

Observations on the nature and cure of gout; on nodes of the joints; and on the influence of certain articles of diet, in gout, rheumatism, and gravel / by James Parkinson.

Contributors

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OBSERVATIONS
ON THE NATURE AND CURS
OF GOUT
IN
THE JOINTS

NODES OF THE JOINTS

INFLUENCE OF CERTAIN ARTICLES OF DIET

JAMES PARKINSON,

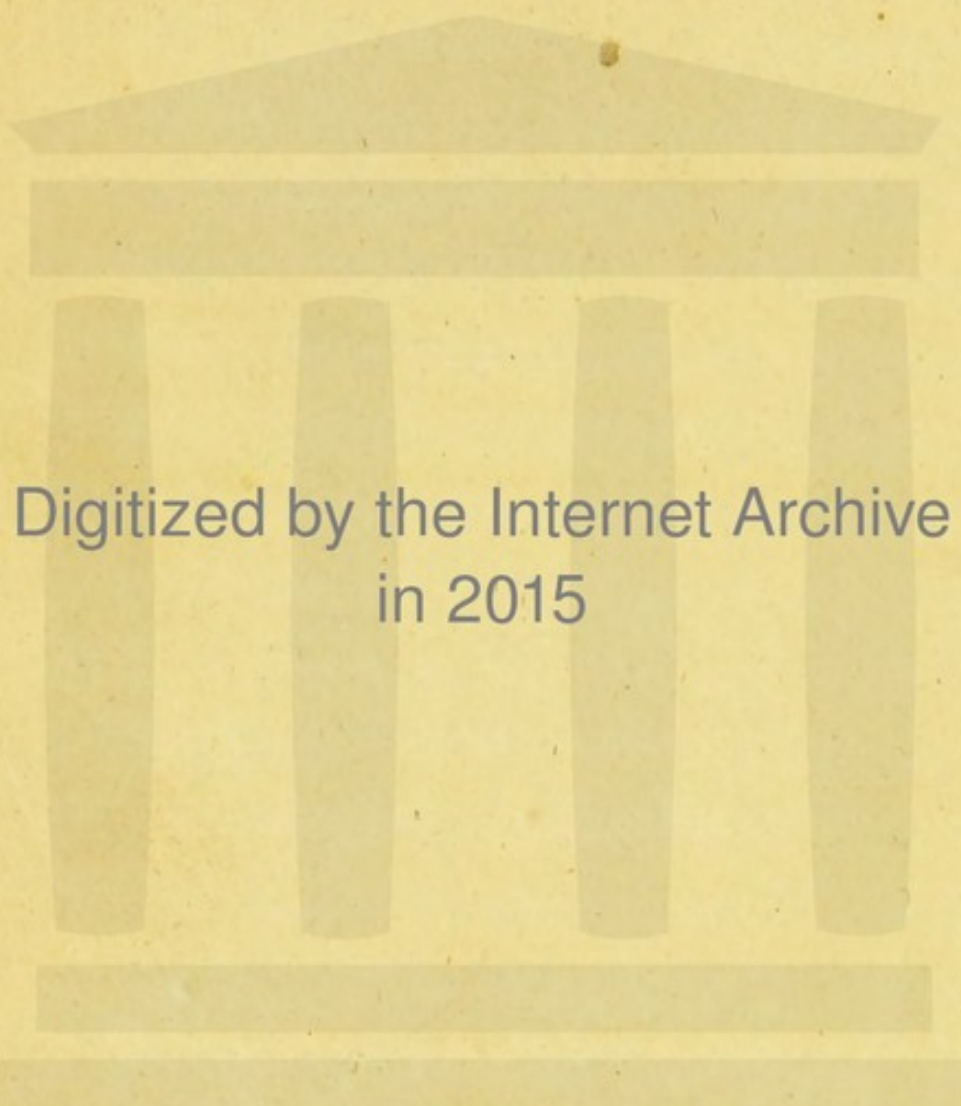
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OF THE HOSPITAL FOR THE SICK AND INFIRM

LONDON

Printed by J. JOHNSON, in Pall-mall.

1784



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OBSERVATIONS
ON
THE NATURE AND CURE
OF
GOUT;
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NODES OF THE JOINTS;
AND ON THE
INFLUENCE OF CERTAIN ARTICLES OF DIET,
IN
GOUT, RHEUMATISM, AND GRAVEL.

BY
JAMES PARKINSON,
HOXTON.

LONDON:

PRINTED BY C. WHITTINGHAM, DEAN STREET;

FOR H. D. SYMONDS, PATERNOSTER ROW; MURRAY, FLEET
STREET; ARCH, CORNHILL; AND COX, ST. THOMAS
STREET, BOROUGH.

1805.

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1802

PREFACE.

IT is upwards of thirty years since I witnessed, with great satisfaction, in the case of a much respected relative, the apparent cure of the Gout, by the use of the caustic fixed alkali. Appearances, for a time, promised an entire restoration to health; but subsequent events made it appear that there existed but little cause for exultation, and shewed, that the cure of Gout should not be attempted, without a careful regard to many circumstances which, in this case, had not obtained sufficient attention.

Nearly fifteen years ago, I experienced the mortification of finding, that I was also under the influence of this tormenting malady. Obligated to submit to the perform-

ance of the most laborious part of a harassing profession, and therefore dreading the serious inconveniences arising from confinement, I repeatedly risked, in opposition to the harsh remonstrances of my judgment, the free application of cold water to the parts suffering under gouty inflammation. But this, as may be readily conceived, was not done, by one who had often anxiously reflected on the nature of this malady, without a vigilant attention to its effects; nor without obtaining some additional information on a subject, which pain and inconvenience had rendered particularly interesting.

Attention to the discoveries of the illustrious Scheele, and to the very ingenious application of those discoveries to the illustration of the nature of gout and gravel, by Mr. Murray Forbes; with the suspicion that the immersion, in cold water, had

been productive of injurious effects, led to the employment of other means. The most important among these, was the fixed alkali, the beneficial effects of which appeared to be satisfactorily evident.

Since that period, one of the constituent parts of arthritic concretions has been ascertained by Dr. G. Pearson, and by Mons. Fourcroy; and the complete analysis of these substances has been published by Dr. Wollaston. These important discoveries rendered it evident, that the medicine which had been hitherto employed, in fact, empirically, was such as accorded with the curative indications, which would have been pointed out by a previous knowledge of this peculiar morbid production. This also led the mind to more rational conjectures respecting the nature and causes, not only of the Gout, but of the Gravel, and of some other diseases, whose

dependence on a similar state of the system, with that on which Gout depends, was hardly suspected.

I was frequently urged, by the hope of benefiting my fellow sufferers, to lay before the public the observations which I had made on this disease, and its several modes of treatment. But, fearing that the work might not prove of that utility which I expected; and knowing that every trifle from my pen must betray the unfavourableness of the moments in which they had been written, I was induced to hesitate. Besides, when I reflected on the strong opposition to a humoral pathology of this disease, which had been made by the justly celebrated Cullen, and when I considered, that the notion of this disease depending on a *materies morbi* was almost universally rejected, I hesitated at advancing a theory,

which would prove so highly repugnant to general opinion.

But the perusal of Dr. Kinglake's Dissertation on Gout determined my intentions. Strongly suspecting that the advice delivered in that work, with so much benevolence and zeal, must in many instances prove highly injurious; and believing that the observations which I had made might serve to prevent too general an adoption of that advice, I resolved on their publication. I hoped, that the observations of a fellow sufferer would not be unacceptable to the victims of this highly afflictive malady, especially when it should appear, that whilst I had witnessed in others the effects of the more generally approved remedies, I had freely employed on myself, those which had been considered as most likely to produce evils of a serious nature.

The hope also of rendering an essential benefit to the labouring part of the people, by making known the particular circumstances I had remarked, respecting the nature and cure of a disease, hitherto but little known, except to the sufferers*, was also a powerful incentive to this publication. That it may prove useful, is my first wish ; this accomplished, my anxiety for its fate, in other respects, will not be excessive.

JAMES PARKINSON.

Hoxton Square.

* Nodi digitorum, Gulielmi Heberden Commentarii de Morborum Historia & Curatione, p. 130.

ERRATUM.

P. 28, l. 6. *for Currie read Curry.*

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In almost every part of this globe, the remains of a former world are continually offering themselves, for the contemplation of mankind; teaching, that the planet we inhabit has suffered considerable changes by the ravages of an universal deluge, and by the influence of other causes, acting with vast power, and to a wide extent. Among these remains, the spoils of the vegetables and animals of those days are frequently discovered; evincing that several species of beings then existed, which are now entirely unknown, and perhaps extinct: their mutilated remains only being left to prove, that they once lived, and *were destroyed with the former world.*

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OBSERVATIONS,

8c. 8c.

CHAPTER I.

CHARACTERISTICS OF GOUT—PROXIMATE CAUSE PROPOSED—DISCOVERIES OF DR. WOLLASTON, DR. G. PEARSON AND FOURCROY—DISSECTION BY MR. WATSON—INQUIRY RESPECTING THE EXISTENCE OF A PECULIAR ACRIMONY IN THIS DISEASE.

GOUT is a hereditary disease, chiefly affecting, with pain and inflammation, parts possessing a ligamentous or tendinous structure. It most frequently attacks the joints, and particularly those of the hands and feet. It sometimes also manifests itself, by painful affections of internal parts, which often alternate with the affections of the limbs. It deposits, on the parts which it affects, a concrete saline substance, which is sometimes accumulated in considerable quantities, particularly on the joints of the fingers and hands.

The different forms in which this disease appears, have rendered it necessary to divide it into regular and irregular gout. In the former, the attacks of which are known by the denomination of regular fits of the gout, one or more joints of the extremities become inflamed, painful, and tender, and frequently in an exquisite degree. A symptomatic fever, proportioned to the degree of pain and inflammation, with evening exacerbations, accompany the other complaints, which distress the patient for uncertain periods, sometimes for several weeks. When the fit goes off, the joints, which have been the seat of the disease, are always found to have become rigid and inflexible, in proportion to the degree in which the disease has existed in them; frequently remaining enlarged, and incapable of free motion, for a considerable time. On the other hand, the patient, at the same time, experiences so perfect an exemption from disease, as generally to lead to the opinion, that the fit has occasioned the most salutary changes in the system.

In the irregular gout, the affection of the joints is much less confined than in the former. Sometimes it leaves the joints at first attacked, and fixes on some distant part; and sometimes, after harassing the patient, by making a circuit in-

cluding almost every joint of the extremities, the fit is terminated by a renewed attack on the part first affected. In some cases, the disease quits its situation in the extremities for a time, and occasions symptoms of a very alarming nature, by its attack on some internal part; this also abating on the return of the disease to the part which had been first attacked: this is termed, retrocedent gout. In other cases, in which there exist the most evident marks of a gouty diathesis, no affection of the extremities takes place, but complaints of a very anomalous kind shew that some internal part is under the influence of this disease: these may be regarded as cases of misplaced gout. A want of power and tone in the system appears to accompany both these states of gout.

The proximate cause of gout appears to be—a peculiar saline acrimony existing in the blood, in such a proportion, as to irritate and excite to morbid action, the minute terminations of the arteries, in certain parts of the body.

The humoral pathology of diseases, in general, having yielded to the numerous and powerful arguments, with which it has been opposed, it is not with the expectation of a prompt and implicit

adoption, that the above conjecture is offered, respecting the proximate cause of this disease. Strong arguments in its support, it, however, is hoped, will offer themselves, when the nature of the morbid matter, which is separated in this disease, and which has been ascertained by the indisputable evidence of chemical analysis, is considered.

Dr. Wollaston, in a paper read before the Royal Society, June 22, 1797, demonstrated that the concretions, which form on the joints of gouty persons, are composed of the lithic (uric) acid and soda; forming a compound salt, the lithiate or urate of soda.* Dr. G. Pearson, in a paper, read before the Royal Society, December 14, 1797, in which he relates the result of the analysis of upwards of three hundred urinary calculi, particularly mentions the existence of this acid in arthritic concretions. The word lithic, borrowed from the term *lithiasis*, he recommended to be changed to that of ouric or uric.† Fourcroy also, about the same time, discovered the uric acid in these concretions.‡

* Philosophical Transactions, for the year 1797, Part II

† Philosophical Transactions, for the year 1797, Part II.

‡ Annales de Chimie, XXVII.

When we view in a person who has been long subject to this disease, the prodigious quantity of this matter which has been separated from the system, forming almost all the smaller joints of the hands into white, and apparently cretaceous nodules, we are naturally led to the opinion, that the blood must have been preternaturally charged with this matter, or with the principles of which it is formed.

No case which has been recorded affords, perhaps, so remarkable an instance of the extent to which a morbid matter has been separated, in this disease, as that of which the dissection is given in the first volume of Medical Communications, by Mr. Henry Watson, surgeon to the Westminster Hospital.

The subject of this case had been a free liver in his youth, and became a martyr to this disease so early, that he might have been called an old man at forty. He died of gout at the age of fifty years; and had not been able, for a long time, to lie strait in his bed. His legs were drawn up to his thighs, and his thighs to his belly, his knees resting on his breast.

One of the great toes was found to be much

enlarged, and upon dissection the first joint of it was found to be inclosed in a bed of chalk-like matter, like a fossil shell : but the bone itself was neither increased in size, nor altered in its texture.

The joints of the fingers were also swelled and knotty ; every knot resembling a lump of chalk : and Mr. Watson was told, that when he played at cards, he used frequently to score up the game with his knuckles.

On the middle of the right tibia there appeared an oblong tumour, resembling a node, over which the integuments were very thin, and ready to burst : it was a mere deposition of chalk-like matter, between the skin and periosteum ; and though thick and large, had not as yet done any injury to the bone.

He had at different times, but more particularly a little before he died, complained greatly of violent excruciating pains in his head ; often imagining that he was falling, or tumbling down headlong. This of course led to an examination of the brain.

After sawing through the cranium all round, it was found impossible to remove the bone, without

also dividing the dura mater; which being done, the adhesion appeared not to be owing to the extraordinary depth of any of the furrows on the inside of the skull, but to an inflammation, thickening, and induration of the dura mater, and this Mr. Watson says, I think, will sufficiently account for those lancinating pains in the head, so grievously complained of.

The fasciculated texture, bordering on the sinuses, was remarkably strong. Here the glands, as they are called, were large and very distinct: the brain itself being as firm as wax.

The outer surface of the pia mater was smeared with a smooth mucus, of the colour and consistence of cream. The medulla oblongata and medulla spinalis were much firmer than any other part of the brain; the tunica arachnoides was thickened, harsh, and gritty; and the glandula pinealis quite destroyed; nothing remaining, but its membranous coat filled with concretions resembling very small pearls.

The body, though much emaciated, afforded an appearance of fat under the skin, at least two inches in thickness. The mesentery was loaded with fat. The stomach and intestines, though

pale, thin, and greatly distended by accumulated air, afforded no mark of particular disease. The spleen and pancreas were sound; the liver indurated and of a pale yellow colour; and with the gall bladder, buried in fat. The kidneys were small in size and filled with hydatids. The vesica urinaria was thick and contracted; but neither in it nor in the kidneys was the smallest particle of concremented matter.

When the abdominal portion of the aorta was brought to view by dissection, it was discovered to be ossified the whole way, from the diaphragm to the very termination of the iliac arteries.

The valves of the heart, with all the great vessels emerging from its basis, and the whole thoracic portion of the aorta, were perfectly free from ossification.

The lungs, though in a soft and pretty healthy state, were not without some slight marks of the disease; as a small stone was found in one of the lobes; but the bronchial glands, accompanying the trachea, were filled with gouty matter.

The joints of the lower limbs were so very rigid, that it was not without labour they were gotten

into such a situation as would allow of the getting to the abdomen. On examination, the cause of this contraction appeared to be evidently owing to the state of the ligaments, which were hardened, much thickened, and had lost their polished hue; while the synovia, like a mixture of chalk, oil, and water, was become as thick and as smooth as cream.

The cartilages were not much altered; nor were they marked with any grooves or ridges, such as are sometimes seen in gouty joints that have been exercised.

From this examination, Mr. Watson concluded, that the gouty matter has the strongest tendency towards the extreme parts of the body, and generally fixes in the greatest quantity, where the weakest impetus of the circulating fluids is most likely to leave it.

The foregoing case, in which so prodigious a quantity of morbid matter was secreted, either manifests that the urate of soda, described by Mr. Watson as chalk, was present in the system: or rather, that a peculiar saline acrimony existed, favourable to the formation of the uric acid.

No evidence indeed is likely to be adduced, to shew in what state, or in what stage of combination, the principles of this peculiar acid exist in the blood. To have the least chance of success in such an inquiry, a series of experiments would be required on the blood of the healthy, as well as on that of the gouty; and were these experiments even to be performed, with all due accuracy, yet positive information would hardly be obtained.

It is most probable that the uric acid would not be found to exist, formally, in the blood. A superabundance of the acid principle, only, might be detected in the blood of the arthritic and nephritic. That combination, from which the uric acid results, must be the work of some part of the animal system; since it is not known to exist in any of the substances which are employed as food. But in what part of the system this operation is performed, it is, perhaps, impossible at present to determine. It appears to be most probable, that a superabundance of its principles are introduced into the stomach, and thence passes into the blood, forming there a saline acrimony of a peculiar kind. But that peculiar arrangement and modification of its principles, from which its existence in the actual form of uric acid proceeds, is most probably the result of the action

of those vessels, by which it is also separated, and deposited in different parts, as the kidneys, ligaments, tendons, &c.

Among the astonishing powers possessed by organized matter, is that of directing and effecting those chemical combinations and decompositions, on which the existence of beings, animal or vegetable, depends. Hence do the different individuals, of the animal and vegetable kingdom, possess the power of reciprocally interchanging, and of reducing to their own nature, their several constituent parts: and thus may the vegetable acids be converted, by some part of the animal system, into the lactic, uric, or phosphoric acids.

It may, however, always remain as difficult to determine, on what precise state of the blood the formation of the uric acid depends; as to ascertain that peculiar state which is most favourable to the production of bile, or of any other secretion. Under this uncertainty, respecting the real deviation in the state of the blood, from that of health, it has been thought preferable to denominate the proximate cause of this disease, a peculiar saline acrimony, than to designate it by any term which might convey the idea of the actual existence of the uric acid itself in the blood.

Whether the uric acid naturally belongs to the human system, when unimpaired by the indulgence of injurious habits; or whether it entirely owes its origin to morbid changes, the consequence of some error with respect to the *ingesta*, must at present remain undetermined. At present, also, experiment does not furnish us with any thing positive, respecting the source of this acid, or of the matter from which its origin has been derived. Until we are thus aided, we must adopt such conjectures as the various circumstances attendant on the gouty diathesis seem to authorize.

It requires but little acquaintance with the sick to know, that impaired digestion is the most prolific source of acidity in the human system. In almost every case of weakened stomach, or of deficient digestion, acid eructations point out the faulty change which has been induced in the contents of the stomach. A considerable part of the aliment used by man is of an acescent kind; and in those cases, in which the gastric juice is not in a proper state, or in which the stomach is not endued with a proper tone, a fermentation productive of an acid appears to take place.

The fermentation which thus takes place in the

stomach has been hitherto regarded as the acetous, and the acetous acid has of course been supposed to be its product. But when it is considered that the food, whilst under the action of the masticatory organs, becomes thoroughly imbued with an animal fluid, the saliva, which has been secreted from the circulating blood, and which contains, with phosphate of soda, of lime and of ammonia, nearly a fourth part of albuminous matter; that upon reaching the stomach it becomes blended also with the gastric juice, another highly animalized fluid; and that it is also acted upon by the stomach itself, a doubt cannot fail to arise respecting the propriety of considering the fermentation which takes place in the stomach, as the acetous fermentation.

Farther reasons for this doubt will be found in the difference of time requisite for effecting the changes of the two fermentations. In the gastric fermentation, the changes are effected with much greater rapidity than in the acetous. Some days are necessary for the duration of the acetous fermentation before vinegar is produced; but, very frequently, within a few minutes after taking a glass full of weak wine, sour belchings will denote the formation of the morbid acid. The difference of the acids, proceeding from the two fermenta-

tions, affords another objection. The acid produced by the gastric fermentation yields a taste very different from that of vinegar: those who are subject to the unpleasant occurrence of acid eructations, often say, that its taste is very different from that of vinegar, and that it also affects the organs of taste, in other respects, in a peculiar manner. These circumstances, with those which have been already mentioned respecting the food being impregnated with animal fluids, and surrounded by, and acted on, by parts possessing the living principle, lead directly to the opinion, that any acid thus formed, must be rather of an animal, than of a vegetable nature. Instead of the acetous acid, an acid may be expected to be formed, which having been subjected to the powers of animalization with which the stomach is endued, would possess properties different from the acetous, and such as would evince it to be a peculiar animal acid. This acid it appears proper to distinguish by the term, gastric acid, since as a fluid formed in the stomach is only hereby designated, the term is equally proper, which ever way observation and experiment may decide, as to the mode of its formation.

The distinction here proposed does not at present manifest itself to be of much consequence; but

in the search of truth it is necessary to prevent the continued adoption of the least error; since that which now is regarded as trivial, may lead to conjectures and hypotheses fraught with the most injurious consequences. It is on this account only that these suggestions are offered with respect to the nature of this acid; for in the present state of our knowledge, little difference can result therefrom, either in the pathology or the cure of gout.

The reprehensible deviations from the plainest and strongest dictates of reason, by substituting various heterogeneous artificial mixtures, for the simple natural food destined for the earliest periods of childhood, are always succeeded by the formation of this morbid acid in the stomach. Such also are the unnatural and injurious articles employed for the purposes of nourishment and indulgence, in the subsequent periods of existence, as cannot fail to promote the formation of acidity, and of course such diseases as are dependent on it.

In infancy, vomitings, severe gripings, sour and green stools, proceed from the injurious nature of this acid. It is also highly probable, that the

rickets is a disease depending on a morbid state of the fluids, proceeding from a superabundance of acidity. It may be presumed to be a law of the animal œconomy, that neither the acids nor alkalis shall exist in the circulating fluid in a free unneutralized state, except in certain rare instances. Agreeable to this principle, it appears that in gout the uric acid enters into combination with the fixed alkali, soda, furnished perhaps by the medium of the bile, and originally derived from the animal and alkaline parts of the food. But in the aliment of young children, no alkaline matters are present; it is indeed almost entirely composed of acescent matters, the acid derived from which can only become neutralized at the expence of the earthy particles, which nature had destined for the supply of solid matter to the bones. Hence it appears, that at one period of human life, *mollities ossium* may be produced by the same morbid superabundance of acid, which, when life is more advanced, occasions gout.

Youth does not indeed appear to be liable to any particular morbid effects, decidedly proceeding from this cause. If indeed conjecture might be allowed to suggest subjects for future examination, diseases might be mentioned, as depend-

ing, perhaps, on this particular cause, such as various cutaneous eruptions and discharges, colic, extreme leanness of the body, &c.

As life advances, the morbid effects of the gastric acid become more evident. Digestion is more impaired, and the patient is frequently distressed with pain of the stomach, heartburn, or eructations, the acidity of the latter being often said to exceed that of vinegar, and to excite the sensation which is generally described by the expression, setting the teeth on edge. When these circumstances are considered, there can exist little reason to doubt the propriety of regarding the stomach, when in a debilitated state, as an inexhaustible source of acidity. The acid it yields, passing into the intestines, and being thence absorbed, and conveyed by the medium of the blood into every part of the body, necessarily undergoes certain changes and modifications, dependent on the variety of structure and difference of powers in the several organs, to whose action it becomes exposed.

It may be here objected, that not only acid fruits, but vinegar and vegetable acids in general, are frequently taken, and particularly in youth, with entire impunity. But not to enlarge on the

difference of idiosyncrasy: many never experiencing any inconvenience from acids, whilst others are susceptible, in the highest degree, of the injuries which have been here particularly noticed, considerable difference must result from the different periods of life. In infancy and youth, when nature is busied in giving the necessary degree of firmness to the more solid parts of the body, the prevailing principle of acidity, if existing in the blood, may then have its proper office to accomplish, in assisting in forming the phosphoric acid, which, in combination with lime, is to give the due degree of solidity to the bones. But when that period of life arrives, when the bones may be supposed to have attained almost their utmost degree of firmness and solidity; and which, perhaps, it may not be too much to presume, may be about that time (from the thirty-fifth to the fortieth year), in which gout generally appears, the phosphoric acid has then much less to perform. It has now merely to keep up the necessary supply of solid matter to the bones, which may be rendered necessary by that absorption, and removal from the system, which is perhaps constantly going on, in a greater or less degree. A considerable part therefore of those principles, which were before employed, in constituting the phosphoric acid, may, from under-

going the appropriated action of a different series of vessels, become the uric acid. It serves to confirm this opinion, that "the urine of infants and nurses contains very little phosphate of lime and phosphoric acid; it is not until after ossification is finished, that these elements are found in abundance in the urinary fluid. The urine of old men, on the contrary, contains them in a great quantity; the bony system, already overcharged with phosphate of lime, refuses to admit more of it*."

Indeed as the difference between the various animal acids depends, probably, on the powers yielded by the nervous influence to the vessels by which they are formed, and by which those vessels are enabled to select and combine the several principles, which constitute the different acids, there can be little reason to doubt, that, at one period, and under the influence of a particular diathesis, the uric acid may be formed from the same principles, which under other circumstances, by a difference of modification, might have been rendered some other particular acid, for instance, the phosphoric.

* Elements of Physiology, by A. Richeraud. P. 97.

Although unable to trace this acid regularly from the stomach, through its various modifications and combinations, to the actual formation of gouty concretions, or of the calculus of the bladder, it may not be improper to endeavour to ascertain, whether it is discoverable in any intermediate states, and whether nature has provided any other means of procuring its discharge, when existing in too large a quantity.

Frequently, after trifling febrile affections, such as are generally combined with a slight degree of catarrh, and which common observation has attributed to interrupted perspiration, a precipitate of a pink colour, called by physicans a lateritious sediment, is deposited by the urine. This kind of sediment is almost always to be found in the urine which is made after the hot fit of intermittents has gone off; and is also discoverable, at some period or other, of almost every fever. The appearance of this kind of sediment, in the urine of gouty persons, is so frequent, as to have occasioned urine which deposits it, to be distinguished by the term, gouty urine. A copious sediment of this kind frequently indicates the termination of a paroxysm; and on its sudden disappearance, a fresh attack or relapse may oftentimes be expected. This sediment,

which had been considered by Scheele, and other chemists since his time, as uric (lithic) acid mixed with some phosphate of lime, Proust believes to consist chiefly of a peculiar animal acid, to which he gives the name of the *Rosacic Acid*; and which he observes possesses a greater degree of solubility, and much less disposition to crystallization, than the uric acid. That this acid may differ so much from the uric, as to allow it to be considered as a different and a peculiar acid, is very likely; at the same time, it is highly probable that it approximates, in its nature and composition, very near to the uric acid, with which it has been hitherto confounded. The uric acid is, however, well known to be almost a constant ingredient in urine, and the quantity in which it exists, in that fluid, makes it evident that its removal, in an excrementitious state, is intended to be accomplished by such excretion.

When it is considered also that an acid, the nature of which has not been yet ascertained, but which has been regarded by some as the phosphoric, and by others as the uric acid, is found to exist in the matter emitted by perspiration, there need be little hesitation in concluding that in this way also an outlet is secured for this acid when it exists in superabundance. The probability of

this is increased, by this acidity being considerably augmented during the critical periods of some diseases, and particularly in the gout itself. Berthollet ascertained, that paper, coloured blue by litmus, became red on being exposed to the perspiration of a part affected with the inflammation of gout.

The discharge of the uric acid with the urine, may be regarded as the most constant mode by which its superabundance is intended to be prevented. But when, from the profuse introduction of those substances into the stomach, on which the formation of this acid depends, a sudden and considerable augmentation of it takes place, it is probable the skin unites with the kidneys in performing the depuratory office; and the superabundant acid, somewhat changed, perhaps, in its nature, is exhaled, in combination with the sweat. Thus may be explained the general sour sweats, to which those who possess a gouty diathesis are so frequently liable; as well as the acid which, in many persons, is separated by the emunctories in the groin, and which is so extremely pungent, as to resemble the acetic acid in its smell, and to occasion, oftentimes, a very considerable degree of excoriation in the parts on which it has remained after its exudation. The

kidnies and skin therefore appear to be intended to act, as the natural regulators of the quantity of this acid, in the human system.

But in those cases, where the excessive indulgence in such articles of food, as yield much of the acetic and carbonic acid, has generated a larger quantity of this acid than can be removed by the joint operation of the kidnies and skin, disease most probably will succeed.

It appears by Dr. Wollaston's experiments that the uric acid, as well as that compound of it with soda, which forms the gouty concretions, requires a very large quantity of fluid to hold it in solution. Whenever, therefore, it exists in a morbid proportion in the human system, a strong disposition to its crystallization must prevail; and its separation in a solid form is reasonably to be expected. The part where this separation will take place, will necessarily depend on certain particularities in the general diathesis, not, perhaps, to be explained. In some habits, the kidnies will prove to be the organs destined to effect this morbid separation; in which cases, the saline concretion will be found either in the urine, bearing the appearance of a red sand, or forming one species of urinary calculus. In other habits, the liga-

ments and tendons will be the parts on which the morbid excess of this acid will be deposited. In this case, gouty inflammation will be induced, and after every attack a thickening, with a considerable degree of stiffness, of the ligaments, and hindrance of motion, will be occasioned in consequence of the deposition of the gouty matter. At the commencement of this disease, when the paroxysms are slight and seldom, a sufficient opportunity is yielded between the fits for the absorption of the deposited matter, which is in general soon removed, and the motion of the joint, in a little time, quite restored. But when the paroxysms are of long duration, the intervals from disease are not sufficient to allow of the removal of the deposited matter, before a fresh separation and deposition takes place; hence accumulation proceeds, until considerable collections are formed in different joints. The injurious process is most observable in the joints of the fingers and hands, where frequently the whole ligamentary apparatus becomes involved in the concrete mass, which sometimes, in consequence of the absorption of the superincumbent teguments, becomes so exposed, as to admit of its removal from the part, in a state of purity.

Hitherto we have only caught a few glances at one of the component parts of the arthritic con-

cretion. The peculiar acid which it contains has been examined, and some conjectures have been offered with respect to its origin : the other component part, the soda, now demands attention. It is unnecessary here to trace back the soda to its first admission into the system, by the medium of many of the various articles of food ; nor does it appear to be necessary to enter upon the difficult question, where the soda first enters into combination with the uric acid ; in which inquiry, the presence of soda in the bile, and its admixture with the gastric acid, might however furnish some assistance. It is sufficient for the present purpose that it is found to exist, in combination with the uric acid, in the arthritic concretions.

But since the arthritic concretions contain soda, as well as the uric acid, the former substance may seem to deserve to be regarded, equally with the latter, as of morbid origin, and as equally deleterious, by contributing to the formation of these morbid accumulations. But it is to be considered, that the formation of these depends on the insolubility of the matter of which they are composed ; and that this insolubility proceeds entirely from the nature of the uric acid, the soda not contributing thereto in the least ; but on the contrary possessing a tendency to increase its so-

lubility. Its combination with the uric acid may indeed be regarded as a salutary measure—as one of the processes performed by the preservative powers of the system, agreeable to an established law of the animal œconomy, and conformable with the laws of chemical affinity. For in every case, except where the secretion and conservation of a peculiar acid is proposed, the acids, as have been already remarked, are found in the animal system, in combination with an alkali, or an earth, in the form of neutral salts; in which less acrid state they are not so likely to irritate and injure the sanguiferous, and other vessels through which they pass, as the acids themselves would in a free and pure state. Agreeably to this idea, the uric acid is concluded to be the noxious principle in those dreadful diseases, the gout, gravel, and stone; but the propriety of this conclusion will be better judged of, when it is considered along with those circumstances, which may be regarded as the remote causes of this disease, and with those symptoms which characterize the disease.

It is hoped, that on a review of what has been here stated, the conjecture that gout depends on a saline acrimony of a peculiar kind, will not be considered as ill founded. In those

persons who possess a gouty diathesis, the stomach is almost always disposed to the formation of an acid ;—their perspiration, even in health, but more particularly immediately previous to, and during the attacks of gout, generally manifests a high degree of acidity ;—the parts suffering under gout frequently exude a strong acid matter ;—and the separation of a peculiar saline matter by the vessels of the parts affected, appears to be the regular termination of the disease. The consideration of these circumstances can hardly fail to furnish reasons for agreeing in this supposition : but reasons perhaps still more cogent will be found in the excellent publication of Mr. Forbes, which, though written previously to the important discovery of Dr. Wollaston, contains arguments highly confirmatory of the opinion here delivered respecting the nature of gout and gravel. It must also be remarked, that the learned professor, who so beautifully simplified the knowledge of diseases by clearing away the erroneous notions of the humoral pathology, did not refuse to admit the existence of a preternaturally saline state of the blood as the cause of a disease. Speaking of the scurvy, which he believed to originate in the production and evolution of a saline matter, he says, “ That this saline state is constantly, in some measure, produced and evolved

by the animal process, appears from this, that certain excretions of saline matter are constantly made from the human body, and are therefore presumed necessary to its health*."

By the Syllabus of the Course of Lectures of Dr. Currie, in which an analogy between gouty inflammation and phosphoric combustion is suggested, and by the reports received respecting the lectures themselves, there appears to be little doubt but that the full publication of the Doctor's opinions, on this subject, would supply us with the most ingenious deductions from the valuable discovery of Dr. Wollaston, and might prove essentially beneficial to those afflicted with this malady.

* Cullen's First Lines, § M.DCCC.XII.

CHAPTER II.

REMOTE CAUSES—HEREDITARY DISPOSITION—INDIGESTION—ERRORS IN NON-NATURALS—INTEMPERANCE—DIFFERENT EFFECTS FROM DIFFERENT FERMENTED LIQUORS—OF WINE—CYDER—BEER—ACIDS AND ACESCENTS—CIRCUMSTANCES PREVENTING THE ESCAPE OF MORBID ACID.

FROM the uncertainty which exists respecting the real nature, and more immediate cause of gout, the necessary knowledge respecting its remote causes must be difficult to be obtained. This difficulty is particularly experienced, whilst endeavouring to determine what circumstances may be considered as predisponent causes of this disease. These have been supposed to be much more numerous than the opinion here entertained, respecting the nature of the disease, appears to warrant : original constitution, for the most part hereditary, middle or advanced age, and a weakened state of the stomach, appearing to be the chief circumstances which require to be thus considered.

The examination of the occasional causes of this disease, on which we shall now proceed, will assist, as has been already remarked, in determining the degree of confidence which may be placed on the proximate cause which has been proposed. To render this examination more effectual, in this respect, the mode in which these excite their morbid influence will be made the chief object of inquiry.

Excessive indulgence in pleasures, the sudden change from a full to a spare diet, and profuse evacuations, enumerated by Cullen amongst the occasional causes, may be considered as producing their injurious effects, by occasioning debility, and thereby disposing the smaller vessels to take on that kind of increased action, which is not only compatible with, but even dependent on diminished power. The occasional causes which remain to be considered, may be divided into two classes; such as promote the generation of the morbid matter, and such as prevent its expulsion from the system.

Indigestion produced, either by the quantity, or quality of aliments, may, without the least hesitation, be placed among the more active of the

occasional causes of this disease. Observation has repeatedly marked the connexion between gout, and an impaired state of the stomach : and, in the history of this disease, this connexion is known to be a prominent circumstance. The generation of the gastric acid, it has been already observed, almost constantly accompanies indigestion ; and, here it must be added, that this acid may exist in the stomach, to a considerable degree, without manifesting itself, by any sensible effect on the fauces and organs of taste. That a morbid excess of acidity in the system, on which it is supposed that gout depends, may be derived from this source, appears to be so obvious as not to demand any additional argument.

Intemperance in the use of spirits, cannot but be regarded as one of the occasional causes of this disease. This pernicious practice, as far as respects gout, appears to act in a two-fold manner. In the first place, by disordering the functions of the stomach, and occasioning indigestion, it gives rise to an increase in the quantity of the gastric acid ; and secondly, by impairing the energy of the nervous system, it renders those parts, which have before suffered from the attacks of gout, more susceptible of morbid impression, and more likely to take on diseased action.

That the gout is, however, less attributable to the intoxicating principle, than to other principles existing in wine, &c. is evident from this circumstance, that those, who are so unhappy as to be under the dominion of an attachment to spiritous liquors, are seldom subject to attacks of the gout, unless when they take wine also, or when they join the use of acids to that of spirits, as in punch. Numerous instances occur where those who are devoted to the drinking of spirits have been perfectly free from the attacks of gout, until after a debauch, in which wine or punch has been taken freely. In such cases, it is by no means an infrequent occurrence, for gouty inflammation to manifest itself, even on the succeeding day, or evening of such indulgence.

The free use of wine, or of other fermented liquors, may be regarded as one of the most obvious, and one of the most powerful, of the occasional causes of gout. General observation has marked the drinker of wine as peculiarly obnoxious to this malady : and it may also be observed, that the disposition to gout generally exists in a degree, proportioned to the confinement to wine, in convivial indulgences.

Every medical man must be informed of the

frequency with which patients complain of extremely sour eructations directly, after the taking of a glass of wine, or the use of vinegar or pickles. This frequently indeed occurs to such a degree of inconvenience as to seem to authorize the opinion, that the whole contents of the stomach partake, in a great measure, of this sudden morbid change.

With a rapidity equally difficult to explain, is the taking of vinous or acescent substances into the stomach succeeded by arthritic pains, and by the formation of sabulous concretions. Oftentimes, within a few hours after the indulgence in even a few glasses of wine, have sharp arthritic pains testified the morbid power of that cordial, which, in every other respect almost, may be considered to be as salutary, as it is pleasant. Equally frequent are the cases in which sudden and severe fits of the gravel are referred, by the sufferers, to the having too freely drank, only a few hours before, of wine, or of beer, which, by too long keeping, had acquired that degree of acidity which gains it the distinction of stale beer.

A considerable difference is discoverable in the morbid effects which follow the too liberal use of different fermented liquors. Thus wine, in general,

appears to dispose most to the gout; cyder and the low new wines seem to occasion the gravel; whilst beer, except in a certain state, does not appear to be particularly productive of either. To ascertain the reason of this difference appears to be highly worthy of being attempted; since the investigation may not only lead to a more perfect knowledge of the nature of the disease, but also may serve to establish some important points in the method of cure.

The liquors obtained by fermentation, for the purpose of beverage, may be divided, according to their effects on the human body, into strong wines, in which the fermentative process has completed its course, cyder, perry, the low wines, and beer.

To obtain the vinous fermentation, in which is included that by which beer is formed, it is necessary that sugar, extractive matter, and a vegetable acid, should be diffused in water, and placed in a certain temperature. As the acidity of the liquor, resulting from the vinous fermentation, will depend on the quantity of vegetable acid, in the original matter subjected to this operation; so will the quantity of alcohol, separable by distillation, depend on the quantity of saccharine mat-

ter : so also will the strength or weakness of the fermented liquor depend on the quantity of water, through which the other matters are diffused.

The grape, which ranks foremost among the fruits from which this charming beverage is obtained, when fully ripe, contains a juice of a slightly acid, and lusciously sweet flavour. This liquor consists of a vegetable (the tartaric) acid, a gelatinous glutinous matter, and sugar, all combined with a certain portion of water. The sugar is in so considerable a proportion, that some of the more luxuriant and fine species of this fruit are said to yield thirty parts in the hundred of a peculiar kind of sugar. Hence it is, that in the wine of the grape a greater proportion of spirit is contained, than in the wine formed from other fruits : and hence it is, that it possesses such a body, as to allow so long a duration of the fermentative process, and those various changes and new combinations, whilst in completely closed vessels, as render it so deliciously flavoured, and so pleasingly intoxicating. By this intimate combination, its constituent principles are almost entirely concealed from the detection of the taste. Although containing a considerable proportion of alcohol, this exists in so peculiar a kind of combination, that it only manifests itself by distillation, or by

the equally certain evidence of its presence in the wine itself, its powers of intoxication. Thus also, hardly discoverable by the taste, a considerable quantity of acid exists in all wines, from which, when taken into the stomach, may proceed that superabundance of acidity in the system, whence, it is probable, the uric acid derives its most abundant principle. Thus, by the use of wine, it is conjectured, that gout may be occasioned; as well as some species of gravel, and of the larger urinary calculi.

It may appear to be a forcible objection to this opinion, that many are in the habit of taking profusely of wine, without experiencing any of the injurious effects which have been here attributed to it. But it should be considered, that from the influence of habit, and of a principle of accommodation in the animal economy, even strong poisons are sometimes taken with impunity. Thus opium may be chewed almost as an article of food, and alcohol be drank almost as freely as water. But this particular apparent indemnification will perhaps be still better accounted for, by reference to a circumstance which has been already mentioned. The matter of perspiration and the urine have been mentioned above, as the appropriate vehicles, for the removal of superfluous saline

matters from the system. With the vinous acid, we have already seen, a considerable portion of alcohol is blended, the diuretic qualities of which are well known. From this union a two-fold effect is insured upon a free potation of wine; a superabundant quantity of acid is introduced into the system; but at the same time a greater quantity of urine is formed, by which the uric acid, or its neutral combination with soda, each requiring a large quantity of water for its solution, will be suspended, and carried off: and thus, perhaps, the equilibrium may be preserved for a considerable time. But should this discharge of superabundant acid be suspended, from any cause not here to be ascertained, then may such a morbid prevalence of acidity take place, as may, according to certain existing circumstances, and the peculiarities of diathesis, occasion either gravel or gout.

The low new wines, such as possess not a sufficient quantity of alcohol to prevent them from soon acquiring a considerable degree of acidity, in addition to that which has been left unchanged from defect of the continuance of fermentation, possess, in a high degree, the injurious powers here attributed to the stronger wines. The low thin wines of the northern provinces of France,

and of Germany, the wines made in England from currants, gooseberries, &c. with cyder and perry, are liquors of this description. An apparent objection may be here noticed: liquors of this kind are chiefly drank by the poorer class of people, whilst gout is almost proverbially marked as the inheritance of the rich. But the poor labourer purchases, by the sweat of his body, those exemptions from disease, which the rich and slothful, unwilling to make the necessary sacrifices, fail to obtain.

From certain circumstances, perhaps dependent on a difference in the other articles of diet, as well as in the exercise, the humbler classes, it has been observed, seem to be more liable to concretions in the urinary passages, than to complaints of a gouty nature.

The mass of the people, however, in those countries where liquors of this description constitute their general beverage, by no means escape the attacks of other diseases, which, in their nature, manifestly approximate to the gout. Such is the gradual enlargement of the joints, hereafter treated of more particularly; and such is that prototype of the gout, the acute rheumatism. The resemblance between this latter disease and gout is, in-

deed, so great as to lead much towards a suspicion of an identity of nature in many respects.

The evidence of Dr. Huxham, whose residence in so celebrated a cyder county as Devonshire, and whose particular attention to the diseases of the inhabitants of that county, must render his evidence incontrovertible, proves the connection between the use of cyder, and the existence of arthritic and rheumatic complaints*. The Doctor, attributing the same noxious powers to the new

* Nec certè longe differt vinum Rhenanum à *pomatia* generoso, nisi quòd hoc multo plus *mucilaginis* habeat.—Utravis horum mustea si bibis affatim, doloribus colicis et *rheumaticis* certo certius vexabere; nec arthritidi obnoxii hæcce hauriunt impunè, quippe quos protinus corripit paroxysmus. Nec graviores pœnas lœunt bibaces Germani, ad ripas Rheni & Mosæ incolæ, se vino *tartareo* ingurgitantes, quam nostrates *pomaceum* avidè perpotantes: ibi enim, & hic, arthritis morbus est endemicus, & maxime communis; neque tot uspiam, etiam inter plebeculam, *podagra* laborant, quot in Damnonia provincia, ob *pomaceum* notissima. Ac credere fas est, morbi hujus frequentiae causam fuisse multum et continuum vinorum usum, *tartaro* maximè abundantium, qualia sunt vina Mosellanica, Gallica, & *pomacea* nostra: ex quo enim horum invaluit usus, longè magis quàm antè increbuit arthritis. Vinum Burdegalense, præsentis ævi delicias! haud magni fecit ætas elapsa; & decuplo plus *pomacei* nunc factum & epotum est, quàm annis abhinc triginta.

De Morbo Colico Damnoniorum, page 13.

wines made from the grape as to cyder, observes, that the drinking freely of either, in its new state, will most certainly occasion the pains of the colic and rheumatism: nor will those who are liable to the gout drink them with impunity, since they will be speedily attacked with a fit of this malady. The people of Germany, he observes, who drink large quantities of wines impregnated with tartar, suffer not more than those of Devonshire, who drink so freely of cyder; for there, as well as here, the gout is endemic, and exceedingly common; nor do so many, among the common people in any part of the world, suffer from the gout, he observes, as in the county of Devon, so famed for its cyder.

It now remains to examine the properties of *beer*, a beverage so general in this country, that the examination of the effects it is likely to produce on the human system can hardly fail to prove interesting. It is not necessary to dwell longer here on the methods by which this liquor is produced, than to remark, that it is obtained, by a species of the vinous fermentation, from barley, which is composed chiefly of saccharine and gelatinous matter, and contains little or no vegetable acid: hence the product of this fermentation differs from the liquors already treated

of, in its containing, even when the fermentation has continued sufficiently long to render it fit for drinking, a considerable portion of saccharine and gelatinous matter with alcohol, and but a very trifling degree of acidity. Such a liquor, from the small quantity of acid it contains, must, when compared with the liquors already treated of, appear to be entirely innocent in its nature, as far as respects the disposing to the formation of gout. Churlish indeed would he be, who, without the strongest evidence, would impute noxious properties to that bland and rich beverage, home brewed ale; a liquor which, at the same time that it possesses the most pleasingly exhilarating powers, contains a larger portion of nutritious matter than any other known fermented liquor. The properties of this liquor must be admitted to be particularly salubrious indeed; for whilst, on the one hand, it is free from that proportion of acidity, which it has been endeavoured to demonstrate disposes to diseases of a certain description, so, on the other hand, it holds the alcohol, on which its pleasing stimulating powers depend, in such combinations, and under such peculiar modifications, as seem to lessen those injurious properties, which alcohol obviously possesses, when separated by distillation from the other products of the fermentative process. Thus

no particular susceptibility of disease characterizes the drinker of strong beer, whilst the votaries to wine may be regarded as the devoted victims to gout and gravel, and the slaves to the abuse of spirits to jaundice or dropsy. In a word, beer, of which protracted fermentation has not so far changed all its saccharine and glutinous parts, as to prevent it from hanging about the glass with some degree of viscosity, and to which age has not given acidity, appears to be a liquor well calculated to support the spirits during laborious exertions, and to be least likely to produce injurious consequences.

This being admitted, it becomes necessary to state the reason, why this liquor is placed among the substances likely to become an exciting cause of this and of other diseases. It must however have already appeared, that the hurtful powers tending to the production of gout and gravel exist only in this liquor, when, from mismanagement or age, it has acquired a degree of acidity ; and much is it to be lamented, that the laborious poor in general, at least, in and about the metropolis, obtain this liquor, generally, in this its most noxious state.

The nearer any fermenting liquor approaches to the completion of its fermentative process, the

greater is the quantity of alcohol it contains. Experience has taught this to the drinkers of strong beer, and particularly to those who indulge in porter. Not finding their cordial too powerfully fraught with malt and hops, they have sought to obtain it in that state, in which its exhilarating powers manifest most influence. Hence they have discovered, that beer possesses the most strength, not whilst the more silent and efficacious part of the vinous fermentation is yet going on, during which period it is termed *mild beer*; but when a slight degree of acidity manifests the vinous fermentation to be completed, in which state it is called *stale beer*. Thus have the drinkers of strong beer been led to seek constantly for this test of the strength of their beer; and thus gradually have been induced, by habit, to consider a slight degree of acidity as a necessary part of the flavour of good beer. But as every depravity of taste necessarily demands a regular increase in its gratification, so most porter drinkers, unless they have been able to ascertain the injurious effects it sometimes produces, are disposed to drink their beer in that state in which acidity is very predominant.

It is much to be feared that this taste cannot be indulged, unless the virtues of this most useful

and salubrious liquor is impaired, in a considerable degree. Porter which is brewed of a sufficient strength would not, preserved, as it always is, in properly closed vessels, acquire that acidity, which characterizes stale beer, for a considerable time. But it certainly cannot be expected of the porter brewer, with whom the quickness of the return of his immense capital must be an important consideration, to hoard up his beer to its deterioration, and to his own serious injury. A more expeditious method, it is said, is sometimes adopted, by which sourness is substituted for strength. But should the brewer consider it to be his duty *not to mix new beer with old*; yet this is not the case with the tapster, who, impelled to please the palate of his customers, may often find himself under the necessity of mixing beer, actually acid, with that which is in itself sound and good.

Here, however, is not, indeed, the place to determine, whether it proceeds entirely from a depraved taste in the drinkers of malt liquors, or from the tricks of the brewer or of the tapster, or from the lack of the genuine juice of barley in its composition, that the malt liquor, in general, drank in and about the metropolis, partakes more of the nature of vinegar than of humming brown beer. It is sufficient to remark, that in proportion as beer pos-

sesses acidity, it may be considered as proper to be placed among the occasional causes of this disease.

The connection between the assumed proximate cause of this disease, and *the effects of the large use of acids and acescents* on the system, must be sufficiently obvious to every one. No one who has had frequent opportunities of observing the several changes to which arthritics are subject, can have failed to notice the frequency with which the paroxysms of the gout have succeeded, in a very short space of time indeed, after the taking freely of substances of this kind.

But no one has treated this subject with so much propriety and force as Dr. Cadogan has done in that work, which, for its benevolent zeal and high degree of utility, has the strongest claims on the gratitude, not only of the arthritic, but of almost every invalid sufferer under diseases of a chronic kind. The observations of the Doctor on this point are in such strict accordance with those principles, to the establishment of which the arguments in this work are directed, that the inclination to adduce them here as corroborative evidence could not be resisted.—“The nature of most chronic diseases, and their first symptom, heartburn, as it is commonly called, plainly shew

the original cause to be acid crudity prevailing in the juices ; producing coagulations, concretions, and obstructions of various kinds ; all which are very manifest in the gout, rheumatism, stone, and most nervous cases : the remedies also, that sometimes relieve and palliate, confirm this ; such as the volatile alkalies, hartshorn, sal ammoniac, testaceous powders, sope, &c. Many may be surprised at this, and say it cannot be ; for though they have these diseases, they take little or no acids : but there are many things they take that are acescent, that is, that are liable to become acid, especially by the heat of the stomach. This they are not aware of ; but they are in their nature much more prejudicial than things already sour ; for, besides that people take not these in any quantity, the acescent never become sour but by the act of fermentation, which, being raised in the stomach, where it ought never to happen, produces strange tumults, wind, vapour, gas, that is, that fume arising from fermenting liquors of any kind, which has been known sometimes to kill at a stroke. It may here be necessary to enumerate some of those things called acescent. These are sweets of every kind, puddings, cakes, pastry, creams, confections, &c. and every thing made of flour, especially fermented ; bread, in particular, so far from being the wholesome thing many

imagine, is not only unwholesome by its acescency, but by the strong ferment it contains, it forces into fermentation every thing capable of it that it meets with in the stomach. In this light we must also consider most sorts of seasonings, stuffings, forcemeats, and compounded sauces. But the greatest acescent, or rather bane of all, high and low, rich and otherwise, whoever they are that take it constantly, is wine: wine alone produces more diseases than all the other causes put together. All men allow that wine taken to excess is hurtful: they see the immediate evils that follow; but distant effects, that require more attentive and deducive observation, very few see or believe; and, judging from present and agreeable feelings, they say that a little wine is wholesome and good for every one, and accordingly take it every day, give it their children, and teach them to like it, by debauching their natural taste in the earliest infancy*."

Much application to study or business is very justly placed by Dr. Cullen among the occasional causes of gout. It is not by medical men alone that the fact must have been repeatedly observed,

* A Dissertation on the Gout, &c. by William Cadogan, Fellow of the College of Physicians, p. 46.

that anxious employment of the mind has a strong and direct tendency to impair the functions of the digestive organs. The observation must have been often made by others, that vomiting, disorder of the bowels, heartburn, and sour eructations, are the frequent consequences of the occurrence of any circumstance, which suddenly calls the mind into anxious and distressing exertion. No hesitation therefore can be necessary in resolving, that this cause is one of those which contribute, in a considerable degree, to the generation of an acid in the stomach, and to its subsequent prevalence in the system.

Having now enumerated and examined those occasional causes of the gout which promote the formation of acidity in the *primæ viæ*, it is necessary to attend to those exciting causes, whose noxious influence is exerted, in checking, the discharge of the superabundant acid from the system.

That the urine is intended to carry off a large proportion of the superfluous saline particles from the body, and that it naturally manifests a predominant acidity is well known; but of the circumstances which direct the proportion of acid which thus enters into the composition of urine nothing has been yet discovered: no success,

therefore is likely to result, from an attempt to discover what circumstances act as exciting causes, by preventing the discharge of the morbid excess of acidity by this channel. But the strong acid perspiration which is, generally, separated by the inguinal glands, the profuse acid sweats to which arthritics are subject, and which is particularly found to exude from any part, suffering under gouty inflammation, plainly shew that the cuticular pores are channels, by which the superfluous acid may be ejected. The presence of acid matters, in the discharge by perspiration, is much more obvious than in the urine; from which much useful information may be derived, respecting the proper time for promoting this discharge; since happily the circumstances, on which the diminution, or increase of the discharge of perspiration depends, are much under our power. An inquiry respecting the influence of these circumstances, as exciting causes of this disease, is, therefore, particularly requisite.

The ceasing of usual labour, cold applied to the lower extremities, and night watching, are mentioned by the illustrious Cullen, among the occasional causes of this disease; but without pointing out the mode, in which they produce their effects on the system.

The effect of exercise in promoting perspiration is sufficiently known, and only a very slight degree of consideration is necessary to determine, that *the cessation of accustomed labour* must be succeeded, by the retention of much excrementitious matter, which had been used to be discharged by the emunctories of the skin. During the regular exercise of the labourer, the exudation of a saline matter takes place from the general surface of the body, whilst the *inguina* and *axillæ*, with the feet, pour out a matter, frequently so offensive to the smell, as to leave little doubt of the salutary consequences of its removal. In proportion to the degree of laborious exertions will be, in general, the quantity of matter thus discharged, and the volatility of its effluvia; not but that it frequently happens, that a considerable difference, in both these respects, will arise from original difference of constitution. It would be difficult to specify all the injurious consequences of the suppression of such perspiration, by the cessation of usual labour; but that the retention of a morbid excess of acid, is likely to be one of the mischiefs thereby produced, cannot, it is presumed, be difficult to conceive.

By the application of cold to the lower extremities, the perspiration must be considerably

checked, at least, in the limbs to which the cold is applied. The discharge of perspirable matter from the feet and from the groins, so essential, doubtless, to the welfare of the system, must be, in a great measure, thereby prevented; and in proportion as this takes place, the morbid accumulation of acid may be formed.

During the hours of sleep in bed, the rest of the body, and the texture of the bed clothes, allow of the accumulation of heat and of vapour, which must very much promote the flow of the matter of perspiration. *Night watching*, on the contrary, must diminish the perspiration, and thus be productive of similar injurious consequences, with those exciting causes which have been just enumerated. When it is accompanied, at the same time, by *study*, the exertion of the mind may induce such a derangement in the functions of the stomach, as may occasion indigestion, &c. In this manner then may this cause be considered as disposing to this malady in two ways: by promoting the formation of acid in the stomach, and by preventing its discharge from the system, by the cuticular emunctories.

CHAPTER III.

EXAMINATION OF THE SYMPTOMS—THEIR AGREEMENT
WITH THE SUPPOSED PROXIMATE CAUSE.

A TASK of some difficulty presents itself in the following chapter.—The examination of the several phenomena preceding, accompanying, and succeeding this disease, with a view of ascertaining their agreement with its assumed immediate cause.

Among the circumstances most remarkable, previous to the coming on of the paroxysm, are *the diminution of appetite, flatulency, sour eructations, and other symptoms of indigestion*, shewing that the functions of the stomach are more or less disturbed. After what has been already said, respecting the probable origin of the acid, on which gout appears to depend, it cannot be necessary to make any remarks here, on the obvious connection between these circumstances, which accompany the formation of that acid, and the subsequent disease.

The frequent numbness, which alternates with a sense of prickling along the whole of the lower extremities ; the frequent cramps of the muscles of the legs, the unusual turgescence of the veins, and the extreme coldness of the legs and of the feet, are symptoms so equivocal in their nature, as to allow no more to be said respecting them, than that they probably result from a peculiarity of structure, perhaps hereditary, in consequence of which the blood is not propelled through the lower extremities, with that power and efficiency which is accordant with health.

The ceasing of a sweating which the feet had commonly been affected with before, is placed, by Cullen, among those symptoms which generally precede the paroxysm. The matter which is separated from the feet by sweating is well known to possess frequently a very pungent odour. The acrid exudation from the feet has been particularly taken notice of by Dr. Hulme ; and “ if,” Cullen remarks, “ this happens, especially in scorbutic persons, it will be a remarkable proof, that in scurvy the fluids suffer a considerable change.” With at least an equal degree of reason it may be*

* First Lines. M.DCCC.XI.

said, that in gouty habits, in which acidity is prevalent, and in which the perspiration is often obviously acid, the fluids have suffered a peculiar change. The ceasing of a sweating which the feet had commonly been affected with before, taking place a little time previous to the coming on of the paroxysm, also shews that something was thereby retained, which proved in some way efficient in producing the disease.

The gout seldom attacks persons employed in constant bodily labour. This well known fact is by no means difficult of explanation, on principles agreeable to the theory of this disease, which has been here advanced. Perspiration, as has been already observed, appears to be one of the destined means of discharging, not only any excess of saline matter, which naturally belongs to the system, but also any morbid saline acrimony, which the kidneys have failed to separate and remove. That constant bodily labour will considerably promote this salutary process cannot be doubted, when it is considered, that not only the quantity of the matter of perspiration is considerably increased thereby, but that the proportion of acrid and offensively odorous particles, which are thus discharged, appear to be also increased.

It is less frequent among those people who make no use of wine or other fermented liquors. This is a fact, strongly corroboratory of the arguments which have been adduced in favour of the proximate cause of gout, which has been here assumed. It has, however, been already so fully considered as not to render it necessary to dwell on it in this place. Arguments of some weight might also be adduced from other points in the history of gout. The less frequency with which females are affected with this disease than males, may fairly be attributed to the much smaller quantity of wine which they drink than men. Its most frequent appearance in the spring may be attributed to the detention and accumulation of those deleterious matters, by the action of the cold of the preceding winter, which in warmer weather obtain their escape with the matter of perspiration.

The deposits of urate of soda on the joints, peculiar to this disease, afford almost demonstrative evidence of the propriety of the opinion proposed, respecting the proximate cause of this disease. This opinion also derives considerable support, from the identity of constitutions, in which gout and urinary calculi occur; manifested by the frequent occurrence of the two diseases in the same

person, at different periods of life, and by the extraordinary facts of some of the children of a gouty parent being hereditarily disposed to gravel, and of some of the children of those subject to urinary calculi becoming the victims of gout.

Many other points, in the history of this disease, are purposely omitted to be noticed here, in consequence of their being of so equivocal a kind, as not to be at all decidedly favourable to any particular theory. No circumstance, however, is here passed over from which any argument could be expected to be derived, which would militate against the assumed origin of gout.

The phenomena accompanying this complaint, during its regular progress, are chiefly referable to the inflammation which characterizes the paroxysm, and do not therefore allow of any particular explanation, derived from the peculiar nature of the real proximate cause of this disease. It is not, however, meant to admit, that none of these phenomena bear evidence favourable to the opinion here endeavoured to be supported. On the contrary, the peculiar appearance,—the particular shining aspect of parts, under gouty inflammation, points out a difference between the inflammation of gout and common inflammation; whilst

the different termination of the two inflammations also points out a difference, which admits of an easy explanation, if the proposed theory respecting the proximate cause of this disease be admitted. The natural termination of common inflammation is the secretion of pus; but in gouty inflammation pus is hardly ever formed; but, perhaps, in every case of gouty inflammation, more or less of a peculiar saline substance (urate of soda) is deposited; being the morbid secretion proper to this species of inflammation. In the case already described this morbid deposition had taken place in various internal parts, and, consequently, it is concluded, that each of those parts had been the subject of gouty inflammation.

Nor does the sudden shifting of the disease from one part to another, appear in the least to militate against the idea, of the existence of a morbid matter in this disease. It indeed appears to result from the actual presence of a morbid matter in the blood, and which is therefore present, wherever the circulation reaches, and only requires a susceptibility of arthritic action in certain parts, to produce its elimination, and its rejection from the system. This susceptibility of morbid action existing in certain parts, renders them liable to run into, at the same time or in succession, that

peculiar morbid action, which is induced by the influence of that peculiar saline acrimony, which is essential to the existence of this disease. Hence the sudden appearance of the disease, in one part, may take place totally independent of its cessation or suspension in another. It is not however meant to be denied, that general observation has established the fact, that arthritic action will often be suddenly suspended in one part, and be as suddenly produced in some distant and oftentimes in some important part, whose natural actions cannot be impeded but with actual danger to life. But, even under these circumstances, nothing contradictory to the proposed proximate cause appears. The phenomena, on the contrary, appear to be most easy of explanation, on the supposition of the presence of a peculiar morbid saline acrimony in the system.

CHAPTER IV.

DIAGNOSIS—DIFFERENCE BETWEEN GOUT AND RHEUMATISM—ANOMALOUS COMPLAINTS APPARENTLY DEPENDENT ON GOUT.

WHEN the circumstances attendant upon the gouty paroxysm, and the particular parts which the gouty inflammation seizes, are well considered, but little difficulty can arise in distinguishing regular gout from any other disease, with the exception of acute rheumatism. Between these two diseases, indeed, a similitude often appears sufficient to authorise the opinion, that they both depend upon certain states of the system, not very widely differing from each other. Acute rheumatism may, however, in general be easily distinguished from gout by an attention to these circumstances. It is generally accompanied by a greater degree of fever than gout: it commonly attacks those who have not yet attained that period of life at which gout commonly appears: and it generally, even at its commencement, attacks several joints at the same time, a circumstance which very seldom happens in gout.

Much benefit might perhaps result, were the powers of discrimination to be carefully exercised by the physician, in determining which, among the numerous strange and anomalous diseases of the human body, arise from the same morbid state of the system with that on which gout itself depends. Morbid affections, referable to this class, are probably much more numerous than at present is supposed. In habits in which the gouty diathesis prevails, but in which the gouty inflammation does not attack the feet and hands in the usual manner, different parts evidently become liable to painful affections, bearing a peculiar and distinctive character from those diseases of these parts which are already known.

The celebrated Cullen has particularized most of the symptoms which take place in the atonic state of gout; in which, although the gouty diathesis is prevalent, no inflammatory affection of the joints takes place. In this state the stomach often becomes affected, and loss of appetite, indigestion, flatulency, nausea, vomiting, with severe pains in the stomach, are produced. In the bowels also pains resembling those of the colic, with great irregularity in passing the fæces, and various affections, difficult to explain, are found to occur. With these affections of the alimentary

canal, the various symptoms of hypochondriasis are often distressingly combined. When the viscera of the thorax become the seat of the disease, the patient suffers from palpitations, faintings, asthma, &c. When the head is affected, giddiness, head-ach, apoplexy, and palsy take place.

The different forms of this Proteus-like disease are by no means thoroughly known: so various and so deceptive are its appearances, that in every case, in which the gouty diathesis is known to be prevalent, and in which the inflammatory affection of the joints does not take place, every morbid affection must be considered with the most careful exertion of the judgment. The circumstance which most particularly renders this attention necessary is, that those affections, which proceed from this cause, bear a most close resemblance, in their symptoms, to the genuine acute inflammation of the same parts, whilst they differ from it as much as the chronic does from the acute rheumatism. In making the necessary distinction, it may be useful to bear in mind, that, in these complaints, the fever is very inconsiderable, and that the symptoms are much less violent, and the progress of the disease much more slow, than in active inflammation.

The inflammation which takes place in these cases, appears to depend on increased action, accompanied with diminished power, and, perhaps, may with propriety be termed chronic inflammation. To this class of diseases may be referred, perhaps, that affection of the chest, denominated angina pectoris. To this kind of inflammation, it is very probable also, that hydrops pectoris frequently succeeds. An instance of this appears to have occurred in the following case.

A gentleman of the temperament to which gout is supposed most particularly to belong, and whose father had suffered from gout, but in the latter part of his life had been asthmatic, was attacked at thirty-eight years of age with gout. His indulgence in wine had been moderate and uniform, a few glasses daily, but rarely to excess. He had experienced, for the last two or three years, a considerable portion of distress and anxiety, from which he had now obtained relief. The attack of gout, which was in the foot, was but slight, not confining him more than a week. In about four months after this attack of gout, he had a severe return of deep-seated pain, in the middle of the thigh, where he had once or twice experienced it, previous to his attack of gout. This by rest, warm fomentations, and sudorifics, was

removed in less than a week. In three weeks time after this an acute pain seized him in the loins, of the same side, accompanied by a slight degree of the pain in the thigh. The pain in the loins being supposed to proceed from gravel, the means thought most appropriate were employed: in about a week this complaint subsided, the urine depositing a very considerable sediment of a pink colour. In about six months from this time he found his breath become short at night, and his strength much impaired: and at the end of a fortnight the breathing became so difficult at going to bed, as to require his being propped up in a sitting posture every night. He now applied for medical aid; when his pulse being found to be very low, and he exceedingly weak, and no shortness of breathing taking place in the day-time, a blister was applied between the shoulders, and various antispasmodics and expectorants were tried, for a few days, without success. He was then bled, and lost about five ounces of blood, from which he experienced very great relief to his breathing; but, at the same time, suffered a considerable farther prostration of strength. In about four or five days, the shortness of breathing returning to as great a degree as before, it was proposed to take away three or four ounces of blood *by cupping* from the chest. But although the shortness

of breathing was exceedingly distressing, yet he begged to avoid the loss of more blood, confident that, although it might afford him temporary relief, the exhaustion of his strength would be irreparable. All that was prescribed by the eminent physician who had first seen him, as well as by two others, proved ineffectual, and within six weeks he sunk, overcome by the accumulation of water in the chest.

Much difficulty occurred in determining the nature of the foregoing case ; particularly at its commencement, when, although slight or low inflammation was feared, the regular occurrence of shortness of breathing at night seemed to point out some other change in the organs of respiration. With respect also to the connection of this disease with the gouty diathesis, much room for conjecture remains. On the one hand, his father having laboured under asthma, was a circumstance which induced the patient himself, and others, to consider the affection of the lungs to be purely spasmodic, and originating in a peculiar hereditary disposition. On the other hand, subsequent reflection excites the suspicion, that the affection of the lungs, as well as the uncommon affection of the thigh, the pain of the side, and the profuse lateritious sediment of the urine, proceeded from

that same prevalent disposition in the solids, or peculiar acrimony in the fluids, on which gout depends, of which too he had experienced a slight attack.

If the conjectures advanced in the preceding pages be admitted, then may it be offered for consideration, Whether the redundant acrimony, from which the uric acid is derived, was not imperfectly eliminated, by the slight attack of gout, which so speedily ceased: and, whether the succeeding anomalous attacks of the thigh, side, and lungs, were not further efforts of the system to procure the change or separation of that remaining morbid matter. Whether gout depends on a peculiar state of the solids, or of the fluids, will not, it is presumed, at all affect this question; since it is not difficult to suppose, that the imperfect completion of gouty action, or the imperfect separation of a morbid matter, might either be succeeded, by the peculiar and anomalous symptoms manifested in the foregoing case.

Many other cases, evincing, that both gout, and its kindred malady the acute rheumatism, frequently occasion serious affections of the internal parts, requiring the utmost exertions of diagnostic skill, might be here adduced. Some of these will

appear in that part of this essay, which is appropriated to the consideration of the different modes recommended for the cure of gout.

Repeated observations have shewn, that most of those who are attacked by disease of the ligaments of the hip joint, after five and thirty or forty years of age, are such as have experienced actual podagral attacks, or who have manifested decided marks of a gouty diathesis. From the observation of this apparent connection, perhaps, originated the term of hip-gout, which is so generally applied to this complaint; and which from the sciatic nerves becoming affected, and marking the course of the pain, is known among medical men, by the term *Sciatica*. Sometimes this affection is found to amount to only slight and transient attacks of pain; but frequently also the attack is more severe and permanent, and is succeeded by mischiefs of a serious kind. Such an alteration takes place in the articular ligaments of the hip, as is productive of a considerable degree of lameness, and a great degree of pain upon exertion during the remainder of life. May not this affection depend on the same morbid acrimony, and on the same deposition on the ligaments, which take place in acknowledged cases of gout?

To this cause there appears to be reason to attribute that painful affection of the loins, which is distinguished by the indefinite term of Lumbago. The circumstance of no symptom of any disease of the kidneys, or of any other viscus being here discoverable, would be almost alone sufficient to direct the attention to the ligaments of the vertebral column, or to the vast tendinous aponeurosis spread on this part, as the seat of this distressing complaint. The increase of pain on sudden and particular motion, as well as the part in which the pain is fixed, also serves to confirm this conjecture, with respect to the parts thus affected.

CHAPTER V.

PARTICULAR AFFECTION OF THE JOINTS, APPARENTLY
DEPENDENT ON THE SAME STATE OF THE SYSTEM
AS THAT WHICH PRODUCES GOUT. — HISTORY,
DIAGNOSIS, &c.

* BESIDES those anomalous affections, already enumerated, as apparently depending on the same state of the fluids, as that which produces regular gout, there is one complaint, probably depending on the same cause, which merits particular attention, from the frequency of its occurrence, and the distressful inconveniences it occasions.

This complaint is—*an enlargement of the joints, which takes place slowly, and which differs, in several respects, from those which proceed from diseases hitherto described.*

* Whilst this work was at press, a few days only previous to this sheet being worked off, the author saw the advertisement of Dr. Haygarth's Clinical History of Diseases. On obtaining the work, he was surprised to find the Doctor had there fully treated of the disease, which is the subject of this Chapter, and which had hitherto so much escaped the notice of medical writers. On perusing Dr. Haygarth's excellent work, some differences appeared between the doctor's account, and that which had been prepared for this work. To

It generally first manifests itself in one of the last joints of the fingers* : the ends of the bones forming the joint become slightly painful and tender, and a small degree of enlargement is at first perceived. The swelling, with the tenderness and pain, gradually increase; so that, at different periods, in different persons, but generally in about three months, the pain and enlargement occasion considerable inconvenience. Myriads of minute hot points sometimes seem to be piercing the bone, whilst at other times a stinging sensation pervades the tumefied part; the pain being considerably increased by the least pressure. The motion of the joint becomes so impeded by the enlargement, that the merely closing of the hand, in its ordinary employments, produces a very considerable degree of pain.

have corrected these in the present work, and thereby to have produced a nearer agreement of the two accounts, might, at first thought, appear to be no more than was actually due to the high professional abilities, and superior opportunities of information, possessed by Dr. Haygarth. But a regard for truth requiring that the facts should be related exactly as they occurred, it was thought fit to present them to the reader, with the observations they produced, as they had been originally noted; and to point out the more important variations, in the two reports, in marginal notes. The advantage of two separate evidences is thus secured.

* In two cases lately observed, this was not the case. In one the inner condyle of the *os humeri* was first affected, and in the other, the internal *malleolus*.

As the swelling continues to enlarge, a very slight degree of redness comes on, and sometimes threatens suppuration, which, however, very seldom ensues. Sometimes this inflammatory state, after continuing a certain time, varying much in this respect in different persons, at length subsides, when the mobility of the joint is found to be much diminished, and the swelling increased in size and hardness, but much less painful and tender. In this state it sometimes continues, with the exception of a very gradual increase of the size and hardness of the tumour, and consequent injury to the motion of the joint, during the remainder of life.

Within a little time, perhaps two or three months, of the appearance of this first swelling, some of the first joints of the other fingers become affected in a similar manner, and pass through a similar course: and thus most of the other finger joints become the seat of this malady, and undergo the morbid changes just described.

As the mischief advances in the hand, proofs of the general influence of a peculiar morbid state are evinced, in some of the larger joints, particularly in the wrists, the elbow, the ankle, and knee joints. But even when the larger joints are at-

tacked, it is not to be ascertained, in the living subject, whether the seat of this malady is in the more prominent parts of the ends of the bones, which form the joint, or of the peritoneum, just before it separates to give a covering to the capsular ligament, or in the ligamentous parts alone. Sometimes extreme tenderness, on pressure being applied, shews that the os calcis, or its immediate investiture, partakes of the mischief. This tenderness, which, in the first of the morning, will hardly allow the foot to rest on the ground, diminishes after the pressure has been repeated, during walking, for about half an hour. Sometimes the tenderness, accompanied by a slight degree of enlargement, exists at the back part of the os calcis; and in one case a knotty seam-like hardness was discoverable in the *tendo achillis*, which very much impeded the walking. A hardness somewhat similar, with an indentation and contraction affecting even the integuments, is also sometimes observed in some of the flexor tendons of the fingers, in those who possess the diathesis here described. When this is the case, the corresponding finger will always be found firmly contracted, in proportion to the injury which the flexor tendon has experienced.

Frequently the bones of the feet become so affected, as to occasion great difficulty and pain in

walking, which is only performed, in a manner, which renders the crippled state of the parts very evident; giving the idea to the patient of the metatarsal bones, which form the arch of the foot, being crushed together by the pressure of the body.

After some time most of the joints, and, with the rest, those of the spine, partake of the prevailing disposition to rigidity; so that at last the flexibility necessary for performing the most simple offices in life is lost. Thus crippled, the unhappy sufferer sinks under his calamity; his various incapacities, proceeding from his inability for motion, giving the idea of his being prematurely afflicted with the decrepitude of old age.

The persons who appear to be most liable to this complaint, are those to whom its injurious effects must prove most particularly afflictive. The labouring poor, whose hands are their only means of support, appear to be the most frequent sufferers by this malady. A slight and transient injury to the hand is, indeed, a serious injury to the poor; but a disease which thus entirely destroys its powers, renders the situation of its victims truly deplorable. They toil on, depressed by observing the daily diminution of their ability

for laborious exertion, and are at last mournfully obliged to submit to receive from charity, that support, which their hands can no longer procure them. The examination of the inmates of those houses which receive the parochial poor, will generally shew sufficient proofs of the prevalence of this malady. Many will be found driven thither who still possess a considerable portion of constitutional strength, but who, thus maimed, are entirely deprived of that blessing to an independent spirit, the power of supporting themselves by their own exertions.

The misery which this complaint sometimes inflicts, is thus enlarged upon with the hope of exciting the attention of medical men towards it, and of inducing them to make known, in their respective circles, those observations which may be likely to prove beneficial in mitigating evils, which must be so severely afflictive to the poor*.

* Dr. Haygarth observes, that "these nodes more commonly attack persons in higher and middle, than in the lowest class of life. However, it is not exclusively a disease of any rank: I have seen it, though seldom, among the patients of the Chester Infirmary." Having first particularly attended to this disease, in consequence of finding myself the subject of it, I made pretty diligent inquiry respecting it, and found it exceedingly frequent among the parish aged

The particular enlargements of the ends of the bones here described, differ sufficiently from those which take place in scrophula, to allow the distinction to be very easily made : they occur much later in life than the latter ; the tumours never acquire that magnitude, nor that soft and pulpy feel ; nor does the skin possess that glossiness and redness which are observable in scrophulous tumours ; neither do they, except very rarely, terminate in suppuration. They differ from those tumours of the joints which proceed from external injury, and which generally accompany a carious state of the bones, in the pain and tenderness, as well as the inflammation and tumefaction, exist-

poor ; which led me very early to make the conclusion, that it existed most frequently among the lower class of the people. Subsequent observation has undoubtedly shewn, that it is not so much confined to the poor as I at first imagined.

Dr. Haygarth also remarks, that “out of the number of cases which he had witnessed (thirty-four), there was but one man.” It happened, as has been already remarked, that I was first led to particularly attend to this malady, by becoming subject to it myself : since which I have certainly seen it in several males ; and have lately seen a node of this kind on the third joint of the finger of a gentleman, which had began to assume somewhat of a pellucid appearance. Recollection, however, confirms the fact, that these nodes more frequently happen to women, and, agreeable to the Doctor’s observation, seldom before the period when the menses naturally cease,

ing in a much less degree than in those. Whether they differ essentially, or only in degree, from those tumours which are formed by the gouty concretions, does not appear to be certain. The first appearance of the chalk-stone, as it is termed, is not unlike that of these tumours; but in general the gouty concretion becomes much sooner pointedly prominent, the morbid matter is more rapidly deposited; the integuments also become pointed and shining, and soon become extremely thin and then ulcerated, allowing the gradual escape of the deposited matter. But in the tumours, to which our attention is here particularly directed, the tumefaction, instead of soon becoming prominent, preserves the general form of the end of the bone, thus enlarged, the integuments undergo but very little change, and, as has been already observed, suppuration seems rarely to take place.

The only instance, at present known to the author, in which this species of tumour had proceeded to suppuration, was in a female about fifty years of age, a maniac, and in a very infirm state. Suppuration had taken place on five of the finger joints, and in one knee, in every one of which the ends of the bones were so carious, as would have rendered amputation necessary, had she not been in that reduced state which forbid it. The

derangement of her mind was such as prevented her furnishing any account of the origin of these tumours, the inflammation and suppuration of which was attributed to her having been constantly exposed to considerable cold, during the preceding winter.

Dr. William Heberden made the following brief remarks on these tumours, to which he has assigned a chapter in his most excellent work.

“ *De Nodis Digitorum.*—Nunquam rite intellexi naturam tumorum, qui interdum nascuntur, ad pisi magnitudinem, prope tertium digitorum articulum. Nihil certe illis commune est cum arthritide; quoniam in multis reperiuntur, quibus morbus ille est incognitus. Per hominis ætatem manent; vacant omni dolore, neque spectant ad exulcerationem. Proinde deformitas major est, quam incommodum: quanquam motus digitorum impeditur*.”

The observations of Dr. Heberden differ in some respects from those which have been offered in the preceding pages. On this difference it

* Gulielmi Heberden Commentarii de Marborum Historia & Curatione, p. 130.

will be necessary to make a few remarks. The Doctor speaks of these tumors, as *existing only on the third joints of the fingers*, which may be accounted for from the circumstance of their almost always making their first appearance on those joints; some months, and even sometimes years, elapsing before they appear on the second series of the finger joints. Although it is undoubtedly a fact, that *they are often to be found on those persons to whom gout is unknown*; yet they often exist where gout has manifested itself, in some slight attack, at some former period. This has appeared to be the case, on inquiry of several hard working people, who had no idea of having been honoured by a visitation of gout; but who could remember, at some former period, having a slight redness, with pain, on the instep or ankle, which they had considered merely as a sprain or rheumatism. The Doctor speaks of these tumours as being entirely free from pain; but that they are sometimes painful, giving the sensation which excites the idea of stinging and burning, the author's own personal experience has proved; but this is not constant, and, perhaps, does not exist until after the tumours have attained a certain stage. These differences being thus explained, no doubt can remain that the disease, noticed by Dr. Heber-

den, is the same with that to which this chapter is devoted.

In a disease, the observations respecting which have been made by so few persons, sufficient facts do not appear to be yet collected, to allow the forming of a well-founded opinion, respecting the causes on which its existence depends. Considering, therefore, that, in this state of our knowledge respecting this disease, conjecture is excusable, the following suggestion is offered.

It has been already endeavoured to shew, that, from certain errors in the modes of living, a peculiar saline acrimony is engendered in the system; from which, during the paroxysms of gout, a deposition of a peculiar saline combination is formed, on those parts which become the seat of gouty inflammation. It also appears that Nature has appointed other outlets for this morbid matter, such as the kidneys, and certain emunctories on the surface of the body. Besides these, it is conjectured, that when the morbid matter exists in less abundance, than in those habits in which it excites gouty inflammation, the periosteum, or the ligaments, or the ends of the bones themselves, may assume the office of slowly secreting from the system, and of depositing that matter which,

if allowed to accumulate, would, perhaps, demand for its removal the more violent and more extensive action, which constitutes a fit of the gout. It appears to be rather confirmatory of this conjecture, that this affection of the finger joints has, as in the author's case, been found to take place after the attacks of gout in the feet have been suspended. Another circumstance, which also tends to confirm the conjecture here offered, is, that the persons whom this disease generally attacks, are those whose chief drink is malt liquor, or those who drink sparingly of wine, and whose fluids, therefore, may be expected not to abound so much with the uric acid as those whose indulgencies are less limited. All this is, indeed, but conjectural. The suggestion is, however, admitted here, since the arguments which may be employed in its subversion may serve to erect a better founded and more useful fabric.

The plan of treatment which has been adopted for this malady, it is agreeable to observe, has, in the few instances in which it has been employed, been generally successful. The assumed indications on which the removal of these tumours were attempted are,—1st. To diminish the increased action of the vessels, in the part, by which the secretion of the morbid matter is performed : 2dly.

To promote a free perspiration of the part affected: and 3dly. To correct the prevailing disposition to acidity in the primæ viæ, and in the system in general.

The means which it has been thought proper hitherto to employ, for the accomplishment of the first of these objects, has been the application of one or more leeches to the tumefied part; the number of leeches being determined by the extent of the tumour and degree of the disease. To obtain the object of the second indication, the part has been surrounded by a plaister of equal parts of simple diachylon and of white soap, the adhesion of which to the skin becomes in a few days so slight, as to admit the free exit of the perspirable matter through the skin which, hindered from escaping farther, condenses on the surface of the plaister. By this application the part is kept continually moist, frequently so strictly so, as to appear on the removal of the plaister, after two or three days, as if it had been so long soddened in hot water. To fulfil the third indication, a due attention has been advised to the mode of living, by avoiding acid and acescent matters, and particularly such fermented liquors as have begun to manifest marks of acescency: in a word, the regimen here particularized, as appearing to be best calculated for the

gouty, has been enjoined. To neutralize that acidity which, being present in the stomach, would secure its increase, by acting as a ferment, the soda has been given in doses from five grains to ten or fifteen in the day.

From the combined influence of these measures, the utmost success that hope could look for has been obtained. The gradual diminution, and, finally, the complete removal of such tumours as have existed for several months, have been thus procured; whilst those which have existed for some years have been so much reduced, as to allow of considerable motion in joints which had become nearly immoveable.

In the author's case, a node of this kind was removed from the last joint of the third finger of the right hand, which had continued upwards of twelve months; as well as one from the last joint of the first finger, and one from the last joint of the second finger of the same hand, one of which had existed about six, and the other about three months. One was also thus removed from the last joint of the thumb of the same hand, which, although it had not been more than a month forming, had acquired considerable size, and appeared to be making a rapid progress.

Soon after the application of the leeches, the sensation of heat and stinging in the parts ceased, and the tumours became nearly free from pain. In some of the tumours a slight diminution soon became perceptible, as if the deposition of the morbid matter having ceased, with the increased action of the vessels of the part, the continued ordinary action of the absorbents was sufficient to carry away that portion of matter, which had been already deposited. In other tumours of this kind, although the pain was thus removed, as well as the inflammation of the integuments, still their size remained unchanged until the soda had exerted its influence on the system, when their diminution evidently took place.

In a female, about fifty years of age, the benefit of this plan was very evident: the joints of the fingers were almost all considerably enlarged: the insteps suffered considerable pain, on the feet being pressed to the ground, proceeding from the enlargement of the lower ends of the metatarsal bones: considerable pain was also occasioned by every attempt to walk, owing to a tumefaction of the lower ends of the tibiæ. From these causes, which had existed eight or ten years, but which had considerably increased in the last three years, she was able to walk but little more than a quarter

of a mile at a time, and that with a great degree of pain. Leeches were applied to the tumefied parts, and repeated about every ten days, and twelve grains of soda were taken every day for about a month. At the end of that period the amendment, which had commenced after the first week, had become so considerable, that she was able to walk two miles, and return, after three or four hours resting, with but very little inconvenience. After this, she repeated the leeches at more distant periods, and took the soda in smaller quantities, under which plan she continued to improve so much, that, to use her own words, she seemed to be made young again. In fact, the change she experienced was so great, being released from pain, and rescued from what had been deemed the decrepitude of age, that a total change took place in her habits; her long hoarded dresses and ornaments were resumed, and her old acquaintances were again visited. Her spirits, naturally good, but which had been depressed by pain and confinement, were now rallied; and a considerable degree of hilarity manifested such delight, as might be expected to be felt by one who had, as it were, shaken off those infirmities which she had expected to continue during the remainder of her life.

CHAPTER VI.

INDICATIONS OF CURE IN THE GOUT—TO PREVENT
THE FORMATION OF THE MORBID ACRIMONY—TO
REMOVE AND CORRECT THAT WHICH ALREADY EXISTS
—TO REPAIR THE DIMINISHED STRENGTH OF THE
SYSTEM—INDICATIONS DURING THE FIT.

AGREEABLE to the various opinions which have been entertained, respecting the nature of this disease, have been the different conjectures respecting its cure. Those who have believed gout to be an affection of the nervous system, depending upon a certain general conformation and state of the body, have consistently believed that it was not very probable that it was curable by medicine. Those also who have believed it to depend on a certain unknown morbid matter, have also, with equal propriety, conceived it to be incurable, until the real nature of that morbid matter was ascertained.

The experiments, however, of Dr. Wollaston, have, as it has been shewn, determined the nature

of the peculiar morbid matter which is formed, and secreted, in gouty habits; and hence the nature also of the peculiar acrimony from which that matter is derived, and on which gout itself depends, may be conjectured, and, perhaps, with a tolerable near approximation to certainty. On these grounds, it is presumed, that the cure of gout is to be attempted on new principles, and with a much greater chance of success, than heretofore there could have been reason to expect.

The various phenomena which constitute gout, and the several circumstances which have been enumerated as its remote causes, lead to the adoption of the following indications of cure during the intervals of the paroxysms. First, To prevent as much as possible the formation of that peculiar saline acrimony, on which the disease has been supposed to depend. Secondly, To procure the removal and correction of so much of this acrimony as may be already formed. Thirdly, To repair the diminished powers of the system.

Whilst endeavouring to comply with the first indication, by preventing the formation of that peculiar saline acrimony, from which this disease is supposed to proceed, it must be considered that this acrimony appears to be connected with

the formation of a peculiar acid, the uric, which most probably derives its constituent principles from that acidity which is formed in the stomach, and is afterwards admitted into the circulating mass. Great caution, therefore, appears to be necessary in the selection of such articles of diet as will best agree with this indication.

Having already pointed out the injurious tendency of *wine* in promoting the formation of the gastric acid, little more need here be said than to remark, that in several instances, where its employment has been suspended, benefit, proportionable to the length and rigour of the penance, has almost always been experienced. A gentleman of considerable respectability in the city, about forty years of age, whose father was much tormented with gout, had enjoyed a good state of health until about five years before, when he first experienced an attack of gout in the foot; which was repeated within the twelvemonth. After this the fits became so frequent and long, that no sufficient time occurred between them to admit of the recovery of strength. Hence he appeared to be hastening, from the continual shortening of the intervals, between the paroxysms, and the perpetual increase of his debility, to a state of permanent lameness and disease. His indul-

gence at the table was within the bounds of moderation ; and half a pint of wine after his dinner, with a pint of porter, or a glass of brandy and water in the evening, constituted his general indulgences of that kind. With a curative intention he had been in the habit, for about three months, of drinking a solution of soda, highly supersaturated with carbonic acid.

Being a person possessing a full share of reason and fortitude, the opinion which had been formed respecting the disease, and the necessity of exact compliance with the prescribed rules, were explained to him. He was ordered to abstain from wine and all fermented liquors ; to drink with, and after his meals, in as small a quantity as he could be satisfied with, spirits, very much diluted with water ; to take about fifteen grains of soda (carbonated) in the course of the day ; to use as much exercise, as his strength would permit ; and to eat freely of such vegetables as should not appear to occasion acidity in the stomach.

Anxious for relief, and aware of the necessity of exact attentions to the prescribed rules, he complied with the greatest fidelity. After taking the soda for a month, as directed, the quantity was reduced to a half, which was persisted in about

a month longer. The regulations as to regimen were, however, strictly attended to for upwards of two years, during which time no appearance of gout offered itself. But during the succeeding six months, circumstances occurring which rendered his presence in convivial parties more frequent, he then experienced a few menacing sensations, which he directly opposed with the soda, and necessary abstemiousness, and with success.

A gentleman, about fifty years of age, who had indulged freely in the pleasures of the table, had been the victim of gout about fifteen years, and, during the last three years, had been confined every three or four months, with extreme pain, from one hip to the other, over the os sacrum, which left him in a crippled state in the intervals. About twice, in this period, the disease manifested itself in the feet and knees, during which attack, and for some time afterwards, the back and loins were essentially relieved.

The plan adopted in the foregoing case was recommended in this, and was pursued for upwards of six months with tolerable exactness, the transgressions being but seldom : in consequence, he remained free from disease, for nearly twelve months, when the deviations from the prescribed

rules, which at first had been but trifling, became now so considerable, as nearly to approach to an equal indulgence in injurious habits, with what had formerly been admitted. Hence ensued a return of disease, but under circumstances more easy of endurance, the pains being confined chiefly to the feet. The relief obtained in this case, appearing evidently, to the patient himself, to be the result of the changes which had been recommended, the soda was occasionally taken, and regimen attended to, when the urgent influence of example, and the unwillingness to act different from those around him, did not oppose the suggestions of prudence. Hence, as might be expected, but a partial benefit was obtained; the relief, however, evidently agreed with the degree of strictness, with which the rules were attended to.

In proportion to the strictness of the abstinence from the use of wine will, in general, be found the degree of benefit experienced. Considerable difference also will be found, in this respect, from the kind of wines which are employed. The low English wines, either surcharged with carbonic acid, or approaching to the state of vinegar, low claret, thin port, and foreign white wines, lowered by English wines, appear to be

most injurious. Old Port, sound, and with the least possible acescency, and Madeira, possessing similar characters, appear to be the most preferable of these ensnaring poisons.

The injurious effects of *fermented liquors in general* have already been fully noticed whilst considering the causes of this disease: it only, therefore, remains to particularize again the different states in which these may be found, and to point out which of these are to be considered as injurious, and therefore necessary to be avoided; and which may safely be admitted, whilst aiming to attain the cure of this disease.

As has been already observed, fermented liquors may be found in the state of evident fermentation; in a state, in which sensible fermentation has ceased, and a spirituous principle prevents its progression towards acescency; and in a state of acescency, or even of actual acidity. From what has been already said, it must be evident, that the middle state is that in which these liquors are most admissible. In the first mentioned state, there is reason to fear injury, not merely from the quantity of carbonic acid thus introduced, but also from the rapidity with which fluids in this state pass on, in some states of the stomach, to acidity.

The mischiefs likely to result from the employment of these liquors, in the last mentioned state, must be sufficiently obvious, if the nature of the disease has not been here entirely misrepresented.

Whilst endeavouring to prevent this disease, by the adoption of a proper regimen, it is necessary that the attention should be particularly directed to one circumstance, which would not otherwise, perhaps, obtain that consideration which it really demands. The general beverage at dinner, *small or table beer*, and which is often taken with a considerable degree of freedom, is seldom thought to be of consequence sufficient, to be considered as to its injurious effects; whilst, undoubtedly, great part of that which is drank, is in a state very ill fitted for the stomach of the valetudinarian. Unless this kind of malt liquor possess more strength, than that which is generally possessed by the liquor, designated by the name of small beer, it will, very soon after the air is allowed access to it, run into the acetous fermentation. Frequently also, it is to be feared, that some particular management takes place here, as well as in the stronger beers, and that, perhaps, sour beers are broken in and mixed with the new, to render it fit for almost immediate use, or to

get rid of that which, alone, would be found too sour for drinking.

It is necessary, therefore, that those who are disposed to gout or gravel should be extremely particular in this article of their diet, and to resolve never to drink of this liquor when it manifests acidity. The injurious consequences which result from drinking table beer in this state are, indeed, much greater to the temperate man, than those which proceed from faulty wine; since he will take, perhaps, only two or three glasses of the latter, whilst he may be in the habit of taking as many half pints of the former, which, probably, is much more abundant in acidity, than any wine is which is ever drank. Indeed it is necessary to add, that with respect to these, and other similar liquors, an acescent state is sufficient to prohibit their use; since the stomach, in those who are disposed to gout, possesses, in a particular degree, the property of converting those substances, which are only in an acescent state, almost immediately into a state of absolute acidity.

The observation just made equally applies to most other acescent substances, among which may be placed many of the articles of *confectionary* and *pastry*, particularly such marmalades of fruits,

and such fruits as have been preserved in syrups, which have been susceptible of some degree of fermentation. A very intelligent observer, subject to nephritic attacks, has informed me, that repeated observations had convinced him, that the employment of such ripe fruits, as currants, gooseberries, &c. which naturally contained much acid in their mature state, was always sure to increase his sufferings. With respect to vegetable acids, particularly those of the stronger kinds, such as vinegar, juice of lemons, &c. if the leading opinions, in these pages be well founded, they must be in the highest degree injurious. It is indeed very probable, but on this subject farther observation is necessary, that they may be even more injurious, than the stronger *mineral acids*, in which the acidifying principle adheres to its bases, with a stronger degree of attraction, and is therefore less likely to enter into any new combination in the human body.

To the rational, and to those who will give themselves the trouble to think on the subject, it must be obvious, that perseverance is absolutely necessary, in the employment of any dietetic arrangement, from which a cure is expected. It has been endeavoured to shew, that the disease depends on a morbid acrimony, generated from cer-

tain errors in the article of diet : the correction of this error must, therefore, be effected, if the recurrence of the dreaded malady is intended ; if the cause be allowed to exist, the effects must be expected to follow. " Can," says Dr. Cadogan, " any one in his senses suppose that diseases a man has been his whole life contracting, and to which he is adding every day by perseverance in unwholesome diet and bad habits, are to be removed by a *coup de main ou de baguette* ? or that they will not return, be they cured or conjured away ever so often, whilst he continues the same mode of life that brought them on at first ?"

A debilitated state of the stomach having been here regarded as the fountain of that acidity, which, by its influence in the system, produces those various symptoms which characterize gout, it becomes necessary to ascertain what means are best adapted for the correction of such a morbid state of this organ.

For this purpose, the employment of Peruvian bark, and of the various aromatic and stomachic bitters, must be regarded as likely to be productive of considerable advantages. It is hardly necessary to remark, that some care is, however, necessary in the selection to be made on this occa-

sion. This must be directed by the state of the liver and other viscera, the more or less predominance of acidity in the stomach, as well as the greater or less degree of irritability possessed by this organ. Thus, in some cases, in which the liver and its appendages may be suspected to a disposition to obstruction, it will be found necessary to employ, in preference to tonics, those bitters which exert a beneficial influence on both organs. In most cases it will be found necessary carefully to remove any accumulation of bile, and to cleanse the stomach and intestines, from any *sordes*, previous to the use of either bitters or tonics. In doing this, the state of the stomach must be sedulously attended to. If acidity is prevalent in a very high degree, pure magnesia may be regarded as the most appropriate medicine: if the stomach is irritable to excess, small but sufficient doses of the least disgusting saline purgatives may be employed: but if a contrary state of the stomach is present; if it, as well as the intestines, are in a state of torpor, rhubarb, aloes, and particularly calomel, may be employed with considerable advantage. Cases also must sometimes occur, where the stomach will be so obviously oppressed by the accumulation of undigested and other injurious matters, as to demand their immediate rejection; then the aid of ipecacuanha,

or the still more powerful operation of an antimonial emetic, will be demanded.

The fatal consequences which have been observed to follow the unguarded employment of bitters and tonics, by the subjects of this malady, requires to be here particularly considered.

Dr. Cadogan, speaking of the Duke of Portland's powder, long celebrated for its efficacy in curing this disease, says, What was this medicine, and what did it really do? It was a strong spicy bitter taken in substance, in a large quantity, for a long time; its effect was to keep up a constant fever as long as it was taken; this kept the gouty matter always afloat, and prevented its fixing any where. But there was no living long with a constant fever; accordingly many of those who took it died very soon. I myself observed between fifty and sixty of its advocates, some my patients, some my acquaintance or neighbours, who were apparently cured by it; but in less than six years time, *omnes ad internecionem cæsi*, they all died to a man*." Cullen remarks†, that in every instance which he had known of the exhibition of

* A Dissertation on the Gout, p. 67.

† First Lines of Practice of Physic, vol. ii. p. 104.

this medicine for the length of time prescribed, the persons who had taken it were, indeed, afterwards free from any inflammatory affection of the joints ; but they were affected with many symptoms of the atonic gout ; and all, soon after finishing their course of the medicine, have been attacked with apoplexy, asthma, or dropsy, which proved fatal.

Considerable difficulty accompanies the attempt to explain, why this class of medicines should have been found to prove so injurious, in cases of this kind. But, perhaps, some aid may be furnished by the following remarks ; the opinion which they contain requiring the adoption of no particular theory, respecting the nature of this disease.

It is justly observed in the useful and elegant Commentaries of the late Dr. William Heberden*, that since gout materially injures the stomach, so that the patient neither desires nor digests his food as before, it is not unlikely that this disease may be so restrained and overpowered, by those means which give power to the stomach, as to give reason to hope, that although the complete resto-

* Gulielmi Heberden Commentarii de Morborum Historia & Curatione, pagin. 49.

ration of health be not effected, yet much relief may be thus obtained. That whatever good effects result from this mode of treatment are produced in this manner, there can be little doubt. By the same action on the stomach may the injurious effects, which have been noticed, be also thus produced. In every one who has been long under the dominion of this disease, a peculiarly delicate state of the vascular system is observable. The vessels, however, accommodating themselves to the quantity of fluids they contain, which, from the impaired powers of the stomach and intestines, may be expected to be not very abundant, no mischievous effects follow. But when, from the powerful stomachic effects of the bitters, not only a greater portion of food is taken into the stomach, but a greater quantity of chyle, and consequently of blood, is produced, a plethoric state may be induced; the quantity of blood may exceed the powers of the already weakened vessels in which it is contained, whence may proceed those congestions, on which the production of asthma, dropsy, apoplexy, &c. may depend. A circumstance of pretty general occurrence will strongly tend to procure this effect. The arthritic, suffering under considerable debility, to which diminished appetite and impaired digestion has much contributed, delighted with the restored powers of

gratification, and eager to obtain a rapid renovation of his health, indulges his appetite without restraint, and thus totally destroys his health, which he was confidently hoping to establish:

Under such a course of stomachics, therefore, it would be necessary that the patient should not only most cautiously guard against the employment of *too large a quantity of food*, but should also be careful in selecting that which is best adapted for his case. Should the stomach not be capable of digesting butcher's meat, fowls, game, rabbits, and fish, and particularly shell fish, should be had recourse to; if the stomach be not equal to these, boiled milk or milk pottage, light puddings, custards, tripe, or calves feet, may be taken. Wine and other acescents, pickles, heating spices, and acids, should be carefully avoided. When the stomach is capable of taking lamb, beef, mutton, &c. these should be taken, but in moderate quantities, with such vegetables as brocoli, asparagus, cauliflower, cos lettuce, endive, &c. remembering that bodily exercise should always be used, in proportion to the quantity and kind of food which is employed.

Among the remedies which have been employed in this disease, whose beneficial effects appear to

depend, chiefly upon the power of correcting the morbid state of the digestive organs, must be classed those substances, which possess the power of neutralising the acidity, which is so frequently prevalent in the stomach of gouty subjects. The most powerful of these, appear to be the fixed alkalies in a pure state; but since the causticity which they thus possess is so considerable, as to render them highly obnoxious to many persons, the same alkalies, in a carbonated state, are, perhaps, preferable. The volatile alkali also, in a carbonated state, is a remedy which may be occasionally employed, with considerable advantage, in those cases in which its stimulant or diaphoretic powers are also required. Lime water and pure, or, as it is termed, calcined magnesia, may also be beneficially employed.

Speaking of this class of remedies, Cullen observes: "Another remedy which has had the appearance of preventing the gout, is an alkali in various forms, such as the fixed alkali, both mild and caustic, lime water, soap, and absorbent earths. Since it became common to exhibit these medicines in nephritic and calculous cases, it has often happened that they were given to those who were, at the same time, subject to the gout: and it has been observed, that, under the use of these

medicines, gouty persons have been longer free from the fits of their disease. That, however, the use of these medicines has entirely prevented the returns of gout, I do not know ; because I never pushed the use of those medicines for a long time, being apprehensive that the long continued use of them might produce a hurtful change in the state of the fluids*."

The following case will shew, that the caustic fixed alkali possesses very considerable powers in, at least, preventing the access of the gouty paroxysm, if not, in even preventing the formation of that morbid acrimony of the fluids, on which gout has been supposed to depend.

CASE.

J. P. was of a sanguine temperament, and born of parents who had not been subject to either the gravel or gout. His food was generally plain ; and his convivial indulgences were by no means frequent, but wine, or some other fermented liquor, was at these times generally employed. Until nearly forty years of age he had enjoyed almost uninterrupted health ; but at this period he was first attacked with gout in the foot ; the

* First Lines, D.LVIII.

fit being uncommonly severe. During the succeeding six or seven years, he was subject to very violent paroxysms, which, during the latter three years, occurred twice every year, and confined him at least a month or six weeks each time.

Whilst recovering from a severe and tedious paroxysm, he received a visit from the late Dr. Hugh Smith, who informed him, that a gentleman of respectability, in Essex, who had been subject to both gravel and gout, had, three years before, taken Blackrie's Lixivium (a solution of pure fixed alkali) for the cure of the gravel, and had never since been attacked by gout: he therefore recommended to him the trial of it as an anti-arthritic. In consequence of this recommendation, he took the lixivium for a twelvemonth, avoiding wine and other acescents most carefully, no symptom of gout making its appearance. At the end of this time, finding no return of gout, he relaxed in his use of the soap-lye, and began to drink of stale porter. Within about a twelvemonth, from his thus resuming the use of this powerful acescent, an acute pain took place immediately beneath the pubis, which did not abate of its excruciating violence until two hundred drops of laudanum were injected, mixed with a proper fluid, into the rectum. He continued to

endure daily excruciating tortures in this part for upwards of two years, notwithstanding very frequent and large doses of opium were employed to abate them. The nature of this complaint was never actually determined, although every circumstance attendant on it seemed, at one time, to warrant the supposition of its being a case of schirrous contracted rectum. At the end of rather more than two years, the pains considerably abated; but very soon after ascites was found to have established itself, the distressing attendants on which closed the melancholy scene.

REMARKS.

The foregoing case affords very strong evidence of the anti-arthritic powers of the fixed alkali. The attacks of gout, which had been regularly made for a considerable time, were by this remedy entirely prevented, and perfect health might have, probably, succeeded, but for the improper indulgence in acescent liquors. It also displays a striking instance of an uncommon and anomalous complaint, succeeding to the interruption of the regular progress of the gout, and of that disease refusing to occupy that part which it once possessed, but from which it had been expelled. The attacks had been constantly made on the feet, but after the correction of the gouty acrimony by the

soda, and apparent restoration to health, the disease which succeeded, and which, though not actually proved to be gout, was the consequence of an acknowledged exciting cause of that malady, fixed its seat, not on the feet, but on an internal part. The whole view of the case shewing, that the progress of regular gout should never be interrupted, unless sufficient resolution is possessed by the sufferer, to enable him firmly to resist the temptation of continuing in those injurious indulgences, which will create that acrimony on which the disease depends.

Repeated instances of the successful employment of the fixed alkali, even in its more ordinary form, the carbonate of soda, have plainly evinced its efficacy in preventing the attacks of gout.

With respect to the *modus operandi* of this medicine, nothing certain can, perhaps, as yet be asserted. Whether its beneficial effects result from its action on the stomach and its contents, on the morbid acrimony existing in the blood, or on the gouty matter when formed, must be determined by future and more successful observations. In the mean time it must be allowed that conjecture, at least, leads to the opinion, that the power of this remedy is chiefly exercised on the contents of the stomach,

checking the progress of the acid fermentation, The mere neutralization of the acid matters, already formed in the stomach, could yield no material benefit; since their neutralization would facilitate their admission into the blood, where the developement of the acid would afterwards take place.

It is not, however, meant to deny, that the alkali may exert its influence, in some small degree, in the correction of the morbid acrimony existing in the blood. From the experiments of Dr. Wollaston we may conclude, that if the vegetable fixed alkali were applied in a free state to the gouty matter, the urate of soda, whilst circulating in the vessels, its deposition would be prevented. If also it were to be applied to the gouty matter, when deposited by the vessels destined for its secretion, its dissolution might also be expected to take place. On this supposition, indeed, it appears that the Doctor himself offers the following observations:—"The knowledge of this compound (the gouty concretion) may lead to a farther trial of the alkalies which have been observed by Dr. Cullen to be apparently efficacious in preventing the returns of this disease (First Lines, D.LVIII.); and may induce us, when correcting the acidity to which gouty persons are

frequently subject, to employ the fixed alkalies, which are either of them capable of dissolving gouty matter, in preference to the earths (termed absorbent) which can have no such beneficial effect*."

The fixed alkali, even when it is taken into the stomach in a free state, cannot, however, but soon become saturated, in that organ, with carbonic acid. In this state it most probably passes into the blood; but whether it there becomes applied to the urate of soda, in such a state, as to produce its union with that substance to the degree of supersaturation, and thus increase its solubility, and effect its discharge from the system, can only be determined by such a knowledge of the agency of different chemical affinities, in the vascular system, as is little likely to be obtained.

The resolution of tumours, which apparently arise from a deposit of this kind, and which, it will be shewn, sometimes takes place during a course of the fixed alkali, seems to point out such an action on the accumulated morbid matter. On the one side it may, indeed, be supposed, that

* Philosophical Transactions, 1797, Part II. p. 389.

the absorption of the deposited matter may be the result of the combined action of those vessels, which bring to the spot the liquifying alkali, and of those absorbents which immediately take up, and remove the morbid matter at the moment of its having undergone this remedial change. But, on the other side, it appears to be as probable a conjecture, that the source of the gouty matter being destroyed, and no more deposited, the absorbents, merely by continuing that action, which may have never been suspended, but has been only exceeded and overpowered by the morbidly increased action of those vessels which separated the gouty matter, may effect the complete removal of that which has been already deposited. How far such an effect is produced, by the absorbents possessing a power of election—an ability to effect the separation of some particular principles of bodies from others, and of thus commencing a chemical resolution of the body to be absorbed, should not, perhaps, be here examined. It is however probable, that in the performance of secretion, of exhalation, of absorption, and of other important functions in the animal system, chemical action performs a more important part of the task, than can be readily conceived.

But to return.—That the greater part of the

salutary effects, succeeding to the use of the fixed alkali in these cases, proceeds from its action on the stomach and its contents, will, it is presumed, not appear improbable, when it is recollected how rapidly generative is every morbid acid ferment in the stomach, of a similar state, in every substance which it meets with in that organ. Thus, by neutralizing the gastric acid, its power is destroyed of extending that fermentation by which it was formed. Hence, according to the length of time required for the restoration of this fermentative process, will be the diminution of the formation of acid, not only in the stomach, but even in the bowels: and thus, the poison being checked in its formation, the curative powers of the animal system become equal, not only to the task of repairing the injuries it may hitherto have occasioned, but also of sufficiently correcting the lessened quantity which may happen occasionally to be formed.

The opinion which has been proposed, respecting the nature of gout, and the correction of the acrimony, on which it is supposed to depend, derives considerable support from the beneficial effects which succeed to the employment of the fixed alkali in those other diseases, which that hypothesis supposes to depend on a similar acri-

mony. In those nephritic cases, in which the presence of sabulous matter is marked, by considerable pain in the region of the kidneys, the most speedy and salubrious effects have resulted from the free use of this remedy. It has been seen in numerous instances, that within a very small time after taking the quantity of fifteen or twenty grains of carbonated soda, a large portion of gravel has passed away, by which immediate relief has been obtained. In chronic rheumatism some good effects have followed from the use of this remedy; but these, perhaps from the medicine not having been employed a sufficient length of time, it must be admitted have not been strongly marked: but in acute rheumatism, the effects have been repeatedly seen to be most decidedly beneficial. This was particularly observable in two cases, which occurred just before this sheet went to press. In one of these cases, in which the wrists, elbows, ankles and knees, were most severely affected, and in which the redness of the integuments and the pain were more than commonly great, Dover's powder was freely employed without benefit for three days. The soda was then given on the fifth day of the disease, in doses of eight grains every six hours, with one dose of the Dover's powder, of ten grains at night. The following day great relief was experienced, and by

three days further perseverance in this plan, a complete cure was effected.

That the *volatile alkali* also possesses considerable efficacy, in correcting a disposition to gout, may be inferred from its possessing, as well as the fixed alkali, the property of neutralizing acid substances. In addition to this, its possession of anti-arthritic powers may be concluded from the remarkable coincidence of practice, in the employment of large doses of the volatile alkali, both in the cure of gout, and of its prototype the acute rheumatism. The use of this medicine has been recommended in rheumatism by almost every writer on that disease. Dr. Dawson, more than thirty years ago, recommended its liberal employment in the acute rheumatism; seldom prescribing a less dose than six drams of the volatile tincture of guaiacum, and, in general, with the happiest effects. Dr. F. Warner, formerly Vicar of Westham, Essex, who had suffered much from the tortures of the gout, experienced so much benefit in the treatment of his own case, and of those of others, by the use of opium, in combination with large doses of the volatile alkali, that as a performance of an indispensable duty, he published an account of those cases, in which this remedy had appeared to be eminently successful. The use of

this medicine in diseases in which an inflammatory disposition manifests itself, as in the gout, and particularly in the acute rheumatism, might be considered as liable to be productive of some degree of inconvenience, from its stimulant effects on the system. But, that it manifests no injurious effects in these cases, is agreeable to repeated observation. Even Dr. Kinglake, who, exceedingly averse to the employment of any heating or stimulating means in the cure of gout, would doubtless superintend the operation of this medicine with extreme vigilance, found that no circumstance occurred which prohibited his employment of the volatile tincture of guaiacum with the camphorated tincture of opium, in doses to half an ounce of each at intervals of four hours.

It does not appear to be necessary to dwell much on the importance of recruiting the strength and of restoring the general tone of the system. The necessity of doing this, and the means by which it may be accomplished, are in general sufficiently known. A continued attention to those rules of diet and exercise which have been already laid down, with the occasional use of tonics, among which the pre-eminence must, perhaps, be allowed to preparations of bark and of steel, will be required in most cases. After what has been

already remarked on the employment of this class of medicines, as well as of bitters, whilst treating of the best mode of complying with the indication of amending the state of the stomach, nothing more seems necessary to be added here.

To promote the removal of that portion of acid which already exists in the system, it is plain, that much advantage may be derived, from the occasional use of those means which increase the discharges, by which its removal from the system appears to be naturally effected. These, as has been attempted to be shewn, are the urine and the matter of perspiration. When either of these manifest the presence of acidity, the increase of that particular discharge is evidently indicated; since, as the quantity of the vehicle is augmented, so must be its power of sustaining and carrying off the injurious saline particles. Thus when the urine, in those disposed to arthritic affections and urinary concretions, is loaded with a pink sediment, those articles should be employed which possess a diuretic power. On this principle, diluting liquors should be freely taken, and such substances used in diet, as manifest a power of promoting the urinary discharge, such as leeks, onions, garlic, &c. should be liberally employed. Thus also when the matter of perspiration is dis-

covered to be of an acid nature, every means, not forbidden by other circumstances, should be employed, by which its discharge can be promoted and increased*.

Agreeable to the advice just offered, and to the opinion respecting the nature of this disease, which has been adopted in these pages, is the opinion given, on this subject, by the celebrated Cullen. So firmly did he believe in the salutary powers of exercise, that he gives it as his opinion, that the gout may be entirely prevented by constant bodily exercise, and a low diet; even in persons who have a hereditary disposition to the disease. So confident was he of the efficacy of such a mode of treatment, as to be persuaded, that even in those who have had repeated paroxysms of the gout, labour and abstinence would absolutely prevent any returns of it for the remainder of life. Indeed, when the extensive effects of exercise, on the system, are contemplated, the beneficial consequences of its employment, in this disease, must be obvious. Besides the benefits derived to the system by the acquisition of a higher degree of tone, and by an improved state of the

* Dissertation on the Gout, &c. by William Cadogan, M.D. page 68.

stomach, there cannot exist a doubt, but that by the increase of the discharge from the emunctories of the skin, the system is also freed from various effete and acrimonious substances, the removal of which must contribute to the preservation of the general health. It has been already shewn, that amongst the various matters which are thus removed from the system, certain saline particles are constantly present; and in arthritic habits, and particularly from parts suffering under gouty action, a pungent acid is particularly observed. Hence it is concluded, that, by perspiration, the superabundant acid is frequently removed, which, being retained, might become the cause of gout.

Free and even laborious exercise, not employed to the extent of inducing considerable fatigue, may be regarded then, on this principle, as one of the most effectual means of preventing the existence of that morbid state of the system, for the correction of which, the gouty paroxysm appears to be produced.

With the view of still farther promoting the removal of this peculiar saline matter, by perspiration, every means should be employed to secure the free exercise of the functions of the

exhalant vessels, from which the matter of perspiration flows. With this intention, warm bathing might be sometimes beneficially employed. For this purpose also, flannel should be worn constantly, in the day time, next the skin. Particular care should be likewise taken to correct, as much as possible, that coldness of the lower extremities, which is almost constantly observable, in those who are disposed to gout. This may be, in a great measure, accomplished, by having the worsted under-stockings of so coarse and rough a texture, that they may not only be effectual, in preventing the dissipation of the heat, but may, by their irritating the surface, keep up the action of the extreme vessels. As this unpleasant and injurious state of the lower extremities takes place, particularly whilst in a sitting posture, much benefit may, perhaps, be derived from supporting the feet, so as to raise the legs nearly to a level with the thighs: the interruption to the passage of the blood, by the pressure of the inferior and lower part of the thighs, on the edge of the seat, being thereby diminished, and the return of the blood through the veins being thereby also promoted.

The correction of the morbid acrimony existing in the blood, it must be sufficiently obvious, must

chiefly depend on a strict adherence to a properly adapted regimen: the principles on which the necessary regulations, in this respect, may be founded having been already explained, nothing more need be here added.

As to the power of different alkaline or earthy medicines in this respect, as has been just remarked, nothing certain can, perhaps, at present be known. The probability however is, that by a continued use of medicines of this class, such as have been already recommended, for their efficacy in diminishing the creation of acidity, by the gastric fermentation, a very beneficial influence may be exerted by the neutralization of that acidity, which already exists in the blood. Nor can there exist a doubt, that by these means, unless due attention is paid to the effects produced, the opposite state of the system may be induced; and as gout, gravel, and acute rheumatism, had been produced by a prevalence of acidity, so scurvy, the other extreme of the scale, might be found to proceed from the too free introduction of fixed alkali into the system.

CHAPTER VII.

TREATMENT DURING THE FIT—DIFFERENT INDICATIONS NOTICED—OPINION OF CULLEN—OPIATES—TOPICAL APPLICATIONS.

IF the opinions and principles, respecting the nature and cure of gout, have been delivered with sufficient perspicuity, very little need be said of the treatment necessary during the paroxysm. If these be kept in view, and such measures be adopted as may serve, to correct that acidity which already exists, to prevent its formation anew, and to promote its escape from the affected part, the rest of the treatment will require but little deviation from that recommended by Sydenham and Cullen.

To obtain the correction of the prevalent acidity, an attention to the general rules, which have been already laid down, will be requisite. Every acid or acescent matter should be carefully avoided; and small doses of the volatile or fixed alkali, in appropriate vehicles, should be frequently given:

the choice of these two remedies, it may be proper to suggest, may frequently be directed by the state of the skin and bowels.

Should the skin, as is sometimes the case, be hot and dry, the increase of perspiration, on every account, would be highly desirable. In this case, the volatile alkali would be preferable; since, aided by the free use of diluents, it would hardly fail to produce a relaxation of the exhalants on the surface, and procure that flow of perspiration, which would not only diminish the feverish state, but might also carry off a considerable portion of the morbid matter. Some advantage, doubtlessly, would also be derived from its antacid property: this, however, would not extend much beyond the stomach; since it is highly probable, that it would, when introduced into the animal system, soon suffer decomposition, and, being resolved into its constituent principles, would, of course, no longer possess the power of neutralizing any acid matter.

But if the perspiration be sufficiently free, the fixed alkali, in doses from five to eight grains may be given every six hours in a suitable vehicle, which should be in a sufficient quantity, never less than two or three ounces. Should the bowels appear to be loaded, and, especially, if in a consti-

pated state, stools should be procured freely, so as effectually to remove any accumulated sordes. This may, in some cases, be effected by proper doses and combinations of manna, rhubarb and magnesia: but, in most cases, to be assured of this being effectually performed, a sufficient dose of calomel should be had recourse to.

Should sharp sour eructations, with sickness and pain at the pit of the stomach, make it evident that the stomach itself is loaded with acid sordes, an appropriate emetic might even be had recourse to. Thus might the source of the *materies morbi*, on which depends the protracted morbid state, constituting the paroxysm, be at once dried up, and the sufferings of the patient safely abridged. To this practice we are directly led, by the following interesting case, related in the Medical Observations and Inquiries.

The subject of this case was Mr. Major Rook, of Upper Shadwell, forty-five years of age. This gentleman was attacked by a fit of the gout in both feet, March 1753. The pain in his feet, heels, and ankles, increased with great violence for about ten or twelve days, till at length he was in the most extreme agonies; such as he had never felt before, and such as almost made him mad. In the height

of this extremity, the pains (it is his own expression) from the feet, heels, and ankles, flew as quick as lightning directly to the calves of his legs; but remaining there not half a minute, and not in the least abating of their extreme violence (though the feet, heels, and ankles, were left entirely free from pain); from the calves, after a short stay of about half a minute, the pains ascended with the same velocity as before to both the thighs, at the same time leaving the calves of the legs free: from the thighs, in less than the space of one minute, and as quick as before, they arrived at the abdomen, and after giving the patient one most severe twitch in the bowels, they reached the stomach; here the pains, and here the fit ended, upon the patient's vomiting up a pint and a half of a green aqueous liquor, but so extremely *corrosive*, that he compared it to the *strongest mineral acid*.

This extraordinary crisis happened at about two in the morning. Immediately after this discharge he fell asleep, and slept till seven or eight, and waked perfectly easy in every part, no signs of the distemper remaining, but the swelling and tenderness of his feet, both of which went off gradually, so that in two days he was able to walk about his business. It was observable, that this gentleman had other fits, which terminated in the

same manner, by the vomiting of a *corrosive acid*; and that during the whole course of his fits his breath was uncommonly stinking, his urine was of almost as deep a red as claret, and a profuse sweat broke out every morning, during the whole course of the fits, which was extremely offensive*.

By the foregoing case we are not only taught the necessity of attending to the state of the stomach, in the treatment of gout; but are also furnished with strong evidence of the connection, between this disease and a morbid acid, generated in the stomach.

That opiates, when given in sufficient doses, yield most certain relief from pain in this disease, frequent observation has proved. But, in the opinion of Cullen, when given in the beginning of gouty paroxysms, they occasion these to return with greater violence. Opium not possessing any particular curative power in this malady, it is not to be wondered, that when its influence had subsided, the violence of the pain should return with, at least, as much violence as ever. Its only usefulness, therefore, in this disease, must proceed from its power of alleviating the sufferings of the

* Medical Observations and Inquiries, Vol. I. p. 42.

patient, during the progress of the natural cure, or the employment of those means by which this process is accelerated.

Dr. Tavares, a Portuguese physician, relates, that considerable benefit is produced by the freely taking of Peruvian bark, after a drastic purge, in the paroxysm of gout. The beneficial effects thus stated, are such as will not be difficult to account for, on the supposition, that the disease depended on a morbid acid, derived from a diseased state of the stomach. By the drastic purge, the acid sordes accumulated in the primæ viæ would be removed; and their renewal would be prevented, at least for a time, by the tonic powers of the bark exerted on the stomach.

The general dietetic management, during the fit, must necessarily vary considerably, according to the age, strength, habits, and former complaints of the patient. In the strong and otherwise healthful, spirits, wine, animal food, and every thing of a stimulant or acid nature, should be carefully avoided. In those who are more advanced in years, or who have been reduced by frequent attacks of this or of other diseases, a more generous regimen may be permitted: but even in these cases it has frequently appeared that the

continued use of wine has most certainly had the effect of considerably protracting the fit.

Paradoxical as it may appear, there is no doubt but that the practice of giving wine, with the intention of curing gout, has been sometimes adopted, in consequence of its having been successfully employed in producing this disease. It has been frequently had recourse to, for the purpose of inducing a podagral attack in those cases, in which other more alarming complaints have appeared to follow, from the suspension of the gouty action in the feet. The uninformed, noticing the beneficial effects thus produced in those disposed to the gout; and learning that to such persons Madeira has been recommended with great advantage, by the most eminent physicians, have fallen into the error, that wine must necessarily be good for the gouty. Dr. Heberden has remarked, that plenty of good wine has been supposed to be particularly beneficial to the gouty; but he justly suspects, that this doctrine has been spread abroad, not so much from its being generally believed, as from those who are fond of wine wishing it to be true*.

* Gulielmi Heberden Commentarii de Morborum Historia & Curatione, p. 44.

Aware of the wide spread of good or of evil, which depended on the soundness of the principles which he taught, the justly celebrated Cullen laid down no maxim respecting the treatment of diseases, until it had undergone the nicest and most accurate investigation. He appears to have considered that precepts, on points so essential to the comfort and happiness of mankind, ought not to have a chance of obtaining the general reception, which he must have been apprised, the authority of his name would obtain for them, until he was thoroughly convinced, that no injurious consequences could result from them. Agreeable to this opinion, the strongest marks of anxious consideration, and of the most diffident exercise of his excellent judgment, may be plainly traced in the advice which he offers on any subject, which is at once doubtful and important.

Strong marks of this benevolent caution are obvious, in the following monitory observations respecting the moderating of the inflammation of gout. "That no irritation is to be added to the system, during the paroxysms of the gout, (except, he observes, in some particular cases which he had just mentioned,) is entirely agreed among physicians: but it is a more difficult matter to determine whether, during the time of paroxysms,

any measures may be pursued to moderate the violence of reaction and of inflammation. Dr. Sydenham has given it as his opinion, that the more violent the inflammation and pain, the paroxysms will be the shorter, as well as the interval between the present and next paroxysm longer: and if this opinion be admitted as just, it will forbid the use of any remedies which might moderate the inflammation, which is, to a certain degree, undoubtedly necessary for the health of the body. On the other hand, acute pain presses for relief; and although a certain degree of inflammation may seem absolutely necessary, it is not certain but that a moderate degree of it may answer the purpose: and it is even probable, that, in many cases, the violence of inflammation may weaken the tone of the parts, and thereby invite a return of paroxysms. It seems to me to be in this way, that as the disease advances, the paroxysms become more frequent*."

Under the influence of the same considerate caution, after admitting that it seems probable that some measures may be taken to moderate the violence of the inflammation and pain, and particularly that in first paroxysms, and in the young

* First Lines, Vol. II. § DLXII.

and vigorous, blood-letting at the arm may be practised, and that the application of leeches to the inflamed part may be employed even with greater safety, he hardly ventures to attempt any thing farther. Warm bathing, emollient poultices, blistering, the application of moxa, of camphor, and of aromatic oils, all excited his suspicion so much, that fearing some danger must attend every external application to the parts affected, during a paroxysm, he concluded that, therefore, the common practice of committing the person to patience and flannel alone is established upon the best foundation.

In agreement with the opinion of Cullen, and with the theory advanced in these pages, it is submitted, that the indication to be fulfilled, as to the treatment of the parts affected, is so to manage the inflammation, that, although the extreme violence of the pain may be moderated, the parts shall not be interrupted in the functions they are now called on to perform ; and, at the same time, the escape of any injurious matter from the pores of the part affected shall be promoted, as much as possible.

It is, however, obvious, that the treatment must vary, with the degree of inflammation, and the

powers and strength of the patient. In the younger and more athletic, and in the first paroxysms, if the pain be excessive and the inflammation extremely violent, even bleeding with leeches, near the part, may be adopted, and the accumulation of heat, by heavy, dense clothing avoided. The part therefore, if the weather should be mild, may be but lightly covered, or very lightly enveloped in loose wool, over which may be disposed an oil silk bootikin, brought pretty close together at its aperture. By this treatment, the exhalation of the part being confined, the skin will become relaxed, by immersion in its own vapour, and the evaporation from its innumerable exhalants be necessarily increased. Thus may the violence of the pain and inflammation be moderated, whilst an opportunity is given, by the increased action of the exhalants, and the relaxed state of the skin, for the expulsion of the materials of any morbid accumulation, which might have been about to be deposited on the part. By closely surrounding the part affected with a cabbage-leaf, the vapour exuding from the part is so confined and condensed, as frequently to occasion a very free perspiration from the part, and a very rapid alleviation of the complaint.

Even in more advanced stages of life, and where

the paroxysms have been several times repeated, if the pain and inflammation be urgent, this mode of promoting the perspiration of the part appears to be admissible with safety. The process which nature has instituted is not likely to be hereby interrupted; but may be thus conducted to its termination, with much less pain and inconvenience, than might otherwise have taken place. In those cases where the pain and inflammation is intense, the good effects of this mode may be accelerated by moistening the wool previously to its application. This may be done by dipping it in lukewarm water, and then allowing it to drain; or, which will be still better, by suspending it over the steam of boiling water; by which latter method, the wool will not be made to collapse together. In either case, it will not be of any material consequence, if the wool, thus wetted, should be rather lower in temperature than the part, since, from the mode of application, an equilibrium of temperature will soon take place.

In many cases, of very urgent pain, the greatest relief has been experienced, from the gentle application, with a feather, of equal parts of tincture of opium, soap liniment, oil of almonds, and rose water. But even this application, so simple and mild, has appeared, in one or two instances,

to have had the effect of making the inflammation shift to some other part; proving how well founded is the observation of Cullen, that some danger must attend every external application to the parts affected, during a paroxysm. But since the contrary opinion has been recently and strenuously promulgated, and has been adopted and even acted upon, to a very considerable extent, the following chapter is appropriated to its examination.

CHAPTER VIII.

REMARKS ON DR. KINGLAKE'S PRACTICE—RETRO-
CEDENT GOUT—APPLICATION OF COLD WATER
DANGEROUS.

It has been seen in the preceding chapter, that every interference with the regular progress of the fit of gout, by any application to the part suffering the gouty inflammation, is generally considered as a practice fraught with much danger. But a late writer, who has most zealously endeavoured to disseminate opinions of a contrary nature, has asserted, that, "*gout differs in no essential circumstance from common inflammation—that, gout is not a constitutional, but merely a local affection—and that, parts, under the inflammation of gout, may, with perfect safety, be subjected to a long and unremitted continuance of application of cold water, in cases of even the worst state of constitutional health.*"

In a work, the object of which is to establish a mode of treatment of a particular disease, which long experience, and the highest authority in the

healing science, had taught to be fraught with the greatest danger, at least under certain circumstances, those circumstances might be expected to be examined with some considerable degree of attention. But this task is, however, not performed; and yet Dr. Kinglake conceives that his doctrine is sufficiently established to allow him contemptuously to speak of the opposite opinions, as the adoption of popular prejudice, occasionally sanctioned with the solemn gravity of medical erudition.

The most celebrated writers on this disease have particularly urged the necessity of attending to the sudden suspension of its morbid action, in that part of the body which it first attacks, and its almost immediately affecting some distant part: always regarding this secondary affection, from its most frequently taking place in some vital organ, as a circumstance highly to be dreaded.

No one who has attended to the progress of this disease, in a moderate number of cases, can have failed of witnessing that alarming symptom, known generally by the term of gout in the stomach; a term derived from popular observation, which has determined the dependence of this symptom, on

the presence of gout in the system, and has marked its coincidence, with the sudden disappearance of the gout from the extremities. In this most afflicting state of the stomach, the pain is often so violent, as to excite considerable apprehensions even for the life of the patient, the alarm being heightened, by his pale and shrunk countenance, and by the great degree of oppressive anxiety under which he is seen to labour. But the degree of alarm, and indeed, the degree of real danger, which belong to such a state, could never possibly be expected by any one who relied on the account which Dr. Kinglake has given of this affection. Whilst reading Dr. Kinglake's account, an uninformed reader would suppose he was treating of a complaint only, which, without pain, occasioned little more inconvenience than interrupting the process of digestion. The Doctor's words are :

“ If any particular organ should be previously disturbed by any unhealthful conditions of its motive powers or excitability, on that part the gouty excitement is liable more particularly to be arrested, where it will endure with greater or less violence, as it may happen to be incessantly deriving its support from the gouty source, or becoming independent of its exciting cause.

“ The stomach, for example, during a paroxysm of gout, may have its excitability so painfully impressed by a sympathetic or associative extension of the stimulant influence of that malady, as to be rendered *unequal, either to its digestive function, or to that of supporting a sort of regulating tone and energy for the salutarily motive relations of the system generally.* In that case, an ailment at the stomach may continue to prevail after the extinction of gouty pain, owing to the deep impression made on its native powers, unlike the transient effect arising from the slighter influence of morbid sympathy*.”

Nothing in this account can lead to the necessary caution and just alarm, which such a case ought to excite. Here, not only no mention is made of the anxiety, sickness, and violent pain, spoken of by Cullen ; nor of its being one of those symptoms which Sydenham considered as placing the life of the patient in danger ; but, on the contrary, neither pain nor danger is once mentioned. This affection, which is given as an example, of the other cases of retrocedent gout, no other instances even being adduced, is described in terms so mild, that were the probability of its being

* Dissertation on Gout, p. 22.

produced by the proposed remedy, immersion in cold water, even to be proved, it would, in all likelihood, appear to those who had derived their only knowledge, respecting these circumstances, from the Doctor's account, as of too insignificant a nature to deter them from the experiment.

This affection of the stomach, on the contrary, is not only of an alarming and dangerous nature, but calls for the utmost skill in determining on an appropriate mode of treatment. The first point necessary to be ascertained is, whether or not the age of the patient, the symptoms, and other circumstances of the case, warrant the suspicion of the presence of active inflammation. When this can with certainty be ascertained, the next object of investigation is, whether any offensive matter exists in the stomach, or not. Should a disagreeable taste in the mouth, sour and offensive risings, and frequent useless urgings to vomit be observable, the emptying of the stomach should be obtained by freely drinking of warm water, or an appropriate dose of ipecacuanha, or in some cases even of Emetic Tartar. When vomitings have so long continued, as to give more reason to suppose that this symptom proceeds, rather from a spasmodic affection, than the presence of any offensive matter in the stomach, a free dose of opium may be ad-

ministered: but frequently where the discharge of bile gives reason to fear that the peristaltic motion of the intestines is becoming inverted, a full dose of the tincture of sena has been given with great success. The application of a blister to the pit of the stomach, should also be had recourse to if these means should not succeed: the part from which the gout has removed should also be immediately immersed in warm water, and be covered by a sinapism of a moderate degree of strength. On similar principles, it appears, every other case of retrocedent gout should be treated. The action of the vessels in the part which has been deserted by the gout, should be increased by the applications of stimuli; whilst by the application of a blister on the parts forming the covering of the affected viscus, the morbid action which it has taken on may be stopped; with the hope of promoting this desirable end, such medicines as are appropriated to the nature of the part, and of the morbid state, must also be exhibited.

But Dr. Kinglake imagining that those symptoms which have been considered as proceeding from retrocedent gout, may be explained on principles different from those which have been hitherto had recourse to; and induced, by having observed, in several cases, that the inflam-

mation of gout might be promptly removed by considerably reducing the temperature of the diseased part, without any ill consequence ; has, with the utmost benevolence and zeal, endeavoured to establish this as the general practice, not doubting its efficacy and safety in every case: the Doctor asserting, that “no case of gout can occur, in which either *curative* or *beneficial* efficacy is not promptly derivable from reduced temperature*.”

That the retrocedence of gout is frequently occasioned by apparently very trifling causes, is a fact which medical observation has so often recorded, that to bring proof of it here is unnecessary. The cases which are here mentioned are, therefore, not introduced so much for the proofs they yield on this point, as for the sake of other practical deductions, which it is thought may be made from them. It is, however, expected that they will shew, contrary to the opinion of Dr. Kinglake, that cases may occur in which the sudden extinction of gouty inflammation is, not only unsafe, but highly dangerous ; and that the sudden stoppage of the diseased action in the inflamed parts by cold *media*, or by any other external application, is not justifiable, in any case of gout or

* Dissertation on Gout, p. 107.

of acute rheumatism ; since although no mischievous effects may be immediately discovered, there is great probability, that consequences, of the most serious and distressing nature, may occur at a distant period.

Dr. Kinglake considers the prompt extinction of the disease as a complete cure, and as a secure defence from entailing on other parts an active state of the disease. But the prompt extinction of the original inflammation has been witnessed by many arthritics, and by many medical men, but most frequently, so far from being followed by a complete cure, it has been succeeded by complaints still more grievous and intolerable.

A lady, about sixty-five years of age, suffering much from an attack of gout in the ball of the great toe, which had began the preceding night, was, about the middle of the following day, induced to bathe it with opodeldoc ; applying afterwards over it, only a piece of fine linen, which was occasionally wetted with the same liquid. In a few hours all appearance of gout was removed in the foot ; but an excruciating pain in the head was experienced. Alarmed by this new complaint, and attributing it to the sudden cessation of the gout in the foot, she applied a pretty strong

sinapism to the ball of the great toe, at the same time enveloping the foot and leg in a thick worsted stocking. In a few hours the arthritic inflammation was again established in her foot, and the head became entirely relieved.

In this case, an extinction of the gouty inflammation took place, with sufficient promptness to have warranted a cure if it could have been thus obtained; but instead of a cure, one of those evils, which experience would lead to the expectation of, appeared to be thereby induced.

In another instance, which occurred within the last six or seven months, a lady between fifty and sixty years of age, who had been several years subject to attacks of gout, and who had on that account been long obliged to abstain from wine, experienced some very slight attacks of gout in the ankle and instep of the right foot, which continued with but very little inconvenience for two or three days, when they ceased. Soon after the foot had become perfectly easy, a severe vomiting, with considerable pain of the stomach, ensued. In about two or three hours these symptoms were, by the adoption of appropriate measures, considerably abated, and in about six hours entirely removed, the pain again possessing the instep and

ankle. She thus continued two days longer, free of every complaint excepting the slight inconvenience she experienced in her foot. On the evening of the second day, disgusted by the unpleasant acidity of the matter of perspiration, which flowed spontaneously, but gently, she sat up about two hours, when the perspiration, as well as the pains in the feet, ceasing, her respiration became almost stopt, by a pain extending from the top to the bottom of the sternum, and spreading under the clavicles to the point of the chin, and down the middle of the upper parts of the arms. The mediastinum appeared now to be the part which had taken up the morbid action; the fear, therefore, of either immediate mischief, or of so dreadful a chronic malady as *angina pectoris*, urged the employment of the most powerful means. The volatile alkali with camphor and laudanum were exhibited; a blister was applied between the shoulders, a sinapism to the chest, and another to the foot. She was immediately replaced in bed, wrapped in flannel, and frequently supplied with draughts of gruel, to which a small portion of brandy was added. The pain of the chest, however, did not much abate for nearly three hours, but in about eight hours it nearly subsided; and towards the evening, when a little tenderness and inflammation manifested

themselves on the upper part of the ball of the great toe of the same foot, the pain of the chest was quite removed. She now remained for three or four days longer in bed, experiencing only slight inconvenience from her foot, but much more from the continual, but moderate, acid perspiration. Again disgusted with this, and also fearing the loss of strength from its continuance, she ventured to attempt again to remain a little out of the bed. A similar, but rather more violent attack on the chest, placed her under the necessity of recurring to the same medicines, sinapisms, &c. as before. The blister being now placed at the pit of the stomach. By the next day, the acid perspiration having again returned, the pain of the chest was again removed.

On the following day, the internal condyle of the left *os humeri* had become considerably inflamed and painful. The patient now, convinced of the necessity of submission, remained in confinement to her bed for about ten days longer, during all but the two or three last days of which, the pain at the elbow joint, and the acid perspiration continued, and then both gradually subsided. She now, on getting up, not only found that her strength was not so much diminished by the perspiration, as she had expected,

but that her general state of health was considerably amended.

In this, as well as in the former case, the secondary affection took place soon after the first symptom of gouty affection had appeared; much sooner, indeed, than the system could have possibly experienced any debilitating or atonic injury from its continuance. In this case also the extinction of the primary inflammation was complete; so that if the cure of the disease had depended on that circumstance, it could not but have taken place.

In both the cases as complete extinction of the inflammation took place as cold water itself could have effected. Indeed in the first case the means were not unlike, since the extinction proceeded from the diminished degree of temperature, resulting from the evaporation of the spirits with which the thin linen cloth, laid on the inflamed part, was wetted. Could less alarming effects have been expected to have been produced, if cold water had been applied? or can it, by any mode of reasoning, be attempted to shew that the application of cold water was recommendable in these cases? On the answers to these questions much must depend, since these are not delivered as rare

and extraordinary cases, but as cases of common occurrence to every physician.

The advisers of the refrigerant system must either boldly assert, that the application of cold water to the parts first affected is recommendable in all such cases; or, it must be admitted, contrary to the positive opinion of Dr. Kinglake, that cases occur in which, instead of beneficial effects, the most injurious consequences may follow from the chilling plan.

A gentleman, aged fifty-three years, of a robust habit, and much addicted to a free mode of living, had ten years before been frequently troubled with gout in the feet; but discovering that it most commonly succeeded to intemperance in wine, he almost relinquished that liquor, and substituted for it spirits diluted with water. In consequence of this change he seldom experienced any gouty complaint, except when he indulged in drinking wine for a day or two; when, as sure as he thus transgressed, so sure he was to experience some menaces, or some actual attack of gout. Having given up the reins to indulgence, and devoted himself for nearly a week to convivial excesses, with different liquors, he became completely delirious: his pulse was low, 120 in the minute, ir-

regular and tremulous: his tongue differed but little from its natural state, being rather white but moist: his skin manifested no feverish heat; nor was he sensible of any pain, although he frequently applied his hand to his head: his eyes were constantly employed in examining some fancied object, and his fingers engaged in picking up flocks or straws; whilst his mind was perpetually engaged in preparing to oppose some fancied plot against him. In consequence of the prevalence of this idea, he was perpetually attempting, and with difficulty restrained from, the commission of some extravagant and violent action. Having obtained no sleep all the previous night and day, although confined to bed in a quiet room, a cathartic medicine was given to him; and, after its second operation, forty drops of tincture of opium were ordered for him, which with great difficulty he was prevailed on to take, and in about two hours he fell asleep, and remained so between three and four hours. He awoke not in the least amended; and was at this period seen by Dr. Curry, physician to Guy's Hospital, who strongly suspected the prevalence of a disposition to gout, and that the present diseased state of the brain might proceed from some action dependent thereon. The cathartic, which was calomel, was repeated; a blister, which he

had refused to submit to have applied, was placed high up on the back of his neck, and the opiate, combined with volatile, saline, camphorated medicines, was repeated. In consequence of these means, he passed two more copious discharges, and slept the greater part of the succeeding night; waking the next morning quite sensible: but in the afternoon of the same day he found the gout had seized on the ball of the right foot, which by evening had become very red and painful. From this instant he required no more medicine; the gout continued in the foot about ten days; and having gradually subsided, left him completely recovered.

That the affection of the brain, in the preceding case, might have depended on the prevailing disposition to gout, must be admitted to be at least probable. Certain it must be, that no medical man could have determined that the connection was so unlikely, as to have warranted him in presuming to check the regular progress of the podagral attack. The most zealous friend to the refrigerant plan would hardly, it is presumed, have ventured to have employed it in this case.

Although the identity of nature in the two diseases, gout and acute rheumatism, is by no

means precisely ascertained ; yet their strict similitude, in many respects, warrants the suspicion, that they may, in their nature, be very closely allied. On what particular circumstances, and on what particular variations in the system, the difference may depend, remains to be discovered. One point of resemblance must have been noticed by most medical men—that of some of the internal parts sometimes suffering from an affection, apparently connected with that of the extremities, and dependent on a similar diathesis. An interesting instance of this kind is yielded by the following case :

A gentleman, thirty-three years of age, in whom the sanguine temperament was prevalent, who had been always healthy, and who had been moderate in his diet, was seized, in the spring of the year 1803, with acute rheumatism, which was treated with gentle diaphoretics, in the early stages of the disease ; and with bark, guaiacum, &c. in the more advanced state. The disease was removed in about three weeks, and he speedily regained his strength.

In the following spring, after undergoing considerable exertions, he experienced a second attack. Having been told that his former illness would have been of shorter duration, if he had

been blooded at its commencement, some blood was taken away at his particular desire : but scarcely had six ounces flowed, before he fell into a syncope, so alarming, that for nearly five minutes it was expected to prove fatal. Three or four days of extreme languor succeeded this ; but the pains of his wrists, ankles, &c. were by no means diminished. A gentle diaphoretic plan having been found beneficial before, this was again adopted. At a week's end, the rheumatic affection not being diminished, a contrary plan was recommended and adopted. The windows were set open, all the upper bed clothes were removed, except the coverlid and sheet, the arms were kept out of bed, and the legs allowed to lay uncovered, when the pains were urgent. Relief was almost directly experienced, and the patient was highly gratified ; but at night he, for the first time, became delirious. The delirium being considered as proceeding, in a great measure, from debility, he was allowed to take wine in moderate quantities, and was ordered the bark. This plan, nearly, was persisted in for about a week or ten days, when he complained of a troublesome pain in the side, accompanied with palpitation of the heart. These symptoms being considered as also depending on debility, the same plan was still pursued : a blister was applied to the side, and the

patient was removed into the country, to an airy and elevated situation. The pulse now became irregular, tremulous, and intermitting; and the breathing short and laborious, on the least motion. The air and situation were repeatedly changed, but without effecting any beneficial alteration: on the contrary, every symptom became worse; and so readily was he affected by motion, that if, after sitting some time perfectly still in his chair, his pulse had become tolerably distinct, the effort to rise out of the chair would prove sufficient to quicken the pulsations so considerably, and to render them so irregular and tremulous, as to become innumerable. A strong feeling of languor and exhaustion attended the whole progress of this diseased state, inducing him to be perpetually requiring the aid of something nutritious or stimulating. As the complaint proceeded, the pulsations of the carotid arteries became very much increased, and for the last two or three months were inordinately violent. The lower extremities also became œdematous, and at last were distended to the utmost degree. Every other symptom also increased, in defiance of all which was attempted by the utmost medical skill; and, in about a twelvemonth, death released him from a most dreadful state of suffering.

Upon the examination of the body, the heart was found to be enlarged to more than twice its natural size, and the pericardium every where adherent to it. No other mark of disease was observable, either in it or in the large vessels, immediately proceeding from it; nor was any other morbid appearance observable in any of the thoracic or abdominal viscera.

Without pretending to determine whether, in this case, the morbid affection was transmitted from the extremities to the heart, or whether the heart only partook, in common with other parts, of the general morbid state; it is thought that sufficient grounds exist for concluding, that the affection of the heart was undoubtedly of the rheumatic kind. Dr. Baillie, remarks, that "the causes which produce a morbid growth of the heart are but little known; one of them seems to be rheumatism attacking this organ;" and adds, in a note, that Dr. Pitcairn has observed this in several cases*.

In the following melancholy case, no slight grounds existed for supposing, that the fatal event

* The Morbid Anatomy of some of the most important Parts of the Human Body. By Matthew Baillie, M. D. &c.

was the result of a rheumatic affection of the heart, or of some of the muscular parts concerned in respiration.

A gentlewoman, about five and thirty years of age, of a sanguine temperament and of healthy parents, was seized with acute rheumatism, under the sufferings of which she lay upwards of a month, notwithstanding the utmost care of the physician who attended her.

Soon after her recovery, she experienced considerable uneasiness from erratic pains in the point of the shoulder, under the clavicles, across the chest, and in different parts of the limbs. During the summer these considerably abated, but on change of weather she was generally more or less affected by them. In this manner she passed upwards of two years, never confined to her bed, and seldom prevented from entering into the usual engagements of care or pleasure, with her family.

One evening, full two years from the attack of acute rheumatism, after having been exposed about half an hour, without any extraordinary covering, to the night air, she experienced, just as she attempted to step into bed, a considerable

tightness across her chest, with extreme difficulty of breathing. After a little time, these symptoms went off, she passed as comfortable a night as usual, and had no particular complaint on the next day. She was, however, advised to take a diaphoretic medicine at bed-time, and to aid its operation by drinking freely of warm gruel. She went up stairs in the evening, at the usual time, purposing to take her medicine and the gruel, after being in bed: but the servants hearing an uncommon noise, ran up stairs, where they found their mistress on the staircase, hardly able to articulate the word, "Help!" and evidently suffering under almost suppressed respiration. She immediately sunk into their arms, and expired within two minutes after being laid on her bed. The great distress of her affectionate family prevented that examination, which was so extremely desirable.

The following case has been thought proper to be introduced here, from the close analogy which it bears with the foregoing: its most remarkable termination also renders it particularly interesting, whilst the reflections it occasions may serve to determine the most appropriate mode of treatment of similar affections,

A. B. in whom the sanguine temperament was predominant, and whose parents were not known to have been affected with any disease which could have been likely to have occasioned the transmission of any particular hereditary disposition, was attacked, at twenty-two years of age, with considerable pain, swelling and inflammation, extending from the instep over the ankle. This complaint, which was deemed to be gout, by the medical gentleman whose opinion was asked, rendered him lame for a few days and then gradually subsided. From this time he suffered no particular injury to his health, until he had passed his forty-sixth year. Then, at the latter end of the year 1803, having experienced a considerable share of anxiety, and having been obliged to exert himself particularly in his business, which was of a commercial nature, he began to suffer much from extreme languor and debility, which sometimes existed to such a degree, as to interfere considerably with the performance of his usual engagements. Sometimes on his return home, towards the evening, he would be so overcome, and his strength would be so exhausted, that some nutritious and refreshing matter was obliged to be speedily given to him to prevent his fainting.

On Saturday the 26th of November, whilst

walking in the city, much fatigued, he was suddenly affected with a violent palpitation of the heart, a slight pain at the pit of the stomach, and such a failure of strength that he could hardly keep from falling. He, however, remained in town, and having completed the business of the day, walked in the evening to his dwelling-house, being a distance of about two miles. The following morning he returned to town, passed through the business of the day with considerable inconvenience, and returned in the evening still more languid and exhausted. Thus he continued to persevere in exertion, walking daily to town, ascending and descending repeatedly two or three lofty pair of stairs, traversing different parts of the city, and returning home on foot in the evening, until the sixth day.

Late in the evening of the sixth day, he was first seen by the author, who found him with a countenance denoting a high degree of languor, and requiring every hour almost some highly nutritive matter to be taken into the stomach, to diminish the distressing sense of debility with which he appeared to be borne down. He complained of slight pain at the pit of the stomach, an uncommon palpitation of the heart, accompanied by a peculiar indescribable sensation resembling a

fluttering within him. His breathing was short, but chiefly on moving; his pulse was quick, tremulous, irregular, and intermitting five or six times in the minute.

Struck with the near resemblance of these symptoms to those described as characteristic of inflammation of the heart or pericardium, the first suggestion was to take away some blood; but in opposition to this intention, were opposed, the previous continued existence of harassing circumstances, by which his nervous system had been evidently much affected: the extreme lowness of the pulse; the relief experienced immediately on nourishment, or vinous or spirituous stimuli, being taken into the stomach; and lastly, the time which the disease had existed in its present form, this being the sixth day. It was resolved, therefore, to omit bleeding for that evening, and to make trial of some cardiac volatile draughts until the morning; when the advice of a physician should be obtained; with whom the determination with respect to bleeding should rest.

The symptoms on the following morning (December 2,) were better; the draughts had appeared to revive him; but the chief difference seemed to proceed from his having not undergone any fatigue. An early visit was obtained from a

physician of much experience and respectability, who, after investigating the particulars of the case, concluded it to be rheumatism of the heart; and as the abdomen appeared to be much distended, he ordered an opening powder with three grains of calomel, with a due quantity of powder of rhubarb and jalap; after which the plan already adopted was recommended to be persisted in, and bleeding not to be employed.

On the following day, December 3, no material change had occurred. There appeared, undoubtedly, to be an amelioration of the symptoms, but not to a greater extent than, perhaps, might be caused by his having continued in a state of rest. The demand for solid nourishment, and occasionally of wine, still continued. The prescription was as follows:

℞. Mist camph.

Aq. puleg. an. ʒ ss.

Æther. vitriol, gtt. xxx.

Tinct. castor. ʒj. M.

F. haust. sextis horis sumend.

℞. Pulv. rhei.

Sal polychrest. an. ʒ ij.

Conf. aromat. ʒj.

Aq. menth. sativ. ʒ x M.

F. haust. cras mane sumend.

Appearing to be better on the following day, the same draughts were ordered to be continued : and as there appeared to be a regular, though slow amendment, the same plan was persisted in for the five following days.

On the 9th of December his physician considered him to be in nearly a convalescent state ; and prescribed the following :

℞. Tinct. colombæ ꝑ ij ss. sum. cochl. parv.
omne die circa meridiem ex quovis vehiculo.

℞. Pulv. fl. chamæm. gr. x.

Pulv. piper. long. gr. iij.

Pulv. aloes socotrin. gr. j. M.

F. pulv. omne nocte temp. decub. sumend.

These remedies were persisted in until the 19th of December, when he found himself able again to go to business, although with great difficulty and uneasiness. He, however, persevered for three days, and on the last day walked both to and from town. This exertion proved highly injurious ; all his complaints were thereby increased, and he was again confined until the 6th of January ; during which period, various means were employed, as suggested by different symptoms and occurrences: among the other means now adopted

was the administration of two strong calomel purges, but without any evident good effects.

About this period a blister was applied to the pit of the stomach, which appeared to augment his internal unpleasant sensations so much, as to induce him to say, that he feared he should not have courage to venture to make trial of another, if it should be recommended.

He again returned to business, and persevered in his endeavours, without any particular medical attention, until the 4th of February, when he applied for the opinion and assistance of Dr. Baillie, and afterwards of Mr. Cline, who exerted themselves for him with much kindness and care. He had now become nearly twice the size he had been two months before, and, undoubtedly, by an accumulation of fat. His difficulty of breathing, pain at the pit of the stomach, and indeed every other symptom increased; and on March the 26th he again became confined. He now soon became unable to lay down in his bed, or be removed out of the room. The difficulty of breathing, palpitation and pain at the pit of the stomach, continued to increase daily; and, at length, from being perpetually obliged to sit up in a chair, the feet, legs, thighs, scrotum, &c. became enor-

mously swelled; and were only diminished for a short time, by free scarification.

About the middle of April, the pain being more acute, and the breathing shorter than usual, about three ounces of blood were taken away by cupping, by which he experienced so much relief, that he requested to have the operation repeated the following day. It was accordingly performed; but hardly two ounces were taken away, before he fell into a most alarming syncope; and continued in so exhausted a state for several hours, as to give the greatest reason to fear that he would sink irrecoverably.

On the 19th of April, when his breathing seemed to be carried on only by convulsive catchings; when, in a word, all around him, supposed him to be at the point of death, he was first seen by Dr. Babington. The Doctor happily recollected having been called to a case, which, in its latter stage, bore a very near resemblance to the present, and in which he had experienced the most beneficial effects from drastic purges. The following was therefore administered:

℞. Elaterii, gr. iij.

Tartar. crystall. in pulv. trit. ʒ ss.

Syr. zinzib. q. s. ut f. bolus.

The operation of this dose was very moderate ; but some little amendment was observable. The next dose was, therefore, increased to four grains. This occasioned some sickness and several watery stools ; and was evidently productive of relief. The numerous distressing symptoms were combated by appropriate palliatives, and in two days the elaterium was repeated in the same dose, with still more decided beneficial effects. It was thus repeated, as the weakened powers of life would admit, three times more. The good effects now were very evident ; the breathing became relieved, the pain was diminished, and the lower extremities and scrotum, from being most enormously swoln, were almost reduced to their natural size. In little more than a fortnight from the commencement of this plan, the palpitation also was much diminished ; and, with the utmost pleasure and astonishment, it was discovered that the intermission of the pulse had ceased.

From this period his recovery proceeded regularly ; his amendment being gradual and with but few and unimportant interruptions. The elaterium, after the first fortnight, was repeated about once a week, as occasion seemed to dictate ; and on the 20th of May he went a journey of more than twenty miles, to a country residence, whence he returned in a few weeks perfectly recovered.

The following case, it is presumed, will serve to corroborate several of the opinions offered in the preceding pages :—

J. P. whose father was much afflicted with gout*, is evidently of that temperament which is supposed to be most prone to that disease, and always possessed a peculiar idiosyncrasy, in consequence of which the taking of any acid, or even acidulous matter, into the stomach, occasioned, in a few minutes, a considerable glow of heat in the face and in the extremities. In youth, chilblains, with cramps in the calves of the legs; and through life, coldness, particularly in the evenings, with dryness of the feet, have seemed to point out a languid circulation in the lower extremities. The functions of the viscera forming the *primæ viæ* have always appeared to be duly performed; no dyspeptic symptoms having ever occurred, excepting, very rarely, slight flatulency in the stomach, happening generally for two or three days previous to any arthritic attack. His diet has been generally plain and simple; such as a humble table has afforded: wine has been drank but seldom, and then sparingly, not exceeding two or three glasses at a time.

* See case related at p. 101.

At thirty-eight years of age he experienced the first attack of gout in the ball of the right foot : this, however, was so slight as not to occasion more than a week's inconvenience. In the spring of the second succeeding year, an attack of more violence and of longer duration was suffered in the left hand ; the pain and swelling lasting about ten days. In the summer of the year following, having walked a little way out of town, drank nearly a pint of wine, and been exposed to a heavy rain in the evening, he awoke about three o'clock in the morning in such severe pain in the instep of the right foot, as excluded all hopes of regaining sleep. Convinced of its being a gouty affection, and wishing to induce perspiration on the part, he quitted his bed, but found himself entirely incapable of standing on that foot : he, however, drew on a woollen stocking, and regained the bed. The pain now soon became so exceedingly acute as to be almost beyond endurance. Recollecting the case of Mr. Alexander Small, related in the sixth volume of the Medical Observation and Inquiries, in which great relief was obtained by lessening the temperature of the part, he now stripped off the stocking, and laid with it, about ten minutes, on the outside of the bed-clothes, exposed to the open air. The pain soon abated, but at the end of about a quarter of an

hour, the abatement not proceeding, but the pain, though much lessened, being still severe, he resolved on trying the effects of cold water. Putting the foot, therefore, into a large wash-hand bason, he employed two quarts of cold water, by repeatedly pouring it on the foot, for about twenty minutes, the pain rapidly diminishing until the end of that time. Little or no pain being then felt, he thoroughly soaked a fine napkin in the water, and wrapt it loosely round the foot. With the foot in this state, he returned to bed, resting the leg, without any other covering, in a chair at the side of the bed. Being now entirely freed from pain, he soon fell asleep, and awoke in the morning, without the least tenderness in the foot, and capable of walking with his wonted ease and freedom.

Delighted with his speedy cure, and not experiencing the least inconvenience from this mode of treatment, he fully resolved on opposing all future attacks on himself, in the same manner. During the next six weeks, he was so peculiarly circumstanced, as to be led to submit to a considerable deviation from his general mode of living, drinking every day after dinner two glasses of wine. At the end of this period, a slight stinging, aching pain in the last joint of the third finger

of the left hand, excited his attention ; and he first perceived a slight enlargement of that joint. The uneasiness, however, being but trifling, he was not induced to pay much attention to it, until about a month afterwards ; when finding it was evidently still farther increased, he made trial of various applications, which proving useless, all attempts to remove it were suspended. About twelve months after this, being between thirteen and fourteen months from the employment of the cold water, the hip became frequently the seat of dull aching pain, which was always increased by walking. This complaint, with the accompanying inconveniences, continued very gradually increasing ; the pain being very much augmented by walking, and manifesting evident characters of sciatica ; the pain being felt also in the knee, down the leg, and about the ankle. To mitigate the pain and inconvenience of this, after trying calomel and opium, with and without succeeding cathartics, various forms of stimulating and sedative embrocations, sudorifics, &c. recourse was had to blisters applied over the hip ; the blistered parts being kept open, for about ten days or a fortnight each time. The relief yielded by the blisters was such, as generally to yield a much greater facility of walking, for six weeks or two months afterwards.

Between three and four more years passed away, during which the complaint of the hip continued increasing, the enlargement of the joint of the third finger of the left hand increased in size, and a similar enlargement took place, in the last joint of the forefinger of the right hand. After two or three years had elapsed, the first joint of the finger of the left hand was attacked with proper arthritic inflammation, marked by almost crimson redness, extreme tenderness, shining tumefaction extending to the wrist, and pain so severe as to render the least motion highly inconvenient, and the least attention to business distressing and irksome, in the highest degree. Most unfortunately, the moment at which this occurred, was that in which he was imperiously urged by particular circumstances, to continue in the exercise of his professional duties. Again, therefore, recourse was had to cold water: the hand was immersed in it and enveloped in cloths wetted with it, until the pain and inflammation was removed, which happened in a few hours. Being able to return to business the next day, entirely relieved from pain, and even possessing the free use of the hand, he hailed the new remedy as a blessing of the highest value, and gratefully proclaimed the obligations he owed to it. By a strange inconsistency, however, he cau-

tioned every one against employing it, until he had made farther trial of its efficacy and safety on himself. In about nine months after, unawed by an enlargement of the last joint of the second finger on the right hand, which had appeared about a month before, he had again recourse to the chilling process, by which he stopt, at its commencement, a second severe and decided attack of gout, on the first joint of the first finger of the left hand. Within three months from this period, the last joint of the forefinger of the right hand began to enlarge, and in about four months afterwards, a similar enlargement took place in the last joint of the thumb of the same hand.

Almost constantly engaged, he seldom paid attention to the ills with which he was beset ; and when he did, finding himself unable to judge of the nature of the complaints, or to discover any indication of cure, he soon ceased to direct his attention, voluntarily, to them.

In the year 1802, the pain of the hip had become considerably augmented, but was much relieved by twice blistering : the enlargement of the finger joints was also increased. Now additional anomalous complaints began to manifest themselves. After walking about half an hour, a pain-

ful girding sensation would be felt across the middle of the forepart of the thigh and the calves of the legs, occasioning considerable inconvenience. Much pain also was felt in the knee and ankle joints, on attempting to walk quickly, and on going up stairs, accompanied with much crackling and snapping of the joints. These symptoms and the pain of the hip were much augmented by the cold of the winter, and much amended by the summer's warmth.

In the beginning of the year 1803, the affection of the muscles of the legs and thighs was considerably amended; but, in the spring, great inconvenience was experienced in walking, from pain and tenderness in the internal *malleolus* of each ankle. These, in about three or four months, were evidently enlarged, and suffered a slight degree of stinging burning pain. During the summer, in consequence of a slight, but sudden twist of the body, an acute pain, on motion, was occasioned in the spine, in the lumbar region. From the effects which were produced, and particularly from the small space to which the pain was confined, there appeared to be every reason to suppose, that this was an affection of some part of the ligaments, by which the *vertebræ* are connected. This complaint, ac-

accompanied by very great inconvenience, lasted nearly a month and gradually abated. In this summer, he also experienced a considerable diminution of his strength, so as to be incapable of enduring half the exertion which he was capable of before. The pain of the hip was frequently very troublesome, and the joints of the finger continued enlarging rapidly through the winter.

About the beginning of the year 1804, he first felt a very distressing sensation in the bones forming the arch or vault of the foot, giving the idea of the metatarsal bones being crushed forcibly together. This affection of these parts continued, with slowly increasing pain and inconvenience, until March, when the sensation became extremely distressing, every time the weight of the body was thrown on either foot; the weight of the body appearing to be too much, for the feet to bear; and the walking of a mile was sufficient to excite a considerable degree of burning pain, in the feet, for some time after. The pain, swelling, and tenderness of the internal *malleoli* of the ankles were also considerably augmented, as well as the pain of the hip. The debility also became so great, that after walking slowly for half an hour, another half hour was almost required to rest, before walking could be again attempted.

His situation was, at this period, highly distressing; he appeared to be sinking under the infirmities of premature old age, and to be rapidly advancing to such a state, as would be entirely incompatible with those exertions, which his business required of him: he therefore resolved to apply himself earnestly to the adoption of some plan, from which he might obtain relief.

Repeated observations had taught him, that wine and acidulous fermented liquors, even in the smallest quantities, were injurious. Frequently, within an hour from drinking a glass of wine, or a draught of beer, in the state in which it is usually drank, he would be reminded of his transgression, by pain in the hip, and a stinging and burning sensation in the enlarged joints of the fingers, &c. These admonitions, he not only, for some time, slighted; but even blamed himself for, as he supposed, chimerically imputing these temporary exacerbations to what he could not, on consideration, but regard as an inadequate cause. The fact, however, became indisputable: either pain in the hip, or in some of the enlarged joints, was constantly felt, within an hour or two, from drinking even a single glass of wine. The first conclusion to which this led was, that the present morbid state might depend on a prevalence of

acidity in the system. To correct that which at present existed, and to prevent its future accumulation, appeared to be the indications, by attending to the guidance of which, a cure might be expected.

In agreement with this plan, an appropriate regimen was adopted. For breakfast, tea with bread and butter was taken: the dinner consisted of the ordinary provision for the family; but vinegar, and pickles of every kind, were carefully avoided. Vegetables of the least acescent kind were used, and articles of pastry, which had often been indulged in, were employed under some restriction. Wine and fermented liquors of every kind were almost entirely avoided. Bread and milk, or milk pottage, formed the supper. To correct any prevailing acidity already existing in the system, and also to neutralize any acid generated in the stomach, and thereby check its action as a ferment, from eight to sixteen grains of soda, in its carbonated state, was taken daily. The swellings on the finger joints being now considerable, and that on the third finger of the left hand manifesting a disposition to inflammation, a leech was applied to it, and the bleeding promoted as much as possible. Almost directly after the bleeding from this joint, the stinging burning sensation,

began to abate, and was in two or three days removed. In about a fortnight's time the swelling was suspected to be rather diminished; and in about six weeks the diminution was evident: a leech was therefore applied to each of the enlarged joints, and with the same beneficial effects as were produced on the other. The medicinal plan just mentioned being pretty fairly persevered in for about two months, essential benefit was experienced: the joints to which the leeches had been applied were considerably reduced, and even the swellings of the thumb and forefinger, to which the leeches had not been applied, were evidently diminished. The pain and tenderness of the feet and ankles were almost entirely removed: even the pain of the hip was troublesome only after walking, which a considerable return of strength enabled him to perform to much greater distances than before.

Apprehensive now lest, by too long a perseverance in the present plan, an injurious tendency in the fluids to an acrimony of the alcalescent kind might be induced, he now suspended the use of the soda, and relied upon the due regulation of the diet. He was gratified by continued amendment for three months longer, during which pe-

riod he did not drink three glasses of wine, nor sip oftener of malt liquor. The finger joints had nearly regained their natural size; enlargements of both the condyles of the right *os femoris*, which had appeared, and had rapidly increased just before this plan was commenced, had also nearly disappeared: all pain was removed, except that of the hip, which was, however, much abated.

At the end of this period, the peculiar stinging and burning pain, already described, seized the lower end of the radius, on which a swelling soon succeeded; and, in a few days afterwards, a similar sensation was felt in the second joint of the first finger of the right hand, where also an incipient tumefaction was discoverable. Prompted by these monitions, he again resumed the use of the soda, and persevered in its use about a fortnight, when the remission of every disagreeable symptom seemed to authorize the opinion, that the morbid acrimony was corrected: the soda was again omitted, and was not resumed until about three months ago, when the return of pain, and of a slight enlargement of the first joint of the thumb, with tenderness over the *patella*, seemed to demand it. The dose employed at this time was ten grains in the day, and, on being continued about a fortnight,

these symptoms disappeared, and the use of the medicine was again suspended.

It may be proper to remark, that about the time at which the last enlargement of the finger joints took place, the upper end of the second phalanx of the bones of the little finger was broken by the accidental application of considerable force. When the fractured bone was united, the enlargement at the juncture was so considerable as to give to the joint an appearance, similar to that which has been described as belonging to these nodes of the joints. Upon the soda producing its full beneficial effect, those enlargements, as have been just related, disappeared; but this, upon the fractured bone, remained unchanged.

Dr. Haygarth relates, that in one of the cases of nodes of the joints seen by him, the full advantage could not be derived from the use of leeches, owing to the considerable degree of inflammation they occasioned. In the case of the author, this peculiar idiosyncrasy existed in a high degree. After the application of every leech, the hand swelled very much, became of a deep crimson colour, was very hot, and an almost intolerable degree of itching existed all round the wound which the leeches had made. At one time, when

the leech had been applied over the first joint of the forefinger, the swelling and redness extended, beyond the elbow, almost to the shoulder, not allowing the shirt sleeve to be closed.

“ Tonic, atonic, retrocedent, and erratic, or misplaced gout, are, according to Dr. Kinglake, insignificant distinctions, more fanciful than real; they arise from different states of sympathetic energy, and visceral susceptibility for associative or sympathetic impression. The erratic, or misplaced gout, has no admissible significance in either the theory or practice of the disease. It implies visceral or systematic affection, arising from its declining or shifting station on the joints. This revolves itself wholly into the greater or less transient effects of sympathetic irritation.—Misplaced gout is a misnomer; when it holds not its natural situation, when it occupies not its indispensable structure (ligamentous and tendinous), its existence is no where but in branular fiction*.”

Such are some of the principles, on which Dr. Kinglake endeavours to establish the utility and safety of suddenly extinguishing gouty inflamma-

* Dissertation on Gout, p. 38 & seq.

tion, in every case. But surely the cases, which have been here related, and which it is conceived are such as may have been observed by most physicians, contain circumstances which prove, that these principles are inadmissible; and that the practice, which they are intended to support, is dangerous and highly reprehensible.

Several of these circumstances, it is presumed, also yield powerful evidence, in favour of the opinions which have been proposed, in the foregoing pages. From them it may be safely concluded, that indulgence in acids is a frequent cause of gout; that an acrimony is thus produced, from which is formed a peculiar matter, which is separated and removed from the system, by the inflammatory action of the parts affected with gout; that this process being suddenly checked in the extremities, is liable to be taken up by some other part, whose healthful state is much more important to the preservation of life, than that which had been primarily affected; that even when no sudden violent affection of any internal part is thus secondarily occasioned, low chronic inflammation, perhaps of a peculiar kind, seems to be oftentimes produced; and that the ends of the bones, or rather their immediate coverings, be-

come affected in a peculiar manner, in those cases, in which the gouty inflammation has been suddenly checked, or in which circumstances exist which prevent its taking place, notwithstanding the gouty diathesis is present.

FINIS.

