On Gout

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On Gout — The term gout is applied to a specific inflammation which attacks most generally persons who have lived gaily, taken little exercise and much fermented liquors. It very rarely occurs before the age of 30 or 35, and attacks men much more frequently than women. Spring and Autumn are the most common seasons of attack, but persons who have suffered frequently from it are not altogether preserved from its recurrence in the summer. The gouty paroxysm is most generally preceded for several days or weeks by various symptoms indicating disorder of the digestive organs. The most common symptoms are flatulence, irregular appetite, heartburn with acid or astringent eruptions, constipation, scanty high coloured urine, becoming muddy on cooling. But the preceding symptoms vary in different cases and appear to depend much on idiosyncrasy, many persons being made aware that they are about to have an attack by some symptoms peculiar to themselves.

Acute gout — The first attack of gout generally comes on a few hours after midnight, and commences with pain most commonly affecting the first joint of the great toe of one.
foot but sometimes the heel, ankle or instep.
The pain at first not very severe is attended
by chiliness and shivering but these soon abate
and are followed by heat, whilst the pain goes
on gradually increasing. It is described as
resembling the crushing of the joint, tearing of
it asunder, the gnawing of a dog. After a
while the part affected becomes so exquisitely tender
that the patient cannot bear the weight of the bed
clothes upon it nor the shaking of the room from
a person walking in it. So it restless and toils
about from the violence of the pain and frequently
changes the position of the foot expecting to find
relief from some particular posture. In slight
cases the pain abates towards morning and the part
is found red, swelled and tender with its veins
turgid, but often the pain increases until the evening
(having lasted twenty four hours) and now the part
is found more swelled and edematous. A perspiration
comes on, the symptoms suddenly remit and the
patient goes to sleep. The same series of symptoms
recur next night and undergo remission next
morning and in this manner the disease goes on
with alternate exacerbations and remissions for a
week or ten days and then disappears altogether.
and as bullen says “leaves the person in very perfect health, enjoying greater ease and alacrity in the functions of both body and mind than he had for a long time before experienced.” During the paroxysm there is loss of appetite, increase of thirst, the bowels are constipated, the urine deposits an coloring a brick dust sediment, consisting of unite of soda, the phosphoric salts, and nasa in various proportions. After the fit the edema subsides, the inflamed cuticle peels off, the desquamation being attended by itching. When recovery has taken place the functions of the joints which have been affected are not sensibly impaired.

It is seldom that more than one joint is affected by the first fit, and that in a great proportion of cases is the first joint of the great toe. Sir Edward found this the case in 130 of 193 instances, and he thinks that the exceptions to the toe being the first joint seized are chiefly found in the cases where the disease has been acquired.

The gout having once occurred there is ever afterwards a tendency to its recurrence, and very generally it does return. The frequency of the subsequent attacks will depend on the continuance or otherwise of the habits which have given
rise to them, on the degree of hereditary tendency, and on the treatment employed during the intervals. During the first few years, the fits are annual and confined to the first seat of the affection, or to it and the toe of the other foot; but afterwards other parts become affected, as the heels, ankles, insteps, knees, elbows, wrists, either in turn or several of them together; the constitutional disturbance and local inflammations becoming more severe and protracted, the latter leading to effusion into the capsules of joints, bursae, and sheaths of tendons. When the disease is thus fairly established, the premonitory symptoms of a paroxysm are much more characteristic than those of the earlier fits. Together with the functional disorder before mentioned, there are usually gouty twinges in the part about to be affected; stiffness and stiffness of the feet after exercise, and suppression of their accustomed perspiration; and sometimes cramps in the gouty limbs.

Chronic gout: In this form the inflammation is more slight, irregular and wandering, but of longer duration than in the acute, and attended by less severe pain, less redness and by permanent oedema, distension, and impaired motion of the
parts affected. The general health is more impaired, the complexion sallow, the countenance haggard, there is great languor, debility, and depression of spirits, the appetite is uncertain, digestion difficult with much disposition to heartburn. Palpitations of the heart are very common. Chronic gout is generally a consequence of the acute, occurring after one or more attacks, either when the paroxysm has not passed off by a regular crisis, or when repeated attacks have so weakened the constitution as to render it incapable of manifesting ostensive action. But it may however occur primarily and follow its usual course without ever having been preceded by the acute gout. The frequent occurrence of gout in the hands or feet gives rise to effusions around the joints, immediately beneath the skin, of a semi-fluid hydrated lithate of soda, the fluid parts of which become gradually absorbed and leave the salt in the form of solid friable concretions which become increased in size by the addition of effusions of successive paroxysms and also from the gradual deposition of lithate of soda during the intervals. It has been ascertained by the directions of Mr. Watson, Mr. Mon. and Dr. Parry that this chalky matter is deposited
not within the joints, but in the cellular tissue, exterior to the periosteum and the articular capsules, especially at the extremity of the bones. But in a case mentioned by Mr. Herbert Barker the deposition took place between the article and cutis and occasioned deep intractable ulceration. The concretions do sometimes but very rarely within the capsular ligaments; such cases lead to absorption of the cartilages and distortion of the phalanges. These gouty concretions may remain a long time without much addition and cause no further inconvenience than impeded motion of the parts they surround but very frequently by their pressure they cause violent inflammations and troublesome ulcerations accompanied with a discharge of lithate of soda from the ulcerated surface. As well as the joints, which are the most common seats of gout; many other external parts are liable to gouty inflammation as the aponeurosis of muscles, the sclerotica, cartilages of the nose, eyelids and can the periosteum the tunica albuginea of the testicle; also some of the viscera. Morgagni suffered from ophthalmia, which he inferred to be gouty from its not running the usual course of common...
inflammation, and from its immediate subsidence on the development of gout in the extremities.

Mr. Barnes of Exeter states that in persons afflicted with gout operated on for cataract, gouty inflammation often attacks the eye and causes blindness, either by acute inflammation with rapid effusion of lymph into the vitreous humour, or by the slower but equally destructive process of repeated inflammation of the sclerotic.

Gouty persons are peculiarly liable to various internal complaints; derangement of the functions of the digestive organs, of the heart and lungs, brain and nerves.

The most common of these disorders is indigestion, denoted by its various symptoms, of impaired appetite, sickness, vomiting, flatulency, heartburn, acid eructations, gastrodynia. Pains and cramps occur in several parts of the trunk, and shoot from thence into the upper extremities and are relieved by the extraction of wind from the stomach. The bowels are irregular, sometimes there is colicky diarrhea but more commonly constipation. The patient is apt to be very dejected in spirits and hypochondriacal. When the lungs and heart are affected there are palpitations, fits of dyspnea, faintings, or even attacks like those
of angina pectoris. In the head occur giddiness, transient affections of vision, and of the hearing, threatenings of palsy and apoplexy. It is disputed whether these disorders occurring in gouty people differ in nature or treatment from similar disorders in persons not gouty. Dr. Barlow says they do not.

Sir C. Fradomore describes them as "disordered functions of internal organs in a gouty constitution and thereby modified in their character," and Dr. Eepland maintains that many of them are specific affections upon the grounds that gouty inflammations of the eye are different in their visible characters, their seats, and their consequences from common ophthalmia and require different treatment. Dr. That the appearances consequent upon fatal internal disease in gouty persons is conclusive of a material difference between them and those following more common maladies 3ly. The juvantic and laerdenta in the former are often very different from those in the latter.
Whatever their nature these functional disorders have been so frequently observed to precede a paroxysm of gout, and to be removed by its occurrence in an open form, that they are probably to be considered as depending on the same general cause prevailing in the system, and hence they have been regarded as indicating one variety of irregular gout, classed by Cullen under the head of "Atomic gout". Sometimes the gouty inflammation in either its acute or chronic form will rapidly disappear from an external part, and as suddenly symptoms of severe and dangerous disease will arise in an internal organ. In other cases an internal organ may become affected the external gouty inflammation not disappearing entirely at once, but being much mitigated. This constitutes what Cullen termed Retrocedent gout. It has been a question whether the internal disorder arises from a suppression or subsidence of the external affection or whether the latter disappears in consequence of the occurrence of the former. Dr. Copland says "either may take place as evinced by the succession of morbid phenomena in different cases, the development
of disorder in an internal organ deriving it from external
pains in some instances, and the suppression of an
external manifestation of a constitutional disease
determining it to an internal predisposed viscus
in others." The stomach is more frequently the
seat of retrocedent gout than any other internal
organ; the affection usually being denoted by
violent burning lancinating pain sickness or vomiting;
or sometimes extreme anxiety terror and irritation;
or spasmodic action and morbid sensibility.
In other cases the heart or pericardium is affected
there being pain in the region of that organ;
vigour palpitation, urgent anxiety, dyspnoea &c.
Dr. Cullen mentions strangury, catarrhous vesices
as not infrequently alternating with gout. Mr.
Howship gives instances of gout transferred to the
kidneys, the neck of the bladder &c. Apoplexy or
other symptoms of cerebral congestion, has been known
to come on quickly when gout has been expelled
from the extremities. Medical men differ in opinion
as to the nature of these internal affections connected
with the disappearance of gout; some maintaining
that they are always inflammatory, others that
they are sometimes inflammatory and sometimes
neuralgic. Considering the symptoms attending these
affections in different cases, for it is chiefly by them that we judge of their nature (since as yet we know little of the lesions produced by their morbid actions) the latter opinion seems correct. But it may be that what commences as neuralgia may terminate in inflammation. Of inflammatory affections we have gouty inflammation of the urethra and gouty ophthalmia.

When an attack of gout in the stomach succeeds to well marked acute gout of the extremities, it is generally of an inflammatory nature as indicated by the presence of the usual symptoms of inflammation. But not infrequently in chronic gout, a painful affection of the stomach (not inflammatory in character) alternates with gout in external parts. The pain attending is like that of cramp; and is usually relieved by pressure; the heat of the surface is not above the natural standard, and there is very seldom vomiting. It is obviously important that we distinguish these two forms of gout, affecting the stomach, as they require different modes of treatment.

**Diagnosis**

The only disease which can be mistaken for gout is rheumatism from which it may be distinguished by carefully considering all the circumstances connected with the two.
The gout is preceded by more disorder of the digestive organs, and the pain and fever attending it permit more distinctly during the day. It is comparatively seldom brought on by cold whilst rheumatism can almost always be traced to that cause. Gout affects the small joints and seldom more than one at a time, rheumatism the large joints and often many at the same time. The inflamed part in gout is of a deep red colour, whilst if any discolouration attend rheumatism it is just a faint blush. Edema of the affected part usually followed by desquamation of the cuticle very generally attend gout and are almost characteristic. In gout there are none of those acid trenching sweats which are present in acute rheumatism. It is doubted whether rheumatism be hereditary; but gout is distinctly so. Gout very generally affects the rich who live indolently. Rheumatism occurs among the poor who work hard.

Prognosis - In the acute or chronic gout when the inflammation is confined to the extremities, and the internal organs betray no serious lesion of function, or structure, we may in general expect that the paroxysm will terminate favourably. But when internal
affections occur either in the gouty diathesis or upon the sudden disappearance of the external of the external inflammation, they are always unfavourable in proportion to their severity and the importance of the organs they affect. When the stomach, the heart, or the brain is affected by retrocedent or misplaced gout, the patient is always to be regarded in great danger; such cases often tend rapidly to a fatal issue. But sometimes patients recover from such affections when prompt and judicious treatment are employed and when the constitution has not been much enfeebled previously. Upon the whole then gout must be regarded a dangerous disease, and one which tends to shorten the duration and diminish the security of life.

Causes — Hereditary disposition has always been held very influential in the production of gout. Sir T. Sedamore found that of 189 patients taken indiscriminately there were 105 whose father or mother or both were subject to gout; the remaining 84 were persons of parents free from gout and not allied to it by family. Dr. Budd remarks of this information: "Now if the children of gouty persons were not more subject to gout than those
of persons not gouty 105 to 84 would express the proportion which the former class bear to the latter; but it must be evident to every one, that even in that class of life in which gout is most frequent, gouty persons are a small minority, a fact which contrasted with the numbers 105 to 84 (showing the proportion of hereditary to those of acquired gout) demonstrates the vast influence of hereditary disposition. Dr. Holland says "that the liability in Sir Claudamores table of cases is chiefly perhaps in making the acquired cases too numerous from the frequent difficulty of obtaining proof of hereditary predisposition even where the fact exists." We find that the disposition to gout is more frequently derived from the father than mother. When both parents have had the disease a greater number of the children will experience it. But where one parent only has had it the child or children having most resemblance to that parent will be most liable to it. Age - The age by far most favourably for the appearance of gout is from 30 to 40. It very rarely occurs before puberty; Heberden who had for 30 years an extensive practice among the higher classes in London, never met with a case before the age of puberty. Beerhave mentions cases
of children suffering from it, here the predisposition must have been very strong. Dr. Gregory frequently met with it at from 18 to 20 years of age. It does not often occur for the first time after 60.

There is a particular form of body described as predisposing to gout. Cullen says "It attacks especially men of robust and large bodies, men of large heads, of full and corpulent habits, and men whose skins are covered with a thicker nata mucosa which gives a coarser surface." Branca states that the gouty conformation consists of a large and full body, voluminous head, large bones and thick skin.

Sex: It has long been known that women are far less liable to gout than men. Hipocrates said it never occurred in women before the cessation of the menstrue, but that observation has been found incorrect. Dr. Gregory mentioned "that females subject to gout had experienced menorrhagia or had become pheatoric from inurigation."

The comparative immunity of women from the disease is to be ascribed to their temperate habits, to their being of less sanguineous temperament than men and probably to the influence of menstruation. But some authors believe
that females have exemption only from the outward form of gout and not from the diathesis. Dr. Holland says: "We have no just reason to presume that the gouty diathesis is absent from the female constitution because not showing itself in similar or recognised shape. The presumption, as derived from the hereditary nature of the disorder and other observations, is widely different." Certain habits of life cooperating with the causes I have mentioned are known to be very influential in the production of gout: high feeding, great consumption of animal food, the habitual abuse of spirituous liquors and sedentary habits are the most efficient of these; and their influence is strikingly manifest when contrasted with the habits of a class of persons known to be exempt from gout. I mean agricultural labourers who from necessity partake of little animal food are habitually temperate and work hard. Cullen says that gout never attacks those following laborious occupations, or who live chiefly on vegetable food, or use neither wine nor other fermented liquor. Numerous instances have been remarked of persons who during a life of luxury and indolence
had been subject to this disease but had never afterwards suffered from it when their circumstances required them to live abstemiously. In countries where animal food and intoxicating liquors are little used, gout is almost unknown. It is difficult to estimate separately the influence of large quantities of animal food, the abuse of malt liquors and of wine in the production of gout because these causes are generally associated together; but we have information which shows that each of them has considerable influence in producing gout. The habitual free use of animal food occasions plethora. It also favours (as proved by the experiments of Magendie) the production of the lithic acid diathesis, a condition so often associated with gout that some authors suppose the two diseases essentially connected.

There is difference of opinion as to whether malt liquors or wine tend more to produce the gouty diathesis. The influence of malt liquors is especially manifest in the examples of gout which occur among the lower classes. Dr. Budd says that gout is common among the “ballaster” on the Thames, that although they are not a numerous body many are admitted with
with gout every year into the "Dreadnought" these men being much exposed to inclemencies of weather, and using great bodily exertion, which is attended with profuse sweating and much exhaustion, have in consideration of this a large allowance of liquor. Each man drinks two or three gallons of porter daily (besides a quantity of spirits). This immoderate consiption of liquors forms the only exception as far as relates to food that the "ballasters" have to the general habits of the lower classes in London. This fact seems to shew that no amount of bodily exertion can counteract the influence of such large doses of porter. The "ballasters" are derived from the peasantry of Ireland, they can rarely therefore inherit a disposition to gout.

All agree that the abuse of wine is a very efficient cause of gout. The strongest wines such as port and Madeira are said to be most powerful in disposing to gout; but the light and sour wines more readily excite a paroxysm.

It appears that distilled spirits taken exclusively do not powerfully dispose to gout. The gin drinkers among the lower classes in London very rarely suffer from the disease, and it is said to be little known in Glasgow among merchants who live richly, lead
sedentary lives, and partake freely of rum punch.

Strong exercise remedies in some measure the bad effects of intemperance in eating and drinking by promoting the excretions of the body; but indolence on the other hand assists the operation of those causes by favouring repose.

It must be remarked that although the free use of wine be powerfully disposed to gout, the avoidance of these things will not in every instance prevent the occurrence of the disease; hereditary disposition may be so strong that gout may come on without the cooperation of indulgences which can be accounted culpable.

Exciting causes. When the gouty diathesis is already formed a paroxysm is very readily excited by excessive indulgence at the dinner table. In many habits the attacks have relation to the amount of animal food used in diet. Dr. Holland mentions the case of a patient in whom even a moderate meat meal for three or four consecutive days never failed to bring on painful swelling of the joints. &quot;The abuse of wine is the most influential of exciting causes and champagne excites and attacks more readily than any other wine. Strong malt liquors will also bring on a paroxysm. Fatigue and
external injury not infrequently produce an attack, and the injured part is usually its seat, especially in the case of sprains or contusions. Cold is comparatively the exciting cause. Dr. Bulwen enumerates sundry debilitating causes which as such appear to operate in calling into action the gouty disposition. And Dr. Todd has published cases which show that a low and depressed state of the system is favourable to the development of the gouty paroxysm. A peculiarity has been noticed in cases of this kind, namely that the urine does not exhibit the abundant precipitate of the lithates which so often accompanies the gouty paroxysm. In some cases there is no precipitate at all and in others it is very slight; and the specific gravity of the urine is rather below than above the ordinary standard, indicating that no excessive quantity of either uric or lactic acid is held in solution.

Pathology. We have mentioned that the paroxysms of gout give rise to important lesions which affect the ligamentous and tendinous structures, and the synovial capsules. We have seen that the principle morbid change is effusion of fluid into
The capsules and into the cellular tissue adjacent to tendons and ligaments; that the effusion is attended with pain, redness, swelling and fever; circumstances which point out the inflammatory nature of the affection, while the course and products of the local inflammation prove it to be of a specific kind. But we cannot regard gout as merely a local affection, such a supposition will not explain its sudden shifting from one place to another, nor the simultaneous affection of several joints, nor the constitutional disturbance which precedes the gouty attack, nor the train of symptoms which constitute the gouty dathesis. Nor can we regard it to be a peculiar affection of a particular class of textures, for although the fibrinous textures are most liable to it we have seen that it is not confined to them. We agree in the opinion held and very ably supported by several modern writers, that gout is a blood disease; that the phenomena of it are due to the presence of some morbid agent generated in the blood. There are several circumstances which show this opinion to be very probably correct.

1. The symptoms attending it are of similar or analogous kind to the phenomena of some diseases admitted
To arise from the presence of a morbid matter in the blood. 

Dr. Todd has pointed out a close resemblance in the phenomena of the exanthemata, of syphilis when it comes to affect the blood, in the symptoms produced by pus or other morbid agents formed in, or introduced into the blood, as dead animal matters, the fumes of lead, sugar as in diabetes, urea as in "Bright's disease," to the symptoms attending gout. Comparing for example the exanthemata with gout we find the leading characters similar. In the former we have fever, pains in the limbs, affecting the joints, skin eruptions from the fixation of poisonous matter in particular points, as in scarlet fever, the sore throat, in measles the pulmonary affections.

In the latter, the joints suffer the functions of the skin are impaired, the hepatic and renal secretions deranged, and certain organs are apt to be secondarily affected as the stomach, the heart, the lungs, the brain, the eye.

Dr. Joly. The hereditary nature of the disease is in favor of its humoral origin.

Dr. Alison remarks "that there must be some peculiarity in the chemical constitution of the blood in this disease, disease appears most clearly"
not only from the peculiarity of the deposition from the inflamed parts formerly noticed, but from the fact that those who drink only distilled spirits, although living in other respects as similarly as possible, and although becoming pellagous, are affected in a proportion very much less than those who drink fermented liquors. On the other hand, those who drink fermented liquors as cheap as the London coalheavers, although in other respects particularly as regards exercise, in circumstances generally favourable to avoiding the disease are frequently affected by it. We think Dr. Allon reasons sufficiently bear out his conclusion.

The doctrine of the elective affinity between certain tissues or parts of the body, and certain morbidic principles conveyed to them by the blood, applied by Dr. Budd to elucidate the fact of the symmetrical local manifestations of many disorders, which derive their origin from the circulating fluids, deserves further investigation. The phenomena of gout accord exactly with Dr. Budd's theory as communicated to the Medical & Chirurgical Society; and if the theory be true, it throws great light on the pathology of gout.

From the circumstances that the blood in gout
contains excess of uric acid and urea, that these substances are more abundant than usual in the urine; that lithate of soda is sometimes deposited in parts affected with gouty inflammation, and that a large proportion of those who have gravel are also subject to gout; it is believed by some that uric acid, which is prone to be deposited in the vessels of tendons, ligaments &c. under the influence of a stronger acid, taken into the stomach or formed in the system, is the cause of gout. Dr. Petit regards uric acid the materia morti. But uric acid may be present in excess in the blood as the result and not the cause of gout. The urate of soda deposited in ligaments &c. may be a mere product of the inflammation. There are many cases in which there is no connection between gout and gravel.

We know that the same causes which give rise to the lithic acid diathesis namely indolence, good living and little exercise are equally favourable to the production of the gouty one, and experience has proved that the former not infrequently passes into the latter. But we think gout cannot be regarded as dependent on excess of lithic acid in the system, with a free acid, for two reasons, first because these conditions may be present for a considerable time.
(as in febrile affections and dyspepsia) and no symptoms of gout occur. By gout may be present as we have seen, in low states of the constitution where there is no excess of lithates in the urine.

The theory of Liebig advocated by Dr. Bence Jones requires our particular attention, not for the further consideration of the question whether uric acid be the materia morbi in gout, but as to the cause of excess of uric acid in the system—the source of uric acid. We have remarked that the lithic acid diathesis and gouty diathesis are produced by the same causes. We shall see that one point in Liebig's theory is that vegetable food favours the lithic acid diathesis—now if this be correct medical men are in error in directing the diet of gouty patients to be chiefly vegetable.

It is affirmed by Liebig's theory, that excess of uric acid in the system is due to deficiency of oxygen—(Liebig regards uric acid to be the immediate product of the metamorphosis of the albuminous tissues, and uric acid the secondary product arising from the action of oxygen and water in the uric acid) that when oxygen is supplied in due quantity uric acid is nearly all decomposed and converted into urica. "The uric acid disappears in the urine of man when he receives through the
skin and lungs a quantity of oxygen sufficient to oxidize the products of the transformations of the tissues. "Liebig's Org. Chemistry of Physiology" p. 189. So that little of it appears in healthy urine and in carnivorous animals largely supplied with oxygen it disappears altogether. The free acid in the system is said to be lactic acid formed in the stomach.

It is asserted that the non-nitrogenised elements of our food interfere with the conversion of uric acid into urea by monopolizing a great part of the oxygen. According to this other circumstances being equal the uric acid in the urine should increase when a man takes food rich in carbon, and decrease when he confines himself to a nitrogenised diet. Further the proportion of uric acid will decrease and urea increase with the perfection of respiration and the abundance of blood, the carriers of oxygen. But Schmanner's experiments show that a vegetable diet, and one quite free from nitrogen decreases and an animal diet increases the quantity of uric acid—urea also increases. Schmann when living on a diet as free from nitrogen as possible excreted 11.24 grains of uric acid and 237.19 grains of urea in 24 hours. But on confining himself to an animal diet he excreted 22.64 grains of uric acid and 819.2 grains of urea being 11.4 more of uric acid and 582 grains of urea than can be accounted for by metamorphosis of the tissues.
One mixing vegetable food with his diet he did not find that uric acid increased as should be according to Liebig, but on the contrary this substance decreased both in actual amount, and in ratio to urea.

Magendie found that uric acid disappeared from the urine of carnivorous animals fed for about three weeks on non-nitrogenised food. The urine of carnivorous birds highly oxygenated animals—appearing to present (according to Liebig) views the condition for the total conversion of uric acid into urea—consists of urate of ammonia.

We have no proof that uric acid bears any definite relation in quantity to urea. Dr. Proux considers urea derived from the metamer: phos of gelatinous tissues and not like uric acid from albuminous tissues.

The observations of Beauregard have shown, that in chlorosis a disease in which the deficiency of oxygen is obvious, uric acid which ought to be increased (on Liebig's theory) is positively and relatively decreased. The same thing is observed in pulmonary emphysema.

For the reasons we have stated, Liebig's theory must at present be regarded unsatisfactory. Schmann's experiments and other observations make it most probable that uric acid has a double origin, one from the metamerisation of the albuminous tissues and the other from the elements of nitrogenised food which escape the completion of the
prosec of primary affuliation.

In regard to the materials morti of gout, we do not at present know its nature, we must still wait the "longioris esse diligentia" for the solution of the difficulty.

Treatment The circumstance that improvement of health is usually observed to follow the first attack of gout, has led many persons to believe the paroxysm a salutary process, which it is unwise or dangerous to interfere with. Many have even believed the paroxysm beneficial in proportion to its severity and those opinion have endeavoured to encourage its development by exciting applications. But improvement of health follows only the first few attacks, and even of those it is by no means a constant result, as Heberden remarks "The health will sometimes begin to decline even from the first fit and gradually sink from that time, under the usual signs of an irreparably shattered constitution, when though there might be some doubt whether the gout occasioned the mischief, there could be more that it did not prevent it." And so far from violent fits being beneficial we
find that the more violent, and the more frequent, they are the sooner do they break up the general health, and lead to lamentable disorganisation of the joints. But medical men at the present day know well that much can be done by judicious treatment, by remedies which operate on the matter of disease, changing its constitution, or promoting its excretion, and so check the paroxysm, for the prevention of these evils. On the other hand experience has shown that it is dangerous to suppress the local inflammation of gout, by means which do not remedy the disease in the system, as by the local application of cold and administration of opiates &c. which, by repelling the external inflammation, or preventing its manifestation, dispose the morbid action to internal parts. We believe the bad results of such treatment, have led to the unwillingness of some medical men to interfere with the paroxysm of gout, by any means whatever.

When an acute attack of gout comes on in a person of full habit, if there be much fever, and intense local inflammation, it is proper
and advisable to commence the treatment by a moderate general bloodletting with the object of moderating the fever, relieving the severity of the local inflammation, and diminishing repletion. But profuse bloodletting should never be practiced—it has long been known to favour metastasis to internal parts. Purgatives may afterwards be given with benefit and perhaps the most suitable of these is the blue pill; followed after some hours by a black draught, and these to be repeated at proper intervals if the countenance does not show or there is any sign of hepatic derangement. This treatment conjoined with low diet and the use of diluents mitigate the symptoms and prepare the way for the use of colchicum as a safe and efficacious remedy for the completion of the cure. The power of colchicum to arrest the paroxysm of gout is undeniable but this temporary benefit is represented by some to be obtained only at the risk of inducing irregular or atonic gout or organic diseases. Dr. Christian remarks: "This opinion has not been substantiated. Many individuals having reached a good old
age though in constant habit of checking their fits of gout by Colchicum; and the relief obtained in most instances is so prompt and effectual, that a patient who has once experienced it will not easily be deterred from seeking it again by such remote and uncertain evils." (Dispensatory, p. 364.) Sir A. Haldane states that he has never known a single instance of untoward effect from its use, and affirms that gout does not return more quickly after its use than when treated by other means, or left to its own course. We confide in the opinion of Sandeman Barlow &c., that it is only when Colchicum is used to the exclusion of other means without observance of proper diet and left off on the first subsidence of local symptoms; that gout returns more quickly after its use. It is important to consider the physiological effects of Colchicum as they suggest important rules for its use. In large doses it occasions severe vomiting, urgent diarrhea, colic, and heat in the abdomen; and great depression of the circulation. In smaller doses it is a sedative cathartic and diuretic. It increases greatly the secretion of urine even when it does not increase the urine (MacIgdon) and this effect has been particularly observed to attend its therapeutic action in cases of gout.
We may derive a caution from the actions of colchicum on the stomach and bowels against its use in too large doses, for if allowed to produce violent irritation in those parts gouty inflammation might probably thereby be induced to affect them. When therefore distressing nausea, or violent purging supervenes colchicum should be kept off until these effects have subsided.

How colchicum cures gout is not yet determined. Dr. Christiano thinks its effects probably due to its sedative action but general opinion assigns to colchicum a specific action over gout. Dr. Holland argues for "a specific influence on the secretion of urine involving an alteration in nature or proportions in the animal matter excreted through this channel from the blood."

If in acute gout the fever and local inflammation are not urgent general bloodletting is not necessary. We may treat the case from the first with colchicum and the cure obtained by it will be speedy, and if the remedy be long enough continued as permanent as if effected by other means. We may commence by giving 20 drops of the wine of the root with 15 grains of carbonate of magnesia, twice a day in some
aromatic water. And if this agree with the patient the dose may be increased to 30 drops. It is seldom necessary to go beyond this quantity. In this way the pain is usually calmed and the swelling reduced in a few days. But it is necessary to continue this medicine for many days after the symptoms have entirely ceased. As explained by those views of the pathology of gout which show that removal of the local inflammation and attendant fever is not to be regarded a complete cure. We may however diminish the dose and increase the length of interval. Local treatment in acute gout is generally not necessary and not very efficacious. In all cases perhaps it is sufficient merely to cover lightly the gouty part and relieve it from the weight of the bed clothes. Heberden justly discontenances the practice of wrapping a quantity of flannel around the limb.

The diet in acute gout should be much the same as in other febrile diseases, while there is much fever it should be restricted to diluents, toast and water weak tea. In convalescence the bowels should be kept regular by the use of a mild warm purgative and the diet should be light and simple. Exercise of the parts that have been affected (which
however should be attempted very gradually lest a fresh paroxysm be induced) is beneficial by promoting the absorption of effusions. A bandage also is useful if there be edema.

In chronic gout the treatment must be much less active. Direct depletion would be very injurious in this form as there is usually much debility. When the constitution suffers from these symptoms we have before described as constituting the atonic gout of Fuller. Tonic medicines and generous diet are required. And the beneficial action of these will be promoted by allowing the patient two or three glasses of good dry sherry daily. The Bath waters have long been held in high reputation in this form of gout. But in acute gout they are invariably injurious. Under the treatment just mentioned it generally happens that the body is strengthened the internal parts are relieved and gout settles in the extremities assuming a more frankly inflammatory character. When this object is attained colchicum given with due precautions produces admirable effects. In chronic gout unattended by much debility our chief reliance should be in colchicum which should be continued for some time after apparent cure.

If the secretion of bile be defective or the complexion
sallow. Blue pill followed by a mild purgative draught should be occasionally given. The diet should consist of farinaceous food; wine should not be altogether withheld where the patient has been accustomed to it but it must be taken only very moderately. In semi-chronic gout the use of mineral waters is sometimes remarkably successful. In retrocedent gout the objects in treatment are to relieve the suffering organ by remedies which affect it primarily and by others which tend to induce the gouty inflammation to the extremities. For the latter purpose stimulating pediluvia or sinapisms may be used. They should always be tried before very active measures are resorted to for the relief of the suffering organ, because they will sometimes so completely succeed as to render further measures unnecessary. The treatment of the organ affected will differ with the degree and character of the symptoms. When they are of an inflammatory kind the measures to be adopted are those most efficacious in relieving common inflammation of the part affected. In the gouty affection of the stomach (not inflammatory in character) which alternates with that of the joints in chronic gout stimulants are very generally successful.

Prevention. The chief means for the prevention of gout are temperance and exercise. Even when an attack of gout
has already declared the existence of the gouty diathesis. Perseverance in temperate and active habits will often wholly preserve from further attacks; but if it fail in this still their frequency will be lessened and severity diminished. Various medicines have been recommended for the prevention of gout. Sir Haldimand advises a few grains of rhubarb with double the quantity of magnesia every day, or some light bitter infusion, with tincture of rhubarb and fifteen grains of bicarbonate of potash. These various preventives are often useful by improving the digestive powers, but they ought not to be trusted to exclusively. They are dangerous substitutes for a course of temperance and exercise.