chalk-stones like crab's eyes exposed to view, if
you may turn them out with a needle. Sometimes the
morbid matter fixes on the elbows, & raise a white &
tumour; almost as large as an egg, which gradually
grows red & inflamed. Sometimes the thigh feels as if a
weight were attached to it without, however any vis-
able pain. It acquires, however, at the knee, when the pain
is intense. It checks all motion, nails the patient down
to his bed till he will hardly allow him to change his posture,
a hair's breadth. Whenever, on account of the restitutio,
So usual in the disease, or from any urgent accepit, the patient has the more, the greatest caution is necessary. The least contrary movement causes pain, which is tolerable only in proportion as it is momentary. This movement is one of the great trouble in joint, since with perfect quiet, the agony is just tolerable. Up to a certain time, the joint comes on towards the end of winter, last for two or three months, recovers regularly. Afterwards, however, it lasts throughout the whole of year, except only the hottest months of the summer. Furthermore, the longer the chill, the longer is each individual fit. Instead of a day or two, they last a fortnight. Instead of the foot they attack any joint indifferently. Lastly, on the first a second day after, the patient besides the pain, loss of appetite, "general discomfort."

**Conditions of the Blood in Gout.**

Nothing can be obtained satisfactory on this point from the older writers, who imputed this disease to a peculiar morbid element existing in the blood, the nature of which was sufficiently explained by them. I allude to Galen, Peller, Alexander Dalianus, Secius, Calvis Aurelianus & Paulus Aginita; nor even in modern times was this subject more understood, since it is only recently that the Pathological conditions of joint
The Globules, are not altered necessarily in this disease, for in the acute form in an otherwise robust constitution they exist in normal proportions; but in the chronic and asthenic form occurring in an enfeebled constitution they are diminished in amount, as they are, indeed, in weakened and depeased conditions of the form, any other cause. In jest of painters, plumbers, or other workers in lead, this is diminution of the blood globules; but this is due not to the lead, but to the special poison, lead, in the system; as one of the earliest symptoms of plumbism is the production of an anaemic condition of the system.

The Fibrin, in the acute form, is altered as in any other inflammatory affection; its normal proportion in the blood is about 2 parts in 1000, but may be increased to from 5 to 8 parts in 1000, the augmentation being in proportion to the intensity of the inflammation. In chronic gout the fibrin is not increased a particular altered, so that it depends, for its increase not upon the joint, but upon the presence of acute inflammatory action. When drawn from a gouty patient the blood may or may not possess the usual characters of inflammatory blood - viz. of being buffed - according to circumstances.
The serum is not equally attuned in its physical character. Dr. Garrod is of opinion that its mean sp. gr. is lower generally; this however is not the case in acute renal gout, though it is in chronic, very especially those chronic cases in which the kidney is markedly diseased — atrophied, & contracted, & in which we find deposits of uric acid, with albuminuria. The diminution of the specific gravity of the serum in these cases depends upon the loss of albumen: 10.26 to 10.28 is the ordinary density of healthy serum, in chronic gout it is 10.26, never higher than this, but only be several degrees lower.

The saline & fatty ingredients have not been specially examined in gout. Thus then we see that in gout, either in its acute or chronic forms, there is not any great change in the normal constituents of the blood; but there is an abnormal constituent in the blood prevailing during the disease, namely uric acid, information regarding the nature of which we are so much indebted to Dr. Garrod. He first discovered it in a gouty patient as follows:

"Feeling of mind, says he, that, if uric acid were present, it would be in the serum, 1000 grains of that fluid were dried in a water bath, reduced to powder, Brazil with rectified spirit, for the purpose of dissolving matters.
which might interfere with the separation of the uric acid, after being thus exhausted, it was treated with boiling distilled water. When a few drops of the resulting solution were evaporated almost to dryness with nitric acid, Y held over the vapours of ammonia, distinct evidence of uric acid was afforded by the production of the beautiful purple tint of mercuric or fulminate of ammonia; Y when reduced to a thin syrupy consistency, Y a few drops of hydrochloric acid added, Y the acid, in a few hours crystals of uric acid were deposited with the characteristic forms of that body.

"From another quantity of blood drawn even after the first, 1000 grains of serum were taken treated in the same manner, except that no hydrochloric acid was added. The concentrated solution was allowed to stand for some hours. When examined, many numerous tufts of crystals were found deposited on the sides of the vessel and of the fluid. These crystals were proved to consist of urate of soda; they yielded shrinks of uric acid on the addition of a small acid, Y when uncombined, left an ash, alkaline in reaction, soluble in water, not answering to the test for potash."

From these similar observations Dr. Jamieson came to the conclusion, that the blood in fact always contains uric acid, in the form of urate of soda, in abnormal
quantities, which salt can be obtained from it in a crystalline state. He has observed also that in health there exists of uric acid, if urea can be detected usually by very great care.

A less difficult test than the above has been devised by the same author, which he has named the "Uric acid thread experiment," which consists of mixing serum and acetic acid in proper proportions in a flat glass dish or capsule, and then introducing into it a fine thread, the mixture is allowed gradually to dry. Should uric acid be present in the serum in an amount equal to at least 0.025 grains in the 1000 grains of serum, in addition to the trace existing normally in health, it will crystallize, and during its crystallization will be attracted to the thread, forming prisms not unlike that presented by degenerating urea. Upon a string, this should be placed under a microscope, and a needlelike prisms crystal will be developed. An appearance of uric acid on the thread is complete evidence of an abnormal quantity in the blood.

Urea is found in quota blood, but not in materially larger quantity than exists in normal blood.

Uric acid has also been detected in some few cases of gout, and appears to occur chiefly during the inflammatory stage of the disease.
Secrecions from the Skin in Scut.

A whiteish powder has been observed to be deposited in some scutty people, especially after profuse perspiration. The black chemical nature of which has not been fully made out. Andium stated that he had seen a patient laboratory under a severe scutty paroxysm of several months duration, who had the entire surface of the body covered every morning with a white powder, as though he had been dusted with flour.

State of Urine in Scut.

During the early stage of acute scut, the urine is yellow, it contains urine acid in diminished amount, which, however, again increases as the disease advances towards decline. In chronic scut, the urine, instead of being yellow, darkened, is often pale, of low specific gravity, and papery in considerable quantity. The amount of urea in it is generally natural, whereas the amount of urine acid is diminished. It is also often albuminous.

If Cystalline Salt. The scutalate of urine is most at the present. Sometimes turbid casts are observed, when the urine is examined under a microscopio, there are some of two kinds, namely, granular or waxy. The former are most frequently seen when the urine is slightly albuminous; they consist of disintegrated epithelium, more or less moulded into the shape of tubes. This appearance of granular—
casts, indicates that a disarrangement of some is going on from
the lining membrane of the urinary tubes, a change closely
connected with deficient secretion of some of the elements of the
urine, for one especially of the uric acid. The casts fall
when the disease is still further advanced.

Morbid Anatomy

The important changes which take place in the body in this
disease, may be classed under two heads.

1) Early changes in the joints

2) Peculiar affection of the kidneys

I. The changes in the joints already described have been
long known to occur in persons affected with gout. They
have been observed by Dr. B. Brodie, Dr. Cruikshank,
Dr. Lyon, and others. Mr. Garrard's division of such cases
as present depictions in joints or disease in, these

1) With marked deposit during life

2) With deposit in ears

3) Without any visible deposit during life

II. Changes in the kidneys.

The joint kidney, as it is called, is greatly contracted,
may be half, or even less, than the normal size of this
organ. It is also greatly shrivelled in appearance. The
capsule is thickened & quite opaque, it cannot be easily removed.
It becomes granular & the cortical substance almost hid
The pyramids reaching the surface of the organ.

It has pointed out that in well marked cases there is a deposit of crystalline urates of soda in the direction of the tubules, that points of the same also are the seat at the apices of the cones.

Dr. George Johnson mentions that chronic desquamative nephritis, characterized by long continued shedding of epithelium, is not necessarily formed in connection with gout; if not it arises as the result of long continued intemperance, may also supercede upon acute desquamative nephritis. Examination of the urine will point out whether this form of renal degeneration exist or no; when present will be observed first the papage of tubuli uriniferi, granular disintegrated epithelium, connected with albuminuria, which condition resting for some time wavy casts will also be observed. In this form of degeneration, doubtless, the bloodwill undergo change first in the kidneys, this much at all events is ascertained, namely, that the walls of the glomerular arterioles are found thickened as described.

In the cups, on the surface of the cortex, in the membranes of the brain, fatty deposit has been supposed to occur; but absolute proof is required of these assertions.
Etiology

Gout is ordinarily an hereditary disease. Cullen regarded it as invariably so, but we now it may also be acquired. All physicians acknowledge the former statement. Le C. Sennacmore gave a table showing how far hereditary influence could be traced. In his cases, 6 in 52 patients, arrived at the result exhibited in the following table:

Heredity from the Father .......... in 31 cases
" " " Brother .......... in 59 "
" " " Father 24."

Of those whose grandfather or uncle had gout, the number was .......... 3 "
Grandfather on one side only .......... 37 "
Grandmother only had gout .......... 3 "
Grandfather & grand mother .......... 1 "
Uncle only in family had gout .......... 21 "
An aunt only had gout .......... 3 "
Father not known or father's in

In this table the influence of hereditary predisposition can apparently be traced in 332 cases out of 522, or in the ratio of 322 to 180; but, taking the number of those in whom the predisposition could not be considered immediate, that is directly derived from either of the parents, the ratio would be 262 to 264, or in the ratio of one half. Le Sennacmore states that the cases of gout occurring in his hospital practice are hereditary in the proportion of 50 per cent, whilst in his
Influence of sex upon the occurrence of Gout

Women, undoubtedly, are much less liable to this disease than men, but at the same time the aphorism of Hippocrates, "Feminae post paenae non labraur qui micerca deficit," does not certainly at the present day hold good. This immunity from gout enjoyed by the female sex is no doubt owing to the greater purity & regularity of their lives. In the corrupt times of the Roman Empire, however, they suffered equally with the males from baldness & gout. It is also the observed that the organism of women differs materially from that of men, their blood being more watery, & when menstruation begins they eliminate less uric acid than before, & it is very likely that these facts have an important influence upon blood diseases occurring in women.

Influence of Age

Gout seldom occurs in youth. Hippocrates says "Per post paenae non labraur, autis nec est nunc" & Hydenham states that he had never seen either gouty unions or gouty children. Helander, again, never knew a certain case of gout before the age of puberty.

Sixth year is the earliest age observed by it发生.
In 576 cases, the period of the first attack was noted by Sir E. Pekham. The results of his inquiry are seen below.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
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<tbody>
<tr>
<td>Eleven</td>
<td>1</td>
</tr>
<tr>
<td>Twelve</td>
<td>1</td>
</tr>
<tr>
<td>Fifteen</td>
<td>1</td>
</tr>
<tr>
<td>Sixteen</td>
<td>1</td>
</tr>
<tr>
<td>Seventeen</td>
<td>1</td>
</tr>
<tr>
<td>Eighteen</td>
<td>5</td>
</tr>
<tr>
<td>Nineteen</td>
<td>3</td>
</tr>
<tr>
<td>Between twenty &amp; twenty five years of age</td>
<td>5</td>
</tr>
<tr>
<td>Twenty five &amp; thirty</td>
<td>8</td>
</tr>
<tr>
<td>Thirty five &amp; Forty</td>
<td>10</td>
</tr>
<tr>
<td>Forty five &amp; Fifty</td>
<td>8</td>
</tr>
<tr>
<td>Fifty fifty five</td>
<td>6</td>
</tr>
<tr>
<td>Fifty fifty five &amp; sixty</td>
<td>2</td>
</tr>
<tr>
<td>Sixty sixty five</td>
<td>2</td>
</tr>
<tr>
<td>At the age of sixty-six</td>
<td>$\frac{2}{3}$</td>
</tr>
</tbody>
</table>

It will be observed from this table, that in adult age, after the growth of the body is complete, the force of the powers begins to decline, in less than the majority of cases, four makes its appearance. When sound occurs early it is most probably hereditary, whereas when acquired, it requires a longer time for its development, & seven years, hence, in more advanced life.

**Influence of Temperament**

Nothing decisive on the subject has been made out on this point, since the disease has been such with in individuals presenting every variety of tendency.
conformation. Acute gouty fits may be said to occur most frequently in subjects of a sanguine temperament, I in those inclined to corpulency, whilst the asthenic and irregular forms of this disease are perhaps more often seen in individuals of the nervous temperament or of a spare habit of body. Dr. Cullen has remarked on this point: "If, with the ancients, we might ascertain by certain terms of the temperament of one, I could say that the gout attacks especially men of a choleric-sanguine temperament, that it seldom attacks the pure sanguine or melancholic. It is, however, very difficult to treat this matter with precision." And in another place he says, "It attacks especially men of robust and large bodies, men of large heads, of full and corpulent habits, men whose veins are covered with a thick reticulum, which gives a coarse surface."

Influence of Fermented & Distilled Liquors.

They are, no doubt, the most powerful of all predisposing causes of gout, especially in the form of port wine, strong ale & portico. Herholz, in the form of distilled spirits—particularly gin & whiskey—has but little effect in producing it. Then in Scotland gout is barely one in twelve.

Dr. Cruikshank, at the Royal Infirmary, (Edinburgh) had only two cases of gout out of two thousand two hundred clinical patients admitted under his care; Dr. Hamilton, though
physician to the infirmary nearly thirty years, had likewise only two such persons during that period. And in this town during his long physician ship to the same institution only put with two cases of gout, both were in fact drunkard English butters. The same remark is applicable to other Scotch cities, as Glasgow & Aberdeen. In Ireland, again, where whiskey is the principal alcoholic beverage, gout is little known. Irishmen, Poles, & Junes, enjoy comparative immunity from gout, as distilled liquors are generally drunk by them; Van Swieten states that in Holland gout was but little known until wine was introduced as a substitute for beer.

Lunatics regarded wine as the sole instigator of gout among the Laplanders, who partook plentifully of malt liquors, without ever thinking of such a disease. The wines ordinarily drunk in this country, as port, sherry, are the most potent in their influence, whilst the lighter wines, as claret, roths, muscari, &c, can harm one very, although capable of acting as the inciting cause of an attack in gouty subjects, lane, when taken in moderation but little power in inducing this disease; but if the finer qualities of these wines be taken in combination with use of animal food, gout is by as manifestly in manifest itself.

Stout & porter come next to wine in predisposing to gout, for the most acute & invincible forms of this disease are
met with, in London, amongst men connected with large
breweries. They also have a similar power.
Cider & similar beverages it appears will also act to some
extent as predisposing causes.
In drawing a close the causes of faint it may be stated
that all depressing influences—great fatigue, overwork, mental
anxiety, poverty &—may cause an attack, in one predis-
pposed. The spring is the season in which the disease is most
apt to occur, while the autumn ranks second. Plumbers,
painters, others who become the subjects of lead poisoning
are the particularly predisposed to faint.

Treatment of Faint.

Not to prolong my paper by discussing the
views of the ancients on the treatment of this disease, or
give the different opinions of more modern authors, I
shall give that by Dr. Jenner which is as brief, as the same
time correct, as this subject will admit of.

The treatment of faint naturally divides itself into that
proper during an attack, that the adopted in the interval.
That this malady is curable there is no doubt, though it has
been—has Dr. Jenner insist—ever will be—the opportune
medicines, if extirpation by means of the medicines of the
Pharmacopoea be only aimed at. The fit may be mitigated,
shortened, to the cutaneous by drops; but only temporary
relief from this source must be looked for.

It is generally considered that bleeding during an acute attack is unnecessary. Dr. Gairdner well observes: "I am convinced that bleeding to such an amount as is customary to subdue inflammation, are much too avoided in fact. Those who prescribe them will not fail to find out, in a very short time, particularly in London practice, that they have sacrificed their best resource in the cure."—namely the strength or stamina of the patient. I have made a long series of distressing cases, where they meant to make a short & brilliant cure." Although, however, depletion is in every way contraindicated, yet this physician states that he has often found a very small blood-titly (true not four ounces) productive of the greatest good by relieving the overloaded heart, congested spleen, but I would advise that even this be practiced with very great caution. Leeches are sometimes applied to jointy joints, but I have very rarely seen any benefit result from the practice. Laxatives must almost always be given; not violent, but mild and aperient, such as aloes, opium, atractylodes, jalap, &c.

The compound aperient mixture will agree well. Anthony White, who had much experience in the treatment of this disease, maintained that the liver was the organ in which the poison of gout was elaborated; hence that the physician's chief object should be to restore the natural functions of this gland, as indicated by a copious discharge of bile through the bowels. He relied almost exclusively on the
one of a pill made of one grain each of calomel, colchicum, alun, & hellebore; which at first was given six times a day, & afterwards every eight or twenty-four hours, according to circumstances.

Diuretics and Irrigotetics. - There can be no doubt that they often do great good. Hence we may give the acetate, citrate, or citrate of potash; we may administer some preparation of opium; & often we may employ the hot air or the fomentation bath with advantage. But in all these cases, speaking generally, with these remedies we must combine colchicum, since there can be no doubt that it may be regarded as a specific for the gouty paroxysm. It ought not to be administered till the bowels have been well opened; & it must be given first (as often recommended) so as to raise purgative, but in small doses, easily borne without pain or inconvenience.

Ten or fifteen minims of the tincture three times a day, in warm water, or with lactic acid or alkalies, or with hydrochloric muriatic acid, will often suffice. The affected limb must be kept elevated & warm; & the painful part should be covered with cotton wool soaked with, or else with an anaesthetic lotion or a poultice or which some extract of belladonna has been spread, or some tincture of opium sprinkled. It is only in cases of chronic gout that small blisters can be of any service. If the foregoing local remedies fail but little belief they can do no harm, which cannot be said of cold applications. Several cases are known where death has occurred in a few hours from patients plunging their feet into cold water, with the idea of cutting chill
The diet, and lastly, during the early stages the diet must be light, consisting of millet, arrowroot, tea &c. Delicate may be taken with advantage. But when the fever has diminished, beef-tea, fish, poultry, may be gradually allowed; with perhaps a little good sherry or whisky well diluted.

How are we to prevent the return of gout? — Clearly, by enforcing the observance of a well-regulated diet; by exciting a type of indulgence for one of bodily activity; by adopting early & regular hours; by avoiding too great indulgence, as well as by omitting all severe mental application, & by the aid of medicine. Staying the disease will not cure it. An animal & cephalic diet should be used; the point being to take care that, both as regards quantity & quality, the stomach can digest, & can consequently extract healthy chyle from the material put into it. All porter, & our heavy wines, especially port, are injurious; whisky or gin & water may sometimes be allowed. It is very fortunate also, that some light wines, such as claret &c., may be of service. The best medicines will be a wine of turmeric occasionally, & some of the neutral salts frequently used. The urine, tartrate or potash of potass, are valuable, taken in very small doses, in half a pint of water, once or twice a day; or a bottle of weak water may be drunk in the twenty-four hours, or a tumbler of the above infusion of the leaves of the common ash; 1/3 of the leaves infused in a pint of water — may be taken when empty stomach, night & morning. During the last two or three years Dr. Garrod has made many trials of carbonate of mustard as an internal remedy, both in cases of uric acid diarrhoea.
connected with gravel, & in chronic gout. When given internally, in doses of from one to four grains dissolved in plenty of simple water, of
arated water, is repeated two or three times a day, in patients widely ureic acid gravel, it causes the deposits to become soft, or even to cease
all together. If a large amount of alkali be desirable, the carbonate
of soda may be prescribed in combination with the carbonate or citrate of potash.

Treatment of Chronic Gout.

We must regulate the diet, maintain the proper action of the bowels to
help, short broads remedies as calcium, alkali, iodide of potash, quinacrine, etc. In weakly subjects, when the disease lingers about
the system, tonics, such as quinine drachm, do much good. Dr. Green
Welles says that the chalk stones may often be dispersed by the ad-
ministration of the iodide of potash, which professes the power of
dissolving urate of soda; while local friction with some salt will
often do good.

After an attack of gout the patient should take a thorough
holiday. A visit to some of the mineral waters — to Bath, Builston,
Cheltenham, or Lutonington; or for a greater, therefore perhaps
better change, to Wiesbaden, Lichy, Carlsbad, or Aix-la-Chapelle,
will be productive of the greatest benefit.

— Finis —