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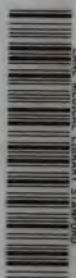
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A PRACTICAL TREATISE  
ON  
URIC ACID POISONING.

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URIC ACID  
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ITS HISTORY, LITERATURE  
AND TREATMENT

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**A Practical Treatise**

**ON**

**Uric Acid Poisoning**

**In All Its Phases, Including Its Treatment With**

**THIALION**

**(A Laxative Salt of Lithia.)**

**With a Complete Bibliography.**

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**FOURTEENTH EDITION.**

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1904.  
**THE VASS CHEMICAL COMPANY,**  
DANBURY, CONNECTICUT,  
U. S. A.

1958-1961

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1904

## THIALION

### Is a Laxative Salt of Lithia.

**Physical Properties.**—It is a non-hygroscopic, non-deliquescent, granular salt, of a lightish brown or straw color, which may vary in shade to a somewhat darker brown.

*It does not effervesce.*

It does not spoil in any climate—i. e., never deteriorates.

It is readily diffusible and invariably of definite and uniform strength.

It is agreeable to the stomach, and it is not unpleasant to the taste, though very slightly flat.

It is only partially soluble in cold water, but freely so in hot water, coloring the water a light yellowish brown. It should always be dissolved in hot water, and drunk at the highest temperature that can be borne comfortably. Taken in this way, it is quickly and completely absorbed into the circulation—an effect, which is of inestimable therapeutic advantage, and one which cannot be obtained from lithia administered in any other form.

**Composition.**—Thialion is a double salt, or sulphate, which (in solution) becomes an artificial alkaline mineral water with unusual solvent properties. It has never been patented; and only the *name* is made proprietary. The details of its manufacture (i. e., the process) have never been made public for obvious reasons. And yet, in this respect, the physician probably knows as much or as little as he does concerning the manufacture of other sulphates—e. g., as he does of sulphate of quinine or of morphine.

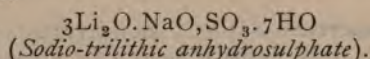
In regard to the composition of thialion, or its derivation, it should be remembered that in any analytical process for extracting an alkali metal (as lithium) from its parent mineral substance, decomposition of the chemical agents used is an inevitable consequence; i. e., one or more by-products result. To obtain a simple citrate, benzoate, or other salt of such metal (lithium), these various side issues are of course eliminated. But in the process observed in manufacturing the salt thialion on a large scale, the lithium base is left in combination with its alkaline end-product, thus resulting in a new laxative salt of lithia.

**Formula.**—As may be seen, thialion is not a preparation composed of separate and distinct ingredients in the sense of requiring a prescription formula, like Dover's powder for instance; but is a definite chemical compound resulting from the synthesis of lithia and a soda derivative. In other words, it is not a mere physical mixture of a known soda salt with a known lithia salt, but a new

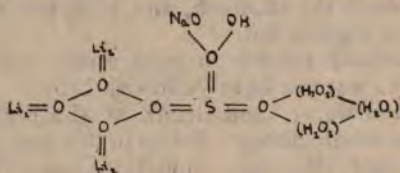
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salt itself arising *de novo* from the rearrangement of the molecules of the above salts through chemical action: a remedy whose effects are *sui generis* to the compound, and which may be expressed by the molecular formula:



The above simple formula itself suggests the anhydrous nature of the salt as well as its solvent character, as shown by its compound radical at the end. But, in order to indicate the molecular configuration of the salt somewhat more in detail, its graphic or constitutional formula may perhaps be best expressed as follows:



It will be observed that the skeleton of the above formula is like that of sulphuric anhydride, except that the oxygen is quadrivalent instead of bivalent; and that a lithium and sodium radical with hydroxyl, have replaced the usual hydrogen atoms found in sulphuric acid. It will be observed, in short, that the oxygen of the sulphate and of the lithia radical has combined as a *tetrad* (as it sometimes does with silver)—instead as a dyad as it does with sodium and hydrogen. It would seem, therefore, that the well-known laxative properties of the salt must be due to the presence of the radical which represents sodium sulphate.

**Preservative Qualities.**—It is not essential that the salt should be kept in a colored or blue glass bottle, although the chemical action of actinic rays of light would probably be less operative in such a case. Thialion may be kept in transparent glass bottles or in an ordinary wooden box, without any apparent loss of strength, even though exposed to air and light for several months. Samples of this kind have been preserved at the factory for nearly six years, with no deleterious effects as proven by frequent tests. The only change noted is a faint alteration in the color of the salt, which becomes slightly darker after prolonged exposure to sunlight. Its physiological action, however, remains unchanged. Being an anhydrous granular salt (without "water of crystallization"), the physical change produced upon thialion, by exposure, is practically nil, even when exposed to dampness. We believe, however, that in order to eliminate every possible element of risk, the salt may be preserved to the best advantage in its original package.

**Why Hot Water.**—Practical experience has conclusively demonstrated that the best method of administering thialion is as follows; to wit:

1. Dissolve thoroughly a teaspoonful of the salt in half a glassful of hot water.
2. Add sufficient cold water to reduce the temperature of the liquid to the just drinkable point—then drink the whole at once.

It is probable that the therapeutic value of the older diuretics was due as much to the caloric effect of the hot infusions used as to the physiologic action of the simple remedies themselves. The osmotic and solvent effect of heat is best exhibited in the warm bath, where the imbibition or absorption of water takes place.

Much more is implied in this last statement than may at first sight appear. To begin with, it should be remembered, that, as the temperature of any liquid containing crystalloids is raised, not only is the rate of diffusion of the latter increased, but their passage by osmosis into an adjoining colloidal solution is accelerated. In other words, salts in watery solution will pass through animal membrane into the colloidal blood more rapidly and more completely if the temperature of the solution is equal to, or greater than that of the blood. It is for this reason that hot alkaline baths (104° F.) are given in gout and rheumatism. The success of the method of treatment observed at the Hot Springs is dependent upon this same dynamic law; i. e., the lithia, soda, etc., contained in these waters, are more readily absorbed into the system. If the body were simply to be immersed in cold water, very little of these salts would be taken up through the skin. The same lack of results necessarily obtains when cold lithia water is taken into the stomach. It will be seen, therefore, that in ordering the patient to dissolve thialion in hot water, and to drink it before becoming lukewarm or cold, an important principle of molecular physics is involved upon which is insured the thorough absorption of this remedy into the circulation.

### PHYSIOLOGIC ACTION.

**Circulation.**—Like certain other alkaline medicinal agents, thialion increases the alkalescence of the blood. This effect is produced both in health and in disease. Its most marked action upon the circulation, however, is observed when the blood is less alkaline than normal because it contains an abnormal quantity of waste tissue salts of the uric acid type. In such conditions, by giving thialion, the capillaries are freed from the urates which have previously impeded their flow, and the circulation to every organ and tissue of the body is correspondingly increased in volume and in purity; the result of which is not only to promote oxidation, but to indirectly stimulate the functional activity of the glandular organs.

In this it resembles somewhat the salts of potassium, but unlike them it never causes cardiac depression and hence is always perfectly safe from the therapeutic standpoint.

An explanation of the radical difference to be observed in the action of thialion as compared with that of the various lithia preparations on the market (e. g., tablets, salts, granular effervescent salts, mineral waters, etc.,) may be given briefly as follows; to wit:

In the first place, it should be understood that lithia, as ordinarily prescribed, in the form of the citrate or carbonate, is only partially absorbable as such, and in so small quantities as to be of little or no effectual service as a solvent of the urates. On the contrary, it is probable that the small amount of lithia thus absorbed into the circulation, is, as Haig believes, "at once waylaid by the phosphate of soda present, forming with it a nearly insoluble triple phosphate; thus, not only is little or no lithia left to combine with uric acid, but the latter is in a measure deprived of its natural solvent (the neutral phosphates), and is consequently thrown down as a deposit."

When thialion is administered, on the other hand, its alkaline constituent unites more readily than lithia with the soda salts of the circulation, increasing them in amount (i. e., increasing the blood's alkalescence), while the lithia is left free to combine with the uric acid as in the test-tube. The well-known alkaline salts of soda and potash produce similar results, but to a much lesser degree. It will be seen, therefore, that while the citrate or carbonate of lithia, taken singly, partially cleanses the blood of uric acid by precipitating it into the bodily tissues, thialion removes it in solution by way of the kidneys, and, furthermore, by increasing the soda salts, produces the additional therapeutic effect of a cholagogue agent in stimulating the flow of bile and initiating peristaltic action of the bowels. Though the phosphate of soda resembles thialion in the cholagogue effects—preventing inspissation of the bile and crystallization of cholesterin—yet it lacks the well-known solvent action of the lithia salt upon uric acid, and besides, tends to prevent the free elimination of urea—as may be observed by any of the ordinary urea tests.

It has for some time been advocated by our best authorities that the natural mineral waters were too weak in their alkaline ingredients to ever become very effectual as uric solvents. It was over ten years ago, that the late Prof. Abraham Jacobi, of New York, in an article entitled "Therapeutics of Infancy and Childhood" (Published in *Archives of Pediatrics*, Jan., 1890), made the following significant statement:

"In cases of renal calculi (most of which consist of uric acid), particularly those cases which occur in gouty families, the diet should be limited to but a moderate

quantity of strongly nitrogenous food. The patient must be encouraged to drink much water, alkaline waters to be preferred. The natural lithia waters (though the best) contain less than the occasion calls for, thus those which are *artificially* prepared have the advantage over those prepared by nature."

It will at once be seen that when thialion is properly taken according to the directions—i. e., dissolved in a glassful of hot water—an artificial alkaline lithia water will be administered which fulfils the indications not met by natural waters, as described by Jacobi; and it is, doubtless, partly for this reason that the results of treatment in these cases have proven so much more satisfactory to those physicians who have tried both methods.

**Nervous System.**—Thialion increases the assimilation and metamorphosis of proteid and purin materials, favoring the elimination of uric acid and urea, and hence by freeing the system from the acid promotes a more energetic cellular action and influences indirectly the nervous system, improving the general muscular tone and stimulating the nerves, thus producing buoyancy and cheerfulness, where, hitherto, had existed depression, listlessness and general debility. The theory is now well established that headache, depression, fits of "blues," and various other functional disturbances are often due to the presence of an excess of uric acid in its colloid form obstructing the capillaries.

To show the difference between the action of thialion in these cases and that temporarily produced by administering some chemical agent which *decreases* the alkalinity of the blood, forming insoluble urates and driving them into the connective tissues and joints, *causing rheumatism*,—the following clinical test which was recently given by us, will prove most interesting and instructive:

Mrs. G., æt. 50, suffered from frequent attacks of the "blues" and "sick headaches," and complained of lassitude, mental confusion, loss of memory, lack of ambition, irritability, cold extremities, etc. As her urine was characteristic of the lithæmic condition, we attributed the foregoing symptoms to an excess of uric acid and its congeners in the circulation. As an experiment, thirty drops of acid phosphate were administered in a half glassful of cold water, t. i. d., for a fortnight. Before the end of the first week, however, the patient reported "decided improvement." The headaches disappeared, and mental brilliancy and a feeling of exhilaration followed. The urinary water increased greatly in quantity, was paler in color, but contained much *less* of the urates than formerly. It was evident that the capillary circulation was freer—that it was unimpeded by the presence of uric acid in excess; but that this excess had not exhibited itself in the urine. Where was it?

Early in the second week this question was answered. The patient now began to complain of pains in the muscles of the side, neck and back, and exhibited some tenderness in one carpal and two metatarsal joints. Before the end of our fortnight's experiment, she was confined to her bed with a severe attack of lumbago and torticollis, and threatened with articular rheumatism in at least three joints. The acid remedy was now withheld, a colored placebo administered—*and nothing else*. Within forty-eight hours the rheumatic attack had subsided, the urine again became scanty, high-colored, containing some urates, and the headache with its disagreeable accompaniments returned with increased virulence. This condition of affairs was permitted to exist for a week, the patient fully recognizing that she

was back again in the old rut. It was then that we prescribed an *alkaline* uric solvent (thialion); a teaspoonful being given in a glassful of hot water every second hour the first day, until four doses had been taken. The second and third days, a teaspoonful was given an hour before each meal, after which one dose was given daily, immediately upon arising. The result was as expected. The headaches vanished in a day or two, the same mental exhilaration was experienced as in the previous instance, but, *in addition*, the urine became loaded with urates. The treatment was continued in this way for a fortnight, the urine being kept slightly on the alkaline side of the neutral point; and to-day the patient is enjoying comparatively good health.

Now what is the explanation from the uric acid standpoint? We contend that the patient was suffering originally from migraine, due to uric acid excess in the circulation. The "acid phosphate" which we administered, reduced the alkalinescence of the blood, formed insoluble urates, or at least, caused their deposition in certain muscles and joints, thus initiating an attack of rheumatism, but freeing the capillaries and effecting relief from the headaches, etc. By withholding this acid remedy, the blood speedily regained its normal alkalinity, the urates were reabsorbed into the circulation, relieving the rheumatism, but reproducing the headaches. Lastly, the alkaline solvent thialion, when finally administered, not only freed the capillaries from their obstruction, and thus relieved the headaches, but avoided the rheumatic symptoms and effected a permanent cure by eliminating the toxin from the system entirely—as was demonstrated by its appearance for a few days in greatly increased amount in the urine. *Uric Acid Monthly*, Vol. 1, No. 4, April, 1901.

**Liver and Bowels.**—One of the most valuable features, concerning the physiologic action of thialion, is that of its power in aiding or stimulating the hepatic function. It is in no sense a cathartic. It is a *laxative*. It does not whip the bowels into action, it simply aids them in the natural performance of the process by enhancing the biliary flow, increasing peristalsis, and rendering the passages more soluble. It cleans out the clogged up liver cells, and at first gives rise to alvine dejections of an exceedingly malodorous character. The stools are usually well formed, but of a soft "mushy" consistence. Four or five doses, repeated every hour or two, will produce a mild catharsis, but with none of the debilitating after effects so common to the class of remedies called "salts;" neither does it produce tenesmus nor favor a chronic torpidity of the bowel.

Owing to its solvent action upon the urates and the consequent removal of amido-acids from the circulation (together with the additional salt of sodium furnished), thialion serves to increase the fluidity of the bile and to neutralize the biliary acids (taurocholate and glycocholate of sodium), thus proving of great value in the treatment of gall-stones. That is, by preventing the bile from becoming viscid, and by its solvent effect upon cholesterin and lime salts, it effectually stops the formation of biliary calculi. As the flow of the bile into the intestine is also materially increased, the hepatic congestion so common in cases of constipation is at once relieved. It is upon the so-called "torpid," or "lazy liver," however, that the beneficial effects of thialion, as a uric solvent and eliminant, have been more particularly noticed—especially in corpulent people and those leading a sedentary or inactive life.

**Genito-Urinary Tract.**—Thialion has a wide application and field of usefulness for the relief of congested and irritable conditions of the genito-urinary tract and pre-senility of the sexual organs. The kidney is especially sensitive to its action. It is a powerful diuretic and solvent of uric acid, having no equal in this respect. In his excellent treatise, entitled "Therapeutics: Its Principles and Practice," Prof. H. C. Wood gives the following indications for the use of diuretics:

1. To maintain the action of the kidneys.
2. To evacuate fluid.
3. To soothe and diminish irritation of the genito-urinary organs; and:
4. To alter the urinary secretion so as to prevent the deposition of calculous material.

Thialion meets all these indications. It maintains the action of the kidneys by gently stimulating the excretory functions; it evacuates fluid, by virtue of its cholagogue properties; it soothes and diminishes irritation of the inflamed mucous membranes of the genito-urinary tract by rendering the urine neutral and non-irritating; and lastly, and most important of all, it renders soluble, and therefore easily excreted, uric acid and calculous material. It, like lithium, and because of the large quantity of lithia contained in it, unites with uric acid and forms a urate of lithium, the most soluble salt formed with uric acid, a salt much more soluble than is formed with either potassium or sodium. Not only will thialion dissolve uric acid, but it will actually, as proven by experiment, soften and disintegrate uric acid calculi, a result hitherto impossible to produce by any therapeutic means at our command. It also raises the daily amount of urea excreted, diminishes the specific gravity of the urine, and dissolves crystals of urate salts.

The solvent and eliminant action of thialion (so far as the urates and other urinary solids are concerned) is beautifully illustrated in examining the urine of a gouty, rheumatic or Bright's patient, during the first few hours or days of treatment. The quantity of urinary water is increased; it rapidly becomes less acid in reaction (finally neutral, or alkaline); and, at first, contains an abnormal amount of uric acid and urea. In a short time, we witness the gradual lessening of these solids, until (as the patient improves) the percentage returns to the degree found in health. The urine can be made faintly alkaline in two or three days, and steadily maintained at that point, by administering a teaspoonful of the salt once or twice per day—whereas four hundred grains of the bicarbonate of soda, given in divided doses daily, are required to produce similar effects.

**Muscles and Joints.**—Dr. Alexander Haig, of London, who is considered the highest authority on the subject of the uric acid diathesis, states that uric acid acts in the production of diseases, (1) “through the circulation, which it controls throughout the body;” and (2) as “a direct irritant of fibrous tissues and joints.” There can be no doubt that the uric acid is deposited in the muscles and joints in greater quantity than in any other portion of the body, and it is owing to its power to remove the foreign body in this abnormal condition, that thialion has become so important an addition to our *Materia Medica*. Its therapeutic action, however, in these cases is somewhat unique, the joints becoming more tender after its administration, and the patients for a few days feeling more pain. This is due to the fact that the remedy, by virtue of its solvent and diuretic action, sweeps the poison out of the system through the bowels and kidneys, the blood reaching out for the surplussage stored in the serous cavity of the joints, and thus by its removal causing the aforesaid temporary disturbance.

## THERAPEUSIS.

### Uric Acid Excess.

By the general term “URIC ACID EXCESS,” as used by us on our cover page, we mean to include all disorders in which there is present an abnormal amount of waste tissue debris or salts of the uric acid type in the system, whether suspended in the blood and extra vascular fluids, or deposited in the various tissue-structures of the body. The condition may be due (1) to over-ingestion of purin foods and drinks, or (2) to insufficiency of the liver and other tissues in completely metabolizing into urea their proper percentage of the purins of the food and bodily cells; but (3) it is principally due to *retention*, owing to the failure of liver, kidneys and bowels to perform the function of elimination properly.

Owing to the fact that it has been found that uric acid is not derived from albuminous foods *per se* (but from their purin-content), nor from proteid metabolism as was once thought, many modern authors have mistakenly assumed that no portion of the uric acid ever becomes normally oxidized into urea. It has been conclusively shown, however, by the convincing experiments of Loewi, Ascoli, Neumeister, Croftan, I. Walker Hall, and others, that the ingested purin (and doubtless that also arising in the organism from cellular catabolism) is first oxidized in the body to trioxy-purin (uric acid), and that a portion of this (45 per cent.) is later decomposed by the liver (perhaps to a slight extent also by the general tissues) and finally excreted as urea, or the intermediate substances, allantoin and oxaluric acid. Croftan attributes this hepatic function to the

presence of a ferment, or "oxidase." If for any reason, therefore, the liver should fail to perform its function properly, an *excess* of uric acid in the system results.

Ascoli discovered the uric acid destroying power of the liver as follows. He mixed blood with uric acid or with lithium urate and first determined that blood alone did not possess the power of destroying uric acid if kept at body temperature for several days. He then passed a mixture of blood and uric acid through a fresh dog's liver that was kept at body temperature and discovered that a considerable loss of uric acid occurred. At the same time he discovered a great increase of a urea-like substance, "which, in all probability," says Croftan, "was allantoin." (Cf. *Pfluger's Archiv.*, Vol. 72, 1898, p. 340.) Finally, as further confirmation of the uric acid destroying power of the liver, Hahn and Nencki (Cf. *Archiv. fur exper. Pathol. u Pharm.*, Vol. xxxii, p. 161), determined that a great increase in the excretion of uric acid occurs if the blood-stream is diverted from the liver and forced to flow directly into the systemic blood vessels through an "Eck fistula." They found that under these circumstances nine times more uric acid was excreted than if the blood were allowed to pass through the liver. Even if no purins were given with the food, they found a great increase in the uric acid excretion (before the operation 0.021 gm., after the operation 0.181 gm. of uric acid) showing that the liver is also concerned in the destruction of *endogenous* purins.

The conclusion to which we are inevitably forced is, that metabolic disorders are frequently caused by the ingestion of purin-containing substances which can serve no useful purpose as food, but which exact extra service on the part of the liver and kidneys to insure their excretion. In the treatment, therefore, it is evident that the extraneous source of supply should be cut down as much as possible, and attention given to aiding the hepatic and renal functions.

As a practical demonstration of the therapeutic value of thialion in this respect—its solvent power over the urates; its stimulating action upon liver, kidneys and bowels, thus securing the elimination of these waste salts *in solutio* by way of the urine, producing results which had hitherto been unobtainable, in the treatment of the innumerable disorders due to the uric acid excess—we would direct attention to the one hundred clinical articles published in this brochure, which have been reprinted from the various current medical journals of this country and Canada.

**The One Hundred Clinical Articles.**—Many of these articles are from the pens of the most eminent members of the profession in this country, whose high official connection with the American Medical Association and with various well-known medical institu-



tions of learning, has rendered their names familiar to the majority of general practitioners, young and old, in every section of the country. The professional standing of these men is a sufficient guarantee that an unbiased opinion has been expressed, and that the articles from their pens are well worth reading.

It is perhaps unnecessary for us to state in this connection that none of these gentlemen recommended the use of thialion until after the most thorough clinical tests of its efficiency had been made, and made personally. In some instances the endorsement was made during the delivery of a clinical lecture to a class of under-graduates, at the college of which the lecturer was a member of the faculty at the time. These lectures were subsequently published in one or more of the prominent medical journals of that date, from whence they have been reprinted in URIC ACID EXCESS. The name and date of the journal, in which the article originally appeared, have been given in each instance, together with the author's name and address. Of these, ten will be recognized as well-known college professors, two of whom are Ex-Presidents of the American Medical Association. Three are Ex-Presidents of the Amer. Med. Editors' Asso.; two, Ex-Presidents Miss. Valley Med. Asso.; one, President Ky. State Board of Health; and one eminent gout specialist. The writers of the other articles are physicians of high standing in town, county or state societies, and all are well and favorably known in the communities in which they reside.

## I. LITHÆMIA (Uricacidæmia.)

The term, "LITH-ÆMIA," was first employed by Murchison, in "Clinical Diseases of the Liver," (2nd Ed., 565), meaning a condition in which uric (lithic) acid is accumulated in the *blood* and in which certain derangements occur in consequence. Dr. Henry Cazalis, (Cf. *Jour. de Med. et de Chirurg. Pract.*, Sept. 15, 1891) says: "It is a vice of nutrition that renders possible the abnormal manufacture of various products, such as organic acids." It will be seen that the former considers that uric acid gives rise to the disorder, while the latter considers that the disorder gives rise to the acid.

The majority of modern investigators (with whom we are in perfect accord) accept the teachings of the originator of the term, that lith-æmia or uric-acid-æmia, simply means (as the etymology of each word signifies) *uric-acid-blood*—no matter how caused—and that various symptoms arise as a consequence of its presence there (in excess). It will be observed that the term is more restricted in its application, than is that of "uric acid excess,"—the latter meaning that there may not only be an accumulation of uric acid in

the blood, but anywhere else in the system; e. g., in the tissue juices and solids. Uric acid accumulation in the blood (or lithæmia), may therefore, like uric acid excess, as already stated, be due to one, or two, or all of three causes; viz.: (1) introduction; (2) suboxidation; (3) retention.

The symptoms of lithæmia are protein in character, great in number, and of a kind to be expected from the presence in the capillaries of colloid urates which impede their flow. Sluggish circulation to and from certain organs and tissues of the body, resulting in congestion of those parts, is the chief characteristic of this disorder. The part to be affected will vary in different individuals, depending upon their vocation—i. e., which part of the organism in a given case is called upon for special effort. The man who uses his brain, or whose cerebral capillaries are required to do extra work, will have headache, depression of spirits, "fits of blues," sleeplessness, loss of memory, etc. The man of brawn, or he whose muscles are constantly engaged, will complain of sluggishness, muscular inertia, inaptitude for physical exertion, dull aches, etc.

In nearly all cases, of course, the *liver* becomes affected, since this organ is actively engaged in every individual. Constipation, sallow skin, biliousness, and all the usual accompaniments of hepatic congestion, or "torpidity" of the *liver*, will be complained of. In short, manifestations of lithæmia, not sufficiently pronounced to be dignified by the name of gout or rheumatism, but which are characterized by symptoms denoting loss of nerve tone and consequent irritability and sleeplessness, high arterial tension and capillary congestion, plethora of digestive organs, headache, backache, etc., and generally recognized as being due to deficient elimination of waste products of the uric acid type from the system,—represent a type of cases which are becoming more numerous every day especially in our larger cities.

In the treatment of this class of cases the aim of course is to modify as far as possible the lithæmic soil, (i. e., an inherent tendency to irritation, inflammation, proliferation of connective tissue, etc.,) by assisting elimination of urates in every possible way, remembering that the function of organs engaged in this duty is frequently imperfect. Thialion will prove beneficial in all such conditions because of its power to eliminate the waste products of tissue metamorphism, the retention of which in the system must become injurious. It is, as has been observed, not only a remedy for the removal of toxins and other effete material from the intestinal canal, but is a most valuable anti-lithic agent and kidney alterative, and, as is well understood, the kidneys are the most important organs for draining the system of the *débris* which is left in its wake.

Concerning the results obtained from the use of thialion in the treatment of lithæmia (or uricacidæmia) we would refer to the following clinical articles published elsewhere in this brochure; to wit:

- (a). "LITHÆMIA," by Allan P. MacDonald, M. D., Danbury, Conn. (Reprinted from the *Homœopathic News*, April, 1899.) Page 100.
- (b). "TREATMENT OF LITHÆMIA," by Frank M. Floyd, M. D., St. Louis, Mo. (Reprinted from the *Interstate Medical Journal*, June, 1900.) Page 182.
- (c). "CEREBRAL PHASES OF LITHÆMIA AND THEIR TREATMENT," by John J. Berry, M. D., Portsmouth, N. H. (Reprinted from the *New England Medical Monthly*, July, 1900.) Page 170.
- (d). "LITHÆMIA," by J. W. P. Smithwick, M. D., La Grange, N. C. (Reprinted from the *Southern Medical Journal*, Feb., 1900.) Page 130.
- (e). "SOME OBSERVATIONS ON LITHÆMIA," by Arch Dixon, Jr., M. D., Fort Huachuca, Arizona. (Reprinted from *Louisville Monthly Journal of Medicine and Surgery*, May, 1900.) Page 153.
- (f). "LITHÆMIA," by F. W. Gavin, M. D., Canton, Ohio. (Abstract from the *Cincinnati Lancet-Clinic*, July 6, 1901.) Page 203.
- (g). "URICACIDÆMIA," by L. H. Watson, M. D., Chicago, Ill. (Reprinted from the *New England Medical Monthly*, July, 1898.) Page 78.
- (h). "THE URIC ACID DIATHESIS—ITS TREATMENT," by O. L. Suggett, M. D., St. Louis, Mo. (Reprinted from the *Climate*, July, 1900.) Page 187.
- (i). "URICACIDÆMIA," by Edmond John Melville, M. D., C. M., Bakersfield, Vermont. (Reprinted from *The Clinical Reporter*, Aug., 1901.) Page 205.
- (j). "THE TREATMENT OF THE URIC ACID DIATHESIS," by F. E. Hale, M. D., Providence, R. I. (Reprinted from *The Medical Mirror*, June, 1898.) Page 88.
- (k). "URICACIDÆMIA," by B. F. Coleman, M. D., Arguta, Ala. (Reprinted from the *Mobile Medical and Surgical Journal*, Nov., 1902.) Page 216.
- (l). "URIC ACID IN THE BLOOD. WHAT DOES IT LEAD TO AND HOW CAN WE ELIMINATE IT?" by Geo. E. Lemmer, M. D., Danbury, Conn. (Reprinted from the *New England Medical Monthly*, Oct., 1898.) Page 40.
- (m). "ILL DEFINED SYMPTOMS OF URICACIDÆMIA TREATED BY THIALION," by J. H. Tyndale, M. D., Lincoln, Neb. (Reprinted from *The Woman's Medical Journal*, June, 1900.) Page 175.
- (n). "SOME OBSERVATIONS, MAINLY CLINICAL, UPON THE URIC ACID DIATHESIS," by Isaac J. Jones, M. D., Austin, Texas. (Reprinted from the *Southern Practitioner*, June, 1899.) Page 106.
- (o). "URIC ACID DIATHESIS," by J. McD. Massie, M. D., St. Louis, Mo. (Reprinted from the *St. Louis Medical Era*, March, 1900.) Page 160.
- (p). "A FEW NOTES ON URIC ACID," by D. M. Gibson, M. D., St. Louis, Mo. (Reprinted from *The Clinical Reporter*, May, 1900.) Page 157.
- (q). "THE TREATMENT OF URIC ACID POISONING—WITH CLINICAL REPORTS," by Robert C. Kenner, A. M., M. D., Louisville, Ky. (Reprinted from *Denver Medical Times*, June, 1900.) Page 181.
- (r). "NOTES ON URICACIDÆMIA," by J. Lindsay Porteous, M. D., F. R. C. P., Yonkers, N. Y. (Reprinted from the *New England Medical Monthly*, April, 1900.) Page 150.
- (s). "CLINICAL EXPERIENCE WITH THIALION," by Lucien Lofton, A. B., M. D., Norfolk, Va. (Reprinted from the *Medical Herald*, Sept., 1899.) Page 111.
- (t). "THIALION," by J. D. Ely, M. D., Toledo, Ohio. (Reprinted from *The Toledo Medical and Surgical Reporter*, March, 1900.) Page 147.
- (u). "NEUROTIC LITHÆMIA," by Chas. F. Craig, M. D., Asst. Pathologist U.S. Army. (Reprinted from the *Southern Practitioner*, June, 1898.) Page 93.

## 2. IRREGULAR GOUT.

By the term "irregular" (visceral, or abarticular) gout, is meant that phase of uric acid excess in which the urates have been precipitated out of the circulation and deposited in the various tissue-structures of the body. It is the stage which invariably follows lithæmia, unless the urates are removed from the blood (via the urine) before the deposits occur. It will readily be understood that if waste salts of the uric acid type are allowed to remain long in the circulation, the blood sooner or later becomes less alkaline than normal owing to the presence of these salts, and the latter are then thrown out of solution to become deposited in the contiguous tissues. Being still in the colloid form, they may, of course, be reabsorbed and conveyed by the circulation to another locality, there to be again deposited, thus causing, by their irritating presence, derangements to appear first in one portion of the body and then another.

Normally, the blood is just sufficiently alkaline to hold its waste salts in solution or suspension, until their removal is assured by means of liver, kidneys and bowels; but if the alkalinity of the blood be reduced from any cause (as exposure to cold, over-exertion, etc.) the urates are thrown down as a deposit, just as in the test-tube under similar circumstances.

The character of the symptoms produced, will depend upon what particular tissue or organ chances to receive the deposits. If the latter occur in the fibres of muscles, we have "muscular rheumatism," or pains and aches; if in the sheathes of nerves, we have neuralgic troubles; if in the fibrous structures of the intestines, we have colicky pains; if in the arterial coats, we have atheroma; if in the cardiac valves, we have endocarditis, or "heart-failure;" if in the stroma of glands, we have cirrhosis; if in the bronchial membrane, we have asthma; etc. In other words, the symptoms of irregular gout are legion.

Though in the nomenclature of our text-books, these various derangements are classed under separate headings, and as many different treatments are recommended as there are names, yet it will be seen that they are often but the effects of a single cause, and that the same treatment is indicated in every instance. In short, by removing the disturbing factor, we may obtain the same satisfactory results as in the disorder we have previously described—lithæmia, the first stage of uric acid excess. The remarkable solvent and eliminant power of thialion has proved of inestimable advantage for this purpose, as may be seen in the speedy dissolution of the deposits which previously existed, and their removal (*in solutio*) from the body by way of the urine after a few days of the treatment. As a practical demonstration of the therapeutic value of thialion in

the condition we are considering, reference may be had to the following clinical articles; to wit:

- (a). "IRREGULAR GOUT," by James S. Kennedy, M. D., Chambersburg, Pa. (Reprinted from *Gaillard's Medical Monthly*, Sept., 1899.) Page 84.
- (b). "GOUTY DISTURBANCES," by Wm. F. Kier, M. D., St. Louis, Mo. (Reprinted from the *Medical Mirror*, April, 1898.) Page 196.
- (c). "LATENT GOUT OF THE MENOPAUSE," by L. N. Wilson, M. D., New York, N. Y. (Reprinted from the *New England Medical Monthly*, Sept., 1898.) Page 82.
- (d). "BACKACHES: THEIR CAUSATION AND TREATMENT," by H. P. Mansfield, M. D., Georgetown, Conn. (Reprinted from the *Canadian Journal of Medicine and Surgery*, Jan., 1900.) Page 125.
- (e). "LEG-CRAMPS IN ELDERLY PEOPLE—A MODE OF TREATMENT," by John MacDonald, M. D., New York City. (Reprinted from the *Northwestern Lancet*, Aug. 15, 1900.) Page 189.
- (f). "CASES OF NEURALGIA," Official Report of St. Louis Medical Society Proceedings, by Prof. I. N. Love, M. D. (Reprinted from *Medical Mirror*, May, 1899.) Page 75.
- (g). "A CURE FOR SLEEPLESSNESS," by J. McFarlin, M. D., St. Louis, Mo. (Reprinted from *International Journal of Surgery*, Aug., 1904.) Page 257.
- (h). "PREVENTIVE MEDICINES AND MEASURES," by J. R. Hayes, M. D., Washington, D. C. (Reprinted from *New England Medical Monthly*, March, 1903.) Page 218.
- (i). "TYPHOID FEVER AT ONE HOSPITAL DURING SEVENTY-EIGHT YEARS," by Chas. E. Page, M. D., Boston, Mass. (Reprinted from *Gaillard's Medical Journal*, Feb., 1900.) Page 135.
- (j). "TREATMENT OF SCIATIC NEURITIS DUE TO THE URIC ACID DIATHESIS," by Edwin Lewis, M. D., Burlington, Vermont. (Reprinted from *The Vermont Medical Monthly*, Sept., 1901.) Page 210.
- (k). "RHEUMATOID MENINGITIS," by O. Henley Snider, A. M., M. D., Atlanta, Ga. (Reprinted from *New England Medical Monthly*, April, 1902.) Page 212.
- (l). "THE RHEUMATIC DIATHESIS," by Roy D. Moore, M. D., St. Louis, Mo. (Reprinted from the *North American Journal of Diagnosis and Practice*, Sept. 20, 1899.) Page 118.

### 3. GOUT.

Gout is the third and last stage of uric acid excess. In the two conditions already described, the urates have merely reached the colloid form, remaining (1) in the blood as such, or (2) precipitated out into the tissues. In true gout, however, the deposits in the joints have finally become *crystalline*, where they remain to cause irritation and set up inflammation. Normally, the uric acid, which circulates in the blood as quadrurate, is at once removed unchanged by the kidneys; but in the gouty state—either from defective kidney action or from incomplete or faulty digestion and assimilation—the quadrurate lingers unduly in the blood, being transformed gradually into the almost insoluble *sodium biurate*, which is of course difficult of removal by the kidneys; and thus the latter, through undue stimulation, finally lose to some extent their power of excretion. Under these new conditions sodium biurate continues to accumulate in the blood up to a certain point, when it is precipitated in the

crystalline form in the joints and elsewhere, thereby determining the occurrence of a fit of gout. This distinct advance in our knowledge of this subject was made when Sir Arthur Garrod first demonstrated, some years ago, that gout was due to the existence of uric acid in the system. Later on it was shown that the deposits were not due to inflammation of the joints, but that the deposits caused the inflammation around the joints, which was known as gout.

Sir William Roberts in his most excellent article upon gout in "Allbut's System of Medicine," Vol. ix, p. 170, says:

"From these conditions it may be inferred that in the normal state uric acid is primarily taken up in the system as a quadrurate; that it circulates in the blood as a quadrurate; and that it is finally voided with the urine as a quadrurate. In perfect health the elimination of the quadrurate proceeds with sufficient speed and completeness to prevent any undue detention or any accumulation of it in the blood. But in the gouty state this tranquil process is interrupted either from defective action of the kidneys, or from excessive introduction of urates into the circulation, and the quadrurate lingers unduly in the blood and accumulates therein. The detained quadrurate, circulating in a medium which is rich in sodium carbonate, gradually takes up an additional atom of base, and is thereby transformed into biurate."

In his celebrated work, "Uric Acid as a Factor in the Causation of Disease," Dr. Alexander Haig, of London, says:

"The uric acid with which I am concerned in this book probably exists as uric acid or a quadrurate, either in solution or colloid form; and only when considering *gout* have I to deal at all with the biurate of sodium, and that only *after* the arthritic irritation has been produced. \* \* \* When uric acid is being retained in the body by the action of an acid it is as a special or colloid urate, but still in suspension and non-crystalline. And when it is being excreted in excess as the result of taking an alkali the latter again meets with it in the blood or tissues, probably as uric acid or a quadrurate. \* \* \* In acute rheumatism the arthritis is often only a matter of a few hours, for even if it continues, the irritation may leave one joint and go to another, proving that the urate is soluble and can be moved from place to place. \* \* \* In *gout*, on the other hand, the urate is not only present in greater quantity in the one joint affected, but it remains longer, and so the biurate is deposited, and this may go on for some time as long as the blood is rich in urates attracting other urates to it, so that the tophus grows steadily larger and larger. Here we have undoubtedly to deal with the *biurate*, and have to consider its solubility in any attempt we may make to dissolve and remove it."

That thialion will dissolve the biurate and remove it partially or wholly from the joint, (in solution or suspension in the circulation) and eventually expel it by way of the urine, has been repeatedly demonstrated in actual practice. We suggest that the following articles be referred to on this subject; to wit:

(a). "THE PREVALENCE AND TREATMENT OF GOUT," by Charles W. McIntyre, M. D., New Albany, Ind. (Reprinted from the *Carolina Medical Journal*, Jan., 1901.) Page 198.

(b). "SOME REASONS WHY AN HEPATIC STIMULANT AND THE URIC ACID SOLVENT ARE ESSENTIAL IN THE TREATMENT OF GOUT," by W. H. Vail, M. D., St. Louis, Mo. (Reprinted from the *Medical Century*, Dec., 1899.) Page 138.

(c). "DIET LIST TO BE USED IN GOUT AND RHEUMATISM," by Henry S. Pole, M. D., Hot Springs, Va. (Reprinted from *New England Medical Monthly*, Oct., 1899.) Page 70.

(d). "THIALION—ITS THERAPEUTIC INDICATIONS WITH CLINICAL REPORTS," by C. W. Canan, B. S., M. D., Ph. D., Orkney Springs, Va. (Reprinted from the *New England Medical Monthly*, Sept., 1901.) Page 206.

(e). "THE TREATMENT OF GOUT AND OBESITY," by L. Bennett, M. D., Central City, Ky. (Reprinted from the *Uric Acid Monthly*, April, 1903.) Page 233.

#### 4. RHEUMATISM.

The word, "rheumatism," was used originally to designate any painful affection of the muscles, nerves or joints, and included even intestinal colics. In fact, all of the morbid conditions which we now recognize either as gout or as rheumatism, were at first classified under the general head of "arthritis," and this latter term corresponded very closely with our modern conception of it, viz.: "The condition in which there is a tendency to joint disease," ("Nat. Med. Dict.")—and, we may add, vitiation of the connective tissue and its derivatives.

It is now a well-recognized fact that the arthritis, denominated "gout," is characterized by the presence in the organism of an excess of the salts of uric acid, and that manifestations of the disorder are due to the precipitation of the less soluble biurates in the various connective tissues, especially the synovial membranes and cartilages. When these uratic deposits occur in the joints, forming tophi which set up inflammatory reaction and pain, the condition is known as "regular" or "articular" gout; but if the deposits occur in other tissues of the body (e. g., muscular, nervous, glandular, etc.), the symptoms produced are those of "irregular," "ab-articular," or "visceral" gout. In the joints, owing to the lessened vascularity and low alkalinity of the parts, the urates are precipitated out in such amount and retained so long as to become crystallized in the form of the sodium biurate, and, as such, is readily recognized in any autopsical finding. But, in "irregular" gout, this is seldom the case, for the deposits are more minute and become frequently absorbed, although even here the effects may be seen in the hardening and thickening of the affected tissues, as of the coats of arteries and parenchyma of glands—e. g., of kidneys and liver.

The arthritis of articular rheumatism differs from that of articular gout, chiefly because of the larger joints affected, the more soluble form of the uratic deposits, and because other materials (of a septic nature) may be the exciting factor—as in gonorrhœa and other infectious diseases. The so-called "rheumatism" of other tissues, however, (muscles, nerves, etc.), may for all practical purposes be classed with "irregular" gout, except when caused by a septic agent as mentioned above, and even then the treatment (i. e., eliminative) is of a similar character. As to the difference in the anatomical conditions prevailing in the rheumatic joint as compared

with that of gout, we are probably indebted more to the original researches of Prof. Alexander Haig, of London, than to those of any other modern investigator. The difference is accounted for by this author by applying the laws of chemistry. If the *colloid* uric acid is allowed to remain for a considerable period of time in any given locality, and is added to from time to time or precipitated by the ingestion of acid foods and drinks, a combination finally takes place with the soda salts present in the circulation, and biurate of sodium crystals are deposited, resulting eventually in gout. Previous to the formation of crystals, and while the urates are still in the colloid form deposited in the muscles and joints, we have the condition known as rheumatism—which is denominated “muscular” in the former case, and “articular” in the latter.

It is evident that the solvent and eliminative mode of treatment is indicated here, as in the conditions previously described. It is more especially in the treatment of chronic cases, that thialion has proven superior to all other anti-rheumatic remedies, as may be seen by referring to the reports in the following articles; to wit:

(a). “A CASE OF CHRONIC RHEUMATISM,” by L. B. Smith, M. D., Hornellsville, N. Y. (Reprinted from the *St. Louis Medical and Surgical Journal*, March, 1901.) Page 200.

(b). “MUSCULAR RHEUMATISM: ITS ETIOLOGY AND DIAGNOSTIC RELATIONSHIP WITH APPENDICITIS,” by Eugene C. Underwood, M. D., Louisville, Ky. (Reprinted from the *Alabama Medical Journal*, May, 1900.) Page 173.

(c). “THREE INTERESTING CASES,” by Stephen L. Reid, M. D., Wilsonville, Ky. (Reprinted from the *Uric Acid Monthly*, IV-2.) Page 237.

(d). “VAGUE MUSCULAR PAINS AND ACHES,” by G. B. Acker, M. D., Laurenceville, Pa. (Reprinted from the *Medical Herald*, July, 1904.) Page 238.

(e). “TWO TROUBLESOME CASES CURED, ONE OF CHRONIC RHEUMATISM AND ANOTHER OF CONSTIPATION,” by D. C. Rees, M. D., La Belle, Mo. (Reprinted from the *Southern Practitioner*, Feb., 1900.) Page 134.

We would direct especial attention to the following two articles, by Professors Phelps and Manley, of New York:

(f). “PURULENT TUBERCULAR AND RHEUMATIC HIP-JOINT DISEASE,” by A. M. Phelps, M. D., New York. (Reprinted from the *Peoria Medical Journal*, Dec., 1898.) Page 47.

(g). “CONSTITUTIONAL TREATMENT IN JOINT INJURIES,” by Thos. H. Manley, M. D., Ph. D., New York. (Reprinted from the *New York Lancet*, Jan., 1901.) Page 73.

## 5. LIVER TROUBLES.

The liver has been not inaptly termed “the mind of the body.” By this is meant that it exercises a general supervision and watchful care in protecting the body from the poisonous effects of its own activities. It is the great “scavenger,” the cleanser, the purifier of the body. It is the final oxidizing depot of the disintegrated waste products of the amido-acid series, resulting from proteid metabolism.



It completes the transformation and retrograde change of these substances from "non-diffusible colloids into crystalloid, dialyzable materials" (e. g., into urea) before they pass into the kidneys for final excretion. Were it not for this organ, the blood which is normally the "life giving fluid" would speedily be filled with waste poisons and become the death giving fluid. Some idea of the importance of its work (from the chemist's standpoint) may be understood, when it is remembered that the products of its activity are recognized as the results or hydrations, oxidations, reductions and syntheses, *such as can be obtained only by the action of the most powerful reagents.*

In the average healthy individual from  $1\frac{1}{2}$  to 2 pints of bile are manufactured every twenty-four hours. Bearing in mind that this is not only a secretory but an excretory fluid, and that it serves as a medium for the removal of under-oxidized products of tissue catabolism, it will at once be understood why symptoms of poisoning always result whenever the liver fails to perform its accustomed work. The blood becomes charged with waste products resulting from the disintegration of the nuclei of worn-out tissue cells (i. e., the so-called leucomains or alloxins of the uric acid group, adenin, xanthin, hypoxanthin, guanin, uric acid, sarkin, creatinin, creatin, etc.), besides those other toxins absorbed from the intestinal tract, which result from the decomposition of food substances imperfectly digested, or from retained fæces.

It is well known that all animal foods that contain purin substances (the extractives) lead to the introduction of uric acid into the body. In the metabolism of these purins and other nitrogenous matter, under the stress of over-exertion on the functioning power of the liver it is reasonable to believe that the result is not perfect, and that matter, instead of forming urea, which is quite soluble and readily thrown out by the renal emunctories, we have an excess of uric acid, not near so soluble, and which is only in limited quantities capable of being so eliminated. The condition which results is often called "hepatic dyspepsia," or "hepatic insufficiency." The patient frequently experiences pain in the right hypochondrium, the bowels are confined, and there is a tendency to piles. These symptoms usually occur about the middle period of life and in persons who take little exercise and eat and drink to excess: a period of life which corresponds to the time when men have passed the active stage of existence and are beginning to "lay off," take things more easily, and, as they term it, "to enjoy life."

Among the cases which the general practitioner is called upon to treat, few are more common or more troublesome than those depending upon hepatic torpor and commonly classed as bilious attacks, a condition due to improper action of the liver. The so-

called bilious attacks may occur periodically or at rare intervals. There are present lassitude, headache, nervous depression and an icteroid hue to the skin and conjunctiva. If untreated, the attack, after continuing for two or three days gradually wears off and the sufferer regains his usual health, or there follows a more or less chronic condition of hepatic torpor, evidenced by sallow skin, yellow conjunctiva, lassitude, nervous irritability and constipation.

Familiar to every practitioner is the countenance of the "bilious" patient, his sallow, yellowish skin, dull eye, sodden tongue covered with a thick, yellowish fur, offensive breath and complaints of nausea, lack of appetite and constipation, alternating with attacks of diarrhœa. All these clinical phenomena are undoubtedly due to inactivity of the liver, i. e., an improper performance of its physiological functions.

In the treatment of these cases thialion is almost a specific. It acts indirectly by cleaning out the bowel and stimulating the excretory apparatus, and directly by stimulating the liver and producing a flow of liquid bile. Its action in increasing the fluidity of the bile is very marked, and its use is thus indicated in gall-stone cases and in those predisposed to attacks of biliary colic.

Inasmuch as normal bile is a strongly alkaline fluid, containing notable quantities of sodium salts, it is quite probable that the effect produced by the alkaline cholagogue is principally of a chemical nature. In other words, like the blood itself, the bile (in the lithæmic patient) becomes subalkaline, resulting in the precipitation of colloid waste and the production of a semi-fluid, *viscid* mixture. Furthermore, owing to the lack of a proper proportion of alkaline constituents usually furnished by the blood, and which are essential to the synthesis of the bile acids and urea, the function of the liver as a depot or crematory for burning up waste material is no longer thoroughly performed, and the circulation remains charged with metabolic products of the xanthin type while the hepatic ducts are filled with a thick, viscid bile and mucus, which may result in irritation and catarrh. Is it, then, a small matter to clear the way for a fresh onflow of bile along the natural passages, partially obstructed by a languid current?

The action of thialion in increasing the alkalescence of the blood and freeing the obstructed capillaries of the colloid urates, permitting an increased flow to the glandular organs, is seen in the well-known diuretic and laxative effect which it produces. Its action in this respect is evidently due to the cholagogue alkaline sodium salt which it contains, in conjunction with the solvent action of its lithia. Its definite therapeutic indication, therefore, is to stimulate hepatic secretion and enhance the function of this organ in the line of catabolism of nitrogenous waste. In other words, it is indicated in the

treatment of that class of cases so common to the general practitioner, and which can be grouped under the following symptoms—malaise, headache and a feeling of weakness on arising in the morning; impaired appetite, faulty digestion, fatigue, vague pains in the limbs and back and (to many of our business men) want of concentration of mind to their work, nervousness, broken sleep at night, worry, mental inability to carry out the accustomed duties. The finer instruments of precision may fail to reveal the cause of these symptoms, but it is evident that the patient is suffering from auto-toxæmia, or “irregular gout” due to *hepatic insufficiency*.

References:

- (a). “BILIOUSNESS,” by Deering J. Roberts, M. D., Nashville, Tenn. (Reprinted from *New England Medical Monthly*, April, 1899.) Page 102.  
 (b). “CHOLELITHIASIS, WITH CLINICAL REPORTS,” by J. W. P. Smithwick, M. D., La Grange, N. C. (Reprinted from the *Charlotte Medical Journal*, Feb., 1900.) Page 196.  
 (c). “SOME PROBLEMS SOLVED,” by R. W. Lowe, M. D., Ridgefield, Conn. (Reprinted from the *Texas Medical Journal*, Aug., 1898.) Page 79.  
 (d). “THE PROPER DOSAGE OF THIALION,” by E. M. Smith, M. D., Newtown, Conn. (Reprinted from the *Journal of Science and Medicine*, May, 1899.) Page 193.  
 (e). “CLEAN OUT THE SEWERS,” by G. G. Williams, M. D., Chicago, Ill. (Reprinted from the *Alabama Medical Journal*, Feb., 1904.) Page 243.  
 (f). “IS CALOMEL NECESSARY?” by G. A. Gilbert, M. D., Danbury, Conn. (Reprinted from *New England Medical Monthly*, Jan., 1900.) Page 248.

## 6. BRIGHT'S DISEASE.

When we consider the constancy and rapidity of tissue change, the large mass of new material to undergo construction and of waste material to be disposed of; and that the kidney is at once the avenue for the removal of the most complex forms of tissue waste, and the by-path along which the absorbed products of intestinal decomposition are removed; that it is also subject to marked and frequent variances in the quantity of the excretory materials delivered to it,—then it is not surprising that the selective function of the renal filter should occasionally become disordered, and elimination by that channel be imperfectly performed. Furthermore, in such an atmospheric medium as we live, where sudden exposures to chills occur, the functions of the skin are habitually depressed and an undue share of the work of elimination is again thrown upon the kidneys. But it is not altogether, in this case, simply an excess of work that the kidneys are called upon to do, for, as is well known, suppression of the perspiration is followed by increased acidity of the urine; and from this we may infer diminished alkalinity of the blood leading to the accumulation of *uric acid* in the circulation, and the deposition of its salts in the various tissues of the body including the canaliculi of the kidney itself. Again, salts and extractives frequently appear in the blood as the result of an imperfect nitrog-

enous metabolism in the tissues, upon either its constructive or destructive side, and thus an excess of the products of disassimilation are delivered to the kidney to be disposed of necessitating extra work of elimination, the result of which, if continued, may be easily foreseen, for it is a well-known pathological law which links together excessive function and proneness to disease. The most interesting and important of these substances formed in the body, which have yet been discovered, are those of which we may take *uric acid* as the type, and of these, many of the so-called "alloxuric bases" have been shown by recent investigations to readily dissolve in the tissue juices, producing distinctly toxic effects.

In summing up, therefore, it may be said, that preceding the stage, usually denominated "Bright's disease," an auto-intoxication process has been going on, resulting in a vitiated circulation and diseased condition known as the "uric acid diathesis," among the more direct causes of which may be enumerated, (1) excessive nitrogenous waste from "high living" (or from certain fevers); (2) increase of the raw material from which uric acid toxins are formed, i. e., the excessive use of purin-containing foods, or foods rich in nucleins; (3) gastro-intestinal indigestion and fermentation, from over-feeding, etc.; (4) absorption of the products of retained fecal matter due to constipation; (5) any factor causing functional disturbance of the liver—the great urea forming organ of the body—resulting in the formation of suboxidation products of the uric acid type; (6) frequent chilling of the bodily surface, which checks perspiration from the skin, resulting in subalkalinity of the blood, the retention in excess of uric acid in the circulation and the subsequent deposition of its salts in the various connective tissues of the body.

In the treatment of Bright's disease, if we are to draw any inference from the clinical history, we have decidedly to deal with more than one set of organs—the kidneys. "In our endeavors," says one author, "to favorably influence the progress of the disease, we may with profit teach our art to follow nature's lead and assist her in her heroic efforts at a conservative systemic compensation." The problem before us in the management of the disease will always include our utmost effort to conserve the damaged kidneys, and, if possible, stay the progress of the degenerative changes there, but it is no less incumbent upon us to maintain the *status quo* in the circulatory system. No greater mistake could be made than to approach the question of treatment solely from the standpoint of the kidneys, and leave the overburdened circulatory system and glandular organs to shift for themselves.

Furthermore, it is not only desirable to promote the elimination of toxic material already formed, through every channel possible (kidneys, skin and bowels), but to prevent the formation of any

more, by regulating the quality and quantity of food ingested, and assisting the organs upon which its transformation into assimilable products depends. For this purpose, no more desirable therapeutic agent than thialion has yet been discovered. It not only increases the excretion of uric acid, but aids in the elimination of *urea*, as may be seen from an examination of the urine after a few doses of the drug have been taken. We believe that it is owing to its eliminant power in this respect that the beneficial effects observed from the use of thialion are largely due.

#### References:

(a). "NOTES, CHIEFLY CLINICAL, ON BRIGHT'S DISEASE AND ITS TREATMENT," by Geo. A. Gilbert, M. D., Danbury, Conn. (Reprinted from the *Massachusetts Medical Journal*, Sept., 1899.) Page 114.

(b). "SUCCESSFUL TREATMENT OF BRIGHT'S DISEASE," by F. J. Spilman, M. D., Connerville, Ind. (Reprinted from *Interstate Medical Journal*, Dec., 1900.) Page 250.

(c). "CHRONIC INTERSTITIAL NEPHRITIS ACCOMPANIED WITH MELANCHOLIA," by William B. Mann, M. D., Evanston, Ill. (Reprinted from *New England Medical Monthly*, Oct., 1898.) Page 87.

(d). "TWO CASES OF BRIGHT'S DISEASE AND THEIR TREATMENT," by C. H. Sangster, M. D., Buffalo, N. Y. (Reprinted from the *Massachusetts Medical Journal*, Jan., 1901.) Page 251.

[N. B. We would direct especial attention to the interesting description of a case of nephritic colic and renal calculus, in the following article by Dr. Arch Dixon, Sr., Ex-President Mississippi Valley Medical Association.

(e). "URIC ACID TOXÆMIA," by Arch Dixon, Sr., M. D., Henderson, Ky. (Reprinted from the *Texas Medical Journal*, Sept., 1900.) Page 66.

## 7. ASTHMA AND HAY FEVER.

The fact that asthma frequently alternates with such diseases of the arthritic diathesis as neuralgia, migraine, angina, gout, etc., soon led to the belief that it was probably due to the same factor which was common to these complaints, and that all were manifestations of a general toxemia. It was not long before it was discovered that the asthmatic syndrome not only resembled that of the others in the manner and source of its inception, but was also alike in its prodromal symptoms as well as in the character and amount of its urinary water and solids, before, during and after the attack. Like epilepsy, migraine, hysteria, eclampsia, and other so-called "spasmodic neuroses," the asthmatic seizure is usually preceded and accompanied by languor, headache, sleeplessness, low surface temperature, distended veins, thready pulse, cold extremities, diminished secretions, scanty urine, and various other signs indicative of an impeded capillary circulation. In other words, we have the characteristic picture of *collæmia*.

At the close of, and immediately following the paroxysm, will be observed a striking reversal of all these symptoms; but especially marked is the abundant flow of pale, limpid urine—neutral or alkaline

in reaction, and *loaded with urates*. The fact that the attack of the asthmatic is so often ushered in during the small hours of the morning, at the height of the alkaline tide—in the midst of the “uric acid storm”—when the general circulation is charged with urates of which it is attempting to relieve itself, is but another indication that this toxin is an important factor to be reckoned with in any consideration of the pathogenesis of this complaint. Instead of manifesting itself by an increased elimination with the urine—as is the case with the healthy individual at these hours, and as is especially necessary if it is present in excess of the normal—it is, on the contrary, retained in the system, owing to subalkalescence of the blood or a change in its solubilities from some other cause, and the result of its retention is evidenced by the various toxemic symptoms above described: relief, however, being prompt and effective as soon as its removal is assured, as witnessed by its appearance in bulk in the urine at the close of the attack—whether asthmatic, neuralgic, epileptic, cephalalgic, eclamptic, or otherwise.

It will readily be understood from the above, that thialion is not given to relieve an existing attack, but to remove the disturbing factor from the system and prevent the occurrence of subsequent attacks.

#### References:

- (a). “ASTHMA AND ITS TREATMENT,” by A. E. May, M. D., New Haven, Conn. (Reprinted from *Gaillard's Medical Journal*, Oct., 1900.) Page 247.
- (b). “URIC ACID AS A CAUSE OF ASTHMA,” by L. H. Watson, M. D., Chicago, Ill. (Reprinted from the *Southern Medical Record*, Feb., 1899.) Page 97.
- (c). “A BRIEF INQUIRY INTO THE ETIOLOGY AND TREATMENT OF HAY FEVER,” by Edwin Hank, M. D., Tanner's Creek, Va. (Reprinted from *Gaillard's Medical Journal*, May, 1900.) Page 158.
- (d). “URICACIDÆMIA, HAY FEVER AND ASTHMA,” by Wm. R. Lowman, A. M., M. D., Orangeburg, S. C. (Reprinted from *The Medical Summary*, June, 1900.) Page 177.
- (e). “ASTHMA AND ITS TREATMENT,” by G. A. Gilbert, M. D., Danbury, Conn. (Reprinted from the *Southern Medical Journal*, Aug., 1899.) Page 108.
- (f). “ASTHMA, INTERMITTENT FEVER, MASTITIS, VARICOSE ULCER, PREPARATION OF THE PATIENT FOR OPERATION,” by R. K. Langson, M. D., Gordon Hospital, Chadron, Neb. (Reprinted from the *Oklahoma Medical Journal*, Nov., 1899.) Page 143.
- (g). “ASTHMA AND THE URIC ACID DIATHESIS,” by S. S. Garst, M. D., Jonesboro, Tenn. (Reprinted from the *Oklahoma Medical Journal*, May, 1900.) Page 164.

## 8. CONSTIPATION.

Some of the essentials of treatment of constipation, in which the presence of an excess of uric acid in the system has become a complicating factor, have already been hinted at when considering the subject of “causes and effects” in this connection. In the first place, the patient should be made to understand that frequent artificial purgation by means of strong “cathartics” is an exceedingly

pernicious practice and should be condemned, as it can only result finally in the production of the vicious "pill habit" and "habitual constipation." He should be taught to appreciate the difference between *forcing* nature and *aiding* her in her efforts to remove waste products from the body, and keep in good repair all four avenues of escape, viz.: (1) expiration via lungs; (2) transpiration via skin; (3) urination via kidneys, and (4) defecation via bowels. The first two means of exit may be likened to flues which eliminate smoke and gases from the fuel consumed in the body, while the third disposes of the ashes, and the fourth carries off in addition the nonusable material or "clinkers."

It will be seen that if for any reason one of these exits should become obstructed, or but partially perform its work, the others will be called upon to perform extra service and a kind of service for which they are not especially adapted, for their respective duties are so peculiar to each, and yet so interdependent, that the work of one cannot be neglected without interfering with that of all the others. As the clinkers obstruct the grate to the stove and prevent free oxygenation and combustion, *sometimes putting out the fire entirely*, so does the obstructed intestinal canal result in an ill-burning fire or lowered metabolism in the human economy; and lowered metabolism is the inevitable precursor, as we know, to the formation of suboxidized (or partially burned) products of the uric acid type. As the liver is the human grate which separates combustible material from the clinkers of the system, it is, of course, of the first importance that it should not be permitted to become clogged by neglecting to remove the refuse. Let it be our duty, then, to keep clear of obstruction both the flues and grate of our system.

In regard to the time or *duration* of the treatment with thialion, it can only be said that each individual case must be studied by itself, and the physician must not only use discretion but depend upon his own judgment. In some instances of so-called "habitual" constipation, it will be necessary to persist in the treatment for several weeks, though, of course, the dose is gradually reduced or taken less frequently until regular daily evacuations occur without assistance. One prominent author recommends that a drachm of the salt be taken in a glassful of hot water "every morning for a week; then every other morning for two weeks, twice a week then for a month, and once a week for another month," at the end of which time, he says, "the patient will be perfectly well." Though, of course, this particular plan cannot be adopted in every case, yet it may be taken as a fairly representative method, and one which will be found applicable in the majority of cases.

No better commentary on the value of thialion in the treatment of these cases need be desired than that contained in the recom-

mentations offered in the following articles, written by three eminent physicians, whose names are familiar to nearly every general practitioner in this country; to wit:

References:

(a). "THE TREATMENT OF CONSTIPATION," (A Clinical Lecture Delivered at the Hospital College of Medicine, Louisville, Ky.,) by Prof. Joseph M. Mathews, M. D., LL. D. (Reprinted from *New England Medical Monthly*, Nov., 1899.) Page 71.

(b). "CONSTIPATION IN TUBERCULOSIS," (A Special Lecture Delivered at the Coll. Phys. and Surg., St. Louis), by Prof. Wm. Porter, A. M., M. D., St. Louis. (Reprinted from the *National Medical Review*, Nov., 1899.) Page 64.

(c). "THREE CASES OF LEAD POISONING AND THEIR TREATMENT," by William C. Wile, A. M., M. D., LL. D., Danbury, Conn. (Reprinted from *International Journal of Surgery*, June, 1898.) Page 37.

(d). "FUNCTIONAL CONSTIPATION AND ITS TREATMENT," by A. J. Jenkins, M. D., Buffalo, N. Y. (Reprinted from the *Interstate Medical Journal*, Oct., 1899.) Page 120.

## 9. URO-GENITAL DISORDERS.

Owing to its great solvent power, thialion is a most energetic remedy for removing and dissolving calculous or gravelly deposits in the bladder or kidneys. From the fact, too, that it renders the urine neutral or slightly alkaline, and holds in solution the urates and uric acid, thus preventing their deposition, it is especially useful in all irritable and inflammatory conditions of the bladder. In cystitis, it is of the greatest value in soothing and healing the inflamed mucous membrane, preventing the deposits of uric acid and rendering the urine mild and unirritating. Cases are reported, too, in which it has, (owing to its solvent power, and by keeping the urine steadily alkaline) succeeded in disintegrating and removing piecemeal, uric acid stones of considerable size, both from the renal pelvis and the bladder.

References:

(a). "LITHÆMIC CYSTITIS AND ITS TREATMENT," by Geo. Wight, M. D., Bethel, Conn. (Reprinted from the *North Carolina Medical Journal*, Nov., 1899.) Page 141.

(b). "A CASE OF CYSTITIS OF LONG STANDING," etc., by J. W. Walker, M. D., Los Gatos, Cal. (Reprinted from *Annals of Gynecology and Pediatrics*, Dec., 1899.) Page 124.

(c). "AN EFFECTIVE URIC ACID SOLVENT AND ELIMINANT," by S. E. Fowler, M. D., Ph. D., Kansas City, Mo., Prof. Genito-Urinary Diseases, Cook Memorial Medical College. (Reprinted from the *Canadian Journal of Medicine and Surgery*, Aug., 1902.) Page 215.

(d). "REPORT OF A CASE OF CYSTINURIA COMPLICATED WITH URICACIDÆMIA," by G. A. Gilbert, M. D., Danbury, Conn. (Reprinted from *The Chicago Clinic*, April, 1900.) Page 148.

(e). "IRRITATION OF THE GENITO-URINARY TRACT," (editorial in *Milwaukee Medical Journal*, Aug., 1900.) Page 192.

(f). "REPORT OF A RARE CASE," by Frank P. Clark, M. D., Danbury, Conn. (Reprinted from *New England Medical Monthly*, June, 1900.) Page 167.



(g). "INCONTINENCE OF URINE IN CHILDHOOD AND ITS TREATMENT," by W. C. Wile, M. D., LL. D. (Reprinted from the *Massachusetts Medical Journal*, Feb., 1900.) Page 132.

(h). "GRAVEL," by J. Alexander Wade, M. D., Danbury, Conn. (Reprinted from the *Toledo Medical and Surgical Reporter*, Oct., 1898.) Page 85.

(i). "A CASE OF URICACIDÆMIA; MISTAKEN SYMPTOMS; ERRONEOUS TREATMENT; RECOVERY," by W. H. Bentley, M. D., LL. D., Woodstock, Ky. (Reprinted from the *Uric Acid Monthly*, IV-3,) Page 252.

## 10. HEADACHE AND MALARIA.

The beneficial results experienced from the use of thialion in relieving headache, may doubtless be attributed to its well-known solvent and eliminative action in producing a plus excretion of toxins of the uric acid type, thus freeing the capillary circulation of the katabolic products which periodically collect and are deposited within their walls to press upon and irritate the contiguous nerve tissue, resulting in the production of pain. That the "gouty headache," like pain in the "gouty toe," is due to the precipitation of colloid urates in the capillaries at the seat of injury, is a theory which is now fast becoming generally accepted. That the cerebral capillaries should become the point of disturbance in one case, and not in another, depends entirely upon local conditions. If the patient is constantly engaged in mental work, or is frequently exposed to emotional shocks, causing a flux of blood through the vessels of the brain, the capillaries in that vicinity will not only be called upon to do extra duty as supply tubes, but must also become the outlet for the waste products caused by the wear and tear of the nervous tissue at this point. It will be seen, therefore, that if such a patient is goutily inclined, i. e., his general circulation already contaminated with the urates—the deposition of the latter is likely to take place in the over-worked cerebral vessels, thus localizing the irritation and giving rise to the symptom known as "gouty headache."

To be successful in the treatment of this condition, it is obvious that some means should be observed to prevent the blocking up of the capillaries by the waste products referred to, and to cause the removal of the latter if already existing. The emunctories of the body should be urged to a proper performance of their function, while the solvency and alkalescence of the blood should be brought to a point to hold the offending substance in solution, or to reabsorb it when already deposited. In other words, if a "gouty headache" be due to an excess of colloid urates (or other suboxidized waste of the uric acid type, xanthin, hypoxanthin, etc.,) in the cerebral capillaries, every effort should be made to effect the removal of this toxin from the system.

Scores of cases have been reported to us concerning the value of thialion in the treatment of MALARIA, the drug being used instead

of calomel, as an adjuvant to quinine. The following is a fair sample of the reports coming to us on this subject:

"GENTLEMEN: My experience in the use of thialion has been highly satisfactory. During the past two months I have been using it in malarial troubles. I exhibited thialion in eight cases of malaria and did not give calomel. In five cases I used calomel. I found thialion more satisfactory.

Respectfully,

CYRUS GRAHAM, M. D.,  
Pres. Ohio Valley Med. Asso."

Henderson, Ky., Oct. 1, 1901.

It will at once be understood *why* a uric acid solvent and eliminant of the nature of thialion, has proven so beneficial in the prevention and cure of malaria. Its therapeutic value in these cases, as will be seen, is two-fold; viz.: 1. It enhances the action of quinine by cleaning out the renal and intestinal tracts and rendering the absorption of this drug more speedy and certain. 2. It removes waste of the uric acid type from the blood, increasing its alkalescence, thus rendering it a less favorable medium for the growth and multiplication of the spores of malaria. Though calomel fulfills in a measure the first of these indications, yet it is entirely lacking in the second; and, for this reason, we conceive, thialion has been found superior to it as an adjuvant remedy to quinine in the treatment of this disease.

#### References:

(a). "TWO CASES OF URIC ACID HEADACHE," by C. L. Tarleton, M. D., Cedar City, Mo., Pres. B'd Exam. for Pensions. (Reprinted from the *Wisconsin Medical Recorder*, Feb., 1899.) Page 96.

(b). "SOME CASES OF OBSTINATE HEADACHE, THE WOMAN'S BURDEN," by S. Green, M. D., Southbury, Conn. (Reprinted from the *Columbus Medical Journal*, Jan., 1900.) Page 127.

(c). "HEADACHE AND BACKACHE OF MENSTRUATION," by Chas. A. Dunham, M. D., Jacksonville, Fla. (Reprinted from the *American Medical Compend*, Jan., 1904.) Page 240.

(d). "MALARIA," by A. N. Couture, M. D., Auburn, Cal. (Abstract from the *California Medical Journal*, Aug., 1900.) Page 245.

(e). "DOES THIALION TAKE THE PLACE OF CALOMEL?" by R. A. MEATH, M. D., Memphis, Tenn. (Reprinted from the *Western Medical Review*, Aug., 1900.) Page 191.

## II. SKIN DISEASES.

There are many skin disorders which are due to the presence of some irritant obtained from the circulation, which has in turn become contaminated owing to the clogging up of the "sewers" (kidneys and bowels), or because the great "scavenger" of the body (the liver) has but partially performed its work: It is in these conditions that toxins of the uric acid type play so important a part. They are retained in the circulation and all that is sometimes required is a slight change in the solvency of the blood, or decrease in its alkalescence, due to exposure to cold, acid drinks, over-feed-

(a). "DEFECTIVE EYESIGHT IN SCHOOL CHILDREN," by George A. Gilbert, M. D., Danbury, Conn. (Reprinted from the *American Medical Compend*, July, 1900.) Page 184.

(b). "CHRONIC NASAL CATARRH," by W. E. Weed, M. D., Ridgefield, Conn. (Reprinted from the *Columbus Medical Journal*, July, 1900.) Page 178.

(c). "URIC ACID IN THE CAUSATION OF EYE, EAR, NOSE AND THROAT DISORDERS," by R. W. Blakeslee, M. D., Peirce City, Mo. (Reprinted from *Uric Acid Monthly*, May, 1903.) Page 235.

#### 14. PUERPERAL ALBUMINURIA.

The theory of auto-intoxication, which is now steadily gaining ground, will ultimately be considered the only rational one in discussing the etiology of puerperal eclampsia. The intermediate products of nitrogenous metabolism—which the liver has failed to arrest and transform—remain in the circulation to cause the auto-infection manifested by headache, vertigo, digestive disturbances, visual irregularities, insomnia, and various other nervous symptoms, which usually precede and usher in the "convulsive seizures." One of the great danger signals, therefore, which we may look for in lieu of albuminuria, is the absence of a normal amount of urea (the end product of nitrogenous metabolism) in the urine. For it must be remembered that although albumen may be absent (which is supposed to be an indication of safety), yet the amount of urea eliminated may be far below normal, in which case our prophylactic measures against eclampsia should at once be instituted.

As one author correctly states: "The perfunctory examinations of the urine for albumen during the latter weeks of pregnancy are not sufficient." A far better plan is to determine the amount of urinary solids and consider one-half of this finding to consist of urea.

In the drug treatment of this condition, our special aim is to effect the removal of accumulated waste products from the body by way of the kidneys and bowels. For this purpose, hot water and thialion are probably the most effectual agents that can be employed.

##### References:

(a). "ALBUMINURIA IN PREGNANCY; ITS CAUSATION AND TREATMENT," by Edwards M. Smith, M. D., Bridgeport, Conn. (Reprinted from the *Peoria Medical Journal*, March, 1900.) Page 145.

For some exceedingly interesting and instructive remarks on an allied subject, we take pleasure in directing attention here to the following clinical lecture delivered in the Clinical and Pathological School of the Cincinnati University, by Prof. C. A. L. Reed, Ex-Pres. Amer. Med. Asso.:

(b). "THE GENITAL FACTOR IN CERTAIN CASES OF NEURASTHENIA IN WOMEN," by Charles A. L. Reed, M. D., LL. D., Cincinnati, Ohio. (Reprinted from *Gaillard's Medical Journal*, Jan., 1899.) Page 59.

## 15. BEFORE OPERATIONS.

On this subject we would direct notice to the article (referred to below) written by Prof. Augustin Goelet, of New York, Professor of Abdominal Surgery in the New York School of Clinical Medicine. The point to which he directs especial attention, is the necessity of establishing a normal functioning activity of the excretory organs, prior to operation,—i. e., find how they digress from the normal standard, and correct the fault before submitting the patient to the knife.

Prof. Goelet believes that in very many people, especially of advanced age, the digestive apparatus and excretory organs are apt to be inactive or impaired and, consequently, their reparative energies will be so weakened after an operation that recovery is doubtful. In such cases (in fact, in all cases, unless immediate operation is demanded) his plan is to spend two or three weeks in getting the patient in condition. He believes in thoroughly cleaning out the intestinal tract and establishing a proper functioning activity of liver and kidneys.

Among other things he recommends thialion for this purpose. "There is no other drug," observes he, "the continuous administration of which acts so reliably and satisfactorily without deleterious effect. It may be continued for days, producing two or three free evacuations each day without the least depression. It arrests fermentation not alone by discharging bile into the intestine, but also by re-establishing a normal alkalinity of their contents; and, at the same time, it increases the secretion of urine and renders it alkaline."

### Reference:

(a) "PREPARATION OF THE PATIENT FOR ABDOMINAL OPERATIONS," by Prof. Augustin H. Goelet, M. D., New York City. (Reprinted from the *Charlotte Medical Journal*, Dec., 1898.) Page 57.

## 16. DENTAL TROUBLES.

It is evident that the teeth and gums depend for their growth and sustenance upon the same general nerve and blood supply as that furnished other special tissues of the body, and all are subject to the same physiological laws and pathological disturbances. To properly treat or preserve a given part, whether by mechanical means or otherwise, it is essential to understand that such part is often vitally influenced by some other part with which its relations are most intimate and constant—i. e., the nerve and blood supply, and secretions of the mouth, in the case of the teeth and gums.

The blood dyscrasia which oftenest produces acid secretions in the mouth, and causes precipitation of deposits in and around the

teeth, leading to degenerations of the various parts, is well-known to the physician as "lithæmia," or "uricacidæmia." Many dentists have already become convinced of the futility of attempting to cure certain cases of caries and pyorrhœa by the adoption of mechanical means and local antiseptics alone. They recognize the necessity of constitutional treatment in order to sweep out the offending urates from the system. For this purpose, several prominent stomatologic surgeons have employed thialion with remarkable success, and have submitted clinical reports concerning its practical value as a solvent in all conditions where such an agent is indicated—e. g., caries, pyorrhœa, sensitive dentine, etc.

#### References:

- (a). "SOME LESIONS OF THE TEETH AND GUMS," by John C. Downs, D. D. S., Danbury, Conn. (Reprinted from the *Uric Acid Monthly*, IV-5.) Page 263.  
 (b). "THE URIC ACID SOLVENT IN DENTAL PRACTICE," by Geo. K. Hawley, D. D. S., Danbury, Conn. (Reprinted from the *Uric Acid Monthly*, IV-5.) Page 255.

### DIRECTIONS FOR USING THIALION.

In administering this drug the following specific direction may always be observed; viz.:

1. Dissolve a teaspoonful of the salt in half a glass of hot water.
2. Add sufficient cold water to reduce the temperature of the liquid to the just drinkable point—then drink the whole at once.

If only one daily dose be given, it should be taken the first thing upon arising in the morning—an hour before breakfast.

In lieu of the plain, cold water, which is added, Prof. Thos. H. Manley, of New York, (Cf. *New York Lancet*, Jan., 1901) suggests the addition of aerated water to which some pleasant syrup has been added; while Prof. Augustin Goelet, of New York, (Cf. *Charlotte Med. Jour.*, Dec., 1898), recommends that a small piece of lemon peel shall be placed in the bottom of the cup. These respective methods were employed to counteract the unpleasant flat taste which the medicine possesses for some people.

When but one dose per day is required, Prof. C. A. L. Reed, of Cincinnati, ex-Pres. Amer. Med. Asso., prefers that it should be given in the evening. In one of his lectures, delivered in the Clinical and Pathological School of the Cincinnati University of the Cincinnati Hospital, Dr. Reed says:

"I use thialion by giving a teaspoonful in hot water before meals. In the course of thirty-six to forty-eight hours, its gently laxative effect is realized. From this time on I give it less frequently. By the end of the next day the systemic effect is manifested. I am rather fond of giving a full dose of it before retiring—an innovation, I believe, in the manner of using it, but I have been able easily to thus perpetuate its once established effects by a minimum of both drug and dosage. The bowels are

thus put into a condition of normal activity." (Cf. *Gaillard's Medical Journal*, January, 1899.)

In a special lecture on "Physical Diagnosis," delivered at the College of Physicians and Surgeons, St. Louis, in 1899, Prof. William Porter, of St. Louis, agreed with ex-President Reed, in regard to the evening dosage. (Cf. *National Medical Review*, Washington, D. C., Nov., 1899.)

Reports have occasionally come to us that the stomachs of some delicate, nervous women are opposed to the introduction of the hot thialion solution. But on investigation, it will usually be found in these cases that the trouble is due to the fastidiousness of the patient herself, and that, by insisting upon its employment, the difficulty becomes tided over after the ingestion of three or four doses.

**The Usual Plan.**—On the first day of the treatment, a dose is given every two hours until a free, "mushy" movement from the bowels occurs—usually after the fourth or fifth dose. Thereafter a dose is given twice (or thrice) daily—the first thing upon arising in the morning and the last thing before retiring at night. This is kept up for a fortnight, one month, or longer. The dose is then reduced to once per day—the early morning dose; and afterward, to twice per week.

The chief object of prescribing thialion is to remove an excess of uric acid from the system; and, to accomplish this purpose, it should be given in sufficient dosage to keep the bowels fairly regular and hold the urine neutral, or faintly alkaline. In chronic cases, the treatment should be persisted in for three or four months, if necessary. *During the first two or three days, the symptoms are often aggravated.* We have explained elsewhere the *cause* of this unique action of the remedy, and stated that such effect is only temporary.

#### URIC ACID TESTS.

(1.)

##### [*Murexid Test.*]

To determine the presence of uric acid in the urine, by chemical means, the following "Murexid Test" is probably the simplest; to wit: "Evaporate to dryness at a low heat over an alcohol lamp, a few drops of urine in a watch crystal; add a drop or two of nitric acid and again cautiously evaporate to dryness; a red residue remains. Now add a drop or two of ammonia solution. The formation of murexid, which is shown by a beautiful purple (purpurate of ammonia), indicates uric acid or urates." The above method is sometimes unsatisfactory owing to tardy results and the pink (instead of purple) color produced. We have found by experience, that a slight excess of ammonia destroys the color, and that it must be dropped into the dish *without at first letting it come directly into contact with the residue.* Prof. Samuel E. Earp, of Indianapolis, recommends that a volatile salt of ammonia be used instead of a solution. "If," says he, "the salt is placed on a metal plate, and covered with the evaporating dish, the heat from the flame underneath causes quick volatilization, and it will be found that the purple red (purpurate of ammonia) color covers the evaporating dish completely on its inner surface."

(II.)

[*Approximate Test.*]

For ordinary practical purposes, the approximate amount of urates present may be determined as follows:

"Strongly acidulate some urine in a test-tube with hydrochloric acid and set aside for twenty-four hours. An examination, then, will reveal crystals of uric acid collected in the bottom of the container, also some on the sides and some floating on the surface of the urine. By testing the urine in question against a companion-tube holding an equal quantity of normal urine and treated in the same manner, an approximate comparison may be made which will be accurate enough for ordinary purposes. It must be remembered that nearly the whole, if not all, of the uric acid thus made evident is obtained from the decomposition of the urates with the consequent liberation of the acid."

(III.)

[*Ocular Test.*]

The presence of an excess of uric acid or urates in the urine is usually made evident by the physical appearance of the urine itself. For instance, a copious deposit of red sand in the vessel in which urine has stood for three or four hours only, points usually to excessive excretion of this substance. The urates being much more soluble in warm than in cold water, the urine may be clear on voiding, but after becoming cold may deposit quite a sediment. This sediment may be yellow, pink or red, and is commonly known as "brick dust deposit." A precipitate of these urates will be dissolved by heating the urine, which will serve to differentiate it from other precipitates. If the urine is scant, high colored, strongly acid, and contains frequent "brick dust" deposits, we have very strong evidence of uricacidæmia.

## OTHER URINARY TESTS.

(I.)

[*Bulkley and Haines' Test.*]

In determining the amount of urinary solids passed in a given case, the entire urinary output for the 24 hours should be collected. This should always be insisted upon, and the importance of it impressed upon the mind of the patient. The quickest and easiest method of ascertaining results, is that recommended by Bulkley and Haines, who give the following simple rule; viz.:

"*RULE. Multiply the number of ounces for the twenty-four hours by the last two figures of the specific gravity and add to the result ten per cent.*

The answer will be in grains and will give a very close approximation to the amount of urinary solids passed by the patient in twenty-four hours. For instance, if total quantity of urine is 40 ounces and specific gravity 1020, there would be  $40 \times 20 = 800 + 80 = 880$  grains solids. One-half of this amount (440 grains) would fairly represent the total quantity of urea excreted during that day. In the urine of a man weighing 160 lbs., about 1,200 grains of solids should be found, and one-half that amount of urea."

(II.)

[*Alkaline Urine.*]

Urine may be alkaline when *first* voided, and it is important that it be ascertained whether this alkalinity is due to the presence of a fixed alkali (sodium and potassium, or thalion) or to a volatile alkali (ammonium). This may be determined as follows: The litmus paper that has been turned to blue by the urine is exposed to the air until it becomes dry. If the blue color then remains, the change was due to a fixed alkali; if not, to a volatile alkali. The former reaction is of no special significance (it may be due to an alkaline remedy which is being taken,) while the latter nearly always indicates cystic trouble.

## CLINICAL NOTES BY EMINENT WRITERS.

### THREE CASES OF LEAD POISONING AND THEIR TREATMENT.

BY WILLIAM C. WILE, A. M., M. D., LL. D., DANBURY, CONN.

(Reprinted from *International Journal of Surgery* for June, 1898.)

The treatment of both chronic and acute lead poisoning (lead colic) while usually successful, i. e., not many cases dying, still the process is often tedious and uncertain, while it is rare indeed, if by medicines we are enabled to completely eradicate the lead from the system. By removing the grosser parts, by taking the patient away from contact or source of supply, nature finally unaided finishes the elimination in her own inimitable way, but if the patient is not removed from the contact or source of supply, the system becomes so impregnated with the lead that it becomes a very serious factor in health.

There are four prominent classes who absorb through their daily occupation lead enough to produce serious results.

The first are those who absorb the metal from drinking water which passes through corroded lead pipes. These cases are rarely serious, but to a certain extent interfering with the normal healthy condition of the body.

The second class are printers who absorb the metal from handling type and though most printing offices look out for their employees in this respect, advising frequent flushing of the bowels and taking acidulated drinks, still in spite of these precautions we have some severe cases in this class.

The third class are painters, who absorb the metal from the white lead and oil mixture used while painting. The cases in this class are of more frequent occurrence and more severe in the attack than are either of the classes before mentioned.

The fourth class are the workers in rubber, this includes to a greater or less degree all men who work in a rubber factory, but more especially are those subject, who are employed in the mixing or calendering departments. As it is well known, in order to vulcanize India rubber, it has to be mixed with various chemicals, notably among which is lead, generally white lead or red lead. The men who weigh out the batches in the weighing room of the rubber factory and the men working at the calendering machines where the lead is mixed into the rubber by passing through very large, heavy, steel rolls, are the ones most affected.

In this class we have a very serious lot of cases. It complicates every other disease. I resided over 15 years at Sandy Hook, Conn., where there is a large rubber factory and during that time I must have seen a thousand or more cases.

It was my experience that if a man who worked in either of the departments mentioned above, had any other illness he was sure to have a harder time, a graver sickness, require larger doses of medicine, with a prolonged convalescence than those who did not. I do not remember while residing at there of a single case of pneumonia among these mixers or calenders that ever recovered. Usually about the third day the grim messenger made his visit.

The process of absorption of the poison commences immediately upon the man's assuming this kind of work, and it goes on until lead colic supervenes and the doctor is called in. This is probably the first intimation the man has that he is absorbing lead, though his health has not been good for a long time previous. It takes a



longer time to produce this result in some cases than others, for some of the workmen seemed to be more easily impressed by the poison. Rarely does the patient consult the physician till this condition of colic presents itself.

At this time the examination shows a lead line on the teeth and gums which is deeper denser, thicker than in any other form of lead poisoning. The deposit on the teeth is so great in some of these cases where the man has worked for years in these departments, that it can be literally cut off. In these attacks of lead colic the pain is so severe that in the majority of cases a hypodermic injection of morphine is required to relieve the sufferer. Of course this is only palliative but it has to be done.

Then we find the constipation most obstinate and in some instances so persistent that it is impossible to get them to move and the patient dies before relief comes. In these cases every effort is made, by injections and internal medication to affect their movement but the bowels are simply immovable. Of course these cases are rare but they occur just the same in the practice of those who live in communities where such factories are located. If the bowels can be moved, thoroughly cleaned out (saline purgatives being the best), and then kept open, supplemented by the administration of the saturated solution of iodide of potash, 10 drops three times a day after meals, which keeps up the process of elimination, we bring about all that can be expected in this class of cases. The difficulties to contend with are the obstinacy with which the bowels permit themselves to be moved. Weeks have elapsed sometimes before they resumed anything like a normal condition.

The following three cases presenting themselves in quick succession suggested a new plan of treatment which has been so thoroughly successful that I was tempted to present it to the profession with a view to removing some of the difficulties in the path of my brother practitioners. I always sympathize with those who have to deal with many of this class, but I feel confident that if the lines laid down in this paper are carefully followed out the doctor's cares will be considerably lightened.

The first case that presented itself was that of John McN., a resident of Sandy Hook, Conn., and an employee of the rubber factory, in that place. He was 42 years old and had worked in that factory for eighteen years, either in the mixing room or on one of the calendaring machines. As he stepped into the office door, he presented a typical picture of one of those unfortunates who have absorbed large quantities of lead. His face was pale, he was thin and as he crossed the threshold he was bent, his face was drawn as if in pain, his step was a tip-toe almost, so as to avoid jar as much as possible and his first words were characteristic.

"Good morning, doctor, I've got it agin."

He was suffering from the beginning of an attack of lead colic.

On looking in his mouth his gums presented in a marked degree the leaden hue, while there was a lead line on his teeth. Familiarity with this class of cases enabled me to make a diagnosis without much of an examination. I ordered him to take a teaspoonful of thialion as soon as he got to the drug store, dissolving it in a cup of hot water. This dose was to be repeated every two hours fasting till the bowels moved freely and then he was directed to take a teaspoonful in the same media each morning on rising.

He was to let me know by telephone that night if he did not get relief, and in any event he was to see me in a week's time.

I did not hear from him till the week was up, when he came into the office smiling and happy. He said his bowels moved soon after taking the third dose and with the movement his pain left him, as is usual in these cases. The trouble has always been in getting the bowels to move. On examining his mouth I found to my astonishment that the lead line on gums and teeth was very materially lessened and as I did not suppose that the Thialion would do anything more than produce the necessary evacuation, I was surprised.

The results having been so good I ordered him to keep up the medicine, taking it as before, each morning and to report in two weeks. He did not come until three

weeks had passed and then all of the lead lines had disappeared and he was in fine fettle. He said he was in better health than he had been for years before. He kept up the treatment for two weeks more and a letter received from him a short time since, three months after treatment, says that he has had no return, though still working at the old post, but, he significantly added, "I take a teaspoonful of Thialion dissolved in a teacupful of hot water one or two mornings each week, as nothing has ever seemed to do me so much good."

Case two is in striking contrast to the one mentioned first. John W., aged 23, had been working at a calendering machine in the same factory only eighteen months. He stated that for the last two months his health had been bad. Some of his friends thought that it was due to lead, but others said he had been working too short a time to absorb enough of the metal. An examination revealed the lead line well marked on both gums and teeth. The breath was bad, the stomach deranged, appetite capricious, bowels very constipated. He had not had any movement for the last three days in spite of active cathartics having been administered.

He felt as if he had the malaria, dragging and heavy, with aching muscles and bones.

His sleep was like the sleep of the dead, but when he awoke seemed as tired as ever. Urine scanty and high colored. He had never had an attack of lead colic so thought it could not be lead poisoning that he was suffering from.

A teaspoonful of thialion administered in a teacupful of hot water every two hours till bowels moved was ordered. It took three doses to have the desired effect. After this result had been obtained, he was directed to take a teaspoonful each morning for one month. I saw him in three weeks with the lead lines all gone, the transformation from a sick to a healthy man being complete and wonderful. He kept up the medicine for two weeks more when he stopped it. He has not had an attack since, which is six months ago.

Case three was of a different type, that is, its origin was from a different cause and the condition as well as symptoms presented were different. Charles W., a printer, consulted me about two months ago with all of the symptoms of lead poisoning. He said that for years he had been chronically constipated, being compelled to take some sort of physic, till at last enormous doses had to be taken to get any satisfactory sort of a movement. He was addicted to the drink habit and was always worse after a debauch.

When he consulted me he had been on a long drunk and had as severe an attack of lead colic as I ever saw. He had been a printer for nine years and had never taken anything to get rid of the accumulating lead. He was writhing with pain, while a careful examination of the bowels showed masses of fecal matter packed in the colon, while a finger into the rectum showed that part of the bowels were also filled with feces. So dense was this latter mass that I determined it would be necessary to relieve it by manual interference. His gums showed the lead line perfectly, though not so well marked as in the other two cases.

Oiling my hand well I commenced to break up the masses in the rectum and quite a job it was. As soon as one mass was removed, another came down until an ordinary sized chamber was half filled. He was by this time becoming exhausted and while all had not been removed I thought it better to give him a little time to rest. During the interval I directed a teaspoonful of thialion dissolved in hot water to be given every two hours, promising to call again in six hours. After the second dose had been taken a fair movement was had and a copious one after the third, at which time all of the pain left him. I saw him seven hours after my previous visit; he was sleeping soundly. The after-treatment consisted in a teaspoonful of thialion each morning with good, nutritious diet. I kept watch of him for six weeks, but the last traces visible of the lead had gone by the end of the third week.

There can be no question of the value of this sort of treatment in these cases and while I am not able to explain the modus operandi still, I do know that three cures were effected where heretofore the utmost difficulty had been experienced in getting

anything like such results. If we remove the obstruction we do a lot toward relieving our patient, but if we clear out of the system all of the lead we cure our patient. I believe that thialion in these cases forms with the lead a soluble salt which is speedily carried out of the system just the same as I believe it combines with the uric acid in the system forming a soluble salt which is easily removed by the ordinary operations of the functions of the body.

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## URIC ACID IN THE BLOOD. WHAT DOES IT LEAD TO AND HOW CAN WE ELIMINATE IT?

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Read before the Danbury Medical Society, Oct. 12, 1898.

(Reprinted from the *New England Medical Monthly*.)

We will open this paper by advancing two propositions which I think are safely within the line of present pathological and chemical research, and with your patient indulgence, will then endeavor to justify them.

Is not the major proportion of diseases that afflict man due, either to errors in the kinds of foods taken, to excess in their use, or to imperfect oxidation, assimilation and excretion?

Does not a large percentage of such diseases tend directly of themselves to shorten life, and does not the remainder lead indirectly to the same melancholy end, by lowering in individual cases, the inherent power of resistance to the action of the germs and ptomaines of contagious and infectious diseases, and the shock and exhaustion following injuries?

We have lived beyond the time when the pain of passing through an attack of gout or rheumatic arthritis was in no small degree mitigated by the reflection, that after all he who dances should gracefully bend to remunerate the piper who played; and by the pleasing thought of the many good things yet to be devoured and the smothering thereof, in the liquid fruit of the side-board.

The obverse of the picture—the etiological and pathological perfection of to-day—enables us to catch the shadow of the slow but certain arterial atheromate, with its resulting hopeless structural changes, that follows in the train of the high liver.

In the man of simple and normal habit, the great toxine resulting from nitrogenous oxidation, uric acid, is thrown off as fast as secreted by the kidneys in the form of the soluble triple urates of potassium, sodium and ammonia; but in the subjects given to gastronomic excess, oxidation and excretion are almost always defective, hence we find the blood and lymphatic system loaded ever with the pernicious results of imperfect intestinal kidney and liver metabolism, with the subsequent accumulation in the blood and tissues of the insoluble urates and free uric acid.

Taking the mortality due directly to the presence of this effete principle in the system as in gout, rheumatism, organic cardiac lesions, including coronary sclerosis renal and hepatic disorders and apoplexy, and thereto adding the deaths occurring during the course of the ordinary self-limited diseases, wherein the fatality is in consequence of vitiated vital force, or is due to pre-existing gastric disorder, the result of past excess. May not the conclusion be fairly drawn, that as many men die to-day because of error and excess at table, as perish from both hunger and alcoholic indulgence?

The parts of the body where begins the primary formation of uric acid, are by no means agreed upon by observers, but we gather as the weight of evidence, first, that

the chemical metamorphosis ever going forward in the body tissues does not result in its secretion; second, that the liver secretes, if at all, a much smaller amount than was but recently supposed, the uric acid found here and believed to be due to hepatic activity, being really the result of defective metabolism of that already secreted, and finally that the kidneys really secrete if not all, by far the larger proportions.

Referring to this point of primary secretion, Luff holds that a "functional affection of the kidney always precedes gouty manifestations, and that this functional lesion which may be started by various agents and causes, viz., excessive indulgence in nitrogenous foods, wine and beer—the toxic effect of lead and violent mental shock or physical injury, may subside on the removal of the exciting cause, or it may pass on to a structural lesion of the granular type."

It is generally admitted that uric acid is always found in the blood of subjects afflicted with renal disease; and frequently in those never suspected of having had gout, post mortem examination reveals the presence of urate deposit within the kidney.

Davis, Jr., writing on general atheromata of gouty subjects refers pointedly to the atheromatous changes throughout the kidneys, and Sajous points in addition to the gradual progress of the renal disease, the "organ being affected in spots with intermissions in the degenerative changes which are microscopically small until finally large areas are involved." "In these cases," he continues, "the glomeruli and tubules are attacked in a way at times to cause scarcely an appreciable symptomatology, whereas similar changes coming on suddenly, as in the case of a different etiology would cause striking clinical and urinary manifestations."

With reference to the happy result that follows many times, the giving of a full dose of calomel in cases of minor symptoms of uric acid poisoning, it must be remembered that alterations in the metabolism of the liver, affect the excretion and elimination of this toxine in the healthy subject, and as variations in hepatic chemistry depend on manner and amount of food taken, on variety and extent of exercise and on certain nervous influences, it can be readily understood why liver trouble frequently accompanies gouty dyspepsia. May not the fact be thus explained, why some observers, failing to dissociate the two, attribute to the liver the primary formation of uric acid?

But, however authorities may disagree as to whether or no it is secreted entirely by the kidneys, or whether its abnormal secretion and precipitation in the blood and tissues be due to excessive use of nitrogenous food, to amyloaceous dyspepsia, to the acute febrile conditions, to excess in various alcoholics;—or whether the large amount thrown off under treatment be due to accumulation from past defective excretion, the cardinal fact remains proven that the presence in the blood and tissues of this poisonous result of food oxidation or sub-oxidation, is pregnant with a group of disorders far-reaching and grave beyond the belief of observers of a decade ago.

Many diseases and a multitude of symptoms of heretofore unknown pathology and speculative causation, are now recognized as occurring only under the condition of excessive uric acidity. And if no further injury were done than that accompanying the gouty diathesis, rheumatism and urinary calculi, all of which have for long been recognized as due to this toxine, the suffering to be endured and lives shortened in consequence, would rank this baneful compound as one of the potent allies of the grim wielder of the scythe and sand-glass. The cumulative results, however, of research along this line, bear evidence to the startling fact that the uric acid diathesis in its causative relation to human mortality, may be classed as a twin factor with the bacillus of tuberculosis.

The major harm to the system from uric acid excess seems to rest on its peculiar power of distributing the peripheral arterial supply.

The entire principle of nutrition and excretion depends, for its normal working on the uniformity of arterial tension and free and unobstructed capillary circulation. Oxygen taken up during inspiration in quantities, however generous, is of value as a conservator of life, only in so far as its imbibition is followed by uniform distribution to individual tissue cells; therefore any impediment to the normal capillary ebb and flow,

must be attended with results detrimental and serious, in proportion to the degree and continuance of the circulatory impediment.

Many of our present day observers along this special line, among whom Haig, of London, has attained an enviable distinction, are firmly committed to the opinion that free uric acid in the blood *does* cause contraction of the arterioles and by this interference with interstitial circulation, becomes the prime factor in pathological changes in every tissue and organ of the body. Haig says: "From the clinical history of the uric acid headache, we learn that at the time of the attack, when there is excessive uric acid in the blood and in the urine, the pulse is generally slow and of high tension. It appears that this is due to contraction of the arterioles and capillaries of which there is abundant evidence in the cold skin and extremities that accompany the headache. Very little experimentation will, I believe, suffice to convince any one, that contraction of the arterioles varies directly with the amount of uric acid that is circulating in the blood. This contraction of the arterioles will produce two results—first a rise of blood pressure in the heart and great vessels on the proximal side of the obstructed vessels—a high arterial tension; and second, a deficient circulation and interchange between the blood and the tissues in and on the distal side of the obstructed vessels.

Thus may be explained our intractable cases of gouty dyspepsia. The secretion of gastric juice being dependent directly and wholly on the capillary supply of blood to the gastric tubules, it of necessity follows that restriction in the supply of the latter, will diminish in like ratio the secretion and flow of the former.

Davis thus accounts for the minute foci of degenerative changes in the kidneys of gouty subjects, and which probably precede the advent of interstitial nephritis.

Perhaps the more serious results due to this cell and interstitial anemia, are referred to the effects on nerve centers and ganglion, and from which anything may ensue from headache to insanity.

Good observers have for some few years past associated asthma with the presence in the blood of free uric acid, the explanation of to-day being the accumulation of irritating toxins upon the bronchial mucous membrane in consequence of impaired nutrition.

In a paper read before the Brooklyn Pathological Society as far back as 1885 on "The Nervous Symptoms of So-called Lithemia," L. Carter Gray attributed in many cases the following to the lithemic diathesis—vertigo, cephalalgia, insomnia, nervousness, tinnitus aurium, neuralgia, paræsthesiæ, muscular cramps and twitchings, vaso motor disturbances, fever, and, he continues, we may have a delusional mental condition, myelitis of the anterior cornua, hysteria, neurasthenia, epilepsy and disseminated sclerosis. For the purposes of this paper it is quite enough to refer to the fact that the difference between the lithemia of '85 and the uricacidemia of to-day is simply one of nomenclature.

In the matter of mental irresponsibility, *The Hospital* says: "Dr. Haig is of the opinion that suicide may be traced to errors in diet, the error being the eating of meat, the drinking of beer and tea and the smoking of tobacco. His facts all fall comfortably into their places in support of his hypothesis! Are there not more suicides among men than among women and do not men consume more meat, beer and tobacco than women? Again, suicide is more common in England than in Scotland, not apparently because the Scotch are a more canny race, but because the English eat more meat and drink more beer, while the Scotch eat less meat and drink whiskey instead of beer. Uric acid is in fact at the bottom of all this and according to Dr. Haig, the incidence of suicide tallies with the daily, annual and life fluctuations of uric acid in the blood; being commonest when uric acid is most abundant; namely, in the mornings, in spring and summer, and in childhood and the full prime of life."

Haig though unsupported in some of his deductions and standing practically alone in many of them, has the sense of security in his belief sufficiently strong, to sum up one of his brilliant theses as follows: "If my premises are good and my deductions sound and if uric acid really influences the circulation to the extent which I have been

led to believe it does, it follows that uric acid really dominates the function, nutrition, and structure of the human body to an extent which has never yet been dreamed of in our philosophy, and in place of affecting the structure of a few comparatively insignificant fibrous tissues, in which it is found after death, it may really direct the development, life history and final decay and dissolution, of every tissue from the most important nerve centers and the most active glands, to the matrix of the nails and the structure of the skin and hair."

*Treatment:* The underlying principle here seems to be as clear as is the condition treated—complex. It depends for its success first, on the reduction of the acidity of the body fluids to the degree of slight urinary alkalinity, thereby rendering soluble the accumulated insoluble toxins; and second on the stimulation of the excretory functions of kidneys, liver and skin.

This apparently simple solution of our intricate problem excludes of course those cases in which degenerative changes have already taken place, and even here it does apply in varying degrees short of actual repair of damage done.

Reference need scarcely be made to the utility and in many cases the necessity of augmenting hepatic excretion by regular persistent muscular exercise, nor to the beneficial results of stimulating perspiratory action, by increased personal hygiene, frequent baths and massage.

As to table discipline it may be safely stated, that for the subject in whom structural changes are impending there must be an almost total exclusion from the diet of the albuminoids or nitrogenous foods, of acids, and of alcohol in every form, until frequent urinary analysis bears evidence to the fact, that the urates and free uric acid that were excreted in large amounts on the beginning of the treatment, have been reduced to about the amount normally thrown off in health.

For the multitude of subjects not advanced to the point of tissue lesion, and embracing that large class where positive and permanently satisfactory results may be confidently looked for, the use of red meats in moderation is not only allowable but is advised; it being understood that the initial treatment be pushed to the point of clearing the system of acid accumulation and excess, followed for a variable period by medication decided enough to keep the urine *faintly* acid.

In all recent cases coming under my care I have found thialion so prompt and reliable in meeting the issue, that I have come to prescribe little else in the way of drugs. Its physiological properties of rapid urinary alkalinity, increased diuresis and catharsis, have been attended by a no less marked and satisfactory disappearance of the indications calling for its exhibition, as the following few cases demonstrate:

Thomas B., saloon keeper, age 42, weight 230; came to the office a few weeks ago in the evening, badly frightened because of an attack of vertigo of three days' duration, felt like falling over if he tried to read, had frontal pain and "throbbing of blood in his ears"—had also severe muscular pains along left side and leg, bowels constipated, and stomach in wretched form. Prescribed thialion, two teaspoonfuls in goblet of hot water on retiring, same double dose to be taken before breakfast on following day, after which one teaspoonful before each meal until I saw him again. Called on the third day feeling all right—bowels were moving rather freely; ordered medicine stopped for two days, then continued until bottle was finished, taking one teaspoonful a day on rising from bed. All right in a week's time. No return.

James E., flatter, aged 52, weight 192. Called about three months ago, complaining of feeling sore all over, but more particularly about the head—felt heavy, dull ache all the time—could not remember things ordinarily easy to recall, had not eaten a fair meal in over two weeks—was sure he was in for typhoid fever or some other serious illness. About a year ago I had treated him for subacute rheumatism. Prescribed thialion, two teaspoonfuls for first dose, then one teaspoonful in tumblerful of hot water before eating, for two days, stop for a day, then one dose before breakfast for remainder of the week; met him on the street two weeks later, said he had never felt better—he had used about two-thirds of his bottle.

Edw. G., business man, aged 42 years, weight 207. Called some five months ago, hardly able to walk from pain across lumbar region and stiffness in legs—frequently had similar, though much milder pains during rainy weather, very little mental effort brought about an acute distressing sense of weariness; had for some time previous been bothered with "sour" stomach—no relish for food—had grown so irritable and "nervous" he made things miserable for himself and family; was of clean habits, did not use alcoholics of any kind. Prescribed thialion in two teaspoonful doses, before each meal, for one day, regardless of over free catharsis, then one dose before breakfast for two weeks, dropping it for a day or two if the bowels grew too free. Took two bottles up to date; has had no return of symptoms; says he feels in condition to fight for a man's life.

## DISCUSSION.

DR. WILE in opening the discussion said: "Mr. President I am very glad to say a word in connection with this subject because, as you all know, I have been one of the greatest sufferers from uric acid. I want to compliment Dr. Lemmer on his exhaustive and ably written paper, which presents to our mind a most vivid picture which will carry its impress for many a day." To those who have not given the subject of an excess of uric acid in the blood particular attention, this paper will clear up many points, it will suggest many questions as to whether the pathology of some of the diseases which have been so difficult to treat in the past has not been wrong and if we will not have to study again some of the problems that are constantly presenting themselves as best how to relieve suffering and cure disease. One of the most prominent errors that is made in connection with the uric acid diathesis, is, that when we have an excess it is due to an over abundant production, while, as a matter of fact, it is due to tardy and indiffererent elimination. The more we study this question the more we become convinced of the fact that this poison when not eliminated, aggravates all diseases and is the foundation and origin of many. Investigators are demonstrating this fact every day. Dr. Vallient of New York City recently cited the following case which illustrate the fact that thialion is used with advantage in paralysis, due to lead poisoning, though, I believe, I was the first to call the attention of the profession to its value in chronic lead poisoning. The doctor relates that Mr. S. P., a painter, forty-three years of age, American, married, consulted him in reference to an existing paralysis of the middle fingers of the right hand, due to lead poisoning of long standing. The case had been treated by electricity, with strychnine and various ways by many different doctors with negative results. About twelve weeks ago, he commenced treating him with teaspoonful doses of thialion, giving it three times a day, in a cupful of hot water. This was continued for five weeks when the dose was diminished to one-half a teaspoonful in the same media for six weeks longer. In his letter of September 29th, the doctor says, he has now the full use of his fingers and is able to attend to his business as a painter. As no other treatment was used, there can be no question but that the elimination of the lead poison was effected by this remedy, and if it was, an important question arises as to whether or not this man did not suffer from an excess of uric acid in the blood, as well as chronic lead poisoning, for if he did, it is an easy matter for us to understand how the remedy acted so quickly and the cure was so easily effected.

I hold in my hand a letter, written by Dr. Hamilton Kibbee, a distinguished physician of Oblong, Illinois, who describes the case of his son who suffered from chronic Bright's disease of the kidney, also another one from the same source dated the 13th of September, both of which I have the author's permission to read to you. The doctor incidentally in his letters makes some remarks as to the cause of Bright's disease, which I am sure will prove interesting to you. The doctor says: 'Fully expecting to be disappointed in the results I ordered four ounces of thialion for use in my son's case. He is a young man twenty-three years of age, who was taken with albuminuria, about seven months ago while at work in Chicago. For several weeks he was under the treatment of Dr. Purdy, the distinguished specialist and author of note on diseases of

the kidney. By the advice of Dr. Purdy, I finally brought him home, where he has remained, improving in general health greatly by proper diet and rest. I have battled with this case with all a father's anxiety, and have grasped at everything which offered hope, but nothing has ever relieved the uremic symptoms like thialion. Its action has given me the greatest encouragement. His most troublesome symptoms were flushing of the face, congestion of the eyes, pulsation of the temporal arteries and beating of the heart against the chest wall. There was great restlessness and sleeplessness, throwing himself over the bed and moaning. The urine was sometimes (usually) profuse, specific gravity 1010 and it contained always about one-fourth of one per cent. albumin. Urea by Doremus test was less than 500 grains in 24 hours. If he exercised it brought on pulsation with increased arterial tension and dizziness. I began the thialion about fifteen days ago and within three days I could see improvement. His flushed face has disappeared and his eyes are now normal. For the first few days he had pulsations, but they lasted only about half an hour and for the past three days he has had no pulsations whatever and he says he feels better than he has for a year. I cannot tell you how thankful and hopeful these results have made me, I tremble lest the benefit shall be only apparent and not real.

The boy was morose, despondent and hopeless, now he is his natural self again.

I believe we are all wrong about the treatment of interstitial nephritis. I don't believe the albumin tests are of much value. The thing to keep the finger on is the test for urea, Doremus test the best. The excretion of urea is the barometer that indicates improvement or contrary. I think that excess of urea is the cause of the nephritis and the local trouble in the kidney is due to excessive uric acid in the blood. From the fact that almost all cases of interstitial nephritis occur in brain workers, who exercise their brains to excess, I am inclined to believe that the cause of uric acid in the blood is due to brain lesion, something involving the transmission of nerve influence or causing interference with natural normal nerve vibration. Good results from the use of static current to the brain have been reported by Dr. Neiswinger, of Chicago, and my theory is that in these cases normal vibration is restored to the nerve structure of the brain by the electric current and this will account for Dr. Neiswinger's result in the treatment of interstitial nephritis. But get rid of the urea. There can be no question but that this is the first and most urgent requirement, while the second thing would be to stop (by electricity or in any manner) the excessive accumulation of uric acid. That thialion will get rid of the urea I have demonstrated.

This letter was written on the 9th of September, one month and three days from that date the doctor writes: 'My son has continued to improve up to Friday of last week, when he started to spend the winter with his brother, Dr. Kent V. Kibbee, Professor of Chemistry in the Medical Department of Fort Worth University, of Fort Worth, Texas. For two weeks previous to his departure he had no flush, headache, or other symptoms connected with his kidney trouble and his urine in every respect was perfectly normal even to excretion of urea. Though he suffered from a painful jaw, as the result of the extraction of an ulcerated tooth, he had no nervous symptoms and insisted upon making the trip. He left here on Thursday and St. Louis on Friday morning, reaching Fort Worth on Saturday night. I had a letter from his brother, who visited us in October last and he informs me that the boy got to Fort Worth in good order and that he is greatly surprised at the improvement in his condition since he saw him last in October.'

Dr. Kibbee's words convey to us information which ought to prove valuable, certainly the results are remarkable.

The trouble is that we have been growing more and more a gouty people, due to the fact, largely, that meat being cheap with us, we eat it in excess. The profession has long been looking for a reliable remedy to combat the multitude of ills directly traceable to an accumulation of uric acid in the blood, one which when ingested will convert the insoluble phosphates, oxalates and urates into a soluble compound which can be readily eliminated. This subject confronts the general practitioner daily as he goes



his rounds. He has grasped at everything from pure waters down to dangerous drugs, with but little avail and I believe in thialion he has an invaluable agent for good.

My own case, you will remember, was a stone in the right kidney and some of you have seen me at my bedside amid great suffering. My belief is that the stone has disappeared, any way, my pain has gone and I am able to do work that two years ago would have been simply impossible. I believe that stone was dissolved in the pelvis of the kidney by the use of thialion and that remedy alone."

DR. STRATTON has used thialion quite extensively and with satisfactory results. He believed its superiority to other standard remedies used to a similar end lay in its increased power of stimulating liver and kidney metabolism and thereby prompting the eliminations of uric acid or other toxins. In this way he explained its striking results when given in lead poisoning.

DR. LOWE believed the eating in large quantities of vegetables and cereals rich in starch, was almost as great a factor in inducing uric acid precipitation as was the excessive nitrogenous diet. In combating this condition by the use of thialion he has obtained marked curative results, especially in the following conditions. The colica corapulosa of infants, the persistent cephalalgias of young girls and in asthma—in the latter he has secured results that border on the apparently impossible.

DR. BENNETT had astonished himself and secured the unqualified gratitude of his patients, by the prompt and thus far lasting results obtained with thialion in four severe cases of asthma. The doctor believed he has at last found an every day solvent for his aid.

DR. WADE believed in the uric acid causation of asthma, in the treatment of which by thialion, he has secured results uniformly satisfactory; similar good effects have followed its exhibition in several cases of rheumatism.

The doctor believes its happy results were due principally to its power of inducing increased liver and kidney activity and thereby elimination.

DR. GORDON thought it impossible to increase the amount of uric acid excretion by either liver kidney or skin, until the precipitated toxine was first rendered soluble. All observers being agreed that it is this very insolubility that renders possible the precipitation of the toxine within the tissues.

DR. BROWN was fully committed to the belief in the curative properties of the preparation in question, but he had observed that many of the minor symptoms of the uric acid diathesis could be relieved by remedies that increased hepatic metabolism and catharsis and he was therefore inclined to believe that the superiority of thialion in the treatment of the gouty diathesis was in consequence of its power to augment diuresis and liver excretions.

"For I must say," continued the speaker, "that I have found thialion the most delightful laxative I have ever used."

DR. LEMMER closed the discussion by referring to the fact that for many years past, clinicians and chemists had been laboring to find a certain safe and perfect solvent for uric acid as found in the blood. Many agents had come to life that did the work thoroughly in the test tube of the laboratory, but which, on being exhibited within the body, failed partially or entirely of their mission.

"On this property of solvency," continued the speaker, "must rest the primal and fundamental merit of any remedy that successfully antidotes the uric acid toxine; for while without elimination the use of a solvent would be of but little or no benefit. How absolutely void of results must be the stimulating and increasing of liver and kidney excretion with the view of thereby throwing off a given precipitate, whose very insolubility renders its passage through the malpighian tufts of the kidneys and the hepatic excretory cells an utter mechanical as well as chemical impossibility."

The speaker believed that many of the minor symptoms of the uric acid diathesis were frequently due to quite a different etiology and when relieved by a full dose of calomel flanked by a little rhubarb and quinia, it seemed wanting in proof to assume that explosion of acid toxemia had been prevented.

## PURULENT TUBERCULOSIS AND RHEUMATIC HIP-JOINT DISEASE.

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(Reprinted from the *Peoria Medical Journal* for December, 1898.)

The profession at the present time recognizes various forms of joint diseases, but by far the most common is the tubercular and purulent. The next most common joint disease is due to a rheumatic condition. In this brief paper I desire to call the attention of the profession to a few points in the etiology, pathology, symptoms and treatment. Tubercular joints begin insidiously, progress slowly and cover over periods of months or even years, and result in the formation of tubercular abscesses or extensive destruction of bone by caries. Other joints are frequently affected secondarily by metastasis. Purulent joints are characterized by the sudden onset of the disease and great pain. The disease progressing rapidly and virulently, the destruction of bone extension and the formation of abscess follows very soon after the attack. This condition of the joint is nothing more or less than a rapid osteomyelitis. In both of these affections a single joint is usually attacked; whereas in joint disease due to rheumatic condition several joints are affected at once. Then we may safely conclude that single joint disease is almost invariably tubercular or purulent. Tubercular and purulent joints are always local and have nothing to do whatever with a general constitutional disease. Whereas rheumatism, syphilis and other constitutional diseases may produce local joint disease. But several joints are usually diseased when caused by constitutional conditions.

## ETIOLOGY OF TUBERCULAR AND PURULENT JOINTS.

Undoubtedly these diseases must be preceded by a localized inflammation. Into this area of inflammation are inoculated the germs which produce the destructive changes. That these diseases are a manifestation of a "constitutional taint," I think is incorrect; that it is a localized focus of disease, I believe. To illustrate: Germ life, to grow and produce its destructive changes, must have a soil fit for its reception and nutrition, and it is only within the area of the active process of repair in which large masses of embryonic cell tissue are present that we find such a soil excepting in the lymphatic glands. Unless there is a lesion of an inflammatory nature in any portion of the body, these germs cannot find a foothold for their growth. For example, an incised wound is made, we watch it closely and find that the first process that takes place is an effusion of blood and coagulation; then a rapid wandering of cells into this blood clot occurs, and rapid cell proliferation. These cells rapidly form themselves into line between the cut ends of the tissues for the purpose of repair. Soon organization takes place, loops of capillaries are thrown out and new tissue is built up. After this, contraction begins to take place; the capillaries are destroyed, the epithelium grows over the surface of the wound, and the wound is healed. This, I believe to be the normal process of repair. *This is inflammation*, and this is as normal as the growth of the stag's horn. This reparative inflammation is necessary in all cases where injury has been inflicted. If at any time during this process of repair or normal inflammation, germs are inoculated into this new inflammatory tissue, another condition is at once established. If these germs are streptococci or some one of the pyogenic germs, they at once seize upon this new inflammatory material, and they with their ptomaines destroy it. In this case inoculation has taken place and we say that the wound has become infected, and disease is the result. *This disease is suppuration*. If the germs of tuberculosis should be inoculated growth takes place immediately, but it is very

slow. No pus is formed from the bacilli of tuberculosis, but the germs grow and as surely destroy this new inflammatory material as did the germs of suppuration. Then we say that this new inflammatory material has become diseased, that we have a tubercular inoculation or a tubercular focus of disease. So we see there is a vast difference, as I define it, between inflammation and disease. In joint disease an injury has been done to the joints, it makes no difference however slight, or from whatever cause. That injury may have been produced by a trauma or embolism; in any case the rapid effort of nature to repair the injury which has been done builds up new inflammatory material, and into this material is inoculated the germs which are floating in the circulation.

Should these germs be pyogenic and the inflammation in the bone, then a very rapid osteomyelitis with the formation of abscess is almost sure to take place. If, on the contrary the germs of tuberculosis are floating in the circulation, and they come in contact with this area of normal inflammation, then so surely will the diseased condition be a tubercular disease which begins insidiously, progresses slowly, and produces destruction by ulceration or caries. If absorption has taken place from the Peyerian patches, in typhoid fever, and inoculation takes place into a focus of new inflammatory material, then we have what is known as the "typhoid joint." After inoculation has taken place with the germs of tuberculosis, the growth in this new inflammatory material is very slow. After a time, the entire new material is destroyed. Just outside of this area of disease a new barrier has been thrown up by nature—a new barrier of inflammatory material. Into this tubercular germs rapidly grow, and they may destroy this new wall of inflammatory material, and so the normal process of repair goes on just a little in advance of the disease, until after a time the entire joint is destroyed.

Tubercular disease never produces a pus abscess *per se*. We all frequently find large tubercular cavities which are filled with tubercular materials, but pus is absent. But just as soon as one of these cavities become inoculated with pyogenic germs, then abscesses form immediately so that it may seem a little heterodox for me to say that abscesses are seldom prevented by any treatment after inoculation has taken place, and that when inoculation with the pyogenic germs takes place into an old focus of tubercular disease, that case will rapidly go on to the formation of abscess in spite of anything that can be done, with an occasional exception, and depending upon the physical condition of the patient. By this I do not mean to say that proper treatment is to be discouraged, because the sooner the tubercular focus of disease is done away with, the sooner will the powder magazine be removed from the patient. Hence fixation to allow nature to repair and drainage to get rid of the enemy.

We see, then, that these cases of joint disease are always preceded by a lesion in the bony structures, or soft parts, which lesion is either produced by trauma, embolism, or some other pathological cause, producing an area of inflammation into which inoculation takes place from the germs which are floating in the circulation. The condition is purely local, and has nothing whatever to do with a "constitutional taint." The reason why one child is affected with local tuberculosis, and another is not is to be found in the condition of the child. That condition is known as struma. *Struma is not a disease; it is a condition*, and I hope that I will never see again printed the terms "strumus joint." The term struma should be used to indicate weakness and it exists in the protoplasm of the ultimate cell of the body, and measures the resistance of that protoplasm to the attack of germ life. Scrofula we now know to be tuberculosis, so that "scrofulous joints" have been relegated to the obscurity which they so justly deserve. General tuberculosis takes place from joint disease, as the result of multiple inoculations in different portions of the body.

The pathology of the affection depends, of course, entirely upon the etiology. In discussing the etiology I have touched somewhat upon the pathology, so that can be passed over briefly. It is needless for me to say that the disease is as a rule, with an occasional exception, located in the bony structures. As I have already said, I will not enter into the minute pathology of this condition, because "space" will not allow.

## HOW DO PYOGENIC AND TUBERCULAR GERMS ENTER THE CIRCULATION PRIMARILY?

Through the lymphatic system as a rule. A child playing in the back yard of a tenement house, in an atmosphere contaminated by germ life caused by the old woman beating the carpets from an infected room, where an individual has died from tuberculosis or osteomyelitis, inhales the spores of the germ.

These spores are immediately absorbed by the lymphatics from the mucous membrane of the pharynx and the trachea and carried to the neighboring lymphatic glands.

The lymphatic glands are rich with cells and are a good soil for the reception and growth of the germs. The cells or phagocytes of the lymphatic glands are at once attacked by the germs and destroyed, until the entire gland is converted into a pus or tubercular cavity, depending upon the kind of germ absorbed. These are the large glands seen in the necks of children and called by the older authors, "strumus or scrofulous gland." Ulceration now commences in the gland, burrowing takes place in the direction of least resistance. The gland is surrounded by a vascular net work of veins and arteries. When perforation of the gland takes place from ulceration, its contents may discharge directly into a vein, thus it can be readily seen how the circulation becomes contaminated with germ life from the reservoir which is constantly discharging into it. Now if the child playing in the back yard receives a slight injury of a joint at once inflammatory action begins at the point of lesion already described. The blood being loaded with germs of infection carries them to the point of injury. The pathogenic germs finding a fit soil for their reception and growth attack the normal new inflammatory material and convert it into a *diseased condition*, with a formation of pus or a tubercular abscess. From this point of local infection the pathogenic germs find their way into adjacent tissues destroying them as they advance and enlarging the diseased area. Should the head of the bone be involved it soon is destroyed, and the diseased cavity discharges into the joint infecting all the tissues involved in the structure of the joint. If the diseased focus is in the soft parts, the joint becomes infected in the same manner, and the bone is secondarily involved. The entire joint now being involved, the same processes which took place in the lymphatic gland are observed in the joint, viz., ulceration, burrowing and the formation of tubercular or pus cavities, together with destruction of all tissues lying in contact with the disease, by infection. Burrowing always takes place in the direction of least resistance, which accounts for abscesses appearing at different points in joints apparently similarly affected.

Before considering the treatment of tubercular and purulent joints, I desire to say a word in regard to rheumatic conditions affecting joints.

## RHEUMATIC JOINTS

Are always due to a constitutional condition. They are usually multiple and single; a joint is never involved excepting it is preceded by an injury. Therefore the treatment of rheumatic joints requires in addition to the mechanical and operative, constitutional treatment. Nine times out of ten, allow me to say, when a single joint is involved, a rheumatic condition has nothing at all to do with it. The mechanical treatment in rheumatic joints, is of just as much importance as in tubercular and purulent joints. In the old man or woman with a rheumatic diathesis is frequently seen a diseased hip, unquestionably rheumatic. Such cases should immediately be put into bed with a weight and pulley varying from twelve to twenty pounds, after which follow the methods employed in tubercular and purulent joints. (See mechanical treatment.)

In all rheumatic cases the alkaline treatment is prescribed, which frequently is very disappointing. During the past year, in all cases of rheumatic joints, I have been using a new salt of lithia, combined with alkalies, known as "thialion." This is a laxative salt, and when used carefully and faithfully, has proved in my hands one of the best agents in these rheumatic affections.

My method of administration is as follows: I direct that a teaspoonful of this granulated salt be dissolved in a cup of hot water and drunk as warm as possible (in acute cases) taken every three hours until very free catharsis is produced.

This is accomplished, by thialion acting very freely on the liver, producing a marked flow of bile into the intestines, as well as increasing the peristaltic action of the bowels.

After this result is produced the dose is then lessened to once or twice a day until the urine approaches the point of alkalinity, which generally takes place about the third day, then once a day only until cure is affected.

In chronic cases a teaspoonful taken in the same medium morning and night, always before meals, for a week and then once a day on rising, for a week longer, produces the happiest results.

#### THE EARLY SYMPTOMS OF HIP-JOINT DISEASE AND TREATMENT.

Before considering the early symptoms of hip-joint disease, I would like to call attention briefly to a few facts which are observed clinically. Joints attacked by inflammation, either intra or extra capsular, have a condition of rigidity or spasm of the muscles about them. This is due to irritation of the terminal nerve plates in the area of disease, transmitted through the reflex centers. The muscles operating upon the joint which are supplied by a nerve given off from a common nerve trunk (one branch distributed to the area of the disease, the other to the muscle), are affected by spasm, while the other muscles may remain quiescent. That muscles affected by spasm will rapidly atrophy is well known. These facts are observed particularly in inflammation of the knee-joint. The knee joint is supplied posteriorly by branches from the great sciatic nerve. The patella is supplied by nerves given off from the anterior crural and obdurator. When inflammation attacks the condyles, flexion and rapid atrophy always take place, but in patella disease, or disease located anteriorly, the limb remains in the straight position, owing to the fact that the reflexes are distributed through the anterior crural and obdurator and not through the great sciatic. Assuming that these propositions are correct, and clinical observations seem to demonstrate them, we must at once conclude that rigidity of the muscles from spasm, producing a limit of motion, would be the first symptom observed in any joint disease. Limit of motion due to spasm of muscles in any joint produces deformity. We would designate as the second most common early symptom in joint disease, deformity. This limit of motion and deformity produces a limp. So I think we can safely say that limit of motion, deformity and limp are nearly always, if not always, present in hip-joint in the early stages. There are in general joint diseases eight cardinal symptoms two or more of which are always present. These cardinal symptoms are pain, heat, swelling, pain on joint pressure, limited motion, spasm of the muscles, atrophy and deformity. Each joint has super-added to these eight cardinal symptoms other special symptoms. These special symptoms are due to the anatomical characteristics of the joint. In hip-joint disease pain is not always a common symptom; rise of temperature, owing to the depth of the joint, is hardly perceptible; swelling is not seen until effusion or dislocation takes place; pain on joint pressure is present only in intra capsular disease, located between or near the articular surfaces. Limited motion, spasm of the muscle, limp and deformity, with apparent lengthening or real shortening, are nearly always seen associated together. Atrophy pretty constantly occurs, especially in bone diseases, and it may occur as early as the tenth day. The other symptoms observed in the early stages are night cries, pain in the knee, flattening of the buttock, partial or complete obliteration of the gluteal fold.

When the limb is in a straight position the muscles accurately balances it, but when the limb becomes flexed, the action of these muscles is changed in proportion to the amount of flexion. If these muscles are in a condition of excitability or spasm from reflex irritation, one can easily see how various deformities can take place depending entirely upon the position of the limb when the muscles act. When this great mass of muscles is affected by spasm, which is always the case in inflammation, one can readily see how limit of motion and deformity, to a greater or less extent, must be the earliest symptoms observed.

Before the American Orthopædic Association, I presented a model, together with several dissections which I had made of the joints, for the purpose of demonstrating why the limb assumes certain positions, with occasional exceptions, when the hip-joint is inflamed. The capsule of the normal joint is twisted around the head and neck in such a manner that when the limb is in the straight position, great tension is exerted upon the joint through the capsule and its other ligaments. Now, when the joint or capsule becomes inflamed, the patient invariably places his limb in a slightly flexed and abducted position to relieve tension, and changes altogether the action of the muscles; they, being in a condition of spasm, together with the voluntary act, produce the deformity of the first and second stage of the disease. When flexion takes place just a little further, the action of the muscles is entirely changed; abductors become inward rotators; outward rotators become to a certain extent, abductors, etc., etc. Resistance not being offered to the adductor muscles, the limb, by their contraction, passes over to the deformity of the third stage of hip-joint disease, that is, adduction flexion and inward rotation. There are exceptions to these deformities, which I have designated as erratic, but they will not be considered now.

These deformities take place whether disease is intra capsular or extra capsular, whether there is effusion into the joints or not; and let me say here that only a limited number of cases have effusion into the joints in the early stages. To conclude, the importance of symptoms, I believe, speaking generally, occur about in the following order:

1. Limit of motion.
2. Deformity, with apparent lengthening or real shortening.
3. Limp.
4. Atrophy (bone disease)
5. Pain in the knee (with absence of knee-joint disease).
6. Pain on joint pressure.
7. Night cries, in absence of other joint disease.
8. Flattening of buttock, with change in gluteal fold.
9. Heat.
10. Swelling.

The order of these symptoms might be transposed a little by some authors, but this order will answer for diagnostic purposes.

#### TREATMENT.

The treatment of hip-joint disease is divided into the operative and mechanical. *In all cases where abscesses are present they should be immediately evacuated. This enables the surgeon to intelligently explore the diseased joint with his finger and ascertain to what extent the disease has progressed.* If the head of the bone is separated from the neck it should be removed together, with the great trochanter and the neck. The acetabulum, if diseased should be thoroughly curetted, together with any other diseased tissue that may be found in the joint. If only small points of disease are found within the joint, those should be curetted together with whatever diseased tissue exists within the joint, and the cavity washed out with bichloride solution, 1 to 2,000. The joints should now be filled with a solution of iodoform and glycerine, one-half ounce of iodoform to four of hot glycerine. After this has been done the patient should be put in bed, with extension in the line of deformity and lateral traction above the knee, amounting to about three pounds. Day by day the limb should be lowered, until the deformity is overcome. When the deformity is overcome the lateral traction fixation splint which I devised and use in the Post-Graduate School should be adjusted, and the patient put on crutches with a high shoe on the well leg. Pus and tubercular material destroy living tissues, and when joints are allowed to macerate for weeks and months in these materials, which now seem to be the favorite method of many of our orthopædic surgeons, extensive destruction of bone will almost surely follow from infection. In many cases extensive cutting of muscles, tendons and fascia may be

necessary to overcome the deformity. The reader will see, then, that we believe that deformities should be first overcome and all abscesses opened before the mechanical work begins. *No case of hip-joint disease need recover with angular deformity*, and to secure and attain this end steps should be taken at the commencement of treatment to place the limb parallel, after which the lateral traction fixation splint, already alluded to, will prevent the patient from becoming again deformed.

#### MECHANICAL TREATMENT.

For many years the profession have been taught that the long traction splint used by Sayre, Taylor, and others, was the proper machine to use. The patient is allowed



Fig. 2.—The Cheap Dispensary Splint.



Fig. 3.—Inside Bar and Lateral Traction.

to walk upon this splint, using it as a perineal crutch. The splint stops at the trochanter and exerts no power over the joint, on that account, to fix it. The patient, stepping upon this splint with a strap around the perineum, causes trauma of the joint while walking and nearly every splint that I have seen adjusted allows the patient to put his toe upon the ground, which, of course, drives the head of the bone into the acetabulum each time the patient steps. This pumping of the head of the bone backwards and forwards into the acetabulum at the rate of 2,000 times an hour each day as Dr. Ridlow has so aptly expressed it, as the child runs, accounts for the disastrous results which we see published from institutions where this splint is used. Angular deformity, which produces shortening, nearly always results from the use of this splint.

The statistics published by Shaffer and Lovett, in the *New York Medical Journal*, from the 59th Street Orthopedic Dispensary, in thirty-nine cases reported on in a series of many hundreds:

Ankylosis.....	19	Motion from 10 degrees.....	7
Slight Motion.....	6	Motion to right angle.....	3
	—	Motion free.....	3
	25		



No. 4.—The Patient, Splint, Adjustable High Shoe and Crutch.



Fig. 5.—The Double Dispensary Splint.

The three with free motion were treated during the first stage of the disease, two were under three years old. There were only two cases without shortening. The splint used was the long traction, which I have already described—one which admits of free motion at the hip-joint and the patient is allowed to walk upon it. This splint was devised during a time when it was believed that fixation would produce ankylosis of the joint, and that motion was necessary to keep up the nutrition of the joint. It is needless to say that we have outgrown both of those ideas. The statistics of Cham-



bers Street Hospital of fifty consecutive fractures of the elbow joint show only one case of ankylosis. These patients were fixed in plaster of Paris for many weeks, without passive motion. In the Post-Graduate Hospital School, we fix our cases of hip-joints



Fig. 6.



Fig. 7.

from one to five years without motion, with the lateral traction fixation splint, and in our long series of cases not one has resulted in bony ankylosis, excepting cases with great destruction of bone, and where we have had control of the patients they have

recovered, practically, without angular deformity. Fig. 7 shows range of motion in a case fixed sixteen months absolutely in a plaster of Paris bed, perfect motion resulting. This one case demonstrates that sixteen months of absolute locking up of a hip-joint will not produce ankylosis. Shortening is seen in this long series of cases only from non-development of the limb, and extensive bone destruction. The accompanying cuts and description will convey a very accurate idea of the splint which we use in our treatment after the deformity has been overcome in bed. Tissues inflamed or diseased should be put at rest, to allow the normal process of repair to take place without the trauma of motion. This is the law. It is applied in the treatment of the iris, fractures, sprains, and any other tissue that can be immobilized. To carry out the requirements of this law so far as possible, I was led to devise the splints illustrated in this article.

To fix the hip-joint, a splint must extend from the foot to the axilla (see Figs. 2, 3, 4 and 6).

Fig. 4 represents the perineal crutch, with the abduction bar adjustable by means of the key, for the purpose of making lateral extension. The steel bar is adjusted to the steel ring which makes a firm crutch, the pressure coming on the tuberosity of the ischium. Adhesive straps, extending to near the body from the ankle, furnish means of extension by tightly buckling them to the straps, the ring furnishing counter-extension. The rod ending in the upper ring, prevents flexion and extension of the legs. The splint is intended to prevent every motion at the hip-joint, and at the same time apply extension in a line with the neck of the femur. Fig. 4 shows the crutch and splint adjusted, the patient using crutches, and standing upon a high shoe upon the well leg.

This splint I found a little too expensive for dispensary work. I then constructed the splint (Figs. 2 and 6), which simply does away with the extension joint and key.

A glance at the cuts will convey the idea. (Figs. 2, 3, 4 and 6 are the single and Fig. 5 the double splint for double hip disease. Fig. 6 is the cheap outside bar splint, and is the one I now use in all cases. The splint is a bar of steel, extending from the



Fig. 8.

foot of the axilla, accurately bent to fit the body. A tracing made on paper by laying the child on it will assist in shaping the bar. A pelvic belt, a thoracic belt, and a steel perineal ring complete the fixation part of the splint. The straps in the foot-piece buckle to adhesive straps attached to the leg, which make longitudinal traction. The strap lashes the leg to the splint, making lateral traction precisely as the abduction bar acts in Fig. 3.

An ordinary blacksmith can construct this splint.

Fig. 8 is the double hip splint adjusted. Fig. 9. The writer's hemostatic forceps useful in working in cavities and fibrous tissue. The jaws are serated and will hold. Being blunt pointed, the ligature will slip over the end and not tie on the forceps.

Before these or any other splint is adjusted, however, the patient should be treated in bed until deformity is overcome and the active stage of the disease somewhat modified.

To conclude, my observations led me to believe that the most serious element of destruction in hip-joint disease is the trauma and pressure produced by the spasm of the muscle; the fixation of the joint without extension is an impossibility; but the successful treatment of the joint must depend upon its absolute immobilization, which can only be produced by proper extension and fixation; that the constitutional treat-



Fig. 9.

ment of hip-joint disease amounts to but little, independent of mechanical treatment; that mechanics is everything; that extension in a line with the axis of the shaft and deformity alone, in hip-joint disease, is entirely wrong, that extension should be made in a line parallel to the axis of the neck—in other words, two lines of extension;—otherwise the idea of extension is not perfectly carried out; that ankylosis of the joint is not produced by immobilization, but by the severity and character of the inflammation and subsequent cicatricial contraction about the joints; that the long traction hip-splints in general use neither properly extend nor immobilize the joints; that intra-articular pressure results in the destruction of the joint or ankylosis in a large percentage of cases is proven by statistics; that the results in hip-joint disease should be as good as those of knee joint disease, and will be, provided perfect immobilization can be carried out; that patients should never be allowed to step upon any portable apparatus; that a high shoe on the well leg and crutches should be insisted upon until the patient is cured; finally, that the angular deformity seen in cured cases should not occur, and such cases are a standing rebuke to the splint and methods employed. In other words, no patient with hip-joint disease need ever recover with angular deformity. In exceptional neglected cases of dislocation a slight amount of deformity had better be left than resort to osteotomy

## PREPARATION OF THE PATIENT FOR ABDOMINAL OPERATIONS.

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(Reprinted from the *Charlotte Medical Journal*, Charlotte, N. C., for Dec., 1898.)

The importance of careful preparation of the patient when operations within the abdominal cavity are about to be done is universally admitted, yet it often falls short of the actual requirement, because insufficient time is allowed, and because essential features are disregarded. Something more is necessary than the clearing out of the intestinal tract and examination of the urine to exclude albumen and sugar. When practicable, where immediate operation is not demanded, from one to three weeks at least should be consumed in getting the patient in condition.

Careful preparation will lessen the shock of exposure of the peritoneal cavity, minimize the unpleasant effect of the anesthetic and render the convalescence smoother. It will also facilitate the work of the surgeon by overcoming intestinal distention, enabling him to do better work in a shorter time and will materially lessen the mortality following abdominal operations.

A careful examination of the heart, lungs and kidneys will decide if an operation is permissible and what anesthetic is to be preferred. All things considered, chloroform is to be preferred in abdominal operations when there is no actual contra-indication, both on account of its greater safety, when properly administered, and because it causes less disturbance of the digestive tract. When the Trendelenburg position is employed it is certainly to be preferred. Not infrequently a bad heart which before would positively forbid both anesthesia and operation will be so much strengthened and improved by proper preparatory treatment as to permit an operation if it can be rapidly executed. This is particularly true of women of advanced age, whose digestive apparatus and excretory organs are apt to be inactive or impaired.

It is particularly important to establish a normal functioning activity of the excretory organs, and the digestive apparatus must perform its work properly. To this end we must first ascertain in what respect these organs are deficient and to what extent they digress from the normal standard. Therefore daily examinations of the urine in particular should be made to determine the average voided in 24 hours, its specific gravity and the presence or absence of albumen, sugar and bile. Something near the normal standard must be attained before operation, and the exclusion of bile from the urine is quite as important as to exclude albumen and sugar.

The presence of bile in the urine\* indicates an improper action of the liver and that the bile is being absorbed into the circulation and eliminated by the kidneys instead of being discharged into the intestinal tract. Bile is the great intestinal antiseptic and prevents fermentation, hence its absence in the intestinal tract in normal quantity permits fermentation and the result is intestinal indigestion and gaseous distention. The importance of an active condition of the liver is recognized by most operators but the administration of a dose of calomel a day or two preceding operation is not sufficient in the majority of cases.

The advantage of repeated examinations of the urine to exclude albumen, sugar and bile is evident since it is well known that specimens vary from day to day and even the same day before and after the ingestion of food. Therefore daily examinations of the urine extending over a period of a week or more is necessary, and these examinations should record the daily average quantity excreted, its specific gravity, its chemical reaction upon tests for the above named substances, and the result of microscopic

\* A rough test for bile in the urine is to boil a small quantity (about 3 ij) in a test tube and add a few drops of pure nitric acid when if bile is present the specimen changes color and becomes brown or a deep reddish brown.

examination for casts and epithelial scales. If after several microscopical examinations of different specimens no casts are found this part of the examination may be omitted afterwards.

It is impossible to unload the intestinal tract by one free purgation, particularly where the intestines are habitually inactive as is apt to be the case in conditions requiring abdominal operations, hence the importance of prolonged preparation. I have found an abundance of fecal matter in the intestines after apparently thorough evacuation extending over a period of several days, and no doubt other operators have had a similar experience.

For thoroughly clearing out the intestinal tract and establishing a proper functional activity of the liver preparatory for operation the following course has been found most satisfactory: Administer every third night at bed-time, at least four hours after the last meal of the day, two or three pills each containing two grains of a reliable extract of cascara and at the same time ten tablet triturates of calomel one-tenth of a grain each. The action of this dose is free from any unpleasant effect, and there is no griping. This is followed in the morning an hour before breakfast by a heaping teaspoonful of thialion (a laxative salt of lithia) in a cup of hot water. Every intervening night and morning a similar dose of thialion is given to maintain an active condition of the bowel which it does by exciting the flow of bile. There is no other drug the continuous administration of which acts so reliably and satisfactorily without deleterious effect. It may be continued for days producing two or three free evacuations each day without the least depression. It arrests fermentation not alone by discharging bile into the intestines but also by re-establishing a normal alkalinity of their contents, and at the same time it increases the secretion of urine and renders it alkaline.

When the cascara and calomel is no longer required (*and in most cases one dose is sufficient*), thialion is continued up to the day of operation, administering it either once or twice a day as required. It has an unpleasant flat taste in solution in hot water to counteract which a small piece of lemon peel may be dropped into the cup. It may be continued after the operation as soon as it is desirable to act upon the bowels, though at first larger or more frequently repeated doses may be required.

While the bowels are being thus prepared and the liver rendered active attention must be given to the diet. It is best in most cases to limit the diet to food that will be digested in the stomach, such as meat, particularly lean beef and the white of egg carefully cooked, and to avoid such articles as will ferment readily, for instance, those containing starch, and vegetables. Bread and milk are particularly objectionable. The former because it contains starch and it is apt to ferment in the intestines. Then, too, the yeast ferment is not always destroyed by the process of baking. Bread can, however, be rendered fit for food in cases of impaired intestinal digestion by slicing it thin, trimming off the crust and placing it in the oven on a dish, and drying it thoroughly until it is deprived of all moisture and becomes crisp. Milk and any of its preparations are objectionable either before or following coeliotomy, chiefly because it ferments readily and creates distention. All kinds of sweets are positively prohibited for a similar reason.

It is important to have the intestinal tract free and the intestines collapsed at the time of operation—in fact, this is one of the chief aims of preparatory treatment—hence for two days preceding the operation the food should be of such character as to leave the least possible residue after the process of digestion and absorption. In some instances it is best to give liquid food only for the twenty-four hours immediately preceding, and this must be of a character not to cause the least disturbance of the digestive apparatus.

The condition of the skin also must receive attention, and to insure proper functional activity of the perspiratory glands, frequent baths followed by massage should be given during the time devoted to preparatory treatment. Every second day will be best in the majority of cases, and in enfeebled patients great care must be taken to avoid exhaustion and depression. The bath should be given *comfortably warm*, pre-

ferably at bed-time, because it induces refreshing sleep and there is less liability to exposure and cold following it. It is well to add about an ounce of lysol to the bath to soften the water and aid in cleansing the surface. The patient should remain completely immersed, except the head, for fully five or ten minutes, then the whole surface should be soaped well out of the water and scrubbed with a brush or mitten. When this process has been completed the surface is again immersed to remove the soap. The surface is now dried thoroughly and the patient is placed on a bed or couch between light blankets, and rubbed and massaged until the skin reacts thoroughly. In cases where reaction is tardy alcohol may be used, and when the skin is dry and poorly nourished cocoanut oil may be rubbed in. Afterwards the patient, according to individual preference, is either permitted to rest awhile comfortably between the blankets or is put to bed properly.

The evening before the operation the surface of the abdomen where the incision is to be made and for a considerable distance around is shaved, and when the incision is to be made below the level of the umbilicus the pubes and vulva are also shaved. A soap plaster made by spreading green soap on a folded pad of gauze is applied to the surface at least six inches on either side of the proposed incision. This is retained in place by strips of adhesive plaster and a bandage and remains over night. The following morning it is removed, the surface scrubbed with a brush and green soap and rinsed with water and afterwards with alcohol. Then a large pad of several layers of markasol gauze is applied and held in place by a bandage until the patient is placed on the operating table. When intra-pelvic abdominal surgery is to be done in the female the vagina and vulva must be shaved and thoroughly cleansed also. To accomplish this the vulva is scrubbed with brush and green soap and the vagina is scrubbed with soap also and a pledget of cotton or gauze in the grasp of long-handled dressing forceps. Afterwards the vagina and vulva are irrigated freely with a one per cent. solution of lysol to remove the soap and a vulva pad of markasol gauze is applied and held in place by a T binder.

Comparison of the results both during and following operation when this method of preparation has been fully carried out, with the same work done after more hasty and less careful preparation, will prove abundantly convincing.

#### THE GENITAL FACTOR IN CERTAIN CASES OF NEURASTHENIA IN WOMEN.

A Clinical Lecture Delivered in the Clinical and Pathological School of the Cincinnati University at the Cincinnati Hospital.

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(Reprinted from *Gaillard's Medical Journal*, January, 1899.)

Our lectures have been so exclusively surgical that I purpose changing the program a little to-day; and I offer no apology for discussing the more medical aspects of the cases that I shall present to you. It is somewhat important, at times, to emphasize the fact that gynecology—or rather abdominal and pelvic surgery, as it has come to be—can never be considered in the light of an absolute specialty; by which I mean a specialty dissociated from the general field of scientific medicine. On the contrary, as these cases will show, it is essential to a complete comprehension of the case, that all lesions within the pelvis be considered in the light of their possible relations to functional, or, for that matter, organic disturbances more or less remote from the genitalia. This is especially true with regard to those more or less complex systemic states which involve perversion of the various nutrient phenomena. These conditions

or at least some of them, are exemplified in the cases that are awaiting our consideration this morning. But before I bring them in let me emphasize the relationship that exists between the female organs of generation and the general system. You have heard me say that these organs are not to be considered as vital; that they are not essential to either life or health, and that nature seems to have tucked them away in a corner of the anatomy where they will be quite out of the way after they shall have ceased to subserve the purpose of reproduction. Now, while all this is true, I would not have you think that there is not a most important relationship between them and the general system, relatively to which they are so much "a thing apart." Your anatomical knowledge would instantly correct any such misapprehension;—but let me refresh that knowledge just a little.

You know, of course, how pronounced are the circulatory connections between the female generative organs and the general system;—how the lymphatics and the veins are open highways for the easy transit of nutrient elements or of morbid agencies from the womb to the general system, and for that matter *vice versa*. I have had repeated occasion to demonstrate to you here in this amphitheatre, the disastrous results of systemic invasions of this character. But to-day I wish to fix in your minds the fact that, intimate as are these circulatory connections, the nervous connection is still more intimate, and through this connection the whole system may become disturbed so far as its rhythm of functional activity is concerned. Remember that from the sacral plexus of the cerebro-spinal system, are derived several branches, one of which, the ileo inguinalis, goes to the skin of the labiæ; another, the crural branch, to the round ligament and to the inguinal skin; another, the hemorrhoidal, goes to the fundus of the womb and to the bladder; another, the perineal, to the sphincters and to the perineum, and there is still another that goes to the clitoris and to the nymphæ. Now, all of these nerves are of the cerebro-spinal system; but you will recall another very important fact and that is that this system commingles, through the instrumentality of the anterior communicating branches, and, in instances, by more direct anastomosis with the great sympathetic system. This, the great sympathetic, which presides so directly over the entire process of nutrition, also furnishes an abundant supply of branches directly to the womb, the ovaries, the vagina and the external genitalia. Thus there is a direct branch from the renal plexus to the ovaries, from the spermatic plexus to the womb, ovaries and Fallopian tubes; and then there is the inferior hypogastric plexus, which seems to send the filaments to practically all of the organs within the pelvis, including the rectum. What is the significance of all of this? It simply means that the genital organs of woman, considered in the aggregate, are nothing more or less than a central telegraphic office, from which wires radiate to every nook and corner of the system, and over which are transmitted messages, morbid or otherwise, as the case may be;—and it should be remembered right here that telegraphic messages travel both ways over the same wire; that there are both receiving and sending offices at each end of the line. The great physiological manifestation of this fact is to be found in pregnancy. How general it is that a woman, after conceiving, increases in flesh and weight, her nutritive functions being stimulated to the maximum of activity. Then we see, as in these cases to-day, the very opposite. There is disease, demonstrable disease, now within the pelvis of one of these unfortunate women and there was in the pelvis of the other; but I want to talk to-day more about the constitutional results of these diseases than about the local conditions themselves.

Here is the first woman. She is 31 years old and had a child six years ago. She had an induced miscarriage four years ago and since that time she has not been well. Her symptoms have been of the pelvic order—everything seeming to radiate from that center. I find that her womb and ovaries and Fallopian tubes are bound into a mass, the result of a previous acute inflammation. As she has no temperature now, I fancy there is no acute inflammation at this time, and as she has no leucocytosis, I infer that she is without recent infection and that there is no suppuration within the pelvis. But look at her general condition. She is wasted in flesh and there is no

color in her cheeks or lips. She has no appetite; her tongue is furred and she is constipated. She seldom sleeps well and at times has splitting headaches. She says she is nervous and easily fatigued. Her pulse in repose is over a hundred and she complains of frequent irregularities of the heart, particularly in the evenings. She is mentally depressed—always has the "blues." In short, gentlemen, this woman is a typical neurastheniac.

Now let me turn to this other case; she is not much older than the first one, and I operated upon her in your presence about six months ago, breaking up some old adhesions within the pelvis and correcting an old retro-version. The uterine appendages, however, were not removed, as their condition did not indicate it. At that time, she too, was a typical neurastheniac—as bad, if not worse, than the first case that I have presented to you. But look at her now. She has kindly come here to-day, at my request, to let you see the results of treatment. She has gained nearly thirty pounds in weight, eats well, sleeps well and is well.

I have presented these two cases together that you might appreciate, by contrast, the manifest influence of the local condition upon the general health—yes, let me be more explicit, and say the influence of intra-pelvic lesions upon the causation of neurasthenia. I assure you that there is hardly a case upon my service, particularly a chronic case, but that is an exemplification of the same general truth.

How are we to establish the relationship of cause and effect between these pelvic diseases and these constitutional states? The chronologic element of the histories is suggestive to say the least, the pelvic disease occurring in the majority of all instances as the initial departure from health. The succession of events, from this point, is generally easily traced, but if they were not a reasonable interpretation of known physiological and pathological laws, would enable us logically to trace the connection. The constitutional disturbances incident to puberty, to the menopause, and for that matter to sexual excitement, are but so many examples of nerve perturbation, with a tendency to nerve exhaustion. Of course in ordinary and physiological instances, they are within the normal limits, but still the resemblance to the morbid phenomena of neurasthenia is so striking that the differences are of degree rather than of kind. In each instance there is a local cause for the change—the evolutions of puberty, the involutions of the menopause, and the local congestions incident to sexual excitement. If it be true that on the physiologic side local pelvic conditions thus modify constitutional states, it must be true, on the pathologic side, that equally pronounced pelvic conditions produce equally pronounced constitutional states. The variation of effect is equal only to the variation of cause, the concomitant circumstances being the same. But let us pass from the general to the concrete. Take the case of accidental pain—a traumatism, if you please, and note the phenomena. There is disturbance of the cardiac and respiratory rhythm, the superficial capillaries become contracted, there is a more or less pronounced prostration, and the whole is followed by the excretion of an excess of uric acid. This latter circumstance indicates that there has been an abnormal increase of waste in the process of metabolism. Now let us change the picture. Instead of the victim of an accident or an injury, take one of these women whom I have presented to you, and for the sake of the argument, leave out of consideration for the present the elements of infection, of work and of worry. A painful condition, and a constant painful condition, at that, has been established in the pelvis. This is always true in cases of retro-displacement of the womb with fixation, in occlusive inflammations of the Fallopian tubes, in follicular degeneration and inflammatory fixations of the ovaries, in intestinal hyperplasie of the uterus, and in many other conditions. Now what must be the result of these painful states in their influence through the rich nerve connections, of which I have already spoken, upon the general system? Obviously there must be a repetition in kind, if not in degree, of the results of the traumatism, with the difference, however, that the traumatism was transient, while the pelvic state is persistent. The metabolic changes induced temporarily by the injury are induced constantly by the diseased organs. The resulting influence upon metabolism is marked.



The observations in my service in this Hospital indicate that in practically all of these cases the proportion of the uric acid is increased to one in forty, one in thirty-six, and, in one instance, to more than one in thirty. The daily amount of urine in these cases is below the average, and, of course, the specific gravity is uniformly high. Occasionally we find albumin, but generally without other evidence of renal lesion.

At this point begins the multiplication of difficulties. The lithæmic condition becomes exaggerated. The poisons of the uric acid group increase apace, within the circulation, with the result of still further lowering the tone of the nervous system. This is noticeable especially in the sympathetic and finds expression in retarded peristalsis and consequent impairment of digestion, both gastric and intestinal. Constipation ensues, and when constipation begins, then begins auto-intoxication, due to the absorption of stercorine, as discovered and demonstrated by Flint, and of other salts found in the feces. It were useless for me in this lecture to try to trace the hydramanifestations of neurasthenia. From the point at which we have now arrived in our discussion, it is but a step to any of the neurasthenic possibilities. My purpose will have been accomplished when I shall have fixed in your minds the fact that these intra-pelvic states are among the most potent factors in the causation of neurasthenia. The pathology of this disease is far from complete when these states are not taken into account; and yet, self-evident as is the proposition, certain neurologists, notably Dana, in a recent encyclopædic article, fail to give it recognition. It is for this reason that I call your attention to it with the greater emphasis.

And now, lest I be misunderstood, let me hasten to be explicit in the declaration that this is not the only cause of these nervous phenomena; it is only one of many; work, exposure, food too rich or too poor, dissipation, injuries, acute diseases, excessive fecundity, sexual indiscretions and worry, are all potent causes. Then, on the other hand, there must be recognized what a lamented writer on this subject once called "nerve counterfeits" of uterine and ovarian disease—cases in which the patient's complaints all center around her genitalia, the various organs of which present no manifestations of disease. These cases are to be carefully differentiated and are to be treated in accordance with their respective indications.

#### LOCAL TREATMENT.

What are we to do for cases of neurasthenia with extra-pelvic lesions, or for that matter what are we to do for that even more troublesome class of cases in which there exists a nerve counterfeit of neutral disease rather than the disease itself? I know of no class of cases in which the golden rule of therapy should be so rigorously observed, the rule which demands that treatment shall begin with the removal of the cause. Therefore, where there exists intra-pelvic disease, begin by giving it attention. Is there a retroflexed or a retroverted uterus with fixation? Give it attention, but don't—don't, as you love the welfare of your patient, as you revere the sacredness of your professional trust, don't afflict the unfortunate woman with always worse than useless pessaries. Is there degenerative change of the uterine appendages? Give your patient the advantage of the practically always successful resources of our surgical art. And thus you may go on through the whole category of pelvic diseases in women.

#### CONSTITUTIONAL TREATMENT.

Now while the rational inauguration of treatment must be by giving attention to the cause, it must be remembered that in practically all of these cases we have certain consequences, certain acquired constitutional states, with which to contend. These states are easily summarized in the general expression—uric acid diathesis, and consist, essentially, in the retention in the system of the products of metabolism. Uric acid, urea, xanthine and paraxanthine are among the chief factors of mischief. If to these you add the toxic products absorbed from the always sluggish bowels you can realize how thoroughly poisoned is the system. We are generally confronted by this state of auto-infection, not in the form of a developing process, but in a form that our

French friends would call a *fait accompli*. It is essential in all of these cases, either before or after any surgical interference that may be required, to neutralize these poisons and eliminate them from the system. In this connection you must select your remedies wisely if you would realize the best results. The salicylates are anti-lithæmics having a certain value, but unhappily they upset the digestion. Lithia is chemically and physiologically the logical remedy in these cases, but as ordinarily obtained is worthless because besides its tendency to hyperalkalize the stomach it is rarely assimilated by the system in quantity sufficient to produce desired results. The lithia waters which abound in the markets, unfortunately do not abound in lithia to the degree that gives them a therapeutic value beyond that which depends upon the water itself rather than upon any thing it contains. I therefore do not prescribe them except as a sometimes necessary pretext to get my patient to drink water in abundance and as this is a very expensive proceeding, I generally order some pure spring water, or, what is just as good, some distilled water, and put what I desire into it. It is always desirable to give your patient a laxative, and to avoid the multiplication of potions, it is well to combine it with your other agents, whether they be the salicylates or lithia. For the last few months I have been using a remedy that presents a happy combination of these qualities—a new salt of lithia known as thialion—but why so called I am sure I do not know, but I do know that with it I have been able to lessen the acidity and lower the specific gravity of the urine more rapidly than by any other means. I use it by giving a teaspoonful in hot water before meals. In the course of thirty-six to forty-eight hours, its gently laxative effect is realized. From this time on I give it less frequently. By the end of the next day the systemic effect is manifested. I am rather fond of giving a full dose of it before retiring—an innovation, I believe, in the manner of using it, but I have been able easily to thus perpetuate its once established effects by a minimum of both drug and dosage. The bowels are put into a condition of normal activity. Certain of these cases are anæmic, and require a reconstructor. As a rule they are intolerant of iron, which generally adds to the mischief by interfering with digestion and intensifying the pre-existing constipation. I have been able to increase the hæmoglobin and reduce the usual leucocytosis of these cases most effectively by employing the formula of my old friend Dr. Barclay for the administration of gold in combination with arsenic, a product now obtainable under the title of arsenaurol. A diet from which dark meats are excluded should be enjoined. Active muscular exercise out of doors should be indulged in consistently with the strength of the patient. Daily baths, but never cold ones, should be made a matter of routine. An occasional sudorific bath is an advantage. When a patient cannot take active muscular exercise, out of doors, she should be treated by being given passive exercise in the form of massage—and just here we come to an important part of the treatment of these cases, I mean the

#### MORAL TREATMENT

or I should say the disciplinary treatment. These cases, at least until they are brought under control, do best away from home. The influence of a strange physician and strange surroundings is simply paramount in many of these otherwise intractable cases. They should be placed under the most careful surroundings, but as a rule they ought not to go to institutions, public or private. The surroundings are generally depressing to persons of hyperæsthetic sensibilities and but little vital resistance. I follow the rule of Weir Mitchell, and place these cases, particularly those whose pelvic lesions do not demand operation—and let me add, parenthetically, very many of them do not—I say I generally place these cases in private nursing homes, bright and cheerful, owned and conducted by an intelligent woman trained to the care of such patients. Once placed under these desirable surroundings I can bring medicine, suggestion—a powerful remedy—discipline, hygiene, everything necessary indeed to secure the desired result. If you follow the line of treatment, the line of general management that I have indicated, you will be rewarded with the recovery of cases that will otherwise harass your life, if they do not actually damage your reputation.

## CONSTIPATION IN TUBERCULOSIS.

BY WILLIAM PORTER, A. M., M. D., ST. LOUIS, MO.

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(Extract from a Special Lecture in the 1899 Course on Physical Diagnosis at the College of Physicians and Surgeons, St. Louis.)

(Reprinted from the *National Medical Review*, Washington, D. C., November, 1899.)

In the care of tubercular cases, there is one point that should always be insisted upon, and that is that the lower bowel should never be allowed to become distended with fecal matter and partially digested particles of food débris. I can conceive of no better condition for the retention and development of bacilli than that which exists in a bowel so distended, the muscular fibres of which are weakened by distention, and the mucous membrane congested by the irritating substances retained.

In nearly all such cases of any chronicity, there is dilatation of the ascending and transverse colon, and dullness on percussion of the descending colon. The explanation is simple. Accumulation in the lower bowel with fermentation and retention of gas in the transverse and ascending tracts. Aside from the usual idiopathic sequelæ of constipation, there is the additional danger in tuberculosis of auto-infection from the bowel. I do not believe that we attach enough of importance to this, and yet the reasoning is logical from premise to conclusion.

The patient who is constantly expectorating tubercular matter will certainly receive more or less of it into the stomach, especially in the acts of drinking and food deglutition. The weak gastric digestion, so often present, does not greatly change the activity of the bacilli or the virulence of their ptomaines. These pass into the very tract where absorption is one of the main functions. Is it, then, an unreasonable proposition that much of the general mal-condition in tuberculosis depends upon this manner of auto-infection?

In these days when the subject of limitation of tuberculosis by sanitation is attracting so much attention it is but natural that our investigations should largely be in the direction of prevention of all outward sources of infection. It is right that the sputum should be mixed with germicides or burned. It is right that the milk and meat should be the objects of careful scrutiny. It is right that the individual should be protected against all danger of germ invasion from those who are already so affected, but it is also right that he should be protected against himself.

Were it not for auto-infection I am convinced that most cases of tuberculosis would be more amenable to treatment. We can all recall cases in which a recognized tubercular condition was for a long time latent. Seeming improvement began. There was a gain in flesh, in strength, in appetite and in courage. Then an explosion occurred. The afternoon fever, night sweats, loss of appetite, irregular action of the bowels, all appeared, and yet no tangible extension of the local pulmonary lesion. Does this not suggest auto-infection? The very fact that impaired assimilation is so early a complication in tuberculosis, is a fact that adds to the plausibility of this hypothesis.

Indeed this deduction has come to be more than an hypothesis, it has all the authority of a recognized fact. The physician who neglects this part of the treatment and permits the lower bowel to become a receptacle for the retention, increase and absorption of material containing so much active poison as the tubercular sputum—that phy-

sician must not be surprised if, in spite of his efforts in other directions, his patient steadily declines.

I cannot but think that some of the good results credited to creasote, guaiacol and other remedies of this class, are due to their immediate action in the intestinal tract, either as germicides or in rendering the condition of the intestine uninhabitable for the bacillus and in counteracting the influence of the ptomaines. It has now become my practice to order a high enema once or twice a week that the lower bowel may be well emptied and kept in as aseptic a condition as possible.

The same inertness may, and I believe does, prevail in the small intestine, notably just above the appendix and in some cases through much of the extent of the whole lower bowel. Here no enema can reach and yet a frequent evacuation is necessary, if the above noted conditions are present. Drugs that irritate, or have a marked drastic action are to be avoided. It has been the custom of many to give strychnia, aloin, etc., and yet it is manifestly wrong that a stimulant and whip, even when guarded by belladonna, should be used to urge to activity and compel action of muscular fibres already exhausted and weakened by distention.

It is much more rational, I take it, to give a mild saline after the lower bowel has been well emptied by the enema. For some time the phosphate of soda has been my favorite remedy, but it does not meet all of the indications, especially where there is the complication of lithæmia, or urine with excess of phosphates, as often found in tubercular cases. Moreover it has been my experience that this agent loses its effect after a short time unless the dose is increased repeatedly.

More recently I have used, with satisfaction, thialion, which combines the properties of a laxative salt with those of lithia. It has the additional virtue of acting upon the uric acid diathesis, which so frequently hinders the recuperative progress and is so often a complication of faulty intestinal digestion.

Thialion performs a four-fold function, all of which tend to help the patient. First, it acts thoroughly on the bowels, increasing peristalsis; second, it relieves the torpid condition of the liver, increasing the flow of bile; third, it acts on the kidneys, increasing the quantity of urine voided; and fourth, it eliminates the uric acid from the body. I give a teaspoonful dissolved in a cup of hot water and drunk as hot as possible the last thing before retiring at night.

Since paying more attention to this phase of the treatment in tubercular cases, I have been able to largely reduce the amount of creasote indicated and in many cases the reduction of temperature has been very noticeable, following the administration of enemata and the saline. Why not?

It must be remembered, however, that this treatment is not to be pushed too far. Frequent examinations of the abdomen by palpation and percussion should be made and the treatment regulated accordingly. The thialion salt should be given in small doses, well diluted in hot water and after the bowel has been well emptied. I prefer administering it at bed-time. This will not interfere in any way with gastric digestion.

I strongly object to the continued administration of salines, even when well dissolved and largely diluted, in close proximity to a meal in all cases of impaired gastric digestion. I know that experimenters have found in the laboratory, that the exhibition of some of the milder alkalies stimulates the secretion of hydrochloric acid, but it must be remembered that such experiments are generally made upon organs with healthy functions. In cases where the alkalies—bicarbonate of soda, for instance—do produce a better gastric action when given near the time of eating, I believe it is because of its reaction with the lactic and fatty acids.

Much of this I know is apparently direct opposition to the teachings of the physiologist, and yet there is no real contradiction. Sherician Lea has shown that in natural gastric digestion, conditions are favorable for the rapid absorption of soluble salts, but we are not dealing with natural gastric conditions. Besides this, whatever of the salt remains unabsorbed, certainly neutralizes to some extent the hydrochloric acid.

This may be a lengthy plea for so seemingly an unimportant proposition, but in caring for these cases nothing is unimportant—certainly nothing affecting digestion. Therefore I repeat that in all tubercular cases where a saline laxative is needed, it is better to give it at bed-time.

It is not by the use of any one agent—serum, creosote, tonics, diet, rest or what you will that we can confidently expect to cure, as we may now do, many cases of tuberculosis formerly considered hopeless, but by a proper application of every method indicated. Of these I am sure the one above discussed is not the least.

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### URIC ACID TOXÆMIA.

BY ARCH DIXON, M. D., HENDERSON, KY.

Ex-President of the Mississippi Valley Medical Association; ex-President Kentucky State Medical Society; Member of the Kentucky State Board of Health, etc., etc.

(Reprinted from the *Texas Medical Journal*, September, 1900.)

That "necessity is the mother of invention" is no less true in medicine than in other ways. A distinguished physician living in the East, big of brain and heart, a leader in society work, both literary and social, a "chutmuck," a "friendly Indian," from some cause, upon the discussion of which it is not necessary to enter here, found himself the unwilling victim of increasing uric acid trouble. The attacks gradually became more violent and increased in frequency until life to him became almost a burden. He was compelled to restrict himself in many ways, both in his business and social duties, and he had to turn with serious thought to some method of exorcising this demon which had entered into him. How he suffered, only those who have had a similar experience can at all appreciate. I remember once, it was at the Nashville meeting of the American Medical Association; after the business of the day, there was a meeting of the "committee" called together by the chairman of the committee on "Nutrition and Stimulation." Mathews was there and Love and Owen, of blessed memory, and the peerless Palmer, who since "has passed the gates of sorrow through," and McMurtry, Grant and Reed and other royal fellows. There had been a flood of eloquence and an avalanche of wit and the gentleman from the East was much in evidence. An hour later he writhed in agony, the victim of an explosive attack of nephritic colic. Six hours later he was on his way back to the East. His frame of mind was such that he could not exclaim, "This is a very beautiful world and I'm glad I'm living," but the contrary. Returning home, he consulted the best men in the profession, among them his particular friends, Price, Wyeth, McBurney and Marcy. There was no difference of opinion as to his case. Each and every one pronounced it stone in the kidney, for the relief of which an operation must be done. What did that mean? It meant the indefinite relinquishment of a practice already crippled by continued attacks of indisposition, the leaving of home and family, the subjection of himself to the surgeon's knife, with perhaps the result at best, of a long and tedious convalescence. The contemplation of this gave him pause, and he seriously considered if "the game were worth the candle." But something must be done, and quickly, too, for in addition to his kidney trouble, gout, that torturing devil so aptly portrayed in the accompanying cut, seized upon him. Look upon the picture and it goes without the saying that a further description of his condition is unnecessary. And so this man, selfishly if you will, set the machinery of his great brain to work to discover something to cure himself.

It is useless to say that he had tried all remedies known to the profession, holding fast only to those which seemed good. Among all these the lithias gave promise of the best results, and along these lines he began a most active research. Assisted by an able German chemist a series of experiments were kept up for four long years, until

finally a laxative salt of lithia was evolved, which, after numerous tests, was found to be an active stimulant to all the emunctories, and since gout is rarely, if ever, due to excessive formation of uric acid in the blood, but always to retention, or failure of excretion, the discovery of this remedy came to this man as a life saver and a blessing indeed. Its action upon him he describes as little short of marvelous, transforming him, as it were, into a new man. Not content to form a verdict from its action in his own particular case, he distributed a sufficient quantity for trial in similar cases among his numerous friends in the profession, telling them of the great things it had done for him. The reports from these were awaited with great anxiety, but at last they came and he could well exclaim "Eureka!" for the results upon others were the same as upon



Courtesy of Battle & Co.

#### THE GOUT.

himself. Urged by his friends he determined to give to others the benefit of this great blessing which had come to him, following the injunction:

Have you had a blessing shown?  
 Pass it on.  
 'Twas not given for you alone—  
 Pass it on.  
 Let travel down the years,  
 Let it wipe another's tears,  
 Till in Heaven the deed appears,  
 Pass it on.

In the spring of 1899 I received several bottles of this lithia salt, now called thialion, with the request that I give it a trial, and if it proved satisfactory to so report.

Being a lithæmic myself, and having run the scale of all remedies recommended for this trouble with little benefit, I was extremely skeptical of its efficacy. However, I concluded to use it in a few very obstinate cases, which had refused altogether to yield to other treatment, or had been very slightly benefited thereby. The results obtained were in the nature of a very agreeable surprise. First of all, I cannot do better than give a report of my own case as taken from a paper, "Some Observations on Lithæmia," by my son, Dr. Arch Dixon, Jr., published in the May number of *The Louisville Monthly Journal of Medicine and Surgery*.

"The latter part of August, 1899, Dr. —, who has been in active practice for nearly twenty-five years, was attacked suddenly, after a moderate lunch, with vertigo so decided as to necessitate the recumbent posture, and cause great alarm to his family.

There was no actual syncope, but a distressing sense of faintness, from which, however, he recovered in a few minutes; there was neither nausea nor palpitation, but headache. The attack was at the time attributed to lager beer not very fresh, taken with the lunch. In early life, while a medical student, he had suffered from a bad attack of dyspepsia with palpitation culminating in mitral disease. Occasional attacks of vertigo occurred, but usually late in the evening and after days of unusual fatigue.

These were always temporarily relieved by a small quantity of any mild stimulant. The attacks were at one time thought to be possibly due to his habit of smoking, but no direct relation could ever be traced.

Matters had now assumed so grave an aspect that he began seriously to study his own case as he would have been compelled to do in the case of any other patient. First the condition of the heart was investigated as a possible cause, but competent examination revealed no increase of the mitral disease, no evidence of fatty degeneration, the pulse in fullness, frequency and rhythm normal, neither palpitation nor dyspnoea, only an occasional intermission of the pulse. No evidence whatever of any organic disorder. The renal function was apparently perfect; the urine of proper specific gravity, although there was a tendency to abnormal acidity. In the absence of any deposit or other symptom, the urine was only roughly tested at any time, until a severe attack of lumbago accompanied by general myalgia and intense headache compelled a more accurate examination. The digestion was bad; the bowels as always during life, regular with the exceptions noted hereafter; the urine was found to be loaded with uric acid. These attacks have never been accompanied by fever nor by any severe disturbance of the general health, but always by extreme irritability, nervousness and impatience, with more or less torpor of the bowels. The appetite, even in the worst of these, was always good enough, if not too good. A more careful course of diet was at once instituted.

The amount of nitrogenous and carbonaceous food was greatly reduced, and all stimulants and malt liquors, always in daily, but never in excessive use were discarded entirely, smoking was interdicted.

As medicines, a full dose of thialion was given before each meal, and an active dose of concentrated French lick water on rising each morning, these producing one full liquid evacuation daily. The effect of this course was very decided. It was continued with hardly an intermission for four months, though on several occasions, when too much animal food, a glass or two of wine or whiskey were indulged in, the warnings were unmistakable. At the end of this period the tinnitus was hardly noticeable, the vertigo entirely gone, and the gouty pains a thing of the past. His health has been more vigorous than ever, but only at the price of constant watchfulness, for any attempt at the indulgences at the table, either at once or with the lapse of two or three days, brings its penalty in myalgic pains, with headache, tinnitus, or vertigo one or all. The only wines that seem to cause no trouble are a thin table sherry and dry champagne."

I make no apology for giving the case at some length, and I consider it to be a good illustration of a certain class of lithæmic cases, and typical of the nervous and gouty complications, while remarkably free from those renal and gastric symptoms

which more generally accompany and obscure the diagnosis, for, as will be noticed, there were none of the ordinary symptoms to call attention to what was undoubtedly the true source of the difficulty, the imperfect assimilation of the ingesta. That vertigo and tinnitus as well as other obscure and intractable complaints, especially those of the skin and mucous membranes, may often be traced to the lithuric condition, whether it be designated as lithæmia or suppressed gout, there can be no doubt.

CASE II. Mr. A. J. C., aged 67, farmer, weight 180, was referred to me by another physician. Mr. C. had led an active life, was a good eater, but moderate drinker. For more than two years he had been suffering with lumbago, headache and what he described as "spells," in which he would for the moment lose consciousness. These attacks of vertigo would come on suddenly and without periodicity. He was also much constipated, was low spirited, being convinced that he was the victim of some incurable malady. His digestion was bad, complexion sallow, tongue coated. His urine was scanty. Specific gravity 1.030, reaction strongly acid, with a trace of albumen, dark red, with a large brick dust deposit. Microscopic examination revealed uric acid crystals, in large numbers, with a corresponding deficiency in amorphous urates. He was put upon teaspoonful doses of thialion in a glass of hot water three times daily before meals. He was also instructed as to diet and told to take a hot bath every night just before retiring and to report in a week or ten days. In a week Mr. C. came into my office and reported that he was much better. The same treatment ordered except that the thialion was to be taken only once a day, an hour before breakfast.

In three weeks he came in and said, "doctor I am a new man, my friends ask me what I have been doing to myself, I look so much better they hardly know me." Mr. C. is a new man, his aches and ailments have all disappeared and with the exception that he still has an occasional mild attack of vertigo, his health is excellent. I could cite numbers of such cases.

One of the most striking and convincing effects of the virtues of thialion is in the treatment of asthma. There can be no question, as Haig says, that uric acid produces high arterial tension and that the contraction of the arterioles varies directly with the amount that is circulating in the blood. The way then to cure asthma is to cleanse the blood of uric acid and to keep it clean; this thialion will do. Mrs. D., aged 65, had suffered for years with frequent attacks of asthma. She had been under the treatment of several physicians, who had exhausted all the remedies known to pharmacy with but temporary relief, and this being afforded only by morphia hypodermically administered. Her breathing was at all times labored, but during the paroxysms the dyspnoea was painful to see, and sleep was out of the question. Examination of the chest revealed bronchial catarrh and emphysema. The slightest change in atmospheric conditions aggravated all symptoms and she looked forward with dread to those changes which brought about humidity. She became a regular barometer and the signal service man was not in it with her in foretelling the changes in the weather. Thialion was given her in the usual doses with the addition, now and again, of a teaspoonful of elix paraldehyde at bed time. It has now been four months since she began the treatment and with the exception of the remaining emphysema she is practically a well woman and is correspondingly grateful.

It is useless to multiply cases. The production of uric acid is an interesting and as yet an unsettled problem. Whether it be by synthesis of the ammonium salts with lactic acid in the liver, or by decomposition of nuclein, or by the kidney synthesizing urea with glycine, the fact remains that it is there and the prime object is to get rid of it. The pains in the muscles and fibrous tissues and even in joints, that often appear after exposure to cold and like influences, though called rheumatic are often not rheumatic at all, but are manifestations of metabolic disturbance and due to alterations in the fluids of the body, in consequence of which certain substances are thrown out of solution and act as irritants, generally or locally. These cases derive no benefit from the salicylates, but are certainly and surely relieved by thialion. Lest we forget, let us remember that all uric acid troubles, and they are legion, are due to disturbed meta-



bolism and lessened excretion, and that complying with certain rules of diet, the best of which are those laid down by Dr. Henry S. Pole, of Hot Springs, Va., and by giving such remedies as increase excretion and restore metabolic equilibrium, and the best of these in so far as my experience goes is thialion, we can restore our patients, if not to perfect health, to that condition in which he may now and again exclaim, "This is a very beautiful world and I'm glad I'm living."

### DIET LIST TO BE USED IN GOUT AND RHEUMATISM.

AS LAID DOWN BY HENRY S. POLE, M. D., HOT SPRINGS, VA.

(Reprinted from the *New England Medical Monthly*, October, 1899.)

To get the best results we must nourish the patient, give him good food and direct the following:

**SOUPS.**—Consomme, Julienne, tomato, mock turtle and puree allowed, Bean and pea soups prohibited.

**FISH.**—All kinds of fish are allowed, except canned lobsters—fresh lobsters there was no objection to.

**MEATS.**—Beef, mutton, lamb, chicken, turkey and game are allowed, but all pork prohibited. The least objectionable form to the latter, however, being ham and bacon, but the patient is better without any pork at all. Veal not allowed.

**VEGETABLES.**—Spinach, green beans, onions, new peas, lettuce, carrots, parsnips, turnips, raw cabbage, cauliflower, string beans, rice, oatmeal, hominy allowed.

Grits and mush are allowed, but cracked wheat or wheatina not.

• Asparagus allowed unless it is found to irritate; some cases it agrees with, while some it does not. Radishes are not allowed on account of their indigestibility. Sugar beets not allowed. Tomatoes allowed if they agree. Potatoes not allowed unless well baked. Lemons are allowed, provided they are used without sugar. Eggs allowed. *No sweets at all.* Taboed, sugar, pastry, pudding, candy, *strawberries*, bananas, preserves, jellies, lemons with sugar.

Dried fruits may be taken, provided saccharin is used in the cooking. *Saccharin must be used at all times in the place of sugar.*

The fats—olive oil, gravy, sauces, mayonnaise and butter allowed.

No fried meat of any kind allowed.

Alcoholics disallowed except in cases of debility, when whiskey, preferably Scotch whiskey, is prescribed with carbonated water.

For drink, tea, milk with salt in it and coffee for breakfast only.

*No water from one hour before to one hour after meals.*

Fresh fruit allowed with the exceptions above indicated.

No hot bread allowed of any kind.

Live in the open air, take all the exercise the patient possibly can.

I am glad of an opportunity to express to you my opinion of the value of thialion in the treatment of gout. I have used it in a great number of cases with unvarying success, and in connection with the Hot Springs waters, as my experience with it has been, I do not know of anything to equal it. It unquestionably assists in throwing off the uric acid, and acts delightfully on the liver. I rarely find it necessary to use it more than once a day, preferably one hour before breakfast, and my experience is that the taste is improved, and a better effect is obtained, if a teaspoonful of lemon juice is added to the dose. In order to get good results from its use it must be taken with regularity, until it produces free bilious discharges.

The diet regulations while taking thialion and the gout treatment vary according to the patient's condition, but two general rules may be laid down with certainty. The patient should not eat anything containing starch or sugar, and all wines and liquors are excluded, except in cases where there is great debility, when Scotch whiskey with soda is allowable.

Very sincerely yours,

HENRY S. POLE,

Resident Physician, Hot Springs, Va.

## THE TREATMENT OF CONSTIPATION.

A Clinical Lecture Delivered at the Hospital College of Medicine, Louisville, Kentucky.

BY JOSEPH M. MATHEWS, M. D., LL. D., LOUISVILLE, KY.

Professor of Surgery and Clinical Lecturer on Diseases of the Rectum; ex-President of the American Medical Association; President of the Kentucky State Board of Health, etc.

(Reprinted from the *New England Medical Monthly*, November, 1899.)

GENTLEMEN:—During the present session of the school, which is now nearing its close, you have witnessed operations for nearly every known disease of the rectum. I am sure that you are convinced now, if never before, of the absolute necessity of giving some special study to this class of affections. I trust, too, that by this clinical demonstration you will have been profited sufficiently to do many of these operations, thereby relieving a large class of sufferers, a class, too, which has been wonderfully neglected in the past by the profession. You know how common it is for all such affections to be designated as "piles," and the patient to be assured that an ointment will effect a cure. Your experience here will prove to you what an error it is to so classify these troubles. You have seen at these clinics men and women whose lives have been wrecked by the want of proper treatment. Need I mention such formidable diseases of the rectum and colon as tuberculosis, syphilis and cancer, or the so-called minor affections, as hemorrhoids, fistula, proctitis, ulceration, stricture, prolapse, polypoid growths, eczemas, pruritus, etc. Let me beseech you, therefore, not to look too lightly upon this class, but at least give them the benefit of a careful examination before you dismiss them. As the last clinic to be held this session I have summoned a number of patients who are not seriously ill, nor do they need any surgical operation. You see here some aged and some middle aged, while here to my right is a very young person. Each one of these is a subject of that very common, and, what is generally regarded, very simple ailment—*constipation*. Before I begin to explain the condition of these patients, or this class of patients, permit me to say that constipation is a relative term. What is constipation to one is not constipation to another. Very often you will hear a person say, "If my bowels do not move every day I feel badly, headache, languor and tired. Another in apparent good health, will inform you that his or her bowels move only on every second, third or fourth day. The late Doctor D. W. Yandell once told me that a patient, in describing her trouble, said that so far as her bowels were concerned she was all right, as they moved with perfect regularity, *every two weeks*. I have made mention to you of a case treated by me and which is fully described in my work on Diseases of the Rectum, a young lady whose bowels moved only once every three months, four times a year.

I do not wish you to be impressed with the idea, either, that constipation is a simple thing, for to the contrary, it is often a very serious affair. I once heard an old physician say that "if his bowels moved in the morning he was sure that he would not die that day." As he is now dead I have wondered "if his bowels moved that day."

Let us for a little time consider the physiology of defecation. The fecal mass has the cæcum as its starting point, and when "a call of nature" takes place it means that a peristaltic wave occurs, which moves this mass rapidly through the colon, dropping it into the sigmoid flexure, thence into the rectum. If the "call" is heeded by the individual an "action" is the result. If, through false modesty, attention to business, or general laziness, attention is not paid to this effort of nature, then the watery constituent, which is the greater, is absorbed and carried into the circulation. In consequence we have an *auto-infection* which may prove of serious import. You can readily understand that by the absorption of the fecal mass, a poison, that the whole general system would

be deranged. The red corpuscles of the blood are diseased, altered in color and lessened in power. Hence a sallow complexion, dark rings under the eyes, cold extremities because of less supply of oxygen; lethargy due to vitiated blood and enfeebled corpuscles. The system is not nourished, hence the loss of flesh; the diseased blood circulates through the nervous system, and there is in consequence nervous depression—we might say *nervous exhaustion*—the pulse is slow and easily compressed; the organs of digestion and assimilation are lowered; there is loss of memory, no concentration of thought, and a great disposition to drowsiness. Notwithstanding that these patients are generally "sleepy," they are not relieved by sleep. All the functions are unsatisfactorily performed. If this condition is not relieved, disease and suffering must be the result. There is another phase of constipation that I would have you consider. We have stated that the liquid contents of the fecal mass is absorbed, the solid portion remains in the flexure and rectum. Daily and weekly this dried mass is added to, and in consequence we have the whole pelvic circulation deranged; external piles are produced, internal piles are made to bleed; atony of the coats of the bowel takes place, congestion, inflammation and ulceration may result. Truly, then, constipation is no "light" matter. What, then, shall we do for this condition? I once heard a doctor say that he would give a thousand dollars for a "specific" for constipation. I really believe the investment would have been a good one, when we consider how many people are thus affected.

Before attempting to map out any line of treatment I wish to impress upon you that you should diagnosticate between what is known as *obstipation* and *constipation*. The former may arise from a mechanical cause, as an irritable and contracted sphincter, a stricture or growth in the rectum, and some believe that the valves of the rectum play a part here. Of course, if either of these conditions are detected you should turn your attention to their removal, for the obstipation is only secondary to them. I have relieved many cases of so-called constipation by dilating the sphincter muscle. But what should be done in a medical way to eradicate this condition? Let me say that you will find as most excellent adjuvants in the treatments of many of these patients: electricity, massage of the abdomen, cold baths and exercise. Every physician seems to have some favorite prescription, in the form of a pill or solution, but they are constantly informed that "they have lost their power." Of course you have heard that the "regular habit" should be indulged in; that enemas are good under certain conditions, and a pill is necessary. But do such effect a cure? Very rarely. Each case must be studied as an individual one. Fat people as well as the lean are affected in this way—the young as well as the old. Women are more given to the habit than men, and I believe the reason to be that they are possessed of a womb. You will often find that a displaced uterus, or an enlarged one with adhesions, is responsible for the constipated condition. It is common with young school girls, who in the rush to get early to school neglect the very important duty of having their bowels move in the early morning. Among the serviceable drugs in the treatment of this affection you will find the following: cascara sagrada, sulphur, belladonna, nux vomica, sulph. iron, buckthorn, ipecac, magnesia, the mineral waters, and many others, either alone or in combination.

But let me impress upon you the necessity of making a more thorough study of such a case. If the patient who consults you is really desirous of getting well he should at least give you a fair chance to cure him. Supposing then that you have such consent, I would advise you to proceed in the following way. First try and ascertain what is the *cause* of the constipation. In this connection, I wish to state that after an examination and observation of these cases extending over twenty years, I am forced to believe that the majority of them have as a basis a constitutional derangement. In trying to solve the problem, it was observed that many of these patients were of a rheumatic or gouty diathesis. Acting upon this hypothesis, I have treated them by combating this special trouble and have found that in many cases the constipation would take care of itself. There are many preparations that you can use for this pur-

pose, but the best is some form of lithia. Waters containing this salt will be found of service if taken in large quantities and for a long period of time. However, in my own practice I prefer to use the drug in a more concentrated form. I have, therefore, been using for some time a preparation of lithia known as thialion, with a marked degree of success. I direct that it be taken in teaspoonful doses, given in a full glass of hot water before each meal. My theory is that in the rheumatic or gouty subject the intestines are brought under the same conditions that the disease or diseases are made manifest in other portions of the body. The muscular coat of the intestines is particularly affected by this gouty condition, and in consequence loses its contractile power. Anyway I have cured patients of the confirmed constipation habit by this drug alone. To proceed, I would say to the patient that he must submit to my directions. You will find that in lieu of the rectal enema, that if a *high* enema is given through a Wales bougie say of a half to a gallon of water two or three times a week it will be much more satisfactory. The object is to replace the amount of water which has been lost by absorption of the feces. A fruit diet, together with the drinking of large quantities of water should be enjoined. Massage of the abdomen by the patient himself, who should be taught the route of the colons, should be advised. The sweets should be forbidden and only plain, nutritious diet observed. I consider the administration of drastic purgatives harmful rather than beneficial. If you will watch this class of patients as carefully as you would any other chronic one, you will be awarded by success. I beseech you not to get into the habit of prescribing for them in a routine way, for if you do they will soon desert you, and go elsewhere; besides you will do them no good.

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## ON THE DIAGNOSTIC TEST AND CONSTITUTIONAL TREATMENT IN JOINT INJURIES.

BY THOMAS H. MANLEY, M. D., NEW YORK CITY.

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(Reprinted from the *New York Lancet*, January, 1901.)

It would seem that with the trans-illumination of the skeleton during life by the radiograph, and the more radical medical procedure of free incision into the soft parts, we should encounter no special difficulty in the diagnosis of those numerous injuries involving the articulations, or parts contiguous with them after accident. In my recent essay recorded in the "Transactions of the Mississippi Valley Medical Association," radical issue was taken with those who claim infallibility for the Roentgen rays in obscure joint injuries; nor, was my experience in the management of a large number of fracture cases, such as to justify the assumption, that the (*Le Nord-Medical*, 5th Sept., 1900) theory that a free incision, into a closed fracture, for purposes of diagnosis or therapy is an innocuous measure.

### ON THE INFLUENCE OF CONSTITUTIONAL CONDITIONS IN JOINT TRAUMATISM.

Age, diathesis and constitutional conditions make their impress felt in a multiplicity of injuries. It is constantly observed in neurasthenic hysterical females, after articular traumatism, and in gouty, or rheumatic states of the system in both sexes. Indeed, Brodie went so far as to allege that a rheumatic arthritis may be provoked in various individuals by severe strains.

When acute, inflammatory changes with marked swelling and intense pain follow a violent wrench of an articulation, there is often an absence of any definite clinical symptoms, by which we can differentiate between those resulting from local causes, or systematic conditions.

We may search in vain in the clinical history for any evidence of latent rheumatism; an excess of phosphates is absent in the urine, and the diurnal fluctuations are wanting in temperature.

To be *en rapport* with the latest up-to-date method, we may resort to Röntgen's shadow-graphy, but in my experience there is no aid that bristles with so many fallacies.

For example; in a severe case of wrist injury, coming under my own care, some time ago, I was forced to state that after most painstaking and repeated examinations I could find no evidence of fracture, but a colleague depicted two, of the radius, lower end, with aid of the rays. Another picture afterward showed no fracture, but a displacement of the first carpal row. Not to be worsted in the matter, a third shadow-graph was taken which presented the parts in a normal state.

But the patient some time before, had had gonorrhoea, which was evidently now aroused into activity by the trauma, and recovery was tedious, leaving a stiff joint, something so common after gonorrhoeal arthritis.

In malarial countries, and in places where it appears in its undeveloped forms, malarial infection by its deleterious effects on metabolism, and the nutrition of the system, is well known to exercise a most potent influence in masking symptoms and retarding the repair of injuries.

The presence of the plasmodiæ, it is true, would decide diagnosis; but, few are capable of preparing the blood, and making a critical study of it under a high-power objective, moreover, in the undeveloped types of malaria, it may be absent or detected with difficulty. Syphilis, rather strange to say, is one of the constitutional affections which rarely complicate diagnosis of the joint-injury, though it often retards reparative processes. The same may be said of tuberculosis.

When, therefore, we meet with severe arthritis, after joint-injury, and this fails to respond to ordinary therapeutic measures, we should carefully investigate into the environment of the patient, his habits, his antecedent history, and examine well into his general condition.

In the middle state, where ill-defined malaria is so common, when especially a febrile element is present, a brisk mercurial purge followed by a full dose of quinine, will often show a most gratifying change in the local condition.

In those cases, attended with grinding, torturing, nocturnal pains, we may suspect a gonorrhoeal metastasis.

But the most common complication is rheumatic. How shall we determine this? Certainly not by any *ensemble* of symptoms, as the only ever-constant, is pain with local swelling.

We must then resort to the *therapeutic test*, in other words, treat the patient as well as his injury.

Salicylic acid, in the following combination, is a power in any painful affections of a joint from any cause, in which inflammation is present.

℞ Acid salicylic, ʒ iij.  
Tinct. opii, ʒ iss.  
Ol. terebenthene, ʒ j.  
Ol. dulcis, ʒ ij.  
Spir. vini rect. U. S. P., q. s. ad ʒ vj.

M. Sig. Liniment.

In order, however, to reach the system, and eradicate the cause, when rheumatism is present, internal medicine should be simultaneously given in all cases.

The potash salts, with colchicum, may be used to advantage, but of late in all those cases, I have used lithia in the form of the new salt, thialion, which acts with energy and remarkable effect.

I first commence with a full dose of two teaspoonfuls of thialion in orangeade, or what is better some of the syrups and carbonated water.

This will freely evacuate the bowels, when as a rule amelioration is felt.

The dose is then reduced to a half teaspoonful one hour before or one hour after each meal dissolved in a cup of hot water and drunk as hot as possible.

We will need no other medicine to keep the bowels in a soluble condition, because thialion affects this perfectly, acting freely upon the liver.

When gonorrhoeal complication is expected, nothing will afford as prompt relief as free acupuncture with hot bathing, combined with the internal treatment above mentioned.

In that large class of malingerers, who often make an arthritic injury the basis of a civil action, one of the greatest difficulties of the expert, is to determine what is the exact rôle played by the struma, or the complicating systemic condition expressed by a local lesion.

It may be generally noticed, however, that when rheumatic symptoms are dominant, myotrophic changes are more pronounced and the parts are less responsive to the electric current than when an injury alone has been sustained.

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#### OFFICIAL REPORT OF ST. LOUIS MEDICAL SOCIETY PROCEEDINGS.

(Reprinted from the *Medical Mirror*, St. Louis, Mo., May, 1899.)

Dr. I. N. Love, in discussing the papers of Drs. Henry H. Mudd and N. B. Carson, on the Surgical Treatment of Trifacial Neuralgia, with Reports of Cases of Removal of the Gasserian Ganglion, in the St. Louis Medical Society, Friday, March 17, 1899, said:

"I was rather in hopes that some one else would speak first on this subject. I did not hear the papers, but am somewhat familiar with some of the published reports, and from the cases I have read I am satisfied that the operation is a difficult one. Of course I know that in the cases reported before the Society by Drs. Carson and Mudd it is to be taken for granted that every other method for the relief of the neuralgia had been exhausted before the operation was resorted to; it is furthermore admitted that these gentlemen are masters not only of the technique of the work, but also in the making of a diagnosis of the proper conditions for the surgical procedure. But I do feel with regard to this operation as I do with regard to many that are reported in the medical press by the masters in the various departments of work, that a large number who read the reports of these cases may, by not having had impressed upon them sufficiently the importance of exhausting every other remedy, every other procedure, be led to perform this operation unnecessarily. And I have been impressed by this particularly because I have had under my observation during the past five or six years a number of cases which seemed absolutely unrelievable—facial neuralgia, sciatica, brachial and other neuralgias, where nerve stretching, section of the nerve, removal of the ganglion, etc., were seriously discussed, and yet where, after the application of proper medicine and adoption of a proper regime as to diet, etc., relief was secured.

My views upon the entire subject of neuralgia were very materially modified by a personal experience some six or seven years ago, during the time when la grippe was at its height—when we had our second epidemic, I had an attack of la grippe, which I was treating in a tentative way, and neglecting it as most of us do; I was exposed in making a call to a distant part of the city on a chilly, raw day (I went in my open vehicle), and was thoroughly chilled through by the time I reached home, and was taken with a most excruciating form of brachial neuralgia. My suffering continued for days and weeks. I had a particular mania against the taking of sedatives, I remember. I had the kindly care of a number of my colleagues; I was treated with quinine, salicylates, along malarial lines, and I must admit that my experience during those many weeks was not only an excruciating one, but a disappointing one. I can readily understand how the laity can become despondent and disgusted with doctors and medicine. During the entire time I had, as an accompaniment of la grippe, a bad

taste in my mouth—a rotten taste, which of itself is an expression of perverted secretions. I was constipated and my attending physicians charged me with being a crank on the subject of purgatives. I felt all the time that I ought to be freely purged, but I was not. Of course I lost my appetite, lost flesh; I suffered the pangs of the damned; I was annoyed by the door-bell and telephone; and, as is usual with sick doctors, I was badly treated in that I did not have a physician who would come in and take charge—absolute charge of my case. A half dozen physicians were treating me in a tentative way, and too often listening to my suggestions (I will say that I wish they had listened to some of them sooner than they did). After seven or eight weeks of suffering I myself suggested the importance of my going away, but I could get no definite advice as to where to go. I suggested several places and my attendants would remark that they were as good as any place. Here, I want to remark, I learned another lesson: That whatever advice we have to give should be given in a definite, positive way, without hesitation, whether it is right or wrong. I finally proposed Hot Springs, Ark.; that, by the way, was first suggested to me by a layman, a dear, good friend. Then shoulders were shrugged and the doctors did not know but what it was as good a place as any.

As promptly as I could get there I found myself in Hot Springs. My arm had to be carried in a sling; I had to be taken care of like a baby; I had had no sleep for many nights without sedatives. Of course I avoided opium all I could, but would occasionally have to resort to it. I presented myself to my friend, Dr. Garnet, one of the resident physicians. I told him I felt I needed purging—I felt I needed flushing out. I never had thought that I was of a gouty temperament, but then I was disposed to think that this brachial neuralgia from which I suffered so much was gouty, and that I should be thoroughly cleaned out—have my sewers flushed out freely; I suggested that I would feel better after eliminating some of the poisons that were disturbing this nerve.

The doctor agreed with me. I at once commenced taking large doses of sulphate of soda in a liberal quantity of hot water. The first day I took tablespoon doses of sulphate of soda every two or three hours in hot water until I was thoroughly purged, then I followed that up each morning with a proper dose. My entire sewerage system was thoroughly flushed. I took hot Turkish baths every day; and, by the way, in giving Turkish baths I believe we should guard against remaining in the sweat-room too long; we should not remain longer than just enough to start the sweating process—to arouse the activities of the skin.

Well, suffice it to say that in three days I slept all night without a sedative; my brachial neuralgia was relieved as if by magic. I took no other medicine. From that time forth, for two or three weeks I was out on horseback and on foot, all over the mountains, from Happy Hollow to Hell's Half Acre. The weather was delightful, but I found it necessary to avoid the shady side of the street, on account of the chilliness. I always had my top coat on my arm or my back; always after my bath I took a cup of hot coffee in the cooling room—I believe that is a desirable thing. The Turkish bath is valuable chiefly for eliminating purposes; I have carried out this idea in many cases of sciatica and facial neuralgia where surgical procedures had been advised.

I remember one case of facial neuralgia in particular in a gentleman who had suffered for weeks and months; he was 70 years old. There was certainly pronounced evidence that there was some definite lesions affecting the nerve—enough to justify an operation. I suggested gout to that gentleman; he laughed at me and said: "Doctor, I was bankrupted twenty years ago, and have not had enough to eat since that time to give any one the gout." I told him that high living alone did not produce gout, but that there was a disturbance of nutrition, the checking of elimination and accumulation of poisons—the ashes of combustion and clinkers in one's system. I treated him as for gout, gave him salicylate of soda with colchicum, together with occasional sweats by the hot pack. Within a week he was cured without section of the nerve. This was ten years ago; he is now nearly 80 years old. At that time I

advised lots of exercise, believing it to be at all times advantageous in the treatment of gout. I believe exercise favors elimination better than anything we can advise. The old gentleman soon established himself in the occupation of collecting stamps from the various business firms of the city, who secured them through the mails in payment for small packages; he then sells them again at a small profit. It was a new business to me. The old gentleman has been doing this for ten years, making a living for himself and other dependents in this way. He walks from ten to fifteen miles a day, and has done so during all that time. Now, mind you, I had treated him previous to this for neuralgia with quinine, salicylates and everything else. I think about six months ago he had his first bona fide attack of gout, that is, judging from his own standpoint and the average layman's standpoint; namely, he had gouty inflammation of the large joint of the big toe, and I treated this in the same way that I have been treating my cases of neuralgia recently, giving teaspoonful doses of thialion in a glass of hot water every two hours, with a glass of plain hot water every hour. Of course this produced free catharsis. After this result was obtained a teaspoonful in a glass of hot water every morning; free purgation and urination completely eliminates the uric acid. In addition, I had the inflamed joint constantly poulticed with cloths wet in boiling hot water day and night. Within three or four days he was able to go about and attend to his business and within a week walking as much as usual. He has had no return since.

The point I wish to make in relation to my personal experience, this case and many others that I could relate, is that we should keep in mind the possibility of an inflammation being of a gouty origin. I think that possibly gout attacks important superficial nerve trunks even more frequently than it does the joints. The personal experience of my friend, Dr. Hunter Maguire, with his own case of gout, recently published, was very interesting reading to me. I shall be able to present it to this Society with other matter relative on a later occasion. I have very strong views on the subject of gout; I believe it covers a broader field than we have previously believed; certainly a much broader field than was dreamed of in my philosophy for my first fifteen or twenty years of active practice of medicine.

During the past year I have kept myself absolutely free from twinges of gout in joints and promptly cured (more promptly than ever before my threatened or matured attack of neuralgia, which I insist are but one of the protean forms of gout) by several doses daily of thialion, a teaspoonful in a glass of hot water, this being a laxative salt of lithia.

DR. J. J. MILLER. I did not hear the paper, but in confirmation of the remarks of Dr. Love, I wish to say that I was called, some two months ago, to see a lady who had been the victim of neuralgia for a number of years. Nothing had been able to relieve her in any way, so she finally submitted to the operation of nerve dissection, which gave her relief for about two years. But about two months ago the pain returned. She was of a gouty diathesis, so I purged her very freely and the neuralgia disappeared very promptly. Previous to and even at that time no sedatives or nervines had any effect whatever in giving her relief.



## URICACIDÆMIA.

BY L. H. WATSON, M. D., CHICAGO, ILL.

Reprinted from the *New England Medical Monthly*, July, 1898.

The medical profession seem to have found a new Tiphys in Alexander Haig, who shall "pilot their Argonautic fleet through strange seas untried before." There is no doubt that Haig has taught us valuable lessons, and we are indebted to him for new and especially painstaking and scientific investigation, in lines not before mapped out.

The "uric acid diathesis" we hear so much about, is the result of destructive nitrogenous metabolism and lack of elimination of its products.

Uric acid is, according to Haig, the offending element in this metabolism. It is formed in the liver and spleen and excreted by the kidneys. When we have uric acid in excess, either circulating in the blood, or deposited in the tissues, we designate the condition as one of "uricacidæmia." This offending substance, uric acid, may appear in the blood under suitable conditions, or in combination with certain bases, like sodium, ammonium, potassium and calcium in the form of urates.

The chief clinical significance of the urates is the quantity of uric acid they represent. Von Jaksch has found that uric acid accumulates in the blood in gout and anæmia as a result of defective oxidation. When the liver and spleen are most active, that is, during digestion, then we have the most abundant elimination.

From his teaching, the daily, hourly and monthly excretion of uric acid depend upon three things; the food we eat, the exercise we take, and the solvent drugs we use. He also claims, a certain proportion must exist between the uric acid and urea excreted, and this proportion must be maintained. We must, therefore, have complete elimination or there is a rise of urea and a fall in uric acid, or *vice versa*. In either case, the balance or proportion, of 1-40 or 45 is lost, and impaired health or absolute disease is the result.

"The formation of uric acid," says Haig, "is practically constant, while excretion varies." It is within our power to regulate excretion as well as formation; we must learn to estimate the quantity excreted and Purdy considers Heintz's method the best.

"Take 200 cc. of urine and add to it 10 cc. of hydrochloric acid; let it stand 24 hours in a cool place. Collect the precipitated uric acid crystals on a filter and wash with cold, distilled water. Dry the filter and uric acid crystals and weigh—weight of filter being previously known; by subtracting weight of filter, the result will be the weight of uric acid in 200 cc. of urine. This is not particularly difficult and approximately accurate. Although the existence of any abundant deposit in the urine, of urates, does not warrant the inference that uric acid is excreted in excess, there is no doubt that there are certain processes going on in the system, the chief evidence of which is such an increase in the elimination of uric acid and through this of urates, that we can establish the condition," says Von Jaksch. In the headache of uric acid, there is often a large increase of these urates, accompanied by slow pulse and high arterial tension.

This is due to blocking up of the capillaries. Neither food selections nor exercise will now avail, and we must use drugs. Among these solvents of uric acid, Thialion, a new lithia salt, is one of the best. In selecting uric acid solvents, we consider chiefly those which make rapid combination and are readily run off with the water from the kidneys, says Kunze. Thialion seems an ideal preparation in this respect and a careful trial has compelled my admiration for a pharmaceutical preparation combining so many virtues and so few faults.

CASE I. Mr. L., 32 years of age, a travelling man, large eater of rich food, has been troubled for many years with muscular pain, indigestion and supposed sciatica. He has been treated by many physicians, and only after taking two bottles of Thialion would he admit any benefit. He has now been under observation two months and declares that he has not felt so well in years. Of course a somewhat restrictive diet

was maintained; but this had been tried before, to the degree of starvation and no relief.

CASE 2. Mrs. L., married lady, 54 years of age. Has frequent attacks of uric acid gravel, traces of albumin in urine, indigestion, uric gas eructations, stomach dilation and insomnia. Washed out stomach daily and gave Thialion. Uric acid copiously deposited, eight grains daily for a week or ten days. Uric excretions one to two grains daily. Insomnia no longer present, indigestion apparently much better, and rheumatism which is hereditary, and from which one son also suffers, is much more bearable. Will continue use in hot water mornings for two weeks more.

CASE 3. Mr. T., young man aged 22, telegraph operator; has suffered from uric acid headache, and intestinal pains for two years; supposed in Louisville to have had gastritis. Has really little or no indigestion. After test meal, hydrochloric and lactic acids were normal in quantity with some undigested starch granules. He complains of frequent pains, first in stomach, then liver, then intestines. Two bottles of Thialion relieved all symptoms, and with free urinary secretions, pains all disappeared and have not returned.

The best time for administering Thialion seems to be in the morning on a fasting stomach, and when the alkaline tide is established, relief usually comes.

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### SOME PROBLEMS SOLVED.

BY R. W. LOWE, M. D., RIDGEFIELD, CONN.

(Reprinted from the *Texas Medical Journal*, for August, 1898.)

Problems are constantly presenting themselves to the busy practitioner, for solution. Some are knotty and difficult of solving so as to be acceptable to himself and to the profession, and render a cure possible, the result satisfactory to the patient. Those of diagnosis comes first and of treatment afterwards.

The doctor's means of existence, the necessities for himself and family depend on the skill with which he shall relieve suffering and cure disease.

If he does this fairly well a living, at least, is for him, possibly a competency and if brilliant, wealth. These problems present themselves to all classes of practitioners, the country and city alike, as well as the rich and the poor, the talented and the ordinary.

After a considerable experience in the practice of my profession, and coming in contact socially and professionally with many of its brightest lights, I am forced to confess that they all have these problems to solve, to accomplish which they have quite as much difficulty as their more modest neighbor, the country doctor, with honors quite easy as to possible errors of judgement.

It is a good thing that we do not any of us know it all, for it is just such problems that stimulate us to higher endeavor and make honorable competition possible, something to work for besides the constant struggle for the almighty dollar.

The following case, which indirectly led to the treatment adopted in the other two, was just such a problem, to solve which, necessitated a considerable amount of study on my part, and the solution when arrived at, so impressed me that I considered it a duty to have it published, for the lesson there learned may tend to throw light upon some case which now rests in obscurity.

Mr. M., a banker, American, 66 years old, married, a man of family, consulted me on the 6th day of March, 1898, and I obtained from him the following facts. His family history was excellent, both parents dying at a good old age, the father at 77, and the mother at 83. He had one brother and two sisters, all married, who had raised families and were still living. He was born in the country, educated there and entered the office of a small private banking house in a neighboring city at the age of 22. His habits were exemplary, was a member of the church and Sunday school, never drank

except in the most moderate way and at the table socially. Never drank in his life to excess. He did not smoke and a very careful examination failed to reveal any specific lesion or history. He had married at 26 a lovely woman, who bore him three healthy children and who made his home an exceptionally happy one. At the time of his marriage he moved to New York City and was engaged in a large banking house of which he ultimately became the head. He was wrapped up in his business and the accumulation of wealth, while outside of this he cared for little besides his family, of whom he was inordinately fond. His habits were sedentary, taking but little of that exercise out of doors which is so essential to health.

He was five feet, nine inches tall and weighed 180 pounds, not what you might call a fat man, but one simply showing good keeping. His appetite was always good, preferring plain food and cooking, meat forming a large part of his diet. At the age of thirty-six he commenced to have attacks of headache which lasted from that time till now, a matter of thirty years. These headaches were of a peculiar character.

The afternoon before the attack would come on he would be restless and uneasy, no pain, no indigestion, but a simple nervousness, a cloud would rise on the horizon betokening (as he often said) the coming of the headache storm of the next day. The pain would commence at the back of the head at the base of the brain gradually increasing till the whole organ was one aching, throbbing mass. The sight was dim, conjunctiva congested, but the pupils showed no change.

Finally he was compelled to go to bed, there to remain for a day at least and many times two. When he left it, he looked as if he had been through a fit of sickness. Of course it is not necessary for me to say that with his means he could and did employ the best medical talent, in fact both at home and abroad, he had the best that could be procured. He was medicined, shocked, douched, sprayed, physicked, injected and purged, anodyned and narcotized till, as he said, "it was no use" he had simply to live with it till he died or it killed him. These attacks at first came on about once a month, but as he grew older, they increased in frequency till at the time of my visit, they came on once in about four days.

I was called to see him during an attack at about ten o'clock in the morning of the day in question. The room was darkened, perfect quiet pervaded the house from top to bottom, the servants going about on tip-toe. In fact everything tended to show that severe illness was present.

I found a slight rise of temperature of about one-half of a degree. The tongue, while not coated, was white and flabby, indicating an impaired digestion. His pulse was slightly accelerated, 88. He lay with his knees drawn up and perfectly quiet.

The lines of his face were drawn sharply, showing how intense his suffering was. His wife informed me that twice during these attacks lately he had had a mild delirium.

On questioning him about the condition of his bowels he said that they were very regular and had moved the evening before. While the movements had been regular, he said that he had not for years felt the relief he should have done after a normal passage. He insisted that I should give him something simply to relieve the pain, nothing else in fact. I was informed by him that I need not ask him questions, I was not called in for that. Simply relieve the pain by a hypodermic injection and go away. If I did not do this I could go away as that was all I was called for. It had come at last to the only thing that was sure relief, the deadly morphine.

The case was an interesting one and I sparred for time and wind.

I absolutely refused to give the morphine unless I had tried other means and found that they were of no avail. After a careful examination of his heart and finding that all right I administered a small quantity of chloroform by inhalation. This gave him some relief and a little sleep. While he was asleep I examined his urine and found that it was acid, containing a quantity of phosphates above the normal, while the specific gravity was 1025.

A half hour's sleep brought him to consciousness and pain again.

I had in the interval made up my mind that it would do no harm and possibly some good if I unloaded his bowels thoroughly, so I gave him a teaspoonful of thialion dissolved in a teacupful of hot water and had him drink it as warm as possible. This was repeated in two hours. An hour after the last dose he had two copious evacuations, the large mushy stools, that thialion invariably produces.

While this medicine was getting in its fine work I had administered to him small quantities of chloroform so as to keep him quiet, but after the last passage he went to sleep and slept well till morning, I staying all night with him.

In the morning I had a further talk with him which resulted in his consenting to take another dose of thialion which resulted during the day in two more passages and a copious flow of urine.

The relief that this thorough cleansing gave him was immense and after my call at 6 P. M., I left him at his request for good.

Four days after my last visit he called at my office stating that he wanted to know what that medicine was I gave him and to get some more. He said it certainly made him feel better. I ordered him to procure a bottle of thialion and take a teaspoonful each morning on rising dissolved in the same quantity of hot water.

It was to be taken as hot and as early after waking as possible. He called again in a week and to my surprise, he said that he had not had any headache since I made my first visit, but he felt a little nervous and was afraid that he would have one in the morning and asked me to be sure and call, which I did. I found him with one of the headaches sure enough, but of a very mild character. By ten o'clock he was out-doors walking about, a thing he had not done in years on a headache day.

According to my instructions he continued the thialion every morning and from this time on for the next six weeks he had two mild attacks only and then they left him for good, at least he has not had an attack since. He still takes a teaspoonful of thialion twice and sometimes three times a week.

I did not at my first visit think that case was one of uric acid headaches. In fact I was at a loss for a diagnosis and I gave the thialion alone to relieve the hepatic torpor and sluggishness of the bowels that I felt sure to exist. The effect of the remedy was so marked from the very first almost, and its continuance so happy in results that I am satisfied that the uric acid played an important part in this drama of pain and suffering and that the thialion united with the uric acid forming a soluble salt which was quickly washed out of the system and the cause of all of his sickness removed. It is unnecessary for me to say that Mr. M. is my good friend and he showed his appreciation of my skill in getting him out of his trouble with a handsome check.

CASE II was that of Mrs. C., aged 69 years, who weighed 190 pounds. She was wealthy, a high liver, meat forming a prominent part of her diet. I was called to see her early in the morning of April 7th and found her suffering from a severe attack of neuralgia of the right arm. The pain was lancinating and so severe as to necessitate a hypodermic injection at once and before I could make an extended examination. After it had eased, she told me that she had suffered from this pain at intervals differing as to the length of time for the last three years. She had tried a host of remedies and doctors, but without any permanent benefit, the morphine alone giving relief.

This had to be continued for a couple of days when the pain went away only to return again in a short time.

Having the case of Mr. M. in mind, I gave her a teaspoonful of thialion every two hours till the bowels moved thoroughly, which happened after the fourth dose, the morphine probably interfering with the action of the medicine somewhat. She, as well as myself, was astonished, when at my evening visit she informed me that she had had no more pain and that she was quite comfortable and I found the same condition in the morning when I made my next visit.

I directed that the thialion should be kept up in the same dose and manner twice a day for two days and then but once a day, that in the morning. In the course of two

weeks, there being no return of the pain the dose of thialion was taken but twice a week. From that time till now she has had no return.

The neuralgic pain in this case was without doubt due to the excess of uric acid in the system and which the thialion dissolved, freeing her from her enemy of years' standing.

CASE III. Mr. D., a mechanic, called at my office on the 2d day of May, giving me the following history. He was 29 years old, American, married man of family, temperate, but using tobacco freely.

A hearty liver, weighing 170 pounds and standing about six feet in his stockings. His bowels were regular but for the last three months he had suffered very badly with irritability of the bladder. He could not hold his water as he used to do and made it five or six times a day and what was the most annoying of all, he had to get up two or three times in the night.

He said he had had no blow or other cause that he knew of to give rise to the trouble, but it was mighty inconvenient and he wanted it stopped. Knowing from experience that thialion will remove pain in the kidneys when present from irritation I thought I would try it on him. I gave him a prescription calling for a bottle, directing him to take a teaspoonful dissolved in a teacup of hot water three times a day and to come and see me on the second day after. He did this and on his next visit he complained of a very bad looseness of his bowels, but his pain was much better.

I directed him to take the thialion every morning on rising and in a week he was entirely relieved from all of his disagreeable symptoms. The third day he stopped me while I was passing his house, saying he wanted to show me what he passed with his water. At the bottom of the vessel which he had saved there was a thick coat of uric acid crystals. They were fastened to it, and could hardly be removed with sapollo. The quantity was greater than I ever saw in any specimen before.

This case was a revelation to me of the power of this drug and its wide range of application.

### LATENT GOUT OF THE MENOPAUSE.

BY L. N. WILSON, M. D., NEW YORK CITY.

(Reprinted from the *New England Medical Monthly*, September, 1898.)

My attention was attracted to this, to me, new subject, first, by a paper which was read before the British Gynæcological Society and afterwards published in the *British Medical Journal*. I do not remember the author's name, but the paper impressed me very forcibly as being an able one and on a subject which was not very much understood, if at all, by the profession. It was not a great while afterwards before the following typical case presented itself, and as it is so uncommon or at least so infrequently recognized I made up my mind to report it:

Mrs. T., a widow, 46 years old, American, mother of two children, had always weighed about 135 pounds till about a year ago, when she began to take on flesh rapidly and at the time of this consultation, October 3, 1897, she weighed 201 pounds, while standing in her stockings she measured five feet nine and one-half inches in height. This increased stoutness was accompanied with much muscular flabbiness.

At the time of the commencement of this flesh taking the year previous, her menstruation became irregular and she presented all of the symptoms of those women who are approaching the menopause. She first menstruated when she was fifteen years of age.

The symptoms presenting were great irritability and restlessness, shortness of breath, especially on the least exercise, with cardiac debility. The hands, feet and face were puffed up while there was present great mental and bodily lethargy.

There was broken and disturbed sleep, with a feeling of weariness on rising in the morning. In fact it was the middle of the forenoon before she was able to pull herself together. She suffered severely from headache, the attack coming on at any time of the day and lasting for an hour or several hours as it might be. None of the remedies useful for headaches seemed to have the least effect on her and she simply had to wait till they went away.

Neuralgia, especially of the back of the head and neck was present almost constantly, in fact was so persistent at times that she would be compelled to take her bed and remain there till it in a measure subsided. She suffered from indigestion and dyspepsia, accompanied with much flatulence, together with a most obstinate constipation. She also complained of lumbago with a host of vague muscular pains. The tongue was coated, but she had no bad taste in the mouth, though the breath would indicate that she ought to.

An examination of the urine showed that below the normal quantity was being voided. The reaction was acid. Urates and uric acid crystals in abundance. No casts, no albumin. Specific gravity 1029. She had tried many remedies, treatments and diets in vain. Her condition was pitiable indeed. It seemed that ere long her mind must give way under the strain.

I directed her to take a teaspoonful of thialion three times a day dissolved in a teacupful of hot water, drinking it as hot as she could and, if possible, one hour before the meals. On my visit on the 4th I found that she had had two free evacuations immediately following the third dose of the medicine, while there was an increased quantity of urine voided, which was of a lighter color. Directed the medicine continued as before.

October 5th I found that she had had three more movements from the bowels since I was there last, the third of which was of a very loose character, of a dark brownish green color, smelling horribly, and stinging around the anus in its passage, indicating bile pure and simple. All of the rest of the symptoms were slightly improved. The thialion was then reduced to a teaspoonful each morning on rising.

October 6th, patient much better. Quantity of water voided much larger, the urates and uric acid lessened markedly in quantity, the complexion, which had been sallow and yellow, was clearing up and the sleep had returned in a normal way. Spirits were better. She was much more happy and less depressed and irritable. Puffiness of the hands, feet and face much reduced and rapidly diminishing. Muscular pains greatly relieved and so much of an improvement presented itself that the patient and family were delighted and appreciative.

From this time on for two weeks the progress toward recovery was uninterrupted, the dose of thialion was given on rising each morning and in the same manner, the improvement being progressive and sure. At the end of two weeks it was taken only twice a week, then once a week for a month, when the cure was complete.

The transformation from the misery and pain, in this case to that of health, was little short of wonderful. The scene was completely changed from sickness and suffering to health and happiness.

In the paper alluded to at the beginning of this article the author insists that the treatment must be directed:

1. To increase the elimination of waste products from the blood,
2. To disperse the morbid products in the lymph spaces, lymphatics and muscles.
3. To improve the state of the sympathetic nervous system."

This the thialion did, as I consider no other known remedy could have done, surely not in the same length of time and with the same certainty. The general treatment included regulated exercise, the heavy meal being taken in the middle of the day, and regular hours.

## IRREGULAR GOUT.

BY JAMES S. KENNEDY, M. D., CHAMBERSBURG, PA.

(Reprinted from *Gaillard's Medical Monthly*, September, 1898.)

Gout, according to Osler, "is a nutritional disorder, associated with an excessive formation of uric acid and characterized clinically by attacks of acute arthritis, by the gradual deposition of urate of soda in and about the joints and by the occurrence of irregular constitutional symptoms."

By the laity and many physicians, gout is supposed to only effect the articulations of the great toe, but this is a grave error, as it may occur in any of the articulations and even in the muscles and tendons. Wherever the urate of soda is deposited, there will the symptoms of gout manifest themselves. Taken in this broad sense gout is extremely frequent among the American people, and is undoubtedly growing more so as the various sedentary occupations increase and physical exercise becomes thereby curtailed.

The vast majority of the medical profession admit now that gout is primarily due to a deposition of the insoluble urate of soda in the tissues and articulations. The blood shows a great increase of uric acid and Garrod believes that acute attacks are due entirely to the accumulation of urates in the blood.

Although the first joint of the great toe is commonly affected, the ankles, knees and joints of the wrists and hands are very often attacked. In such joints there may be found deposits of urate of soda and the surrounding ligaments become filled also with the deposit.

The kidneys show deposits of urates between and in the papillæ, and there is generally present, if the disease has been of long standing, an interstitial nephritis.

In this paper, the writer wishes to speak especially of the symptoms and treatment of that class of cases of gout, known as irregular gout, or those cases to which the term "gouty diathesis" is applied. This form of the disease occurs, as Osler says, "in persons who have lived not wisely but too well, who have eaten and drunk largely, lived sedentary lives, and yet have been fortunate enough to escape an acute attack." No age is exempt and the symptoms to which the disease gives rise are protean in number.

The following are some of the many symptoms which patients suffering from irregular gout complain of: So-called bilious attacks with foul breath and tongue, constipation, and the sallow skin denoting a torpid liver, pain around the heart and darting pains in the joints and muscles; a feeling of faintness and vertigo; heat and itching of the feet, leg cramp and constant or periodical headaches. The urine is high colored, acid in reaction and may show an increase of uric acid, but in many cases this increase only occurs periodically, occurring after an increase of the symptoms. Sugar is often found, and such patients are very liable to the formation of urinary calculi.

The treatment may be divided into the hygienic, dietetic and medicinal.

The hygienic treatment consists in keeping the skin active by daily baths, the wearing of warm clothing and a certain amount of exercise. Any form of out-door exercise is good, but walking, rowing and horse-back riding are probably the preferable forms. The patient should lead a quiet life and eat sparingly, but often, if necessary.

The diet should consist of meat, except veal and pork, in any form, eggs, the fresh vegetables and the acid fruits. The following articles should be avoided: All starchy or sweet articles of food, sugar, potatoes, salt meats, lobsters, sweet fruits, especially melons and strawberries, all forms of hot bread stuffs and the cereals.

The medicinal treatment has, until recently proven rather unsatisfactory in the author's hands. Mineral waters are but feebly beneficial and such drags as colchicum, iodide of potassium and guaiacum are sometimes though rarely useful. Lithium is strongly recommended by Osler, but the author met with but little success with it until quite lately, when a combination of lithium with an alkaline laxative, known as thialion, was brought to his attention. Thialion has been used in several heretofore intractable cases with really surprising results, as the two typical cases which follow, demonstrate.

CASE I. This case is a good illustration of that form of irregular gout where the symptoms are mainly gastro intestinal. J. H., æt. 30, American, family history, gouty. Complexion sallow, and rather cadaverous. Examination of urine showed large quantities of calcium oxalate crystals and a few uric acid crystals. Reaction acid, specific gravity, 1.029. His tongue was thickly coated and the breath foul.

The patient came complaining of periodical attacks of nausea and diarrhœa, constipation being present in the interval. These attacks occurred about every three weeks. He complained also of the following symptoms: Vertigo, pain of a shooting character in the arms and legs, headache, a peculiar gnawing feeling in the stomach continually, and great lassitude and weakness.

He was given directions concerning diet and exercise, and directed to take a teaspoonful of thialion in half a glass of hot water three times a day for two days and then once a day, immediately after arising in the morning, until told to stop.

He faithfully followed directions and reported himself in two weeks as decidedly better. At the end of a month he reported as being entirely well, and said that for ten years he had not felt as well as he did at the present time. The change in his appearance was really remarkable and proof positive of the value of the treatment.

CASE II. M. C., female, æt. 27, had suffered for some weeks from the following symptoms: Pain, sometimes sharp, sometimes dull, in the joints of the feet and hands, heat and tenderness in the feet, constipation, headache, and a general feeling of malaria and lack of ambition. At times the pains in the small joints were so severe as to awaken her from sleep. She had observed that when the pains were most severe, her urine deposited a brick dust sediment. An examination of the urine showed a highly acid reaction, large amount of urates and a high specific gravity.

She was put upon the same treatment as the above case and at the present time, three weeks after commencing treatment, her symptoms have entirely disappeared and she feels perfectly well.

These two cases cited show the effect of this new lithium combination in this disease, and it would seem that in thialion we have a most efficient agent in combating irregular gout.

#### GRAVEL.

BY J. ALEXANDER WADE, M. D., DANBURY, CONN.

(Reprinted from the *Toledo Medical and Surgical Reporter*, October, 1898.)

Certain solid substances which are usually carried off with the urine are sometimes precipitated, crystallized in the tubules of the kidney or any of the other portions of the urinary passages and voided in crystals which are always visible under the field of the microscope and oftentimes to the eye alone.

This condition is called gravel, and is one of the most distressing complaints that the physician has to deal with. The cause of these crystals being thrown down is, that there is too much concentration of the urine, it becomes too heavy in the organic constituents and as most frequently met with in general practice, is composed of uric acid and is the red sand which quickly forms around the sides of the vessel in which it is voided. Those suffering from a gouty diathesis, especially when aided by a sedentary life and high living, are more likely to have this disease, though I have met with it in every condition of life.

According to Keyes the symptoms are as follows:

"This pain (of the back) is deep seated and is felt over the kidneys, usually unilateral, often extending around the side following the course of the ureters, sometimes continuing on and into the testicle, oftentimes complicated by bladder symptoms, of stone in the bladder or of chronic cystitis of the neck. The pain varies in intensity and is usually made worse by fatigue. Oftentimes the patient cannot lie upon the affected side in the bed. The pain is usually a dull, deep ache, occasionally sharp, darting,



pricking in character. It may come on gradually or suddenly and remain according to its causes, from a short time up to many years, perhaps until death."

In looking up the authors of the various text-books on this quite common disease, I was amazed to find that the treatment recommended is of the most meager description and consists chiefly in the use of some of the various mineral waters, which do not contain enough of lithia (the only good in them) to produce any therapeutical results whatever, the use of a restricted diet and some alkalies.

A quite extended experience tells me that gravel is a much more common disease than is usually thought, that the diagnosis is oftentimes not properly made out and the patient suffers on, because of the fault of the doctor. We should be much more careful in the examination of all the backaches that come to us, especially in the male, and see if the urine is loaded with the uric acid crystals. It is an easy matter to distinguish this trouble, provided a little time and pains are taken with the examination.

Until recently the treatment was not at all satisfactory. There can be no question but that lithia is the best treatment, but how can we get a lithia which will pass into the system and do the work that was intended for it, (the formation of a chemical change with the uric acid, making a soluble salt so that it can be excreted) instead of doing as usually is the case go in the mouth and out of the anus just as it was taken in. I am free to claim that lithia as commonly taken into the system in tablets and so forth, does not enter into the system only in the very slightest proportion and then not enough to do good. Lithia must be *dissolved* in the stomach, must be *taken up* into the blood, must be *united with the uric acid* there present and in excess, form a soluble salt which is washed out of the system, *to be of any good*. This the waters and tablets will not do. The testimony of almost the entire profession is in accord with these facts.

Until lately I have been at sea about the treatment of these cases of gravel. Some I have cured but it always seemed by the grace of God rather than by my treatment. Now the whole scene is changed. Since the new salt of lithia called thialion, has been discovered, which *is* absorbed, which *does* go into the system and form the soluble salt, my troubles are over as to the treatment of gravel. *Every* case has yielded. The relief had come quickly, at once, almost, and I was able to prove that it was the thialion that was doing the business, by chemical and microscopical examination of the urine, showing the lithia present inside of *four hours after administration*.

Let me cite just one case out of the many. Mr. G., aged 53, a well-to-do farmer, weighing 160 pounds, sent for me to come and see him on the 6th of December, 1897, and I found him with the following history and symptoms. His father and mother, who lived to a good old age, had suffered from rheumatism greatly, while the father, who was never a fat man or a big liver, suffered for years from the gravel and the subsequent kidney colic attacks. My patient had had the attacks like the one which he was now suffering from, for the last five years. Had had three different doctors, who had doctored and doctored him in vain. At first he had one every six months, but now they came on once in about three months. His bowels were only in a fair condition, and you will find that most of these cases suffer from constipation in some of its degrees of severity. The only thing that gave him relief from his severe pain was morphine, and he begged me for that. An examination of his chamber showed it incrustated all over the bottom with the reddish brown deposit which indicated an excess of uric acid crystals. His wife said that she simply could not remove it even with sand.

He was in great pain, rolling from side to side in the bed, it being greatest in intensity in the left side over that kidney. The pain streaked down the leg and into the testicle on that side, drawing that organ up tightly into the body. The tongue was coated and his breath foul. The water was scanty and highly colored with a high specific gravity. I ordered him to take a teaspoonful of thialion dissolved in a teacupful of hot water and repeated every two hours until the bowels moved freely. This took three doses. His pain was lessened after the second dose and became bearable. After this he took two doses, one morning and night before meals for three days and then one dose on rising in the morning. His bowels became natural, his health

improved rapidly, the urine became normal, no more uric acid crystals were excreted and no more attacks of nephritic colic. In fact has not lost a day on account of sickness since the attack above mentioned.

## CHRONIC INTERSTITIAL NEPHRITIS ACCOMPANIED WITH MELANCHOLIA.

BY WILLIAM B. MANN, M. D., EVANSTON, ILL.

(Reprinted from the *New England Medical Monthly*, October, 1898.)

The treatment of the following case, while decided in results, sufficient time has not yet elapsed to indicate an absolute cure, but the rapid change in this man's condition is so marked, improvement so rapid, and the outcome so unprecedented that I felt it a duty to lay it before the profession.

Mr. J., aged forty-nine, consulted me with the following history, on the third of March, 1898. He had for several years been a sufferer from asthma, headache, loss of appetite, constipation, fetid breath, copious discharges of offensive mucus from both nose and mouth, heavy dragging pains over the kidneys, puffiness of the feet and face, especially under the eyes, with insomnia.

He had frequent attacks of extreme melancholia. This would be so depressing that he would have weeping spells, followed in a day or two after by delusions of persecutions from an imaginary foe. He was so bad that he seemed on the verge of insanity.

His temperature, as a rule, was below the normal a fraction, but at these melancholic times it would go slightly above.

The pain in the region of the kidneys he described as constant and severe. He also had pain over the spleen, which was considerably enlarged. He having a malarial history. An examination of the urine revealed the fact that the quantity voided was below normal and contained a small quantity of albumin, hyaline casts, an excess of uric acid, and the urates. He was badly emaciated and had a history of three years' illness.

Quantity of urine voided diminished to twenty ounces, or a little over one-third of normal amount.

Specific gravity diminished.

Solid diminished.

Albumin present in considerable amount.

Urea diminished 50 per cent.

Microscopically—Pus corpuscles, } in considerable amount.  
Epithelium, }

Tube casts in small amount.

After ten days' treatment with thialion—Urine almost normal both in quantity (about  $3\frac{1}{2}$  pints) and also chemically.

Taking the case altogether it was one of the worst I was ever called to attend.

I commenced a systematic course of diet, carefully avoiding those things which would increase the irritability of the kidneys, at the same time building him up to the fullest extent.

I gave him a teaspoonful of thialion three times daily, dissolved in a glass of hot water and the result was immediate and clearly apparent to physician and friends three days after its commencement. Of course it is unnecessary for me to state that his bowels, liver and stomach were thoroughly cleared out by this medicine.

The acid eructation which had been such a persistent symptom rapidly passed away. In ten days' time, according to the patient's own words, "You have done me

more good in this short time than I have received heretofore in all my treatment by a number of physicians, some of whom stand very high in the profession."

One of the remarkable features of this case was the fact that nothing else was used but thialion, that all the depressing symptoms passed away and of course the crying spells with them.

Since this time the improvement has been steady and though the case from start to finish has been an unpromising one, still I am satisfied a cure is certain.

## THE TREATMENT OF THE URIC ACID DIATHESIS.

BY F. E. HALE, M. D., PROVIDENCE, R. I.

(Reprinted from *The Medical Mirror*, St. Louis, Mo., June, 1898.)

Among the multitude of cases which come before the general practitioner for treatment, none are more urgent in their demands for relief or, in many instances, more difficult to relieve, than those suffering from the various manifestations of the uric acid diathesis. This peculiar inability of the system to eliminate the uric acid formed, for, according to the best authorities, the condition depends upon lessened excretion rather than increased formation, is to blame for a myriad disagreeable and dangerous symptoms, which call for treatment. In a recent paper\* Craig thus ably sums up the symptomatology of the uric acid diathesis.

"The symptoms of the uric acid diathesis, excepting gout and rheumatism, are protean in number and variety and are exceedingly hard to classify. Among those affecting the digestive system are anorexia, discomfort after eating, flatulence, pyrosis and persistent constipation; of the urinary organs, a sense of heat and burning after micturition, frequent micturition and pain over the region of the kidneys; the pulse may be irregular and intermittent, there is increased arterial tension and sometimes attacks of palpitation and there is generally present great depression of spirits and a general sense of weariness and inaptitude for effort of any kind. The sleep is restless and on awakening in the morning the patient feels as tired or even more so, than on retiring.

The symptoms arising from the nervous system are of much interest, comprising vertigo, tinnitus aurium, muscular pains and cramps, headache, neuralgia, affecting various parts of the body, spinal irritation, vaso-motor disturbances, insomnia, general nervousness and fevers. Hysterical and even epileptiform symptoms have been described by some authorities and delusions are not uncommon.

One or many of these symptoms may be associated in a single case, but in no one case will they all occur. Migraine, with its peculiar symptomatology is probably an expression of the uric acid diathesis and from repeated examinations of the urine after attacks of migraine this inference is strengthened, for in a vast majority of instances the urine has shown an excess of uric acid.

The symptoms enumerated are generally seen either in those leading an indolent, luxurious life, little out-door exercise being indulged in, or in those whose occupation keeps them within doors and subjects them to more or less mental strain and worry. In fact the hypochondriacal or those tending toward that temperament are most subject to the uric acid diathesis.

The urine of those suffering from this 'diathesis' possesses great clinical importance and in every suspected case should be most carefully examined. It is always highly acid, of a dark golden color and in a large proportion of cases contains a sediment of uric acid crystals.

In a larger proportion of cases, however, the uric acid is not deposited as uric acid crystals in the urine, but exists in combination with sodium and ammonium, forming acid urates. When it is separated from its bases it crystallizes in rhombic or prismatic

\**New England Medical Monthly*, July, 1897.

crystals of a red color and it is these which form the red granules seen in some urines. Not every urine showing this sedimentation contains uric acid in excess, for it may be due to a decreased solvent power of the urine, rather than to an increased amount of uric acid.

More commonly the urine of those having the uric acid diathesis shows a fine, powdery sediment, pinkish in color and which is formed by the precipitation of amorphous urates. Such a disposition may often occur in the urine of other diseases, but its presence is always suggestive and the clinical history will generally bear out the diagnosis of uric acid disease."

As to the treatment of the condition known as the uric acid diathesis, much has been said and written. Numerous remedies have been advocated, used awhile, and then discarded, as experience proved their uselessness. Only one remedy can be said to have stood even at all, the test of time and scientific criticism, and that is lithia in some form. The so-called lithia waters are almost entirely inert, so far as their effect upon the uric acid trouble is concerned, while the carbonate of lithia, while somewhat successful, is irritating to the stomach and absorbed with great difficulty. Recently, however there has been introduced into therapeutics a new salt of lithia, formed by combining lithia with an alkaline laxative, which combination results in a laxative salt of lithia. I have used this salt (Thialion) in the treatment of the uric acid diathesis with very great satisfaction, as it does not irritate the stomach and accomplishes beneficial results which are quite remarkable.

Before speaking more in detail of the medicinal treatment of the diathesis, let us consider for a moment some points concerning the dietetic and hygienic treatment of the disease. The diet should be carefully regulated and I can do no better at this point, than quote from a valuable paper by Tyson\* upon the subject. He says:

"This consists essentially in the elimination from the food of all nitrogenous or albuminous principles, whose complete combustion results in urea and incomplete combustion in uric acid. As to these there should be no half course. They ought to be excluded as far as possible from the dietary. I say as far as possible, for it is practically impossible to eliminate them altogether. The foods which are the type of this class should, however, be altogether omitted. Such are the meats of the butcher shops, the albumen of eggs, and the cheeses. The first include beef, veal, mutton, lamb, and pork, whether salt or fresh, and for the most part fish. As to cheeses, as one-half pound of cheese contains almost as much nitrogenous matter as a pound of meat, 27 per cent. when made of the whole milk, and 28 per cent. when made of skim-milk, it is evident that they are contraindicated. If we consider only the edible parts of beef, i. e., meat deprived of the refuse represented by bones, skin, and shells, it contains, according to its source, 17 to 23 per cent. of proteids; mutton from 15 to 18 per cent. Of fish, flounder contains 13.8 per cent., mackerel 18, halibut 15, and salmon 21 per cent., or quite as much as beef and more than mutton; salt codfish contains 15 per cent., smoked herring 20, and canned sardines 24. Poultry contains 14 to 15 per cent. of albuminates and game 32 per cent. The hen's egg, including albumen and fat, contains 13.7 per cent. protein, whence it is plain that the yellow of eggs contains a very small quantity and becomes a suitable food.

On the other hand milk contains but 3 to 4 per cent. protein, butter 1 per cent., and oleomargarine 0.6 per cent. The fat oyster contains 8 per cent. and the lean 4.2 per cent. and the lobster 5.5 per cent. Other fish than the above mentioned 5 to 10 per cent.

Of vegetable foods wheat bread contains 8.9 per cent. protein, wheat flour 11, and graham flour 11.7; rye bread 6.7, buckwheat flour the same, corn (maize) 9, rice 7.4, sugar 0.3, potatoes 2, sweet potatoes 1.5, turnips and carrots 1, cabbage 1.9, melons 1, apples and pears 0.4, and bananas 2 per cent. Again, beans contain 23.2 per cent. and oatmeal 12 to 15 per cent. large proportions of proteins.

\*Proceedings Pan American Medical Congress, 1892. Vol. 1.

Thus the typical foods permissible from the standpoint of composition are milk, butter, the succulent vegetables, except beans and oatmeal, and fruits. To these oysters and lobster may be added moderately, fish except those named as containing a large amount of protein, and where extreme rigidity is not required, poultry in moderate amount; but all butcher's meat should be strictly forbidden.

It is usual also to interdict the use of carbohydrates, i. e., starches and sugars, as well as the hydrocarbons or fats, but I have never been able to see any reason for this.

There is, however, another sort of ingesta, also entirely or almost free from nitrogen acknowledged to be both a predisposing and exciting cause of gout, and that is malt liquors and wines. These are composed of water, alcohol and other carbohydrates, and a trace of mineral matters, but no nitrogen. It is not easy at first thought to understand why these substances should be harmful. Experience, however, shows that the strongest wines, such as port, Madeira and sherry, by their continued use, are very likely to produce gout; while the lighter wines, the clarets, hocks and Moselle wines, if taken in moderation, rarely produce it. After these, stout, porter, and the strong ales induce gout. Even lager beer, which contains but 3 per cent. of alcohol, is capable of acting similarly; and I know many men who have been forced to give up this beverage because of this effect. Cider and perry, also, predispose to gout to a less degree. On the other hand distilled spirits, especially whisky, are almost entirely without effect in producing gout. Why is this? Plainly, the amount of alcohol is not the measure of the effect, for whisky, gin, brandy and rum all contain more alcohol than any of the wines alluded to. If reference is made to the wines most apt to produce gout it will be found that they are those which contain a considerable quantity of both sugar and alcohol. Such as port, sherry, and Madeira, all of which contain more than 15 per cent. of alcohol and much sugar; also sweet champagnes containing 11 per cent. alcohol. On the other hand some very sweet wines, as Tokay, Malaga, and the higher sauternes, which contain much sugar, produce gout less rapidly. It would seem that those liquors which contain alcohol in combination with other substances, especially sugar, are potent gout producers, especially where they excite indigestion.

That the acidity of alcoholic drinks acts as an exciting cause cannot be doubted. Whatever be the explanation few facts in the clinical history of gout are better established than that the ingestion of acid is an exciting cause.

In the same way act acid fruits, such as strawberries, acid oranges and lemons.

As to exercise it may be said that almost always a history of want of exercise is elicited in these cases and to this is largely due many of the disagreeable symptoms complained of. Craig, in the paper before referred to, says, and I agree with his statements: "Boating, hunting, riding, fishing, walking, are all good forms of exercise and should be, in one form or another, insisted upon as important elements in the treatment. Let the patient be outdoors as much as possible and engaged in some form of muscular exercise. Too much importance cannot be paid to muscular exercise in the treatment of uric acid diathesis."

As to the medicinal treatment of the disease, the alkalies and colchicum have heretofore been most largely used, but with varying success. As I have said I have recently used the new salt of lithia, called Thialion, to the exclusion of every other drug and the following cases illustrate well its beneficial action:

CASE I. T. H., an American, æt. 40; had been suffering for years from bilious attacks, vague undefined pains in the muscles and joints, headache, loss of appetite and insomnia. He had persistent constipation and presented a very depressed melancholic appearance.

Examination of his urine resulted as follows: Specific gravity 1.010, color dark red, reaction very acid, a slight reaction to albumin and the microscope showed a large number of uric acid crystals to be present. He was put upon teaspoonful doses of Thialion, dissolved in a teacupful of hot water, three times a day for a few days, when the same dose was given twice a day for a period of about four weeks. After taking the drug for five days, his urine was examined with the following results:

Specific gravity, 1.020; color, light yellow, no reaction to albumin; no uric acid crystals present and a strong alkaline reaction. His symptoms had improved somewhat, but at the end of two weeks the improvement was very marked. His appetite was, as he said, "immense," his sleep sound, muscular pains had vanished and his constipation had given place to a regularity which had been unknown to him for years.

At the present writing he is in perfect health to all appearances and has not taken any medicine for some time.

The remarkable features of this case are the change in the condition of the urine and the prompt improvement in the symptoms following this change.

CASE II. E. B., German, æt. 25; first came to me complaining of constipation, nausea, headache and severe muscular pains in the arms and legs. He worked indoors most of the day and took but little exercise. His complexion was sallow. There was a degree of emaciation present and he complained of great soreness of the muscles of the arms and legs, on pressure upon them. His urine was scanty, specific gravity 1.032, strong acid reaction, slight reaction to albumin, dark red in color, with a large brick dust sediment. Microscopical examination revealed large quantities of uric acid crystals and a small quantity of amorphous urates. He was put upon the same treatment as the foregoing case and told to report in a week. In just a week he returned and stated that he was feeling much better, the soreness and aching in the muscles having disappeared, his bowels being regular and nausea and headache also gone.

His urine was examined with the following results: Specific gravity, 1.022, color, light yellow and clear; no sediment, no reaction to albumin and a strong alkaline reaction. The microscope revealed nothing of importance save a small amount of amorphous urates.

He was told to continue the treatment for a month longer and at the present time is so greatly improved that he has discontinued the medicine.

In both the above cases directions regarding the diet and outdoor exercise each day was insisted upon and I have reason to believe that my directions were obeyed as far as possible. It is a fact, as seen from the two cases just mentioned, that Thialion will cause a urine characteristic of the uric acid diathesis, i. e., of high specific gravity, strong acid reaction and containing abundance of uric acid crystals, to become alkaline in reaction and normal in its constituents within one week from the initial dose and, furthermore, this change is always accompanied by the most marked improvement in the general symptoms.

Mrs. D., American, married, and aged 26, no children, comes from a gouty and rheumatic family, consulted me on the second day of April, with the following symptoms: A patch of eczema on the right arm of about the size of the hand. This patch had been there ever since she was 18 years old. All treatment was of no avail.

Pains in the joints, especially of the hands and feet, also frequent gouty pains in the uterus. These were especially bad at the time of menstruation. Constipated, large doses of medicine being necessary to get a fair movement. Sleep bad, and appetite capricious. On rainy days pains would radiate through all of the joints and bones of the body. Urine scalding at times and not normal in quantity; very acid.

I commenced to give her a teaspoonful of Thialion twice a day, keeping this up for three days. The bowels moved very freely, but the patient felt better after the fourth day had ended.

Then a dose was given each morning for two months with the result of complete restoration to health. In this case, as in all of the cases of uric acid poisoning which I have treated with Thialion, the bowels acted regularly and the constipation was effectually cured. All of the gouty symptoms passed away and a complete restoration to health followed. Strange to say, the eczema also disappeared and now there is no sign of it.

One thing particularly noticeable in this case was the rapid disappearance of the insomnia after taking Thialion. She had been a very bad sleeper before, but the second

day after commencing treatment, she slept well nights and was not troubled with insomnia afterward.

Frank H., 53 years old, consulted me about the middle of January. For years he had suffered from chronic gout which had been complicated with torpidity of the liver, great yellow and dark brown liver spots appearing over the face and hands chiefly, eyes yellow and the general hue of the skin of the whole body was that of a person who had a good deal of derangement of the liver. Joints, especially the tarsal and metatarsal and phalangeal, were tender, stiff and enlarged. He has to be on the road a good deal, consequently the meals were eaten in an irregular manner and all of his habits broken up more or less. The bowels were constipated, the tongue coated, with a vile taste in the mouth. The urine was scanty and high colored, with a specific gravity of 1.029.

He was placed on teaspoonful doses of Thialion dissolved in a teacupful of hot water three times a day for three days before meals, the first one taken as soon as getting out of bed in the morning. At the end of the second day he came to me and said that his bowels were too loose, so I directed that he should take only one dose a day and that on rising in the morning. He went away from home for a short business trip and I did not see him for six days, when I found his condition much improved. The color of his skin and eyes had become normal and the liver spots were much fainter. The urine was increased in quantity, the tenderness was lessened in the joints and taken altogether he was very much better. He recognized this himself and was grateful for it.

A teaspoonful was directed to be taken each morning, which was faithfully carried out for two months, when every vestige of the trouble had disappeared. His liver spots were no more, (this was a surprise to me, as I did not know that Thialion acted in this wonderful way on the liver), his complexion was clear, his joints normal and he was well. This patient coming from a gouty family I suggested to him that he take once a week a morning dose of Thialion as a prophylactic.

I was called to see Mr. W. on the evening of January 10th and on my arrival I found him suffering from an attack of nephritic colic. In telling me his history he said that his father had had the gravel before him and that this was the ninth attack. His pain was excruciating, the paroxysms came with the regularity of labor pains. Hypodermic injections of morphine, one quarter of a grain at a dose till three doses were given dispelled the pain at last, though a good deal of soreness lasted over the left side for a week. A careful examination of the urine the day after the attack showed some small stones of uric acid. He was put on Thialion the second day after the attack, as his stomach would not tolerate it the next day. It was given to him dissolved in a teacupful of hot water three times a day for three days and after that once a day in the same media on rising in the morning. In twelve hours the urine showed a large increase of uric acid, in fact the quantity excreted was phenomenal. The pain left his left kidney, his bowels became normal and he improved rapidly. Since then he has had no attack, though rarely six weeks elapsed without one, before taking the medicine, though four months now have passed. He now takes Thialion once a week.

Mr. R., aged 39, a resident of an adjoining town, a jeweler by trade, called at my office the 11th day of April, complaining of a burning pain at the neck of the bladder and frequent micturition (in fact so frequent that he seemed unable to hold but a few drops of water at a time), pains streaking along the inside of his legs, much tenderness over site of the bladder.

He gave no history of gonorrhoea, recently or ever. Had had wakeful, restless, painful nights. Nervous, irritable, rapid pulse, coated tongue, conjunctiva yellow, with a sallow complexion.

He thought that his trouble with his water came from a cold which he caught a week ago, when it first commenced. He had been to two physicians with no benefit and life had become a burden.

I advised him to stay at one of the hotels all night, so that I might see how the medicine acted, for it was evident that the man's condition was such from loss of sleep

and pain, and that he must get relief and that quickly. I ordered him to take a teaspoonful of Thialion dissolved in a tumbler of hot water, to drink as *hot* as he could. This was at eleven o'clock in the morning. As soon as this was done I sent him to take a Turkish bath, directing that he should stay in the hot room at least 25 minutes. He was then to lie down and keep quiet till it was time for him to take the second dose two hours later. On calling to see him at the hotel at nine o'clock that evening he said his suffering began to be relieved in a half hour after he had taken the first dose and that he had taken four doses. The desire to urinate had wonderfully decreased and he was very comfortable, excepting that his bowels were moving very freely. All medicine suspended till morning, when he took another dose of Thialion as soon as he awoke.

He went home at noon with directions to take a teaspoonful of Thialion twice a day for two days and one teaspoonful each morning after that for a week. This man was a hard drinker and at his next visit a week later he said: "Did you give me anything to kill the taste for liquor, for if you did it did its work effectually. I have not had the slightest desire for liquor since I saw you last."

He told me at this visit that he had to suspend the medicine for two days because it moved his bowels too freely. He now had no more of the cystitis and was entirely well. The experience in this case was as in the others, constipation entirely relieved, sleep returned and the liver acting normally, as was shown by the natural color of the conjunctiva and the skin.

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## NEUROTIC LITHEMIA.

BY CHAS. F. CRAIG, M. D., DANBURY, CONN.

(Reprinted from the *Southern Practitioner*, Nashville, Tenn.)

The relation of uric acid to diseases of the nervous system is a subject which has received but very little consideration, although it is a most important one. There can be no doubt but that uric acid has an irritant action upon nerve tissue and that its deposition in the body is followed, in many cases, by symptoms which can only be referred to such action. There is a large class of cases in which the uric acid diathesis is manifested almost entirely by clinical phenomena resulting from the injury done to the nervous system by the retention within the body of this agent, and as there is no account of this class of cases in medical literature, a short description of their characteristic symptoms may be of value.

All cases of the uric acid diathesis present some symptoms arising from the nervous system, but we will consider here only those cases in which the nervous symptoms predominate, *i. e.*, only those which would be classed as cases of nerve disease. Among the many symptoms complained of by these patients are vertigo, tinnitus aurium, persistent insomnia, neuralgia of various nerves, spinal irritation, vaso-motor disturbances and general nervousness.

Hysterical and epileptiform convulsions have been observed by some authorities, and melancholia, associated with delusions and suicidal impulses, has also been observed.

Very many patients suffering from the uric acid diathesis complain of vertigo, tinnitus aurium and insomnia. The vertigo is generally noticed only when the sufferer moves about, or changes position suddenly, when it may be so severe as to cause falling. It is generally accompanied by vaso-motor phenomena, such as a flushing of the face and a sense of congestion in the head. Rarely the vertigo is noticed when the patient is sitting or standing quietly, objects around seeming suddenly to swim slowly before the eyes.



Tinnitus aurium, aside from any disease of the ear, is of frequent occurrence, being generally accompanied by a sudden dilatation of the blood-vessels of the brain and occurring at irregular intervals. The noises heard vary from a slight buzzing to a roar and some patients complain of temporary deafness in the ear affected. One of the most common symptoms spoken of by this class of patients is insomnia, varying in severity, but always troublesome and always accompanied by great general nervousness. One has but to converse with such a patient for a few moments to become convinced that the nervous system is profoundly affected, for the twitching hands, the unsteady eyes, the alternate flushing and paling of the countenance and the general air of "uncomfortableness," evidences this fact very clearly. Vaso-motor phenomena are very prominent in these patients and examination of the urine will always reveal large amounts of calcium oxalate crystals and decreased elimination of urates. The insomnia is invariably relieved by treatment which eliminates the uric acid from the system.

Neuralgia, affecting various portions of the body and ranging in severity from a dull ache to the most severe boring and darting pains, characterize the majority of cases of what may be called "uric acid neuroses." The pain varies with the varying amount of uric acid eliminated, disappearing when elimination approaches normal and becoming more severe as elimination is interfered with. Almost every uric acid patient will complain of a certain amount of pain, but where the nervous system is chiefly affected the neuralgia is more severe and persistent.

Of the more severe nervous manifestations of the uric acid diathesis such as the symptoms attending spinal irritation and hysterical and epileptiform convulsions, little can be said, as the cases reported are few in number and the data given very imperfect.

One of the first clinical signs to strike the attention in these cases is the marked mental depression, verging almost into melancholia. The "world looks blue" to the patient, and he is troubled by vague forebodings and is unable to see a bright side to anything. So marked in some cases is this that suicide is even contemplated, as life seems to have lost all of its former sweetness and pleasure. No amount of encouragement or argument will in the least change or lessen the patient's gloomy views and it is only when the system is properly rid of the irritating uric acid compounds that any improvement can be looked for.

Regarding the treatment of the "uric acid neuroses" it may be said that it is substantially that of the uric acid diathesis in general. Plenty of out-door air and exercise, some labor or duty which will absorb the attention, thus preventing any morbid introspection, and the restriction of the diet, as laid down in our numerous treatises upon medicine, will with the help of certain medicinal measures, relieve and cure the existing condition.

Medicinally, we strive first of all, and most important of all, to aid the system in eliminating the uric acid formed. For this purpose no remedy we have has stood so successfully the test of experience as lithia, for the reason that the combination of lithia with uric acid results in the formation of a lithium urate, which is the most soluble of all the urates. In Thialion, a combination of lithium with a laxative salt, and which has recently been added to our therapeutic resources, we have a most powerful solvent of uric acid and also an efficient laxative, which adds greatly to its value. Its use in the uric acid diathesis is always followed by the most beneficial results, as the following cases will illustrate.

John B., *æt.* 30, a laborer, came to the author complaining of insomnia, occipital headache, attacks of vertigo, loss of appetite and general restlessness and nervousness. He also complained of soreness and aching in the deltoid and biceps muscles, and also in the muscles of the thigh. His work, that of a truckman, was not heavier than usual, nor did it seem to fatigue him more than it had done for months. His general appearance was good, save that he showed the lack of sleep and seemed very nervous and irritable when talking. He said that he had not slept more than two or three hours a night for two weeks. His habits were temperate in every respect. Examina-

tion of his urine showed a specific gravity of 1.036, strong acid reaction, and a heavy sediment consisting almost entirely of calcium oxalate crystals and urates. His bowels were habitually constipated.

He was put upon teaspoonful doses of Thialion in hot water after each meal for three days, and then the same dose morning and evening and told to report in two weeks. He also received directions concerning his diet. At the end of two weeks he reported as considerably better, his sleep being much improved, but being still troubled by headache and vertigo. The same treatment was persisted in for two weeks longer, at the end of which time he reported that he was sleeping soundly all night long, his headache and vertigo had ceased and his bowels were regular.

Mr. H., American, aged 42, weight 210 pounds, married, consulted me about nine weeks ago, with the following symptoms. For a long time he had suffered from insomnia, together with great irritability. Usually a delightful man in his family, he noticed himself, as did his wife also, a gradually increasing irritability. On the slightest provocation and sometimes on none at all he would break out in seemingly uncontrollable fits of passion. He became exacting and fault-finding to such a degree that living with him became a burden.

He complained of pain down his back with points of tenderness in the lower part of the spinal column. Had fits of despondency and loss of sexual desire. The bowels were fitful in their action, constipated for a week, and then loose for a day or two. Tongue coated in the morning, with capricious appetite. Urine high colored, specific gravity of 1.026 and deposit of brick dust in the vessel after standing, which it was found difficult to remove. Inability to work, especially mental effort, was noticed and being fond of using the typewriter, he found himself striking off the wrong keys, using the wrong words in trying to express himself. At times he had a shuffling gait.

These symptoms continued, gradually growing worse, till the consultation mentioned above was held. My first desire was to clean his system out of the uric acid and regulate his diet. I commenced giving him a teaspoonful of Thialion dissolved in a teacupful of hot water three times a day before meals for three days. This had the desired effect of cleaning out the bowels thoroughly and starting the bile in its natural channel.

Diet restricted to fresh vegetables and cereals, no meat allowed for a week. Then Thialion was given every morning on rising in the same dose and also  $\frac{1}{10}$  grain of strychnine was directed to be taken three times a day. At the end of the week the bowels continuing loose, the dose of Thialion was reduced to one-half teaspoonful. He was allowed the ordinary food at the table, but smoking and drinking were tabooed. Improvement at this time was marked. The general symptoms gave way and at the end of two and one-half months of the Thialion treatment he had entirely recovered. In this case the nervous phenomena were markedly prominent and there is no question that when he first consulted me his condition was critical. At this date, June 1st, he says he is entirely well.

## TWO CASES OF URIC ACID HEADACHE.

BY C. L. TARLETON, M. D., CEDAR CITY, MO.,

President of the Board of Examiners for Pensions, etc.

(Reprinted from the *Wisconsin Medical Recorder* for February, 1899.)

The two following cases which, yielding so promptly to treatment, were unique in my experience, inasmuch as they were both probably due to malarial origin combined with a sluggish liver, such as oftentimes pertains in this section of the country and is almost always associated with an excess of uric acid in the blood. Nothing seemed to give relief until I used thialion, and then the work was accomplished as if by magic.

The first case was that of Emmet W., age 11, who was taken sick the 15th of August, 1898, with a profound chill, followed by high fever. One of the local physicians was called in at this time to see him, and he had charge of the case until September 26th, when I took charge of it. I found him free from the fever, with a badly coated tongue, sallow skin, constipated bowels, with highly colored urine, which contained quantities of urates and phosphates, and had a specific gravity of 1012. As night approached he complained of a severe pain in the head, which was not confined to any definite point, but seemed to radiate through all portions of the brain. The peculiar feature was that this lasted only during night time, disappearing as day approached. I tried everything—calomel, quinine in large doses, strychnine, bromides, and tonics—but the only relief he could get was through opium. The bromide of lithia gave him more relief than any other remedy before I tried thialion, but none of these remedies seemed to have the desired result of curing the patient; the pain still continued in greater or less degree. On November the 5th I commenced giving him thialion, directing that a teaspoonful should be taken the first day three times, one hour before meals, dissolved in a cupful of hot water, and drunk as hot as possible. The second day two doses of similar size were administered, and after that only one dose a day was sufficient. The effect was immediate, the pain was relieved of its great intensity. The first night much relief, the second night very little pain, and the third night none at all, and none since that time. A dose of thialion was given once a day for two weeks, and once every third day for two weeks more and then stopped. He is now perfectly well, entirely free from pain, gained in flesh and strength, and seems in perfect health. The bowels, which before this were in a very constipated condition all the time, are now moving naturally every day, the thialion having cured this obstructive condition which had lasted for years.

Case 2 is that of John V., age 33, farmer, married. He was taken sick on the 4th of December with violent pain in the head. The people here call this a "sun pain." I was called to see him on the 10th. In the interim between the attack and my seeing him first he had tried many patent and domestic remedies without any result. On my first visit he was a pitiable subject indeed, pain radiating through the brain, causing intense suffering. Remembering my experience in the other case, I put him at once on thialion, ordering a teaspoonful in a cupful of hot water every two hours until it operated well, and then every morning before eating. The result was magical, the pain diminishing rapidly, and in three days he was entirely free from it, though the medicine was continued once a day for a considerable time. There has been no return of the attack, which was over a month ago.

These two cases were evidently caused by an excess of uric acid in the blood, which was promptly relieved by thialion, which I consider a most valuable addition to our therapeutics.

## URIC ACID AS A CAUSE OF ASTHMA.

BY L. H. WATSON, M. D., CHICAGO, ILL.

(Reprinted from the *Southern Medical Record*, Feb., 1899.)

Asthma is usually considered as a neurotic affection, dependent upon some irritation of the pneumogastric nerve, and characterized by bronchial spasm, and accompanied by an exudate of mucin.

While this may be a fair statement of the condition, it does not explain the etiology of the disease. An irritable condition of the respiratory nerve centers, caused by an impression made upon them, either through direct contact, or through morbid material in the blood current, exciting a reflex spasm, would seem to be the principal agent in producing this paroxysmal condition called asthma. Long have we sought the cause and found it not. Von Leyden thought he had it when he exploited the Charcot Leyden crystals and Curschmann's spirals; now we know they are only an accompaniment, and while diagnostic of asthma, do not at all account for its existence. They are simply confirmatory signs when the diagnosis is complicated; indeed the crystals are said to be found only late in the attack. We have been accustomed to divide asthma into two classes, idiopathic and secondary, but it is extremely doubtful if we see a case of genuine idiopathic asthma. By searching we can trace a cause immediate or remote. We have mechanical causes, like thymic asthma, nasal polypi, the pollen of plants, drug dust, disease of the spine or heart. We have chemical causes of a toxic nature, due to blood toxins taken up from the stomach or intestines, and failing of elimination by emunctories, remain as elements of discord exciting the paroxysms.

Heredity has been supposed to play a large part in attacks, but only through hypersensitiveness of the nervous system. Locality undoubtedly influences the recurrence of the spasm. Some people cannot exist comfortably in the country, and are free from attacks in town. I once had a patient, a very intelligent man, who could not sleep on the ground floor of his house, but was free of attacks in the second story. Many idiosyncrasies attach themselves to attacks of asthma, and it would require a larger article than this to trace them all.

I desire to call attention particularly to the "uric acid storm" as a factor, and a large one, in the production of the asthmatic paroxysms. Haig says in *International Clinics*, Vol. III:

"My researches leave little doubt that asthma represents the effect of uric acid on the circulation in the thorax, and that it is paroxysmal, for the same reason that epilepsy and migrain are paroxysmal, in accordance with the natural fluctuation of the uric acid, and the amount of that substance passing through the blood, and furthermore the only way to treat asthma is to clean the blood of uric acid and keep it clean."

This is a strong statement, but facts bear out Haig's assertion. Long before the uric acid hypothesis was understood, physicians depended upon iodide of potash as a curative remedy, but it was not found of great service in dispelling the attacks. The use for two or three weeks before an expected paroxysm seemed to abort it, and the iodide was deemed almost a specific. What it did do was cause the elimination of uric acid and thus lessen the irritation upon the vagi nerves, which precipitated this attack. It remained for Haig to explain the reason in an intelligent and scientific manner.

While I will not go so far as to say that all cases of asthma are caused by uric acid, I do say that almost all cases are benefited by attention to the elimination of uric acid, and many cases are absolutely cured when the proper methods are adopted and certain dietary plans are accepted which shall prevent its accumulation. It is a well-known fact, well known especially to asthmatics, that they cannot transgress the rules which govern proper digestion and assimilation, or they will pay the penalty.

My first method is to insist upon a rigid diet list, excluding all the producers of nitrogen, and then begin the treatment with thialion, which is certainly one of the

most efficacious remedies we now possess for removing the excess of uric acid in the blood, and picking up the deposits in the forms of urates which have been already deposited to the tissues ready to contaminate the blood stream when the conditions are favorable. Abjure then, all nitrogenous supplies and put the patient upon thialion for two or three weeks; longer if the case be an obstinate one. You will be fully repaid for the attempt.

There is no doubt also that uricacidæmia when it contracts the arteriols will certainly suspend gastro-intestinal digestion and absorption, and allow putrefactive processes to take place, which shall furnish toxins that will find their way into the circulation, and thus again act as irritants, while producing high arterial tension. An asthmatic attack represents the thoracic effect of this tension. Two confirmatory facts would seem to favor Haig's hypothesis; the first is that most attacks of asthma occur at from 2 to 4 o'clock in the morning, when the uric acid flood is at its height; and the other is that after an attack of asthma, as after a uric acid storm, there is a flow of limpid, pale urine, in great abundance. Upon the whole the uric acid theory offers us, perhaps, the most feasible theory known at the present day to account for the peculiarity of asthmatic attacks. I append two typical cases.

Miss L—, a maiden lady, 50 years of age, a long sufferer from hay fever, which usually begins in August and lasts until the first frost. In Nov., 1898, she suffered from persistent asthmatic attacks which were supposed to be due to the hay fever. Obtaining only small relief from all the usual remedies she placed herself under the care of a specialist, who proceeded to cauterize and burn out the redundant nasal mucosæ, which seemed to be the irritating cause of her attacks. The asthma continuing, she came under my care. Discovering her to be a confirmed dyspeptic, I first attended to her diet and placed her upon thialion. In a couple of weeks relief came, and in six weeks after the treatment was commenced she had no further attack.

The second case was that of an old asthmatic, Mr. K—, who was also an old dyspeptic. Winter and summer this gentleman, who possessed a large amount of this world's goods, was constantly using Himrod's pastiles and cursing his fate. Thialion combined with treatment directed to get his stomach in fair condition, has so relieved him that I cannot persuade him to stop its use. He takes it constantly every morning in hot water, and while he wheezes a little now and then when he has been indiscreet at table, he is practically well.

100 STATE STREET.

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## CASES OF PSORIASIS, HEPATIC TORPOR, GOUT AND CORPULENCY.

BY C. H. POWELL, A. M., M. D., ST. LOUIS., MO.

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(Reprinted from *The North American Journal of Diagnosis and Practice*, March, 1899.)

Psoriasis, gout and corpulency are three classes of cases that are in truth a bug-bear to the medical profession. Hepatic inactivity is usually an associated concomitant of a fatty diathesis, whereas the intimate relationship that exists between psoriasis and gout is attested to by the efficacy of remedies addressed to the rectification of the uric acid diathesis. Many cases of psoriasis are considered incurable, the appearance of the patient is loathsome, the body in proportion to the extent and duration of the disease becomes covered with patches that are red in appearance, attended by smarting and itching that renders the patient's existence a continued menace to contentment. These patches in a short time become covered with a coating of albuminoid substances and minute particles of the clothing, which assist in the production of a coating that as

sease progresses is thrown off, and appears upon the removal of the clothing in the form of flakes of epidermis. There are varied grades of psoriasis, the disease existing to a greater or less extent in different individuals. Psoriasis is a very common disease; much more so than the average medical man realizes. It shows itself in a number of different localities especially. Thus a favorite location exists on the surface of the nose at its junction with the face, the creases found on each side of the suitable soil for the development of psoriatic patches. The eye-brow is also a common seat for the manifestation of this disease. In any locality, however, the course of the trouble is identical; that is, the disease has a well marked tendency to continue, regardless of the application of any line of therapy. Outside of the points mentioned upon the face, the disease rarely spreads to any considerable extent upon the body. It seems to require warmth for its propagation, together with a moderate amount of moisture, both of which conditions are found beneath the clothing; hence the preference for its extension in this locality. Age exerts a very potent factor in the course of psoriasis; the younger the subject the more the prospect of a permanent cure; and, *inversa*, the older the patient the greater the difficulty in affording relief. Here is where the uric acid diathesis exerts so powerful a rôle in the premises, as the old subject is especially prone to be the victim also of gouty deposits, and the removal of these uric acid deposits is one of the most difficult tasks encountered by the physician. It is not meant to insinuate that every case of psoriasis is due to the uric acid diathesis, but that a very large number of cases of this trouble are intimately connected with said uric acid disturbance there is no possibility of a doubt. Arsenic, the sheet anchor in the treatment of skin disturbances generally, is of little benefit in psoriasis. Ichthyol dissolved up in lanoline is of service as a local application; and, given internally, has afforded marked benefit in some cases. The iodide of potassium, probably on account of its solvent properties in eliminating the cause, has also given fair results occasionally, but the disease has always proven most intractable to medication. Corpulency is another condition that only too often defies treatment. One of the greatest difficulties experienced in handling this class of cases consists in regulating their appetite. These patients are invariably large feeders; they consume a great deal of sugar in the form of candy and rich dessert, and it is the most arduous task to place them upon any other diet. Still another factor efficient in keeping up the adiposity is lack of sufficient exercise. Sluggishness is a characteristic of fat people, and the result is the lack of its necessary exercise to carry away the elaborated material, there is thus an excess of said material proportionate to the needs of the animal economy; the excess becomes stored up in the shape of fat. The following symptoms are usually met in this class of cases. First on the scene is dyspnoea, then gastric disturbances are common, accompanied with intestinal atony; the bowels become constipated; this constipation is also often the result of the patient being too sluggish to attend to the demands of nature for evacuation. Headache is also a common accompaniment, especially at night, bad dreams and talking in the sleep characterize many of these cases. The heart may or may not take part in the fatty condition; if it does, then upon the scene all of those manifestations of myocarditis, as accelerated pulse, pain in the precordial region, etc. Having had my attention directed to thialion, a laxative salt of lithia, in the treatment of rheumatic and gouty disturbances, as well as in corpulency, and experiencing the satisfaction with the other agents in the field, induced me to experiment, and I put the remedy to practical tests. The first case where it was administered was that of an aged patient, whose finger joints were all distorted from gouty deposits. I gave her a teaspoonful three times a day in a little hot water, and continued the preparation for one week. There was no perceptible change in the swellings, but the pains, which had previously been a source of great annoyance to the patient, became markedly ameliorated, and she gained in weight about one pound in the course of two weeks' time.

A lady consulted me about the same time with a most extensive case of psoriasis I have ever come in contact with, the entire body being one mass of sores from the neck downward. Having used every remedy from arsenic to thyroid extract without the least improvement, I placed the patient upon thialion in teaspoonful doses every four hours in as much hot water as she could tolerate. The incessant itching at once abated, and the patches became paler in appearance losing their characteristic scarlet hue, coincidentally the scales would flake off in large quantities, and the patient was greatly benefited from the very beginning. Seeing the improvement so well marked I determined to reduce the amount of the drug, and accordingly gave a teaspoonful three times a day in place of every four hours; the disease from that very moment seemed to take a fresh hold and I resumed the previous dose, whereupon she again gained in every way. As is a well known fact which all writers attest, psoriasis is intimately connected with a gouty diathesis, and it is my belief that the efficacy of thialion in the case was due to its beneficial influence upon the diathesis.

I placed a gentleman who was excessively corpulent upon thialion every four hours and noticed a reduction of five pounds during its administration; I also dieted him during this period and am accordingly doubtful as to the credit attributable to the remedy alone. Certainly, however, the results were satisfactory and thialion should be credited with its share of the outcome.

One of the very best uses of this salt, however, was found in its efficacy as an hepatic stimulant to be given after a patient's recovery from an acute attack of malaria or grip. As we all know hepatic inactivity is particularly preponderant after the disease has ended. This is shown by the patient losing appetite, they complain of general debility, have a pain in the back, are annoyed by hyperacidity of the stomach and upon awakening in the morning have a bitter taste and a heavily coated tongue indicating a cessation of secretion, especially of the bile and gastric juices. Give this class of cases thialion in teaspoonful doses in a half a glass of hot water one-half hour before meals, and these unpleasant complications will not only be promptly removed, but the patient gain in strength and weight with a surprising celerity. In order to secure these results the remedy should be given alone and in the manner outlined. I am thoroughly satisfied from my own experience with this preparation that it has a wide and useful field in the different conditions herein outlined. I have resorted to it in several other cases where an hepatic stimulant is indicated and have yet to find the patient afflicted with this unpleasant complication it will not materially cure.

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#### LITHÆMIA.

BY ALLAN P. MACDONALD, M. D., DANBURY, CONN.

(Reprinted from the *Homœopathic News*, St. Louis, Mo., April, 1899.)

The medical profession is waking up to the fact that the uric acid diathesis is more of a factor in the causation of chronic ill health than has heretofore been taught in our text-books or medical schools. Uric acid is very sparingly soluble in the urine, and when from any cause it is formed in the tissues of the body in excess of the normal capacity of the kidneys to eliminate it, it becomes the cause of many diseases, which from the nature and difficulty of removing the cause, is the *bête noire* of medicine. In the grosser forms of disease under this head, such as gout and nephrolithiasis, the diagnosis is easily made, but in some cases of dyspepsia, asthma, neurasthenia, nervous palpitation of the heart, muscular rheumatism and other obscure ailments, it is more difficult to arrive at a correct diagnosis and in a large proportion of cases require a microscopical examination of the urine.

All cases of the above-named diseases do not have uric acid as an etiological factor, and if the physician is not on the watch for the uric acid, it will not force itself on his observation.

The treatment of such cases with homœopathic remedies on homœopathic indications, has not been a brilliant success in my hands. I have never succeeded in correcting the morbid physiological chemistry, which is at the bottom of the difficulty with medicines, neither has any diet been more than palliative, so that I was forced early in my professional experience to have recourse to the best solvents then known or recommended. In this direction my success was not satisfactory.

As a last resource, up to a few years back, I was forced to the expedient of flushing the system with as copious draughts of hot water as my patients would take. In some cases this last named treatment was quite satisfactory. In women especially I had that they drink so little water that the physiological functions of the body have scarcely enough water to do their work properly.

In the last few years uric acid solvents of greater merit, like piperazine and uropin have been introduced to the profession, and within the past year, a newer one—thialion—has come as a candidate for professional favor. The first two are quite expensive, the latter quite moderate in price, and from my experience with it, bids fair to become a valuable remedy in this condition. In looking over our literature on this subject, I regret to say that I do not remember any recommendation of the rational treatment of this condition with solvents. I can say that in the last six years, with the newer and better class of uric solvents, I have succeeded in getting better results for my clients than I did prior to that time.

The treatment is palliative, but you have the satisfaction of knowing that you can keep your patients free from distress, and at the same time prevent the deposits of the acid in localities where it may become the nidus of some organic disease. How many valvular diseases of the heart, how many apoplexies are due to the deposit of this substance on the valves of the heart, in the walls of the arteries? We frequently see calculi in the kidneys and the bladder as a result, which if not removed, will end in great suffering and early death.

CASE I. Mrs. H., aged 41, had been suffering for eight years from headache, palpitation, palpitation of the heart and irregular and intermittent pulse, a combination of symptoms which always produces great anxiety and distress of mind, which is hard to control. She consulted quite a few of our local physicians and two eminent members of the profession in New York. All assured her that her heart symptoms were due to indigestion, but no remedies directed towards the cure of this disease gave her any relief.

Early in September last the case came under my observation. I made an examination of her urine and found an excess of uric acid. I placed her on lycopodium and thialion. She took one teaspoonful of thialion in hot water, half an hour before each meal for two days, till the urine became alkaline, after this, once a day, before breakfast, for two weeks. At this period, finding her very much improved, it was continued every alternate day. She was dismissed completely relieved of all her symptoms about the first of January.

This was the most brilliant cure I ever saw in any similar difficulty. Although the uric acid tendency is still present, to all intents and purposes it is a cure and I cannot but give the credit to thialion as the factor in bringing it about, by eliminating the excess of uric acid from the blood, where it acted as a toxine, reflecting on the heart and other organs implicated.

CASE II. Mrs. A., aged 49. This patient came under my care three years ago. She had intermittent attacks of headache, neuralgia, muscular rheumatism and bronchitis. One time it would be one of the above, another time it would be another. Sometimes she would have two or more in combination.

I saw her on an average of once a week during the three years she was my patient, from one or another of her ailments. In the last part of September, I examined her urine and found an excess of uric acid. I placed her on thialion as in Case I. She improved immediately so that in over two months she has not had a single attack of



headache, neuralgia, rheumatism or bronchitis. In January she passed through an attack of uncomplicated grippe without trouble.

Here is a case of a woman who has been ailing for about nine years from various symptoms which were undoubtedly due to the toxic action of uric acid, who had homeopathic treatment directed against her various symptoms for the whole period without practical benefit, became practically a well woman after the exhibition of thialion for its solvent power over uric acid.

### BILIOUSNESS.

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Member of the American Medical Association; Tennessee Medical Society, etc.

(Reprinted from the *New England Medical Monthly*, Danbury, Conn., April, 1899.)

One of the errors of the age is excessive alimentation. The amount of food consumed in this country would be ample if appropriated to one-fourth, or better far, one-half as many more individuals. "Eating to live" and "Living to eat" are widely different in their results. Those following out the former aphorism as a rule of life rarely have occasion for the aid of a physician; while in the latter is to be found to a large extent, the clientele of the medical profession. Excessive alimentation unduly taxes the liver—more food being consumed than is needed, this important glandular structure is sadly overworked, and as a result, in addition to the outcroppings of acute disorders, we find many individuals, especially those who have reached the middle period of life, developing quite a series of chronic pathological conditions, which if not effectually disabling in their effects, are quite sufficient to render life a burden, interfering with mental and physical integrity, and seriously impairing vital power, if not eventually leading on to death, as an indirect, if not as a direct, cause.

Among many conditions to which we find our attention so often called in both men and women, especially those of middle age, may be mentioned gout and the gouty condition, rheumatism and the rheumatic condition, neuralgia, asthma, chronic constipation, etc., in all of which to a greater or less extent will be found defective hepatic action. In such cases uric acid invariably exists in the blood and tissues in excess. Normally urea and uric acid are formed by the liver in the average adult human being in each twenty-four hours, in the proportion of about 500 grains of the former to between 8 and 10 grains of the latter. Both are highly nitrogenized, crystalline bodies, and in the excessive alimentation which is the curse and bane of civilized people, and especially with reference to nitrogenous foods, this proportion is varied by an increased development or production of uric acid.

The classical monograph of J. Milner Fothergill bearing the title of "Indigestion and Biliousness," issued from the press of Wm. Wood & Co., in 1881, and the splendid little brochure of Dr. Alexander Haig of more recent date on "Uric Acid as a Factor in the Causation of Disease," have been of inestimable value to me, both from a practical as well as a theoretical standpoint. Both are replete with most valuable suggestions. From the "American Medical Lexicon, on the Plan of Quincy's Physio-Medicum, etc.," published by T. & J. Swords, New York, in 1811, I quote the following, having reference to bilious diseases: "The real exciting cause of these disorders called 'bilious,' being generally a hostile stimulant and pestilential acid in the primæ viæ;" and in the "Edinburgh Practice of Physic," published for G. Kearsley, Fleet Street, London, in 1800, I find the statement that: "A very ingenious work has lately been published by an anonymous author entitled 'A Treatise on Gravel and upon Gout,' in which the sources of each are investigated, and effective means of preventing or removing these diseases recommended. In this treatise an attempt is made to prove that both diseases depend upon a peculiar concreting acid,

the acid of calc<sup>o</sup>li, or the *lithic acid*, as it has been styled by some." Even Hippocrates in discussing rheumatism stated that the bile mingled with the blood in the veins and articulations, causing swelling of the joints, or extending to the whole body, producing acute pain. In 1610 William de Baillou published his thesis on rheumatism, in which he endeavored to show the distinction between this disease and gout; and Sydenham, 50 years later, with his inimitable logic made even a more distinct division between the two. Cullen, Stall and Van Swieten in their teachings promoted these views and favored their treatment accordingly, yet the developments of later days have demonstrated the existence of an excess of uric acid in the fluid and tissues in both these, as well as in other morbid conditions. The excess of lithic acid and lithemia of the distant past are identical with the excess of uric acid and uricacidemia of more recent days and constitute a marked feature of biliousness.

Fothergill says "Biliousness may take one of two directions. In some persons there is the regular bilious attack—headache, furred tongue, disturbance of the alimentary canal, vitiated stools, and fullness over the hepatic region, the urine being merely highly colored. In others, again, there is rather a dyspeptic condition, with the appearance of lithiats in the water, especially two or three hours after a meal. There is no essential difference betwixt the two; in each there is defective oxidation. But in the one bile acids seem to preponderate, while in the other the urinary products of nitrogenized waste take the leading place. The first is rather the condition of the congenitally bilious, the latter of the congenitally gouty."

It has long been known that faulty liver action is attended by a series of phenomena widely varying in character, from the acute attack of indigestion due to over indulgence in rich and highly nitrogenized food, to the more persistent and chronic affections, such as neuralgia, rheumatism, gout, etc., in all of which conditions the liver being unduly taxed there is the development, rapidly or more slowly, of an excess of uric acid. The chemical equations of urea and uric acid are quite analogous, and while one equivalent of uric acid may be broken up into two of urea, the obverse has not been shown. Yet, in the metabolism of nitrogenous matter, under the stress of over exertion on the functioning powers of the liver, it is reasonable to believe that the result is not perfect, and that matter, instead of forming urea, which is quite soluble and readily thrown out by the renal emunctories, we have an excess of uric acid, not near so soluble, and which is only in limited quantities capable of being so eliminated.

The mercurial, followed by a saline purge, so earnestly advocated by Fothergill, and which is so well and widely known for its excellent effects in these conditions, acts most admirably for the time being, and is, as a rule, prompt in giving relief—permanent in acute cases, temporary, possibly, in those of a more persistent or chronic character. Again, the rigid vegetarian dietetic rules of Dr. Haig act most excellently, both as prophylactic and curative. In the discussion of a paper on Lithemia, read by Dr. A. N. Upshur at the Tri-State Society of Virginia and the Carolinas, recently published in the *Charlotte Medical Journal*, Dr. Hunter M'Guire, of Richmond, fully sustains this statement, as observed in his own case. The renowned Abernathy in his advice to "live on a shilling a day and earn it" struck the keynote to this whole subject.

But, alas! "Ephraim is joined to his idols!" Preach as we may, advise and re-advise, adjure, conjure and insist, yet our people, aye, and our doctors, too, for that matter, knowing these facts both by observation and precept, still continue on the even tenor of their way; and the people of the civilized world, both doctors and their clientele, are now, as they have been for centuries past, still struggling, groaning, moaning, aye, and even dying day by day, the victims of their own appetites, in the grim grasp of uric acid.

Physiological chemistry has made great and wonderful strides, its advance and progress have been most marked indeed; yet pharmacological chemistry has not lagged in the rear. The latter part of this century has witnessed the development of many new remedies, including quite a number of synthetical compounds, as well as special

compounds of both old and new drugs and pharmaceuticals, some of which under a special trade mark or copyrighted protection, which extends only to the special name or designation, have proved of incalculable value. In the many that have been introduced, some, having failed in sustaining the claims made for them, have been properly relegated to obscurity. Yet, others, having material value by reason of stable and known qualities, uniformity of pharmaceutical strength and composition and well demonstrated clinical results, are being used daily by many of the ablest and most reputable practitioners of the day. Among the recent additions to the latter class is a compound of lithium and saline laxatives introduced by The Vass Chemical Co., of Danbury, Conn., to which they have given the name of *Thialion*, which has proved of marked value in gout and gouty conditions, rheumatism and rheumatic conditions, neuralgia, chronic constipation and defective hepatic action.

Having given thorough trial to thialion in a number of such conditions, and having obtained such universally satisfactory results therefrom, I have no hesitation in earnestly commending and calling attention to it, feeling convinced that it will prove a "stayer," and will be appreciated by all who will give it a trial. Prominent among the factors in the successful treatment of lithemia or uricacidæmia, or to use the expression with which I have headed this article, "Biliousness," especially if of a chronic or persistent character, may be considered first, a rigid dietary in which albuminoids and nitrogenous matter are restricted to the minimum, plenty of outdoor exercise and a reasonable amount of labor or duty to absorb attention and prevent morbid introspection; and second, the administration of medicinal agents to aid the system in eliminating the excess of uric acid formed. In acute cases the mercurial followed by saline laxatives ordinarily is quite effective; but in more persistent conditions as a medicinal agent, I have found thialion more efficacious than any remedy or combination of remedies tried.

In gout, rheumatism and neuralgia, colchicum has long enjoyed a high degree of professional favor, which it has attained by its active eliminant action, increasing all the secretions; yet it is objectionable by reason of its occasional tendency to purge excessively, its griping and the distressing nausea it sometimes produces. To get its effects it must be pushed. It unquestionably increases the elimination of uric acid, and could it be deprived of its occasional unpleasant effects would be more appreciated than it has been. No remedy for successfully eliminating uric acid has so successively stood the test of experience as lithium, for the reason that its combination with uric acid results in the formation of a lithium urate, which is the most soluble of all the urates. In thialion we have a combination of lithium with saline laxatives, forming the most active and powerful solvent of uric acid, which with the mild, but efficient laxative effects of the salines add greatly to its value.

A brief resumé of a few cases in which thialion has been successfully tried is here-with submitted, beginning with the case of Mr. W. M. P., white, æt. 39, a commercial traveller, who was the subject of repeated and persistent attacks of sick headache, frequently prostrating him completely for a week or ten days, and leaving him incapacitated for business two or three weeks following. Preceding the attacks he would be greatly troubled with melancholia; everything looked blue and gloomy, and everything seemed to go wrong; despondent and with indefinite anticipations of trouble. Bowels would become sluggish, skin dry, urine high colored, with specific gravity of 1030 to 1035, highly acid. Was always a hearty eater and would not control his desire for meats. Mercurials followed by salines occasionally deferred and sometimes lightened the attacks. In August last he was advised to take thialion in teaspoonful doses in half a glass of water every three hours until bowels acted freely—then one teaspoonful in a glass of hot water half an hour before breakfast each morning for three or four weeks. The result has been that he has not since had a repetition, a longer interval than has occurred for years. He has had several premonitions of an attack, but they have invariably subsided under this line of treatment.

CASE II. Mrs. R. J. D., æt. 51, nullipara, menstruation ceased six years ago. Had been healthy all her life with the exception of attacks of neuralgic headache, accompanied by distressing nausea and vomiting, lasting for three or four days. Had been subject to same since girlhood. Her father suffered similarly all his life. In her case the prodromata consisted invariably of "a fit of the blues," accompanied by constipation, high colored and acid urine, preceded by increased appetite. Had never passed more than six or eight weeks without an attack and had become so familiar with them could always anticipate them with almost unerring certainty. It was hoped that the menopause would be accompanied by improvement, but disappointment resulted. She was placed on thialion, as in the preceding case, also in August last, and has been free from her ancient enemy ever since by resorting to it from time to time.

Mr. R. B. J., æt. 58, had been a sufferer from muscular rheumatism for the last twenty years, the attacks increasing in frequency and severity, so much so that the last three years he had never been free at any time from a greater or less degree of agonizing torture. He tried faithfully remedies and combinations of remedies innumerable, including several trips to Hot Springs, Ark., never deriving complete relief. In fact the most satisfactory relief he has had has been since last September, when he was placed upon full doses of thialion until free action from the bowels, and then continuing one teaspoonful each morning. He has had but little if any suffering during the entire time, but has kept up the use of thialion pretty regularly, occasionally taking it sufficiently to produce a full laxative effect.

CASE IV. Mr. H. S. D., æt. 48, attorney at law, engaged in active practice since his 21st year. Of full habit, a hearty feeder, but full of energy and active habits. For the past ten years had had quite a number of distinct attacks of gout, which would be relieved by ten days to three weeks active treatment, accompanied by absolute rest, low diet, etc. Commenced the use of thialion with him in the incipency of an attack early in September last, and it gave him such satisfactory relief that he now considers himself, with the aid of thialion, to be immune.

CASE V. G. T. W., æt. 49, dark complexion, active habits, blacksmith, had for past twenty years suffered more or less from asthma. The attacks would always be preceded by dullness, low spirits, lassitude, sluggish bowels, high colored and acid urine, of high specific gravity. Had tried remedies almost without number, and had for some time given up to be incapacitated from one-fourth to one-third of each year by means of his trouble. In November last, at the beginning of an attack, I gave him thialion freely as previously cited, continuing it since. He received so much relief within the first week that he says he expects to use it more or less regularly, and especially so if his present satisfactory condition continues.

Other cases might be cited, with such neurotic phenomena as vertigo, tinnitus aurium, insomnia, neuralgia, *et id omne genus*, yet in all cases attributable to uricacidemia, or, as I have termed it, biliousness, I have found in thialion a combination that has given me most uniformly satisfactory results.

## SOME OBSERVATIONS, MAINLY CLINICAL, UPON THE URIC ACID DIATHESIS.

BY ISAAC J. JONES, M. D., AUSTIN, TEXAS.

Late Surgeon to the Texas Confederate Soldiers' Home; Secretary to the State Health Officer of Texas.

(Reprinted from the *Southern Practitioner*, Memphis, Tenn., June, 1899.)

There is a large class of departures from the normal state of health; in some instances amounting to actual disease, in others not being well enough defined to be so classified; that, after having long defied the ingenuity of the medical profession to find the real pathological factor, now, since that has been demonstrated, seem to be equally as refractory to therapeutics; I refer to the conditions now known to result from the uric acid diathesis. Until the researches of Haig, and others, the etiology of even the well known but formidable rheumatic diathesis was a terra incognita, and since the guilt has been fixed upon uric acid, we have broken and splintered every lance in our armamentarium without avail, or at the best with only temporary or partial success. It has been found that the salicylates, once thought to be specific, do no more to cure the disease than chloroform does to heal the wound of the surgeon's knife; they are merely analgesiac. It is now not only conceded that uric acid is the direct causative factor of rheumatism, but it is claimed with strong supporting evidence that asthma is another one of its manifestations; and, so far as my knowledge goes, it was a Texas physician, Dr. Scott, who first advanced this theory. He cites, and I believe it to be a clinical fact, that the two diseases do not co-exist in the same patient, but that the one usually precedes or follows the other. This hypothesis of the causation of asthma has gained considerable currency, insomuch that the manufacturing chemists are recommending preparations for the cure of asthma by the elimination of uric acid. I have been much interested in this question by reason of the fact that I have had the medical care of a large number of chronic asthmatics, rheumatics and sufferers from migraine during my four years service at the Confederate Soldiers' Home in this city.

Believing that I had found some light on the subject, I began the treatment of some of these patients by the administration of various alkaline preparations, said to combine with the uric acid in the blood, forming soluble urates that could then be readily eliminated from the system. It seems to be generally considered that lithia forms the best base for this chemical reaction, and also by its diuretic power, assists in the elimination.

Now uric acid does not exist in the body, as such, normally; its normal condition is that of a quadriurate of sodium, potassium, or ammonium. When these are split up and the uric acid set free, we have gravel and calculi. When these quadriurates are not excreted with the normal rapidity, on account of some defect in the excretory functions, or when they are produced in abnormal quantities (?), they gradually take up another atom of base, and are thus converted into biurates, which being stable and insoluble salts are deposited in certain tissues, thus causing gout, rheumatism, etc.

After having, as before stated, had considerable experience in the treatment of these diseases with various salts designated to neutralize the poison and favor its elimination, my attention was called to a new chemical salt of lithia, bearing the commercial name of thialion. This I found to be a laxative alkaline salt, soluble in hot water, and not disagreeable to the taste. It was claimed for this that it not only possessed the well known diuretic action of lithia, but was also an efficient and pleasant laxative. It was this combination of desirable qualities that attracted me. Besides these it possesses other properties worthy of note, being a circulatory stimulant and increasing the flow of bile in a marked manner.

I began the use of the drug upon myself first, having suffered for some years past with a continuous soreness and stiffness in each shoulder joint and running down the extensor muscles of the arm to such a degree that I could not dress, or even lift my hat without pain in that region. I had tried to correct this by appropriate diet, but without success. I had also a considerable degree of constipation and frequent attacks of "biliousness." I began with one teaspoonful of thialion three times daily, taking it in hot water before each meal. In two days the characteristic soluble stools were produced. I continued the use of the drug for one month, taking only one teaspoonful daily. At the end of this time I was entirely relieved of my pain, as well as my constipation, and have remained well. My father having died of valvular heart disease, I had looked forward to the same trouble, as I am his prototype physically, and suffered with the same character of rheumatism. I now feel that I have a reliable weapon to combat the enemy.

The second patient was Dr. W. F. B., a prominent state official, who suffered with the same form of rheumatism as myself, and in addition had severe attacks of migraine almost weekly. He took thialion in the usual dose, a teaspoonful three times daily until its laxative effect is produced, and one teaspoonful thereafter for one month, and was entirely relieved of his rheumatism, and has had no attack of migraine since the first week of treatment. He states that he sometimes feels that he is threatened with migraine, but that a dose of the remedy is sufficient to relieve him of the malaise.

Mrs. E. B. R., aged 30, married, has been suffering with renal calculi for a number of years. Was treated by her father, one of our ablest physicians, without benefit; afterward spent several months in a famous sanatorium at the north with the same result. She took thialion in the usual dose for one month, and since its administration was begun the uric acid deposits have disappeared from her urine, nor has she passed a stone. She has also gained twenty pounds in weight in three months. I fear that there has been so much structural damage to the kidney that surgical interference will eventually be required.

D. C., male, aged 68 years, was for years a sufferer from rheumatism, being blind from iritis, probably of rheumatic origin. Some years ago the rheumatism disappeared only to be replaced by bronchial asthma of severe type. I exhausted every resource of the pharmacopœia upon this patient, having him under my constant care in the hospital for four years. The only success that rewarded my efforts was that I found that I could abort his paroxysms with a mixture containing a half grain of codeine sulph. and fifteen minims aromatic spirit of ammonia to the dose. I gave him thialion in the usual dose for sixty days and discontinued it. He has not had a paroxysm of asthma since. There is no symptom of his disease remaining except a slight bronchial discharge, easily coughed away. He has gained fifteen pounds in weight.

J. F. D., aged 72, male. Old case of bronchial asthma, with much emphysema and chronic bronchial catarrh. He was also under my care for four years. His respiration, at all times difficult, passed to a state of extreme dyspnoea during his paroxysms pitiable to see. These paroxysms occurred twice a week as a rule, but he was never able to sleep more than an hour or two consecutively, at any time. His condition was aggravated by the least exposure, and by sudden changes in the atmosphere or humidity. I gave the thialion in the usual dose, and continued it for sixty days. He has had none of the severe paroxysms since. Respiration, while still somewhat difficult, is uniform and so much improved that he sleeps normally. In fact after two months observation I think I can safely say that his asthma is cured, and were it not for the structural conditions engendered by it he would be well.

307 WEST ELEVENTH STREET.

## ASTHMA AND ITS TREATMENT.

BY G. A. GILBERT, M. D., DANBURY, CONN.

(Reprinted from *The Southern Medical Journal* for August, 1899.)

It is now generally conceded that asthma is essentially a disease of the nervous system, depending upon a central or peripheral irritation of the vagus, which produces contraction of the muscles of Reisseisen. The paroxysm is thus described by Biermer: "The air entering the lung in inspiration is pent up by the spastic constriction of the bronchi, which, acting as a valve, admits of its passage in one direction, but impedes its escape during expiration and thus causes inflation of the air cells and insufficient aëration." It is admitted, too, that not only is the vagus involved, but the vaso motor system as well—contraction of the arterioles and high arterial tension being the inevitable result. As physiologists tell us that the amount of respiratory surface in both lungs is about 156 square yards, and that this entire area is richly endowed with capillary blood vessels, it will at once be seen that any general constriction of the latter must necessarily interrupt to a marked degree the normal function of respiration, and interfere with the interchange of oxygen for the poisonous carbon dioxide; while in the more remote parts of the body there will be a deficient circulation and interchange between the blood and tissues in and on the distal side of the obstructed vessels.

In relation to the *cause* of the abnormal condition above described, it may be well to refer to the statement of the celebrated Haig, of London, who says: "Very little experimentation will suffice to convince any one that contraction of the arterioles varies directly with the amount of *uric acid* that is circulating in the blood, and the only way to treat asthma is to clean the blood of uric acid and keep it clean." That uric acid produces high arterial tension and the condition leading to asthma is now well understood. It is believed that the biurate crystals, by their points, set up a reflex irritation of the terminal branches of the vagi in the bronchial mucous membrane, thus initiating the asthmatic attack; the latter being paroxysmal, for the same reason that migraine is paroxysmal, in accordance with the natural fluctuation of the uric acid and the amount of that toxine passing through the blood; and not until the emunctories of the system eliminate the poison may permanent relief be expected. Two confirmatory facts which would seem to favor this hypothesis are, first, that most attacks of asthma occur at from 2 to 4 o'clock in the morning, when the uric acid flood is at its height; and, second, that after an attack of asthma, as after a uric acid storm, there is a flow of limpid, pale urine, in great abundance.

Though probably all cases of asthma are not due to the presence of uric acid in the circulation, yet it will be found that nearly every case will be benefited if attention is given to its elimination by means of dieting and the proper medication. In the opinion of Dr. Scott, an eminent Texas physician, the factor that produces rheumatism also produces asthma; and he, furthermore, cites the clinical fact (often observed by the writer of this article), that the two diseases do not co-exist in the same patient, but that the one usually precedes or follows the other.

Having decided, therefore, upon the factor most fertile in the etiology of the condition known as asthma, it now behooves the careful physician to turn his attention toward the proper therapeutic agent to remove this toxine from the system; and thus, after long groping in the darkness, be enabled finally to treat his asthmatic patient in a rational manner. As regards a remedy for the removal of uric acid from the system, the stage of experimentation has been passed, and it is now quite generally the opinion that the laxative salt of lithia (thialion) is the most potent antilithic agent to be found in our present *materia medica*. As iodide of potash was once given empirically, its partial success being due to the formation in the system of the partially soluble urate of potash, and its partial elimination by the kidneys; so now is the laxative salt of lithia given rationally, for the purpose of completely solving the uric acid by the formation of the freely soluble urate of lithia, and its consequent complete elimination by both kid-

\* [Cf. *Volkman's Sammlung klinischer Vorträge*, No. 12, Leipzig, 1870.]

and intestines. Concerning the physiological action of thialion, it has been found in addition to its important solvent and hydragogue properties, it has a marked effect in reducing arterial tension, a condition always present in the paroxysm of true thial asthma.

Dr. Isaac J. Jones, (*Southern Practitioner*, June, 1899), of Texas, who has had the medical care of a large number of chronic asthmatics, rheumatics and sufferers from indigestion during a four years' service at the Confederate Soldier's Home in the city of Austin; and who has had an unusually wide experience in the treatment of these diseases with various salts designated to neutralize the uric acid poison, and favor its elimination from the system,—states that it was not until he began the use of thialion that the results of his treatment of these cases became at all satisfactory. The virtue of thialion in these conditions, he believes, is due not only to its possessing the well-known diuretic properties and diuretic action of lithia, but also to the fact of its being an efficient and pleasant laxative,—increasing the flow of bile in a marked manner, and, in consequence of its hydragogue properties, relieving any indicanuria that may exist. In using the drug upon himself with good results, Dr. Jones prescribed it altogether as a practice, and among other interesting cases, reports the following:

'D. C., male, aged 68 years, was for years a sufferer from rheumatism, being afflicted with iritis, probably of rheumatic origin. Some years ago the rheumatism disappeared, only to be replaced by bronchial asthma of severe type. I exhausted every remedy of the pharmacopœia upon this patient, having him under my constant care in the hospital for four years. The only success that rewarded my efforts was that I found I could abort his paroxysms with a mixture containing a half grain of codein sulph. and fifteen minims aromatic spirit of ammonia to the dose. I gave him thialion in the same dose for sixty days and discontinued it. He has not had a paroxysm of asthma since. There is no symptom of his disease remaining except a slight bronchial discharge, easily coughed away. He has gained fifteen pounds in weight.

'F. D., aged 72, male. Old case of bronchial asthma, with much emphysema and chronic bronchial catarrh. He was also under my care for four years. His respiration, at all times difficult, passed to a state of extreme dyspnoea during his paroxysms, and was able to see. These paroxysms occurred twice a week as a rule, but he was never able to sleep more than an hour or two consecutively, at any time. His condition was aggravated by the least exposure, and by sudden changes in the atmosphere or humidity. I gave the thialion in the usual dose, and continued it for sixty days. He has not had one of the severe paroxysms since. Respiration, while still somewhat difficult, is improved, and so much improved that he sleeps normally. In fact, after two months' treatment, I think I can safely say that his asthma is cured, and were it not for the natural conditions engendered by it he would be well."

Dr. L. H. Watson, of Chicago, in an article entitled "Uric Acid as a Cause of Asthma," published in the *Southern Medical Record*, February, 1899, states that he has used this form of the lithia salt in asthmatic cases of long standing, and has met with success beyond his most sanguine expectations. He appends in his report the following typical cases:

'Miss L., a maiden lady, 50 years of age, a long sufferer from hay fever, which usually begins in August and lasts until the first frost. In November, 1898, she suffered from persistent asthmatic attacks which were supposed to be due to hay fever. Finding only small relief from all the usual remedies she placed herself under the care of a specialist, who proceeded to cauterize and burn out the redundant nasal mucous membrane, which seemed to be the irritating cause of her attacks. The asthma continuing under my care. Discovering her to be a confirmed dyspeptic, I first attended to her diet and placed her upon thialion. In a couple of weeks relief came, and in six weeks after the treatment was commenced she had no further attack.

The second case was that of an old asthmatic, Mr. K., who was also an old dyspeptic. Winter and summer, this gentleman, who possessed a large amount of this world's goods, was constantly using Himrod's pastilles and cursing his fate. Thialion



combined with treatment directed to get his stomach in fair condition has so relieved him that I cannot persuade him to stop its use. He takes it constantly every morning in hot water, and while he wheezes a little now and then when he has been indiscrete at table, he is practically well.

On hearing of the treatment above described and the successful results attending it in the hands of these two physicians, and being familiar with the action of thialion in certain cases of uric acid diathesis, the writer determined to adopt the same method of treatment in the following case, which had hitherto baffled every attempt to afford substantial relief.

Fred. K., German-American, aged 45, barber by trade, has been a sufferer from spasmodic asthma for the past fifteen years, during the last two of which the asthma has alternated quite regularly with muscular rheumatism. The asthmatic paroxysms have often lasted two or three days, confining the patient to the house. Usually, however, they have occurred during the night, lasting about an hour, during which time it would be impossible for the patient to remain in bed,—his dyspnoea at times being so great that the physician was frequently sent for. Until March of the present year the usual alkaline preventive treatment was adopted consisting of iodide of potash, Gardner's syrup of hydriodic acid, etc., with inhalations of nitrate of amyl, burning nitre paper or stramonium leaves, during the paroxysms,—the patient hying away to the White Mountains an occasional summer. Under this procedure partial relief would ensue for a short time, when the disease would again appear, disappear and again appear, until patient and physician had become discouraged,—both regarding the case as incurable.

At the beginning of March, 1899, the above method of treatment was entirely abandoned, and the patient put upon thialion and instructed as to his diet,—strongly nitrogenous food being interdicted. The first day a teaspoonful was given in a cup of hot water every three hours until free catharsis supervened, after which the same dose was given only once a day,—every morning upon rising. This was continued pretty regularly for nearly two months, the patient being told to skip the medicine for a day or two whenever the litmus paper indicated alkaline urine,—the object being to keep the latter at or about the neutral point. In regard to the results obtained by this simple method of treatment, it is perhaps well to note that the patient deemed himself cured at the end of the first month, since which time he has suffered no attacks, either of asthma or rheumatism. His general bodily health is now much improved, an irritable temper has given way to a more amiable disposition, and his nights are devoted to securing the rest and sleep of which his system has been so long deprived. Though after the lapse of twelve weeks, it may, perhaps, be considered too early to declare this patient cured, yet, if proper attention be paid to the condition of the urine, preventing any collection of uric acid by timely dosage with thialion, the writer of this article is satisfied that the patient may be promised immunity from any further attacks of his old complaint.

## CLINICAL EXPERIENCE WITH THIALION.

BY LUCIEN LOFTON, A. B., M. D., NORFOLK, VIRGINIA.

President Seaboard Medical Association of Virginia and North Carolina.

(Reprinted from the *Medical Herald*, St. Joseph, Mo., Sept., 1899.)

Professional pressure has prevented me from giving an earlier clinical experience with thialion.

I shall confine my remarks principally to the therapeutic value of this highly important drug, and will preface my paper by stating that thialion is a recent definite chemical compound, a laxative salt of lithia.

I believe that I was the first man to use thialion in this section of the South to any extent. I have not been careful about the selection of my patients, and whenever an opportunity presented I would prescribe it freely. I have yet to find a case, covering an experience of nearly fourteen months, in which I used this preparation, that good results did not follow. It has been used in the various diatheses resulting from uric acid, from tuberculosis, hepatic engorgement, neurasthenia, and lastly in Bright's disease. To say that the results have been brilliant and lasting but feebly tells the story. I will now take up in order named and give a succinct account of cases mentioned above. From my case book No. 3 I take the following:

CASE 1.—W. K. B., Norfolk, age 35, a liveryman. Family history, negative. Personal history includes the diseases of childhood, with an attack of typhoid fever when he was about eighteen, from which he made a good recovery. After he reached thirty he began to lead a sedentary life, and, being a big eater, rapidly became quite corpulent. As his flesh grew he began to have afternoon headaches, which would invariably be followed by drowsiness and uneasy stretchy sensations in the lower extremities. Finally he developed a gout, which lasted two or three years. Occasionally, dieting and a dosing of salicylic acid gave him some relief. Two years before he came to me he had suffered an acute attack of renal colic, and every sixty or ninety days he complained of passing calculi, which upon examination proved to be principally uric acid. When I first saw this gentleman he resembled very much a man who was bleeding to death with hemorrhagic piles. He was more or less stiff about the joints, had an indifferent walk, a strange expression, a continuous headache with great weakness and a constant desire to pass water. A physical examination disclosed a furred tongue and constipation; the heart and lungs were normal, likewise the spleen, stomach and intestines, but considerable engorgement of the hepatic gland was noted. An examination of the eyes, nose and throat did not account for the migraine. Upon testing h<sup>+</sup> urine I found it distinctly acid, and the detection of uric acid crystals was easily recognized with the microscope. The murexide test gave confirmatory results. A quantitative analysis in a later examination disclosed a drachm and a half of uric acid from urine passed in twenty-four hours. I immediately began the use of thialion in the following manner: Two teaspoonfuls dissolved in a cup of hot water every three hours until several evacuations from the bowels had taken place. I did not regard this man's condition at all favorably, from the fact that he had despaired of ever getting any relief. He talked like a man who had run the gamut in "kidney and liver medicines," as he termed it, and a further course of treatment was money and time thrown away. He returned to my offices in two days and said the medicine "had worked" on his head, joints, liver, bowels, kidneys and bladder, and was prepared now to resume his position and hold his own in the dining room. I gave him a restricted diet, avoiding all rich soups, fat meats, pastries, fermented drinks, etc. A teaspoonful of thialion was ordered night and morning, dissolved in hot water, to be drunk one hour before breakfast and supper. This was kept up three weeks, at the expiration of which time I made an analysis of his urine, and something like fifteen grains of uric acid was noted in twenty-four hours. Three grains of iron by hydrogen had been given in a loose

state three times each day. At the expiration of the fourth week the man's natural color was in sight; he voided his urine normally, while his bowels were regular. The liver at this time was found to be free from congestion. At intervals of three or four days this patient was instructed to take a teaspoonful of thialion. Altogether I believe he consumed four bottles of four ounces each. It has now been several months since he took the last dose, and a more healthy specimen of manhood you would not care to see.

CASE II.—J. W. M., Norfolk. Female; age 42. White. Family history, negative. Personal history: Had had articular rheumatism mostly all her life. There was some ankylosis of both knees, which necessitated the patient using canes to walk. During damp or rainy weather her condition was aggravated. A teaspoonful of thialion night and morning was ordered and kept up for two weeks. She was given an occasional hot air bath of 350° F. for the ankylosed joint, with subsequent massage, which easily corrected the deformity. Strange to say, I did not find any endocarditis, no valvular trouble or any endarteritis. This patient took the above dose faithfully for several weeks, and, it matters not how severe the weather or how much night air she may expose herself to, her "old trouble" still remains a thing of the past after five months.

CASE III.—J. F. F., Norfolk. White; age 37. A contractor. Family history, negative. Personal history, negative, with the exception of an occasional "bilious" attack, which was invariably relieved by some purgative. Two years ago he began to suffer with a drawing sensation at the nape of the neck, which radiated to the frontal region. Hot and cold water alternately applied would occasionally give him relief. He had had a number of physicians to prescribe for him in Norfolk, but finally becoming despondent he went to Richmond, this State, where a noted "war surgeon" saw him. He was given a prescription containing iodide of potash, colchici and salicylic acid. While taking the medicine his trouble ceased, but when the medicine gave out he began to suffer worse than ever. He came to me and said: "For Heaven's sake, Doctor, is there nothing that will cure headache?" After he had told me his story I admit I gave him a favorable prognosis with some trepidation. Physical diagnosis revealed nothing other than a complete anaesthesia of the skin from the protuberance of the occipital bone down to the vertebra prominens. Anaesthesia existed for two inches on both sides of this imaginary line. No impression could be made with a needle, hot or cold water or electricity. I gave him four cells of a faradic current with a sponge electrode, with no results whatever. I began the use of thialion immediately, ordering two teaspoonfuls in a cup of hot water three times each day, one hour before meals, for three days. Upon his return he said his headache had nearly left, but the anaesthesia still existed. No manner of liniments excited the nerve forces. When he returned to me in one week's time, after a wholesome massage of his neck skin, I tried the faradic current, and, much to my delight, the skin responded. I kept up the thialion, giving a teaspoonful night and morning for three weeks, together with an occasional electrical seance, and now, after a lapse of over sixty days, he met me in church last night and said he felt like a "new man all over."

CASE IV.—Mrs. S. A. T., age 44. Emporia, Va. Family history, tuberculosis, maternal side; hepatic abscess, paternal side. Personal history, has had measles and is the mother of eight children. Patient states that she has suffered for the past fifteen years with engorged liver, and shows now signs of arthritis deformans. Says she is compelled to take a mercurial purge every thirty or sixty days, and when she fails to do this her liver pains her intensely. Presumably the liver pressing upon the diaphragm gives her an occasional hacking cough, and when she consulted me thought she had tuberculosis of the lungs. Physical examination revealed heart and lungs and abdominal viscera normal, save the liver, which protruded two or three inches below the costal margin. Thialion was administered night and morning in teaspoonful doses for ten days, half the dose was administered for the next ten days at night only, and altogether two bottles were consumed—she sometimes taking a dose of the medi

cine during a period of six weeks. Nearly four months have elapsed since the last dose was taken and her health is now the envy of her friends.

CASE V.—Miss S., Norfolk county. Age 26. Has just left my offices, and a brief history of her case will prove interesting. Physical condition practically normal. She is of neurotic parents and is herself very much tainted. She told me some weeks ago that she had suffered from urticaria for five years, and only the severest cold weather would relieve her of this condition. I tried various internal and external remedies without avail. The patient was becoming despondent and certainly I was. It has been my experience that a good many cases of nettle rash come from uric acid poisoning, and knowing that nothing so well antidoted this condition as does thialion, I concluded I would try it. Two teaspoonfuls night and morning in hot water was ordered. At first the amount was too large and nauseated the patient somewhat, but I obviated this trouble by dissolving one teaspoonful of the salt in hot lemonade. This acted charmingly. Much to my delight, and her comfort and gratitude, the nervousness and urticaria has disappeared. She continued the remedy as outlined above for two weeks and I consider her now well.

*Tuberculosis.* I cannot say in what way thialion acts upon localized tuberculosis, but this I know well—I get good results, and as long as you cure your patients you carry the day. Several months ago there came to my offices an anæmic lad about seventeen years of age, who gave a distinct family history of consumption. A well defined osteitis of the left metacarpal bones was noted, while more or less ankylosis existed. I did not resort to any stereotyped treatment of this case from the fact that I had never gotten any satisfactory results in such cases. I concluded to go it alone and try thialion upon its merits. A teaspoonful one hour before each meal was administered in hot lemonade for a week; but during this time I gave the lad a hot air bath three times per week in connection with massage. In ten days the acute inflammatory process had subsided and the boy's general appearance was greatly improved. Thialion and the hot air treatment was kept up for two weeks, at the expiration of which time I only employed an occasional hot bath with massage. From a helpless member the boy's hand has developed into a useful helpmate, and to-day, ten months after treatment, he is earning a good livelihood in a sawmill.

*Neurasthenia.* When I speak of neurasthenia I mean cases of extreme nerve debility. So often is it the case that you find neurotics who have come down to the very lowest plane of despair before consulting a doctor; and the sight as presented is most pitiable. You look for the pathology and nine times out of ten, if you are an honest practitioner, you will acknowledge that the pathology is a "will o' the wisp." All neurasthenics will tell you *why* they are neurotics, but how much confidence can you place in a person who is mentally unstrung? Specialists, in sanitarium and out, must acknowledge their inability to deal with this unfortunate class at times. Now where shall we look for the etiology? I believe that the majority of cases of this description are the host and hostess of too much uric acid. I further believe that we would have fewer cases of insanity if this particular field was more thoroughly investigated. I know that I have cured patients who had neurasthenia that have resisted the most strenuous efforts upon the part of good men. Whenever I am consulted for this condition I never give any *real* medicine until I have first investigated the urine.

*The Urine.* It is here that the profession in years to come will more eagerly submit their claims to recognition as diagnosticians. We cannot become too thorough in making urine analyses. If I had the choice of selection of only one source in making a diagnosis in any case where disease existed, I would choose the urine. Thialion has done more for neurasthenia in my hands than all other medicines I know. I say this advisedly. No set rule can here obtain in the administration of this compound.

Now in conclusion let me speak a word for thialion in the treatment of various forms of Bright's disease.

*Bright's Disease.* No one will deny that lithia is a fine diuretic, but long administration will not only cause nausea, but its effect direct upon the tubules of the kidney

will cause some irritation therein. Thialion seems to possess the properties of soothing and healing the inflamed parenchyma of this organ. In acute parenchymatous nephritis thialion acts most admirably; in short it reduces the congestion and easily puts into solution any excess of salts that may be in the blood in a loose state. In these cases the liver is never forgotten. In interstitial nephritis thialion may be relied upon. While in amyloid infiltration nothing seems to give such fine results as does thialion.

*Renal Colic.* A few days since I prescribed thialion in a case of renal colic and the effects were magical. My success up to the present time has been more than I expected. I have yet to find a case that this preparation has failed to give relief. Within the past thirty days I have prescribed thialion in fourteen cases which I have not here mentioned.

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#### NOTES, CHIEFLY CLINICAL, ON BRIGHT'S DISEASE AND ITS TREATMENT.

BY G. A. GILBERT, M. D., DANBURY, CONN.

(Reprinted from *Massachusetts Medical Journal*, Sept., 1899.)

In past years, the strongest clinical evidence to the diagnostician of the existence of Bright's disease in any given case has been the presence of albumin in the urine, usually determined by heat or the nitric acid test. But, inasmuch as all simple proteids are precipitated from solution by an excess of nitric acid, and as all but traces of nitrogenous waste matter are eliminated through the kidneys, it might be well to use the more general term "proteids" in the place of the historical albumin. Chemically considered, albumin is a complex ureide containing one-fifth of its nitrogen in the form of urea. The presence of urea in the urine excites no apprehension, but on the contrary, is considered normal, the adult human being eliminating about 30 grams daily as an expression of nitrogenous waste. In case of incomplete combustion, however, or faulty elimination of effete material, we have uric acid as a product; which, occurring as it does in the form of insoluble urates is mostly retained in the circulating medium, serving as a source of irritation to both kidneys and liver, thus initiating the protean symptoms hitherto classed under the generic term "uric acid diathesis;" while in more advanced stages of mal-elimination, as in Bright's disease, much of the urea itself is retained in the circulation, giving rise to the well known symptom "uræmia." In an article on this subject published in the *New York Medical Record*, Aug. 26, 1899, Walter Sands Mills, M. D., defines Bright's disease as "a disease characterized by degeneration of the kidneys, whereby the excretory function is so impaired that urea is not sufficiently eliminated by the blood." In other words, he considers, as does Semmola, that the changes in the kidneys are the result and not the cause of the disease. In the Goulstonian lectures delivered before the Royal College of Physicians, in March, 1898, (*Cf. London Lancet*, March and April, 1898.) John Rose Bradford, M. D., devoted some attention to the subject of uræmia, and, in summing up, says: "It is probably due to some abnormal product of disordered metabolism." Commenting on this statement, Dr. Mills continues: "The following facts comprise the sum total of our knowledge of the pathology of uræmia," to wit: "1. Before an outbreak of uræmia there is a diminution in the amount of urea excreted by the kidneys. 2. There is an increase in the percentage of urea in the blood."

It is becoming more evident from day to day, as the question receives scientific consideration, that the presence in the blood of uric acid and urea, and in the urine of uric acid and albumin indicates abnormal conditions that differ only in degree. There exist the same evidences of faulty metabolism; and, in both cases, owing to its having been forced to attempt the work of other organs, the kidney is found to be incapable

of performing its excretory function in a proper manner. In one case, this important organ indicates simply the incipient stage of inflammation; *i. e.*, high arterial tension and evidences of proliferation of connective tissue cells: in the other, the stage has become more advanced; *i. e.*, the inflammatory process has already begun and its products infiltrated into the interstitial tissue of the organ itself. It is evident, therefore, that the treatment should be directed toward relieving that organ of all impossible efforts; to accomplish which, the insoluble urates should be rendered soluble, while the entire alimentary tract should be urged to perform its duty and perform it unusually well, the liver being stimulated to action and the bowels kept open and free from all extraneous and poisonous matter. Furthermore, albuminous foods, especially meats, should be largely interdicted, and a milk or vegetable diet substituted in most cases.

The medicinal treatment of Bright's disease has usually proved unsatisfactory from the fact that too little attention has been paid to its real cause. It is probably owing largely to their extreme fondness for red meats and high living that the English speaking people are so prone to this dread disease, while strict vegetarians, like the Chinese, are comparatively free from its ravages. (The variable climate is of course another factor.) It is obvious that by restricting the diet principally to the carbohydrates there will be less manufacture of uric acid and necessarily less retention of its salts and urea in the circulation. In case, however, of the actual retention or presence in the blood of either of these toxins, it behooves us, as careful physicians, not only to recommend a fixed diet, but to prescribe a remedy which will readily form soluble urates, thus relieving the terrible strain upon the kidneys, and at the same time a remedy hydragogue in action in order to stimulate the flow of bile and institute a free movement of the bowels. For this purpose the laxative salt of lithia, thialion, has been found efficacious, having been used in several instances with unusually favorable results.

At a meeting of the Danbury Medical Society, Oct. 12, 1898, during the discussion which followed the reading of a paper by Geo. E. Lemmer, M. D., entitled "Uric Acid in the Blood: What Does it Lead to and How Can We Eliminate it?"\* William C. Wile, M. D., presented a letter on this same subject written by Hamilton Kibbee, M. D., a distinguished physician of Oblong, Illinois, wherein the latter said:

"I believe we are all wrong about the treatment of interstitial nephritis. I don't believe the albumin tests are of much value, The thing to keep the finger on is the test for urea, Doremus test the best. The excretion of urea is the barometer that indicates improvement or contrary. I think that excess of urea [in the circulation?] is the cause of the nephritis, and that the local trouble in the kidney is due to excessive uric acid in the blood. \* \* \* Let us get rid of the urea; there can be no question but this is the first and most urgent requirement, while the second thing would be to stop the excessive accumulation of uric acid. That thialion will get rid of these toxins I have demonstrated."

Continuing his letter, Dr. Kibbee says:

"Fully expecting to be disappointed in the results, I ordered four ounces of thialion for use in my son's case. He is a young man twenty-three years of age, who was taken with albuminuria about seven months ago, while at work in Chicago. For several weeks he was under the treatment of Dr. Purdy, the distinguished specialist and author of note on diseases of the kidney. By the advice of Dr. Purdy, I finally brought him home, where he has remained, improving in general health greatly by proper diet and rest. I have battled with this case with all a father's anxiety, and have grasped at everything which offered hope, but nothing has ever relieved the uremic symptoms like thialion. Its action has given me the greatest encouragement. His most troublesome symptoms were flushing of the face, congestion of the eyes, pulsation of the temporal arteries and beating of the heart against the chest wall. There was great restlessness and sleeplessness, throwing himself over the bed and

\*Published in the *New England Medical Monthly*, November, 1898.

moaning. The urine was sometimes (usually) profuse, specific gravity 1010, and it contained always about one-fourth of one per cent. albumin. Urea, by Doremus test, was less than 500 grains in 24 hours. If he exercised it brought on pulsation with increased arterial tension and dizziness. I began the thialion about fifteen days ago and within three days I could see improvement. His flushed face has disappeared, and his eyes are now normal. For the first few days he had pulsations, but they lasted only about half an hour, and for the past three days he has had no pulsations whatever, and he says he feels better than he has for a year. I cannot tell you how thankful and hopeful these results have made me, I tremble lest the benefit shall be only apparent and not real.

The boy was morose, despondent and hopeless, now he is his natural self again."

The above letter was written on the 9th of September, 1898; and one month and three days from that date the doctor writes again:

"My son has continued to improve up to Friday of last week, when he started to spend the winter with his brother, Kent V. Kibbee, M. D., Professor of Chemistry in the Medical Department of Fort Worth University, of Fort Worth, Texas. For two weeks previous to his departure he had no flush, headache or other symptoms connected with his kidney trouble, and his urine in every respect was perfectly normal, even to excretion of urea. Though he suffered from a painful jaw, as the result of the extraction of an ulcerated tooth, he had no nervous symptoms, and insisted upon making the trip. He left here on Thursday and St. Louis on Friday morning, reaching Fort Worth on Saturday night. I had a letter from his brother, who visited us in October last, and he informs me that the boy got to Fort Worth in good order and that he is greatly surprised at the improvement in his condition since he saw him last in October."

In commenting on this letter, Dr. Wile made the following remarks:

"Dr. Kibbee's words convey to us information which ought to prove valuable, certainly the results are remarkable. The trouble is that we have been growing more and more a gouty people, due to the fact, largely, that meat being cheap with us, we eat it in excess. The profession has long been looking for a reliable remedy to combat the multitude of ills directly traceable to an accumulation of uric acid in the blood, one which when ingested will convert the insoluble phosphates, oxalates and urates into a soluble compound which can be readily eliminated. This subject confronts the general practitioner daily as he goes his rounds. He has grasped at everything from pure waters down to dangerous drugs with but little avail, and I believe in thialion he has an invaluable agent for good."

The following case, reported by E. M. Smith, M. D., of Newtown, Conn., appeared in the *Journal of Science and Medicine*, May, 1899:

Mrs. B., American, age 47, now passing menopause, is recovering from acute nephritis—urine scanty, high in specific gravity, exceedingly acid, liver torpid and inactive; a marked degree of mental hebetude.

This patient gave me considerable anxiety, inasmuch as I had given her almost all the diuretics with indifferent results—a little better now, not so well a little later.

I finally put her on thialion in teaspoonful doses thoroughly dissolved in a cupful of hot water each morning, insisting upon the dose being taken as soon after waking as possible, and to be drunk as hot as she could. It was but a few days before improvement began all along the line. There was a general amendment—urine increased in quantity, and nearly approached the neutral line, bowels acted in the most satisfactory manner. In this case the liver played an important part. This was stimulated until the stools became like that of the child. Mind cleared up, becoming very natural. She is now on the way to complete recovery, though I still insist that she take thialion three or four times in succession every two weeks. In this case the different symptoms, added to the mental condition, made it doubtful whether she could ever recover, but I feel confident that this most happy result will take place."

A plan of treatment similar to the above was observed in the following case of "Chronic Interstitial Nephritis Accompanied with Melancholia," as reported by Wm. B. Mann, M. D., of Evanston, Illinois, in the *New England Medical Monthly*, October, 1898:

"Mr. J., age 49, had for several years been a sufferer from asthma, headache, loss of appetite, constipation, fetid breath, copious discharges of offensive mucus from both nose and mouth, heavy dragging pains over the kidneys, puffiness of the feet and face, especially under the eyes, and insomnia. There were also frequent attacks of extreme melancholia, which were so depressing that the patient would have weeping spells, followed in a day or two by delusions of persecutions from an imaginary foe. He seemed at times on the verge of insanity. The pain in the region of the kidneys he described as constant and severe.

An examination of the urine revealed the fact that the quantity voided was below normal and contained a small quantity of albumin, hyaline casts, an excess of uric acid and the urates. He was badly emaciated and had a history of three years' illness. A more careful examination of the urine revealed the following: Quantity diminished to twenty ounces; specific gravity diminished; solids diminished; albumin present in considerable amount; urea diminished 50 per cent.; pus corpuscles and epithelium present; tube casts in small amount. Taking the case altogether it was one of the worst I was ever called upon to attend.

After ten days treatment with thialion, the urine became almost normal, both in quantity ( $3\frac{1}{2}$  pints) and also chemically. I commenced a systematic course of diet, carefully avoiding that which would increase the irritability of the kidneys, at the same time building him up to the fullest extent. I gave him a teaspoonful of thialion three times daily, dissolved in a glass of hot water, and the result was immediate and clearly apparent to physician and friends. It is unnecessary for me to state that his bowels, liver and stomach were thoroughly cleared out by this medicine. The acid eructations which had been so persistent, rapidly passed away. After ten days treatment the patient said: 'You have done me more good in this short time than I have received heretofore in all my treatment by a number of physicians, some of whom stand very high in the profession.'

One of the remarkable features of this case was the fact that nothing else was used but thialion; that all the depressing symptoms passed away and of course the crying spells with them. Since this time the improvement has been steady, and though the case from start to finish has been an unpromising one, still I am satisfied a cure is certain."

A case somewhat like the above, and one that is of sufficient importance to be cited in this connection, has been treated by the writer recently in a similar manner, and with equally gratifying results, to wit:

Mrs. W., widow, American, age 60, appeared for treatment in August, 1898, bringing a sample of her urine and giving the following history:

Since her menopause, ten years ago, she had been gradually failing in general health. She first noticed attacks of vertigo, flushings of the face, irregular heart action and headaches. Her appetite became poor and she was obliged to refrain from eating meat, which had always been her main article of food, but which now, for some reason, "did not agree with her," causing "hot flashes," etc. Her ankles became swollen, and latterly she has complained of dropsy of the abdomen and some dyspnoea. She has spent sleepless nights and admits that she has become extremely nervous and feels at times like committing suicide. Her hearing and eyesight were both rapidly failing, and at times she saw "dark specks" floating in the air. Her strength was gone and she was unable to do her housework. During the past two years she had consulted four local physicians and a New York specialist.

Physical examination revealed some tenderness on pressure over the region of the kidneys. There was extreme pallor of the skin and prominent dark rings under the eyes. When talking, the patient frequently wandered from the subject, seeming to be



unable to concentrate her attention, though she was evidently an intelligent woman. The urine was scanty, rather high colored, and contained considerable albumin and some casts. Calcium oxalate crystals and the urates were also present in abundance, and there were the usual indications of a torpid liver. Obstinate constipation was admitted on questioning. The most striking features, however, to a general observer, in this case, would undoubtedly be the anæmia, weakness, and rambling conversation.

The patient was at once put upon thialion and a milk diet, the former being prescribed in half-teaspoonful doses in a teacupful of hot water three times daily until four ounces were taken and the urine had become markedly alkaline. The medicine was then omitted for two or three days, when it was again prescribed and taken in the same manner as before. At the end of the first month the urine had increased greatly in quantity, and indicated a loss of at least 50 per cent. of the albumin. The patient reported improvement in every respect, and expressed her gratitude in glowing terms for the speedy relief she had obtained. She soon afterwards removed to New York, and the case was lost sight of until a few days ago, when her son, by request, visited the office and made the following statement:

"My mother, when she went away, had with her two bottles of the medicine, which she took according to your directions until it was all gone. She then felt so much better that she considered it unnecessary to take any more. She is now able to do her sewing and housework herself, and talks as lucidly and clearly as she ever did. Her urine was recently examined and only a trace of albumin was found. She is not nervous, sleeps well at night, eats well of everything but meats, and looks as well in the face as she did before she was taken sick. She says she believes that the disease has been permanently checked, that she is likely to live for many years yet, and finally die of something else."

#### THE RHEUMATIC DIATHESIS.

BY ROY D. MOORE, M. D., ST. LOUIS, MO.

(Reprinted from the *North American Journal of Diagnosis and Practice*, September 20, 1899.)

There is no more perplexing problem that confronts the physician in his routine work than the successful treatment of rheumatism especially the chronic form. In the acute form of the disease there are three theories that predominate as to the causation of the trouble: First. The Metabolic theory. Secondly. The Neurotic theory. Thirdly. The Germ theory. Of these the metabolic theory holds most universal sway which attributes the disease to tissue changes whereby an excess of sarco-lactic acid prevails in the blood. Upon this supposition the therapy of the disease with the alkaline remedies is based. Clinically there are two forms of rheumatism that concern us, namely: the acute and the chronic. Acute rheumatic fever is a self limited disease running its course in a certain time.

This self limitation has been demonstrated by Austin Flint, Sr., who, in Bellevue Hospital, years ago, treated a number of cases with inert substances and observed acute rheumatism would terminate in about three weeks. Such being the case, however, in no manner contra-indicates the use of remedies having well known therapeutic properties, as a patient who is kept persistently upon the alkaline treatment is far less liable to have serious complications arise during the course of the disease. Especially is this true regarding cardiac lesions. The salicylate of sodium in particular has obtained the widest use in the treatment of acute rheumatism given in ten or fifteen grain doses every three or four hours. Of other agents resorted to, the carbonate of potassium and the acetate of potassium are often prescribed with decided benefit. In this direction the bicarbonate of sodium is also a valuable drug freely given until the urine becomes thoroughly alkaline in reaction. The usual outcome of a given case of acute rheuma-

tism is highly satisfactory but when we come to handling the chronic form of the disease there is perhaps no pathological condition that will more sorely tax our patience, and act rebellious to all agents employed. There are, of course, reasons why such is the case. In the first place the blood becomes surcharged with uric acid, and as a result the so-called gouty deposits make their appearance in the joints in the shape of lime salts. These lime salts are productive of intense pain upon every movement of the involved joint, by their continued encroachment upon the adjacent structures the joint becomes greatly swollen, and the fingers or toes contorted in every possible shape, rendering life a continued burden to the sufferer. Everyone who has prescribed for this unfortunate class of patients is well aware of the inefficacy of many of the vaunted remedies for relief. The iodide of potassium has long been regarded as possessing merit in this direction given in gradually increasing doses, but how many cases fall to our care that receive the least benefit from this agent? Indeed, in a very large proportion of cases iodism comes upon the scene, and renders further use of the iodides impossible. In such cases the kidneys become involved in the systemic disturbance, and the evidence of morbus Brightii becomes apparent. Hot baths are indicated in these cases to produce a free diaphoresis, and under these circumstances I am in the habit of prescribing thialion in teaspoonful doses every four hours in a half glass of hot water; the benefits derived in chronic cases such as herein described from the use of thialion cannot possibly be equalled from any other preparation at present in use. In the first place thialion acts most favorably upon the liver, the organ seems to take on increased secretive action, the unpleasant gastric oppression becomes at once ameliorated, the eructation of food stops, and the tongue becomes gradually cleansed of its bilious coating. Simultaneously with the improvement in this direction the alvine discharges become a golden color so characteristic of healthy stools, indicating the free admixture of the bile, and the appetite craves for food. So far as the local effect of thialion on the swollen joints, the first improvement manifested in this direction is the relief of the intense pain, this generally follows about the second day. The patient then notices that there is a feeling as if the affected joint were becoming smaller, the skin becomes wrinkled, and a general improvement sets in most gratifying to all parties concerned in the case.

I desire especially to call the attention to thialion on account of its remarkable therapeutic properties in chronic rheumatism: as is a well known fact, the profession of medicine is flooded with a long line of vaunted specifics, but by far the majority have been weighed in the balance and found wanting as to the results claimed. Not so with thialion, however; under its influence, it is truly surprising how an otherwise intractable treated case will improve under its continued use. Thialion is a laxative salt of lithia; it is prepared exclusively for physicians' use. Before dismissing this subject I desire to say that I have also found thialion a most valuable aid in the treatment of chronic malarial poisoning on account of its well marked stimulating influence upon the hepatic cells. In these cases it should be prescribed in teaspoonful doses in a teacupful of water, hot, one hour before each meal. This plan of treatment in no wise interferes with the administration of other agents, indeed the use of quinine will be productive of far better results while the patient is taking thialion than under any other circumstances. As we all know, many of these cases we think require a little mercurial cathartic, and yet we feel an uneasiness in the case of the aged to give even a small dose of calomel or even blue mass, in such cases thialion will fully take the place of the mercurial, and has the advantage of being entirely free from every disagreeable property. The influence exerted upon the bilious state by thialion stamps its efficacy at once as a reliable agent to use in a long line of diseases dependent upon hepatic inactivity. In conclusion I desire to state that I have received such highly satisfactory returns from thialion, I cannot hesitate to express my views to my professional brethren, believing that others may have their attention called to something that will prove a friend in need.

## FUNCTIONAL CONSTIPATION AND ITS TREATMENT.

BY A. J. JENKINS, M. D., BUFFALO, N. Y.

(Reprinted from *Interstate Medical Journal*, October, 1895.)

When Nature calls at either door,  
Do not attempt to bluff her,  
But haste away, at night or day,  
Or health is sure to suffer.

Ingestion of food, its digestion and assimilation, are universally recognized as essential; but necessity of thorough elimination of waste is not so generally understood, the result of which is much ill-defined, though serious invalidism brought on through an inexcusable disregard of one of the most important calls of Nature. On this point a valuable lesson might be derived from the brute creation, whose frequent daily observances of this kind, irrespective of circumstances, are well known, and are a sufficient commentary on the significance of the call, for animal instinct seldom proves false to physical laws. Even the infant has no restrictions whatever, and, when in a normal condition, has upon an average of three passages per diem. There is no doubt that many of the ills of human life may be traced directly to constipation, which, if long continued, introduces a train of symptoms that present themselves for relief in the daily practice of every active physician; nor does he find any one cause of ill health so difficult of removal, for its effects in turn become causes that continually react upon and aggravate its own condition.

By functional constipation is meant that large percentage of all cases of constipation associated with derangement of one or more of the three great processes of nutrition—digestion, absorption and assimilation, due directly to some disturbance of the physiological action of the intestinal tract, usually brought on by neglect to answer promptly one of the commonest behests of nature. The effects upon the general system, therefore, of functional constipation, will be those connected with mal-nutrition, and the two abnormal conditions will do no less than mutually aggravate each other. From the fact that the intestine is a secreting, absorbing and eliminating tube, in which the most important part of digestion takes place, it is highly essential that its canal should be kept clean and sweet, kept open and free from all poisonous and extraneous matter—containing only a completely digested and non-irritating fluid—in order that it may perform its duty in a perfectly healthy and rational manner.

Of the three groups of alimentary principles—proteids, fats and carbo-hydrates—the first requires the greatest amount of digestion, and in the stomach are largely converted into diffusible peptones; but the pancreatic digestion of proteids, in the duodenum, is carried much further, especially in reference to the disintegration of the molecules, inasmuch as the hemi-peptones of tryptic fermentation may be converted into leucin, tyrosin and ammonia, preliminary stages to the excretion of nitrogenous excess in the form of urea. Such excess is exceedingly common with English speaking people, owing to the national habit of feeding inordinately on albuminous foods. It will be seen that if the gastric juice be unable to perform the work, on account of excess in the ingestion of proteids, the undigested nitrogenous substances necessarily pass into the intestine, where (particularly if constipation exist) bacterial, putrefaction becomes almost inevitable. The subject of the formation of poisonous substances within the intestine and the effect of this poison upon the health of the individual has attracted considerable attention in the last few years, and the various chemical products, which are generated either by fermentive or bacterial putrefaction have been quite successfully differentiated. These substances are, of course, mostly eliminated by the kidneys (and can readily be detected in the urine), also in part by the bowels, except in case of chronic constipation, when they are principally absorbed into the circulation, giving rise to the various constitutional symptoms so characteristic of this complaint.

The presence in the urine of the incompletely elaborated products of tissue waste, such as uric acid and the urates in excess, would point to faulty metabolism; peptones,

albumin, or indican in the urine would implicate assimilation; while the discovery in the stools of the digestive products in a diffusible form would indicate defective absorption. Collectively these products appear in the urine in the form of ethereal sulphates, and when these are discovered in certain proportions, as they almost invariably are in functional constipation, it may be definitely concluded that putrefaction is actively present in the intestine. The existent nutritive disorder usually takes its origin in the digestive tube, either in alteration of the chemical processes, or in duodenal indigestion from faulty chyme; insufficient flow of bile or pancreatic secretions, or from want of intestinal peristalsis. Absorption of the products of putrefaction and the manufacture of new toxins are the inevitable result of mal-elimination from the uro-genital, or intestinal tract, or both.

The decay of food occurs mostly in the intestines for the reason that here we meet two potent factors, namely, an albuminoid fluid prone to decay, and bacteria prone to cause the decay most rapidly. Through the labors of Jaffé, Baumann, Brieger, and others, it has been ascertained that the majority of these products belonging to the aromatic series, are elaborated as such in the small intestine and usually eliminated with the urine, one of the most important of which is the combination, indol, which gives rise to indicanuria. This sulphur compound is formed by the putrefaction of albumin in the intestinal canal, which body is oxidized in the organism into indoxyl, which in turn combines with sulphuric acid and is eliminated by the urine. The indicanuria which follows involves more or less auto-intoxication and many resulting nervous symptoms which are often of a serious and distressing character.

We have seen that the nitrogenous foods, which include the glutenoids, are particularly prone to undergo putrefaction resulting in the aromatic sulphates, or, that, if incompletely oxidized and not eliminated, they result in uric acid and the urates; consequently this class of foods should be excluded from the diet to a reasonable degree in all cases of functional constipation. It is believed by Professor Græme Hammond, of New York City (Cf. *New England Medical Monthly*, April, 1895), that the ingestion of too much nitrogenous food in the form of meat, leads to bacterial putrefaction, and that "the steady absorption of putrid matter by the blood, and the subsequent distribution of this material to the nervous system must exert a pernicious influence thereupon in direct proportion to the quantity of poisonous material generated and absorbed." We may fairly conclude, therefore, that the furred tongue, fœtid breath, headaches and *various nervous symptoms* so common in cases of functional constipation, are due not altogether to the existence of urates in the circulation, but largely to absorption of the toxic material formed and retained in the intestines. It has already been shown by the investigations of Hirschler, T. R. Müller, Helden and others (Cf. "Intestinal Antiseptics and Aromatic Sulphates," by John A. Wesener, Ph. C., M. D., in the *New York Medical Journal*, Nov. 3, 1894), that "the aromatics are diminished in the urine when the albuminoids are excluded from the food and a large amount of carbo-hydrates is used instead." It has not been proved that these chemical changes take place in no other part of the body, but it has been shown that they are formed principally from protracted decomposition of the albuminoids in the intestine, and Küche and Nencke have demonstrated that indol is exclusively a product resulting from the action of bacteria on albuminoids, and, furthermore, that uric acid and the urates result when the albuminoids are not completely changed into urea.

It should be understood that ordinary putrefaction outside the body is the same as pancreatic digestion; that is, albuminoids are first decomposed into leucin, tyrosin and ammonia, and should then be eliminated as urea, the reserve solids passing through the bowels as stool; but in case of deficient elimination of the latter, the products being allowed to remain in the intestine, extra-decomposition takes place into the poisonous indol, phenol, etc., which are in turn absorbed, giving rise to the various constitutional symptoms associated with chronic constipation. Any notable excess of indican in the urine may be determined as follows: Into a small test tube containing a drachm of pure hydrochloric acid about thirty drops of the suspected urine is added and the mixture

shaken. A purplish or violet tint appearing within two or three minutes indicates a decided excess of indican. Should this reaction not occur, however, add three drops of strong fuming nitric acid, and if neither of the above mentioned colors appear there is no indicanuria.

So-called cases of "biliousness," so common about the middle period of life in constipated subjects, are really cases of hepatic insufficiency, brought on by the stress of some previous over-exertion on the functioning power of the liver in its efforts to prevent faulty metabolism of nitrogenous matter and the consequent manufacture and retention of uric acid in the system. As to the detection of uric acid in the urine, a copious deposit of red sand in the vessel, in which acid urine has stood for three or four hours only, points usually to excessive formation of this substance, which is rendered worse should an abundant fermentation in the gastro-intestinal tract coexist.

In summing up the case it will readily be seen that a remedy, to be effectual in long standing cases of functional constipation, must be one which will excite cellular action of glands, and promote the elimination of the waste products of nutrition: *i. e.*, 1. Chemically, it must be a good solvent of uric acid. 2. Physiologically, it must be distinctly hydragogue in action, in order to stimulate the intestinal secretion, bile and pancreatic juice, awaken peristalsis, and thus prevent duodenal indigestion with all its attendant ills of putrefaction, auto-intoxication, etc. For the purpose first mentioned, lithia is universally considered the best known agent, inasmuch as urate of lithia is formed, which is the most soluble of all the salts of uric acid. For the second purpose, a laxative saline is plainly indicated in order to excite free outward osmosis, and thus change the dry, hard fecal accumulations or scybalæ, into dejections moderately soft in consistency—rendering their removal an easier mechanical process. A remedy, therefore, which contains within itself a combination of these two qualities, would be highly desirable and should prove efficacious in these cases.

The only therapeutic agent known to the writer which fully answers to the above description, is the new laxative salt of lithia, thialion, which has already been used with exceptionally gratifying results in refractory cases of the uric acid diathesis as well as in functional constipation. A unique, and at the same time very significant action of this drug, is its tendency to cause about the third or fifth day the elimination of what is called the "stinking stool," when it becomes necessary for the operator to isolate himself in the center of a ten-acre lot to save himself from becoming a public nuisance. The cause of this trouble is evidently an old impaction which has for some time been retained high in the jejunum, acquiring its delightful odor from extra-decomposition and the development of a substance which is a final product of the putrefaction of albumin. It is highly important, of course, that this poisonous mass should be removed from the body, and thus prevent absorption and further toxic effects. From what has just been stated it would appear that, theoretically, thialion should prove beneficial in its action upon a "torpid liver;" and in the following case, which has kindly been reported to me by a distinguished brother physician, its salutary effect in this respect is demonstrated in a very practical manner, to wit:—

"Mrs. A., American, æt 40, married, no children, consulted me in reference to obstinate constipation, from which she said she had suffered for many years. She had run the gamut of a long series of patent medicines, pills of various makes, and had received treatment at the hands of a number of physicians without getting anything more than temporary relief. As a rule the several treatments left her in a worse condition than before. At the time of her first visit the bowels did not move more than twice a week, and then only by the use of large enemas. From her description of the stools, it was quite evident that only the rectum was emptied by these evacuations, and room was made for the full contents of the colon above. She was a large woman, weighing 180 pounds, had a sallow skin and a headache severe in character, two or three times a week. She also complained of asthmatic breathing, together with painful joints of the hands and feet. Her deep brick-colored urine indicated the presence of *uric acid*, as well as the waste material usually found in cases of torpid liver.

I directed her to take a dose of thialion, a teaspoonful dissolved in a cup of hot water, and drank as hot as possible each morning—and to report to me in two days. On her second visit, she said no movement had taken place, and she was apprehensive that she should take something more powerful in order to move the bowels. She was then told that thialion was not in any sense a cathartic, but was a laxative, which acted slowly but surely upon the liver, that she must continue to take the medicine as prescribed for two days more, when she should report again. She did not come to report until morning of the third day, when she said that she had had three large movements during the forenoon—such movements as she had not had for years. I told her to omit the dose next morning, and to take the medicine every other day, requesting her to call on me again in the course of a week—which she did. At that time she reported regular movements every day, especially the day on which the medicine was taken. Her headache was gone, and she felt very grateful and much better. She continued taking thialion every other day, or twice a week, for four months, and she expressed herself then as perfectly cured.

On seeing the patient last week, over a year since she commenced the treatment, she stated that about once a month she found it necessary to take a dose of thialion, but that aside from that her constipation was perfectly cured. This case illustrates the point that until the remedy gets in its work upon the liver, we cannot expect the bowels to increase very much in their activity."

The following case is reported from the same source, and is particularly interesting as an illustration of perfect recovery from functional constipation associated with long suffering mal-nutrition:

"Mrs. D., American, *æt.* 32, brunette, married, no children, weight 135 pounds, has been a great sufferer from childhood from obstinate constipation. Like the previous case she had spent much time and money trying to get relief from the difficulty which was evidently undermining her health rapidly. The movements occurred only about twice a week, while once each week she suffered from a severe headache which prostrated her for two days at a time, so that she could not exist out of bed in a room that had to be constantly darkened. She had liver patches on her face, yellow conjunctiva, pasty look to the skin, bad appetite, foul tongue, and all the symptoms that go with auto-intoxication and poisoning. That there was considerable putrefaction and consequent absorption of the retained fecal mass was evidenced not only by the aforementioned symptoms, but also by a well-marked indicanuria.

Thialion was given her as in the previous case, a teaspoonful dissolved in a cup of hot water taken in the morning on rising, while at the same time she was cautioned to avoid excess in nitrogenous foods. It was not until the fifth day that she had a free movement, and then, as she expressed it, it was the most odorous stool that one could possibly imagine to come from a human being. The remedy was continued in her case every morning for a week; then every other morning for two weeks; twice a week then for a month; once a week for another month, and at the end of that time she appeared to be perfectly well. Her bowels moved freely; appetite returned; skin resumed a healthy hue, the pasty look having entirely disappeared; tongue was clean; breath nice and sweet,—in fact, every indication was present to show that the nutritive functions were finally being properly performed.

It is now two years since this patient began treatment, and she reports that by taking an occasional dose of thialion she has remained perfectly well, the bowels acting normally—movements being had every day or every other day."

A CASE OF CYSTITIS OF LONG STANDING, COMPLICATED BY  
CHRONIC MALARIA, TOGETHER WITH SLUGGISH LIVER  
AND HABITUAL CONSTIPATION.

BY J. W. WALKER, M. D. (HARV.), LOS GATOS, CAL.

(Reprinted from the *Annals of Gynecology and Padiatry*, December, 1899.)

The following case may serve to illustrate the maxim that we should never abandon the hope of a cure, so long as any remedy, compounded upon rational and scientific principles, remains untried.

The patient, Mr. R., eighty-two years of age, has suffered for several years from chronic cystitis, with occasional acute exacerbation.

The original case of this cystitis was, undoubtedly, the careless (or rather the *ignorant*) use of unclean catheters.

Like many elderly men he has enlarged prostate, and has been compelled for years to rely on the catheter for the evacuation of his bladder; but had never been taught the importance of keeping this instrument clean; knew nothing of the value of thorough sterilization.

As a result the flexible rubber catheter which he used rapidly became foul: and its repeated introduction in this condition gave rise to an acute cystitis, which finally became chronic, and has lasted up to the adoption of the treatment indicated below.

In addition to this trouble, he suffered from chronic malaria and a sluggish liver, together with habitual constipation, which last symptom the old gentleman himself, being an enormous eater, regarded as not the least of his afflictions.

He had tried so many remedies and doctors without effect and was so querulous and petulant in consequence of his advanced age, that it was difficult to induce him to take any medicine at all.

I had never before used thialion, but its composition warranted the belief that it would prove an ideal remedy for this class of disorders, while the published reports of other practitioners as to its effects in similar cases confirmed this idea.

Following the suggestion given on page 22 of the pamphlet on uric acid, I combined quinine with thialion in this case, giving two grains of quinine three times a day, while the thialion was given in teaspoonful doses every morning dissolved in a cup of hot water.

At the same time I consigned the old rubber catheters to the ash-barrel, procured a proper prostatic catheter of block tin, which could readily be sterilized by boiling, and taught the patient how to use and care for it.

The results of this change of treatment were rapid and satisfactory, both to myself and the patient.

He has had no more chills, has large, regular, mushy evacuations of the bowels, and most important of all, the amount of urine voided has greatly increased, while the former purulent, mucous and bloody discharges have totally disappeared. He is so delighted with his improved condition that he says he feels twenty years younger, and what is most remarkable of all, for the last three days he has been able occasionally, for the first time in twelve years, to empty his bladder in the natural manner, without the use of the catheter.

This case is certainly a convincing proof of the efficacy of thialion in this class of cases; and how many such there are, in the hands of my brother practitioners all over the country, which might be cured as this has been, and as easily!

## BACKACHES: THEIR CAUSATION AND TREATMENT.

BY H. P. MANSFIELD, M. D., GEORGETOWN, CONN.

(Reprinted from the *Canadian Journal of Medicine and Surgery*, Toronto, Canada, January, 1900.)

The backaches referred to in this article comprise what has long been classed as lumbago, or myalgia lumbalis, and should not be confounded with disease of the spinal cord, with abscess, nor with certain rectal or uterine disorders. Diseases of the kidneys, however, and passages of renal calculi through the ureters, as in so-called "crick in the back," are included under this heading, inasmuch as they both may be traced to a certain well-known toxic agent as the common etiological factor, the writer believing that fully nine-tenths of the backaches which afflict mankind are merely local expressions of a general uricacidæmia; or, in other words, that they are the inevitable result of the deposition of uric acid tophi in and about the various connective tissues in the region of the back.

It is unnecessary here to enter into a study of the process by which uric acid is manufactured in the system, as there is already a plethora of literature on that subject, but it may be stated that nearly all investigators agree that the toxin usually results from the long continued ingesta of an excess of nitrogenous food-stuff, and the consequent ultimate failure of the liver to transform the crystalline products of pancreatic digestion and the ammonium carbamates into urea. The uric acid salts having once been formed and retained in the circulation are sooner or later deposited in those tissues for which there is a predilection, especially the fibrous tissues of joints and muscles, as so commonly manifested in gout and rheumatism.

It has long been known that there is a predisposition to myalgia among those of acquired gouty habit, but not until recently has it been demonstrated that the two conditions are symptomatic of the same general dyscrasia. The ancient physicians gave the name of gout in the thirteenth century to a supposed morbid matter which oozed from the blood, drop by drop, and settled about the joints of the feet; and, says one writer: "They were surely in touch with our present theory that the morbid matter (uric acid and the least soluble urates) left the blood and 'settled about the joints.'"

The external agencies involved which determine the precipitation of the urates from the circulation and their consequent "settling about the joints" are both common and numerous; but, to be brief, it may be said that anything which diminishes the alkalinity of the blood will serve in such cases as a causative factor, the point of deposition depending upon some irritation of the part, such as local injury, strain or pressure. Thus we see why the metatarso-phalangeal articulation of the big toe is so often selected as well as the joints and muscles of the back, especially the latter among those whose occupation or calling requires a position which causes constant strain and ever varying nicely balanced contractions of the muscles of the spine, the uratic deposits being greatest, of course, near the points of tendinous insertion. The salts are usually deposited gradually, causing fatty, granular or fibroid degeneration of the muscles with the resultant general malnutrition, vitiated vital force and chronic aches of the part. But sometimes the onset is abrupt, as in those instances where there is sudden exposure to cold. In such cases the blood is made less alkaline owing to the sudden checking of the acid excretion from the skin, the muscles of the back being so often affected owing to the great extent of surface and greater tendency to be exposed to cold draughts.

It has long been understood that, unless the patient is lying recumbent, the pain of lumbago is constant and prolonged because of the never changing necessity of maintaining an erect position of the trunk. While it is a condition common to the middle and later periods of life, nevertheless it is often ushered in earlier because of the peculiarity of some occupation, as standing for hours in one position at the bench like the



hatter, or sitting steadily bent over in his seat like the cobbler. The habit of standing stiffly at recitation in classes at school is also a pernicious practice, and gives rise to many backaches among school children. Backache or muscular rheumatism was one of the very few disorders of which the western Indian hunters and pioneers of this country were wont to complain, which was probably owing to their frequent exposures to cold and their dependence upon meats as the main article of food, two factors most fertile in the production and retention of uric acid in the system. It has lately been estimated that, of our foods, not more than one-third should be nitrogenous or tissue building, while the other two-thirds should consist of the energy-producing carbo-hydrates. It is in respect to their choice of food and manner of eating it, therefore, that the American people have been so long at fault, and it is largely owing to this circumstance and a variable climate that they are now subject to gout, rheumatism and backaches.

Concerning the treatment of these cases, all of which are manifestations of the same uratic diathesis, it is obvious that in order to get at the root of the matter the physician should not only strive to remove from the system the uric acid already formed, but must prevent the formation of any more; in other words, an hepatic stimulant is indicated as well as the uric acid solvent. The new laxative salt of lithia, thialion, combines within itself both of these essential qualities, being strongly antilithic in its therapeutic action, and at the same time cholagogue in its effect upon the liver, initiating a free biliary flow with consequent peristaltic action of the bowels and the production of a large "mushy" stool tinged with many suggestive odors. Though this remedy has already an established footing among therapeutic agents in the treatment of the gouty and rheumatic diatheses, yet it has not hitherto been lauded as a specific for backache, and for this reason the writer takes pleasure in reporting a few of the many cases in which it has been used in this complaint with exceptionally gratifying results.

J. B., American, æt 32, hat finisher by trade, had suffered almost constantly for two years with "backache." He had tried various internal remedies and applied porous plasters innumerable, gaining only temporary relief. He complained of occasional attacks of vertigo and some sleeplessness, but otherwise enjoyed perfectly good health. Careful examination revealed little of consequence aside from a strongly acid, brick-colored urine, containing the usual deposits indicative of a sluggish liver. Upon questioning him regarding his occupation it was learned that he was obliged to stand on his feet at the bench in a hot room from morning till night, with no coat on, and usually exposed to cold draughts from open windows. He also admitted that he considered it his duty, as a workman, to eat meat three times a day and had rarely failed to do so, partaking but sparingly of other foods.

It was evident that this patient was a victim of the uric acid diathesis, the back having been selected for the deposition of the toxin owing to the great strain put upon its muscles and its frequent exposure to cold draughts. Teaspoonful doses of thialion were administered every three hours the first day until a free bilious passage from the bowels was produced, which occurred soon after the third dose. For two weeks thereafter a dose was given in a glass of hot water every morning upon rising. As the litmus paper then indicated a distinctly alkaline urine, the medicine was omitted every other morning for another fortnight, at the end of which time it was given up altogether, the patient having declared himself cured. Three months have since elapsed, and although this man has attended to his usual work at the bench, the pain in his back has not reappeared. It should be stated, however, that he has eaten less of meats and been more careful in regard to exposure.

The foregoing case is a type of hundreds of others to be met with daily in most manufacturing towns of old New England, and has been given here in brief as a fair sample of seventeen other sufferers whom the writer has successfully treated in precisely the same manner. Another set of cases which is often met with occurs among those of the middle and higher walks of life, people who are prone to eat too well and yet are of sedentary habits—professional men, retired business men, bankers, teachers, clerks, etc. The following case is illustrative of this class:

S. H., American, stock speculator, æt 48, five feet ten inches in height, of fine physique, had always enjoyed perfect health up to eight years ago, when he retired from active business career and began life "on the street," from which time he has complained more or less of backache, the pain over the lumbar region during the past year having been almost constant. Upon questioning him the fact was elicited that he was wont to indulge in late hours, game suppers and the "flowing bowl." His urine, at times, he said, resembled "red paint," and occasionally scalded. His treatment had consisted of iodide of potash, belladonna plasters and Turkish baths, none of which had afforded him relief. Like the case above reported he was at once put upon teaspoonful doses of thialion to be taken in a glassful of hot water every morning upon rising. On the third day a large mushy movement of the bowels occurred, which was so offensive in odor that the patient at first refused to continue the medicine. On being informed, however, that it was the best thing that could have happened he was finally persuaded to resume the treatment, from which hour he began to improve steadily. Three weeks later he reported himself cured of his backache, although he continued to take the medicine twice a week for some time after, owing to its delightful effect on his bowels.

#### SOME CASES OF OBSTINATE HEADACHE, THE WOMAN'S BURDEN.

BY S. GREEN, M. D., SANDY HOOK, CONN.

(Reprinted from the *Columbus Medical Journal*, Columbus, Ohio, January, 1900.)

The Professor of the medical college says, "Gentlemen, this is a clinic," when he brings his patients before the students for examination, diagnosis and treatment, but I, being a country doctor and not a professor in a college, am obliged to say to the readers of this paper;—This is a clinical experience which may prove of value to you. I do not intend to enter into a discussion of the etiology or pathology of headache, but simply to relate two cases which have come under my observation within the last year, and which have taught me a lesson I can never forget. These cases had been through the hands of several physicians; unknown quantities of patent medicines had been employed, and in the case of number one a sea voyage was expressly undertaken for the purpose of obtaining the relief that never came. All of these cases failed in being cured by the ordinary rational methods adopted by the doctor of to-day. The question that will quickly arise in the minds of my readers will be: "Were these cases due to uric acid?" In answer I will state that I do not know, but this much I do know, that when I gave medicine which was powerful enough to eliminate the uric acid, make the bowels regular and relieve the torpidity of the liver (which was present in every case), I never failed to cure. These statements may seem broad, but they are actual facts borne out by the results obtained in every case.

Mrs. Van C., German woman, 44 years of age, mother of seven children, weighing 166 pounds, four feet, six and three-quarter inches tall, approaching the menopause, consulted me in March, 1899, with a history that comes to the doctor so frequently; headache—periodical headache, an ache that extended from the frontal bone back to the occiput; life a burden; nerves unstrung from constant strain; insomnia a prominent symptom, with bad dreams when sleep did arrive, and days of great depression almost approaching melancholia. In connection with these symptoms she had moderate attacks of asthma, not very severe, but enough so that when added to the other troubles only aggravated the condition and made her still more miserable. These headaches would visit her at first (about five years ago) usually once a month, and this about the middle of the month, but at no time immediately preceding or during the flow of the menstrual period. It commenced with pains over the left eye, generally present in the morning on rising; these pains gradually passed over to the right eye, and then by a

rapid progress involved the whole brain, which became a throbbing, palpitating, painful mass. This was her condition by ten o'clock in the morning, and by 11 o'clock, as a rule, she was in her bed, from which she did not rise until late the following day. After awhile these attacks became more frequent, until, at the time of her first consulting me she had on an average, at least two attacks a week. Her husband was a man of moderate means, but devoted to his wife and family, never hesitating at any expense to relieve her from this terrible condition. Doctors were employed, money was expended as freely as he could, she was given every attention, but all to no purpose, when finally he was advised to make any sacrifice to give his wife a sea voyage over to the other side. He secured passage on one of the steamers of the Red Star Line, 13 days to Antwerp, where she remained for a week or two, returning home on the same steamer. For a short time after her return she seemed a little improved, but soon relapsed into the old condition, and, to make a long story short, she finally fell into my hands. An examination revealed the fact that she had a coated tongue, conjunctiva of a yellowish hue, two liver spots were prominent upon the face, menstruation painful but no displacements, urination frequent, (I believe that this was due to the irritation of the uric acid crystals on the neck of the bladder,) urine not normal in quantity, of a very high specific gravity, highly colored, and intensely acid as the litmus paper tests showed. She complained of pain in the back, dragging pains down the legs, appetite poor, and for the last two or three months her sight had been failing rapidly. At the severest exercise she noticed that her limbs were swollen a little. The bowels were constipated, movements being had only by the frequent use of cathartics, of which she had run the whole gamut. Her condition was pitiable indeed.

A careful examination showed the colon to be packed with faecal matter; heart's action feeble and weak like that we get in fatty degeneration; urine 1020 specific gravity; no albumin present; no sugar; plenty of uric acid crystals, urates and phosphates. The microscopical examination revealing a little bladder epithelium.

I made up my mind that this was a typical case of uric acid poisoning, that the blood had become so full of these accumulations that only a short time must elapse before an acute explosion took place in some of the serous cavities of the body. Up to within a year prior to the first visit of this woman, the treatment of these conditions had been attended with very different results. All of the modern remedies for the elimination of this poison had been used, one after another. My success in the treatment of rheumatism, neuralgia, asthma, Bright's disease of the kidneys, and a host of other diseases *which were due to excess of uric acid in the blood*, had been of such a delightful character with the use of thialion, that I made up my mind that here was a condition where the drug might be put to a thorough and practical test, as my previous experience warranted me in giving it a trial in this case. I first insisted upon her taking a Turkish bath, so as to remove anything of an exterior nature which might retard the proper action of the skin in its effort to assist in throwing off waste material. I then commenced by giving her a teaspoonful of thialion dissolved in a cupful of hot water and drunk as hot as she could, drinking the whole quantity as quickly as possible, three times a day, one hour before meals, she sending me a specimen of her water every day and to report to me at the end of the third day. After the fourth dose had been taken the litmus paper showed a marked diminution in the acidity of the urine; after the fifth dose it was alkaline. When she reported herself on the third day the rest of her symptoms had not been improved, nor had the bowels moved since she had commenced taking the medicine. She also complained about the flat, disagreeable taste, stating that it had the tendency to nauseate. Believing my course was correct in the treatment of these conditions, I directed her to squeeze some lemon peel into the hot water previous to the adding of the thialion, which at once removed the only disagreeable feature of taste, and I further directed that she continue taking the medicine as before and to report to me again on the second day thereafter. She did not wait until the second day; she came to my office the following day and said: "Doctor, I never thought it possible for a person's bowels to contain such a quantity of faecal matter as

I have voided since I was here yesterday. During the night I was taken with cramps in the bowels, from which I suffered about an hour before the desire to go to stool manifested itself. Then I thought they would never become empty. From midnight until seven o'clock in the morning I had five large movements of the most frightful odor I ever experienced." At this time the skin became active, the urine was increased very largely in quantity, showing urates and uric acid crystals in abundance. The following day the movements became so many and so bilious in character, that I put her upon a teaspoonful dose once a day taken on rising in the morning; which dose I had her continue for two months, long before the end of which time all of her symptoms were relieved and she was cured. The liver spots were gone, the asthma banished, the constipation was cured, and, best of all, the headaches were gone and have never returned since. Occasionally, now, she tells me, when she thinks her liver is not acting as it should do, she takes a dose of thialion, but sometimes it is more than a month from one dose to another, and never oftener than once in two weeks.

This case speaks for itself; it needs no comments on my part. I simply present the facts to you.

Improvement had hardly commenced in the case noted above before this one presented itself. Mrs. C., American, 39 years old, five feet, seven and one-half inches tall, weighing 110 pounds, the mother of six children, consulted me with regard to persistent, chronic, occipital headache. These headaches came on sometime during the day, generally during the afternoon, commencing with pain at the occiput—radiating, sharp and neuralgic in character. Still as she described it, "It's inside the cranium, Doctor." This woman has borne children rapidly, two of them were born within thirteen months of each other. Her husband was a clerk in a dry goods store, and she had to bring up his family on \$15 or \$16 a week. This, of course, necessitated hard work for her—work from morning to night, the work never done for the woman. She was married when but 17 years of age, and her children were all born before she was thirty. Careful examination failed to reveal the fact that she had ever done anything to prevent conception. These headaches dated back to a time shortly after she had given birth to her fourth child, and during her last pregnancy they had increased in severity and frequency, while at the same time she noticed a puffiness in her limbs with a general tendency to bloat. This was due, so she was told, to the fact that her water was wrong in some way. The headache generally came on a few days (nearly always two) before the flow of the menstrual period. Before she commenced menstruating a day persistent pain was present, in character much the same as we get where a woman has stenosis or a flexion of one kind or another. The attack lasted usually from twenty-four to thirty hours, and absolutely incapacitated her for her work. It took her a long time to recover from the effects of one of these exhausting attacks. Further examination reveals the following: Obstinate constipation of long standing; furred tongue; sallow skin; listless eyes; general facial expression one indicating discouragement; a woman subject to fits of melancholia; water high colored with brick dust deposited at the bottom of the vessel. Vaginal examination fails to reveal anything abnormal about the uterus. When placed in the Sim's position and a careful examination made by using the Sim's speculum, everything seemed to be normal and all right. She called my attention to some icteric spots over the body. On the left arm was a small patch of eczema, which she said had existed for four or five years, resisting all kinds of treatment. Latterly she notes that her hair is falling out rapidly, and at the time of her first visit it was very, very thin. The spleen is enlarged, probably due to the fact that she had malaria several years ago. The lower border of the liver projects an inch or more below the normal line. Veins stand out prominently on the forehead and hands. Altogether it would seem that in her case, where from fast childbearing, overwork, etc., the uric acid, which normally should have been carried out of the system through the bowels and urine, had been retained until she reached her present deplorable condition. She had received treatment at the hands of so many doctors, had taken so many different kinds of medicines to effect a cure, that

when I suggested going to the hospital for treatment, it revealed the fact that she was discouraged in the first place, and did not care to entertain for a moment the idea of entering a hospital. Later I saw her husband and advised him to allow her to go into the hospital for two weeks, explaining to him the necessity in her case of complete rest, good care and nursing, the right medicine, medicine administered by trained hands, given in the best way and at the proper time with regularity, showing him how impossible it was for these conditions to be met in her home. He finally consented, and she also consented, and the night she went to the hospital I ordered she be given a bath at a temperature of 104, for fourteen minutes, when she was taken and put in the hot pack with seven blankets. Here she remained another fourteen minutes, when she was to be massaged after which she was rubbed down, and just before going to bed she was given the alcohol rub. She was given a teaspoonful of thialion dissolved in a cupful of hot water, into which a piece of lemon peel had been squeezed to remove the flat taste. This she drunk down as quickly and as hot as possible. In the morning a similar dose of thialion was administered, and about fifteen minutes after breakfast a desire to stool was apparent, and a large mushy movement was the result. Thialion was given again in the evening in like manner, and as a result she had another large stool during the night. A general massage was ordered for every day. On the second day the movements from the bowels continued, the third stool indicating bile in large quantities with stinging around the anus. Thialion was continued only once a day, and she was given tablets containing feralboid, quinine and strychnia, one tablet three times a day before meals. She was given during the whole time good nourishing food with plenty of milk. After the sixth morning she was given a dose of thialion as before, but we found out that it agreed with her much better when taken in the evening, just the last thing before going to bed, so it was ordered given in this way. Improvement now commenced, and from then on till the end of the two weeks it was steady and marked. The bowels became not only regular in their movements, but the evacuations were natural in color, resembling much the stool of the infant. The appetite returned; eczema disappeared from the arm at the end of the tenth day without any treatment whatever. Spirits returned, and when her two weeks were up she went out of the hospital a new woman. At that time she was taking but one dose of thialion twice a week. She now takes a dose of thialion once a week or once in two weeks, just as she finds she requires. But she is absolutely well; attends to her wifely duties; eats well; sleeps well, and has become pregnant again.

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#### LITHÆMIA.

BY J. W. P. SMITHWICK, M. D., LA GRANGE, N. C.

(Reprint from the *Southern Medical Journal*, February, 1900.)

This condition, which is the result of imperfect oxidation, is usually brought on by excesses in eating and drinking, and is a frequent forerunner of gout. These excesses pervert the functions of the different organs, more especially the digestive organs. The liver suffers to a very great extent by having the work of other organs to perform. This results in imperfect work on its part—imperfect oxidation—and the accumulation of an excessive amount of uric acid, a more lowly organized product than urea, which is normally formed. If this condition is allowed to progress, in the course of time, the blood becomes surcharged with uric acid, and later on there appears all the symptoms of irregular gout, or it may result in contracted kidney.

The patients usually present themselves complaining of dyspepsia in one or all of its forms. There are acid eructations, heart burn, gaseous distension after eating, coated tongue, bad taste in mouth, breath heavy and foul smelling, and constipation is usually present. The skin is muddy and there is a great deal of headache and aching

of the limbs. The liver is enlarged and tender on pressure, due to congestion. The urine is scanty and high colored, and of a high specific gravity. On standing, urates and uric acid are deposited. Micturition is frequent and scalding. Patients complain that they never feel entirely well, though not sick enough to go to bed; that they have no energy for anything whatever.

The digestive disturbances are complained of most and must be overcome. To do this, a careful regulation of diet, with the proper medication is necessary. If the distress appears immediately after eating and lasts only a short while, the greatest amount of fault is due to the stomach; if delayed for an hour or more, then the trouble is due to faulty intestinal digestion; but more often the trouble comes on immediately after a meal and lasts until the end of the period of digestion. In the first place albuminous food material must be restricted, in the second instance the starchy and saccharine constituents of the food must be limited, while in the third instance a carefully modified diet must be used. This must be studied carefully, as every person is a law unto himself, and only articles of diet are to be made use of that are found to be of easy digestion and assimilation.

To intelligently administer drugs one must differentiate two varieties of the affection, which require different treatments. In the first variety there are marked gastric and hepatic derangements; while in the second variety, in addition to the above symptoms, there are decided disturbances of the nervous system. The patients affected with the second form of the trouble usually take a very small quantity of food, and are disturbed with insomnia, vertigo, weakness, and all the varied symptoms of the neurasthenic. In the first class, who are usually heavy eaters, saline purgatives are very beneficial by relieving the portal system. In the second class active purgatives should be avoided, only gentle laxatives being used. Sodium phosphate is recommended and is often used with good results. Colchicum has also been used. The waters of the various lithia springs have long been in use and are found to be very beneficial, but their use must extend over long periods of time and large quantities consumed. It has been proven time and time again, that lithia has a greater neutralizing power, weight for weight, than any of the other alkalies. To obviate the long periods of administration most practitioners use some one of the salts of lithia, and it was the custom of the writer to use the citrate until the appearance of thialion, the laxative salt of lithia. This drug acts in a four-fold manner by gently relieving the portal circulation, stimulating the flow of bile, aiding in the elimination of the excess of uric acid, increasing the peristalsis, thereby relieving the constipation and increasing the flow of the urine. Usually the administration of thialion is sufficient to overcome the trouble entirely, but sometimes in neurasthenic individuals, I give the following formula for its tonic effect:

R Acid nitrohydrochlor.  $\frac{3}{4}$  j.  
Tinct. gent. comp.,  $\frac{3}{4}$  viij.

M. Sig. Two teaspoonfuls in water just before eating.

Treated as above outlined I have never seen a person but what was greatly benefited, if not cured entirely. Of course the same cause will produce the same result the second time and sometimes a patient returns, saying that he has been benefited but little if any by the treatment. After careful inquiry, I find, as an invariable rule, that he has lapsed into the same old habits, after stopping the treatment, which bring on the trouble the second time. This treatment never fails to dispel the symptoms the second and third times.

I herewith append a few typical cases taken from my case book.

CASE XL. A young man, 26 years of age, to all outward appearances enjoying perfect health. Had been suffering from indigestion for some time. Had acid eructations, coated tongue, foul smelling breath, bad taste in mouth on rising, was troubled very much with gaseous distension of bowels at all times, bowels were constipated. Suffered very much from headaches and aches in all parts of the body. I put him upon teaspoonful doses of thialion in a glass of hot water one hour before meals. This gave

him complete relief by dispelling all the above symptoms and regulating the functions of all the organs of the body.

CASE XIX. This patient was a married woman, 36 years of age. Had several children and was complaining of indigestion in all its forms, as well as "womb trouble" in all its forms. I made a careful vaginal examination and found all the parts normally located, but very much congested and tender on pressure. The liver was swollen and tender. She was very nervous and complained of insomnia, vertigo and very great weakness. I put her on thialion, and the tonic, the formula of which is given above, and in one week's time she reported herself feeling better than she had in five years before. I advised her to keep up the treatment for two weeks longer, and then report. At the end of that time she came and I hardly knew her, so much had been the change. She has since been well, and at the present time is thoroughly well, two years from the time I first saw her.

CASE XXII. A young man, school teacher by profession, was troubled with indigestion, constipation, and all the attendant ills. The nervous manifestations were very marked. I ordered a teaspoonful of thialion in a glass of hot water after meals, and the following tonic:

℞ Acid. hydrochlor.,  
Tinct. nuc. vomic., aa ℥ j.  
Tinct. gent. comp., ℥ iv.

M. Sig. Teaspoonful in a little water before eating.

The improvement was marked from the beginning, and in less than two weeks he reported himself as entirely well. I advised another weeks' treatment, which he took, and has since enjoyed the best of health, having gained twenty pounds.

## INCONTINENCE OF URINE IN CHILDHOOD AND ITS TREATMENT.

BY WILLIAM C. WILE, A. M., M. D., DANBURY, CONN.

(Reprinted from the *Massachusetts Medical Journal*, Boston, Mass., February, 1900.)

Though enuresis is occasionally met with in adult life, yet, for all practical purposes, it may be considered an affection peculiar to childhood, rarely occurring after the age of puberty. Before the completion of dentition, incontinence is not looked upon as a disease, but is considered a normal condition. It is not surprising, therefore, that involuntary passages of urine should occur mostly among illy nourished, ill-conditioned children whose muscular fibres still remain weak and undeveloped; or among others comparatively strong, but whose urine for certain reasons has become unusually acid and irritating in character. It is to the etiology and treatment of these latter cases that we wish to direct attention here, inasmuch as in this advanced age of civilization, when children are permitted to gorge upon sweets and meats, such patients are becoming more common every day.

It has already been demonstrated, that, in adult life, among those who "live high" and are addicted to luxurious habits, symptoms of uricacidæmia manifest themselves in the genito-urinary system in the form of cystitis, gravel, sensitive urethra, etc., attended with urine strongly acid, loaded with urate salts. So among children who are fed to repletion and indulged inordinately upon "sweetmeats," the urine becomes charged with urate crystals which irritate, by their points, the partially developed, sensitive mucous membrane and sphincter muscles of the bladder, resulting in incontinence. In an article, entitled "Uric Acid Poisoning," published in *The American Therapist* for April and May, 1898, Dr. J. Lindsay Porteous writes that he is satisfied nocturnal urination in children is often the result of uric acid. He refers to the fact that one year at the Leake and Watts Orphan Home, he treated fifty-four cases of this troublesome habit, fifty-one of which recovered entirely by the administration of alkalies and regulated diet.

In addition to alkaline remedies, however, which are effective only as diuretics or uric acid solvents, the writer has usually found it necessary to prescribe some cholagogue agent in order to excite free biliary flow and thus relieve the work of the genito-urinary system by removing much of the fluid waste of the body through the bowels. Hepatic stimulation of this character is essential, too, owing to the fact that, in these cases, where the ingestion of sweets is sometimes enormous, the liver cells soon become clogged with glycogen, which of course interferes with the special metabolic function of that organ in changing nitrogenous waste and the ammonium carbamates into urea—which, when imperfectly performed, results in the retention of uric acid in the system with all its attendant evils.

For antacid and antilithic effects the salt of lithia still holds first rank among therapeutic agents in the treatment of the uric acid diathesis. This is probably owing to its ready combination with the uric acid of the blood, forming urate of lithia, the most soluble of the uratic salts. It has been found, however, that the natural lithia waters contain less of that agent than occasion calls for. Prof. Abraham Jacobi, who believes that "calculi are of great frequency in infancy and childhood," states in the Archives of Pediatrics, VII, 424, that artificial preparations of lithia, when carefully made, have the advantage over the natural waters owing to their greater strength and potency.

There have been many such preparations presented to the medical profession, some of which are effective as uric acid solvents, and others not, but none of which act effectively also upon the liver, stimulating cellular action, except the new laxative salt of lithia, thialion. The thorough cleaning out of the hepatic cells produced by this remedy is in some cases very striking, as indicated in the character of the stools, which become not only "mushy" in consistence, but about the third day are so positively disgusting in odor (owing probably to the "cleaning out" process referred to), that the little patients' parents have sometimes refused to continue with the remedy, believing that it is producing some disease "inwardly."

While thialion, therefore, is an agent not particularly æsthetic in effect, yet its therapeutic results in these cases are satisfactory and pronounced. Not only is this seen in the character of the passages from the bowels, but also that from the bladder, the urine becoming rapidly less acid and irritating, and finally alkaline. When this occurs the medicine is usually omitted for a day or two, or until the litmus indicates that the neutral point has again been passed, when it may be resumed and continued until recovery. As an illustration of the potency of this remedy and the practical results which may be obtained by its administration, and to evidence that incontinence is often but the local manifestation of a general uric acid poisoning, the following cases are submitted here, in which an alkaline agent has been used with exceptionally gratifying results:

William D., æt. 12, was brought to the office for treatment March 10, 1899, his mother reporting that he had "wet the bed" regularly every night for the past five or six years. During a great portion of this time, the usual remedies had been prescribed by the family physician—belladonna, iron, ergot, etc.—affording only temporary relief. The patient's general health had been good, until recently he had begun to grow irritable and complain of dizziness and headache. His skin and mucosæ were pale, and bowels inclined to costiveness. Upon further questioning it was learned that the patient had always been extremely fond of "sweetmeats," and, owing to the good nature of the father, had usually succeeded in getting his "fill," regardless of maternal restrictions. His mother had already suspected that this indulgence was a causative factor in the case, and was much pleased to learn that her opinion was shared by the new physician. Directions were at once given as to the diet, and thialion administered in the usual way; *i. e.*, half a teaspoonful in a cup of hot water every morning upon rising. The treatment was continued in this way for the first month without much change in the patient's condition, except that the bowels had become regular, while the headache and dizziness had practically disappeared. It was noticed, too, that the quantity of urine voided during the night was gradually diminishing. At the end of another



month a marked improvement was manifest, the normal color of the skin having been regained, while the bedding in the morning was found to be but slightly soiled. On June 15th, three months after the commencement of treatment, the mother reported her son cured, but was advised to continue with the medicine for another month, reducing the dosage to a third of a teaspoonful every other day. Nothing further was heard of the case until the 16th of December, on which date the mother called and stated that the boy had not relapsed into his former habit but once during the preceding six months, a mistake which she attributed to a hearty meal taken just before retiring.

A case even more troublesome than the above, was that of John D., a young man 18 years of age, who reported that he had "soaked the bed" nearly every night since he could remember, wetting through sheets and mattress (as well as blankets placed to absorb the urine). He was first seen two years ago, having, at that time, been treated unsuccessfully by several different physicians. I administered the usual remedies for two or three months without benefit, and the patient was soon lost sight of. Last September he again appeared for treatment, for another trouble, and, being asked regarding his old complaint, he stated that he was "just as bad as ever," and had given up all hopes of obtaining relief. An examination of his urine revealed a considerable quantity of urates and a high degree of acidity. He was finally persuaded to try a new course of treatment; and, having first been advised as to his diet, was at once put upon thialion—a teaspoonful three times a day. This heroic dosage was continued for a week, and then reduced to a teaspoonful every morning upon rising. The young man followed out directions carefully in regard to his diet, and took the medicine regularly for two months, at the end of which time he called at the office and reported himself cured. Three months have since elapsed, during which time he says he has retained his urine at night "as well as any one." He is of a nervous temperament, and his habits are of such a character, that, were there any doubt as to his being entirely cured, the fact would have offered itself long ago. The recovery of this case in so short a time is in many respects remarkable, and can be explained by the writer only on the grounds that the patient had for a long time been a victim of the uric acid diathesis. His bladder, too, was doing much of the work of the bowels. His stools had always been hard and dry, until taking the thialion, when they immediately became soft and "mushy" in consistence.

## TWO TROUBLESOME CASES CURED, ONE OF CHRONIC RHEUMATISM AND ANOTHER OF CONSTIPATION.

BY D. C. REES, M. D., LA BELLE, MO.

(Reprinted from *The Southern Practitioner*, February, 1900.)

The following cases in which I used thialion, seem to me worthy of recording. There can be no question of the therapeutic value of this drug in a wide range of cases—in fact, in every case where the malady is caused by an excess of uric acid in the blood. It works in such a quick and effective way that it is a revelation to physicians who are wedded to the older methods. Its action on the liver is of so marked a character that I am prone to believe that, if intelligently used, and the treatment started with the understanding that *it is not* a cathartic, but a laxative, which increases peristalsis of the bowels, stimulates gently the liver to action, increases markedly the flow of bile; it will take the place of and entirely supersede the use of calomel.

Mrs. C., American, 53 years of age, large and fat, consulted me in regard to rheumatism of her hips, back, knees and ankles, of long standing. She was so lame that she was compelled to use a cane in going about the house. Like all, or nearly all, fat women of full habit, she was constipated, and the liver was very torpid and slow

in its action, leaving a coated tongue, headache, and all that train of symptoms that follow a sluggish liver. I commenced the treatment by giving her a teaspoonful of thialion dissolved in a cup of hot water three times a day, one hour before meals. At the fifth dose very free evacuation and the characteristic "stinking stool" took place. After this the improvement was rapid. After the ninth dose the thialion was reduced to a dose morning and night for three days, and afterwards to once a day, and that in the morning on rising.

The effect was like magic. In two weeks the cane was thrown away, and she attended the "street fair" at Quincy. I saw her then and she was very sure that she would have a relapse for her temerity, but she did not, for the next day she was attending to her household duties as usual.

Yesterday I saw her son (seven weeks since I first treated her), and he said that she was singing about the house as happy as a lark, and had gotten for him that morning an early breakfast so that he could open his drug store.

Miss N., has two brothers who are physicians, has been ailing for eight years, she is now 29. She had obstinate constipation of long standing. The strain at stool was very severe, and if she did not take something, days would intervene between the stools.

I commenced the treatment by giving a teaspoonful of thialion three times a day, one hour before meals, in a cup of hot water. This I kept up for one week, after which one dose a day either in the morning on rising or taken the last thing before retiring at night, had the desired effect. She began to improve after the first three days. She is doing her first general clothes washing for the first time in eight years, and I consider her entirely well after three months since first commencing treatment.

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## TYPHOID FEVER AT ONE HOSPITAL DURING SEVENTY-EIGHT YEARS.

BY CHARLES E. PAGE, M. D., BOSTON, MASS.

(Reprinted from *Gaillard's Medical Journal*, February, 1900.)

The conclusions reached from the study of the records of the Massachusetts General Hospital for the past seventy-eight years,\* according to the report of Dr. R. H. Fitz, of Boston, are as follows:

1. The treatment of typhoid fever does not differ in essentials from the principles laid down in 1839.

2. The average mortality from this disease has not materially changed from the days of active treatment with emetics, purgatives, venesection, antimony and calomel down to the present time.

3. Intestinal hemorrhage, perforation and relapse, upon the whole, are quite as frequent now as at any period in the history of the disease.

Surely this presentation of the status concerning the treatment of typhoid fever is in itself sufficiently disheartening, and all the more so in view of the fact that Dr. Fitz seems to have no remedy to offer for the evil, and is able to suggest no marked improvement in the treatment for a disease that in this country alone destroys upwards of 50,000 lives annually, a money loss from sickness and deaths amounting to about sixty-four millions of dollars.†

But a careful study of the tables furnished by Dr. Fitz seems to the present writer to show even a worse state of affairs than his summing up would indicate: The average mortality from typhoid fever at the hospital named for the first thirty-eight years was

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\* A paper read before the New York State Medical Association, Oct. 25, 1899, and printed in the *Boston Medical and Surgical Journal*, of Nov. 23, 1899.

† Estimate of Prof. Victor C. Vaughan, of the Michigan University.

12.75 per cent., but for the succeeding forty years (1859 to 1899) it was 15.5 per cent. If we accept the foregoing as fairly illustrative of the general treatment, or rather, we should say, of the practical uniformity of the treatment ("not differing in essentials" during the past sixty years), and of the death-rate, at most other regular hospitals throughout this country (and we have no reason for concluding that the Massachusetts General is lagging in the rear of progress, so far as relates to practices in vogue at the great majority of hospitals), the significance of a markedly different treatment, with its greatly lessened mortality, as tested in a few hospitals and in the private practice of here and there a physician throughout Europe and this country, becomes all the more emphatic.

The statistics furnished by Drs. Brand, Vogl, Juergensen, and others in Germany, and Baruch, J. C. Wilson (Professor of Therapeutics in Jefferson Medical College, Philadelphia), and others in this country, concerning the results from skillful hydro-therapeutic treatment in typhoid fever, together with a radical modification of the diet in these cases, and the withholding of drugs that tend to destroy whatever small capacity remains to the stomach and intestines for utilizing food substances, slight as is this capacity in all cases, and totally absent in many, gives us a bright outlook for the future history of this disease. In one series of cases treated by the three German physicians above named, there were only twelve deaths in 1,223 cases of typhoid fever, and, most remarkable of all, says Dr. Baruch, "not one of those twelve deaths occurred in any case coming at once and early under the bath treatment." The accuracy of these figures is beyond dispute, as is the fact of Dr. Wilson's success with this treatment at the German Hospital, one series of cases, numbering sixty-four, having been treated without a death.

But it is not the whole of the question to so treat patients as to bring them off their sick-beds and onto their feet once more, regardless of any part of a treatment which lowers the vital forces and tends to prolong the illness. What is also needed is to abort the sickness if possible, or to shorten it as much as possible, as all would readily admit, and to restore the patient in clean, sound condition, quite different from the condition of typhoid fever patients who are said to have "recovered" from this disease, a state indicated by the life insurance statistics concerning the after effects of the disease and the routine drug treatment, according to which one-fourth of all "cured" typhoid fever patients finally die of consumption. But so long as the great proportion of physicians continue the practice of forced feeding in this disease, in face of lack of appetite, nausea, not to say in spite of even loathing of food, thus making a cess-pool of the intestinal canal, as is true in practice, and as from the appearance of the tongue and evident condition of the stomach one would decide theoretically would be the case, a state inclining the physician to employ drastic drugs more or less constantly in order to prevent speedy death from ptomaine poisoning—as one brutal act so often leads to another—so long as this sort of feeding to promote high temperature is practiced, making a demand for antipyretic drugs to down this artificially produced pyrexia, downing the patient's vital forces necessarily at the same time—while this sort of practice is the prevailing one there can be no hope of a lessened mortality. Indeed, it is a tribute to the toughness of the human organism that any patient thus treated ever leaves the sick-room alive.

What, in my estimation, should be universally recognized as a truism, that in default of digestion and assimilation food becomes a drug and a true poison shortly after entering the stomach, seems a fact impossible to argue or to pound into the skull of the average medical man. Even when the stomach of a patient is so rebellious as to make feeding impossible, the physician usually prescribes champagne or some other alcoholic stimulant, instead of giving the overtaxed organ absolute rest, and then imagines that his patient has been kept alive by means of this drug, seemingly oblivious to the fact that while any such patient is supplied with fresh water and fresh air he cannot die of starvation while any flesh remains over his bones, and to another most significant fact, that of any two men, sick or well, one being profusely supplied with water only, and

the other with any amount or dilution of alcohol, the former would (other things equal) outlive the latter.

In the *Medical News* for December 2, 1899, occurs an editorial on "The Present Status of Hydrotherapy," which should be read and pondered over by every practicing physician. It is a plea, backed up by liberal quotations from eminent physicians, for the introduction into all medical schools, of hydrotherapy as one of the most important branches of therapeutics. Kussmaul is quoted as declaring that "of hydrotherapy the young physician knows almost nothing. [But the old ones seem to know no more.\*] Here is a great gap in the education of our physicians, and the real cause of his inability to cope with the empirics for the public favor!" It argues well for the general intelligence of the laity when a physician of Dr. Kussmaul's discernment intimates that they are enabled to distinguish between the successful irregular and the inefficient regular; but it is a sad criticism of the profession at large.

Thus far I have made no reference to drugs in the treatment of typhoid fever, except to condemn the routine employment of medicinal antipyretics, whose chief virtue seems to be, as Dr. Baruch has so aptly said, "that they enable the typhoid fever patient to die with a fairly normal temperature," and to indicate that such drugs as calomel, for example, or other violent purgative, will never be required if a strictly water diet be held to until we have reason for concluding, from the appearance of the tongue, condition of the stomach and bowels, together with a genuine hungry appetite, † that digestion and assimilation will follow the ingestion of solid food.

But it usually happens that long before the physician is called to a case of typhoid fever, and the same is true in rheumatic fever, scarlet, in short in all severe illnesses, the patient has been fed *ad nauseum* and has his stomach and bowels crowded with putrefying food-substances requiring to be gently moved along and out. When such a case presents itself to me, it has of late been my practice to employ a new drug which I have used frequently with satisfactory results in other forms of disease, notably gout and rheumatism, but which I have never seen recommended as having any place in the treatment of typhoid fever, viz., thialion. A teaspoonful (for an adult) in a half-cupful of moderately hot water often suffices. With its known effects as a gentle laxative, I do not see why this preparation, so highly extolled in the treatment of diseases believed to result from excess of uric acid in the blood, should be wholly confined to the treatment of these disorders. While I would sooner be deprived from using any medication in our materia medica than to be withheld the entire control of the alimentation of the patient, still in cases such as I have cited above, and as a preliminary to therapeutic fasting, a dose or two of thialion is in order.

For years past I have sacredly avoided the use of calomel and other drugs, noted for "stirring up the liver" in what might be termed a bulldozing fashion; but thialion seems to act favorably both on the liver and kidneys, aiding in the work of elimination.

Once the alimentary tract is cleared of its fermenting matters, it should be let severely alone, except so far as concerns the profuse supply of fresh, soft water, which should often be urged (though never to his inconvenience) upon every fever patient. It will generally be craved; but in some cases, or at some stages, moderately hot water, perhaps with a few drops of lemon juice (occasionally), will be more acceptable. It is essential to maintain the normal fluidity of the blood as nearly as possible, and water is the only liquid indicated for this purpose. To a body perishing from drought, water is the most nutritious of all foods. In fasting patients the bowels are normally closed and should so remain until feeding is resumed when they will move naturally in good time, without artificial help, other than an enema of a cupful or two of cold water in case of a collection of fecal matters difficult to expel.

\* Brackets, present writer.

† After a few days' fast, or at any rate when the proper time for feeding shall have arrived, a piece of stale graham bread will taste delicious to the patient, and a moderate sized piece may be allowed, my twice a day, each mouthful to be chewed in a most thorough manner. Even here, the patient should sacredly regard the rule to "always rise from the table hungry!"

With therapeutic fasting in typhoid fever, I rarely have occasion to employ the full bath treatment to any great extent, often not at all, the damp bandage from armpits to hips (two folds of coarse linen wrung tightly from ice water, with two folds, dry, outside), freshened as often as it gets heated up, fully meeting the needs in most cases so far as the treatment of the trunk is concerned. For headache, the cold compress properly applied is delightful and curative. This should not be the usual little, wet rag, but a thickly folded towel pressed kindly but firmly all about the head, the hair being first well wetted.

Neither the damp bandage nor the Brand bath is properly employed for the purpose of directly reducing the temperature of a fever patient; it is far from desirable to abruptly interfere with nature's curative process by downing the temperature with either water or drugs. The proper object of expert hydropathic treatment in these cases is to brace the heart and nervous system, and this is accomplished by the brief shock of cold, followed by the speedy warming up of the bandage, to be repeated once every two to three hours, or oftener when needed. Under this method of treatment we know nothing about intestinal hemorrhage, perforation, relapses nor even of uncomfortable tympanites. The patient is kept in an easy, comfortable state, requiring very little attention beyond what any ordinary housewife or nurse can comfortably supply.

154 TREMONT STREET.

#### SOME REASONS WHY AN HEPATIC STIMULANT AND THE URIC ACID SOLVENT ARE ESSENTIAL IN THE TREATMENT OF GOUT.

BY WILLIAM HOOKER VAIL, M. D., ST. LOUIS, MO.

(Reprinted from *Medical Century*, New York City, December, 1899.)

Gout is in reality simply the manifestation of a general lithæmia or uricacidæmia. In other words, it is not a disease, but the symptom of a disease; a symptom grave in its nature, however, inasmuch as it does not usually occur until the malady which it signalizes has become comparatively well advanced. Migraine, vertigo, insomnia, "biliousness," neurasthenia and the like, even neuralgia, asthma and rheumatism, (all of which are symptomatic of this same underlying constitutional trouble) may, and generally do, appear during the earlier stages when the uric acid toxin is still confined to the circulation; but gout is not recognized until the insoluble biurate salts are precipitated from the blood plasma and deposited as tophi in the various connective tissues of the body, becoming especially pronounced in the cartilages of the phalango-metatarsal articulation of the great toe. As will be seen, gout is merely one of the danger signals of a general dyscrasia, which must itself be thoroughly understood before the important matter of treatment can receive scientific consideration.

To understand the true nature of any organic disease it is necessary first to recognize the physiologic function of which it is a perversion. Uricacidæmia, then, may be defined as that perversion of the great nutritive function, in which the waste products of (1) nitrogenous metabolism, and (2) *luxus* consumption of nitrogenous food, are retained in the body in the form of uric acid salts instead of being eliminated as urea. Concerning the first of these processes little need be said in this connection, not only because it is in one sense secondary to the other, but because a faulty nitrogenous metabolism which results in the retention of an excess of uric acid in the system, does not usually occur, the writer believes, until the excretory function of the kidney itself has become seriously deranged, in which case we are confronted with nephro-lithiasis,

Bright's disease, etc. The second of these processes, however, "luxus consumption," is of the greatest importance here, inasmuch as it is one of nature's methods of getting rid of an excessive ingesta of food stuff by extra-pancreatic digestion, thus neutralizing to some extent the ill-effects of gormandizing, which is essentially a vice of advanced civilization, where most of the people live to eat and not eat to live. An excess of albuminous food, upon reaching the duodenum, undergoes, before absorption, a molecular disintegration or change into certain nitrogenous crystalline matters (leucin, tyrosin, etc.), which are carried by the portal vein to the liver and there easily converted into urea, which is itself in turn easily excreted by the kidney. As might be expected from the foregoing statement, it has been demonstrated by careful experiment that the urine of a healthy animal contains an extra quantity of urea immediately after an unusually heavy meal of albuminous foods. Such rapid returns are conclusive proof that the increased amount of urea excreted could not possibly have been the result of destructive tissue metamorphosis.

Nature's provision for an emergency, however, is intended only for occasional use. It is not difficult to foresee, therefore, that if this excessive ingesta of nitrogenous food be kept up any length of time through ignorance or neglect, the liver, upon which the abnormal amount of labor is originally thrown, will finally yield to the strain and be unable to reduce the excess brought to it into urea, but rather, says Kirk, "into other less oxidized products, such as uric acid." (Kirk's Physiology, 12th edition, p. 217.) Thus it is made clear, why, in this country, where meat is cheap and overeating is the fashion, the blood of the "gouty," the "bilious," and the "obese," should be loaded with uric acid, while the urea in the urine is not materially increased. The so-called "torpid liver," or hepatic derangement accompanying constipation, is often but the expression of this extra work put upon it, and the same results will necessarily obtain; the kidney itself becoming affected ultimately, through constant effort to excrete an insoluble substance in place of a soluble one. It is true that birds, fishes and reptiles are still at that backward stage of evolution, where the solid uric acid is the normal excretion, representing the end product of nitrogenous metabolism, but it is evident that the mammalian kidney has evolved a step farther and is intended to excrete only the soluble urea.

The excess of uric acid not eliminated by the kidney is carried over by the renal vein into the circulation, where it first appears in the form of the alkaline quadrates, but being retained in a medium so rich in sodium carbonate it gradually takes up an additional atom of base, and is thereby transformed into the biurate of soda. This latter salt, being insoluble, is sooner or later deposited in the crystalline form in tissues which are especially predisposed to its deposition, where it acts as a foreign body and sets up irritation and inflammation;—the stage which is denominated "gout." The deposition may occur so slowly and quietly that no acute symptoms are noticed, but this is not common, the operation usually being accompanied with local pain and heat.

As already suggested there are two established facts in relation to our subject; *i. e.*, (1) uric acid is found in excess in the blood of gouty subjects during the attack; (2) the insoluble salts of uric acid are found in the concretions of gout, in the various connective tissues of the body. The condition most favorable to the precipitation of the uric acid salts from the circulation, is excessive acidity of the blood itself, the point selected for deposition depending upon either a slight strain or injury, poor vascular supply, pressure, or any mechanical obstruction to a free circulation in the affected part. Thus it will be seen why joints are selected, and particularly that of the big toe. The acidity of these parts alone, would probably be enough to determine their selection.

In considering the particular line of treatment to be adopted, there can be no doubt as to the duty of the physician; *i. e.*, it is plainly apparent that he should not only remove the uric acid already formed, but prevent the formation of any more. For the first purpose the uric acid solvent has been recognized recently as an essential remedy; but something more is evidently required to effect permanent relief and guarantee immunity against future attacks. It would seem that enough had been stated

in regard to the nature of uricacidæmia to show why the gouty symptom does not appear until the liver and kidney, the two organs chiefly involved in *luxus consumption*, have had ample time to become functionally deranged—the former especially, so that even ordinary pancreatic digestion may be imperfectly performed, and the manufacture and retention of uric acid in the system become an everyday occurrence. Obviously the liver needs assistance, for as long as this overtaxed organ is left to take care of itself, and people continue to overeat, especially of meats, just so long will uric acid be formed to plague its victims and gout remain an eminently fashionable disease. Thus the need of an hepatic stimulant.

As a prophylactic measure some attention should be given to the quantity and quality of the food ingested. Strongly albuminous foods should be reduced to the minimum. Furthermore, it is essential at the gouty stage, when the uric acid has already been formed and is in the circulation, to avoid acid fruits and drinks (champagnes, wines, etc.), which tend to increase the acidity of the blood, and thus cause further deposition of the urate salts; while any substance which produces acid fermentation in the stomach should be used sparingly for the same reason. It is important, too, at this late stage, that starches and sugars should be temporarily prohibited, as they throw an additional burden upon the already damaged liver, whose duty it is to convert these substances into glycogen which is stored up in and clogs the hepatic cells. It will be seen that no general rule regarding the food supply in gout can be formulated, but it is usually safe to decide upon a mixed diet, and eat not too well, but wisely.

To eliminate the poison from the circulation and thus absorb the concretions from the joints, uric acid solvents are essential, the best of which is, of course, lithia, inasmuch as urate of lithia is formed (the most soluble of all the uric acid salts) and easily excreted with the urine. People who can afford the expense incurred, are usually benefited by a resort to the Hot Springs of Arkansas and Virginia. By means of hot alkaline baths, and the subsequent general massage performed, much of the lithia, potash, etc., contained in these waters, is absorbed into the circulation rendering the blood alkaline, and thus taking up the tophi from the surrounding tissues and joints in a manner similar to that of uric acid solvents taken internally.

Lastly, as already suggested, an hepatic stimulant should be given—preferably a laxative salt, cholagogue in its action, in order to aid duodenal digestion, and at the same time, (and what is equally important) accelerate the flow of bile and initiate intestinal peristalsis. In summing up, it will be seen that there are two separate and distinct therapeutic indications: (1) the uric acid solvent, and (2) an hepatic stimulant; one to eliminate the poison already formed, the other to prevent the formation of any more.

While there are several anti-lithic agents which might be prescribed, answering the purpose of uric acid solvents, few or none of them act upon the liver. A remedy, therefore, which combines within itself both essential qualities, would be highly desirable in the treatment of these cases. But one such therapeutic agent, however, has as yet come to the notice of the writer—a drug which has been recently added to our materia medica, and is attracting unusually favorable attention. The remedy referred to is essentially a new salt of lithia, thialion, composed of the metal lithium as a base, in chemical combination with a laxative alkali. That it is a reliable drug and has come to stay, is evidenced from the fact that it is highly recommended by one of the most distinguished gout specialists in the country, Dr. Henry S. Pole, Resident Physician, Hot Springs, Va., whose practice has extended over a period of thirty years with successful treatment of fifty thousand cases. He says:

"I have used thialion in a great number of cases with unvarying success, in connection with the Hot Springs waters, and my experience with it has been that I do not know of anything to equal it. It unquestionably assists in throwing off the uric acid, and acts *delightfully on the liver*. I rarely find it necessary to use it more than once a day, preferably one hour before breakfast, and my experience is that the taste is

improved, and a better effect is obtained, if a teaspoonful of lemon juice is added to the dose. In order to get good results from its use it must be taken with regularity, until it produces free bilious discharges.

The diet regulations while taking thialion and the gout treatment, vary according to the patient's condition; but two general rules may be laid down with certainty. The patient should not eat anything containing starch or sugar, and all wines and liquors are excluded, except in cases where there is great debility, when Scotch whisky with soda is allowable."

Judging from the character of the above statements of Dr. Pole, it is evident that he, himself, like the humble writer of this article, has the same reasons for considering both an hepatic stimulant and the uric acid solvent as essential in the treatment of gout, and that thialion fills the indications.

### LITHÆMIC CYSTITIS AND ITS TREATMENT.

BY G. WIGHT, M. D., BETHEL, CONN.

(Reprinted from the *North Carolina Medical Journal*, Charlotte, N. C., November 20, 1899.)

One of the most interesting monographs published in recent times is that of Haig on the uric acid diathesis, in which he advances most ingenious theories as to the causation of disease by the uric acid toxin. Notwithstanding the fact, however, that he devotes such an unusual amount of space to this one topic, and includes within the uric acid category nearly every malady that flesh is heir to, yet he says little or nothing on the bearing of uric acid excess on the *genito-urinary organs*. In truth there is very little literature on this point to be found anywhere, though the importance of the subject will be admitted by all.

After long and tedious examinations of various authorities we find that Gouley, in his treatise on "Diseases of the Urinary Organs," p. 106, alludes to the fact that some of the most distressing cases of cystitis are caused by uric acid success. Prof. Keyes, too, in his admirable work ("Genito-Urinary Diseases with Syphilis," p. 322) says: "There are no inflammatory conditions, acute or chronic, of any portion of the urinary passages which are not aggravated by over acid urine, while some of them are caused in the first place by it."

Having witnessed so often the tendency of the urates and uric acid crystals to become precipitated on the bottom and sides of a vessel into which urine has been voided, especially if the vessel stand a few moments in a cool room, we can scarcely avoid the conclusion that there are many causes, mechanical and otherwise, that, under certain favorable conditions, would produce a similar deposit in the bladder itself. We know that the urate salts are precipitated from the blood whenever the latter for any reason is made less alkaline than usual, and we know that such a state of affairs never occurs more certainly than when there is an abrupt cooling of the entire surface of the body, and the acid excretion from the skin is thereby checked, as when leaving a hot room or theatre and entering at once into the chill night air outside—which, by the way is already recognized as a frequent cause of cystitis, as well as inflammation of other mucous membranes. May not, therefore, this sudden deposition of the uric acid salts in the mucous membranes and various connective tissues of the body, serve to explain the *modus operandi* of "catching cold?" If so, we can readily understand why hot alkaline drinks are so beneficial in such cases and often abort the "cold."

Many lithæmic subjects—especially middle aged business men, overfed, and thin, anæmic women, overworked—pass urine which is habitually strongly acid, high colored and of high specific gravity, depositing uric acid or mixed urates on cooling. In such cases any reduction of the alkalinity of the body secretions causes molecular storing of



the uric acid salts on the floor of the bladder and elsewhere with its train of attendant evils, for that uric acid is a chemical irritant and will eventually set up congestion and inflammation of surrounding tissues, is abundantly evidenced by the results which follow the deposition of its salts in the fibrous tissues of joints—as in gout or rheumatism. It is to these cases, therefore, and they are very common, that the term "lithæmic cystitis" is meant to apply.

Inflammation of the mucous membrane of the bladder having once become firmly established, the constant presence of pus there decomposes the urea of the urine, liberating the volatile carbonate of ammonium, thus rendering the urine alkaline and ammoniacal, with the characteristic fleshy or organic smell and dark-brownish sediment. This alkaline fermentation of course causes intense pain, the bladder becoming distended with the liberated gas in the same manner as do the stomach and intestines in case of fermentation of the undigested contents of either of these organs. While it is true, therefore, that in chronic cystitis the urine voided is distinctly alkaline, yet at the moment of its entrance into the bladder from the ureters it is as strongly acid as ever, and is constantly bringing down lime and urate salts to serve as irritant foreign bodies to the inflamed area.

In all of these lithæmic cases there exists in combination with the genito-urinary trouble a general disturbance of the gastro-intestinal tract, the patients complaining of indigestion and constipation, and usually having flabby, heavily-coated tongues and foul breath. It is evident that such a condition is unfavorable to the cystitis, for with constipation present the liquids which should pass off with the feces are retained, and the acid contents of the bladder are proportionably increased. Saline laxatives, therefore, are plainly indicated to reduce the amount of the bladder's work.

Hitherto our treatment of these cases has been empirical. We have treated the symptoms. We have relieved pain. We have applied to the affected surface various medicaments to abort or reduce the inflammation; but we have never removed the toxin itself, that which caused and will keep up the inflammation indefinitely. It is manifestly our duty, when confronted with a case of chronic cystitis, the symptoms and history of which point toward lithæmia, to prescribe at once an effective uric acid solvent. For this purpose the laxative salt of lithia, thialion, is now being recognized as one of the most efficient therapeutic agents at our command. Its great advantage in this class of cases is attributed partly to its antilithic effect and partly to its stimulating action on the liver, producing outward osmosis and free bilious discharges from the bowels. In the case given below the effect of the remedy was so immediate and gratifying, that it is cited here as a point in favor of the uric acid theory of causation and treatment of the disease under consideration.

Mrs. B., American, æt. 40, married, with two children, was a sufferer for many years with chronic cystitis. She had become broken down and very thin, evidencing an abnormal condition that required instant relief. Her principal complaints were backache, sacral pain radiating upward and backward from the perineum, and a desire to strain after the act of micturition as though the bladder was not fully emptied. Indeed, the tenesmus was at times so great as to leave her quite exhausted for a number of minutes. She urinated frequently during the day, and was obliged to get up often during the night, the resultant loss of sleep inducing finally a state of extreme nervousness. Jolting or riding, too, caused severe pain over the region of the bladder, and she was obliged to confine herself largely to the house.

The treatment consisted of teaspoonful doses of thialion administered in half a glassful of hot water three times daily before meals. This was kept up pretty regularly during the entire treatment, the patient being instructed of course to diminish the dose if the bowels should become too loose, or the litmus paper indicated a urine too strongly alkaline. She was advised to drink much milk and to partake but sparingly of nitrogenous foods.

The result of this simple method of treatment was all that could be desired. After taking four ounces of the remedy the improvement was most marked in every respect.

She was rarely obliged to get up at night, the backache disappeared and the constant desire to urinate became a thing of the past. She could ride slowly, too, in a carriage without experiencing any distress. In this manner she continued to improve for another fortnight, or until she had taken the second bottle, at which time, notwithstanding she had been ill for many years, her general and local condition had reached such a favorable stage as to require no further treatment.

#### HOSPITAL REPORT.

#### ASTHMA, INTERMITTENT FEVER, MASTITIS, VARICOSE ULCER, PREPARATION OF THE PATIENT FOR OPERATION.

BY R. K. LANGSON, M. D., GORDON HOSPITAL, CHADRON, NEB.

(Reprinted from the *Oklahoma Medical Journal*, Guthrie, O., November, 1899.)

Some three months ago I became very much interested in an article in the *New England Medical Monthly*, on a new medicine called thialion, a laxative salt of lithia.

I have now been using it for two months, and it has filled a want I know every country doctor will appreciate. We all have more or less chronic asthmatic patients that tax our skill and patience to the utmost, and, at the best I have only found indifferent success in using the different forms of treatment now in vogue—I mean those old cases that have been the rounds generally; from having the sphincter stretched to inhalations of stramonium fumes. Thialion is indeed a jewel. I have now used it in twelve cases with the most gratifying results, and have found out that the more strongly acid the urine, the better and quicker results one obtains. It should be given in teaspoonful doses in a glassful of hot water the first thing on arising, and the last thing before retiring at night and kept up until the reaction of the urine is neutral or slightly alkaline.

I have also used it in two cases of intermittent fever in conjunction with quinine, both cases recovering in four to six days that ordinarily will take two weeks in this section. It has a profound action on the liver, and, I believe, in this way enhances the action of the quinine.

I have treated a great many cases of rupture by the injection method, a report of which you will find in the November number of the *Philadelphia Medical World*. Since writing that article I have operated on nine new cases, in six of which I administered thialion three days before the injection, and in each of these cases there was wanting the rise of one-half a degree of fever that usually follows. Now, I am not quite sure that the thialion was the real cause in preventing this, but believe it was, for it happened in the whole series of the six cases in which thialion had been used, while in the three cases where it was not used, I got the usual rise in temperature. I cannot believe it was merely coincidence, and shall therefore follow it up and report later.

I find that in every surgical case (especially chronic) it is an excellent thing to give thialion a day or two before the operation and I expect to report in a few weeks the results obtained, when I hope to be in a position to say exactly how much is due to this treatment. One case, however, I wish to note now. The wife of Mr. W. J. B., druggist, Hemingford, Neb., entered the hospital two weeks ago, suffering from the worst case of mastitis I ever saw. She had pyæmic poisoning from the absorption of the retained pus in both breasts. Temperature 103, and all in all, the general condition of this woman was about as bad as it is possible to get in with this trouble. Today she goes home entirely well, and the whole treatment consisted of thialion given in hot water, a teaspoonful every morning on rising and every evening on going to bed, in connection with the application of steam coils to the breast. Ordinary cases of

this character would hardly be out of danger by this time, but she is cured to-day. The urine in her case contained blood and hyaline casts, and 11 per cent. of phosphates, notwithstanding which, it was very acid. Mrs. B. two years ago had an attack of the same trouble, only, with one breast, and she thinks it wonderful to have recovered so quickly this time.

Mrs. C., age 68, Rapid City, S. D., came to the hospital June 30th with the following history: Some eighteen years ago she had pneumonia, followed by typhoid fever. When she was able to get up she found that the veins of the left leg and foot were very much enlarged, and that every few nights she would have severe asthmatic breathing. About one year after, one of the veins ruptured, and she had a small ulcer on the left ankle for about three months. All this time her "bad breathing spells," as she calls them, got more frequent and worse. Five years later the leg gave her much trouble, and after being bloated for some months, another ulcer appeared that resisted all treatment.

Hospital report of case as follows: Mrs. C., aged 68, brunette, *nervo-bilious* temperament, weight 181. Family history negative. One sister, she thinks, died of *scrofula*. Chest measurement, just above breasts, 38 inches, forced inspiration; 38½ inches, normal inspiration. Respiration over most of right lung, except apex; left lung all mucous râles, and point of left apex seemed consolidated. Much mucopurulent sputa. Microscopical examination showed no tubercle. Both lower limbs very cedematous, that of the left more than the right. Varicose ulcer 2½ inches long by 2 inches wide, just over the external malleolus and very offensive.

Urine loaded with urates; specific gravity, 1016; reaction, very acid. Color, dark; odor, very putrid.

Should have said that for the past three years she could not lie down, but slept always propped up in a chair.

Treatment: Charcoal poultices on the ulcer for three days, changed every twelve hours. Leg elevated and massaged one hour daily. After third day boracic acid sprinkled on ulcer, dressing changed daily. Foot and leg bandaged from toes to hip.

Internal medication: Teaspoonful of thialion in glass of hot water three times daily, for one week, then twice daily.

On July 26th she was discharged cured.

Remarks: After the first day using thialion, the stools for a week were so offensive that we had to use our formaldehyde burner. This condition gradually passed off and the passages then remained mushy and natural (first time in years). The sixth night the patient for the first time in many years slept lying down. While the expansion and contraction of the breast did not change, there was complete disappearance of all dyspnea. The ulcer was nicely healed, and I copy from part of a letter received a few days ago from the patient. "I am still doing well and the bloot is almost out of my legs. The sore is all right, and I sleep almost all night. Shall I keep on using the salts (many call thialion salts) twice a week?"

In the hospital report the heart was found to be normal, but very feeble; pulse 61. I could notice no difference when she left the hospital. This is a very good example of results in old chronic cases, that before thialion came out I was at my wits end to do anything for. One thing I have omitted to state is that she had five steam baths, of twenty minutes, each, while here.

## ALBUMINURIA IN PREGNANCY: ITS CAUSATION AND TREATMENT.

BY E. M. SMITH, M. D., NEWTOWN, CONN.

(Reprinted from the *Peoria Medical Journal*, March, 1900.)

Though puerperal albuminuria has for many years attracted the especial attention of obstetricians its etiology still remains a matter of much speculation and doubt. Modern researches have shown, however, that an intimate connection exists between the presence of albumin in the urine of the pregnant woman and the altered state of her blood, which contains an excess of albuminous material owing to the unusual call for nutritive supply on the part of the fœtus. While this condition of the blood at that particular time is undoubtedly physiological, and exists throughout pregnancy in most cases without giving rise to albuminuria, nevertheless it must be considered a predisposing cause which needs only the introduction of some factor productive of hyperæmia of the kidneys to produce a state analogous to the first stage of Bright's disease. The congestion consequent upon the mechanical pressure exerted by the gravid uterus upon the renal vein has long been looked upon as such an exciting factor, while sudden exposure to cold with its resultant impeded cutaneous action has been more recently added as a contributory cause of a similar character.

The hyperalbuminous blood of the pregnant woman becomes a constant source of danger, also, owing to the series of delicate and intricate processes by which nitrogenous metabolism is maintained and the products of disintegration rendered harmless and removed. Liver and kidneys are both called upon to do extra duty, and any congestion of either of those organs which interferes materially with their functional activity is likely to result disastrously; *i. e.*, autointoxication results from the production and retention of the urinary elements in the circulation—more especially members of the "uric acid group."

The importance of "exposure to cold," as an immediate factor in the production of albuminuria, cannot be overestimated; but, until recently, it has not received the attention it deserves. The sudden checking of the acid excretion from the skin renders the blood, of course, less alkaline, causing the deposition of uric acid salts in the various connective tissues of the body, particularly of the kidneys, and thus gives rise to the hyperæmia and finally inflammation of those organs as previously mentioned. Constipation, too, is a factor not to be overlooked in such cases, inasmuch as many of the fluids of the body which naturally pass through the intestines, are left behind to be excreted by the kidneys, already overburdened in that respect.

It will be seen, however, that to be effective as an agent in the causation of albuminuria, the "exposure to cold" must be coincident with the presence of uric acid in the circulation, a condition frequently met with in the pregnant woman owing to the unusual demands made upon the metabolic function of the liver as well as excretory action of the kidneys consequent upon the superabundance of albuminous material in the blood. If this view be correct it becomes essential, in the treatment of these cases, that attention should be devoted to the support of the liver and kidneys, and that the uric acid toxin, when present, should be immediately removed. Any therapeutic agent, therefore, which is distinctly cholagogue in effect, which stimulates the cellular activity of the liver, causing free outward osmosis, with the resultant peristaltic action of the bowels,—must be of the greatest potency in these cases, not only in enhancing the metabolic function of the liver, but also in removing much unnecessary labor from the kidneys. The processes of digestion and assimilation, as well as of oxidation, will be more complete; and, instead of the insoluble uric acid salts,—the more highly oxidized and soluble urea will be presented to the kidneys for their excretion. But when these cases are first brought to the physician's notice the former toxin is usually already formed and deposited in the renal tubules; thus the administration of the uric acid solvent becomes a necessity to effect a removal, otherwise eclampsia may result from renal insufficiency and the consequent final retention of the urea itself in the general circulation.

Lithia in conjunction with a laxative alkali, such as we find in the well known combination thialion, would seem theoretically to meet the above indications more fully than any other remedial agency, and, besides, has been practically tested by the writer in the following two cases with marked success. It would seem, too, if the uric acid theory be correct, that the same remedy must prove effectual as a *prophylactic* agent in these cases, preventing the formation of urinary toxins by supporting the action of liver and bowels, and freeing the kidneys of much of that additional work so commonly attendant upon the pregnant condition.

The first case to which allusion has been made was that of Mrs. G., a primipara, *æt.* 24, who had reached her seventh month of pregnancy, and when first seen complained simply of dizziness and headache. Acetate of potash was prescribed and the patient was not seen again until the following week. On this occasion her condition was at once recognized to be more serious and a careful examination was instituted. Questioning elicited the fact that the patient's bowels had not moved in four days, that she suffered from insomnia, loss of appetite and occasional indistinct vision. There being some anasarca of the feet and limbs, the urine was examined and found to contain a considerable quantity of albumin and evidences of casts. The diagnosis being no longer doubtful the patient was at once put upon thialion in teaspoonful doses every four hours, the first day, until a movement of the bowels was effected—a large mushy stool appearing soon after the third dose. Thereafter a teaspoonful was administered in a glassful of hot water every morning upon rising.

Improvement in this case was marked almost from the very outset. The puffiness of the feet disappeared, headaches were less frequent and the bowels moved with some degree of regularity. More urine, too, was being voided than at any other time during the pregnancy, and at the end of a week after the commencement of the treatment, the albumin had entirely disappeared. The patient was delivered less than two months afterward of a healthy male child, from which operation she proceeded to a speedy and perfect recovery.

The second case was one of threatened eclampsia. The patient, a delicate young woman eight months pregnant, had already suffered from what her husband styled "spells" or "fits." She would be sitting quietly at table reading or sewing, when suddenly she would straighten out and begin to jerk her limbs in a convulsive manner, her face being drawn as if in pain. This singular condition would last for about a minute, when the patient would resume her former attitude and state, but without any clear recollection of what had occurred, and remaining for a short time in a somewhat dazed condition. She had complained previously of severe frontal headaches which she attributed to constipation. Her urine was scanty, strongly acid and high colored, and scalded considerably in its passage. There were no evidences of albumin, although uric acid crystals were discovered in abundance. The treatment adopted was precisely like that already described in the preceding case, while recovery was equally prompt and decisive. Two months have now passed since the patient's confinement, which was normal, and she is gaining in health and strength, besides having had no return of her spasms. She continues, however, to take thialion at intervals to prevent the recurrence of constipation and the attendant headaches.

In both of these cases strongly nitrogenous food was interdicted, and a milk diet substituted. The last patient, too, admitted after much questioning, that her urine had not commenced to scald until the morning after a certain night at the theater, when she had emerged from the hot building into the cold night air and experienced a decided chill, which lasted until she had reached home and retired to her couch.

## THIALION.

BY J. D. ELY, M. D., TOLEDO, OHIO.

(Published in *The Toledo Medical and Surgical Reporter*, March, 1900.)

One of the most satisfactory of the newer preparations that have come to my notice is thialion, which is a combination of lithia and a saline laxative.

The desirability of such a combination is apparent, and its usefulness in the treatment of many diseases must become more generally recognized as its use is extended.

Defective elimination is such an important causative factor in most of the diseases we have to treat, that the remedy or combination of remedies which will remove this is first considered and prescribed.

"Timely Catharsis" was the subject of one of the most profitable lectures, given by my old professor of therapeutics, that I ever listened to, and a subsequent article by him on the subject is one of my most valued possessions.

The salines were favorites of his, particularly sulphate of magnesia, and the results he obtained by their timely use were such as to convince all who were privileged to observe them that they are the most generally useful, as is now so universally understood.

The salts of lithium have also become better known, and their value in the treatment of numerous diseases so generally recognized that the physicians are few who do not prescribe it now.

Lithia is, perhaps, second only in importance to the salines and their combination, as in thialion, which I believe is most valuable. Previous to my acquaintance with thialion, I had been in the habit of prescribing lithia and the salines separately, and quite satisfactorily so far as results were concerned; but so much more pleasant and effectual has their use been in the combination, thialion, that I now prescribe and recommend it exclusively whenever the lithium and the salines are indicated.

It has a very wide range of usefulness and is indicated, particularly, in the uric acid diathesis, which is now understood to prevail in many diseases where it was formerly not considered as a factor, if recognized at all. To enumerate them and to particularize, would require too much space, hence I will only mention, to illustrate, its effects in one case I have under observation, and which for some time baffled the efforts of a number of physicians besides myself: Mrs. M., a rather fleshy widow, sixty years of age, a subject of rheumatism for a number of years, which, during the cold, changeable weather usually confined her to bed, and kept her pretty constantly under the care of a physician.

These attacks of rheumatism were latterly accompanied by laryngio-bronchitis, with paroxysms of asthma, which were very difficult to control, and from which she was never relieved until antilithias and salines were used freely and for a considerable time. Various preparations of lithia and the sulphate of magnesia, were used quite satisfactorily for some time, but the best results were obtained by the use of thialion. It not only relieved the patient of all unpleasant symptoms, but apparently has cured her, as up to the present time this winter she has been free from the usual trouble, and there have been no symptoms indicating its return.

This case is mentioned, particularly, not only because it illustrates the permanent good influence of thialion, but on account of a number of the effects of uricacidæmia rarely observed in one patient, but which have been and are now recognized as due to the same cause, in many. The physician who is not posted on the many manifestations of the uric acid diathesis and its successful treatment, is sure to profit and feel well satisfied in the reading of the abundant literature now being published in the medical journals throughout the country.

REPORT OF A CASE OF CYSTINURIA COMPLICATED WITH URICACIDÆMIA.

BY G. A. GILBERT, M. D., DANBURY, CONN.

(Reprinted from *The Chicago Clinic*, April, 1900.)

Mrs. W., æt. 59, a well known physician in one of our northwestern cities, has been a sufferer from facial neuralgia for many years. Early in the winter of 1873, after arriving home from a long cold drive in the country, she was taken with severe pain in the pectoral region and over the left eye. Thereafter, upon every exposure to cold, or upon overworking, neuralgia of the eye and head reappeared. This condition occurred at intervals during the next twelve years and then disappeared. Again in the fall of 1893, when crossing the street in the face of a heavy wind, she suffered another attack of still greater intensity. "It seemed," she says, "as though a thousand red hot needles were being thrust through the right side of my face—especially the upper lip, the pain causing the water to gush out of the right eye and spurt over the top of my head." Medicines were taken during the next six months which gave considerable relief and the patient thought herself cured. "But it then returned again," she writes, "and from that time on I have tried many physicians and medicines, but with no avail." The treatment consisted of diet, various mineral waters, special treatment of nose, throat and teeth, change of climate, and travel. She not only took baths in the Ranchers Colorado Springs, near Pueblo, but during the latter portion of last winter visited Mexico.

Her attention was not attracted toward her kidneys until about three years ago, when she noticed uric acid deposits in her urine. Supposing it to be ephemeral little thought was given to it until she began to notice that she had to rise many times in the night to urinate, when it would often be impossible to void more than a tablespoonful, "although," says she, "the desire was just as intense as if the bladder were full." She then began treatment for her kidneys, taking lithia and remedies of that character.

Throughout all of this period, in addition to her other troubles, the patient's bowels have been constipated to an alarming degree. "She is, and has been for many years," writes her husband, "constipated the worst way; has had an operation on the rectum, (stretching, etc.) but all to no purpose." It finally became necessary to use a salt water solution enema every night in order to produce an evacuation. An operation for hemorrhoids was also performed, but the constipation remained unimproved. Mercury in all its forms was taken, as well as Carlsbad salts, hydrastia, etc. "The constipation remained the same," she states, "regardless of what I took, and my stools were nearly always white except just while I was taking something to act on the liver."

The patient's general health at the beginning of December last, as described by herself, was as follows:—"I am the poorest in flesh I have ever been; have a great deal of confusion in my head, and blurring in my eyes; a good deal of mucus in the posterior nares; chill easily; limbs swell slightly from the knees down; a little puffy over the eyes; sleep a little from about 1 or 2 A. M. until 5 or 6 A. M. My eyes feel as though they were padded, and sometimes I find it very painful to wash and wipe the right half of my upper lip and around my nose."

A probable explanation of the cause of the patient's suffering is given in the words of her husband, who is also a physician, and who says: "She is of uric acid diathesis; *in fact she is full of the acid.*" Writing under date of Dec. 14, 1899, he says: "About three weeks ago I came across the treatise on thialion and commenced prescribing the remedy for my wife, giving a teaspoonful in hot water four times the first day, three times the next two days, and night and morning the rest of the time, until she had taken nearly two bottles. It had the effect of increasing the quantity of her urine making it neutral, etc., besides evidencing itself in the peculiar odor of her stools. Last Tuesday evening I gave her in addition the salt water enema. Wednesday morning, in the vessel where she urinated, at the bottom, was a large quantity of crystals

(about  $1\frac{1}{2}$  drms.), like these I enclose to you. Will you kindly aid me in this case? 1st. What are these crystals and what caused them to pass? 2d. Is it a sign of returning health? 3d. Should she take larger doses of the thialion?"

On receipt of the package above mentioned, I exhibited its contents to the local physicians of the city, none of whom were able to state the nature of the crystals, which were hexagonal in form, of a chalky appearance, and about the size of half a split pea; those exhibited in the accompanying cut being magnified three diameters. The package was then forwarded to a prominent manufacturing chemist of Baltimore, who replied shortly afterwards as follows: "Your esteemed letter was received in due time, also a little later the box containing the mysterious crystals. As we could not discover the nature of these crystals in our laboratory, and believing that it would be of interest to you to know something definite concerning them, I applied to Dr. Chas. Simon, of the



Johns Hopkins hospital, who has made a specialty of the analysis of urine and other secretions, and is considered one of our best authorities on this subject. He examined them carefully and states that the crystals are *cystine*—a metabolic anomaly of rare occurrence. He is very much interested in them, and requests that about a gallon of the patient's urine be sent to him in half-gallon bottles, putting a tablespoonful of chloroform in each to prevent decomposition."

A specimen of the patient's urine was subsequently sent to Prof. Simon, as above requested, who reported that this second sample was entirely free from cystine; that the deposit consisted entirely of uric acid, and, that, in solution he could likewise find nothing. He requested, however, that the woman be instructed to send on any further



concretions she might collect, and to send on her urine again as soon as more was eliminated.

Such, then, is the state of this interesting case at the present time. The first of the questions propounded by the patient's husband has been satisfactorily answered. In regard to the second, the future alone can determine the answer, but it would seem advisable to continue the treatment. That the thialion caused the expulsion of the concretions, there can be no question. The patient complained of a severe renal colic the night before the crystals were voided, evidencing their passage through the ureters, from the kidneys into the bladder.

In the January number of the *American Journal of the Medical Sciences*, Dr. Simon has presented an exceedingly interesting and instructive article on the subject of Cystinuria, and has tabulated 107 cases—which are all that have been reported in foreign and domestic journals up to date. The first case was discovered by Wollaston in 1805. Little is known concerning the origin of cystine, but it is supposed to be a transition product of proteid metabolism, and is probably due to hepatic insufficiency, as there is always a distinct sulphur reaction, indicating its connection with the liver. The synthesis of cystine has not yet been accomplished. Outside of the human body it has only been found in two instances—namely by Cloëtta, in the kidney of an ox (*Annal. d Chem. und Phar.*, Vol. xcix, p. 289), and by Dreschel, in the liver of a horse (DuBois Reymond's *Archiv. f. Physiol.*, 1891, p. 245). "The only source for its study," remarks Dr. Simon, "is the urine of cystinuric patients and the relatively small number of cystine stones removed by operation. That the second sample of urine in this case was from cystine is not so surprising, when we consider the fact that in the cases reported the cystinuria usually disappeared after removal of the accompanying calculus.

In none of the cases previously reported has attention been directed toward the relationship of cystinuria with uricacidemia, which in the case herein described is of so great significance in this respect. Man's body is not only a receptacle but a laboratory of poisons, and it is evident that if nitrogenous metabolism be but imperfectly performed, or the products of disintegration be poorly eliminated—through the fault of the liver in one case or of the kidneys and bowels in the other—in such toxins as uric acid, cystine, tyrosin, putrescin, and a host of others similar in character, will remain in the system to cause gout, diabetes, uræmia, neuralgia, and the various obscure neuroses so troublesome to physician and patient alike. It is obvious, then, that to be successful in the treatment of these cases, attention must be directed toward the support of liver and kidneys, and some remedy administered like that in the case we have just described.

In the opinion of the writer, the neuralgia in this instance, appearing after every exposure to cold, was due to the presence of uric acid in the circulation. The sudden chill, checking the acid excretion from the skin, rendered the blood, of course, less alkaline, causing the sudden deposition (in the various connective tissues of the body) of the uric acid crystals, which irritated chemically, as well as mechanically by their points; the surrounding tissues and nerves in their vicinity, producing the intense shooting pains described by the patient.

#### NOTES ON URICACIDÆMIA.

BY J. LINDSAY PORTEOUS, M. D., YONKERS, N. Y.

(Reprinted from the *New England Medical Monthly*, April, 1900.)

In April and May of last year, I published an article on uricacidæmia. Since that time I have tried many so-called remedies for the distressing symptoms which are developed in this condition. Haig is an acknowledged authority on things pertaining to

gout and the uric acid diathesis, and from a considerable experience in the treatment of such cases my experience teaches me that many of his statements are correct, but not all. For example, out of fifty-eight urinalyses the nearest to Dr. Haig's proportion of uric acid to urea—1-33—that I have found has been 1-55, and the average was about 1-150. Some of these analyses were from the urine of seemingly healthy persons. I have noted, however, that patients suffering from gouty symptoms have a diminution of urea, and the worst cases I have had were those which had small excretion of urea rather than of uric acid. By small excretion I mean less than  $3\frac{1}{2}$  grains per pound of body weight. As an instance of this I find on looking over my notes on urinalyses the case of a gentleman, aged 78 years, who had been under treatment for some time before I saw him for rheumatism.

He had used liniments and electricity and numerous internal drugs.

His chief trouble seemed to be pains in the front of the thigh, and, as he described it, a "fulness in his head." The examination of the urine revealed that he was short of urea, viz.: 196.8 grs. in 24 hours, or in other words in 48 ounces. The uric acid amounted to 1.995 grs. in 24 hours. Under lithia and colchicum the amount of urea increased to 275 grs. in 24 hours, and the uric acid to 6.563 grs. His head symptoms improved and the pains in his legs were better, but did not entirely leave him until the urea amounted to 464 grains in 24 hours, at the same time the uric acid decreased to 4.158 grs. in 24 hours. This would look as if the increased excretion of urea was the cause of the improvement in the symptoms and not the uric acid. Haig maintains that the higher the acidity of the urine the lower the alkalinity of the blood and inversely, the lower the acidity of the urine the higher the alkalinity of the blood, and as a high alkalinity of the blood favors free uric acid, it follows that the excretion of uric acid is greater when the blood is highly alkaline. This theory, in my opinion, is correct. Within the last few years the drug market has been flooded with so-called uric acid remedies. Many are utterly worthless for the purpose of setting free the uric acid, whilst others are absolutely harmful, as they drive the poison to the joints, ligaments, etc.

The old standbys, colchicum or its alkaloid, colchicine and lithia, hold their own, more as relieves of acute attacks than as permanent benefactors. Diet, undoubtedly, is the chief agent, not only in shortening an attack, but also in preventing a recurrence. Avoidance of starchy food and sugar is imperative, and, when the constitution can stand it, abstinence from beef is necessary. Tea and coffee both contain large amounts of uric acid, also dark, new beer, and also champagne, sherry and port. The lighter Rhine wine and whiskies are the least harmful of all liquors. Tomatoes, pears and bananas are bad. Apples in many cases do no harm, as after being about two hours in the alimentary canal turn into carbonates. Even cider may be taken by many without bad effects. Gout and rheumatism are almost unknown in cider drinking countries.

The question may be asked, can a person who has once contracted the uric acid "diathesis" ever be entirely cured? The answer to this is, yes and no. The former only if a strict diet is adhered to, and abundance of exercise taken. By the latter I mean that once a person has the condition called uricacidæmia, it is sure to return sooner or later, if the laws pertaining to diet and hygiene are broken. I have already stated in a previous article that uric acid may not be the substance which causes the miserable symptoms called gout, but may be the only ingredient of a composite substance which our present knowledge of chemistry can discover. Clinically viewed, uric acid claims our attention and its production in the healthy body is a most interesting as well as a most intricate problem. How is it supposed to be formed? Several hypothetical ways have been suggested. 1st. By synthesis of the ammonium salts with lactic acid in the liver. 2d. By decomposition of nuclein. 3d. By the kidney synthesizing urea with glycine.

Each of these methods has its votaries—all of whom are men of noted distinction in the realm of experimental medicine. Such being the case, it will be of no advantage to discuss the different theories in an article of a practical nature, as the great dis-

versity of opinion only goes to prove the lack of absolute knowledge of this great subject. Edgecombe and Bain have recorded observations, showing that in health an inverse ratio exists between the leucocyte and uric acid, the subject being on a fixed diet. Horbaczewski considered that uric acid was intimately related to the metabolism of the white cells, and found that an increase of uric acid was associated with hyperleucocytosis. Luff claims that, from experiments he has made, blood made alkaline by sodium bicarbonate is converted sooner into crystals of sodium biurate than when made alkaline by potassium salts—and that in the former case the gelatinous biurate left in solution is much less than that in the latter.

Seeing that opinions are so different regarding the theories of causation and the action of drugs, the only and best thing for physicians to do, is, after careful observation and repeated urinalyses, give their opinion of the value of certain drugs which they have found beneficial. One patient of mine who had suffered much from attacks of gout, and had, after nearly exhausting the Pharmacopœia, had recourse to the Hot Springs of Virginia. Here in a short time he found relief. He kept up a strict diet for several months, gradually relaxing until he took all that was going. Soon, however, slight twinges of the joints and muscles reminded him that he must be careful. He applied to me and I ordered him a dram of phosphate of soda every morning in a tumblerful of hot water. This had the desired effect to a certain extent, but still stiffness remained and an occasional headache. The acidity of the urine which had not decreased much, suddenly rose until it reached 67.8 gr. in twenty-four hours, that is, the 50 ounces of urine passed during that time contained that amount. The urea amounted to 455 grains, and the uric acid 2.61 grs. I learned that Dr. Pole, of Hot Springs, Va., highly recommended a chemical compound of lithia, called thialion. I resolved to try it in this case, and found after giving it in dram doses three times the first day and once every morning afterward that the urine increased to 62 ounces in twenty-four hours. The urea increased from 455 grs. to 489.8 grs. The uric acid decreased to 1.08 grs. and the acidity had fallen from 67.8 grs. to 36.02 grs. The diet was the same before and after the thialion was given.

For a few days after the administration of the drug there were more pains than had been previously. This is the same as takes place while taking the Virginia baths and is supposed to be caused by the rapid elimination of the uric acid or urate of sodium from the affected parts. Now, if, as is asserted by Haig, a decrease of the acidity of the urine means an increase of the alkalinity of the blood, this medicine must be considered very beneficial, as, according to Haig, the uric acid must be in a more soluble condition, and therefore more readily excreted, because the blood is highly alkaline. But in this case the uric acid decreased. For this I cannot account—but the improvement in the patient's condition points to the fact that the urea has much to do with the disease, as I have already suggested. It is sad to tell, but we must admit that a correct knowledge of the causes and treatment of gout is yet to be obtained, and there is still a wide field for experiment before we can arrive at a thorough understanding of this common disease.

Another case where much relief was experienced after the administration of thialion, was that of a lady who had long suffered from pains and stiffness in her joints with almost daily headaches. She has been taking this drug for one month and has not had a headache for three weeks. She says she has not been so long free from headache for many years. I could report many cases which have been benefited by the use of thialion, but will only mention one more. A young man of 28 years had been under treatment for many months for Bright's disease. There were casts and blood and a very large amount of albumin and an average of only 30 ounces of urine voided in 24 hours. When the urine was boiled it became almost solid. His face had the well known appearance of one suffering from this disease. There were the puffy eyelids and the dirty-white complexion. The feet and ankles were swollen, the breathing was difficult and there was great drowsiness. He had taken large quantities of iron in various forms, and in fact nearly all of the so-called remedies for this disease. Some

weeks ago I put him on thialion and in the course of one week the amount of urine had increased to 60 ounces in 24 hours. The albumin had diminished by fully one-half, his complexion cleared up, the swelling left his limbs and eyelids almost entirely, and he felt much better in every way.

At the present date he says he is quite well, eats well and can do his work as well as ever he did. There is still a trace of albumin in the water, which may always continue, but even if such is the case, I consider that his improved condition is a great blessing to him, as he now can support his family, whereas, only a few weeks ago, he was, to all appearances, on the road to an early death. *How* this medicine acts in a case of this kind, I am at present unable to say, but facts are facts.

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### SOME OBSERVATIONS ON LITHÆMIA.

BY ARCH DIXON, JR., M. D., FORT HUACHUCA, ARIZONA.

(Reprinted from *Louisville Monthly Journal of Medicine and Surgery*, May, 1900.)

There is perhaps no class of patients coming under a physician's observation which is more troublesome than those cases of gastric and hepatic derangement due to the uric acid diathesis. The functional disturbances are so associated with nervous phenomena as to render the sufferer impatient and intractable, skeptical of your assertion that he has no serious organic disease, and ready to try every nostrum and accept every diagnosis but the true one from the numerous professional and lay friends whose sympathy he seeks.

Although lithæmia, lithuria, lithiasis, etc., have now become familiar terms to the profession, the whole subject still remains more or less obscure, especially the subjective semiology and the relative importance of the renal and hepatic pathology. The true nature of the affection often escapes recognition by the medical adviser until some case presents itself which cannot be ignored, in which he is forced to closer inquiry into the antecedents, and a more rigid analysis of the symptoms.

He then discovers that he has to deal with something more than a mere gastric derangement, indigestion, dyspepsia, or what not, vague terms with which he has temporarily satisfied his own conscience and his patient's importunities, his calomel and pepsin, his alkalies and sedatives either separately or in some incongruous combination, have generally been a lamentable failure. In mild cases, to be sure, the mark is occasionally hit by some snap shot, but when the patient, superadded to his other grievances, has occasional attacks of vertigo, so sudden and severe as to make him unwilling to trust himself alone in the street, and along with this severe ringing in his ears, what wonder that he should seek other and special skill in brain, heart, eye or ear, to the great discredit of the general practitioner; for though he may get no more relief by the change, his subjective symptoms get more direct attention, and he, at any rate, is for the time being satisfied that some special treatment is exactly what he needs. The disorder in question has no fixed set of symptoms. The subjective expression of the pathological condition may manifest itself in protean forms. Either the gastric, rheumatic, renal, hepatic, cerebral or cardiac, or several of them combined may seem to predominate in any particular case, yet each is dependent in great measure upon certain lithic conditions, which, being neglected, render any treatment unsatisfactory if not wholly useless. It is not necessary that nausea, constipation, or diarrhea, headache, insomnia, or palpitation, myalgic pains or urinary deposits, should all be present in any given case; the subject of these, indeed, is quite likely to express himself as being otherwise in good health and strength, vigorous in mind and body, and yet so tormented at times, and apparently without cause, with one or more of the functional nervous phenomena described, as to induce in him the fear of some fatal organic defect of heart or brain. Of the varied symptoms none are more distressing than a constant tinnitus aurium, from which there is no escape during the waking hours, and which,

indeed, often interferes with the sleep—buzzing, ringing, choking or constant pulsation, for which no visible nor tangible cause can be discovered either in gastric disorder or the external and internal auditory apparatus—not only a constant source of annoyance, but of serious apprehension to its unfortunate possessor; or still more, if, either with or without this tinnitus, the victim finds himself the subject of sudden attacks of vertigo, so severe and decided as to cause a staggering gait, possibly complete prostration, as an attack of epilepsy, the case assumes a gravity which startles and terrifies its subject into fear of impending death. In one case a young, active business man apparently in vigorous health, in addition to some of these symptoms, finds his memory failing to such a degree as to impair business efficiency, he cannot recall the prices of his goods, the daily changes in stocks, etc., and fancies that he is threatened with paralysis, brain softening, or some dire evil which is to bring ruin upon him.

Another will have renal complications dependent wholly upon some hepatic derangement of function which sends him from one physician to another in the hope of relief to his fear of Bright's disease, diabetes, or cystic calculus, while still another may be complicated sorely with tormenting muscular or arthritic pains. And so on one might recall instances of one or more of these with the addition of purely nervous complications, simulating to the fears of the patient almost every conceivable organic disease.

The first of the ensuing cases only, is given in detail, it being a striking instance of the disorder, and one which with its coincident organic cardiac complication might well have caused much concern to both physician and patient, but when its true nature was appreciated, proved to be susceptible to prompt and effectual relief.

Dr. —, who has been in active practice for nearly twenty-five years, was attacked suddenly, after a moderate lunch, with vertigo so decided as to necessitate the recumbent posture, and cause great alarm to his family.

There was no actual syncope, but a distressing sense of faintness, from which, however, he recovered in a few minutes; there was neither nausea nor palpitation, but headache. The attack was at the time attributed to lager beer not very fresh, taken with the lunch. In early life, while a medical student, he had suffered from a bad attack of dyspepsia with palpitation culminating in mitral disease. Occasional attacks of vertigo occurred but usually late in the evening and after days of unusual fatigue.

These were always temporarily relieved by a small quantity of any mild stimulant. The attacks were at one time thought to be possibly due to his habit of smoking, but no direct relation could ever be traced.

Matters had now assumed so grave an aspect that he began seriously to study his own case as he would have been compelled to do in the case of any other patient. First the condition of the heart was investigated as a possible cause, but competent examination revealed no increase of the mitral disease, no evidence of fatty degeneration, the pulse in fullness, frequency and rhythm normal, neither palpitation nor dyspnoea, only an occasional intermission of the pulse. No evidence whatever of any organic disorder. The renal function was apparently perfect; the urine of proper specific gravity, although there was a tendency to abnormal acidity. In the absence of any deposit or other symptom the urine was only roughly tested at any time, until a severe attack of lumbago accompanied by general myalgia and intense headache compelled a more accurate examination. The digestion was bad; the bowels as always during life, regular with the exceptions noted hereafter; the urine was found to be loaded with uric acid. These attacks have never been accompanied by fever nor by any severe disturbance of the general health, but always by extreme irritability, nervousness and impatience, with more or less torpor of the bowels. The appetite, even in the worst of these, was always good enough, if not too good. A more careful course of diet was at once instituted.

The amount of nitrogenous and carbonaceous food was greatly reduced, and all stimulants and malt liquors, always in daily, but never in excessive use were discarded entirely, smoking was interdicted. As medicines, a full dose of thialion was given

before each meal, and an active dose of concentrated French lick water on rising each morning, these producing one full liquid evacuation daily. The effect of this course was very decided. It was continued with hardly an intermission for four months, though on several occasions, when too much animal food, a glass or two of wine or whiskey were indulged in, the warnings were unmistakable. At the end of this period the tinnitus was hardly noticeable, the vertigo entirely gone, and the gouty pains a thing of the past. His health has been more vigorous than ever, but only at the price of constant watchfulness, for any attempt at the indulgences of the table, either at once or with the lapse of two or three days, brings its penalty in myalgic pains, with headache, tinnitus, or vertigo, one or all. The only wines that seem to cause no trouble are a thin table sherry and dry champagne. I make no apology for giving the case at some length, as I consider it to be a good illustration of a certain class of lithæmic cases, and typical of the nervous and gouty complications, while remarkably free from those renal and gastric symptoms which more generally accompany and obscure the diagnosis: for, as will be noticed, there were none of the ordinary symptoms to call attention to what was undoubtedly the true source of the difficulty, the imperfect assimilation of the ingesta. That vertigo and tinnitus as well as other obscure and intractable complaints, especially those of the skin and mucous membranes, may often be traced to the lithuric condition, whether it be designated as lithæmia or suppressed gout, there can be no doubt.

I could give from my notes many other cases in which the relief from distressing symptoms of long duration, and where sufferers had been almost hopeless of relief, would be shown, but the narration would serve no other purpose than to lengthen this already tedious paper, if given in detail. I will merely allude to a few of them, as showing some of the common differences in type:

CASE I.—The son of a physician, married, age forty-six, a high liver, had for three years been subject to these nervous symptoms. In this case renal congestion was so marked a feature as to cause apprehension of some organic disease of the kidneys. Under the proper treatment as above, the functions of the liver were restored, the nervous and renal symptoms disappeared, and he regained, and so far as I know, is still in comparatively vigorous health.

CASE II.—A perfectly temperate man, age fifty-six, was for two years subject to vertigo. He had also muscular debility, nausea and some anasarca. Under careful regulation of the diet, free action of the bowels, nitromuriatic acid, etc., the vertigo and muscular weakness disappeared and his apprehensions with them.

CASE III.—A lady of middle age, with some renal symptoms, headache, nausea, œdema, etc., was under my care at intervals for two years. Though much improved in many respects the nausea having nearly disappeared, she consulted me again last fall for frequent and painful micturition and incessant tinnitus aurium. By the use of thialion, whiskey, cream and a restricted diet, she obtained relief from all the nervous complications.

CASE IV.—A well nourished and apparently vigorous man of thirty-two, in active mercantile life, complained bitterly of seminal emissions and loss of venereal appetite, but chiefly of a constant sense of cerebral confusion with loss of memory, at times so absolute that he could not remember the price of his merchandise or make simple arithmetical calculations.

He was married and of steady habits, excepting that his meals were irregular and hastily taken. He suffered to a slight degree from hemorrhoids and headache. The emissions proved to be trifling and distinctly prostatic, not seminal. As he was an excessive smoker, tobacco was forbidden and with proper regulation of the quantity of his diet and the use of thialion and mineral tonics, the unpleasant cerebral phenomena were relieved entirely and permanently a year having now elapsed without any recurrence.

CASE V.—I will allude to but one more. An old gentleman, a steady drinker, past seventy, has been for many years a notable specimen of the hypochondriac. He

has, however, certain difficulties that are not imaginary, especially prostatic enlargement in an aggravated degree. He has for years suffered from tinnitus, slight vertigo and palpitations. He was under my care for a year or two before I could get him under decent control. He was depressed, skeptical, sure that he was to lose his mind or die suddenly of apoplexy or heart disease. Would follow a prescription for a day; then seek another; buy every quack medicine that was recommended (and serve it fortunately in the same way), until finally under the threat that I could or would do no more, a promise of obedience was exacted and tolerably kept until now; under comparatively simple treatment life is no longer a burden to him or his friends.

How deranged functions of the liver, imperfect disintegration and oxidation of the albuminoids, result in the excess of lithic acid in the blood, is a physiological problem, for the discussion of which I must refer to Fothergill, Charcot, Murchison, Da Costa and many others.

The opinions of writers and experimenters are still quite at variance upon many points.

As to treatment, it is already sufficiently indicated, if we accept the theory of the lithæmic origin of the trouble. That the liver may rest from its overcharged labor, saccharine, nitrogenous, and alcoholic ingesta must be diminished, both sedentary habits on the one hand and excessive fatigue on the other, and over cerebral exhaustion from study or worry avoided, they all tending to weaken the circulation and so favor acid accumulation.

With regard to the use of tonics, mineral or vegetable, they are often worse than useless, especially in the early stage of average cases, in which with careful diet, mild saline laxatives perseveringly used are the best tonics. In anæmic or broken down cases their use may be, of course, a necessity. In most cases alkaline salts are indispensable, and of these I have found thialion more useful than any, and perhaps the most agreeable to the stomach, although occasionally it overstimulates the kidneys and must be suspended for a time. When the pain is myalgic, muriate of ammonia in full doses will often give prompt relief, though if the result does not follow within a day or two its continuance is useless.

I have found no benefit from it in arthritic pains, or tenderness. Mercurials, podophyllin, colchicum, etc., must, I think, be rarely needed and are objectionable from their depressing effect. Their influence upon the biliary secretion is at least questionable, and if the small intestines are kept free from biliary accumulations by saline laxatives, they are not required. If there be any one thing that I should lay the most stress upon throughout the treatment it would be the use of concentrated French lick water in conjunction with thialion. Nothing proves so promptly effectual in removing those exacerbations of arthritic tendencies, vertigo and tinnitus which the most tractable patient will occasionally bring upon himself by some indiscretion, as an extra dose of French lick water (Pluto) taken for a day or two in the morning fasting. By an extra dose I mean a large and more active one, for I would have a small dose of the same used almost continuously and for months after the cessation of the urgent symptoms. This water keeps the small intestines free and the sulphates of soda and magnesia with which they are highly charged have a cholagogue influence which goes for something. Their influence as combined in this water is decidedly more satisfactory than when taken alone.

As to the use of stimulants, most patients are probably better for entire abstinence, but in a certain class such abstinence can with difficulty be enforced. I know of no rule by which one can be guided but by the experience of the patient himself. As a rule, of the light wines the driest are the best. One will drink claret with impunity, while to others it is an undoubted poison, and the same may be said of champagne, Burgundy, Hock, etc.

Climatic and especially hygrometric conditions become here, I believe, an important factor. It is now a well known fact that a patient will indulge with impunity in

England or on the continent in beverages both in quality and in quantity which in our drier climate cannot be assimilated.

The first case reported was a striking instance of this, as was proved by his experience in a visit abroad. Good whiskey—especially Scotch—or brandy in moderate quantities is perhaps the least harmful. It must not be forgotten that one's living may be generous without being excessive in either food or drinks. The patient should always be made to understand that the relief which he may receive is to be permanent only so long as the conditions of the cure are complied with, and that any indulgence or excess will almost inevitably be followed by its penalty, and worse even, remembering that too frequent recurrence of merely functional disorders are likely to result eventually in actual organic changes no longer amenable to curative treatment.

In conclusion, I may be permitted to say that while the pathology of the affections remains as at present, an open question with different observers, the successful treatment of a series of cases may help materially in its solution. When medical science is deficient medical art may assist in placing it upon a right foundation.

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#### A FEW NOTES ON URIC ACID.

BY D. M. GIBSON, M. D., ST. LOUIS, MO.

(Reprinted from *The Clinical Reporter*, May, 1900.)

Excess of uric acid in the system does not always manifest itself by the same symptoms. In one patient we have the gouty conditions, the painful limbs and inflamed joints, and the general rheumatic symptoms; while in another who may be suffering from the same cause, we have a yellow skin, a sour stomach, a coated tongue, general inactivity of the liver and the resulting constipation. Associated with this is usually more or less weakness and irregularity of the heart's action, a loss of strength, tone and vigor.

The urine at this time will usually be high colored and loaded with an excess of solid matters. If the patient be somewhat aged, this condition is likely to go on slowly, gradually and progressively, and remain indefinitely unless relief be afforded. In the younger subjects, such a condition is more likely to be associated with the "joint" form of the disease, or with a direct lesion of the heart itself. This heart lesion is apt to be progressive, and in due time will result in organic disease of the heart.

Ordinary medication in this class of cases, is, as a rule, tedious, and not infrequently is entirely unavailing, the relief granted being but temporary. It seems impossible to get the blood back to its normal condition. It is loaded, as it were, with a sediment which impeded its movement and lowers its quality. The rational treatment for such cases is, of course, the removal of the excess of uric acid from the system and the restoring of the normal functions of the bowels, liver and kidneys and to enable the stomach to perform its share of the digestion. Of the various remedies that have been used for this condition, the active cathartics and the stimulating medication, or so-called tonic treatment, seems to be the worst, so that what relief is gained is accomplished by systemic treatment, or that which has a view to the general betterment of the system rather than to any one condition or any set of conditions that may be found present. A comparatively new preparation, thialion, which has recently come before the profession, promises more and seems to accomplish more in this class of cases than anything that has heretofore been used in the conditions here enumerated. This drug is easy of administration, has a good effect upon the patient, and does not weaken or deplete the already overtaxed system. It is mildly diuretic and laxative in its action, and does not, so far as we can see, interfere with the action of any other remedy that may be used.

By way of illustration, I will cite a case. A. G., æt. 64, has complained of "liver trouble" for some months. No special attention did he pay to his condition, until a



swelling of the feet was noticed. The physician to whom he applied for treatment, somewhat bettered his condition, and removed the dropsical condition by the free use of Epsom salts. The administration of the salts, however, so weakened the patient and destroyed his appetite, that he was forced to discontinue it.

He presented the following condition: Skin, sallow colored; tongue, heavily coated—a dark brown; action of the heart, weak; region of the liver, swollen, but not sensitive; no dropsical condition at the time, but an excessive constant thirst. The urine was not passed in excess, but it contained an excessive amount of solid matter. He was advised to stop the use of the salts, to partake freely of good nourishing food, but to eat sparingly of meat; was given the indicated remedy and, in order to mechanically remove or wash out the condition which was clogging his system, he was given also thialion, one teaspoonful in a glass of hot water, to be taken each morning before eating.

There was no appreciable effect for about four days. At the end of this time the stool became more frequent and horribly offensive in odor, the urine became more copious and lighter colored, and my patient's condition began to improve. He was continued upon the remedies which he had taken, and now, at the end of three weeks, announces himself to be better than he has been for a year. His appetite is good, his tongue is clean, the liver reduced in size, and the functions of the body rapidly approaching the normal. In his case medications must be continued for some time, but his improvement has been remarkable.

CASE II.—H. B., *æt.* 23 years, has enjoyed good health up to the present time, except for constipation; complains of pain in chest, difficult breathing and smothering. Pulse, irregular; heart's action, labored and jerky; traces of albumin in urine, which is scanty.

Various remedies were administered, and with some success, but upon the least exertion the symptoms returned, and the bowels *would not move*. He was now given thialion, a teaspoonful in a glass of hot water, night and morning, and all other medication discontinued. Improvement was rapid and marked, so much so that in three weeks time, he was able to return to his work, and the constipation is a thing of the past. The amount of thialion taken is being gradually lessened, but the improvement continues.

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## A BRIEF INQUIRY INTO THE ETIOLOGY AND TREATMENT OF HAY FEVER.

BY EDWIN HANK, M. D., TANNERS CREEK, VA.

(Reprinted from *Gaillard's Medical Journal*, May, 1900.)

Many theories have been advanced of late years as to the cause of hay fever, and fully as many suggestions offered as to the best mode of treatment, from all of which we may infer that the disease is still somewhat of a riddle to the profession. An eminent philosopher once said, that of two or more opposing doctrines there is always a grain of truth hidden in each. So with our present subject, we may assume that the whole truth is not to be found in any single theory, but rather in the combination of many.

There are those, for instance, who pin their faith on the popular anatomical theory; i. e., that there exists an undue prominence of the inferior turbinated bones, accompanied by an hypertrophy of the immediately overlying soft parts. Others affirm that, in many cases, the nostrils are obstructed by deflection of the septum. There are many, too, who support the nervous theory; i. e., that the local manifestations are principally due to vaso-motor reflexes, producing arterial tension and resultant obstruction to the capillary circulation. Others are of the opinion that there exists a personal idiosyncrasy, or predisposition to become influenced by an external causative agency;

but, without some further explanation, this would seem to be simply a convenient expression to cloak ignorance. In conclusion, it may be said, that all recognize some external irritant as an immediate factor in the case; e. g., pollen of plants, strong odors and vapors, etc. The periodicity, so remarkable in this disease, is accounted for on the ground that the "external irritant" only appears at certain seasons of the year. There are, of course, exceptions, as in instances where the victim has been exposed to inhalations from certain drugs.

In the summing up of, and sifting out the truth from these various theories, it will be seen that three etiologic factors stand out most prominent; which are best expressed in the following hypothesis, formulated by Sajous: 1. An external irritant. 2. A "predisposition" to become influenced by this irritant. 3. A vulnerable or sensitive area through which the irritant may exert its influence. All authorities are substantially agreed on the existence of the first of these factors, and it may be passed over here without further comment. The causative connection between the second and third, however, is not yet so well established, and it is on this subject that we beg to offer a few suggestions. In regard to the "sensitive area," we have no doubt that in a few isolated cases the trouble is due to abnormally prominent turbinated bones, but in the vast majority of instances we believe that it is simply one of the many local manifestations of the mysterious "predisposition" itself. If this view be correct, an investigation into the nature of this predisposition will be of no little assistance in determining the etiology and treatment of hay fever.

The opinion is now fast gaining credence among specialists on diseases of the skin, eye, nose and throat, respectively, that many disorders of the tegumentary system which have hitherto been classed as specific diseases, are in reality but symptomatic of the general dyscrasia known as uricacidæmia. Uric and calcareous deposits are found in the skin and mucous membranes of these patients as in the joints and muscles of the gouty and rheumatic, and as the joints and muscles of the latter become congested and swollen through the presence of this irritant foreign body so do the skin and mucosæ of the victims of herpes, psoriasis, urticaria, tonsillitis, pharyngitis, conjunctivitis, etc. (all of which are now recognized as symptomatic of the uric acid diathesis) and, sometimes, even astigmatism—the nutrition of the corneal muscles having finally become interfered with owing to the deposits already mentioned. The nasal, pharyngeal and bronchial mucous membranes, as well as the skin and conjunctivæ of uric acid victims, are extremely sensitive to both internal and external influences, becoming inflamed and swollen on the slightest pretext or most fugitive impression.

This latter fact is no doubt largely due to arterial tension, and partly to the unnatural efforts of skin and mucosæ to perform the excretory function of kidneys, liver and bowels, which are habitually inactive in all lithæmic patients. A sudden chill, too, which checks the acid excretion from the skin, rendering the blood less alkaline and causing the deposition from the circulation of the uric acid salts, will not only bring on an attack of rheumatism and gout, but also of tonsillitis or bronchitis, or even of the simple coryza. In these patients—owing to the arterial tension—there is almost always turgescence of the erectile tissue of the mucous membranes, causing catarrh, especially of nose and throat, where exposed to constant currents of air and other atmospheric influences. It is not surprising, therefore, why in patients thus predisposed, there should exist the "sensitive area," subject to "external irritants" which result in hay fever, nor why conjunctivitis and bronchitis should so frequently complicate this troublesome malady. It is not contended here that all uric acid subjects are necessarily victims of hay fever, nor that all hay fever subjects are necessarily victims of the uric acid diathesis, but we do believe that the "sensitive area" exists in many persons of this "predisposition" and that the majority of hay fever patients are thus predisposed.

It will readily be seen, that, in considering the treatment of these cases there are two causative factors to be removed—either the "external irritant" or the "predisposition." To those who can afford to visit the mountains in the fall, the cure is simple, for if they cannot remove the irritant they can remove themselves. But for those

unfortunates who are obliged to remain at home, there is only one alternative—to remove the predisposition. Aside from directions given as to the diet, largely interdicting nitrogenous food stuffs, it should be the duty of the attending physician to stimulate the action of his patient's kidneys, liver and bowels, and thus give exit through the proper channels, toxins which the skin and mucosæ have been attempting to remove. Among many other cases similarly tested, the following one is cited here to illustrate the fact, not only that the uric acid diathesis may be a common predisposing cause of hay fever, but that timely prophylactic treatment with appropriate anti uric acid remedies may effectually prevent an attack.

Mr. F., æt. 52, a prominent trucker of Norfolk County, has been a sufferer from the effects of hay fever every fall for the last twelve years, each attack beginning about the first of August and lasting until frost. Various methods of treatment have been tried in this case, without benefit, until finally I determined to give the anti uric acid treatment a trial, being led to this decision from the unmistakable evidences of uric acid deposits in the patient's urine. Other symptoms of the diathesis were also prominent. The skin was dry and yellow, the conjunctiva injected, and patches of congestion found in the pharynx indicating the "rheumatic sore throat." The patient's general health was not seriously affected, but it was evident that uric acid salts were gradually deposited in the follicles of skin and mucosæ, the latter, lining the nasal passages, being almost constantly swollen and emitting a sticky mucus.

Treatment was begun about a month before the anticipated attack. I directed that one teaspoonful of thialion be taken in a teacup of warm water about one hour before each meal for three days, after which the number of doses was reduced to one each day taken before breakfast. I also eliminated from his diet, as far as possible, all albuminous principles. No signs of trouble appeared until the latter part of August, when, owing to exposure to cold and wet, the patient began to evince signs of his dread malady, and suffered mentally in consequence. I increased the number of doses given to three times a day for two days, and then fell back to one dose per day— but increasing the size to one and a half teaspoonfuls. The result was most satisfactory. Within a few hours all symptoms of the attack had subsided and the case progressed without further trouble. A somewhat peculiar fact, to be mentioned in this case is, that notwithstanding his rigid diet, the patient steadily increased in weight.

#### URIC ACID DIATHESIS.

BY J. MC D. MASSIE, M. D., ST. LOUIS, MO.

(Reprinted from the *St. Louis Medical Era*, March, 1900.)

Uric acid is so intimately concerned in a multitude of pathological conditions both within the domain of medicine and surgery, that it presents to the diagnostician a most interesting field for investigation. It furnishes the key to a solution of many vexing pathological problems.

Uric acid is the product of imperfect oxidation of the nitrogenized elements of the food which should be transformed, on the one hand, into material to be assimilated by the tissues, and on the other, into urea. Urea represents the final product of tissue metabolism, its volume depending upon the degree of transformation of albuminoid substances after digestion and absorption, upon the amount of tissue waste, and upon the functional activity of the kidneys. Persons who suffer from these toxic influences usually eat too much, drink too little water, too much beer or alcoholic stimulants, take too little exercise, and worry over troubles which their evil habits have engendered. Excessive use of nitrogenous foods, together with a lack of cereals and vegetables, is another frequent cause. Climate is another factor. Cold interferes with the cutaneous circulation, and checks perspiration. This throws an extra burden upon the kidneys,

may have been already impaired in their function by irregular and unsanitary of life. The main symptoms group themselves around the digestive, urinary, and the nervous system. The patient complains of loss of appetite, his tongue is red and dry. His taste is perverted, he has indigestion, pyrosis, nausea, and flatulence. He is constipated, flatulent, and complains of tenderness in the region of the back with a tendency to hemorrhoidal affections. The nervous phenomena are tinnitus aurium, restlessness, insomnia, and neuralgia in various parts of the body with an endless array of other mental and physical annoyances. An attack of rheumatism may precede or follow many of the above morbid phenomena. The skin plays an important rôle in the processes of excretion. Where a due amount of nitrogen is not exhaled from the skin, an excess of nitrogen remains in the blood to be eliminated by the kidneys in the form of urates or urea. The skin should relieve the system of much of this work. Not that uric acid or the urates are expelled as such by the skin, but certain organic matters rich in nitrogen certainly do escape in this way, and the functions of the skin are arrested, they pass from the circulation through the skin in the form of urates. When we consider that the perspiratory tube of a finger-nail in the palm of the hand is seventy-five feet in length, and in other parts of the body about the same proportionately, we can realize the injury its obstruction must do to the health. In twenty-four hours the skin will exhale over one hundred grams of nitrogenous matter, and this organic matter invariably contains much nitrogen. So when the skin fails to perform its functions, much of this organic matter passes through the urinary system into the bladder in the shape of urates; but if these organs are diseased or impaired in function, uremic poisoning may follow.

The action of the skin on the excretion of urates is aptly illustrated in a person of normally good health who, after exposure to a current of cold air, experiences a slight increase in perspiration, and shortly afterwards, when he voids urine of a deeper red than usual, on cooling, it becomes turbid, and presents a deposit of urates. These observations guide the observant physician in his efforts to meet therapeutic indications. A abstemious and well-regulated diet, abstinence from alcohol and tobacco, with increase of out-door exercise, adapting the income of the system to the output of promoting the processes of secretion, excretion, and depuration, and flushing regularly all the sewers of the system, embody all the underlying principles of sanitation in uric acid diseases. In the treatment of disease, we often fail because of a hasty diagnosis. Many symptoms of different diseases are very much alike, and it happens that we attribute these symptoms to the wrong causes. A striking illustration of this error is shown in the following clinical case:

Mrs. Y., whom I have often treated for various ailments, consulted me for a severe headache which had resisted for several days the usual domestic remedies she had accustomed to employ in such cases. The pain affected one-half of the head. There was some periodical abatement of symptoms, and I concluded that it was due to acute toxæmia. After giving her a mercurial purgative, I prescribed three grains each of salicylic acid and acetanilid in capsules, to be taken every two or three hours until relieved. Making the medicine two days without any benefit, she called me to her house, and asked me to try something else. I remembered that I had treated her a year prior to this for rheumatism. I now suspected some uric acid complications, and made an examination of the urine. It clearly revealed a perverted proteid metabolism, complete acidity, specific gravity 1028, high colored, dull-red depositing brick-dust sediment composed largely of uric acid crystals. I found she had partaken of meat three times a day in excessive quantities, but had indulged sparingly in cereals and vegetables. She had not for a long time touched a glass of cold water, but had continued to drink coffee three times a day, and a glass of beer occasionally between meals. She was obstinately constipated, her skin was dry, and her urine scant, causing a burning pain when voided. I regulated her diet, allowing only a moderate amount of meat once a day with a more liberal supply of fresh vegetables. The coffee and beer were forbidden, and plenty of water substituted. She was advised to

take a warm bath once a day, put on thick flannel under-garments, and walk briskly from half a mile to a mile twice a day. The only medicine I prescribed was thialion. At first she took a teaspoonful of this in a wineglass of hot water every three hours; later a teaspoonful three times a day, and when fully relieved of her headache, a teaspoonful only in the morning before breakfast in as much warm water as she could drink. Under this treatment she began immediately to improve, and in less than a week she regained her usual health. It is now three months since she was restored to health. She has had no return of the headache.

I have used this laxative salt of lithia in many obstinate cases of urticaria, eczema, lichen, and psoriasis associated with the uric acid diathesis, with similar results. I attribute its magic effect in these cases to its action as a solvent of uric acid, as a diuretic laxative, gentle diaphoretic and metabolic stimulant. Possessing such therapeutic properties, it must be useful in a wide range of pathological conditions.

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#### SUGGESTIONS ON THE CAUSATIVE RELATIONSHIP BETWEEN URIC ACIDÆMIA AND URTICARIA, WITH REPORT.

BY HALCYON A. WILBUR, M. D., PHILADELPHIA, PA.

(Reprinted from the *Southern Practitioner*, May, 1900.)

The opinion has now become quite generally accepted that functional inactivity of the liver (produced by frequent dietary errors) is a fruitful, and perhaps principal cause of the so-called uric acid diathesis, and that this latter condition, when once formed, gives rise to various disorders of the tegumentary system, the etiology of which has hitherto remained somewhat in obscurity.

Some of our most eminent laryngologists, both at home and abroad, are of the opinion that the rheumatic diathesis often manifests itself in diseases of the throat (Cf. Robinson, in the *New York Medical Record*, Dec. 6, 1890); while a well-known ophthalmologist, who has recently made extended observations on the subject, believes that a causative connection exists between the uric acid diathesis and "astigmatism against the rule." Of forty such cases examined by him the urine of the subjects was found to be typical of the lithæmic condition in every instance. Having found varying corneal surfaces with a tendency to changes in axis, he suggests that this local infirmity is due to impairment of corneal nutrition as indicated by arcus and annulus senilis, and by loss in reflectivity. In addition to the urinalyses instituted, as above referred to, his attention was directed in all of these cases to the other symptoms characteristic of the uric acid dyscrasia,—“the dry, yellow, scaly skin; the harsh, dry, non-oily hair with a scaly scalp; sensitive, bleeding and receding gums; inequalities in the strength of the eye muscles; calcareous deposits in the conjunctiva and skin; a flabby and swollen condition of the mucous membrane of throat and nose; frequent headaches; nervous, irritable disposition; irregular circulation; tendency to indigestion, especially of acid, flatulent type; pains in the muscles of the back and neck and in the wrists, as well as the more gross symptoms usually classified under the heads of gout and rheumatism.”

Concerning the far reaching effects of the rheumatic diathesis in the domain of dermatology, Prof. Piffard (*Diseases of the Skin*, 124-142) cites Hardy, who thus describes those who suffer from this constitutional condition, so far as the skin is concerned: “Their integument is habitually dry, and perspiration is diminished. The skin is often the seat of lively itching, even in the absence of eruption. An important peculiarity, too, is the extreme sensibility of the skin, and the facility with which it is influenced by the lightest and most fugitive impressions; e. g., sometimes great excitement, alcoholic excess, watching, use of coffee, and of certain kinds of food; sometimes a local excitement, irritating frictions, or the application of a plaster, will give rise to

an eruption, often ephemeral in character, but which reveals a particular predisposition of the economy and the existence of a latent vice which needs but a favorable occasion to manifest itself." To this diathesis, as Piffard writes, Hardy ascribes "eczema, acne, lichen, psoriasis, and pityriasis"—to which we may now add, urticaria.

The etiologic condition which exists between the constitutional dyscrasia and the local disturbance of the skin, though not easily discovered, may be traced somewhat as follows: It is now generally recognized that the diathetic condition, known as uric-acidæmia or lithæmia, is a result of suboxidation, and that, owing to the accumulation in the circulation of the various organic acids, the blood is rendered less alkaline; and this subalkalinity, as we are well aware, prevents the process of oxidation or metabolism from being so completely carried on. There is, therefore, an accumulation of suboxidized material in the blood and tissues, and unless the kidneys are equal to carrying them off from, or out of the economy, we are obliged, as one writer states, "to turn to the bowels as the real efficient emunctory of the body. From the frequent appeals that are made to the bowels, both by nature and man, this organ does not, as a rule, suffer much from becoming the way of exit for an excessive amount of excrementitious substances. Unfortunately, however, other vicarious avenues are also selected for the passage outward of the pent-up *materies peccans* which indicates the diathetic condition, and hence it is that the skin and mucous membranes often show evidence of irritation and disease as a consequence of this selection." Especially will this be so if the bowels are neglected, or surcharged by over-eating or by errors in diet, or if the constipation be caused by a torpid or over-worked liver as is usually the case in the lithæmic condition.

It may be fairly assumed, therefore, that urticaria, as well as certain other eruptive disorders, proceeds from a diathetic condition, wherein the kidneys and bowels have failed to throw off the excrementitious substances in the circulation, and the skin in its efforts to provide an avenue of escape, has become the seat of a local disturbance; a disturbance which is intensified owing to the presence of foreign matter, uratic and calcareous deposits, clogging up the pores. It will be seen too, that, in these cases, the predisposing cause is constantly present, and all that is needed is some exciting factor further interfering with the function of the excretory organs—such as a fit of indigestion, caused, perhaps, by a game supper or oyster dinner—to bring on a sudden attack.

If the foregoing views be correct, it is evident in the treatment of these cases, that, in addition to the usual local applications, attention should be directed toward the support of the kidneys, liver and bowels, and some remedy administered which will enhance the function of these excretory organs and remove from the body the toxins therein formed. As an effective uric acid solvent, lithia still holds first rank among therapeutic agents, and is usually prescribed, either in the form of the natural waters, or artificially prepared, for its specific action in this respect. It lacks, however, one very important requisite; i. e., stimulation of liver and bowel; therefore, in the cases which we are now considering, it needs to be combined with some effective cholagogue agent in order to prove most beneficial. For combating the constitutional dyscrasia in cases of astigmatism, the eminent specialist previously referred to, recommends salicylate of soda and the laxative salt of lithia, thialion, as among our most reliable agents. The latter remedy has been used by the writer in the following case of urticaria with most gratifying results, which still further emphasizes his belief in the intimate etiologic connection which exists between the constitutional diathesis and the local disturbance to the skin.

Mrs. G., æt. 48, was first seen in August, 1898. She was suffering from a severe attack of urticaria, which had broken out suddenly the previous night, involving both thighs and a considerable portion of the abdomen. The eruption consisted of wheals of a pinkish color, about the size of a split pea. The itching was so intense as to keep the patient awake throughout the whole of the night. This was the third attack from which she had suffered during the previous two months. The treatment consisted

simply of a local application of thymol solution (gr. j to  $\frac{3}{4}$  j of alcohol), and a mild aperient, the eruption usually disappearing the following day.

During the ensuing year the patient appeared for treatment for the same trouble on seven different occasions, similar treatment being adopted in each instance, the eruption usually disappearing within twenty-four hours. In July, 1899, she again presented herself for the same trouble in a still more aggravated form, the wheals this time having developed into large blebs which covered nearly the entire trunk of the body and both limbs. Careful inquiry into the cause of the trouble revealed the fact that the patient was habitually constipated, and suffered occasionally from flatulency and indigestion. She was subject also to headaches and attacks of vertigo. She had become very nervous, was losing flesh and strength, and slept poorly at night. Her conjunctivæ were injected, showing the characteristic evidences of liver trouble. The urine was scanty, of a brick-dust color, of high specific gravity, with unmistakable signs of uric acid deposits.

Believing that the patient was suffering from uric acid diathesis, and that this was the predisposing cause of the urticaria, constitutional treatment was at once instituted with this end in view. Thialion was administered in teaspoonful doses every three hours the first day, until a large mushy movement of the bowels was effected, which occurred soon after the third dose. Thereafter, a teaspoonful was administered in a glassful of hot water every morning upon rising. This was continued until two ounces of the remedy had been taken, when the dose was diminished to a teaspoonful three times a week.

The result of the above treatment has been eminently satisfactory to patient and physician alike. More than six months have now elapsed since the occurrence of the last attack of the eruption, no signs of which have appeared in the interim. The patient's general health is much improved; she has gained in flesh, eats better, sleeps better and her bowels have become comparatively regular. Her skin, too, is less dry, perspiring freely on occasion. The urine has become paler and more abundant, is neutral in reaction, and presents none of the signs of a functionally inactive liver, such as were found so conspicuously present at the examination in July when beginning the anti uric acid treatment.

## ASTHMA AND THE URIC ACID DIATHESIS.

BY S. S. GARST, M. D., JONESBORO, TENN.

(Reprinted from the *Oklahoma Medical Journal*, May, 1900.)

Though the diathetic nature of asthma has long been suspected, it was not until recently that this phase of the subject received scientific attention, the majority of careful investigators having now come to the conclusion of the celebrated Haig, that "the only way to treat asthma is to clean the blood of uric acid and keep it clean." Dermatologists now recognize the fact, that diseases of the skin and mucous membranes are in the majority of cases due to errors of nutrition and metabolism—such as are manifested in the uric acid diathesis. It is believed that there is a disturbance of the equipoise between the functions of nutrition and excretion, due to a defective working power inherent in the organs primarily concerned in these processes—especially the liver and kidneys.

A well-known dermatologist has recently made the statement (Cf. *Journal of Cutaneous and Genito-Urinary Diseases*, March, 1900) that, of two thousand urinary analyses, made under his directions on the excretions of 569 patients suffering with various skin diseases, uric acid salts were found in the majority of instances. Again, in the report of the Transactions of the American Laryngological Association, for 1898, the opinion is expressed by a prominent specialist, that while diseases of the air pas-

sages may sometimes produce disturbances of the general health, yet the reverse was more frequently the case, and most of the chronic catarrhs of the respiratory tract occurred in uric acid subjects—several cases being cited by him in illustration of the fact.

The uratic and calcareous deposits, which occur in the joints and muscles of these subjects, are likewise found in the skin and mucous membranes, which necessarily interfere with the excretory follicular structures and result in turgescence of the erectile tissue—especially of the mucous membrane with exudation of a tenacious, viscid mucus. There is no longer any doubt that the nutrition of the bronchial nerves and muscles, as well as of other delicate nerves and muscles of the body, is much impaired by these deposits, which seriously interfere with their mechanical function. Oppressive breathing must necessarily result if the bronchi, for any reason are obstructed, or if the lumen of the canal be restricted through failure on the part of the muscles to respond to the nervous influence. The lumen of the minute bronchi will be lessened in the same manner as the capillary tubes in arterial tension, and the latter, as is well known, is symptomatic of the uric acid dyscrasia. Bronchial spasms and arterial tension, therefore, are both present in an attack of asthma, and both due to the same etiologic factor—the presence of uric acid.

To illustrate the benefit that may be derived from appropriate anti uric acid treatment in cases of asthma of long standing, my own case is submitted here as being of no little interest in this connection, to wit:

My age is 36, am married, have wife and one child. My mother was an asthmatic and I was supposed to have inherited the disease from her, although the presence in the neighborhood of numerous candy-shops and constant abuse of the stomach may have been equally prominent as etiologic factors in the case. My first bona fide attack of the dread disease occurred when only fourteen years of age, and for more than twenty years thereafterwards I suffered all the torments of a modern Prometheus.

The attacks at first were rather light in character, but steadily gained in virulence until I was twenty-eight years of age, when they reached their climax. This was in March, 1890, at which time I was attending a third term session at Jefferson Medical College, Philadelphia, Pa., and was there put under the treatment of Prof. Roberts Bartholow, himself. During a period of six weeks, Dr. Bartholow made examinations of my urine, and failed to find evidences of any albumen, or discover anything that would lead to the belief that there was any structural change in the kidneys. But he found an immense quantity of uric acid! He then advised iodide of potash, diet and change of climate. These directions were strictly and religiously observed, and immediately afterward I went to Los Angeles, California.

For two years I lived in comparative peace, so far as asthma was concerned, when I returned to Ashland, Ohio, where the attacks once more became such a torment to me as to render life almost intolerable. Hoping to obtain some relief I then came south to the mountains of Tennessee, but to no avail. For ten months I was unable to sleep in a recumbent position, and was obliged to sit up in bed. I had now begun to despair of ever obtaining any relief. I had tried remedies, from iodide of potash to every imaginable form of patent medicine, without even temporary relief.

It was at this time that my attention was directed to the laxative salt of lithia, thialion, as an effectual anti uric acid remedy, which had already been used with success in chronic cases of asthma. When I first began its use I was suffering from a fresh supply of "cold," and as a result asthma was plying its paroxysms in its most hideous forms. To my surprise and delight, however, the attack was broken up in a few hours. I continued to take the remedy, a teaspoonful in a glass of hot water every morning upon rising, until every sign of my old enemy had disappeared. The most noticeable immediate effect of this treatment, was that exhibited by the urine, which was at first made strongly acid and afterward became alkaline. It also became clearer and more abundant, the previously existing brown color and brick dust sediment disappearing



entirely. The bowels, too, became more regular, and attacks of vertigo and headache were mere things of the past.

Months have now gone by without even a symptom of the dread disease, notwithstanding frequent exposures to inclement weather. I can retire to my bed every night, lie down and sleep the tranquil sleep of the just. This is a boon which is only to be fully appreciated by me who have sat up for months at a time, laboring diligently for my breath and expecting each moment it would be my last. It is, perhaps, too early to pronounce a really permanent cure in this case, but I feel assured that with reasonable caution as to diet and exercise, and with a watchful regard as to the appearance of uric acid deposits, taking the remedy occasionally to stimulate the action of liver and bowels, 'I may be promised immunity from any further attacks of my old complaint.'

### ANTI URIC ACID TREATMENT IN DYSPEPSIA.

BY P. K. BETHEA, M. D., SOCASTEE, S. C.

(Reprinted from the *Georgia Eclectic Medical Journal*, May, 1900.)

It is now quite generally recognized that deficiency of biliary and pancreatic secretion is one of the most common predisposing causes of functional dyspepsia,—especially of the acid flatulent type. It is equally well known that this deficient secretion is only a secondary condition, brought on primarily by some qualitative change in the blood itself. Though there are many toxins, which may be introduced into the circulation, materially changing its physical and chemical character and interfering with its physiological function, yet by far the most prevalent abnormal condition is that of subalkalinity, due to the presence of uric acid.

In health, uric acid is found in the circulation in small amount as a quadrurate and is eliminated as such by the kidneys, but if for any reason there is an undue retention or excessive accumulation of it in the blood, this process is then interrupted. "The detained quadrurate," says Sir William Roberts (Cf. Allbutt's System of Medicine, IX-170), "circulating in a medium which is rich in sodium carbonate, gradually takes up an additional atom of base, and is thereby transformed into biurate of soda." As this latter salt is quite insoluble, it is finally precipitated from the blood and deposited in various tissues of the body, giving rise to gout, rheumatism, etc.

It will readily be seen, therefore, that the blood, being robbed of much of its sodium carbonate, is soon rendered less alkaline, as well as the several glandular secretions depending upon it,—including the bile and pancreatic juice. As the digestive power of these latter secretions, depends largely upon their degree of alkalescence—i. e., the presence of sodium carbonate—it will be seen that indigestion must follow, even though hydrochloric acid be present in normal amount. The vinegary, or acid eructations, which are so characteristic of this form of dyspepsia, will serve as a practical suggestion of the actual condition of affairs, as just described. The flabby, coated tongue, and dry, sticky condition of the mouth (due to deficiency of the salivary secretions) is another illustration. It will be understood, too, why salt is so necessary an article of our diet, and why the administration of bicarbonate of soda so often affords relief in these cases.

This relief, however, is but temporary, inasmuch as it does not remove the primary cause of the trouble,—i. e., the presence of uric acid in the circulation. Neither do uric acid solvents alone (such as lithia or the salicylates) fulfil *all* of the indications; for, though they may remove the toxin already formed, they do not prevent its further formation, to accomplish which, it is essential to regulate the action of the liver itself—the uric acid factory. The real "anti uric acid treatment," therefore, is one which aims, not only to remove the toxin already formed, but to prevent the formation of any more.

The following case is cited here to illustrate the salutary results of such a mode of treatment in dyspepsias of long standing—the remedy used being lithia in combination with a laxative alkali:

H. G., male, æt. 36, has been a sufferer for the past ten years with indigestion, complicated with well marked symptoms of neurasthenia. During the entire period he has been treated by several physicians without getting any perceptible benefit, although at times he admitted temporary relief. His symptoms were as follows: Tongue coated brown; bad taste in the mouth,—especially in the morning on rising; constantly trying to get a full breath and succeeding only occasionally. Especially would the dyspnoea trouble him, after eating a full meal or something that would disagree with him. This was evidently due to accumulation of gas in the stomach from fermentation of food, since a glass of soda water, or drink of whiskey, would almost invariably relieve him.

The patient was troubled, too, with insomnia. He would pass through the night, dozing and dreaming, his sleep never being refreshing, and in the morning would be tired and worn out. He grew despondent and melancholy, having the constant fear that something terrible was about to happen. He was fearful of being alone, and would not sleep without a light in his room. He was melancholy, suspicious, jealous and irritable, sometimes giving way to fits of temper without cause. "The future had nothing in store for him, the past was a failure, and present existence a torment."

Every week or two (sometimes not so often) he would have a bilious attack, when all the previous symptoms would be much aggravated. He then became languid and dull, with a heavy, oppressive feeling in the stomach. The various secretions of the body, too, would apparently become locked, when a dose of calomel would clear him out and give temporary relief for a few days. The bilious attacks would then again recur, and the incapacity to draw a full breath would become much worse. He finally became disinclined to mental or physical exertion, and grew firm in the belief that he had "heart disease" and that his disability was permanent.

It was at this stage of the case, when all of the standard remedies for indigestion and neurasthenia had been tried without avail, that the "anti uric acid treatment" was adopted. The patient was put upon teaspoonful doses of thialion, every three hours the first day, until a free movement of the bowels was effected, which occurred soon after the fourth dose. Thereafter, for two weeks, a half teaspoonful was given an hour before meals—after which time the dose was reduced to a teaspoonful in a glass of hot water every morning upon rising. From the very first dose the patient began to improve, until within six weeks (when less than eight ounces of the remedy had been taken), the distressing symptoms that had troubled him for ten years had vanished like mist before the sun.

Brethren, try the "anti uric acid treatment," especially thialion, on your old chronic cases of indigestion and liver troubles, and you will not be disappointed in the results.

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#### REPORT OF A RARE CASE.

BY FRANK P. CLARK, M. D., DANBURY, CONN.

(Read at a meeting of the Danbury and Bethel Medical Society, April 4, 1900.)

(Reprinted from the *New England Medical Monthly*, June, 1900.)

The patient whose case I wish to bring to your attention is a man, 45 years of age, farmer and drover by occupation, who has always enjoyed excellent health, until last summer when he lost a few pounds of flesh, and, as he expresses it, "felt a little below par, nothing more." He complained, however, of the following symptoms:

Early in February (1899), he began to be troubled with a pressure below the navel, and a frequent desire to pass his urine—which lasted throughout the summer. At

intervals during this period, usually about every three months, he would suffer from attacks of hæmaturia continuing for a week or more. The urine, on such occasions, was generally mixed with blood, but sometimes the blood would pass first and clear urine follow. Sometime in midsummer, just prior to his second hemorrhage, the patient states that he passed with his urine about a dozen pieces of substance of firm consistency, dark in color, a little enlarged at one extremity, measuring about one-third of an inch—"which resembled tadpoles." This is the only time he passed these small pieces.

Last fall the patient was troubled some weeks with sub-acute rheumatism of shoulder and hip joint. The urine during this time varied very much in character, frequently being clear, then smoky, bloody or muddy looking. He complained at this time of scarcely any discomfort of the back, but suffered a progressive weakness which necessitated his gradual withdrawal from active pursuits. On occasions the urine would show brick dust sediment, and, following the above mentioned rheumatic attack, he passed several small calculi.

February 16, 1900—blood appeared again in the urine. During the night on this date he arose in answer to an urgent desire to urinate, and standing up and holding a clean vessel before him he at last felt something pass him with his urine. This "something" was at once put into a small vial and brought to me the next day, together with a sample of the urine. The urine and the contents of the vial were at once delivered to our Dr. Gordon for examination, who reports his finding as follows:

"Urine: specific gravity, 1.018; acid; albumen, large amount; sugar absent; granular casts, few in number; blood, large amount; pus, large amount. Vial contains a portion of a nematoid, the 'strongylus gigas,' measuring 9 $\frac{3}{8}$  inches in length. In the tail end is a bursa which corresponds to the masculine gender. The accompanying sketch represents roughly the outlines of the worm in regard to general conformation



### STRONGYLUS GIGAS.

and size. [See accompanying cut.] With the above sample of urine were also seven calculi. Unable to identify them. The crystals are about half the size of a split pea, saffron colored with a coating of pearly white."

The attack of hæmaturia continued for three or four days. At times, however, the urine would be clear, and frequently would show uric acid. About this time the patient suffered considerable pain in back, bladder and bowels, which did not, however, extend to the end of the penis as is so generally the case with the existence of calculi. Again for some days the urine was quite clear, but during the night of February 26th, about half a pint of very muddy, bloody urine was passed, containing several pieces of the nematoid, one of which was nearly an inch and a half long and one-quarter of an inch in width. At the same time he passed several small calculi. There was also much stringy material that proved to be shreds of the nematoid.

On March 5th, I called on the patient, and found that during the week since the last report, the pain and condition of the urine had remained about the same, but, in addition, he was suffering from rheumatism of back and shoulder. General condition was poor. While up, he did not have sufficient strength to do anything, and the pain interfered with restful sleep. Under treatment the rheumatic element improved, but the urine continued to show blood every few days. The symptoms seemed to indicate that the ureter of the affected kidney had been plugged for some time, during which the other kidney was excreting normal urine.

On March 15th, the patient passed another worm (or portion of the same one?), which I did not see, but which was sent at once to a physician of another city, whose diagnosis of the case coincides with that already given here. Since this time the patient has been on the gain. On March 31st, he called on me at my office, looking better, and reporting himself much improved in every respect. The urine was still somewhat thick, but had become less acid, contained no albumen, very little pus and only a few casts. It had also become neutral in reaction. The patient had always been averse to a physical examination, but at this time I succeeded in getting him on the table for a few moments. Pressure over the right kidney and ureter elicited some pain, but on the left side did not. I was unable to feel the kidney. Nothing else was discovered except a slight swelling on the right side just over the crest of the ilium, which gave rise to tenderness on deep pressure.

This evening (April 4th) the patient called on me and reported all of his bladder symptoms improved. He was looking much better and feeling in good spirits. The treatment has, of course, been directed toward the support of the kidneys—being anti uric acid in character. For this purpose thialion has been given in the usual doses and I have every reason to be satisfied with the results.

Only seven other cases are reported in literature in which the strongylus gigas has secured its admission into the human body. From the year 1674, to the date of the publication of his work (1877), Davaine has collected seven cases, which he regards as "probable," (eight as "very uncertain,") which may be to represent our whole recorded experience of this parasitic disorder in the human subject. Among the seven "probable" cases were two in which the worms had been passed by the urethra only, one in which they had escaped by lumbar fistulæ, and four in which they were found in the kidney after death. Of these four, to which alone we can appeal for pathological information, there is but one in which the condition of the kidney is described with any minuteness: in this case the secreting structure was nearly destroyed, and the weight of the organ reduced about one-half.

It is said that male strongyli of this species usually attain the length of about a foot, the females about three feet. Among the animals in which they have been found Cobbold mentions the dog, wolf, raccoon, otter, seal and mink. In the stages of existence through which this parasite passes before entering the human or mammalian body and assuming the form to which the term *gigas* is applicable, it appears that certain fish play the part of intermediary bearers. It is inferred by Schneider that the worm known as the *Filaria cystica*, which if found encysted beneath the peritoneal membrane of the *Galaxis scriba*, is the sexually miniature and undeveloped strongylus. It is easy to infer that this minute inhabitant of the fish may be transferred to the various fish-eating animals, including man himself.

The chosen position of the worm is the pelvis of the kidney, in which it lies in a coil or knot; but as it has been passed with the urine in the human subject, it is obviously not limited to any subdivision of the urinary cavity. In dogs, in which opportunities for observing the habits and effects of the parasites have been more frequent than with other animals, it has been found stretched along the whole length of the ureter, in the bladder, in the peritoneal cavity, into which it had passed from the renal pelvis, and in external swellings in the neighborhood of the penis.

In the case of our patient the worm was somewhat similar in its shape and consistence to the ordinary lumbricoid, though red in color and, of course, much larger. It was composed of muscular tissue, the fibres of which ran longitudinally, enclosed altogether in a sort of mucous sheath. The strongylus is the largest nematoid known, and may nearly be compared in its dimensions to one of the snakes common in this country, the male to the adder, the female to the common field snake. The serpentine proportions of the creature are testified to by the older writer, who, when they found these parasites in the kidneys of wolves and dogs, described them as serpents in this situation.

The foregoing report was submitted to Dr. Charles E. Simons, of the Johns Hopkins Hospital, Baltimore, the eminent authority on this subject, also two specimens of the urine and the following reply was received:

"I was very much interested indeed in the report which you kindly sent me, and also thank you for the urine. A careful examination showed the presence of tube casts in small numbers, of albumin, the absence of sugar and blood pigment, and an increased amount of uric acid. Parasitic ova were absent. Otherwise there was nothing of special interest.

It seems to me that in view of the extreme rarity of the disease the case deserves more extensive notice than has been given it. Above all a good illustration of the parasite should accompany the report, with a sketch of the bursa under moderate treatment."

At this date, May 12th, the patient still continues to improve. No hemorrhage; some irritation of the bladder, but not nearly so marked as formerly. The prospects for an ultimate recovery are quite favorable.

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#### CEREBRAL PHASES OF LITHÆMIA AND THEIR TREATMENT.

BY JOHN J. BERRY, M. D., PORTSMOUTH, N. H.

(Reprinted from the *New England Medical Monthly*, July, 1900.)

The just prominence which this disease has acquired during the past few years, calls for a more perfect classification of its symptoms and a better appreciation of the result of auto-intoxication.

While clinical observers have recognized the action of effete products upon the human economy, many symptoms have been ascribed to toxins which should more properly have been placed to the credit of lithæmia or allied conditions. We have thought it advisable, therefore, to comment in brief upon two cases which, under the old symptomatology, might have been obscure in character as well as barren of therapeutic results.

That a part, or most of the symptoms embraced in the term *neurasthenia* may be the direct outcome of this affection is indisputable. They are noted in two classes of patients. Some are more or less anæmic and suffer from dyspepsia. Here assimilation is imperfect and the condition of the blood does not allow proper metabolism of the food products. Another type is the plethoric, where by reason of functional disturbances of the digestive organs, there is an enormous supply of carbonaceous material with no facilities for combustion of the same. The result in both instances is an auto-intoxication, which often exerts its action almost exclusively upon the nervous system. I am frequently consulted by brain workers, who at the same time are good liver and lead sedentary lives. With such, insomnia is a prominent and distressing symptom, and they commonly give a history of frequent recourse to sulfonal, trional, chloral and other hypnotics, while the other nervous symptoms are of such a character as to unfit them for work and the ordinary duties of life. The following case of recent date, is a typical one.

CASE I. Mrs. S., aged 46. A neurasthenic and invalid for six years. Had employed several physicians with indifferent success. Nervous dyspepsia. Insomnia, mental depression. Ordinary symptoms of spinal irritation. For a year had secluded herself within the house and recently had become almost a monomaniac as regards taking cold, and practiced a most elaborate system of preventive medicine, a part of which consisted in constant rest in bed and exclusion of air and light. No abdominal or other organic lesions. No emaciation. Urine high colored and somewhat diminished in amount. Contains no albumen or casts, but large quantities of amorphous urates. Has noticed brick dust deposits in the urine for several years. On inquiry it was

learned that the previous treatment of her case had consisted in the use of digestives, tonics, nerve sedatives and salines, none of which had afforded any particular benefit. She was now given thialion in teaspoonful doses, with large amounts of water and occasionally cascara for an increased laxative effect, the constipation being particularly obstinate. These drugs were continued in varying doses and intervals for about three months, during which time no other medicine except placebos were administered. In addition, there were employed the various devices for modifying her manner of living and her mental condition as well. Under the simple medication above described her improvement was prompt and progressive. After being induced to venture out of doors, the amount of exercise was increased to its utmost limits, until she finally became something of an enthusiast on the subject and walked with ease an average of five miles a day. The appetite and digestion became normal. The insomnia was in great measure relieved, while the general neurasthenic symptoms entirely disappeared. An improvement in the condition of the urine was noted on the third day of treatment though it was nearly a month before it could be considered normal in character and amount. At the present time, about five months from date of my first visit, she is to all appearances, in perfect health, both physically and mentally.

The various cerebral manifestations of the disease in question, have received little attention from medical authors and clinical observers. The occasional symptoms of headache, vertigo, local anæsthesia, circulatory disturbances and mental confusion, when occurring in subjects of advanced years, are often erroneously attributed to degenerative brain lesions, and the patient is often subjected to a course of medication which only aggravates the existing conditions. In the case below quoted several eminent physicians had instituted lines of treatment designed to relieve cerebral congestion and the tension upon diseased blood vessels, oblivious to the fact that high tension and sluggish capillary circulation are characteristic of lithæmic conditions, and identical with those of more serious lesions.

The case here given in detail possesses some interest in illustrating the grave symptoms which sometimes result from trivial ailments, and the tendency of specialists to exaggerate the importance of special manifestations of disease.

CASE II. Mr. M. Aged 60. Retired merchant. Excellent family history. No history of previous constitutional disease. During past 6 or 8 years, several slight attacks of sub-acute rheumatism. Habits good, though a good liver, and a daily user of wine with meals. Plethoric and of sedentary habits. Four years ago began to have headaches of the congestive variety. Occurring at first every few weeks, but gradually increasing in frequency and severity and frequently induced by trivial causes. Occasional attacks of vertigo on sudden change of position, and sometimes numbness, sensations of heat and cold and shooting pains in the extremities. *Muscæ volitantes* and flashes of light. No arterial degeneration appreciable, but a full, hard pulse, showing considerable tension. Insomnia very pronounced for several years, for which he employed the various hypnotics, but chiefly chloral. Is very nervous, irritable and melancholic. Had passed two seasons at a German Spa and had consulted several specialists who had warned him against exercise, Turkish baths, mental application and alcoholic beverages. Patient suffers also from a chronic eczema of right leg, involving the entire anterior portion from ankle to knee. Dry and scaly in character, with considerable induration. Same condition in slight degree back of ears.

Urine is high colored and slightly acid. Sp. gr. 1.030. Uric acid crystals in large amounts, but nothing else of importance.

The treatment instituted in this case was as follows: Interdiction of tea, coffee and wine, small amounts of brandy and soda being substituted. All digestible foods in moderation, with a strictly bread and milk supper. Turkish bath once a week and a hot bath daily. Bicycle exercise, commenced cautiously and increased according to indications. Golf in the intervals. He was also given thialion in teaspoonful doses in a glass of hot water before meals, with an extra portion of water after the same. The amount of this drug was somewhat increased afterwards, but subsequently the

original quantity was administered. To increase at times the laxative effect, an occasional dose of Carlsbad Salts was recommended. These were the only remedies employed and with the measures above advocated, comprised the entire treatment for the subsequent month, when his condition was as follows: Much improved in every respect. But one attack of headache and for past week has used no hypnotic. Eczema less annoying.

Urine much lighter in color and with sp. gr. of 1.024. A few crystals of uric acid. Has become much interested in golf and wheeling and is on his feet most of the day without any apparent inconvenience. From this time on the improvement was uninterrupted. The uric acid crystals disappeared from the urine. All the head symptoms abated and he was able to enjoy a fair night's rest without any hypnotic. The eczema disappeared from the face and showed marked improvement in the leg—only one large patch remaining. He returned to his home in New York last October, feeling better than for many years.

#### TREATMENT.

*Hygienic.* The occurrence of excessive amounts of uric acid and urates is not due wholly to functional disturbances of the excretory organs. There is in most cases faulty combustion from deficiency of oxygen. The most frequent sufferer is the brain and indoor worker who uses and indeed requires large amounts of heat producing compounds, but who, by reason of his surroundings, is unable to oxidize the same. Hence in the treatment of these conditions a large and continuous supply of oxygen must be available in order to attain the best results. The mere living out of doors is not enough. The patient requires active exercise—moderate in character but large in amount. This not only doubles the absorption of oxygen, but promotes the elimination of abnormal deposits through increased capillary circulation and more active tissue metamorphosis. Gymnasium work is of doubtful utility as it is too violent, too paroxysmal and usually of an indoor character. The two best forms of exercise are walking and wheeling. The latter I have come to consider almost a specific in its way, for not only is it one of the best forms of general exercise, but is a valuable adjuvant to the various hot baths, in that it promotes the action of the skin and bowels and thus furnishes additional outlets for the passage of faulty products. In this way, the patient avoids the drudgery of forced marches over uninviting territory and at the same time the mental faculties as well as most of muscles are stimulated and called into play by the requirements of this mode of exercise. Of course, the use of the wheel in persons of advanced age is to be advised only in suitable cases and under proper restrictions, but it is an undoubted fact that gouty and lithæmic cases who can employ the method are greatly improved thereby.

*Dietetic.* The fact must be remembered that lithæmia is not due wholly to the use of improper foods but rather to imperfect oxidation of the same. Hence it is a mistake to exclude the force and tissue producing articles of diet, simply because the drafts are shut off and they cannot burn. The nutrition of the various organs and tissues is to be constantly maintained, while the faults of elimination are to be considered second in order of importance. The bad results of a too rigid dietary are to be seen almost every day, and with the marked loss of flesh and strength there follow oftentimes conditions of anæmia and general depression which are most difficult to overcome. Hence, in opposition to the generally accepted theories, I am accustomed to allow such patients a very generous dietary, ignoring all cut and dried formulæ, and giving them all that they can properly assimilate; for it is not so much what one eats as what one fails to digest, that aggravates the condition.

There are, it is true, a certain few articles of diet that exert a bad influence upon these forms of disease. Tea, coffee, cocoa, malt liquors, all sugars and an excess of nitrogenous foods may well be avoided, but these are about all which deserve special mention, special care being taken that the bill of fare contains articles which are plain, nourishing and digestible.

*Medicinal.* While increased oxidation and greater activity of the excretory organs aid materially in the removal of the by-products of food and tissue metamorphosis, yet it should be remembered that unless they exist in a *soluble form*, their complete removal is an impossibility.

The space of all hygienic measures is naturally more or less limited, and we usually find it necessary to supplement the same by the administration of drugs having an eliminative action.

The alkalis have long enjoyed a just reputation, both by reason of their mechanical action in flushing out the tissues and also from their action upon the excretory organs. Hence they form one of the necessary constituents of most gout and rheumatic specifics. Other drugs, such as colchicum and the salicylates are valuable adjuncts. Lithia, which of late years, has enjoyed a wide popularity, might, ere this, have displaced most of the other remedies had it not been so insoluble and at the same time, so irritant to the digestive organs. Recent experiment and investigation have, however, almost wholly overcome the objectionable features of the remedy, enabling us to employ it in a much larger class of cases than heretofore. While we do not recommend thialion as a specific, we believe it to be superior to any other lithia compound and at the same time a remedy which can be administered to the dyspeptic without fear of untoward effects. On the contrary there is often noted a feeling of *bien aise* and exhilaration following its employment in such cases. For the above reasons cases of senility, where all the eliminative organs are more or less impaired and the system is toxæmic from the accumulation of effete products, are often greatly benefited by a course of treatment by this compound of lithia and alkali.

While the condition of lithiasis may be present for many years, and produce only trivial and ill defined symptoms, its long continuance is certainly a source of danger, for in middle and advanced age we begin to note the various phases of cirrhosis and sclerosis which so often result from toxæmia and prolonged activity of the eliminative organs. While in the treatment of these cases it may be too late to repair the damage already done, many distressing symptoms may be alleviated and the life of the patient made much more endurable by the administration of remedies like these.

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## MUSCULAR RHEUMATISM: ITS ETIOLOGY AND DIAGNOSTIC RELATIONSHIP WITH APPENDICITIS.

BY EUGENE C. UNDERWOOD, M. D., LOUISVILLE, KY.

Surgeon B. & O. S. W. Railway, K. & I. B., Etc.

(Reprinted from the *Alabama Medical Journal*, May, 1900.)

Though various theories have been advanced concerning the nature of the lesions underlying the manifestations of muscular rheumatism, none of them have yet succeeded in obtaining universal assent. There are even some authorities who believe that no structural lesion exists, but that the pain, which is so prominent a symptom, is merely the expression of some functional disturbance due primarily to cold, dampness, etc.

It is fast becoming the opinion, however, of those who have made a special study of the subject, that a lesion does exist, and that the pathological condition is analogous to certain other forms of rheumatic inflammations—such, for instance, as occur in septicæmia and syphilis. In other words it is believed that there is a distinct interstitial myositis, due to the presence in the connective tissues, between the muscular fibres, of some foreign or extraneous substance—in most cases merely a cellular infiltration, not affecting the muscle fibres themselves, but mechanically pushing them apart.

This infiltration may consist of various substances; e. g., of leucocytes (and eventually proliferation of connective tissue cells), or of toxins from various bacteria, or,



lastly, of uric acid salts. Attempts have been made to isolate a *specific* micro-organism as the etiologic factor in the case, but, unfortunately, different investigators discover different bacilli; and, then, too, as is well known, myositis is often a sequel to such widely different infectious diseases as scarlet fever, gonorrhoea, etc. The point to be considered, therefore, would seem to be that an infiltration does exist, no matter from what particular bacterium or cause.

Though the lesions may, in certain cases, as just described, consist of organized material, it is, probably, in the majority of cases, inorganic in nature, composed of salts precipitated from the blood into the interstitial tissues, to be from time to time reabsorbed, thus giving rise to disturbances intermittent in character. The question may arise, however, as to the cause of this deposition, as well as to the etiologic connection existing between it and dampness and cold, the latter being, as is well known, the principal exciting factor in rheumatism.

The following clinical facts are important and must have some bearing on the subject under consideration. It is well understood that rheumatism is often the result of chilling the entire surface of the body by exposure to cold and dampness. It is also well known that decreased alkalinity of the blood plasma favors the deposition of uric acid salts in the connective tissues of the body. The significance of these two statements will at once be seen. As a result of exposure to cold, the normal acid secretion of the skin is suppressed, and as the acid which was formerly eliminated is thus retained in the circulation, the alkalescence of the blood is necessarily diminished. Reduced alkalinity of the blood plasma may also follow the ingestion of foods containing a high percentage of acid, or the absorption of the products of acid fermentation in the gastrointestinal tract. This latter would explain why rheumatism is aggravated, and oftentimes ushered in through indulgences in certain kinds of food. Subalkalinity of the blood, too, means diminished oxidation, and, consequently, retarded nutrition, both of which are favorable to the formation of uric acid in the body, as well as to the growth of pathogenic micro-organisms.

If it be true, then, that an infiltration of the interstitial tissue between the muscle fibres actually exists, it would seem probable that some swelling should be discovered by carefully palpating the muscle affected. And such indeed is the case. Opoltzer, Ewer and Lacquer have repeatedly called attention to the fact that minute circumscribed patches of swelling could at times be felt in rheumatic muscles; while such expert masseurs as Meltzer, Helleday and Schreiber have also directed attention to these conditions. It is evident that a delicate touch is required, as well as wide experience in this particular work. It must, however, be borne in mind that the infiltration is not necessarily located in the spot to which the patient refers his pain, but frequently at some portion of the nerve trunk of which this is the terminal distribution.

These infiltrations may, of course, affect any striated muscle of the body and are often found in the abdominal muscles, giving rise to symptoms simulating cholecystitis, intestinal colic, appendicitis, etc.,—particularly the latter, if occurring in the internal obliquus on the right side. It is often an extremely difficult matter, observes Professor Adler (Cf. *New York Medical Record*, March, 1900), "to distinguish between an incipient appendicitis and a rheumatic affection of the deep muscles and fasciæ—especially when located in the region of the right iliac fossa." "The occurrence of this class of cases," continues he, "is by no means generally appreciated, and indeed the very possibility of rheumatic myositis in the abdominal muscles is not taken into account by the majority of practitioners." In conclusion he says: "Not a few cases have been diagnosed as appendicitis, and not a few perfectly normal appendices have been removed, when the actual lesion was merely abdominal rheumatic myositis." That appendicitis has only in recent years become so popular a complaint, would seem to give additional force to the foregoing statement.

Among many similar cases which have occurred under the observation of the writer, we cite the following to illustrate some of the points above referred to.

In October, 1899, a consultation with a brother practitioner was held, to consider the advisability of an operation for appendicitis in the case of a woman, aged 45, who had complained for a week or more of circumscribed pain over the appendix, which was gradually getting worse. The other symptoms in the case were not well marked. She had a slight fever, however (temperature 101), and complained of sleeplessness, constipation and loss of appetite. The subjective pain was localized in the right iliac fossa directly over the appendix, though pressure there would cause it to radiate upward and forward nearly as high as the epigastrium. The patient was extremely nervous, having become imbued with the idea that she had finally become a victim of the dread malady she had so long feared. Her treatment had consisted of cold applications to the abdominal wall, rest in bed, diet, and opium internally to relieve the pain.

Examination failed to reveal any enlargement of the liver and percussion there was not painful. Analysis of the urine, however revealed biliary elements and uric acid crystals in abundance. Questioning, too, elicited the fact that the patient had previously suffered from two attacks of "stiff neck," as well as a lame shoulder. Feeling certain that the diagnosis of appendicitis was a mistake, the treatment was now entirely changed, the patient being put at once upon the anti uric acid treatment for rheumatism. Thialion was administered in teaspoonful doses, every two hours the first day, until a free bilious passage from the bowels was effected. Thereafter a teaspoonful was given in a glass of hot water every morning upon rising, and an anti-nitrogenous diet ordered.

The improvement was marked from the outset. The patient's appetite was restored, she became less nervous and slept better at night. The pain, too, gradually abated and at the end of a fortnight had disappeared almost entirely, the woman having resumed her accustomed household duties and abandoning the idea of appendicitis altogether.

Other cases have been seen by the writer wherein the symptoms at first pointed strongly toward appendicitis, the patients themselves fearing that disease. But every case of this kind has been speedily relieved by appropriate anti uric acid treatment of the character above described. Accounts of similar cases, in the practice of other physicians, might probably be multiplied almost indefinitely. In the words of Professor Adler, "Examples might be adduced in which myositis of the abdominal recti simulated peritonitis or intestinal colic, or when myositis of the quadratus and obliqui was diagnosed as renal colic, but perhaps this will suffice to show that rheumatism of the abdominal muscles must be taken into consideration as among the possibilities in all cases of painful abdominal affection in which the diagnosis is at all doubtful."

#### ILL-DEFINED SYMPTOMS OF URICACIDÆMIA TREATED BY THIALION.

BY J. H. TYNDALE, M. D., LINCOLN, NEB.

(Reprinted from *The Woman's Medical Journal*, June, 1900.)

That the salts of lithium are of marked value in promoting the solution and elimination of uric acid is a well known fact. Until recently the trouble has been to find a preparation of lithium that would act both as a solvent and an eliminative—in the latter capacity preferably through the bowels by favorable action on the portal circulation and depletion of the liver.

An equally well known fact is that the gouty and rheumatic diathesis—all manifestations of disease now grouped under the collective title of uricacidæmia—shows its activity in all three fields of disorders—as an infection of the "auto" variety; as a local inflammation and as a disturbance of innervation in the shape of central or peripheral nerve pain of a persistent character.

In the new preparation known as thialion we have a remedy that fulfills the indications of a uric acid solvent, or neutralizer, or whatever you choose to call it, and a depletor of the portal circulation in a not too violent manner. To illustrate the variety of conditions and not sharply defined collection of obscure symptoms in which thialion is applicable, let me recite a few cases from my practice.

CASE I. Mrs. H., aged 38, farmer's wife. Complained of vague muscular pains all over the body, notably in the lower extremities. Skin dry. Feeling of languor. Appetite fair, but bowels sluggish. Uric acid always found in urine. Salicylates and iodides disturbed her digestion. Gave her thialion—teaspoonful in cup of hot water before breakfast and toward evening; all symptoms disappeared after two weeks. Bowels regular. Now let her take a teaspoonful once a week.

CASE II. Dr. G. M. S., aged 42. Asthmatic attack occurring at night about once a week for the past eight years. Recently occur every other night and during any slight changes in the weather. Attacks have weakened muscular elements of the heart. Asthma found to be based on rheumatic tendencies and aggravated by peripheral irritation in the shape of naso-pharyngeal catarrh. The latter cause removed and the doctor put on thialion once a day, and later on every third day. Intercurrent indigestion had previously brought on attacks. After four months' treatment digestion is perfect, and attacks of a mild sort happen only once in three weeks. These are probably due to smoking, a habit the doctor is about to break himself of.

CASE III. Max W., aged 34, accountant. Family history gouty. Manifestations of this tendency consisted of vague sensations in tendinous tissues alternating with facial neuralgia. Constipated as a rule. Chief complaint was of insomnia, found to be dependent upon increased resistance to the general circulation. Uric acid crystals. Patient thin and nervous. In this, as in some other cases, I gauged the dose of thialion by individual tolerance—half teaspoonfuls twice a day being quite sufficient. Two relapses occurred within five months. None for the last two months.

CASE IV. Louis K., aged 36, saloon keeper. Tendency to obesity, though he does not drink at all. Very good natured, but acknowledges himself getting fidgety on slightest provocation. Troubled with hemorrhoids and itching of anus. From time to time active pain in intercostal muscles of left side, which he says his family physician tried to laugh him out of. Diagnosed as uricacidæmia. Thialion in teaspoonful doses twice a day for two weeks, and then one dose every other day for ten days. All symptoms disappeared. Bowels regular. Gave a dose of ichthyol once a day as after-treatment, because this had proved successful in former discomforts.

CASE V. W. F. A., aged 33, railroad machinist. This was a case of obstinate infiltration of anterior and posterior arches of the palate, with reflex impairment of patient's singing voice, upon which he prided himself. I failed to discover any rheumatic, gouty, or other general tendencies during six weeks of reasonably successful local treatment. Quite suddenly the patient developed acute articular rheumatism (wrists and knee joints chiefly), and a return to the active inflammation in the tonsillar arches. Put him at once upon thialion—moderate teaspoonful twice a day for five days, followed by a heaped teaspoonful every second day, early in the morning up to date. Both articular manifestations and palate infiltration have entirely disappeared, but the voice remains a trifle husky.

## URICACIDÆMIA, HAY FEVER AND ASTHMA.

BY WM. R. LOWMAN A. M., M. D., ORANGEBURG, S. C.

(Reprinted from *The Medical Summary*, June, 1900.)

As has been noted by Bremer, there are a number of cases of peculiar mental and nervous disturbances that are often associated with functional nephritic disturbances. According to Church and Patrick, "the perverted secretion seems to have a localizing tendency somewhat analogous to that of organic and metallic poisons." The sensorium oftentimes is so involved that there is vertigo, loss of identity and defective memory, especially as to time and place. This is evidently in line with the investigations of Haig and the general theory of uricacidæmia or uricæmia. There has been much research along this line in recent years and there is promise of much that will be useful to the physician as a result.

Recently I have had a very interesting case of uricacidæmia. A patient of 63, who from early life has had a gastro-intestinal catarrh, but who in recent years has enjoyed excellent health, with the exception of an annual attack of the rose cold variety of hay fever. These attacks of hay fever have in recent years become very obstinate, lasting some six weeks, more or less, beginning with pollenization in the spring, and ending with the full growth of leaves producing very distressing symptoms—ophthalmia, severe and irritable bronchial cough and asthmatic attacks—worse at night—and the various other concomitant symptoms.

The gentleman referred to is very fond of fresh meats, and especially indulges in a pork diet and the sausages and liver pudding throughout the winter season. This diet seemingly agrees well with him, except as to an occasional attack of mild congestion of the liver and fermentative diarrhea, which he usually promptly relieved with minute doses of calomel. But this régime this year by cumulative effect produced a decided uricacidæmia. For several weeks in the latter part of February and the first of March he experienced a decided vertiginous tendency which produced some alarm, in him, he fearing that there was some insidious lesion developing in the brain of which this was the prodromal symptom.

My direct attention was called to the matter by a more decided attack of vertigo, which sent the patient to bed with some febrile movement, retching and vomiting, and frequent watery stools—an uricacidæmic explosion expending its force on the mucous surface. Rest and emptying the stomach did not relieve the symptoms, but the slightest movement of the head or light in the room produced nausea and retching. The head could not be raised in the slightest degree without experiencing decided vertigo; thick, tenacious secretions, as soon as accumulated in the stomach, produced intense nausea and agonizing retching. None of the usual gastric sedatives produced any effect, and only by paralyzing the vomiting center by hypodermic injections of morphine gained the patient any respite or rest.

An examination of the ejecta showed a condition of extreme acidity. On the evening of the second day I administered a tablespoonful of milk of magnesia with an equal quantity of hot water, every two hours, to correct this decided acidity. The effect was magical. After this the bowels were swept out with mild chloride of mercury, etc.

The vertigo gradually abated, and in three days the patient was put on thialion, or laxative salt of lithia, of which he has taken something over two bottles, with rapid and entire abatement of the vertigo. The patient now seems hale and hearty. He is now taking one dose of the thialion daily, and up to the present time, April 15th, although the foliage of vegetation in his vicinity is well advanced, there has been no appearance of the rose cold. The patient's regimen has been much restricted as to meat diet; vegetables, milk, broiled salt and fresh fish, broiled chicken and farinaceous articles are allowed. Coffee, tea, cocoa, acid wines, beer, besides meats (red), are in-

the fact that in several of the cases nearly every legitimate form of local treatment had been previously tried, only to result in failure. The following typical case is reported here to illustrate this fact as well as to evidence the etiologic connection which often-times exists between the uric acid diathesis and this troublesome complaint. Having served continuously, too, as physician to this family since the birth of the patient, ample opportunities were afforded for observing the development of the case from start to finish.—

J. K., a young miss of 15, had been a sufferer from pharyngo-nasal catarrh for more than eight years, or since her first entrance into the public schools at the age of six. The first evidences of her trouble were exhibited in the form of coryzas, which were attributed to exposures to cold and wet. She was from the outset often kept at home owing to attacks of tonsillitis, which continued to occur at frequent intervals throughout the whole course of her school life; the tonsils and uvula being habitually flabby and swollen, and the pharyngeal mucous membrane congested and extremely sensitive. At the age of ten, signs of deafness appeared, due evidently to plugging of the Eustachian tubes with mucus from the catarrh. About this time, also, she began to be subject to violent headaches which necessitated her withdrawal from school work for two or three days at a time. Her tone of voice became characteristic of catarrh, being thick and indistinct. Her breathing too was stertorous and labored; owing to the partial occlusion of the posterior nares from the hypertrophied mucous membrane. Every morning upon rising an interval would be spent in hawking and spitting and clearing out the bronchial and nasal passages of the discharges which had collected over night. Attacks of vertigo at last became frequent, and the patient, at the age of thirteen, was finally obliged to withdraw from school altogether. She had now become nervous, sleepless, and of a soured disposition, giving way at times to almost maniacal fits of temper.

The treatment during all this time had been mainly local. An eye specialist had been consulted who attributed the headaches and vertigo to astigmatism, for which glasses were tried and fitted. For the deafness, an Eustachian dilator, (Valsalva's method) was used, but afforded only temporary relief. Post-nasal injections, both of an antiseptic and astringent character, were tried, as well as ante-nasal douches, but without material benefit. It was not, in fact, until a chance observation was made by the father of the patient, that the true nature of her trouble was suspected. He had long been a sufferer, himself, from spasmodic asthma, for which he was undergoing treatment at the time, receiving marked benefit from the anti uric acid regime which had been recently adopted in his case. He suggested that the same remedy be given his daughter.

An examination, which was now made for the first time, of the patient's urine, revealed an abundance of uric acid crystals, and she was at once put upon thialion, a teaspoonful in a glass of hot water every morning upon rising. Nitrogenous foods were largely interdicted, and a diet list made out which was strictly observed by the patient from this time forward. Within a month improvement began to manifest itself all along the lines. The bowels became more regular, restful sleep was obtained, a more amiable disposition appeared, and the patient reported that she could already breathe better, talk better and hear better.

The constitutional treatment was continued in this manner for the ensuing six months, at the end of which time the patient had become metamorphosed from a thin, anæmic, disagreeable looking invalid, into a healthy young girl, at least ten pounds heavier. The catarrh of which she had so long complained, together with the deafness, headaches, and voice symptoms, had practically disappeared. She has since continued to improve rapidly and is now employed as clerk in an establishment requiring ten hours' mental application daily, without experiencing more than the ordinary ill effects from the confinement.

## THE TREATMENT OF URIC ACID POISONING—WITH CLINICAL REPORTS.

BY ROBERT C. KENNER, A. M., M. D., LOUISVILLE, KY.

(Reprinted from the *Denver Medical Times*, June, 1900.)

It is commonly thought that gout, as it is seen in England, is not frequent in this country. Yet, the doctor who has seen much practice, cannot deny that the manifestation of the poison which causes gout is very common indeed. In my practice, covering twenty-two years, I am prepared to say that uric acid poisoning is one of the most common affections I am called upon to treat. I can also add that it gives more discomfort than most disease conditions.

In treating patients who have uric acid poisoning there are two indications—the *first* comprises attention to the patient's dietary, and the *second* comprehends the administration of such remedies as will neutralize and remove the uric acid, and which will stimulate to proper activity the liver, which is usually in a torpid condition in these cases.

In carrying out the dietary indications we must tell our patient that the following foods are allowed: Fresh boiled fish, and clear vegetable soups, raw oysters, fat bacon, boiled or broiled chicken, game, sweet bread (in a sparing manner), cracked wheat, oatmeal, rice, sago, hominy, whole wheat bread or biscuit, rye bread, graham bread or rolls, crackers, dry toast, milk toast, macaroni. Mashed potatoes, green peas, string beans, spinach, cabbage, cucumbers, cresses, lettuce, celery. Plain milk pudding, rice and milk, sago and milk, stewed fruits, all without any sugar. Milk, butter-milk, toast water, pure water, cold or hot.

The following foods must be avoided. These are: veal, pork, goose, duck, turkey, salted, dried, potted or preserved fish or meat, except fat bacon, eels, mackerel, crabs, salmon, lobster, eggs, rich soups, gravies, patties, tomatoes, sweet potatoes, asparagus, peas, beans, mushrooms, rhubarb, lemons, pickles, vinegar, fried or made fishes, rich puddings, spices, pies, pastry, sweets, cheese, nuts, dried fruits, tobacco, coffee, cider, malt liquors, sweet wines and champagne.

I have given this list somewhat at length because I have thought it important to have the patient begin with a correct diet. The diet must be persisted in for a protracted period, and there must be no relaxing in the patient's adherence to the correct diet.

The drug treatment of uric acid poisoning is most important and we shall make no substantial progress toward a cure unless proper treatment is instituted.

Examination of the various works on therapeutics and practice will show that the lithia salts have formed and maintained the greatest degree of popularity with the most practical men in the profession. Lithium has brought me good results, but it has often been found wanting because it has not in itself been capable of arousing in any way the torpid state of the liver, nor, as found commonly in the market, quickly and easily taken up into the system. This fault has by the aid of advanced pharmacy been corrected by the bringing out of a laxative salt of lithia, thialion. This salt of lithia acts as an hepatic stimulant and at the same time has proven itself superior as a solvent and eliminant of uric acid. Thialion acting as an hepatic stimulant and laxative at once relieves the constipation which is almost an invariable accompaniment of all types of uric acid poisoning. I begin with thialion by giving it in doses of a teaspoonful in hot water three times daily.

After one or two days I frequently have the patient take a dose only night and morning. In this manner of dosage I generally feel my way—if needs be, I give four teaspoonfuls daily, but if the bowels are kept loose two teaspoonfuls daily will often be all that is required and often one will suffice taken last thing at night or the first thing in the morning on rising. Always in water as hot as can be drunk.

The physician must be governed by the case in hand in the matter of dosage.

The following briefly told cases, illustrate the treatment here advocated.

CASE I. This man was a hotel keeper and an epicure, and indulged himself freely in those foods and drinks which stand in a causative relation to uric acid poisoning. He had all the symptoms of lithæmia and had been confined for the last few days with swelling in the shoulder joint and pain in both arms. Along with this was constipation and a furred tongue. He was put on thialion, teaspoonful four times daily, and this was changed to three teaspoonfuls, and later to two teaspoonfuls daily. His diet was corrected on the lines already laid down.

His improvement was noticeable on the third day, and after that there was a speedy disappearance of his pain and swelling, and he soon resumed his business. He observed the dietary restrictions and took the thialion for six weeks, and has not suffered since, and his general health is now most excellent.

This patient had been a sufferer for some time with vertigo. From the second day of treatment he began to suffer less with this symptom, and has now been exempt for some months.

Not only in this, but in other cases has vertigo disappeared under the employment of thialion.

CASE II. This patient was a chronic sufferer with indigestion, biliousness and diffused pains. When I was called her feet were swelled and she suffered a great deal of pain. On thialion this woman ceased to have biliousness and indigestion, and her improvement was rapid from the second day of treatment. After taking the thialion for several weeks she says her health has never been so good.

Before taking thialion, this woman had not been able to use her left arm without considerable pain for nearly two years. Either her wrist or the elbow joint would be swollen nearly all the time.

Since the time she began employing this remedy this state of swelling and pain has subsided.

CASE III. This was a gentleman who took insufficient exercise and ate the most delicate and stimulating foods. He had well marked symptoms of uric acid poisoning. I had him live up to a rational diet and to take thialion with regularity. This course had the happiest effect upon him and he made steady progress toward a permanent cure.

Seen a few days ago, this patient says he has a clear head, his bowels act freely and he never was so free from pain in the last five years.

Consideration for time and space will not permit me to go further in giving clinical histories; these, it is believed, make it clear that the treatment here advocated is the most promising one in this affection.

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## TREATMENT OF LITHÆMIA.

BY FRANK M. FLOYD, M. D., ST. LOUIS, MO.

(Reprinted from *Interstate Medical Journal*, June, 1900.)

The old saying that "there's nothing new under the sun," comes in singularly well in regard to medical cases, yet the recountal of cases that at first sight seem ordinary, oftentimes instructs and guides us under similar conditions. The cases that I wish to narrate come under this heading. It is to be hoped they will prove interesting and instructive.

The first case, Chas. R., came to me last October, presenting the following history: Age, 29 years; single; height, 5 feet 10 inches; weight, 200 pounds. He had had a fair complexion, but at the time he appeared before me he was sallow. He was a bookkeeper by occupation. He complained of "lost manhood." His was the usual story of having been bled mercilessly by quacks and charlatans. In conversation he

appeared highly nervous and excitable with shaking hands and quivering voice; said he had been almost without sexual desire for two years past. He was utterly incapable of obtaining an erection on most occasions. He had chronic constipation. Frequent micturition, in small amounts and with burning sensation.

He affirmed that he had never had gonorrhœa. He stated that he usually awoke with a headache, and on several occasions had vomited his breakfast. He said he thought he had heart trouble, because he had a dull, heavy pain over the region supposed by him to be the heart, but really in the epigastric area. He even stated that his heart stopped beating (?) at nights, and that he slept but little as a result. His expression was apathetic, and he had yellowish discoloration of the conjunctivæ. His tongue was heavily coated and his breath offensive. He spoke disconnectedly; seemed depressed. His penis and testicles were well developed; there was a small varicocele. Urinary analysis showed urine of a dark red color, strongly acid; specific gravity, 1.026. Had an abundant red precipitate and large quantity of uric acid crystals.

A diagnosis of lithæmia was made from the urinary examination. I could not believe that the lithæmia was responsible for the extensive train of nervous symptoms in this case, but with a view of attacking the lithæmic condition, directly, I prescribed thialion, a teaspoonful in a glass of hot water on arising and retiring, for three days; then the same dose to be taken only in the morning, for a week thereafter. He reported at the end of ten days. He complained then of being troubled with a "running off of the bowels," instead of being constipated, as was the case before. He had to go to stool twice and sometimes three times in twenty-four hours. At the same time he passed large quantities of urine, which he believed to be weakening to his sexual apparatus.

While dissatisfied with the treatment, he admitted that he was relieved of the nausea and headache, and that he no longer felt burning on urination. Examination of six ounces of urine showed it to be slightly acid, specific gravity 1.022, with some uric acid crystals present. His skin began to clear up, and he was relieved of his "heart trouble," as he no longer mentioned it. He was directed to continue taking the medicine every other day.

I saw him at the end of two weeks, and was surprised at his appearance. His skin was clear, he had lost about twenty pounds in weight; cheeks were rosy, and he said that his headache, constipation and nausea no longer troubled him. Examination of the urine showed it to be slightly acid; specific gravity, 1.018; and containing only a trace of uric acid.

The most marked change, however, was in his nervous system. His appearance, demeanor and conversation were entirely changed. He would not admit that he was cured of his "lost manhood," but agreed with me that he was on the highroad to recovery. He was advised to take the remedy for a month, twice weekly, and I also prescribed a stimulant to be taken occasionally. He returned in six weeks, looking well, and remarked to me that he had never felt better in his life, and that his sexual capabilities were all that he desired. This history forces me to the conclusion that his whole trouble was due primarily to his lithæmia.

About the time of his discharge, I was consulted by Mrs. M., married woman; age, 39 years; mother of five children. She said that she was suffering from change of life and wanted relief. She stated that for the past eighteen months, menstruation had been scanty and irregular; that she had gone over a period of three months without menstruating, and that her menstrual flow had always been regular before that time. She complained of hot flushes, shortness of breath, severe headaches, pain in back and shoulders, great restlessness at night, constipation and a continual feeling that something dreadful was going to happen.

After an examination I concluded that her diagnosis of change of life was correct. Examination of her urine showed it to be quite heavy, and that it contained an abundance of uric acid crystals. She was put on the same treatment as the first case nar-



rated. In two months she was relieved of all unpleasant symptoms; was menstruating regularly, and at the end of the third month the flow was as copious as it had ever been.

I have since had other similar cases, and in almost every instance relief of the lithæmic condition was followed by a disappearance of the nervous symptoms. There is ample authority for the statement that excess of uric acid in the system causes neuroses of various clinical aspects. These cases are comparatively frequent, and attention is directed to this condition.

### DEFECTIVE EYESIGHT IN SCHOOL CHILDREN.

BY G. A. GILBERT, M. D., DANBURY, CONN.

(Reprinted from the *American Medical Compend*, July, 1900.)

Were our forbears suddenly to appear incarnate in our midst and their attention called to the most striking changes in the physical appearance of the race, prominence would doubtless be given by them to the strange spectacle of so many of the children of the present generation wearing glasses over the eyes. Questions would then naturally arise as to the cause of this singular anomaly. It is toward the partial solution of this problem that we wish to offer a few suggestions in the present article.

Fifty years ago a child wearing eyeglasses would have been hard to find, and when found would have been considered a great novelty. To-day laws have been passed by several of the states, requiring that "the state board of education shall prepare or cause to be prepared suitable test cards and blanks to be used in testing the eyesight of the pupils in public schools, and shall furnish the same together with all necessary instructions for their use, free of expense, to every school in the state. The superintendent, principal, or teacher, in every school, sometime during the fall term in each year, shall test the eyesight of all pupils under his charge, according to the instructions furnished as above provided, and shall notify in writing the parent or guardian of every pupil who shall be found to have any defect of vision or disease of the eyes, with a brief statement of such defect or disease, and shall make a written report of all such cases to the state board of education." [Cf. Public Acts of the State of Connecticut, passed January Session, 1899, p. 38.]

That such public acts as the foregoing should be deemed necessary is a sufficient commentary on the alarming extent to which defective eyesight has spread among our school children. The parent is immediately notified of the abnormal condition of the eyes of his child, and is then supposed to consult a physician. And here it is that the influence of the profession should make itself felt. In other words it becomes the duty of every physician when so consulted to explain to the parents the etiology and nature of the disease. But in order to do this, it first becomes necessary that the physician himself should understand the real nature of the case.

Ordinarily, in the past, an eye specialist has been consulted, glasses fitted and no further treatment supposed to be required. But attention is now being directed to the fact, that many morbid conditions of the eye, which interfere with distinct vision, are more than mere optical disturbances; that there exists, in other words, an underlying constitutional dyscrasia, of which the eye symptoms are simply local manifestations. This latter statement will appear the more significant when efforts are made to account for the prevalence of defective eyesight among the children of to-day, when only a few years ago such a condition of affairs was practically unknown. In our modern school text-books the type used is a decided improvement over that of the past, the sanitary arrangements and lighting of the school room are better, and it is even doubtful if the average child of to-day spends more time over his books than did his father or grandfather. It will be noticed that school children in rural districts seldom wear glasses, yet their books are the same as those used in adjoining urban communities, while the

lighting of their school room and character of its furniture is usually inferior. It is evident, therefore, that to find the cause of this trouble, we must look outside of the school room.

In the January number of the "International Clinics," Dr. Louis J. Lautenbach (Surgeon in Charge of the Philadelphia Eye, Ear, Nose and Throat Institute) states, that from results obtained in ophthalmometric work, which has been of daily routine with him for some six or seven years, he is convinced that the general bodily conditions influence the cornea and its curvatures, altering its axes and amount of astigmatism far more than by theoretic reasoning seemed possible. For several years he has been suspicious that the phenomena attendant upon cases in which astigmatism was present, were in some way connected with an increase in the quantity of uric acid retained in the system, and it is only recently that the conviction forced itself upon him that the connection is too constant to be accidental, and that some causative relation must exist between the two conditions. Of forty-two cases of astigmatism recently examined by him, urinalyses revealed in every instance, urine typical of the lithæmic condition, —being acid, of high specific gravity, developing an excess of urea and uric acid elements. After the regular constitutional treatment in these cases, assisted by the use of proper glasses, the astigmatism invariably disappeared. Uratic deposits in conjunctivæ and skin also disappeared, the latter organ becoming softer and moister, losing that dry, scaly appearance and the itching, so characteristic of the uric acid diathesis.

In a paper read before the Fourth Annual Meeting of the Western Ophthalmologic Association, Feb. 10, 1899, Dr. Randolph Brunson, of Hot Springs, Arkansas, treated somewhat at length the subject of "Uric Acid as a Factor in the Causation of Choroiditis." "If," says the writer, "we will bear in mind the close anatomic relationship between the choroid and the iris, we will not be surprised to know that if uric acid causes a disturbance in the latter (rheumatic iritis), it will also in the former." Dr. Brunson refers to the fact that the capillary network of the choroid is the finest in the body and that in consequence of the law that the velocity of a current is inversely to its lumen, the velocity of the capillary current here must be very many times less than that of the posterior ciliary artery. It is well-known that in the chronic toxemias produced by uric acid the earliest manifestations of necrobiotic changes are found in the arterioles and capillaries, and inasmuch as the blood current in the structure of the choroid is slower than elsewhere, the blood, charged with toxic substances, is in contact with its minute vessels much longer than in the larger arteries and veins. In the *Ophthalmic Review*, for March, 1899, Mr. Sanford Morton relates that he has seen thrombosis in the vessels of the retina in one or two cases taking place during an attack of megrim, and he believes there is every possibility that these troubles were due to uric acid. "If," says Dr. Brunson, "this can take place in the retina, why not in the choroid."

Specialists along other lines are also beginning to realize that though local diseases may produce disturbances of the general health, the reverse is more frequently the case and to the elucidation of this latter fact their investigations are now being largely directed. In the Report of the American Laryngological Association, for 1898, a prominent rhinologist makes the statement that, atrophic rhinitis barred, he believes the general health of every child who has chronic nasal catarrh is at fault and that in the vast majority of cases this is directly traceable to faulty hygiene, giving rise to the excessive production and retention of uric acid in the system.

Faulty hygiene, too, may be considered the principal etiologic factor in the constitutional dyscrasia underlying defective eyesight in school children—accompanied with catarrh, headaches and frequently incontinence. It is to his pastry and sweetmeats that the modern child, especially the city boy or girl, owes the beginning of his eye trouble, as well as other local manifestations. Candy shops are daily becoming more numerous in urban communities, and the homely fare of his ancestors is spurned by the pampered boy of the age, who delights to tickle his palate with the innumerable dainties of the confectioner's art. His liver cells are clogged with stored up glycogen,

complete digestion of proteids is thereby interfered with, uric acid is formed and sooner or later such symptoms as dyspepsia, constipation, headache, catarrh, vertigo and myopia becoming manifest.

When consulted, therefore, by the anxious parents of these children it is the obvious duty of the physician to explain that while the eye may need temporary assistance from glasses, yet to get at the root of the matter and effect a complete cure, attention must be directed to well-known laws of hygiene, especially in relation to the processes of digestion and nutrition. It would be even better if such simple laws were taught early to the child at school, and some of the time used in attending to his father's danger in the use of alcohol might be devoted to understanding the dangers to himself in the excessive use of sweetmeats.

Concerning the medicinal treatment in these cases, Dr. Lautenbach found that in the instances of astigmatism already mentioned by him, uric acid solvents gave the best results—such as the salicylates and thialion. The writer has found, however, that in young children the first named of these remedies usually give rise to some gastric disturbances and he now prescribes the latter drug altogether. The following case is cited in this connection as a typical illustration of the fact that the eye disorder we are considering is often really but a local manifestation of the underlying constitutional dyscrasia, or lithæmic condition indicating the presence of uric acid in the system, and that speedy recovery may follow the adoption of appropriate treatment.

A boy twelve years of age, son of a well-known local mechanic, was brought to my office by his mother three months ago for treatment of defective eyesight and headaches. The history given was substantially as follows: Four years ago the patient began to be troubled with headaches accompanied with nausea and was frequently sent home from school reported sick. These were at first called "bilious attacks," until shortly afterward the teacher reported that the child was becoming "near sighted" and ought to wear glasses. An eye specialist was consulted who coincided in this opinion, and attributed the headache to the eye trouble. Glasses were tried and fitted, and the child resumed school work. At first the vision improved slightly and the headaches became less frequent, but the old condition of affairs soon returned again and new glasses were necessitated. Since then the glasses were changed twice and although temporary relief was obtained each time, the child gradually grew worse until finally removed from school altogether.

Questioning elicited the additional fact that during all this time the patient's general health had been more or less affected, as indicated by occasional attacks of vertigo and sleeplessness. The child, too, had been constantly growing more irritable in disposition, becoming angry at his young companions on the slightest pretext—sometimes breaking out into almost maniacal fits of temper. It was learned furthermore that his appetite was capricious, and what was of still greater importance, that he had always been allowed to gratify an inordinate desire for pastry and sweetmeats. Suspecting uric acid poisoning, the urine was examined and found to be typical of that well-known condition.

Anti uric acid treatment was at once decided upon. Thialion was given in half-teaspoonful doses, in a glassful of hot water, every morning upon rising. The father, being a firm believer in meat as a food for the workingman, had been accustomed to procuring it for the table regularly three times a day. Instructions were given on this head, at least as far as the child was concerned, that this nitrogenous diet should be largely restricted, and that sweetmeats should be positively interdicted—a plan which was faithfully observed.

Within a month marked improvement was manifest. A healthy appetite was restored, the headaches and vertigo gradually disappeared, and the patient's disposition much improved. After four weeks of this general treatment the child resumed his school work, which he has not since been obliged to abandon—even temporarily. Two weeks ago the glasses were removed and the eyesight being tested with charts in the usual way was found to be perfectly normal.

## THE URIC ACID DIATHESIS—ITS TREATMENT.

BY O. L. SUGGETT, M. D., ST. LOUIS.

(Reprinted from *Climate*, July, 1900.)

Less is known of this common and painful disease than any that afflicts humanity. We recognize it readily when it appears, but as to "whence it cometh and whither it goeth" we are still very much in the dark. We know so little of the disease that we cannot even properly define it. It undoubtedly originates in an error of nutrition with hereditary accompaniments. Nutrition is obstructed and deranged, resulting in arthritic diathesis. We have interrupted metamorphosis and imperfect oxidation of the tissues. A leading and essential feature of the malady is excess of uric acid in the system, with its local expression generally in the ball of the great toe, accompanied by heat, pain and swelling. There seems to be a close relationship of this disease to obesity and diabetes. It is generally partial to persons of luxurious habits—those who eat and drink too much and lead sedentary lives.

Various cutaneous affections often follow in the wake of gout, such as eczema, urticaria, lichen, etc. The organ primarily affected is the kidney, which failing to eliminate the excess of uric acid, it accumulates in the blood and deranges more or less every organ in the body. Whether this disease is to run its course to a fatal termination in a short or long period of time depends on the amount of damage inflicted on the kidney. Hence this organ should engage our constant attention. As long as there is no nephritis or organic lesion of the kidney, there is not apt to be fatal results.

Some authors ascribe gout to an excessive use of albuminoids and malt liquors in diet—consequently lay down the law on the lines of dietary hygiene; but, in my opinion, this disease depends less upon the kind of diet adopted than the amount of food ingested. The use of nitrogenous and non-nitrogenous foods is safe and beneficial, provided the appetite is moderately indulged. The main point to be observed by the gouty subject is to leave the table with a partially satisfied appetite. In this way the moderate amount of food taken is properly digested and assimilated, allowing the organs with ease to perform their physiological duties. The oxidation of tissues goes on without interruption or retardation, and uric acid, as well as other toxic matters, is eliminated through the proper channels. Abstemiousness, muscular activity, and a well-regulated life will exempt to a great extent even the subject of hereditary gout from its oft-recurring local manifestations.

The male is more subject to this disease than the female, probably on account of the greater irregularity of life in the former than in the latter. In middle life we are more apt to encounter this disease, because at this time most men surrender themselves to greater excesses in the luxuries of life, which logically result in errors of nutrition and the development of gout, especially in those cases with an arthritic tendency.

After this disease is developed, the victim is not apt to escape its periodical assaults, for the reason that he refuses to regulate his life on lines that would secure him exemption. At first the local trouble is confined to the great toe; but later, as the disease progresses, other joints are invaded and no longer return to a normal condition upon a subsidence of the attack, but exhibits serious lesions as mementoes of these baneful visitations. Eventually the kidneys, liver, alimentary canal, heart, circulatory system and lungs become involved as sequelæ or prolonged and repeated attacks of gout. The whole organism is finally drawn into the vortex, and sudden collapse may at any time occur.

The treatment is, first, to give a mercurial purgative to relieve the congested condition of the liver. Put the patient on his back and elevate the affected limb on a pillow. Apply absorbent cotton saturated with whisky, belladonna and tincture of opium, put the patient under the influence of chloral hydrate to secure rest, and give the alkaline salts freely. After relieving the distressing results of an excess of uric acid in the blood, means of eliminating this excess should be introduced. Colchicum and

the salicylates often produce untoward effects, and do not always prove efficacious. As a routine treatment I am inclined to think the best results are obtained from the use of thialion.

I have used most of the natural waters, but with far from gratifying results. Whether my unsuccessful experience with them should be attributed to the patient's lack of perseverance or the small amount of lithium in them, I cannot say; but be what it may, they did not accomplish the results hoped for. My experience with thialion has been very satisfactory and to it I give credit for a long list of cures of gout. It has a very large proportion of lithium in it, and that is of far more service in eliminating uric acid from the blood than the mineral waters, I have proven to my own satisfaction. I append a few records showing my experience with thialion in the treatment of the uric acid diathesis:

Mr. J. R. C., age thirty-nine. This gentleman, a railroad official, is a drinker of more than ordinary capacity and a gourmand of no mean ability. I was sent for by him, and upon my arrival found him suffering great pain, referred to the great toe—the point first selected. The patient, whom I found sitting up, was put to bed and every measure resorted to to ease the pain, which he declared to be almost intolerable. The limb was elevated and protected from the weight of the bed-clothing by an improvised apparatus. I applied absorbent cotton saturated with whisky, belladonna and tincture of opium to the involved structure, and put the patient under the influence of an opiate. Upon disappearance of the most marked symptom, pain, I put the patient on thialion, directing him to use it several times during the day. At the same time I showed him the evils of intemperance in drinks and food, to which injunctions he respectfully listened but with no idea of following. However he still remains untroubled with the gout.

Miss E. C. T., age twenty-one; typewriter and stenographer. This young lady came to me suffering rather severely with pain in several joints, which upon examination, were found to be red, slightly swollen, and particularly painful on pressure. The relative infrequency of gout in females, especially in young females, occurred to me, and also knowing the abstemious habits of the young lady, I hesitated to make a diagnosis of gout. Further questioning elicited the information that her father was, and had been for many years, a victim of uric acid diathesis. Upon hearing this history I at once determined upon an anti uric acid treatment, and after giving her instructions regarding the local treatment, prescribed thialion. In a short time the pain left her, and in a week or two she was free, apparently from the disease. However, I advised her to continue taking thialion, and thus far she has had no further trouble in this direction.

Mr. Charles J., age fifty-nine, attorney. He had been suffering from faulty elimination for several years, and at times, especially after a drinking bout or banquet, for both of which he had an undeniable fondness, he had to take to his bed. I saw him after one of his all-night affairs, and found him in bed paying the penalty he knew would follow his carousal. After taking such measures as I mentioned above to relieve the painfully conspicuous symptoms, I put him on thialion. I also gave him a mercurial purge to relieve the hepatic engorgement. He has now been taking thialion for several months, and feels that the dread disease has left him for good.

I might mention other cases in which I have used thialion with excellent results, but lack of time and space forbid. In conclusion I will say, however, that thialion has served me to good purpose, and will be resorted to in all future cases dependent upon an uric acid diathesis.

JEFFERSON AVE. AND OLIVE ST.

## LEG-CRAMPS IN ELDERLY PEOPLE—A MODE OF TREATMENT.

BY JOHN MACDONALD, M. D., NEW YORK CITY.

(Reprinted from the *Northwestern Lancet*, August 15, 1900.)

Of the many physical ailments peculiar to mankind in later adult life, "leg-cramp" is probably one of the most troublesome—troublesome to the patient and troublesome to the physician: to the former because of its severely painful character, to the latter because of its obscure pathology and resistance to treatment.

It has been observed that the muscles most susceptible to these spasmodic contractions, are the gastrocnemii and solei of the leg and those of the plantar region of the foot, to account for which fact various conflicting theories have from time to time been advanced. That the *localization* of the trouble, however, may be explained on purely mechanical grounds admits of little doubt. The veins of the leg and foot being far removed from the heart and acting against gravity, the circulation through them is very sluggish, giving rise to congestive disturbances and defective nutrition. Chronic ulcerations and varicose veins so common to this locality, and also "cold feet," may doubtless be attributed to this same predisposing factor.

The circulation in the leg has not only to overcome the force of gravity, but that of mechanical pressure from above as well; man, in fact, being the only animal in which the weight of the whole column of blood contained in the vena cava presses directly upon the veins of the lower limbs. Unlike other veins the cava is not supplied with valves; and it will at once be seen, in recalling the action of the hydraulic press, what a powerful effect the weight of its column of blood must have. This defect in the structure of our vascular system—i. e., the cessation of valves at just the point where they would be of the most use in the *erect* posture—is only another of the many significant proofs in favor of the evolutionary theory of growth and development. The indication is, that man has assumed his present upright position within so comparatively recent a period that the body is not yet perfectly adapted for it; for, in other animals, of course, the cava lies in a *horizontal* position in which valves are not essential.

It will be observed that persons subject to cramps are worse at night, after a day in which the body has been forced to assume the erect position, as in standing constantly at work at a bench. The effect of mechanical pressure upon the veins of the lower limbs, preventing the return venous flow, may be seen, too, in the results which follow after having been seated for some time in the well-known "cross-legged" position—when severe cramps in the leg so crossed (usually the left) will often be the consequence.

The same effect is often observed in chronic constipation. The colon, containing an accumulation of feces, presses on the iliac veins (more particularly on the left side when partial impaction of the sigmoid flexure occurs) causing congestion of the leg veins, producing cramps, cold feet, etc. This is especially the case in elderly people, who are usually constipated, and in whom the walls of the colon are partially atonied. It has been said that "washing out the colon," has often been resorted to as an effective cure for cold feet. Cramps and cold feet, too, are troublesome at times to the pregnant woman owing probably, to the pressure exerted on the iliac veins by the gravid uterus.

It will be seen from what has been said, that an obstructed or sluggish circulation in the lower limbs, resulting in defective nutrition of the muscles of that locality, is a constant predisposing cause of cramps, and that in any rational treatment of the same this fact should be borne in mind. The products of metabolism and tissue waste, which should be immediately removed from the body, are allowed, owing to obstruction to venous return, to remain behind to vitiate the surrounding structures. Especially is this the case in persons of the gouty diathesis, who are notoriously subject to cramps. Uric acid, a product of defective metabolism, is, in these people, deposited in

the form of urate salts in the muscles surrounding the congested veins of the leg and foot, interfering with nutrition and serving mechanically as an irritant and direct cause of spasmodic contractions.

The blood being charged with the uric acid toxin, and its current in the leg being slower than elsewhere and in contact longer with the adjacent connective tissues, a favorable opportunity is thus afforded for the deposition of its uratic topi, and consequent interference with the function, nutrition and structure of all the parts affected. Says the celebrated Haig: "If uric acid really influences the circulation to the extent which I have been led to believe it does, it follows that uric acid really dominates the function, nutrition and structures of the human body to an extent which has never been dreamed of in our philosophy." But whatever may be the influence of this toxin as a causative factor in other diseased conditions of the human body, there is no doubt as to its being a potent agent in the production of a gouty diathesis—a constitutional dyscrasia in which leg-cramp is merely one of the local manifestations, the muscles of the feet and lower limbs being selected owing to the anatomical reasons we have mentioned above.

In the remedial treatment of cramps, therefore the attention should be directed mainly toward (1) the relief of constipation, (2) the removal of the uric acid toxin, and (3) the establishment of a better nutrition. It is obvious that for this purpose an effective cholagogue agent is of the first importance to stimulate cellular action of the liver, increase its normal secretions and initiate peristalsis; and, that, combined with an appropriate uric acid solvent, such as lithia, the circulation of the blood may be quickened, while at the same time its subalkalinity may be neutralized and oxidation increased by the removal of the toxin mainly responsible for the abnormal condition. A more active interchange having thus been established between blood and tissue, the former being better enabled to perform its function of removing poisonous waste, the nutrition of the latter becomes improved and the third indication is fulfilled.

In the following case the above method of procedure was adopted, directed primarily toward the relief of the constitutional dyscrasia; "leg-cramp" being one of the prominent symptoms which disappeared as the patient's improvement became manifest—thus suggesting to the writer "a mode of treatment" for that troublesome ailment.

Dr. X—; physician, aged 57, had retired from a large and active practice a few years ago, since which time owing to a sedentary life, his weight had increased several pounds (to nearly 200), and symptoms of the gouty diathesis had become very troublesome. Notwithstanding a careful attention devoted to the diet, abstaining from those articles of food usually prohibited in the ordinary "gouty list," his flesh was in no way reduced, and signs of uric acid poisoning daily grew more marked. Constipation, muscular pains, occasional vertigo, and *leg-cramp*, were the principal signals of distress. The urine, too, was scanty, acid, high colored and loaded with uric acid crystals.

Upon retiring at night the cramps in the leg would at times become so severe as to necessitate the administration of chloroform to obtain relief. Various expedients were tried; e. g., tying a band around the thigh, above the knee, massage of the muscles affected, application of heat, etc., but only temporary relief could of course be thus obtained. The feet, too, were habitually cold, and hot foot baths were frequently taken before retiring. It was obvious, however, that the underlying constitutional trouble which gave rise to these conditions must receive attention, and the general nutritive functions improved, before the local symptoms could be made to disappear. The constipation had become very obstinate, examination revealing a colon much distended, and which was probably largely responsible for the severity of the cramps. Physic was taken at frequent intervals but was only temporarily beneficial.

As the above measures were simply palliative in effect, it was decided to adopt some more heroic means—such as the anti uric acid treatment—and thialion was administered. During the first four days a level teaspoonful of this salt was given in a glassful of hot water, three times daily, before meals; the result of which procedure was a thorough evacuation of the bowels on the fourth day, ample in amount and pro-

digiously odorous in character. Thenceforward a teaspoonful was administered every morning early on arising.

The treatment was kept up in this manner for about two months, or until eight ounces of the drug had been taken, at the end of which time the patient's improvement was manifest. His naturally jovial disposition and cheerful countenance had returned, a hearty manner in greeting acquaintances became the rule, and no further complaints were heard of pains in the back and limbs, the patient moving about with some of his old time alacrity. The bowels, too, had begun to move more regularly, and it was probably largely owing to this fact in conjunction with a greater amount of exercise taken, that ten or twelve pounds of superfluous flesh had been removed.

The cramps, which had been so marked a feature in this case, gradually became less frequent, and finally disappeared; and now, after an elapse of several months, the patient states that he is entirely free from them. The writer has since adopted the same line of treatment in several other cases, usually in elderly people, and with the same gratifying results.

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### DOES THIALION TAKE THE PLACE OF CALOMEL?

BY R. A. MEATH, M. D., MEMPHIS, TENN.

(Reprinted from the *Western Medical Review*, August, 1900.)

The following case has been of unusual interest to me inasmuch as it has developed a use for thialion which must prove of great value to every doctor practicing in malarial regions like the one where I reside. It is difficult for the physician not living in such places to realize the tremendous power exerted against the health of the community by malarial poisoning, which is always more or less associated with enlarged spleen, enlarged and torpid liver, together with constipated bowels.

Calomel has always been our mainstay, in fact it is impossible for us to practice medicine without it, with any degree of success. But it seems that in thialion we have a new remedy presented to us, which will not only cure constipation, relieve the torpidity of the liver, but also increase the activity and anti-malarial power of quinine.

I do not want to be misunderstood in this matter. I do not mean to say that two grains of quinine given with thialion is increased per se to four grains, but I do mean to say that by a thorough cleaning out of the liver, the reduction in size of the spleen, and the relief of the constipation, creates a condition by which the quinine is taken into the system more completely, more compactly, if I can so use the term, and is absorbed to a greater degree.

The case that I present here is typical; we have them by the hundreds in this section:

A woman, American, age 33, suffered for a long time from chronic malaria. The attack commenced with soreness through the liver, back, muscles of the back, and through the kidneys, radiating over the pubis and front of the abdomen, with extreme constipation, and when the stool was finally passed, it was of a light green color, almost as green as if Paris green had been mixed with water rather thick. The liver was enlarged, the spleen was enlarged, the skin was dry, rough and sallow, the liver spots were on the face.

She was ill quite a good while before I saw her first, and then was under my treatment for a good while before I thought that possibly thialion might do her good. And I was really astonished at the results. The first influence I noticed was that the green material stopped from the stools and they changed in character completely, and then she commenced to pick up, and the quinine took hold better, while the appetite improved. The kidneys slushed out and the spleen began to be reduced, and she got better fast.



I was satisfied that if I had used the remedy at the start of her sickness, she would have gotten well much quicker. I had been giving 1 grain doses of calomel every two hours for four doses; then in four to six hours I gave castor oil, but the action of this was not at all to be compared with that of thialion. In fact, I think the latter will take the place of calomel, and I am now carrying on an interesting line of experiments in this direction.

In this case, I gave thialion in teaspoonful doses, a teaspoonful in hot water taken three times the first day, and after that once a day taken in the morning on rising for three weeks, when she was entirely well.

We have a great deal of malarial fever here, with constipation, pains in the liver, stomach and kidneys, and I am satisfied that thialion will clear the system of the malaria, because it helps out the quinine. We have more or less rheumatism and neuralgia with soreness of the body and limbs associated with it, which is probably due to the improper elimination of the uric acid.

Of course it takes more than one swallow to make summer, but cases are rapidly multiplying where thialion has wielded a powerful influence for good in this class of cases, and I only hope that future experience will bear this out.

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#### IRRITATION OF THE GENITO-URINARY TRACT.

(Editorial *Milwaukee Medical Journal*, August, 1900.)

Among the many complications of rheumatism we sometimes meet with irritation of the genito-urinary tract, shown by a pain over the region of the kidneys, a desire to urinate frequently and a sense of heat and burning after micturition. The urine of those suffering from rheumatic diathesis possesses great clinical importance and should be most carefully examined. It is always highly acid, of a dark golden color and contains a large amount of sediments; either uric acid crystals or the uric acid exists in combination with sodium and ammonium, forming acid urates. A case exemplifying this was one of irritation of the bladder connected with articular rheumatism in the sub-acute stage. In treating such cases we should use a good diuretic and solvent of uric acid. After Wood the indications for the use of diuretics are the following:

1. To maintain the action of the kidneys.
2. To evacuate fluid.
3. To soothe and diminish irritation of the genito-urinary organs.
4. To alter the urinary secretion so as to prevent the deposition of calculous material.

It is not so easy to find a remedy which has all of those properties. After having used a number of remedies without marked result, thialion was tried and found to be very serviceable. It met all the indications and not only did away with the irritability of the bladder, but relieved to a great extent the symptoms of the joints. Besides this thialion was used in a case of hæmaturia caused by renal calculi. The urine was of high specific gravity. The patient complained of great pain and frequent desire to micturition. The use of thialion greatly relieved all these conditions. Thialion is a laxative salt of lithia; its properties are diuretic as well as purgative. In regard to Wood's indications we see that it maintains the action of the kidneys by gently stimulating the excretory functions. It evacuated fluid by virtue of its hydragogue properties, it soothed and diminished irritation of the inflamed mucous membranes of the genito-urinary tract by rendering the urine alkaline and non-irritating, and, most important of all, it renders soluble, and therefore easily excreted, uric acid and calculous material. Like lithium and because of the large quantity of lithia contained in it, it unites with uric acid and forms a urate of lithium, a salt much more soluble than is found with either potassium or sodium. Thialion not only dissolves uric acid, but it also raises the daily amount of urea excreted, diminishes the specific gravity of the urine and dissolves oxalate of calcium crystals.

Regarding the effects of thialion on the alimentary canal, we see that it stimulates the physiological functions of the liver, increasing the fluidity of the bile and neutralizing the acids resulting from fermentation, and also increases peristalsis noticeably, and in larger doses produces free catharsis, without the unpleasant after effects so common to remedies of this class. In regard to the dose, we give in acute rheumatic conditions either one teaspoonful in hot water every four hours or one-half teaspoonful every two hours; as a laxative we give one teaspoonful in a cup of hot water immediately before breakfast.

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### THE PROPER DOSAGE OF THIALION.

BY E. M. SMITH, M. D., NEWTOWN, CONN.

Ex-Vice President of the Danbury Medical Society; Member of American Medical Association; Fairfield County Medical Society; Connecticut Medical Society, etc.

(Reprinted from the *Journal of Science and Medicine*, Portland, Me., May, 1899.)

Now that thialion has passed through the stage of experimentation, and has become to the general practitioner a real help in need, especially in the treatment of that multitude of cases resulting from an excess of uric acid in the blood—rheumatic diathesis—gouty conditions from any cause, it seems to me that it would be rendering the profession a valuable service if I should say in a few words something as to the manner of its proper administration.

There seems to be a good deal of darkness on this subject. Every little while, in consultation or otherwise, I come in contact with some doctor who has been giving thialion in a wrong way. Either in too large or too small doses. He has not exercised that care and skill that would characterize the administration of quinine or morphine, and has not gone into the real physical condition of the patient.

I am confident that in thialion we have an excellent remedy. This conclusion I have arrived at not only from the results obtained in my practice, but also from its use in my own family. I believe it to be a powerful agent for good.

Now in regard to the dose, I find as a rule that the doses given are too large. Too large, first, because a large dose tastes worse than a small one; second, because it is unnecessary; thirdly, because sometimes in certain cases it acts unpleasantly on the bowels. My rule as evolved from experience is that unless I have a case of uræmic poisoning or threatened uric acid poisoning, such as we meet with in the later stages of pregnancy, or in cases of Bright's disease, or in some such condition, where it is exceedingly important that we eliminate the poison as rapidly as possible and where it is imperative that we increase the flow of urine quickly, then the dose cannot be given too rapidly nor too frequently; but in ordinary cases I believe that smaller doses are better. My plan is except in, say, acute uric acid poisoning, in acute rheumatic gout, or where I have a violent case of uric acid headache, where it is necessary to give a dose three times a day to make the urine rapidly alkaline, to direct my patient upon rising in the morning to take a medium teaspoonful of the thialion dissolved in a cupful of hot water just hot enough to be drunk down at once. Then let him go to his breakfast and as a rule, in 90 cases out of 100, in fifteen or twenty minutes after breakfast a large mushy movement will be the result.

It is peculiar, but I find that if this morning meal is omitted and nothing is taken until the noon meal, the desired result is not obtained. I think that this is easily explained by the fact that after the ingestion of food the peristaltic action of the bowels is increased, and if a laxative is present there its action very quickly becomes apparent, so that it is necessary to advise your patient that it is especially desirable to have

this movement, and that this can be obtained best by taking the morning meal after he has taken the thialion in hot water. In cases of chronic constipation especially is this plan desirable. This dose should be continued every morning for a week, or until it is found that the urine has cleared, leaving no sediment and is of a pale straw color. Then I advise the patient to take it every other day for a week; then for two days another week and then whenever it is necessary for him to get the desired results.

In cases of acute rheumatism I have found that where I wanted to get a very marked result quickly one-half teaspoonful dissolved in two-thirds of a cup of water and taken every two hours as hot as possible will not affect the bowels nearly so actively nor so unpleasantly as a teaspoonful in hot water every four hours would do, or even three times a day.

As a rule I do not find that patients object to the taste of thialion. It is not so bad a taste as a Seidletz powder. But once in a while you will find a person who objects to it, and I am indebted to Prof. Austin H. Goelet, M. D., for a suggestion which he made in an article entitled "Preparation of the Patient for Abdominal Operations," which was published in the *Charlotte Medical Journal*, Charlotte, N. C., in December, 1898. The suggestion is that the flat taste of the medicine can be counteracted by putting in the water a small piece of lemon peel. Since seeing this I have followed it in many cases and find it to give a good deal of satisfaction.

It is necessary for us to remember that in thialion we have a powerful remedy. Take a given case where it is administered three times a day for three days, it is very necessary that we watch the urine carefully, testing it with litmus paper. It will be seen that the urine rapidly approaches the point of alkalinity. Of course we must watch for this; it won't do to go unheedingly along, leaving the patient with an irritating, alkaline urine. It is necessary for us to stop here, and in my practice I always stop at a point on the acid side. Then a small dose administered once or twice a day keeps the urine at a point between acidity and alkalinity, and if we watch carefully we will find that uric acid goes away in drifts and loads under its action.

Again in chronic constipation I have heard doctors say that they had given two or three doses with no results. If they live forever that will be just the way with some cases. You take an old case of chronic constipation, or an old case of torpid liver, or, what is more to the point, these two conditions combined in one case, and it will take a dose of thialion every morning for four or five days before the desired action is attained. Then he will wish he had gone out in a ten-acre lot, for the odor in such a case is something terrible, and the color black. Now a dose every morning will act promptly and cure the patient. Ask the patient how he feels then, and you will get an answer right away.

Dr. G. E. Lemmer, President of the Danbury Medical Society, in a paper read before that Society entitled "Uric Acid in the Blood: What Does It Lead to, and How Can We Eliminate It," published in *The New England Medical Monthly* for October, 1898, emphasizes this point.

Prof. C. A. L. Reed, Cincinnati, Ohio, in a paper entitled "The Genital Factor in Certain Cases of Neurasthenia in Women," published in *Gaillard's Medical Journal*, Jan. 1899, points out that it is sometimes wise—in fact he has got quite in the habit, when only one dose is given a day, of giving it a little while before retiring. He says: "It is an innovation, I believe, in the manner of using it, but I have been able easily to thus perpetuate its once established effects by a minimum of both drug and dosage." This plan I have followed in several cases and have found that as in the cases where administered in the morning all those morbid elements, better outside of the body than inside, were eliminated.

In uræmic poisoning, the effect must be rapid and the patient be brought under its influence as quickly as possible. In some cases I have given it as often as a teaspoonful every two hours till the catharsis and urination were very free, but always with the result of eliminating the poisons from the system and increasing the flow of urine

markedly, but the flow is not so much nor so important as are the products which are carried off by it.

The following three cases will illustrate some of the points I have given for your consideration:

Mrs. B., American, age 47, now passing menopause, is recovering from acute nephritis—urine scanty, high in specific gravity, exceedingly acid, liver torpid and inactive, bowels sluggish, torpid and inactive; a marked degree of mental hebetude.

This patient gave me considerable anxiety, inasmuch as I had given her almost all the diuretics with indifferent results—a little better now, not so well a little later.

I finally put her on thialion in teaspoonful doses thoroughly dissolved in a cupful of hot water each morning, insisting upon the dose being taken as soon after waking as possible, and to be drunk as hot as she could. It was but a few days before improvement began all along the line. There was a general amendment—urine increased in quantity, and nearly approached the neutral line, bowels acted in the most satisfactory manner. In this case the liver played a most important part. This was stimulated until the stools became like that of the child. Mind cleared up, becoming very natural. She is now on the way to complete recovery, though I still insist that she take thialion three or four times in succession every two weeks. In this case the different symptoms added to the mental condition made it doubtful whether she could ever recover, but I feel confident that this most happy result will take place.

CASE II. Mr. M., aged 33, stout and heavy, farmer, weight 210 pounds, necessary that he ride a good deal over rough roads, has decided uric acid diathesis, urine clouded and highly acid, irritation at the neck of the bladder, constipation, enlargement of the liver, much muscular aching all over the body, heavy, dull aching pain over the kidneys, becomes easily tired. In fact, he presented all of those typical symptoms which follow in the train of uric acid diathesis where the bowels are constipated and the liver sluggish.

I did everything for him, but with indifferent success until I began using thialion in teaspoonful doses in hot water three times a day. There was a very decided action of the bowels and kidneys, in fact so much so that it was necessary for him to suspend taking the remedy for two days, when I returned giving him a small dose each morning in hot water as usual on rising. The improvement in this case was rapid, steady and uninterrupted. And while it is a long time since I prescribed for him, yet whenever he feels a return of the old symptoms a few doses of thialion, he says, fixes him all right again. Can you look in the mirror of your experience and duplicate this case? Can you see how many times it has bothered you to cope with such symptoms? *Verbum sat.*

CASE III. Miss C., age 35, short and stout, bilious by habit, slow by temperament, chronically constipated with small and insufficient evacuation of the bowels, urine scanty and highly colored with considerable brick dust sediment, skin and conjunctiva dark and muddy looking, suffered much from backache and drowsiness, with considerable muscular pains and aching.

This woman had been under a variety of treatment under not only my hands but under the hands of others with unsatisfactory results. Thialion administered in teaspoonful doses each morning with corrected diet soon gave relief and all the prominent symptoms faded away. Urine increased in quantity and urates were found in excess. Bowels moved freely and the eyes and skin resumed their natural color. She continued the treatment for two weeks, and so far as I can judge a permanent cure has been effected.

## GOUTY DISTURBANCES.

BY WILLIAM F. KIER, M. D., ST. LOUIS, MO.

(Reprinted from the *Medical Mirror*, St. Louis, Mo., April, 1899.)

As time passes we are all impressed with the thought that many diseases are of gouty origin which had not been suspected. The researches of Garrod, Haig and others have helped us in the differentiations of the various conditions dependent upon accumulations of uric acid in the system. A prolonged experience upon the part of a careful observer broadens his views regarding this question and impresses him with the idea that really the bulk of the diseases that come after the full grown period of life are either produced by uric acid or invited by its presence in the system. Many cases of neuralgia which have come under my observation, which I supposed to be due to malaria, I have found by experience after all to be gouty in their character. A large part of the so-called rheumatism, muscular and articular, which confronts us, is not rheumatism at all, but gout. The evidence is accumulating constantly that uric acid is a very positive factor in hay fever, as well as various forms of asthma. Much might be said upon the matter of diet as affecting diseases of a gouty nature, and the influence as a provocative feature of smoking, but time and space will not permit. I am strong in the belief, however, that tobacco, either chewing or smoking, has much to do in checking excretions and preventing elimination in a general way of poisonous materials in the body, and therefore favor gouty conditions.

Colchicum and the various salts of lithia have been of value in the treatment of this condition, but I have had most favorable experience during the past year in the use of a laxative salt of lithia, which has been presented to the profession during the past year, under the name of thialion. In doses of from one teaspoonful to a table-spoonful in hot water every morning, or, in some cases, three times a day, I have produced results that were almost magical. The facial, sciatic, brachial and other important neuralgias, together with articular expressions of gout, have been promptly cured. I feel that I would be derelict in my duty if I did not report the favorable results which I have secured by the use of thialion. The prompt relaxation of the bowels, coincident with the free action of the kidneys produced by thialion, is of double advantage. We have too often satisfied ourselves with profuse diuresis and ignored the bowels, permitting them to remain constipated.

3609 LINDELL BOULEVARD.

## CHOLELITHIASIS, WITH CLINICAL REPORTS.

BY J. W. P. SMITHWICK, M. D., LA GRANGE, N. C.

(Reprinted from the *Charlotte Medical Journal*, February, 1900.)

This is a condition attended by the formation of calculi within the gall-bladder. These calculi may be small and numerous which may be passed with no inconvenience; or they may be large and few in number and give very marked symptoms in their passage down the common bile duct. The greater portion of the individual stone is made up of cholesterin, principally, arranged in concentric layers. Salts of lime and magnesia, bile salts, fatty acids, and traces of iron and copper are also found in them. Their mode of formation is by no means thoroughly understood, but it is known that when bile is retained in the gall-bladder its concentration favors the deposition of cholesterin.

It is a well-known fact that about three-fourths of the cases of gall-stones occur in women. Sedentary occupations and over-indulgence in eating are important etiological factors. The subjects are often stout and fond of saccharine and starchy materials; in short, the conditions which induce the formation of uric acid favor the development of gall-stones.

When a stone forms in the gall-bladder and begins its passage to the duodenum, if large, it excites violent symptoms known as biliary colic. The attack comes on without premonition and is accompanied with agonizing pain in the region of the liver, which radiates to the shoulder. Often there is a chill with a rise of temperature. There are vomiting, great depression of the circulation and profuse sweating. In a certain number of cases jaundice develops, though this is not a necessary symptom and only appears when the stone is passing down the common duct. An attack may last only a few hours, or it may be prolonged for several days or even weeks. The attacks may be repeated at short intervals, and finally when the stone passes an end is put to all the symptoms at once until the next attack. If the stone becomes impacted along its course, surgical intervention must be resorted to or a fatal result will ensue.

To rationally treat this condition one must get at the cause; that is, correct the morbid process in the economy of the body which favors the concentration and inspissation of the bile. All intestinal, especially duodenal, indigestion should be corrected. The habits of the patients should be studied and regulated. The regulation of the diet should receive attention, and the starchy and saccharine elements of the food restricted.

During the attack there is nothing that can be done but give sufficient morphia to control the pain, and apply hot fomentations over the region of the liver. A few whiffs of chloroform may be necessary before the morphia has time to take effect. The bowels should be thoroughly moved by calomel or soda.

It is after the attack that treatment can do the greatest amount of good by preventing the recurrence. Acting upon the advice of theories many physicians have been led to use the different salts of sodium, especially the sulphate and phosphate, in doses of one or two drachms daily. This has failed to give the desired relief in the majority of cases in my hands. In the course of experimental study I was led to try the citrate of lithia in conjunction with the phosphate of sodium, for its laxative effect, from the relationship of this trouble to that of the uric acid diathesis, and have noted some very happy results. At the present time I use the laxative salt of lithia—thialion—which precludes the necessity of giving the sodium salt.

To illustrate the value of and the results obtained by the above method I herewith detail the histories of a few cases:

CASE III. F. E., aged 63 years. I found this man suffering all the agonies of pain that could be induced by an attack of biliary colic. I used the hypodermic syringe and gave him a few whiffs of chloroform as quickly as possible. In thirty minutes I repeated the hypodermic injection, and in fifteen minutes more he was perfectly easy. I left some calomel and soda for administration. Returning the next day I found him doing well, having passed a stone early that morning. At that time I elicited the following history: That he had been troubled with these attacks for the last twenty years, but of late they had increased in frequency and severity, so much so that his life was a burden to him. He had tried everything that had been recommended for such troubles and failed to get any relief whatever. I put him upon thialion in teaspoonful doses in half a glass of hot water after meals and at bed-time. This treatment was kept up for four weeks, and then the dose was taken only at bed-time. Since he began the treatment he has enjoyed complete health, has had no symptoms whatever of the return of the colic, and says he feels better than he has for several years past.

CASE XIII. Mrs. A. N., aged 28, applied for treatment. She had been raised in all the luxuries of life, rather stout physique, and had had three attacks of biliary colic. All that time there was some tenderness over the region of the gall-bladder, though it was not enlarged. Stated that she was a large eater and especially fond of sweets.

Was greatly troubled with constipation. I prescribed the laxative salt of lithia in teaspoonful doses in half glass of hot water after meals and asked her to report at the end of a week. She did so and informed me that she had been doing well. All the soreness had disappeared, bowels had become regulated, and said that she felt better generally than she had in a long while before. I advised her to keep up the treatment for one week longer and then reduce the number of doses a day to one, which was to be taken at bed-time. At present she is doing nicely, not having felt any of the symptoms of her former troubles since she began the treatment.

These patients are very grateful to me for the benefit I gave them through this treatment, and they have shown their gratitude by sending me a number of good people who were troubled likewise. In the treatment of all of them I have had equally as good results as detailed above.

### THE PREVALENCE AND TREATMENT OF GOUT.

BY CHARLES W. MCINTYRE, M. D., NEW ALBANY, IND.

(Reprinted from the *Carolina Medical Journal*, January, 1901.)

It is a common belief by many physicians that gout is an affection rarely met with in the United States. This view is very erroneous, as practical and up-to-date physicians know. The plain truth is that gout in one or the other of its expressions is one of the most common disease conditions encountered.

I believe that this view of the prevalence of this disease is now being accepted by the profession in general, which is the natural outcome of progress of the profession in the recognition of clinical truth.

It may be said that this view has done much toward the alleviation of human suffering since the correct treatment is now instituted when the cause has been overlooked.

If we, however, look for the development of typical cases of gout, we shall find as we do when going through an epidemic of typhoid fever that few cases correspond exactly to the text book descriptions.

But gout in its manifestations may be mild or severe—just to the extent that the patient's system is poisoned with uric acid.

The treatment of gout in any shade of its expression, as regards severity calls for the regulation of diet on one hand and administration of such remedies as will counteract or eliminate the uric acid on the other.

Among the articles of food which these patients can take without detriment may be put down fish, raw oysters, fat bacon, chicken, game.

In the way of farinaceous foods, cracked wheat, oatmeal, hominy, whole wheat bread, rye bread, crackers, dry toast and macaroni may be said to be least prejudicial.

In the way of vegetables, baked potatoes, green peas, string beans, cabbage, celery, lettuce may be eaten.

Desserts should be milk pudding, rice and milk pudding, and stewed fruits cooked with saccharine for sweetening. No sugar allowed.

The drinks should consist of tea without sugar (saccharine), milk and butter milk.

The patient should avoid veal, pork, duck, turkey, salted or dried fish or meats, eels, mackerel, salmon, lobster, eggs, rich soups, gravies, sweet potatoes, asparagus, mushrooms, rhubarb, lemons, pickles, vinegar, milk, malt liquors, wines and champagne.

Adherence to this diet catalogue I have found to be of very great importance in treating my gout patients, and I always tell them that unless they respect this they may expect to have frequent relapses.

Of remedies none has had in the past greater employment than colchicum. The wine of colchicum is considered by some physicians as a specific for gout. In fact when I was at college colchicum was regarded as a specific for gout.

This belief has greatly changed now and this view is far from being taken seriously. Lithia has held its position with the advanced members of the profession for a considerable time and its merits are not disputed. I employ a laxative salt of lithia, thialion, which has given me more satisfaction than other preparations of the drug.

It is well known, a laxative in those who suffer with gout aids materially in eliminating the poison.

The superiority then in employing thialion is that it brings to our service a pure lithia which has a laxative base.

I exhibit thialion in doses of a teaspoonful two or three times daily—giving the remedy less frequently as the condition of the patient grows better.

A patient, aged fifty, sent for me in the night. He was suffering with intense pain in his great toe, and his entire foot was giving him a great deal of pain. This patient was a hotel keeper and often drank too freely of malt liquors. In fact he made it a practice to drink ten or fifteen drinks of beer every day—often twice this quantity. He ate heartily always and took no systematic exercise. This man had had symptoms of uric acid poisoning before, but gave them no attention. He was now in the throes of the gout and was compelled to go to bed.

I gave him an hypodermic injection of morphine to relieve his pain, and had him begin with the thialion in doses of a teaspoonful every eight hours.

When I saw him twenty-four hours afterwards his bowels had acted very freely and had urinated several times, voiding much more than normal. He felt that his head was freer and that his "mind worked better," as he put it. His foot, which I had had wrapped in cotton batting, showed no further increase in swelling. The next day the patient was so far improved as to be able to sit up and rest his foot on a chair.

Five days later he was able to resume his duties as superintendent of his hotel.

He took thialion for several weeks—a teaspoonful night and morning—and has enjoyed in the last three months better health than for years prior to this attack.

Another patient was a lady about forty years of age, who came to the office for a prescription for rheumatism in her shoulder. This pain was the source of a great deal of trouble, and she said she had pain in her hip joints before it appeared in her shoulder. She was well nourished and was what might be said to be a high liver. She had all the symptoms of uric acid poisoning. She was told this and that her hope for permanent relief lay in adhering to a correct dietary and the taking of a remedy for several weeks.

She began with thialion in doses of a teaspoonful before each meal. In three days her bowels acted rather too often, and I had her take the remedy only twice daily—before breakfast and at bed-time. In this dosage no inconvenience was noticed and the patient went on to an uneventful recovery.

She took the thialion four weeks. After the fifth day she ceased to suffer pain, but I had her take the remedy longer in order to obtain its action as an eliminant and neutralizer.

Another patient, a man who took life easy—a retired merchant aged 50—complained of vertigo and shooting pains—but with great "soreness" in his ankles. His was a typical case of uric acid poisoning, and he was advised regarding the diet and put on thialion in doses of a teaspoonful three times daily. In a week he took it only once a day, as his bowels acted now very frequently.

He began to have no vertigo after the fifth day, and has remained free from this trouble since.

He has also had no further "shooting" pains nor have his ankles again given him pain.

Another patient aged forty—a watchmaker—had swollen knee joints and vertigo with a history of constipation and indulgence in gout producing foods. He also had



attacks of melancholy which were very bad. He was not confined to bed and had come to the office for a prescription. He was put on thialion and told to adhere to the instructions I had given him regarding diet.

This patient gradually recovered from his trouble, the period of time occupied in this case being four weeks. For the last two weeks he only took one dose of thialion a day, a teaspoonful before breakfast.

### A CASE OF CHRONIC RHEUMATISM.

BY L. B. SMITH, M. D., HORNELLSVILLE, N. Y.

(Reprinted from the *St. Louis Medical and Surgical Journal*, March, 1901.)

Six years ago I had synovitis of the right knee joint following an injury from which I was confined to the house for several weeks, but finally recovered with slight stiffness.

In January, 1897, the same knee began to enlarge, which gradually inc eased, until it was at least half as large again as normal. Before this time arrived, the left knee, left ankle, left wrist, right elbow and right jaw became affected, the latter becoming so bad that I could not place a teaspoonful of food between my teeth. I sat in a wheeled chair for twelve weeks, during which time I lost flesh and appetite, while sleep was almost out of the question, excepting at short intervals. Before these conditions appeared, my urine was loaded with uric acid, and despite all remedies and treatment, could not get rid of it. Being a physician myself, in practice since 1875, I tried everything known to me, and a great many remedies recommended by my brother physicians, but the conditions remained the same, gradually becoming worse.

In October, 1898, I was forced to quit work, and went into the Steuben Sanitarium, where I commenced the use of baths, electricity and massage as well as medicines, following the same for several weeks. While I improved in some respects, the uric acid condition remained the same. When I commenced to take thialion, my strength was almost gone, and to all appearances, I was booked for another world.

One day, Dr. Walker, superintendent of the Sanitarium, called my attention to an article published in a medical journal, calling attention to the use of thialion in chronic rheumatism, and as it did not bear any symptoms of being a fake preparation, I told him to get me some that I might try it, as I knew of no better subject to experiment on than a doctor. In forty-eight hours my urine was alkaline, an almost incorceivable result. After a few days I only took one dose a day, viz., a teaspoonful in half a glass of hot water, and I just balanced the urine from slight acid in the morning to slight alkaline at night. In a short time my joints began to decrease in size, and I continued to improve.

In July, 1899, I went up in the Catskill mountains remaining for six weeks for my general health, which did me worlds of good, and I returned to my home on September 1st a new man. I then commenced my practice again, and have continued to improve, until now I am as well as ever, except a little stiffness of the right knee, which is steadily improving. I still take a little thialion occasionally, as a preventative, as I have had all the uric acid deposits I want in my joints. I weigh now within five pounds of as much as I did before this attack. I never had rheumatism before and do not expect to have it again.

I have used thialion in many cases since, in my practice, with equally good results, sometimes varying the treatment to meet the conditions of the patient. One mistake in all such cases, is that they do not take the medicine long enough, for it has to remove the deposits through the blood by the alkalinity mentioned. Thialion certainly did for me what no other remedy did, (I took everything else, lithia in all other forms gave no results whatever, before taking this preparation.) As this is put up for physicians' prescriptions, I can most certainly recommend it to their use.

## REPORT OF A RARE CASE.

BY W. H. BENTLEY, M. D., LL. D., WOODSTOCK, KY.

(Reprinted from *The Medical Summary*, March, 1901.)

The following case is one of so rare occurrence, if not wholly unique, that I feel it is my duty to report it:

May 11, 1899, Mrs. J., a married woman, aged forty-seven years, consulted me. She stated that three years previously she had completely passed, without serious inconvenience, her climacteric period, or, as she termed it, the "turn of life." She said that for fifteen years previously she had enjoyed perfect health, but soon after passing her "turn of life" she, in her own words, "began to take on fat" and feel an extraordinary fullness and to lose energy. After this she noticed a small pimple or tumor on the back part of her left hand near the base of the thumb; that it continued to grow to its present size, that of a pepper corn, in a few months and then ceased to grow. In the meantime other similar tumors appeared, first on her hands and feet, then on her wrists and ankles, and finally extended themselves over her entire person, but never becoming larger than the first one mentioned. At the time she said they were thick and plentiful all over her body; that they were not sore and that they caused her no inconvenience except when irritated by her clothing. I examined those on her hands, wrists, feet and ankles. They were very plentiful and of all sizes, from that of a pepper corn of the size of half a wheat seed down in regular gradation to the point of a pin. They were firm to the touch and seemed movable beneath the skin like a wen. Besides this affection she had had two attacks of what her doctors called rheumatism. The first was confined entirely to the hands, fingers, feet and toes; the second, besides the former, extending to the elbows and knees. Her fingers and toes, besides being stiff and crooked, exhibited enlarged joints. I thought her so-called rheumatism was gout, and so told her, but she wanted relief from the eruptive affection. I frankly informed her that I did not understand this affection and that I could not recall anything that enlightened me in the least, but suggested that a course of some good alterative medicine might be of service, as her skin was both dusky and sallow. Accordingly, I prescribed an eight ounce mixture of iodid. potass., sarsaparilla, and stillingia. After using this she wrote me that "the medicine had cleared the color of her skin, had caused her to feel better than she had felt for years, but had no effect on the 'breaking out.'"

I did not again hear from Mrs. J. until an early hour on the 29th of the ensuing July. Then her son came for me in haste, having ridden most of the distance, fifteen miles, in the night. I responded, arriving about noon.

As the heart was involved in this very serious attack of gout, I used some nitroglycerin antipyretics to obtund the pain, but I relied on thialion, which I had abundantly tested, to control the gout—an offspring of uric acid. I staid until next day and left the patient comfortable, with every prospect of a speedy recovery. I left four ounces of thialion with instructions. September 16th, I had an application for more thialion, the patient stating that under its use according to my instructions the fingers and toes were losing their stiffness and enlargements. In response I sent her eight ounces of thialion.

I did not again hear from this patient until the 15th of the ensuing October, when, in company of one of her sons, she paid us a visit. She and my wife had once been intimate friends and hers was a most welcome visit. She was then completely rid of the skin trouble as well as her arthritic affection.

Recently I wrote her, wishing to know if she still remained well. I desired the information before writing this article. In reply she says: "I am in perfect health. I never have a pain or an ache, and my skin is as smooth and free from any breaking out or other blemish as that of any year-old child."

It may be that some of the *Summary* readers will be impressed by this as old Mr. T. was by the narrative of his young friend, a school teacher.

The young man, in whom Mr. T. had always aroused the greatest admiration, told him that he (the young man) had seen one man strike another on the neck with his fist and that the man so stricken fell stone dead.

"Well," said Mr. T., "if you had not seen this would you have believed it?"

The young man confessed that perhaps he would not.

Mr. T. replied: "Well, I did not see it."

At any rate, I assure the readers of the *Summary* of the truth of this report.

The question with me is and has been, could an excess of uric acid in the patient's blood have caused the above-described condition of the skin?

### ON THE USE OF THIALION IN THE TREATMENT OF ALCOHOLIC GASTRIC CATARRH.

BY BUCHANAN BURR, M. D. (HARV.)

Late Chief Medical Examiner of the New York Life Insurance Co.

(Reprinted from the *Louisville Monthly Journal of Medicine and Surgery*, June, 1901.)

In my experience as a medical expert in life insurance covering fifteen years, I have come in contact with a large number of men who do not consult their family physician because they believe they are in perfect health; I refer to the steady drinker, not to the man who drinks to intoxication, but to the man who never becomes intoxicated, but who drinks from four to twenty drinks of alcohol in some form daily and keeps sober (as he thinks). The corollary of this proposition being that any man who drinks alcohol during business hours, fools none but himself.

These men will tell you that they are paid by their employers to drink, or cannot do their daily business unless they drink with their friends, so that we are not facing a theory, but a fact, when we admit that under our so-called civilization, there are men who, to earn a living must, or think that they must, drink alcohol daily in quantities which we as physicians, know to be prejudicial to health.

The consequence of this abuse of alcohol is too well known to the profession to attempt to explain; they live, they suffer, and usually when they come under professional care they die from pneumonia, appendicitis, typhoid or other intercurrent disease with vitality depleted and nothing to keep it up, with which to carry them over the crisis, because they have abused alcohol and we cannot use it as a stimulant; or we meet them later in life with cirrhosis of the liver, gastric catarrh, chronic interstitial nephritis, and sign their death certificates as dying from disease, when we know or should know, that alcohol persistently taken in moderate doses, has killed them.

Some three years ago, I heard of thialion from a professor of the University of Pennsylvania, and used it successfully for rheumatism and gout among my friends with unvarying success. I may state here as it has nothing to do with this article, that in over a hundred cases of rheumatism and gout treated since 1895, I have never known it to fail to give relief, or cure absolutely; but the purpose of this article is to draw your attention to another use of these salts and that is, its use in the treatment of the gastric catarrh due to alcohol.

We all know that alcohol taken into the stomach in any form, produces gastric catarrh and from that, catarrh of the œsophagus and pharynx, (hence the dark brown taste complained of by drinking men). In treating a patient for rheumatism, who was the confidential agent of a brewery and had to drink large amounts of beer and other alcoholic stimulants, I gave him thialion, and he first informed me of the fact

that it, besides curing his rheumatism, also cured his catarrh of the stomach, his so-called naso-pharyngeal catarrh, which was but secondary to his alcoholic catarrh of the stomach, and also cleared his liver, and "made him feel well." Since then, and that is three years ago, I have prescribed it to hundreds of men, not only for their rheumatism but simply as a corrective for alcoholic gastric catarrh and the cirrhosis of the liver, which always goes with it.

The symptoms most complained of in these cases are the "dark brown taste" in the mouth in the morning, the dull, dead feeling due to congestion of a cirrhotic liver and the rheumatic pains under the left shoulder blade due to gas in an empty and congested stomach.

For this class of cases, I have found thialion almost a specific, taken in hot water, night and morning, as it not only soothes the congested stomach, but acting on the liver removes not only the alcohol imbibed but also with it lithia resolves the uric acid and urates which are a by-product of alcoholic indigestion, to such shape that what does not pass through the bowels with the help of the increased biliary secretion, may pass through the kidneys without harm to them.

I am not writing a temperance article, but it is also true that as drinking is a disease largely due to alcoholic gastric irritation, I have also found that the soothing effect of thialion thus taken into the stomach has helped several of my patients to give up drinking, as the irritation being removed by its use, alcohol in the quantities drunk before was nauseating.

This article is written only to call your attention to the only remedy that I have ever met, that will help us to treat not our patients but our friends, who are more to us than our patients.

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#### LITHEMIA.

BY F. W. GAVIN, M. D., CANTON, O.

Read before the Canton Medical Society, June 7, 1901.

(Abstract from the *Cincinnati Lancet-Clinic*, July 6, 1901.)

It is my purpose to call your attention briefly, and in a general way only, to an abnormal condition of the human system which is not always recognized by the physician, but which, nevertheless, exists very frequently, and is the cause of many of the ills which afflict suffering humanity. I refer to the condition known as the uric acid diathesis, which has been designated by the terms lithuria, lithiasis and lithemia, the latter being the one usually employed by modern writers. There are some intricate unsolved problems connected with the subject named, the solution of which I shall not attempt, but shall simply call your attention to some of the morbid manifestations arising from the condition under consideration, in the belief that a recognition of their cause will aid us in our therapeutics. I do even this with some reluctance, because my observations have not been conducted with the scientific accuracy that the importance of the subject warrants: but I do so hoping the discussion may lead to investigation by more competent observers, and that thereby our patients may benefit and our efficiency as practitioners be increased.

The subject is an important one, because, as I believe, many cases come under observation in which the chief ailment has its origin in the abnormal condition of the blood we are now considering, and their real value not being recognized, the treatment is neither scientific nor satisfactory. This condition was imperfectly described by the older writers under the name oxaluria or oxalic acid diathesis, being so named because oxalic acid was found in the urine. Investigators later proved that the oxalic acid is the product of the oxidation of the lithic acid, and that excess of the acid

is the essential pathological element of the condition. It has also been demonstrated that where the condition exists lithic acid is first found in the blood, and later, in excess, in the urine. The condition of the system is called lithiasis by Fothergill, but this term is now employed to designate calculi formed in any part of the body, and the term lithemia to indicate an excess of the lithic or uric acid in the blood and tissues of the body. Certain conditions favor its retention in some of the organs and tissues until foods or medicines which favor or produce alkalinity of the blood are taken, when it becomes soluble and is washed out of the tissues into the blood. It is while circulating in the blood that the peculiar abnormal symptoms produced by its presence in excess supervene. \* \* \* \* \*

Closely connected with the subject of uric acid formation is that of its retention and accumulation in the system. It would be immaterial how much were formed if it were all readily excreted from the blood and tissues of the body. Hence, uric acid excretion is even more important than its formation, as it is only from its retention that direful effects result. It has been demonstrated that acids retard its excretion and thereby favor its retention. All foods which favor acidity may therefore be hurtful if taken in excess. All malt liquors and light wines which give an acid reaction are potent for evil, and often are active agents in the accumulation of deleterious material. Want of physical exercise, also, indirectly, is a factor in the production of an excess of uric acid. Sedentary habits diminish the quantity of tissue building material required by the organism and retard the excretion of the excess taken. Exercise promotes excretion by lowering acidity, improves digestion and assimilation and lowers the high arterial tension by relaxing the arterioles of the skin.

The treatment of lithemia is probably secondary to the prophylaxis, and a rational aspect for the treatment of this disease would be temperance in eating and drinking. Especially would it be an appeal for limitation of the quantity of nitrogenous food for the actual requirements of the system and a total abstinence from malt liquors and acid wines, superadded, of course, with a proper amount of physical exercise, preferably in the open air. From the foregoing considerations it is apparent that the best treatment for the actual condition is to diminish the formation of uric acid and promote its excretion by using some means to diminish acidity, as acidity has been shown to interfere with its secretion, and favors the accumulation of undesirable material. These indications are best fulfilled by reducing the amount of animal food taken, or entirely excluding it, and making the diet to consist of fruit and vegetables. Haig, who was himself a great sufferer from migraine, found that attacks were mitigated in severity and diminished in frequency as soon as the animal food was limited, and after wholly abstaining for a while, the attacks ceased, but on again resuming a meat diet returned, disappearing permanently upon continued total abstinence from animal foods. It should also be remembered that an excess of saccharine and farinaceous foods, while they do not contribute to the formation of uric acid, favor its retention, through the acidity engendered by them.

It appears that the natural fruit acids do not favor acidity in the fluids of the body; therefore, fruits, including oranges and lemons, may be freely taken. From the fact that alkalis favor the solubility, and through this property promote the excretion of uric acid, it is rational to deduce that they are indicated in treating lithemia, and of all drugs that have been employed in this condition they are, probably, the most efficient. Temporary disappointment may occasionally be experienced from the fact that when the lithic acid is retained in the tissues and an alkali is given, which renders it soluble, and it is then washed out into the blood, the unfavorable symptoms may be aggravated, but by their continued administration it is eliminated and favorable results follow. Recently piperazine has been highly recommended as a solvent for uric acid. It is claimed that this remedy maintains in solution the uric acid of the blood and prevents its deposition in the various tissues. It is affirmed that it actually dissolves uric concretions that have existed for some time in the joints

and kidneys, being especially endorsed in renal lithiasis in which it is said to rapidly bring about a discharge of the concretions and to guard the patient against recurrent attacks of renal colic. As the disorders for which this is recommended are chronic in nature, and of necessity its administration must be continued a long time, (in quantities of sixteen to thirty grains daily), its present high price will prove an objection to its general use. So also with a later drug, the laxative salt of lithia, termed thialion, which I have recently used with seemingly beneficial results even more marked, and, of course, not so long continued in use as the former drug, these patients usually being constipated, with dry skin and scant urine, producing burning pain when voided. I advise a hot bath once a day, regulate the diet, allowing only a small amount of meat once a day and a more liberal supply of vegetables, water being substituted for tea, coffee or liquors, and a brisk walk of half a mile daily, giving the thialion, a drachm in a wine-glass of hot water every three hours, gradually diminishing the amount as improvement progresses. In a few weeks' time patients may regain their usual health.

I close with a single practical suggestion, except for persons engaged in such active manual exercise as produces a rapid destructive tissue metamorphosis, and who, therefore, require a large amount of tissue building material: Meat should not be eaten more than once a day, and by those of sedentary habit even this could be readily dispensed with, if a liberal amount of milk, eggs and vegetables, rich in proteid matter, be indulged in. But let all who are threatened with lithemia reduce their consumption of these to a minimum quantity.

ROOM 15, ERVIN BLDG.

#### URICACIDÆMIA.

BY EDMOND JOHN MELVILLE, M. D., C. M., BAKERSFIELD, VT.

(Reprinted from *The Clinical Reporter*, August, 1901.)

While cases of genuine gout are rare among Americans, on account of their active habits, we see very frequently patients suffering from so-called rheumatism and neuralgia, who, in reality, have irregular gout. This disease is called by a variety of names—as lithuria, lithæmia and the lithic acid diathesis.

Eminent authorities, as Murchison and Bouchard, hold diametrically opposite views regarding the pathological conditions necessary to produce this common affection. However, it is at least safe to say that imperfect oxidation is the chief causative factor in the process. This is followed by retention in the system of the products of retrograde metamorphosis, and in some cases that I have seen, a deposit of urates in the joints, which simulate articular rheumatism. Still, the pathology of "the uric acid habit," is not so interesting to the rank and file of the medical profession as is the *treatment* of this disorder. Therefore, in reporting the following clinical cases I will endeavor to explain my plan of treatment, which always relieves and in the majority of cases brings about a complete cessation of all the symptoms.

CASE I. Mrs. J. S., aged 72; house-wife; hard working woman, who had always been well. In Sept., 1900, she began to lose power of moving left arm and hand. She was treated for four months for creeping paralysis. I was consulted in Feb., 1901. Examination revealed the arm in normal condition as regards sensation; no tenderness, no soreness nor swelling. The temperature was normal; pulse, 80; respiration, normal. Used massage, electricity, antirheumatics, etc., for three weeks, without any beneficial effects. Passive motion of the arm now began to be very painful. Examination of the urine at beginning of the fourth week showed uric acid greatly in excess. Thialion was given in teaspoonful doses dissolved in a pint of hot water every four hours and sipped slowly. This was followed in twenty hours by

free purgation, an increase in the volume of urine secreted, and a diminution of the uric acid. Then prescribed thialion in teaspoonful doses, in a glass of water, night and morning and  $\frac{1}{20}$  gr. of strychn. sulphate before meals. At the end of ten days all medication was discontinued, as Mrs. S. declared herself well. Prescribed massage of the stiffened muscles with hot vaseline, which completed the cure.

CASE II. M. D., married; aged 57; family history, good; hotel-keeper for years, had lived not wisely but too well. For the past ten years had been an agriculturist. May 2, 1900, developed pleuro-pneumonia which ran a regular course, fever reaching normal on the ninth day. Every third day thereafter, fever rose to  $102\frac{1}{2}$ , patient complaining bitterly of stabbing pains over the left side. Used blistering and morphia, etc., for a week, with but temporary relief. Friction sound over pleura very evident. Had treated him in the past for excess of uric acid, and now examined his urine, to find it greatly in excess. Gave thialion as in case 1, until free catharsis ensued. After forty-eight hours urine was again examined, when the uric acid was found to be slightly above normal. The pain in pleura was diminishing and friction sound absent. Temperature, pulse and respiration now became normal and remained so. His complete recovery was prompt and uninteresting. During the past year I have examined his urine several times and have found no excess of uric acid. However, he takes thialion about once a week as a gentle laxative, and to prevent the uric acid habit.

CASE III. Mrs. C. B., aged 48. In January, 1901 she had lagrippe with a recurrent attack in February, 1901. In April she began to develop soreness of joints; hips, knees, ankles and toes being attacked simultaneously. Joints were much swollen; were tender and creaked under manipulation. Temperature, normal; pulse, 85; respirations, 19; anorexia, complete; tongue, coated white; bowels, constipated; urine, loaded with uric acid and very scant. Diagnosed lithæmia. Used cabinet-bath once a day. Opiates to control pain were given. Gave thialion in drachm doses, ordering that the patient sip a glass of hot water slowly shortly afterwards. This was repeated every five hours. The case proved to be an obstinate one, and only after eight doses had been given did the bowels act freely. As patient was rather anæmic, gave iron, arsenic and strychnine. This line of treatment was followed out more or less thoroughly, avoiding too profuse purgation, for three weeks, and although Mrs. B. had an acute exacerbation of the disease during that time, her gain was marked. At present, June 1, 1901, she experiences some stiffness in the joints, and occasionally a pain through the left heel. Nevertheless, she is doing her own housework with very little assistance. The thialion is still continued night and morning.

In reporting the above cases I have purposely refrained from making any mention of the good results obtained from any hard and fast rules regarding diet and exercise, as I believe these have little or no curative powers.

### THIALION—ITS THERAPEUTICAL INDICATIONS WITH CLINICAL REPORTS.

BY C. W. CANAN, B. S., M. D., PH. D., ORKNEY SPRINGS, VA.

(Reprinted from *New England Medical Monthly*, September, 1901.)

A few years ago my attention was called to this remedy by a brother physician. This friend said he had been a great sufferer from uric acid toxemia and that thialion was the only remedy that gave him anything more than temporary relief. This remedy he said had cured him and he had since prescribed it in a number of cases with the most gratifying results. I at once secured a supply and began prescribing it whenever a case presented itself in which it was indicated—at the same time making

notes of each case and the results obtained. These notes now cover such a variety of cases that I thought a report of some of them would at least be instructive to the younger members of the profession, who have not had an opportunity to investigate the many good things in store for them and their patients not mentioned in the text-books. Another reason for calling attention to this remedy, is because it is indicated in a list of diseases in which the physician heretofore exerted very little curative power; also because the symptoms of the diseases in which it is indicated are protean in number and hard to classify. Thialion is a new salt of lithia combined in an original manner with an alkaline laxative; making it an ideal remedy in the diseases, hereafter mentioned. Thialion is an ethical remedy, manufactured from pure drugs, and advertised only to the profession.

All through a long list of cases in which the author has prescribed it the results have been most gratifying and failures only occurred when the cases were not properly selected, a mistake was made in the diagnosis, or when the patient failed to carry out certain directions in reference to diet or exercise. The treatment of diseases (caused by excess of uric acid), with the salts of lithia in the past, gave fair results and was a step in the right direction. The good results obtained from thialion are far superior to those ever obtained through the lithia treatment, in the same class of cases; because it is more easily absorbed, more diffusible and decidedly a more powerful solvent and eliminator of toxic poisons.

The therapeutical indications for its use are numerous and its field of usefulness grows broader as time passes. It is especially indicated in the treatment of gout, rheumatism and all allied conditions resulting from a uric acid diathesis. Its great solvent power fits it especially for the treatment of this class of cases.

Some physicians believe that very few diseases are the result of a uric acid excess but in this they are mistaken; at the present it is well established that an excess of uric acid in the blood and tissues is the underlying cause for a great variety of diseases, yet but imperfectly understood. The symptoms are so masked in many cases that a clear diagnosis is difficult; but where uric acid toxemia is suspected as the cause I know of no remedy so valuable as thialion to clear up the diagnosis. In chronic gout and rheumatism it should be prescribed for a long time after symptoms have disappeared so as to remove all poison and deposits from the system. It is also a remedy of decided promise in the treatment of Bright's disease, especially that form in which uric acid is the main factor in causing the disease. This form is seen in persons who have a gouty diathesis and drink beer or alcoholic stimulants to an excess, yet the author has seen a few cases in which the patients were abstainers from all kinds of stimulants, but the diathesis was always present.

These patients live longer, even if a cure is out of the question when treated with thialion than any remedy we have ever prescribed. If these cases are seen early and this remedy prescribed—say three times daily before meals in hot water until the intestinal tract is thoroughly cleansed, then as often as necessary to keep them in a soluble condition, with proper dieting and other adjunct measures,—a cure may be expected. In cases more chronic in nature the patient's life can be prolonged for years. The advantage to be gained is two fold; (1) its power to eliminate poison, and (2) its stimulating influence over the liver.

In the treatment of asthma it is a remedy of decided value, prescribed rather frequently at first, and then, as indicated by the disease, until a cure is effected. The author is a firm believer, that asthma uncomplicated with throat or lung trouble is due to a dyscrasia of the blood system—lithæmia or leukæmia. I have demonstrated this to my own satisfaction and find "thialion" a remedy of decided curative value in the disease. The same is true of it in gastro-hepatic disease. It is far superior to the calomel treatment in hepatic conditions.

Prescribed in genito-urinary diseases—urethritis, cystitis and other allied conditions it is a remedy of marked value. It alkalifies the urine, (when that is necessary),



allays irritation, stimulates the liver, freeing the portal circulation, unloads the lower bowel and eliminates poison from the system. In this way it goes far toward curing these diseases.

It has been prescribed in albuminuria of pregnant women with success. As soon as any symptoms of this disease are discovered the patient should be placed upon thialion at once and continued in doses sufficient to keep the liver and kidneys in an active condition, because in pregnancy auto-intoxication is very liable to occur if the patient belong to a family where the uric acid diathesis is hereditary. In puerperal eclampsia large doses are necessary in the beginning and varied thereafter to meet indications. Thialion is also recommended in cholelithiasis—gall stones by good authority. It is claimed that if it is continued for a good while that it will prevent their formation. It is also a remedy preferable to calomel and many other drugs for cleansing the intestinal tract before beginning treatment of the many acute disorders, viz., typhus, typhoid, malarial and scarlet fevers. A few brisk doses will stimulate the liver and kidneys and clear out retained poisonous matter from the alimentary canal; thus preparing the patient to go through his illness with less suffering and less danger of losing his life. This drug is especially indicated in uremic and gouty headaches. When you have a case of headache that you cannot find cause for, try thialion and you will almost invariably succeed in relieving your patient if it is caused from retained toxic poisons within the system. In lead poisoning, alcoholism and the treatment of the opium habit, it is a remedy of value if intelligently prescribed. That long train of symptoms due to chronic constipation can be permanently removed by the judicious use of this remedy. It should be prescribed in teaspoonful doses before breakfast each morning in a cup of hot water; at the same time the patient should be cautioned as to diet, exercise, massage, etc. It is also serviceable in neuralgic and neurotic conditions in patients suffering from lithæmia. It will relieve melancholia and hypochondria due to the same cause. There are many other conditions and diseases in which its use will suggest itself to the thoughtful physician. I will now record a few clinical reports taken from notes made at the time we prescribed the drug.

CASE I. Miss M. D. Farmer's daughter aged 17, good habits, had an attack of acute inflammatory rheumatism two years ago, affecting ankles, knees, wrists, elbows and small joints of hands and feet; had to be handled in a sheet for about ten days when she partially recovered; but every decided change in the atmosphere would bring on a subacute attack. She spent two years in this condition sometimes nearly free, at others had to walk by aid of crutches, and sometimes confined to her bed notwithstanding she had taken various remedies. About two years from first attack another very acute one came on, and she came under my care. She was given alkaline baths, and thialion was prescribed in teaspoonful doses every three hours until the bowels were well open and thereafter once or twice daily as indicated. The pain and swelling soon disappeared and improvement was marked in a few days. She made a complete recovery in six weeks not even a trace of the trouble remained except some damage to the heart, but that has been greatly reduced. One year has since elapsed and she has been entirely free.

CASE II. Mr. B. F. S. Merchant, aged 69 years, has been a high liver eating for years whatever his palate called for, and drank the richest wines to be found on the market. About ten years ago he developed gout and for a long time was a continuous sufferer from this malady; although treated by the ablest men in the profession. When he came under my care his feet were swollen and painful, also one elbow. After soliciting his history and making analysis of his urine, which revealed the cause to be an excess of uric acid, I at once decided to place him upon thialion in teaspoonful doses four times daily before meals and on retiring: these were reduced finally to one dose each twenty-four hours. The improvement in this case was certainly remarkable. The pain and tenderness began to disappear at the end of the first week; a reduction of the swelling soon followed and in one month the old gentleman expressed himself

as feeling better than at any time since he had contracted the disease, ten years ago.

He still continues the use of the remedy occasionally, and has been free from gouty symptoms.

CASE III. Miss E. S., accountant, age 28 years, weight 152 lbs., good habits, and a good family history, except for gout. Poor health since eighteen, complains of headache in left temple (sometimes right), bad eyes, had glasses prescribed two years ago by regular oculist; cannot do without them; complains of a great deal of vertigo. Pains, some through body, sides of legs, but especially backache. Also complains of indigestion and constipation. Menses scant, urine small in quantity, high colored and loaded with phosphates, no albumen or sugar. Twitches and starts while asleep. Has been treated by various physicians with poor success. I diagnosed the case as one of neurosis, the result of uric acid excess, and prescribed thialion in teaspoonful doses before meals for the first few days and once per day thereafter. Improvement began almost immediately and in two months she pronounced herself entirely cured. Last winter she had a severe attack of lagrippe and the urine again became scanty and high colored and she suffered severe pain in back. I again prescribed the thialion and she rapidly improved and has since remained in good health.

CASE IV. Miss R. S., typewriter, (sister of last patient), age 22, has been suffering from constipation, vague neuralgic pains in different parts of body, rheumatism of wrists and elbows, sometimes in one, then again in the other. Left side of face and forehead covered with pimples; chin and lips contain ugly brown patches or liver spots. She began menstruating at fourteen, has been normal in that respect, except an itching all over the body at the beginning of each period, which disappears when flow is well established. This girl, like her sister, had been treated by able physicians and had taken patent nostrums enough to make a bath. When she first applied to me for treatment I diagnosed her case as that of acne and chloasma, not being sure as to the cause, but concluded it was indigestion and constipation. These were corrected as far as possible, but the constipation still clung to her at times and her condition improved but little. Prescribed phosphate of soda without benefit. After several analyses of the urine I decided that the cause lay in a uric acid diathesis and began treatment accordingly. Thialion was given; proper restriction of diet enjoined; instructions given in massage and to my gratification the case improved rapidly. Bowels became regular, the acne and chloasma disappeared, and her health has been as near perfect as one could expect.

CASE V. Mrs. L. E., married, aged 36, mother of four children.—youngest, 8 years old, with good family history, has suffered constipation for a number of years. For two years, before she came to me for treatment she had been suffering from an eruption, at times covering the whole body, face and head. This came in the form of small red pimples, which increased in size until they coalesced with each other in certain regions. Some would disappear in a short time while others broke down with a formation of pus and healed under a scab. The itching at the beginning of the eruptions was intense, in fact almost beyond bearing.

Shortly after the appearance of the first eruption she began to suffer from an acute pain in her foot; this pain extended upward affecting ankle, knee, hip, shoulder, finally locating itself in the hip and shoulder. The right side was affected first but later the same occurred on left side. Since these occurrences she has suffered a great deal, her joints having become stiff preventing free movements. During the past two years she was treated by two physicians, one claiming the cause to be a congestion of pelvic viscera. The second one treated her for indigestion and constipation thinking that her troubles originated from these. Neither treatment benefited her and when she came to me she was so stiff that she could not bend forward and touch the floor. I treated this patient symptomatically for a while, but during this time I was studying the case carefully and from the knowledge gathered, linked with that from several examinations of her urine, I made a diagnosis of uric acid poisoning. The treatment

was directed accordingly and from the very first week improvement was noticed. The treatment consisted of first flushing out the lower part of the alimentary canal with large quantities of water to which a teaspoonful of table salt was added to each quart. This was followed with thialion, teaspoonful doses in plenty of hot water before each meal; this was reduced to two doses daily, and finally only one was given. This plan of treatment with proper dieting and exercise resulted in curing the patient.

CASE VI. Mrs. R. A., widow, age 51 years, mother of two children, the youngest 15 years, had been in good health until three years ago when she contracted malaria. Following this came congestion of kidneys and rheumatism. Before coming to me in the third year of her troubles she became irregular and a little later her menses disappeared. At my first call her left foot and ankle and right wrist were swollen, she was sallow and anæmic, spleen enlarged, constipated, and was having well-marked chills every few days. She could not sleep because of hot flushes and burning of the skin with some vague pains throughout the system, sometimes in one region, at others in another. Urine excessively acid; sp. gr. 1.028; quantity voided greatly below normal; no albumin or sugar but heavy deposit of phosphates. I diagnosed the case as one of malaria complicated with uric acid toxemia and vaso-motor disturbances of menopause. Thialion was used freely the first few days with colonic flushing with water, until alimentary canal was thoroughly cleansed then the thialion was reduced to just enough to keep bowels soluble. Then I prescribed the following: Before chill time, caroid, grs. iij, with one drop of Fowler's solution, repeated in half an hour. One, and at most, two doses of the above controlled the chills each time. Later I prescribed bromides at four and eight P. M. to control the flushes and produce sleep. Also prescribed eight drops aromatic sulphuric acid, well diluted after meals. Bowels were kept regular with thialion throughout the treatment. One condition disappeared after another and in a few months my patient was feeling herself again. In six months she considered herself cured, and stopped treatment.

#### TREATMENT OF SCIATIC NEURITIS DUE TO THE URIC ACID DIATHESIS.

BY H. EDWIN LEWIS, M. D., BURLINGTON, VT.

(Reprinted from *The Vermont Med. Mon.*, Sept. 25, 1901.)

Of all the manifold diseases that afflict mankind there are few more distressing or resistant to treatment than sciatic neuritis of rheumatic or gouty origin. The agony and suffering that a patient experiences with an attack of sciatica, bespeaks every possible effort to afford immediate, and so far as possible permanent relief. That the successful treatment of this condition is frequently very difficult and disappointing is well known to every practitioner. The multiplicity of remedies recommended certainly indicates this fact. But one can have little wonder that dismal failure has crowned so many of the therapeutic measures advised for this disease since the error is so commonly made that the local expression of sciatica is treated and the cause completely neglected.

It is fortunate for suffering humanity that latter day ideas of medical science define the removal of the cause as one of the prime requisites in the complete or scientific treatment of any and all diseases. To-day a doctor must not only give his patient surcease from pain or relieve the acute symptoms—he must bring all his skill and scientific knowledge to bear on the removal of the various factors that produce the disease or contribute to its results. As a consequence a knowledge of internal medicine was never more imperative than now. A competent physician must interrogate not only the patient and his symptoms, he must also carefully consider those deviations from a physiologic standard which produce the symptoms and constitute the pathologic entity of each disease.

It is not intended to minimize the duty of medical men to relieve pain. The power and privilege of doing this is one of the highest and noblest functions of the medical profession. But I wish to accentuate the fact that our duty does not cease when we have relieved a patient's pain. We must also bend our energies toward the prevention of future attacks.

Rheumatic sciatica is no exception to the rule. Relief of pain even for a considerable period of weeks or months does not signify a cure. The predisposing cause of unexcreted uric acid and its salts may still remain and in the presence of exposure to cold or dampness the neuritis may recur with all the pain and suffering of previous attacks. Each attack makes the prospect of a complete cure less promising, so it becomes of imperative importance to cut short not only the immediate symptoms but also all the contributing factors that produce them and render their recurrence probable.

Since this paper has to deal with sciatica of rheumatic origin it will be understood that all statements refer to a neuritis caused by uric acid and its salts. No reference will be made to sciatica due to purely mechanical or idiopathic causes.

It is an indisputable fact that a fair majority of cases of sciatic neuritis occur in rheumatic subjects. The disease more frequently attacks men at an age when the metabolic processes are more apt to give rise to accumulation of uric acid, and during a period of life when exposure to cold and wet more commonly contribute to the pathologic deposition of the same in the joints and tissues. The irritant effect of uric acid and its salts on all tissue, but particularly on that which constitutes the nervous system is well known. Many and many a case of neuralgia can be traced to the failure of the body to eliminate the ashes that result from physiologic processes. Neuralgia in many instances therefore, is nothing more nor less than the accumulation of an irritant poison in the system that is particularly prone to attack nerve tissue and produce pain. If this is so, the clearest indication for treatment is to bring about the elimination of such poisons through the natural channels of excretion, and clinical experience shows that just such measures produce the most satisfactory and permanent results.

In rheumatic sciatica the nerve is found on examination to be red, swollen and inflamed. A distinct interstitial neuritis is present and there is ample evidence to show the presence of uric acid irritation. In this class of cases the treatment is well defined. The deposition poisons must be dissolved and removed from the tissues and eliminated by the natural methods of excretion, i. e., defecation, urination and perspiration.

To promote solution of the uric acid and urates the alkalies are clearly indicated. Under their use the uric acid is greatly diminished being rapidly converted into urea, and in addition oxidation is increased and waste products more readily excreted. Of all the alkalies, the lithia salts seem to be the most potent in obtaining the desired results and as a consequence they have won high reputation in the treatment of rheumatic and gouty conditions. Colchicine is another valuable drug and the use of the salicylates is frequently followed with satisfactory results.

But therapeutic measures which simply effect solution of the uric acid poison are not enough. We must carry our efforts further and by stimulating the emunctories permit the sewerage system to carry from the body all of the retained products of waste. Laxatives, and even cathartics in some cases, are consequently necessary adjuvants to the alkalies. Diuretics are useful, but the alkalies, particularly the lithia salts, usually act in this way. A very useful salt is that known as thialion. It combines the solvent influence of lithia with marked laxative and diuretic properties.

In the treatment of sciatic neuritis of rheumatic or gouty origin, I have found thialion remarkably efficient. Its proper administration will cut short the most severe attacks, and when continued under a careful dietetic regime it will certainly effect a permanent cure in the majority of cases.

In beginning the treatment of rheumatic sciatica thialion should be given, a full teaspoonful in a glass of hot water every three hours until several free movements from the bowels are produced. Using so much water to each dose has the double influence of producing diuresis and at the same time preventing any irritating effect on the stomach or digestive tract. After free catharsis has been accomplished thialion should be given a teaspoonful in a full glass of water one-half hour before meals three times a day. Careful tests of the urine should be made from day to day and when the urine becomes neutral or slightly alkaline, the administration of thialion should be reduced to one teaspoonful a day, preferably in the morning. Thus used, thialion gives results highly satisfactory to both doctor and patient, but it should be remembered that careful attention to the diet is also necessary. As so admirably summed up by Thompson in his work on "Practical Dietetics"—the "basis of the diet should be farinaceous food with a few fresh green vegetables. Fish, eggs and fowl may be eaten, but dark meat is not desirable. Sweets and alcoholic beverages should be omitted from the *menu*, and all foods should be plainly cooked and eaten in moderation." A patient who will follow this treatment and regime with painstaking exactness can feel assured that his recurrent attacks of acute sciatic neuritis will grow less and less frequent and finally cease altogether.

For the immediate relief of the agonizing, excruciating pain caused by rheumatic sciatica many different remedies and procedures have been recommended. Some have been found serviceable but not a few have proven useless. One of the simplest and most efficient methods at our command for relieving the acute pain of sciatica is the subcutaneous injection of a pint or more of hot saline solution in the posterior portion of the thigh in the vicinity of the sciatic foramen. The analgesic effect of such an injection is frequently surprisingly prompt and complete. In exceedingly chronic cases, however, the effect of the saline injection is neither so rapid nor satisfactory and in the presence of extreme pain, recourse to the hypodermic injection of morphine must be taken. Many authorities inveigh against the use of morphine, but when it is administered by the physician, as it always should be, there is little danger of the patient's contracting the habit, particularly if he does not know what is being given him. Certain it is that there are times when nothing else will afford relief, and in many instances its sedative influence will give valuable assistance in mastering the malady. Next to the saline injection, and the hypodermic injection of morphine, I have found the use of the thermo-cautery most efficient. It should be used thoroughly over the course of the nerve and the burns dressed with some soothing application. But no matter how complete or immediate relief is obtained from pain by these measures, careful attention should be paid from the first to careful systemic treatment for the purpose of removing the cause. A prudent diet and hygienic habits should be rigidly followed, and the wise systematic use of thialion will do the rest.

#### RHEUMATOID MENINGITIS.

BY O. HENLEY SNIDER, A. M., M. D., ATLANTA, GA.

(Reprinted from *New England Medical Monthly*, April, 1902.)

The above caption will appear to some as oddly coined but it is nevertheless applicable, and properly so in a most interesting case that recently came under the writer's care.

The case was one of chronic rheumatism, with severe attacks at irregular intervals, between which the patient was able, for consecutive months, to go about the usual domestic duties, though at no time without more or less suffering.

In the instance under consideration, the brain symptoms were simultaneous with—if not preceding—the aggravated rheumatism, and were evidently set up by the same morbid conditions in the system, thus being a part and parcel of the disease proper, rather than an independent or complicating feature, in the usual sense.

The case was one of uric acid excess, and in line with the theory of Dr. Haig, and quite eminent American authorities, the metabolic influences of this element evidently producing the brain symptoms in quite the same manner as synovitis, gout, etc. are produced.

I was called to Mrs. F., a mother, 56 years old, after two other physicians had treated the case, one, and nearly two weeks respectively. The patient was of a family whom I had never before called upon, and being in the vicinity of my residence out in the rural suburbs, where I have enjoyed an appreciative and select element of the patronage, I felt especial interest and anxiety as to the outcome.

From information as elicited it was easy to conclude that the patient was attacked quite suddenly with pains about the neck, extending upward through occiput and to the frontal region, becoming insensible before she could be prepared for the bed, remaining in a comatose state until about the fifth day, when consciousness slowly returned.

The patient continued to suffer severe pain at frequent intervals, however, and when I saw her about three weeks after she was first taken, these severe attacks were centered about the lumbar plexus; coming on mostly at night, when prominent darting, lancinating currents, radiating upward into the head and down the sciatic route to the ankles. The latter were somewhat swollen, as were also the feet.

At this time her urine was very scant, highly colored, of heavy specific gravity, showing extreme acidity, and some considerable albumen, with frequent desire for micturition, and intense burning sensations following it; and with skin and general secretions *en status quo*. She had recurring rise of temperature, frequently reaching  $101\frac{1}{2}^{\circ}$ , with contracted pupils, glimmer before eyes, lapse of memory, etc., and especially at such times as severer pains came on.

Following the old routine line of treatment on the theory of systemic causation— with such incidental means as indications called for,—I brought about some slow improvement within about three weeks; but I could plainly see that the entire family, with the patient, were growing quite “impatient,”—regarding the improvement as rather slow.

I had learned that the well-known Dr. Wm. M. Durham, of the Eclectic School of Medicine in Atlanta, had treated this lady during her last severe attack (about nine months prior to this), at which time the stomach was the principal accompanying trouble, and that his success won their confidence, and hence I took occasion to consult the doctor, and after relating the prominent features of the case, his only advice was to put her on thialion. On the following day I carried out these suggestions, some feelings of misgivings, however, inasmuch as I had never used thialion.

To my agreeable surprise, the patient showed some improvement almost immediately, which became so substantial as to justify my dismissing the case eleven days later, with instructions, however, to keep up the thialion indefinitely, the patient then being up and about the house.

This was early during December last. About ten days ago the husband called to ask me if the patient could leave off the thialion entirely, as, he said, she was in better health than she had been in three years. I insisted that she should keep up the use of the drug, a few doses weekly at least, and this I presume she is doing.

One feature quite prominent in this case, was the evident interstitial nephritis, thus confirming the uric acid theory of primary cause and the effects of thialion in reducing its excess. Another feature worthy of mention is the fact that the pains were increased in severity the first two or three days, to the point that improvement in condition or kidneys alone kept me probably, from discontinuing thialion through

disgust. The condition, however, was evidently due to the sensitive process of acid reduction itself, as carried on through the blood, and probably partly to bringing the patient from under the baneful effects of opiates, which had doubtlessly augmented acid accumulation, through absorption from gastro-intestinal tract.

In this connection I would insist that the pathological state of the brain coverings, like the general rheumatic diathesis, was essentially dependent upon uric acid excess—i. e., an excess due to accumulation and in turn dependent upon lessened excretion rather than secretion.

The germ theory of causation as adhered to by such eminent pathologists as Drs. Henry Heimer, A. Jacobi, Jas. J. Walsh and others equally learned, may be sound, but the first and latter are evidently more sound in their doctrine; i. e., that even though germs do exist, their function is to create the uric acid; and that the old line of routine alkaline treatment retained some adherents through its influence solely in favoring diuresis, and thus eliminating uric acid, and probably lessening the micro-organisms (Cf. report of N. Y. Academy Med.: *Pediatrics*, Vol. II, No. 10, May 15, 1901).

But thialion has been abundantly proven to possess solvent powers, especially by formation of *soluble* urates, thus facilitating the happiest means of excretion; and, to the writer, it showed marked influence over biliary secretions, and the means of diuresis.

With reference to the deposition of these infinitesimal scales directly upon synovial membranes and kindred structure, thus causing the several forms of rheumatism, the writer is confirmed as to its truth, and holds from observations, that an identical pathological process in the meningeal membranes, favored by hyperemia in that direction (determination of blood to the brain) does in like manner set up meningitis, either chronic or acute (Cf. Dr. C. L. Tarleton, *Wisconsin Med. Rec.*, Feb., 1899).

The writer's observations as to the influence of thialion over the kidneys in the case above related, induced him to employ the remedy in a case of Bright's disease (with tendency to general arteriosclerosis) far advanced, with marked improvement within eleven days.

#### A SERIOUS CASE OF DYSPEPSIA CAUSED BY URIC ACID.

BY W. H. BENTLEY, M. D., LL. D., WOODSTOCK, KY.

(Reprinted from *Uric Acid Monthly*, July-August, 1902.)

In August, 1899, I received a letter from Dr. S., a former friend of mine, but now, and for the 15 years last past, living at an extensive mining center in Arkansas.

In this letter the doctor stated that his eldest daughter, Betty, 24 years old, and unmarried, had enjoyed excellent health until she was 20 years of age, and that then, without apparent cause, she suddenly developed constantly sour stomach and utter inability to digest food, the same being raised from the stomach by sour eructations soon after ingestion—"real spitting dyspepsia," to use the doctor's expression. She had very costive bowels, but in all other respects than those named she was entirely well. She had been under the treatment of some physician all the while, but got no relief. The doctor said that there were eight creditable physicians in his town; that each one had treated the case until he voluntarily relinquished it, acknowledging his inability to relieve the patient. The last one, however, recommended a specialist living in a large city. Well, Betty was duly shipped to Dr. ———. He at first made light of the case, but after repeating for the ninth time the ant-acids, pills, powders and pepsins that she had been swallowing for years, the doctor resorted to electricity. This made her worse, and she hastened home. This was not a case for electricity. The doctor, (i. e., Dr. S.) desired my views. I replied by asking for a specimen of

the urine, for I thought this a case of uricacidæmia. In reply Dr. S. proposed to send his daughter to me for treatment, and awaited my reply. Well, early in September, Miss Betty arrived. She was the picture of despair. She had traveled all the previous night and till noon on the cars, added to which was a ten mile drive in a carriage. No wonder she appeared exhausted.

First, I gave the patient some grape juice, and told her to take all the rest possible. For tea, she had a cup of Japan tea with some crackers, and some of malted milk. That night the nurse procured for me a vile of urine. I analyzed same during the next day, and found that the patient's illness depended upon lithemia.

TREATMENT: That night on retiring she took a heaping teaspoonful of thialion in a teacup of hot water. She was directed to take a similar dose on arising in the morning, to be repeated every three hours till the bowels acted copiously, and then three times a day, before meals, until the bowels became too active.

Improvement was almost immediate. In three days the thialion was reduced to one dose a day. In ten days she was eating with impunity anything she chose. She was fond of vegetables, and ate at will, bacon, cabbage, beans, green corn, tomatoes any kind of bread, pastry and cake of all sorts.

She remained with us till Oct. 25th. She had taken no other medicine but about 2½ ounces of thialion. She had gained 35 lbs. in weight from Sept. 5th, and was in perfect health.

When she left I gave her a four ounce bottle of thialion, with directions for use, but she has had no occasion to use the medicine, as she often writes to us and always says her health is perfect. Her last letter, dated March 28, 1902, contains this statement.

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#### AN EFFECTIVE URIC ACID SOLVENT AND ELIMINANT.

BY S. E. FOWLER, M. D., PH. D., KANSAS CITY, MO.

Prof. Diseases of Women and Genito-Urinary Diseases, Cook Memorial Medical College.

(Reprinted from the *Canadian Journal of Medicine and Surgery*, August, 1902.)

Some time ago my attention was called to thialion, a laxative salt of lithia. Since then I have thoroughly tested it in a number and variety of cases, where in my judgment I thought its use was indicated. I can say that it has never disappointed me. In hepatic torpor, constipation, rheumatism, gout, incontinence of urine, and obesity, I have employed it with surprisingly good results. Have also used it in diseases of malarial origin, where its salutary effect upon the liver undoubtedly increased the efficacy of the symptomatic remedies used in these cases. I recently had a case of podagra (gout in the foot), male, aged 46; had always been a "high liver," intemperate and irregular in habits. Disease hereditary. Had been treated all along the regular lines for that disease, but with very little benefit. I put him on thialion with restricted diet, systematic exercise, and vapor baths. Decided relief in a short time. Kept treatment up faithfully for about two months, and am still having him use thialion, although patient insists that he is cured.

In cases of sluggish action of the liver, so frequently met with and so difficult to satisfactorily treat, I get better results from thialion than from any other remedy I ever used; and, in the habitual constipation so prevalent among females, I find it a specific.

A case of obesity came under my care some time since. Lady, aged 52, had tried numerous "anti-fats," etc., but, as she herself remarked, she had seemed to "fatten on them." I prescribed thialion, and the proper diet and exercise. She was under my care two months, during which time her weight decreased 27 pounds, while her general health was much improved. I understand that she is still using the remedy.



I have also used this solvent remedy with good results in acute Bright's disease, and also in the albuminuria of pregnancy.

It seems to have a good influence in all genito-urinary diseases, and is an excellent remedy in incontinence of urine. A typical case (in my mind) was in my own family. Son, aged 14, had been troubled with incontinence of urine all his life. I had tried all the remedies for his trouble with which I was familiar, and had appealed to my brother physicians, but all to no purpose. The case seemed well-nigh hopeless. This was before I knew anything of thialion. When I first learned of the preparation, I began using it in his case, and am pleased to say that good results were manifested almost from the first day's use; after about five weeks' use it was discontinued, and there has been no recurrence of the trouble since.

In renal calculi, where the calculi are composed of uric acid or urates, I consider it truly a specific, having obtained results in many cases with thialion that I have never been able to obtain with any other remedies. I would say to those members of the profession, who have never used this drug, not to hesitate to try it in the class of cases I have mentioned. There are many other classes of diseases where I am confident it will prove *the* remedy, but in which as yet I have not had the opportunity to test it.

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#### URICACIDÆMIA.

BY B. F. COLEMAN, M. D., ARGUTA, ALA.

Read before the Southeastern Alabama Medical League, Oct. 22, 1902.

(Reprinted from the *Mobile Medical and Surgical Journal*, November, 1902.)

I beg to present for your consideration, a monograph on this very important subject; but to give the subject all the attention its importance demands of the profession would require more thorough research on my part, and more of your time and patience than can well be devoted to it on this occasion, hence I will merely attempt to point out some of the more important characteristics of this abnormal condition, with its causation, symptoms and treatment, hoping only to call the attention and interest of my colleagues more fully to a pathological condition that causes so much discomfort to those of uric acid diathesis.

Uric acid is conceded to be the outcome of the metabolism of the proteid tissues of the body. It is allied to urea, but is not a less oxidized antecedent of urea, but rather a distinct product of metabolism of nitrogenous material, either of food or of tissue waste. It is, by some physiologists, supposed to be a product of the liver, while others claim that the spleen is the more abundant producer of the two organs, from the fact that a mere trace of this acid is found in the liver, while a decided amount is always found in the spleen.

It is thought that this acid is eliminated from the blood by the epithelial cells of the uriniferous tubules; but there is good reason to believe that the water and saline constituents are excreted by simple diffusion through the blood vessels of the glomeruli, and therefore influenced as to excess or deficiency by greater or less blood pressure; for the renal cells are, to a certain extent, the excretory part of the kidney. Free uric acid, in a normal condition of the system, is found in a very limited quantity, bearing the proportion of about one per cent. to that of thirty-three of urea. It is more generally combined with the salts, potassium, ammonium and calcium, forming quadrurates with these basic salts.

All ages, from the infant to the very aged, are subject to this disorder. Females are said to be more frequently affected than males, owing to their more sedentary habits.

The agencies that bring about this condition are various, such as long continued exposure to cold or wet; the consumption of large quantities of nitrogenous food; plethora coupled with sedentary habits; inattention to cleanliness; diseases that interfere with the free action of the respiratory organs; malaria, etc., are some of the causes that induce an excessive accumulation of uric acid in the blood.

Any agent that interferes with the free action of the excretory organs, may become a causative factor.

The symptoms are also various, multiple. Some of the most prominent are furred tongue, with foul breath, sallow complexion, headache, indigestion, loss of appetite, insomnia, restlessness, listlessness, loss of memory, tinnitus aurium, gaseous accumulations in the alimentary tract, sciatica, rheumatism, gout and calculi.

For the treatment of this troublesome disorder, various remedies, with varying results, have been tried from time to time. Calomel, digitalis, colchicum, acetate of potassa, the salicylates, the salts of lithium, and others too numerous to mention, have been used with more or less favorable results. The carbonate of lithium has, for a considerable period, given more satisfactory results than most of those named. The natural lithia waters do not contain a sufficient quantity of the salt to produce decided beneficial results. Various combinations, such as lithiated hydrangea, lithia tablets, and others have been recommended, but none of them have given uniform satisfaction. Lithium, in combination with an alkaline laxative, seems to more nearly meet the indications, inasmuch as the alkali combines with the acid, rendering it neutral, while the lithium converts it into the urate of lithium, which is the most soluble of all the urates.

The advantage of the laxative salt in this combination, is its stimulating effect upon the secretory and excretory organs. Until within the last few years this necessity was not fully appreciated, hence no remedy was presented to the profession, which performed the double function of converting the uric acid into an easily soluble urate, and at the same time of exciting the excretory organs to increased eliminative action, enabling them thus to take out from the blood this poisonous waste material and ridding the economy of its pernicious influences.

Fortunately for the profession, chemical science has come to our relief and given us a new salt of lithium which meets all the indications, and enables us to relieve our suffering patients of this hydra-headed monster, and restores them to health, happiness and tranquillity of the mind.

The manufacturers of this new salt have given it the somewhat unique name of thialion, thereby indicating its base lithium. It is the product of the chemical action of an alkaline laxative salt, upon lithium.

Its action is three-fold. It converts the insoluble uric acid into the soluble urate of lithium; it stimulates all the emunctories to increased eliminative action, and unloads the system of its poisonous waste material; in brief, it is diuretic, diaphoretic, and cholagogue.

This paper would fail of its purpose without a few hints in regard to diet. All nitrogenous (purin) food should be prohibited so far as possible. Acid fruits and drinks are also to be forbidden. Milk, sweet and fresh, vegetables (except beans), butter, the yolk of eggs, rice, corn bread, light bread; fowl and fresh water fish in limited quantities. The excessive use of sweets and alcoholics must be denied. The urine should be tested daily with litmus paper and enough of the salt administered to keep it neutral or slightly alkaline, and the administration kept up until all the symptoms disappear, or until the patient is cured.

I append tests for excess of uric acid. When in excess, the urine has a high color. It forms a red crystalline deposit on cooling and during acid fermentation. Precipitation is hastened and perfected on the addition of a few drops of hydrochloric acid. The deposit or sediment of uric acid crystals, heated on a piece of metal, in alcohol flame, emits a faint odor of burning hair, and, if pure, leaves little or no residue.

## MUREXIDE TEST.

Place a few crystals in an evaporating dish, add one or two drops of strong, colorless nitric acid, and warm gently. Evaporate nearly to dryness, when a yellowish red residue is obtained. On the addition of ammonia, it turns to a beautiful purple.

Heintz's method for quantitative test, which gives fairly reliable results for clinical purposes, is as follows:

Take 200 parts of urine and add to it ten parts of hydrochloric acid, let it stand twenty-four hours in a cool place. Collect the precipitated uric acid crystals on a filter, wash with cold distilled water, dry the filter and uric acid crystals and weigh, weight of filter being previously known. By subtracting the weight of the filter, the result will be the amount of uric acid in 200 parts urine.

## PREVENTIVE MEDICINES AND MEASURES.

BY J. R. HAYES, M. D., WASHINGTON, D. C.

(Reprinted from *New England Medical Monthly*, March, 1903.)

Some one has said that the first requisite for success in life is to be a first-class animal. As corollary to this, it can also be said that continuous bodily health is essential to anyone who desires to fulfill successfully the manifold duties of human life. Man himself, in order to be a first-class animal, should know the connection that exists in his choice of diet and habits of life with a healthy condition of body. He knows, perhaps, how to rear the fancy stock that he keeps, by close attention to the kind of food and the treatment he gives his animals. But at his own table he indulges indiscriminately in all manner of foods, and little thought is given to his own condition until indulgence ends in a diseased condition of body.

Prevention of disease, rather than the cure, is therefore, the paramount aim of the modern pathologist in dealing with the average man. If he, by his discoveries, can prevent the incurrence of disease, man can indeed be a first-class animal.

In view of this seemingly Utopian aim of the latter day pathologist, it should no longer be an axiom that they only who are sick need a physician. It is the healthy man who needs instructions how to keep himself healthy. He should be regularly advised by his intelligent family physician of the simple laws of disease and health, in order to escape the one and secure the other.

Whatever the human race has gained in the last half century, and this gain has been marvellous, is wholly due to the discoveries of scientists, and the reflex is shown in the treatment and prevention of disease.

It was promulgated as a fact within the past half century, that the surest and most potent factor to ward off or prevent disease, is *comfortable living*, in the generic or medical sense of the term. This means, of course, wholesome food to supply all our bodily needs, and habits of life that make comfortable living a joy to the human being.

The Creator of our universe has so arranged natural laws that they execute themselves. Obedience brings reward; disobedience punishment. All natural laws have double action, and affect the saint and sinner alike. Gravitation is the same when it keeps a strong building secure on its foundation, as when it brings a badly constructed one down in ruins.

When we obey the conservative laws of our bodies, a healthy condition is the reward; disobey them and we suffer disease and premature decay and death, and the medical scientist's field of action is to step in at this stage and alleviate the conditions consequent on disobedience, either self-committed or inherited from disobedient ancestors.

Vital statistics showed that nearly one-half of all persons born into the world die before reaching the age of five years. The survival of the fittest only, we are told is a wise provision. But this rule is necessarily an arbitrary one, because so much depends on circumstance and environment. The large percentage of fatality in early infancy is due to want of nourishment, shelter, clothing and care. In short, *want* in all its phases, rather than heredity, gives death the victory in early life. Prevention of this great mortality is easy of solution, or rather the *want* and sequent diseases that induce this mortality.

What is the most powerful adjunct to the physician in combating the tendency to disease, whether inherited or contracted? Heredity in disease is not immutable. It is not as strong as the *vis medicatrix nature*—the renewing power of nature, and on this fact we make the foundation of our faith in preventive medicine. There may be in the body of the infant the predisposition to tuberculosis inherited, but no tubercle bacillus.

Preventive treatment gives new blood and new tissues every year of its growing, and adolescence will show us a lusty youth apparently free from all disease. The revelation of the fact that heredity in disease is not as potent a factor as the renewing power of nature when assisted, has enabled us to take the widest scope in our researches after preventive measures and medicines to aid her in her efforts for conservation.

What has been accomplished during the last quarter of the 19th century, as relates to the causes and prevention of diseases, far transcends what would have been regarded even half a century ago as the wildest speculation of the theorist.

Bacteriology has brought about changes in the theory and practice of medicine that amount to a complete revolution. In certain diseases, as tuberculosis, pneumonia, erysipelas, diphtheria, all fevers and many of the exanthematous diseases, etc., the causative action of bacteria can no longer be doubted.

The conditions necessary to the development of these diseases seem to resolve themselves in a susceptibility on the part of the individual, and the lodgment and multiplication of special bacteria in the system. I think we all must agree with the views of Dr. Austin Flint, when he says that it is probably the case that a person with an inherited tendency to consumption would never develop the disease if he could be absolutely protected against infection with the tubercle bacillus, but once infected, the bacteria multiply and produce the characteristic signs and symptoms. In other persons the bacillus tuberculosis with difficulty finds a lodgment, and multiplies imperfectly.

The problem to solve in the treatment of diseases due to the action of bacteria is to destroy them and not the patient. Can medicine do this? Consumption of the lungs is a contagious disease, and there is no reason why a contagious disease like tuberculosis cannot be wholly exterminated in time.

The great value of preventive measures—isolation, disinfection and quarantine—is shown in the case of cholera, yellow fever and ship fever. The suppression of the germs of consumption is just as easy as the stamping out of those of cholera and yellow fever. We suppress the ravages of small-pox, diphtheria, yellow fever, etc., by the enforcement of sanitary laws and by obedience to hygienic rules, and hence these diseases decrease every year. Consumption is a tolerated disease, engaging our sympathy when we see it so often, while a yellow fever, cholera, or small-pox invasion causes a panic in a community, and forces the means of repression.

In this essay I am giving more attention to consumption of the lungs than to any other disease, for the reason that just now it is unquestionably the most fatal of all diseases. Whether inherited or contracted, consumption of the lungs has been, and unfortunately is yet, the greatest scourge of the human race. In view of the fact that the health departments of many of the states, and the American Congress on tuberculosis, have taken hold of the subject in earnest, and at the last session of the latter

body the problem of prevention was liberally discussed, it is to be anticipated that the death rate of *one-seventh of the whole population* from consumption alone, will soon be changed to a lesser fraction. There can be no question that the general subject will be elaborately investigated with beneficial results to the human race, now that so many organized health boards and societies have taken the subject in hand.

#### THE PREVENTION OF TUBERCULOSIS OF THE LUNGS.

We have seen that predisposition or heredity can be overcome by preventive treatment, from early infancy to mature age, acting always in concert with the renewing power of nature. Here is our field for the administration of preventive medicine. This field is well covered by the manufacturing chemist, who of late years has proved himself to be a genius in his vocation, and has relegated to the shades the hit or miss principle of officinal preparations manufactured on a small scale, and perhaps from crude material for a long time held in stock.

The reliability of the manufacturing chemist, when established, is a sufficient guarantee for prescribing the hypophosphites, the wines and cordials, the base of which is cod liver oil; the iron and manganese preparations; the derivatives of coal oil; creosote, glycerin compounds, and the many medicinal food preparations, (whose name is legion) whereby the tissues can be supplied with blood rich in red corpuscles.

Every case of tuberculosis, be it localized or general, is invariably preceded by anæmia, and this must be corrected as soon as the remedies can be made to act on the general system, so that the multiplication of the bacilli can be arrested. Dependent upon the age, climatic conditions and environment, and particularly upon the condition of the digestive organs and alimentary canal, the physician is the only qualified judge as to the means for the ends desired, *viz.*: to arrest the multiplication and destroy existing bacilli.

With our present views of the subject we need not await the discovery of a tuberculin that will render the human race immune from tuberculosis, as was so sanguinely expected by Professor Koch and his associates a few years ago. We can now accomplish with our means at hand indirectly, that which Professor Koch thought at one time to accomplish directly, thanks to the successful efforts of our American manufacturing chemists.

They have shown to the world the fallacy of the sentiment of Baron Leibig, *viz.*: "that nature refuses to be made the handmaid of chemistry." We know the pathology of the disease as we never did before, and we know the virtues of the preventive measures we use. Of late years I do not lose a patient from tuberculosis of the lungs, but I must be certain of the purity of the remedies I prescribe, based on the established reputation of the manufacturer.

I will now briefly state what I prescribe, as circumstance, condition, climatic influences, etc., may influence in the treatment. The patient is usually in the anæmic condition when he first seeks medical aid. If predisposed to tuberculosis this condition of anæmia is very often due to the inciting cause of la grippe, now at certain seasons of the year prevalent everywhere, and to pneumonia. This condition calls for a definite line of treatment, if the usual processes of investigation show the presence of the tubercle bacillus.

The tubercle bacillus shuns the tissues where *phosphorus* abounds. Hence the phosphates are found to be our basic preventives, and we know what the reliable preparations of the phosphate of lime, soda and magnesia will do for our patient. If conditions require, to these should be added the phosphate of iron and the active principle of cod liver oil. Combinations with bromides are sometimes necessary. If the stomach is weak, terraline, or the emulsion of linseed oil is substituted for the cod liver preparations. Consumptives, as a rule, soon become averse to cod liver oil, but it is an established fact that fat in some form should be administered to overcome the waste of fat in the sputa.

Cordials of cod liver oil, in combination with the hypophosphites, glycerine with the same, and the glycoheroin, (Smith) pepsin and pancreatin, are all satisfactory combinations.

Certain foods, simple or in combination, may supply the waste of fat, and I give the preference to bullock's blood sterilized. Rich in albumen, it is therefore one of the best of the food stimulants. Sometimes the anaemic condition is persistent, and when examination shows no diminution of the tubercles, I suspend for a time any of the above preparations and prescribe what is commercially termed pepto-mangan (Gude), containing organic iron and manganese. In combination with manganese and peptoids, the iron seems to be more *assimilable* than in many of our official preparations of iron. Why this is so may be due to the presence of manganese. At any rate, as an iron tonic and restorative, I consider it invaluable.

Pure air and the tonic treatment, as above outlined, speaking *bacterially*, increases the phagocytes, the watch dogs against the tubercle bacillus, and if this treatment proves successful the invading bacilli are completely overpowered. Should this preventive treatment seem too slow in action, I then resort to the beechwood creosote, arsenious and hydrochloric acids treatment cautiously administered at intervals, and noting from time to time the results. There are cases where the arsenious acid and creosote must be pushed to the limit to be successful, but with the aid of the phosphates with ringing changes in the combinations, the watchful physician will be successful. Our medical journals from time to time have extolled the virtues of camphor and its compounds, sulphurous acid and its fumes inhaled, benzoïn and its compounds, hydrogen peroxide, corrosive sublimate, aconite, phenacetin and other coal tar products, thiacol, methylene, guaiacol, formaldehyde, carbolic acid, etc., but what can be gained with these and a hundred more that might be named, in comparison with the substances acknowledged virtue that I have named?

#### TYPHOID AND OTHER MALARIAL FEVERS.

Next to tuberculosis of the lungs, typhoid fever claims the most victims in every civilized land. In proportion to population, the number of cases keep pace with the same ratio of a quarter of a century ago. But thanks to preventive measures, the *death rate* has perceptibly diminished, especially since bacteriology became a factor in the study of cause and treatment.

The death rate in our cities will in the near future be materially lessened when boards of health shall succeed in convincing the average civic legislator that the water supply of a city must be made free from soil pollution, and that cleanliness must be enforced wherever suspicion of the causes of typhoid infection stealthily exists. In no other disease, independent of the actively contagious diseases, is the necessity of pure water and cleanliness so imperative.

But when all prevention as to external causes has been carried out, typhoid or bowel fevers will continue to exist, because, aside from malarial causes, it can be induced wholly by the habits of the individual. But of this I will not now mention, but reserve to the space I shall devote to the stomach and the alimentary canal, as the seat of disease.

Cities well supplied with water from a reservoir, especially a filter reservoir, with the modern sewage system and modern plumbing, can derive typhoid fever from contaminated country milk, and the return of people in the fall from a district infected. In rural districts conditions vary. Every country house, and even every house in the small towns and villages, has its own water supply, usually in the shape of a well; the cattle obtain their water mostly from the streams; drainage containing active typhoid germs sometimes enter these streams and are taken into the stomach of the cows, or these germs may be carried by underground drainage directly into the wells from which drinking water is taken. Again in cities their entire water supply may become contaminated *above* the reservoir supply. The prevention here is the reservoir filtering

plant, or the employment of house filters, the milk which is brought from the country sterilized, and all persons returning home in the fall of the year, especially from any infected district, should be home quarantined.

It is generally conceded that typhoid fever is a water born disease, and hence it is that cities should be compelled by the health authorities to adopt some system of filtration. But even this will not give full exemption. When the typhoid fever broke out in the American camps in the recent Spanish war, the water at first was said to be the cause. It was filtered, and even boiled, but the disease did not abate until a new camp ground was located. Typhoid infection from the soil is an admitted fact, as was established by Dr. M. A. Veeder, in a paper recently published in the *New York Medical Record*, and the remedy is disinfection of all typhoid material. So much for the causes that tend to produce and multiply the typhoid bacillus. When causes are known, the remedy should be easy of solution, and prevention is surely in this case far better than cure.

Sir Andrew Clark, one of the most celebrated of English medical authorities antedating the science of bacteriology as it is known to-day, stated: "Anæmia is caused by feculent retention. With disregarded desire, there come accumulations and obstructions in the digestive organs and bowels, and these accumulations undergo putrefaction, evidenced by sore lips, slight eruptions, boils, pimples, etc."

Independent of malarial infection, so-called fecal retention will produce typhoid fever in all its phases. In one family of four daughters, in the city and street where I now live, each daughter after a long illness, successively died of typhoid fever, yet there was not another case on this street, or anywhere within reasonable distance of them. All four were of the same habit, and retention seemed to have caused no inconvenience until the effects of blood poisoning culminated in the usual pathognomonic signs of typhoid fever, and it was so pronounced by the family physician as typhoid.

Camp Alger, Virginia, within a few miles of the Capital city, was first selected as the rendezvous or camp for soldiers when the Spanish-American war broke out in 1898. It was mid-summer, and soon typhoid fever was rife in that camp. The country water was bad, and the soil became polluted because of want of correct early sanitation. These were given out as the causes of so severe a visitation of typhoid, yet every day hundreds of soldiers on leave came into the city. They were new recruits, and the camp diet, wholesome as it was, was not relished by them, and oftentimes one would see a soldier with a whole pie of some sort in one hand, and a schooner of beer in the other. Then came soda water ad libitum, ice cream, cakes and peanuts by the bag, on top of all. In one case the recruit had half a watermelon in one hand and a schooner of lager in the other. If ptomain poisons can incite to typhoid fever, here at Camp Alger in 1898 the fact was manifest. On removal of the camp to Pennsylvania, adjacent to a small city, typhoid fever almost wholly disappeared. Previous to the selection of the camp in Virginia, there was nowhere in the state a healthier locality.

From this it would appear that the cause of typhoid fever was the want of proper sanitation, followed by soil pollution, and further incited by irregular habits; and that malarial influences are not a factor in developing typhoid fever *per se*.

No matter what the cause, in the first stage of the disease can we prevent the bacillus typhosus from his deadly assault on Peyer's glands? If we do this, we can abort or cut short the disease. We can expect no more of the best preventive medicines after a disease has once started on its course.

The problem to solve to a satisfactory result, it seemed to me, was the finding of a remedy that would destroy the tendency to the proliferation of the special organisms of typhoid fever. I had used my remedy in other fevers with marked beneficial results, and found that it acted as an intestinal antiseptic by stimulating the bile secretion, and having in view elimination and intestinal antisepticism, and known to the fact that bacteriological investigations had shown that certain microbes may, under the influence of intestinal fermentation, acquire pathogenic characteristics, I found

that the intestinal canal must be kept free from the residues of digestion, which would at the same time clear it of colonies of microbes and the liquids on which they thrive.

This remedy is now the well-known cascara sagrada. In its action locally upon the digestive organs, on the liver and all the collateral glands of the canal, there is nothing to equal it in all our pharmacopeia. In my own practice I have unquestionably cut short many typhoid fevers and other so-called malarial fevers, with a convalescence exceptionally free from all anxiety. I have often thought that if those gallant young men, recruited for the Spanish war, many hundreds of whom died from typhoid fever before their first camp was broken up, had been treated with cascara, every one could have been saved. Young, and full of vitality strong and healthy, just from the home fireside, they fell victims of intestinal poisons that finally culminated in the severest form of typhoid, and the soil and water of the camp alone are given as the causes.

In treating of the diseases of the alimentary canal, I will more fully elaborate the benefits I have observed in my practice from this most exalted of all our preventive medicines—cascara sagrada.

The usual treatment for typhoid fever the world over is the so-called expectant treatment, with good nursing. To look after the lesions of the bacillus typhosus on the glands of Peyer, and run the gamut of treatment for each symptom manifested from day to day, seems to be the physician's only duty. As in tuberculosis of the lungs, we try to prevent the multiplication of the tubercle bacillus, so in typhoid fever we should aim to prevent proliferation of the bacillus typhosus.

In any disease the intelligent physician tries to discover the cause. Once ascertained, he then should apply the well-known remedies for the lesions already made. If he knows of a preventive to further incursion, or one that will avail before any lesion has formed, he then becomes the physician upon whom rests some of the responsibility that was enjoined upon him when he accepted his degree from his alma mater.

In this connection, in reference to typhoid fever especially, as well as to many other diseases, I would suggest these two axioms:

First: Learn the cause before you treat the symptoms, and if possible remove the cause, if local.

Second: When you find that a remedy acts like a charm, as it were, at certain stages of the disease, then in another case of like nature as you see it, use the same remedy as a preventive before any lesion has occurred.

Cascara sagrada, as a remedial and preventive medicine, I commend to the medical profession at large.

#### RHEUMATISM.

Rheumatism is a disease characterized by pain in the joints and muscles. A celebrated scientist once said that pain suffered in any disease is the mute prayer of the nerves for healthy blood. This is a truism as relates to the pains of rheumatism, and our best efforts should be directed to prevent these pains. What is the cause of these pains, and can we remove the cause and apply remedies to destroy the pains and prevent their recurrence?

In order to apply preventive medicines we must know the causes that produce the disease and the attendant pains, and the main causes of rheumatism are now generally understood by the profession.

If the bile secretion fails to convert or oxidize the food elements when in excess, uric acid is formed in excess, and instead of urea being formed, which is easily soluble and is a natural or healthy formation, we have union of the uric acid with the salts of the blood, whence insoluble compounds are formed, and the urine shows on standing for some time a brick dust sediment. If the liver is congested or torpid the kidneys will soon refuse to throw off the insoluble urates, and uric acid will commence to preponderate in the blood, and by reason of its great insolubility will begin to



crystallize in places where the circulation is weakest, as for example, on the site of an old wound or injury. This condition in a muscle becomes muscular rheumatism, and may be of all types of severity: if the acid poisoning is very great we have inflammatory rheumatism to treat.

Cold and exposure are the convenient means for the development of the uric acid condition, or rheumatic diathesis in a person. This condition will occur equally with those deprived of necessary nutrition, as well as among those overfed. In deficient nutrition the bile does not receive the equilibrium of food elements to form soluble urea, the normal element, and as a result, (as in the other case of overfeeding), free uric acid is formed.

I think that no one holds fast to the neurotic or to the germ theory of rheumatism. It is a disease of metabolic action wholly, with cardiac complications that cause every physician to be constantly on the alert watching them, and using his best efforts to guide his patient through them. In short, here is the danger point in rheumatism, according to the intensity of the disease and area invaded, and the use of preventive measures of the very best known to the profession, is the object of the wide awake physician. He has run the gamut, it may be, of the stereotyped remedies of the alkaline series—tested the virtues of the salicylate of sodium, the carbonate of potassium, the bicarbonates of both, until the urine becomes thoroughly alkaline in reaction, all thoroughly tried for a definite objective, yet there is a something that always protrudes rebellious to the agents we employ. Discarding some of these, because all are not essential, I prefer as adjuvant, the bicarbonates of soda and potassa with lithia salts, as my great preventive to the further inroads of rheumatism of whatever type.

In the market from the manufacturing chemist, we find lithia salts under the name of thialion, that bids fair to become one of the most useful preventives against rheumatism and kidney complications. Administered as a purgative, I find that it acts favorably on the liver by increasing secretive action of that organ, and thus with the aid of the kidneys, eliminating the free uric acid before combination with the salts of the blood. Cascarine, the active principle of cascara sagrada, will perform the same action on the liver as the lithia salts, or thialion, but the cascarine has a local tonic action on the digestive organs, and on all the collateral glands, as well as on the liver, and herein it is better than lithia salts.

With these two modern remedies—thialion and cascarine—while they are the very best remedies for the cure of rheumatism when used as directed, I find that my patients who are subject to the rheumatic diathesis are now saying: "Your prescription is the very best *preventive* against recurrent attacks of rheumatism that I have had nearly all my life." Of course the preventive doses are much smaller, and administered at longer intervals than required for the curative doses.

In many cases, according to complications, in addition to the usual lotions and ointments for the pains in joints and muscles, I administer the monobromide of camphor, the iodide of potash, antipyrin, ammonol or phenacetin, for fevers and internal pains. Colchicum and the salts of magnesia I have wholly discarded in my treatment of rheumatism. In anæmic cases we need quinia, iron and strychnia combinations to meet conditions, with the addition of the liquid peptonoids, cola wine, etc., to aid the digestion of liquid albuminoid foods given in course of treatment.

#### DISEASE OF THE HEART.

We cannot in the morning open our daily paper without reading of some distinguished citizen who has fallen a victim to heart failure, while at the same time, we of the profession know of a great many more who are of the common people, and undistinguished in the political, social, mercantile, professional and all other pursuits of life, who daily fall victims to the same failure, which the daily newspapers do not herald. Yet the heart was designed by the Creator to wear out only coincident with the decay of the other organs.

Sudden death is rare from mitral disease alone, but lesion of the aortic valves, and puckering or contraction of the inner lining of the aortic opening, is the most common cause of sudden death. The repeated and long continued attacks of rheumatism contribute to the lesion of the aortic valves and the contraction of the inner lining of the aortic opening.

The excess of uric acid in the blood is primarily the cause, by reason of its insolubility; and uric acid crystallization is the cause of the contraction and puckering of the inner lining of the aortic opening. Hence we should hail with universal acclaim any preventive medicine that will promise to overcome the rheumatic diathesis, and thus minimize the death rate from disease of the heart, or rheumatic origin. This, as I have before stated, we now have from the use of thialion, or the *active* salts of lithia, and cascara sagrada.

When once established as *organic* heart disease from rheumatism, blood poisoning, or from any other cause, remedies are of very little benefit in a curative sense. In treating this condition we apply temporary remedies to "limber up" the stenosis of the valves and orifices of the heart, but at best our remedies are only palliative. The mischief has been accomplished, because the profession has failed to arrest the mortal influences of the primary causes.

Fatty degeneration of the heart, and fits of indigestion we can control if our patients come to us soon enough to apply the preventive means. This, obese people seldom do, and they fall victims to their own indiscretions. The obese citizen, with deposition of fat around the valves, indulges in a hearty supper late at night, and, to use an Hibernianism, he wakes up dead in the morning. We are willing to aid this class of our population by preventive medicines well known to the profession, but oftentimes we are only called in at the last death throes. The differentiation between organic and functional disease of the heart is easy, and the preventive medicines for any functional disturbance while treating other diseases, are many and effectual, as every one skilled in his profession knows, but in organic disease or valvular lesions, aside from palliative remedies to tide over exigencies that are liable to happen through indiscretion, it is our duty to tell our patients that prevention from sudden death, imminent at any time, rests with themselves for the most part.

These preventive instructions are caution as to any great exertion in life pursuits, maintenance of the general health, freedom from excitements of all kinds, gentle exercise in the open air every day, walking at a moderate pace, cultivation of the expansion of the lungs by inhalation, in order to give more lung area to aid compensation when the blood is thrown back in consequence of mitral insufficiency, and above all, absolute attention to avoid all irregularities of the digestive organs, and to remember always that healthy blood is the fountain of life and the foe to any disease.

I have had patients with organic disease of the heart live to old age, and at last die of some ailment other than disease of the heart, that they so carefully guarded through life.

Digitalis, alcohol, acetate of ammonia, aromatic spirits of ammonia, nitro glycerine, cocoa wine, and a modern preparation containing kola, coca, cinchona, nux vomica, and the cereal phosphates, under the name of kola cardinette, are all very serviceable in the emergencies liable to be encountered in treating organic disease of the heart.

To prevent the results of endocarditis, from whatever cause, that from rheumatism being the most frequent, I prescribe iodide of strontium, iron and quinia citrate, aconite, morphia hydrochlorate, iodide of potash, chloral, veratrum viride, etc., as occasion may dictate.

#### PREVENTIVE MEDICINES FOR DISEASE OF THE STOMACH AND ALIMENTARY CANAL.

It is a truthful saying, that as the sun is to the solar system, so is the stomach to the human body. What a wonderful organ is the stomach to any animal, and especially

to man. I often think that nature knew that man would abuse his stomach, and so she gave him one similar in construction to that of the hog, and in case of indigestion he is compelled to borrow from the hog's store of pepsin for relief.

There is no question that our prosperous people in the United States eat too much and too often of highly concentrated articles of food, and the consequence is, that before we are aware of it, our digestive organs become overworked and impaired, the liver and bile secretions changed, the action of the heart is disturbed in sympathy, and the train is laid for the appearance of dyspepsia, headache, vertigo, disease of the liver and kidneys and rheumatism.

If a man uses up his brain tissues faster than they are repaired by appropriate food, he soon becomes nervous and irritable. To prevent all these erratic conditions, the family physician should be better paid for his *preventive advice* than for his attendance on the sick. The sum total of this advice is comfortable living, and that consists in good, wholesome food in sufficiency to be well digested, and from the products of good digestion to make bone, muscle and brain.

"Man is what he eats." Americans have had the reputation for a long time of being victims of dyspepsia, due to overfeeding, and if this habit is continued, we all know the remarkable chemical changes in the blood that ensue, until finally the excess of uric acid means the inception of almost any disease man is heir to, but the main burden of this diseased condition is thrown upon the digestive and urinary organs and the nervous system, and here is our most important field for the use of our preventive medicines. Sequent to dyspepsia, indigestion and stomach derangements, we find inactivity of the liver and kidneys, and soon is established the uric acid diathesis. Can any member of the profession in his researches through the mazes of pharmacy find any preventive better than cascara sagrada and the laxative salts of lithia (thialion) used singly or alternately, as I have used them repeatedly and successfully? Speaking so emphatically, I shall briefly give the reasons for my belief, which is so well confirmed by my experience with these two substances in my practice. Admitting the fact that we all believe, viz.: that disorders of digestion are the most prevalent of all human ills, and that the great majority of diseases are really due primarily to the derangement of the digestive processes, I have always sought the remedies that would prevent further inroads on the organs affected, beyond the mischief already accomplished when called to the case. Constipation, habitual and persistent, made worse by drastic cathartics for temporary relief, is the first condition to combat. The rheumatic or gouty, or, if you please, the uric acid diathesis, is the cause of the loss of the contractile power in the muscular coats of the intestines. By the alternate use of the laxative salts of lithia, and the best preparation of cascara sagrada that I can find, and by careful attention to the patient day by day, I have succeeded completely in establishing a regular action of the bowels. This accomplished, with the general watchfulness as to diet, etc., it is really marvellous how soon the *diatheses* disappear. One of my patients had all the symptoms of Bright's disease of the kidneys, with persistent constipation, and as soon as regular bowel action was restored, all symptoms of Bright's disease were removed. Another had jaundice and it disappeared. The pathologist will understand the processes by which this change was accomplished. It shows evidently, that diseases of the kidneys and liver are *results* and not causes.

Bundy, the discoverer of cascara sagrada, found that digestion was accelerated by its use, and that the secretory organs were stimulated in a remarkable manner, especially when the secretions were defective in quality and quantity. He found that it readily influenced the circulation and secretions of the liver. He also found that it acted as a tonic to the muscular system in general, and especially to the non-striated fibers of the stomach and intestines, and restored the contractility and tonicity which had been lost by constipation and dyspepsia. Under its influence the secretions of the intestinal and neighborhood glands, as well as of the intestines themselves, become

more abundant, concurrently with the production of slight congestion of the gastro-intestinal mucous membranes.

My experiences and investigations with this drug fully corroborate what I have just said of it. In some cases of atonic dyspepsia and constipation, stenosis of the pyloric was superinduced by the diseased condition. When the constipation was corrected and the tonicity of the stomach restored, the stenosis of the pyloric passed away. This was a most gratifying result to me, as well as to my patients. I can willingly subscribe to what many others have discovered and said in relation to this most valuable preventive drug, and among the many good qualities I discover no bad one, except when injudiciously administered, catharsis is induced, (to be always avoided in treating diseases of the gastro-intestinal tract,) but when used with caution and judgment, it exerts a tonic influence on the whole gastro-intestinal tract, and all complaints arising from any diseased condition of the alimentary canal or liver function have been checked or prevented.

It does not act by osmosis, like the saline cathartics, nor provoke local irritation, like the general cathartics. It should be used only as a *laxative* and *tonic*, when it purges just *enough* by its influence on the secretions of the liver, which thus increased, determines the softening and peristaltic expulsion of the *faeces*. It plays the part also of an intestinal antiseptic. Investigations made by my bacteriologists show that certain microbes as innocent as the phagocytes, may, under the influence of intestinal fermentation, acquire a pathogenic character. To counteract this condition the bile increased in flow will sweep the intestinal canal of all the residues of digestion, the bacterial colonies and the liquids that provide them with nutrient media.

Under the caption "Typhoid Fever," I have stated that I have cut short the duration of disease that would unquestionably have developed into the true typhoid condition if not arrested at the threshold of the disease. Ptomaine poisoning was the cause, and not infected soil, bad water or milk, or malaria. There is reported at this writing, in a large city, cases to the number of 256, of *mild* type of typhoid. The water is not infected, there is no malaria, the board of health looks after the milk supply; what then is the cause of the mildness of the typhoid? Soft and hard shell crabs, immature fruits, lobster a la Newburg, confectionary not made of cane sugar, ice cream, soda water and other dainties ad libitum, the too strenuous life in pursuit of money and pleasure, with omission of daily bowel relief, and want of sleep and rest, and good wholesome food, is the answer to the query.

Lithia combined with an alkaline laxative known as thialion, has a stronger diuretic and solvent power than any other salt of lithium. It is the ideal alkali for the treatment of rheumatism, the alkaline treatment of which is now in favor because it is successful. We all know that the urates of lithia are freely soluble, and that when it combines with the free uric acid in the blood we get the result that we want. Thialion is also diuretic. In rheumatism and gout—in short in all cases where we find the uric acid diathesis, it is a valuable remedy. In diabetes mellitus it is very serviceable. As a preventive to rheumatism, the one who has been a long sufferer from periodical attacks need not be told to resort to it at times, since he knows from experience what it has done for him.

#### PROPHYLACTIC AGAINST DISEASE.

Cascara sagrada and thialion, for the reasons I have stated, are two of the best preventive medicines we have at command. When taken alternately, obesity is controlled. In my own case, with a tendency to corpulency, I have without the least inconvenience lessened my weight by half a dozen pounds in a fortnight of time.

From the character of these remedies it will be readily inferred what they will do for disease of the kidneys. In neuralgia, where the cause is excess of uric acid in the blood, they are preventives. For persons with a predisposition to apoplexy, these two remedies are prophylactic. In locomotor ataxia, especially when the first symptoms

appear, they act as a preventive when used in connection with nerve cell builders. It seems to me that they open the way for the best results from specific remedies, keeping the blood in the condition where assimilation is particularly desired to produce the medicinal impress from alterative remedies and specifics.

Without further enumeration of diseases, the great value of remedies like these to the practicing physician is incalculable. I have selected these two because they are comparatively new to the medical profession, and also because they accord with the pharmaceutical, physiological and chemical ideas of the day in combating disease.

But for the same object in practice, it is not presumed that we shall put aside the old "standbys" for newer things, however valuable and however well recommended to the profession. Conditions vary in every disease, and no physician will permit himself to be controlled by stereotyped prescriptions.

No pent up Utica controls our powers,  
The whole expanse of Therapy is ours.

In time, the practice of medicine should become a fixed science, but to reach this acme, all the senses of the medical devotee should ever be on the alert for the latest discoveries in pharmacy and applied chemistry.

#### "CRUTCHES."

What is essential to the proper digestion of food? The gastric juice of the stomach preceded by proper mastication by the teeth and gums and saliva. This juice of the stomach can be decreased in amount only by disease, as by dyspepsia, for example. Pepsin is the active principle of the gastric juice. It is clearly logical to administer pepsin in diseases of the stomach, and it is done with the utmost faith in its efficacy. Plain, lactated, or in combination with ringing changes interminable, and delightfully pleasant to the taste, everyone likes to have a bottle of it in the house, or carry in the vest pocket wafers to take ad libitum. Well, these preparations are surely the means of temporary relief, when through imprudence in eating and drinking, there is suffering from indigestion. Pepsin, peptonoids, pancreatin, and all combinations thereof are valuable remedies, yet at the same time it can be truthfully said that they act only as *crutches* to tide over the time of the stomach's travail. It is only when the general health is good, and indigestion occurs from overindulgence, that they do the most good, and again when convalescence is established they are invaluable adjuvants. They possess little power as preventives of any disease when not combined with the bases, iron, potash, lime, magnesia, etc. In combination with arsenic and strychnia they become preventives. With beechwood creosote in combination, they fill a highly important mission. The same with derivatives from coal oil. In fact, in addition to their remedial elements, they make the very best menstruum for the administration of preventive medicines.

In combination with cascara sagrada, the object has been to secure a palatable mixture at the expense of the *bitter* principles, but this course I cannot approve of. It is much more important for us to maintain the reputation of this valuable drug in its entirety than to sacrifice it on the altar of palatability.

Liquid peptonoids of beef, milk, and gluten, are the ideal invalid's food, and useful in nearly all stages of treatment. The same in combination with either quinia or strychnia when indicated is invaluable.

#### PREVENTIVE MEDICINES.

The physician for the first time usually is called after the first stroke in hemiplegia, paraplegia or general paralysis—in rheumatism perhaps, after the inflammatory stage has been inaugurated—in typhoid fever when the patient first takes to his bed, after lingering listlessly about the house for several days—in tuberculosis of the lungs

after lesions have already occurred in the lung tissues, and vitality lessened; and so on through the catalogue of diseases, the physician is brought before the enemy he is to fight and conquer if he can, without knowing much of anything, of the embattlements of the foe.

Soon, speaking figuratively, like the thrifty farmer who prepares his land by diligent tillage, removing all rubbish and impedimenta before he plants his seed, the physician should direct his work to the palliation of all the symptoms he meets with, until, with a clear field before him, he is ready to combat the disease and its cause.

As soon as he finds that most of the organs have been brought into subjection, and responsive to the medicines prescribed, he feels himself a victor, and so makes favorable prognosis. We cannot ask more at the hands of any physician, and the community over which he presides should exact no less from him where life and death are concerned. When he finds that his paralytic patient is in a fairly comfortable condition, he commences his treatment to prevent any future return. Like a water-fowl to its native element, he turns his attention to the five tissue building phosphates, lime, potash, magnesia, soda, and iron, and like his great prototype, Chapoteaut, believes that if the nerve cells are composed of these elements, the disease is due to a deficiency of these salts, and hence the reason for their administration.

Why is it that we use the Chapoteaut preparations in preference to the American, of like ingredients? Simply because our manufacturing chemists have failed in establishing reputation, whereas Chapoteaut has, and confidence in a preparation means everything with the conscientious physician when he prescribes. Yet there should be no real foundation for this lack of confidence. With the American preparations of these five hypophosphites, I have been just as successful as with the French preparations. Were it not the case with American preparations the medical profession of the United States would not long permit the imposition without exposure. Among all the myriad class of preventive medicines, these chosen five will perhaps always stand at the head, especially in the general treatment of all nervous diseases, and of all wasting diseases as well.

What is commercially termed kola cardinette, and composed of kola, coca, cinchona, nux vomica, and the cereal phosphates, are valuable preventives against neurasthenia and all neuroses, and in convalescence from paralysis or any nervous disease, I know of no better combination. Also we have a glycerine tonic compound, meeting the same indications as the ingredients show. These are glycerine, gentian, taraxicum, phosphoric acid, sherry wine and carminatives. In convalescence from typhoid fever and pneumonia, this combination is a tonic of the first class. In anæmia, after the red blood corpuscles have been increased by the hemaboloids and other treatment, these preparations are the menstruum of further medication.

#### LA GRIPPE.

What is it but a nondescript—a derelict adrift on the sea of human diseases without a pilot or compass—its father is said to be old dengue, or break bone fever, and its mother the uncomely maiden, Miss Influenzie, both from away back, and the progeny is just as erratic as its parents. Whether it is capable of owning a microbe existence is a puzzle to the bacteriologists. No self-respecting microbe would wish to be seen in such company, and we don't blame the sensitive microbe for his choice of companionship.

La grippe is a disease both symptomatic and sympathetic. The symptoms are all sympathetic of something that is abnormal and out of tone in the system. The treatment should be directed to prevent sequela, like intestinal neuralgia, bronchial involvement and nervous derangements in general. Yerbine, cola, cardinette, glycerine tonic compound and heroin hydrochloride are the preventive medicines I prefer to use in addition to the liquid peptonoids carrying quinia and strychnia. If a physician is

at a loss when called to a case to diagnose whether it is incipient pneumonia, typhoid fever, or any other well-known disease, let him pronounce it la grippe, and treat the symptoms, and he will not go astray in diagnosis.

#### ASTHMA AND HAY FEVER TREATMENT.

If excess of uric acid be found by testing the urine and blood, the treatment is at once indicated. In addition all local and spasmodic symptoms are greatly relieved by the solution of adrenalin chloride. This preparation controls catarrhal inflammation, and cuts short asthmatic paroxysms and sneezing. In minor surgical operations, as upon the eye and nasal passages, its use is highly beneficial.

#### ACETOZONE (ACETYL HYDROGEN, BENZOYLE PEROXIDE).

Used in the treatment of typhoid fever it sterilizes the alimentary canal and prevents the perforation of the bowel, if the disease has advanced thus far to require its use. It is a germicide of the highest order.

#### ASPIRIN (ACETYL SALICYLIC).

In attacks of acute rheumatism I find it to be a specific for the pains and swelling about the joints. The administration causes but little gastric disturbance, and heart action is lessened by its action on the motor nerves of that organ.

#### CACTINA (CACTUS GRANDIFLORA).

"In therapeutic doses cactina produces an elevation of the blood pressure, and acts directly upon the excito-motor centres, and especially is indicated in the cardiac weakness of febrile diseases, and preferable to digitalis because it has no cumulative action, and does not disturb digestion." I have used it with satisfaction in the treatment of fevers, in place of digitalis and aconite, and found it useful as described.

#### SODIUM CACODYLATE (SODIUM ARSENATE).

When arsenic is desired for its specific purpose, especially in the treatment of tuberculosis, this preparation is an admirable one when used hypodermically. In the treatment of diseases of the skin I find much better results than from the use of Fowler's solution. I have used it with much satisfaction in the cachexias produced by malarial and other poisoning influences.

#### SANMETTO (SAW PALMETTO AND SANTAL).

Commercially known as sanmetto, is evidently prepared with great care by the manufacturing chemist, for I have always found it a reliable preparation, and as the proprietors say: "Its soothing and healing power over the entire urinary canal can be proven by one day's use," has often been verified in my general practice of treatment of urinary diseases.

In the above résumé of preventive medicines, I have given my experience with them, and my experience only is the reason for any statements I have made concerning them. Of course there are other medicinal elements and their combinations that I have successfully used in practice, but of late much attention has been given to the diseases and their remedies upon the lines I have so briefly touched.

I am so personally enthusiastic on the subject of preventive medicines that I hail with great satisfaction any new discovery in this connection, and have faith enough in the manufacturing chemist to give his new combinations an impartial trial.

*Reasons for the Increasing Length of Human Life.*—Two prominent French scientists, investigating the question of centenarians, have reached the apparently inconsistent and contradictory conclusion that while the human race lives longer, it does not reach as old an age as formerly. The average duration of human life, what is technically called the expectation of life, is much greater than it ever was before, and is steadily increasing, thanks to improved sanitation, better medical treatment, better nursing, and generally better care, but at the same time there are fewer centenarians, and men do not reach the extreme old age they did a century or five centuries ago. The reason given by the scientists for this apparent contradiction is that the sanitary improvements made, the care and nursing of the sick have diminished or lowered the vitality or constitution of the human race by keeping alive by almost artificial means the weak and defective members of the community.

In olden times the weaker persons perished early, and generally died before reaching puberty. The Darwinian system of the survival of the fittest eliminated them, and the population was preserved through those of stronger physique, whose vigorous constitutions were able to resist all the unsanitary surroundings, and the diseases that lurked everywhere. As a consequence, the average individual who survived childhood in the middle ages was of more vigorous growth than he is to-day, when, thanks to sanitariums, doctors and nurses, the most feeble, thin blooded, scorbutic child may be nursed to manhood, to become the father of a family which perpetuates his maladies, and in time spreads his constitutional weakness throughout the community.

In Sparta of old, it will be remembered, all weak or delicate children were exposed by the state on Mount Taygetus, to be devoured by wild beasts. The result was to eliminate the weak and feeble, and to establish one of the sturdiest and most vigorous races in the world. A still more striking instance of this, however, is seen in China, where, according to Martin, the best authority on the subject, the physical vigor of the Chinese has survived amid the mental, moral and industrial decay of the nation, only because of the unsanitary condition of the country. The insanitation is so great that it kills off millions yearly. The delicate perish miserably amid conditions that are almost intolerable. The survivors represent the stronger constitutions that can resist the filth and poisons that surround them; and they continue the vigor of the Mongolian race which has in the last ten centuries declined in every respect except physique.

These are the facts upon which the French scientists base their belief that while men live longer than they did, they do not reach as great age. That they do live longer we know from the reports of the census and the insurance companies. The late census would indicate that the people of the United States have added five years to their average human age in this country in the last decade; and the expectation of human life the civilized world over, is twice as great as it was a hundred years ago.

We thus see what preventive measures and medicines have done for "weaklings" of the human race that our ancestors killed off. If all the population were on a like plane of bodily strength and vigor the inference follows that disease would have diminished, and a greater average in number of years of life would be shown. It shows also in our civilization that we bring the weak and diseased safely along the path of life with those of healthier stamina. It also shows that it is possible in the future as preventive means progress, to restore these weaklings to the full measure of a healthy enjoyment of human life, and wholly free from all ills inherited from ancestors. It also shows that the renewing power of nature, when properly aided, is a greater power than heredity in disease.

To change the laws of disease into the laws of health by steps that are slow but sure, places the question of prevention in the realms of the sublime. The evolution of man in creation presupposes a being of strength and vigor when he first appeared on this earth, and in time, through no fault but their own, he and his descendants contracted



diseases. At any rate, whether contracted or not, disease came to the human race through many natural causes over which man had no control, or if he had the power to control, it was not exercised because his mental powers were then unequal to the task. The influence of mind over matter only came when the former was able to grasp the latter by the knowledge of the cause and effect of things. When man began to reason a priori he was well on the road towards the solving of many problems of life, of which he was so great a part. If poisonous elements surrounded him he sought the antidote; if disease came upon him, the fact of that disease suggested remedy and prevention, until we have reached the stage when evolution of the mind over matter is almost absolute. If new causes produce new types of diseases, the prototype is recognized and its further incursion is at once curbed.

Are sanitariums for the treatment of invalids of all kinds assistants when it is found necessary to prescribe preventive medicines? The celebrated mountain establishments in Germany, for the cure and prevention of obesity and disease of the heart, that is generally a complication, is a sufficient answer to the question because of the great benefits derived by the many thousands who have availed themselves of the isolation that such places give the patient. With chances for disinfection, and with the advantage of pure air in these mountain retreats, such diseases as consumption of the lungs, obesity, and diseases of heart would be better treated. It is sad to read daily in our newspapers of the sudden demise of some of our best citizens through heart failure, when a sojourn at one of these mountain sanitariums, with the exercise and treatment enjoined would reduce the obesity, and at the same time give new vigor to the great heart muscle. In treating tuberculosis of the lungs, isolation and complete disinfection are important factors.

#### WATER AND BATHING AS PREVENTIVES.

Water is the main solvent in the alimentary canal in the process of digestion and the expulsion of waste. Other substances assist, but water is the only material capable of circulating in all the tissues of the body, and of penetration to the very minutest vessels without irritation to the most delicate organism. For these reasons water is an important element in the treatment of disease. The medicinal baths are the saline or sea bathing, the alkaline, the sulphur, the spray, sitz Russian and Turkish, but the most important of all, as the conservator of health, is the cold water bath. Water is the natural drink of the animal, including man. According to a man's habit of life, his temperament and stamina, so must be the daily bathing as to the temperature of the air and of the water in which he bathes. To maintain health, water at about the temperature of the surrounding air is what a man or woman requires for bathing. But bathing with water at the normal spring temperature of 50° Fahrenheit is a powerful tonic to the general system. These cold baths contract the vessels of the skin and thus protect the body from the injurious effect of accidental exposure. Cold water bathing, by its tonic properties and hardening process, prevents the taking of sudden colds, so often the forerunner to an attack of la grippe. I have found those persons who have been subject to attacks of la grippe every year formerly, to be exempt in late years, by the use of cold water bathing every day. Everyone cannot accustom themselves to cold water bathing in summer and winter, but they can use the sponge cold bath and obtain all the beneficial tonic effect in an easy manner.

Cleanliness is of course the first consideration in bathing, and if cold bathing or sponging is a tonic to the skin in addition, and I know this to be the case, then obversely it can be clearly understood why too frequent use of hot air and vapor baths produces the opposite effect upon the skin and general system. The cold bath accelerates the transmutation of the tissues, augments the excretion of carbonic acid from the lungs and urea from the general circulation, and as a consequence increases

the appetite. The shock to the system in cold water bathing is prevented by using tepid water at first. Five minutes is ample time to secure the invigorating effects of the cold bath.

The cold bath is the true one for the strong, for youth and manhood, and the warm bath only for early childhood and old age, but even here it must not be forgotten that any excess of warm bathing is debilitating. Both hot and cold baths should be used with great caution where there is weakness in the action of the heart, or fatty degeneration of that organ.

Boys without parental control, who in summer spend much of the time in water, in the latter part of the season are troubled with boils or skin diseases that show the enervating effects of too much bathing upon the blood. Our seaside visitors bathe too frequently and remain too long in the water at one time, and lose in a measure the invigoration that a change of diet and air has brought them during the visit.

## THE TREATMENT OF GOUT AND OBESITY.

BY L. BENNETT, M. D., CENTRAL CITY, KY.

(Reprinted from *Uric Acid Monthly*, April, 1903.)

In the days of our forefathers in medicine, gout was a disease which might correctly be termed an affection confined to the wealthy or aristocratic element of society. With the general change, however, that has come in society, this is no longer true. The middle class of people now live better than the exclusive set did in "ye olden time" and gout (as well as obesity) is as frequently seen now among this portion of the population as it ever was among the wealthy. This is an age of high living; and the food-stuffs which are so much consumed are gout-producing agents.

The drinks also tend to produce gout and obesity. The malt liquors were never so largely employed in the history of the world as they now are. This and other facts all tend to show that the causative elements in the production of gout and obesity are numerous.

Gout, as seen in practice is either acute or chronic. My experience has led me to regard the chronic form as the manifestation most generally seen. In fact, but few acute cases have ever come under my notice; while the chronic cases are most numerous indeed.

In the management of acute attacks, the course which has been found productive of best results, consists in the administration of such remedies as will give relief to the pain; but we should begin, at the same time, with those agents which tend to neutralize and eliminate the uric acid.

To this end, I direct the patient, with acute gout, to take codeine in such doses as will keep him free from pain. I also have the affected part wrapped in cloths wet with hot water and laudanum. The part can be made more comfortable if slightly elevated.

In acute, as well in chronic cases of gout, on my first visit to the patient I begin to administer thialion. This agent is a laxative salt of lithia, and is as nearly a specific for uric acid poisoning as our materia medica contains. In all cases of gouty manifestation it is given for the first three or four days in doses of a teaspoonful, three times daily, an hour before meals, in order to get the patient under the influence of the drug. After this, a dose of a teaspoonful, once daily, is generally sufficient.

The physician should frequently examine the urine during the first three days. It must be borne in mind that the urine must not be rendered too strongly alkaline.

The diet of these patients is a matter of the greatest importance, and no promise of permanent results should be vouchsafed to the patient unless he enter into reforms

along this line. Light meats, fish and oysters are to be used with caution. Orders, prohibiting the use of malt liquors and sweet wines, are to be strictly enjoined. Sweet fruits are also to be avoided. I might go on and add a diet list, but, in view of the fact that the dietetics of these conditions is so well known, I think this unnecessary.

CASE I. This patient, a man about 42 years old, applied for treatment of an attack of rheumatism, which had rendered the joints in his left arm stiff, red and swollen. The man was a keeper of a saloon, and ate and drank freely of foods and liquids which produce gout. In view of the history of the case, I regarded the patient's disease as probably due to uric acid poisoning. He was put on thialion, as directed above, and the arm was rubbed several times daily with aconite liniment. On this treatment, he began to improve at once. In a week, his arm was freely movable and he felt better in every way. I had him use the thialion as an eliminant for a month. At the present writing, he has no symptoms of uric acid contamination and is to every appearance in excellent health.

CASE II. This patient, a man of 52, was greatly annoyed by pains in the feet and ankles, and on several occasions he had suffered very excruciating pain in his great toe, thus showing in a marked manner that the attack was purely "gouty." But the history of the case itself was sufficient to make this plain. I lost no time in putting him on thialion, prescribed in the same general way as outlined in the directions as above given. This patient began to improve speedily after the agent had been employed a few days, and his entire recovery followed after thialion had been used for several weeks.

CASE III. This patient, a man of 47, called at the office for a prescription for painful and swollen feet and legs. The man was corpulent, lived high, and had had similar attacks for a long period, but as these were now growing in severity he consulted a physician. His case was clearly one due to uric acid poisoning and he was treated substantially in the same manner as the other patients whose histories are here given. He made an uneventful recovery, which occupied altogether a period of four weeks.

Like the others, this man took thialion as an eliminant and corrective, and adhered to my advice relative to diet and beverages. As a consequence, he is now in better general health than he has been before in ten years.

#### A CASE OF URIC ACID POISONING.

BY C. H. BROWN, M. D., PHILADELPHIA, PA.

(Reprinted from *Uric Acid Monthly*, May, 1903.)

Mrs. J. K. has for many years been a sufferer from the uric acid diathesis, sometimes better and sometimes worse. She had rheumatism shifting from one part of the body to another; pain in the back, which continued so persistently as to make her apprehensive of kidney disease; *flatulence and sour stomach*; a weak heart; and insomnia. She felt wretched at times, and always worse in the morning.

She had been treated with all the various remedies that are indicated in such conditions. Salicylate of soda seemed to be of some benefit, but soon disordered the stomach and was discontinued. Piperazine was used at times and apparently afforded relief; but this remedy also disturbed the stomach and seemed to affect the heart, so much so that the patient was afraid to take it. Effervescent lithia tablets also aggravated the gastric disturbances. Bicarbonate of soda was prescribed internally and in the baths in order to neutralize the excessive acidity; but, in spite of all that was done and taken, Mrs. K. continued to feel miserable.

The *Uric Acid Monthly* had been coming to me for some time and I had been reading of the wonderful results of thialion in just such conditions, and I had often thought of trying it in this case, but was deterred by the fear that it might be such an unpleasant dose as to disturb the patient's stomach as the other remedies had done. But finally, as I had exhausted all other means, I turned to thialion as a last resort and am happy to say that it proved an agreeable surprise. Improvement commenced at once. Patient is now taking her fourth bottle and she feels that it is the remedy for her, as there has been an amelioration of all her symptoms. She feels better when she takes it three times a day, as this keeps the bowels and kidneys acting freely. She takes it dissolved in hot water and rather likes the taste of it. It has not disagreed with the stomach in any way. She has been recommending thialion to her friends as the greatest medicine she has ever taken.

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### URIC ACID IN THE CAUSATION OF EYE, EAR, NOSE AND THROAT DISORDERS.

BY R. W. BLAKESLEE, M. D., PEIRCE CITY, MO.

Bachelor of Ophthalmology; Doctor of Optics, etc.

(Reprinted from *Uric Acid Monthly*, May, 1903.)

*Editor Uric Acid Monthly:*

I have received several copies of your *Uric Acid Monthly*, and am much interested in uric acid and the disorders to which your journal devotes especial attention.

Have used thialion in my practice of eye, ear, nose and throat, for the past four months, with flattering results,—i. e., in the treatment of parasites of the ear, sometimes germinated in the auditory canal, causing aggravating inflammation of the part,—most commonly secondary to eczema; also in polypi and in acute injuries of membrana-tympani (as in concussions from effects of condensed air, etc.) tonsillitis, follicular pharyngitis, and polypi of the nose, conjunctivitis, granulosa blennorrhœa catarrh, blepharitis marginalis, and granular-ophthalmia, all of which affected tissue becomes chronically diseased, and hearing and vision impaired.

Scarcely a person reaches the age of thirty-seven years, ere he, from some unknown cause, becomes hard of hearing to some extent, or his vision impaired.

I claim that it is *electricity* and not oxygen which purifies, filters and throws off venous blood from the anterior, middle and posterior cerebral arteries of the Circle of Willis, and to such an extent that at times the ears become clogged with excessive secretion, which, by its contained uric acid substance, dries readily in the open air, in the external orifice, (as well as dandruff of the scalp,) and the muco-purulent secretions of the eyes, and thickened debris, or scaly deposits at the roots of the eye-lashes, which I have long contended were cremated hairs. The same agitate folliculitis, or inflammation of the follicle in which the eye-lash sets. The uric acid, and calcareous mucilaginous deposits incapsulate the entire root or cuticle, sufficient in time to prevent all nutrition from adjacent tissues, arterial and venous supplies from reaching the small, delicate and spindle shaped glands, which are situated at the apex of the cuticle for the purpose of imbibing nutritive elements for retaining the healthy eye-lash, beard and scalp surface.

I. "In disease *micrococcus*, for example."

In this group the cells range in different species from .5 to 2 m. in diameter; but most measure about 1 m. Before division they may increase in size in all directions.

The species are usually classified according to the method of division. If the cells divide only in one axis, and, through the consistency of their envelopes, remain

attached, then a chain of cocci will be formed. A species in which this occurs is known as "streptococcus." If division takes place irregularly the resultant mass may be compared to a bunch of grapes, and the species is often called "staphylococcus." Division may take place in two axes at right angles to one another, in which case cocci adhere to each other in packets of four, (called tetrads) or sixteen, may be found, the former number being more frequent. To all these forms the word *micrococcus* is generally applied. The individuals in a growth of micrococci often show a tendency to remain united in twos. These are spoken of as "diplococci," but this is not a distinctive character, since every coccus, as a result of division, becomes a diplococcus, though in some species the tendency to remain in pairs is well marked.

The adhesion of cocci to one another depends on the character of the capsule.

Often this has a well-marked outer limit, sometimes it is of great extent, its diameter being many times greater than that of the coccus. It is especially among the streptococci and staphylococci that the phenomenon of the formation of arthrospores is said to occur.

In none of the cocci have endogenous spores been certainly observed. The number of species of the streptococci and staphylococci probably exceeds 150. Besides these there are cocci which divide in three axes at right angles to one another. These are referred to as "sarcinæ."

If the cells are lying singly they are round, but usually they are seen in cubes of eight, with the sides which are in contact slightly flattened. Large numbers of such cubes may be lying together. The sarcinæ are, as a rule, rather larger than the other members of the group. Most of the cocci are non-motile, but a few motile species possessing flagella have been described.

2. BACILLI.—These consist of long or short cylindrical cells, with rounded or sharply rectangular ends, usually not more than 1 m. broad, but varying very greatly in length. They may be motile or non-motile. Where flagella occur, these may be distributed all around the organism, or only at one or both of the poles. Several species are provided with sharply marked capsules. In many species endogenous sporulation occurs. The spores may be central or terminal, round or oval or spindle-shaped.

3. SPIRILLA.—These consist of cylindrical cells more or less spiral and wavy; there are two main types. In one, there is a long non-septate, usually slender, wavy or spiral thread. In the other, the unit is a short curved rod. When two or more of the latter occur, as they often do, end to end, with their curves alternating, then a wavy or spiral thread results. This latter type is of much more frequent occurrence, and contains the more important species. Most of the motile spirilla, however, possess flagella. Of the latter, there may be one or two or a bunch, containing as many as twenty, at one or both poles. Division takes place as among the bacilli, and, in some species, endogenous sporulation has been observed.

No oxygen passes through the membrane of the nasal cavities, post nasal and infundibulum cavities, into the blood streams, lateral and superior to these cavities. It is also true that the air cells secrete carbon.

The action which takes place during sneezing, blowing of the nose and crying, as in epiphora or lachrymation, is *electrical*. The nitrogen and oxygen of the air, coming in contact with secretive carbon mucocoele, cause combustion, which generates electrical currents. These pass through the membrane of the air cells into the blood, from venous to arterial (also causing the rhythmic action of the heart,) thus showing that the air cells secrete carbon, and that this function is one of the important essences of life.

The action of *uric acid*, however, impairs the secretive carbon which generates electrical currents, thereby producing eye, ear, nose and throat diseases, due to an impaired electrical transmitter between the arterial and venous tracts, which must communicate in order that a healthy capillary circulation be maintained. The theory

advocated here is, that oxygen of the system, comes from the food we eat and the water we drink, and must be refined by the process of digestion before it can be made in solution to enter the blood.

A certain percentage of atmospheric oxygen is consumed by means of the chemical action taking place in the air cavities during healthy breathing. The refuse of this process is exhaled as carbon dioxide and various mucilaginous secretions, which show up externally as "blackheads" in the skin, most commonly of the nose, and orifices external to the ear, eye and throat. Further experiments show that the resistance of the human system is so much greater than the pressure of the atmosphere, (making a high altitude preferable for invalids), that it would be impossible for gas to be generated under such conditions. Other experiments show that venous blood can be changed in color, (e. g., like that of arterial) by the use of galvanic electricity.

In the treatment of all uric acid disturbances thialion is heartily recommended by me.

February 8, 1903.

### THREE INTERESTING CASES.

BY STEPHEN L. REID, M. D., WILSONVILLE, KY.

(Reprinted from *Uric Acid Monthly*, Vol. IV, No. 2.)

The following three cases will prove especially interesting from the fact that notwithstanding they represent types of disorders which are supposed to be widely different in their etiological and pathological character, and have generally been classed in our nomenclature under separate and distinct heads, yet the remarkably successful results obtained from the treatment, which was substantially identical in each case, would strongly point to the same underlying factor as the principal cause; to wit:

CASE I. K. B.; male; aged 38; married; occupation, saw mill hand; four years ago, following an attack of typhoid fever, commenced having pains in thigh and calf muscles, gradually increasing in severity until walking became torture. After a long course of treatment the patient was benefited sufficiently to enable him to resume labor. Last march, after having worked in a cold rain all one day, he developed rheumatism in left wrist; in twenty-four hours the other wrist was affected; forty-eight hours later one knee, and both ankles were attacked, and the patient was confined to the bed. Although he received the best of medical attention, these symptoms continued, with only slight intermissions, for over nine weeks.

At this time my attention was called to the case. A consultation with the attending physician showed that the patient had been receiving ideal treatment, such as the salicylates, salol, colchicum, counter-irritants, etc., but with no permanent benefit. Even if I had not already been prepossessed in favor of thialion, there was nothing left for us to use but it. Patient was ordered to take thialion in quantities sufficient to keep the bowels loose. The inflamed joints were allowed to remain swathed in cotton; all other treatment stopped. On the third day, improvement was noted by the patient, and on the ninth day he was able to move himself in bed; he could not do this before on account of the pain. He had the attending physician send for me again at this time to learn if I had any further suggestions to offer. Seeing no reason for a change, I made none. To-day, August 31, 1903, this patient is looking the picture of health. He walked into my office, presenting a note from Dr. C., which said: "Patient desires to make application for life insurance. What do you think of his chances?" This man had continued to use thialion until about the middle of August, and stopped on the advice of his physician. I advised him to apply. He did so. The company demanded a re-examination by another physician, and then granted him a policy for \$3,000.

CASE II. Female; aged 17; single; farmer's daughter; does the work usually required of females in the country. She has suffered, especially during the damp, rainy weather, from recurrent attacks of quinsy. These attacks are of a very alarming nature, patient living in continual dread, and fear that she may lose her life. During these attacks she has pains of greater or less severity, flitting from joint to joint. The rheumatic character of the tonsillar affection being self evident, she was placed on full doses of thialion. That was one year ago, November, 1902. Since that time, she has had only one mild attack, lasting three days (Dec. 2 to 5, 1902). Thialion was discontinued March 15th. The weather from that date to the 10th of May, was cold and rainy, and of a character to bring into action any latent rheumatic tendency that may have been lurking in the system. Patient passed through this period with absolutely no signs of her former trouble, and I consider her sound and well.

CASE III. Is one that caused me to lose many hours of needed rest, until the probable solution of the puzzle presented itself.

Mr. C. O. B., painter by trade; married; four children, youngest four years old. Father and mother both alive at advanced age. Four brothers, two sisters, all alive and well. No history of venereal disease, consumption nor rheumatism. Smokes a pipe, moderate beer drinker, does not drink whiskey. Bowels very constipated, otherwise health is very good, and has been so for years.

First saw him three months ago at midnight, complaining of shortness of breath, palpitation of heart, and sense of fullness in stomach. Diagnosis, "indigestion," for which treatment was given. He got better and able to go to work, but the uneasy feeling did not leave his stomach entirely. Three weeks later, at about the same hour at night, I saw him again in a similar but more violent attack than the previous one. During the intervals between the two attacks, his habits had been regulated; pipe and beer both stopped; diet received careful supervision; laxatives given for his bowels, etc. In all this man had nine of these attacks before I began to suspect his occupation as painter as being the prime cause. The constipation was suspicious, but the absence of the "wrist-drop" and other physical signs of chronic lead poisoning threw me off.

As soon as I became convinced that I had a case of chronic lead poisoning to deal with, I placed the patient on full doses of thialion. It has now been six weeks since Mr. B. began taking thialion. The attacks ceased promptly, and I believe the patient is sound and well. But I have advised a change of occupation for a year, as a precautionary measure.

### VAGUE MUSCULAR PAINS AND ACHES.

BY G. B. ACKER, M. D., LAURENCEVILLE, PA.

(Reprinted from the *Medical Herald*, St. Joseph, Mo.)

Never, perhaps, more than they do at the present time, did patients insist on treatment for the relief of "pains and aches," which they consider to be due to chronic rheumatic conditions of one kind or another. The physician seldom gets a negative answer to the query: "Have you suffered from rheumatism?"—especially if the question be put to the average person over 40 years of age. By the term "rheumatism," however, the patient does not mean to imply that he has suffered from the acutely swollen joint, accompanied by fever causing confinement to bed, which characterizes true acute articular rheumatism; but rather to the commoner form of "vague pains" affecting muscles and nerve sheaths, which may more properly be termed "irregular or abarticular "gout."

As the majority of these patients will say that they suffer most on damp, cold days, or after unusual exposure or extra muscular effort, the question arises: "What is the underlying constitutional factor which remains latent and which is rendered thus active by the foregoing mentioned causes?" It is impossible to avoid the conclusion that some substance which was already circulating in the blood has suddenly been rendered insoluble, or partially so, and been precipitated into the affected muscular and nerve tissues, which are irritated by the presence of this foreign body—thus resulting in a vague pain or ache.

In seeking and making reply to the following two questions, not only is the above view greatly strengthened, but we become practically certain as to the nature of the foreign substance itself; viz.: 1. What principal change does the blood of the capillaries undergo when the surface of the body in their vicinity is exposed to cold and moisture? 2. What change occurs in that portion of the blood which surrounds actively engaged muscles? In both cases, we know that the *alkalinity* of the blood there is diminished, and that application of heat and rest from activity will give temporary relief. We further know that the blood (normally) is just sufficiently alkaline to hold its waste urate salts in solution or suspension; consequently, if this alkalinity be diminished from any cause, the urates will be precipitated out of solution and deposited in the contiguous connective tissues, there to serve as a temporary irritant.

From what has been said, it will readily be understood that any person whose blood contains an abnormal amount of urates, or salts of the uric acid type, will be subject to "aches and pains,"—especially after exposure to cold and dampness or after much muscular exertion. The shifting nature of these pains, too, would indicate the alternate absorption and reabsorption of these salts, and their conveyance by the circulation from place to place to be deposited first in one locality and then another.

If this view be correct, the rationale as the anti-uric-acid treatment would seem to need no further justification; and clinical experience has already proven its value. By prescribing an alkaline solvent which succeeds in eliminating already existent urates from the body, and which at the same time stimulates action of the metabolic organs (kidneys, liver and bowels), thus preventing further formation and retention, we will best succeed in curing the "aches and pains" of which our patients complain. In this way, the employment of drugs, classed under the head of analgesics, sedatives and anodynes, (which can be only temporary in effect) will be found quite useless and unnecessary. We cite below the clinical outlines of two or three cases, taken at random from our case-book, as an illustration of this point; to wit:

CASE I. James B., carpenter, aged 45, came to the office, March 3, 1903, complaining of darting pains in arms, back and shoulders, which incapacitated him from his daily work. He attributed his present trouble to exposure, two or three days before, to a cold, damp wind while shingling the roof of a house. He supposed he was "rheumatically" or "grippy," as he had previously had several similar attacks affecting various muscles of the body. Had tried whiskey and quinine to "break it up," but had only made matters worse. He now sought medical advice, not only to get relief from his present attack, but to be permanently cured of his supposed rheumatism. His suffering from "aches and pains" had become so frequent that he was unable to perform his work satisfactorily and he was in danger of losing his position.

During the next four or five weeks he returned many times saying that although he appeared to obtain relief on each occasion from the medicine given him, he was certain that he perspired more than common and "caught cold" more readily, having suffered several attacks from his old complaint. He had been given salicylates and antifebrin; and he was probably right in his surmise.

On April 10th, he appeared voluntarily with a sample of his urine, which had caused him some alarm owing to its scalding nature, dark, red color, and heavy brick dust deposit. Examination revealed an enormous quantity of uric acid crystals. The water was also scant and highly acid. Satisfied now that the patient was a victim of



uricacidemia, as indicated by this "uric acid explosion," he was at once put upon thialion. On the first day, he was given a teaspoonful, dissolved in a glassful of hot water, an hour before breakfast, this dose being repeated every two hours until four doses were taken, when a remarkably copious and foul-smelling evacuation of the bowels took place. For the next fortnight, the early morning dose only was given.

The improvement was marked from the outset. On April 15th, five days after this eliminative mode of treatment was adopted, the patient reported that he began to feel much less "achy" than heretofore, though, at first, the medicine seemed to make him worse. On May 1st, he returned for another bottle of the "salts," saying that he had felt perfectly well for the past two weeks but wished to keep some of the medicine on hand in case of an emergency. Since taking it his bowels had become much more regular.

CASE II. Mary D., housewife, German-American, aged 42, mother of three children, sent for me Oct. 1, 1903. Found her in bed, suffering muscular pains in back and limbs. She reported that she had had "aches and pains" in various parts of the body for the past ten years, for which she had been given "rheumatism medicine" (oil of wintergreen, phenacetine, etc.), with only slight temporary relief. The present attack was more severe, brought on by a long cold drive into the country a few days before. She concluded it was la grippe. She had always been more or less constipated, and suffered frequently from headaches.

Believing this case to be one of similar nature to that already described above, she was put upon the same treatment and with like satisfactory results. She was apparently worse during the first two or three days, but soon began to improve, and at the end of a week was about the house as usual. She was seen again, Dec. 3rd, when she called for another bottle of medicine, stating that her bowels were now "very regular for her" and that her headaches and "rheumatism" had practically disappeared.

CASE III. Harry F., school-boy, aged 14, complained every night upon going to bed of "aching" all over. Was somewhat "feverish" and would toss about and moan in his sleep. Frequently had "nightmare." Had been troubled this way for three or four months. Felt fairly well during the day, and entered with zeal into all kinds of out door sports with his school-mates. Was usually worse on Saturday, after a day's hard play. Bromides, Dover's powder, etc., had been prescribed with no permanent benefit. Parents had become alarmed.

Urinary examination in this case pointed to the advisability of a similar plan of treatment to that adopted in the preceding two cases. After two weeks of such treatment the parents of the lad reported that he was entirely recovered.

## HEADACHE AND BACKACHE OF MENSTRUATION.

BY CHARLES A. DUNHAM, M. D., JACKSONVILLE, FLA.

(Reprinted from *American Medical Compend*, January, 1904.)

So overwhelming is the majority of women and young girls to-day, who suffer from "headache and backache" as the frequent precursor and constant accompaniment of the menstrual period that there is considerable danger of our being forced to the unwise and unsatisfactory conclusion that such symptoms may be but normal and physiological; and, if this view should be accepted, the physician doing so is in further danger of being led to the course of offering only such temporary relief as may be obtained from the use of sedatives and anodynes. Naturally, he will consider that his duty is done if he succeeds in obtunding the pains during the time in which they necessarily occur, thus enabling the patient to pass through the ordeal with greater ease and comfort.

But experience has abundantly shown that the victims of this fallacious mode of treatment sooner or later become slaves to the calmative effects of the drugs employed; and, not only are they afforded no really permanent benefit, but are continually rendered more sensitive to their sufferings. In short the locking up of the secretions and retention of waste solids, resulting from the frequent taking of analgesic medicines, invariably aggravate the abnormal condition of affairs, which has been at the base of their troubles from the outstart.

There are to be noted, of course, varying degrees of intensity in the suffering of these women,—e. g., from the two or three days of slight frontal or temporal headache to the week of intense *migraine*, with its accompanying vertigo, distressing eye symptoms and gastric disturbances. In the former class of cases, the processes of elimination (which are so essential at this time) are almost equal to the necessities of the occasion, and, were it not for a slight constipation or other excretory check, not even the temporary headache and depression would be noted; in the other, however, the sewers of the system are more effectually blocked, the circulation becomes charged with obnoxious waste and the serious chain of symptoms arises which indicates the retention of this debris in the blood and which we now believe to be the true source of the evils we are considering.

To the painstaking study and investigations of Haig, of London, more than to those of any other authority, are we indebted for the knowledge which we now possess concerning the influence of uric acid in the causation of disease; and many disordered conditions of the system which were hitherto but little understood are now attributed to this factor while the therapeutic results founded upon this knowledge have been very gratifying. It is now generally recognized and understood that migraine is caused by the retention of this substance in the circulation, and that the solvent and eliminative mode of treatment, which aims at its removal, is the only one which promises or effects a really permanent cure.

We are indebted to Haig for the important discovery, that, two or three days prior to menstruation there is a marked diminution in the excretion of uric acid, that the latter substance is retained in the circulation until the second or third day of the flow, when it is excreted in greatly increased amount.

This is what normally happens when the organs of elimination are healthy and active and perform this added duty properly, the only symptoms to indicate this temporary retention being a slight headache and depression of spirits at the beginning of the period. But if, for any reason, elimination is imperfect, as is so frequently the case, uric acid remains to accumulate and we have all the disagreeable symptoms which are known to arise from its presence in the capillaries in excess.

It is evident, that in order to avoid this troublesome condition of affairs it is the duty of the physician when confronted with such a case, to aid the patient's organs of elimination in removing this waste substance from the body at the time when such aid will prove most efficient—i. e., just previous to and at the beginning of menstruation. In short, it would seem that the increased work demanded of liver, kidneys and bowels, at this interesting physiological period, is often greater than can be satisfactorily performed, and, as a result of this partial failure, we meet with the many symptoms indicative of the presence in excess in the blood, of waste toxins of the uric acid type.

To illustrate the value of the *solvent and eliminative* mode of treatment in these cases, and the marked therapeutic advantages it possesses over the older palliative means usually employed, we cite briefly here the clinical outlines of a case of menstrual "sick headache" recently treated by both methods; to wit:

Mrs. W., aged 32, a slender brunette of decided nervous temperament, married and mother of four children, had for several years complained that for three or four days prior to each monthly period, she began to suffer intense headache, which warned her of her approaching sickness, and which necessitated complete withdrawal from house-

hold duties. She was obliged to retire to a darkened room and remain in bed, while absolute quiet reigned. At the beginning of the menstrual flow, gastric disturbances arose (vomiting, etc.), the head symptoms increased in virulence, the entire surface of the body became cold and the patient relapsed into a semi-comatose condition alarming to her friends as well as to her physician. Vigorous rubbing of the limbs and body was always resorted to as a necessary means to restore what appeared to be "suspended animation." Brandy and the usual restoratives were applied.

The patient would recover from one of these attacks or seizures, remain in a very weakened condition for a short time and suddenly relapse into another attack lasting for an hour or two. After remaining ill in this way for a week, the patient upon the gradual lessening of the menstrual flux, would cease to have further attacks, but still remain very weak for two or three days. Upon recovery, she went about her household duties as usual for a fortnight, only to repeat the same experience at the coming monthly period.

The treatment in this case had consisted in the taking of analgesics (antifebrin, etc.) at the onset of the headache, drugs of this character seeming to be her only refuge from the intense suffering at this time. After the commencement of her "spells," attention was directed solely toward restoring consciousness and feeling and an impeded circulation. It was evident, however, that some rational course of treatment should be adopted between the attacks to prevent their recurrence, as the patient was extremely nervous, and her general physical condition undermined. The chief symptoms of which she complained between times were constipation and occasional headaches.

After several years of this suffering and many changes in the treatment at the hands of various physicians who had been consulted, the diagnosis of migraine was made and the solvent and eliminative mode of treatment adopted. Instead of obtunding the pain by means of drugs which paralyzed nature's efforts at eliminating toxic waste, it was decided to directly aid in these efforts by stimulating the natural processes of excretion and employing a solvent which would render removal of the urates prompt and certain, for it was now believed that the serious symptoms in this case were entirely attributable to the retention of colloid urates in the circulation and consequent choking up of the capillaries.

A day or two prior to the time of the expected headache, she was given, the first thing upon arising in the morning an hour before breakfast, a teaspoonful of thialion dissolved in a glassful of hot water, which dose was repeated at two-hourly intervals until four teaspoonfuls had been taken. This caused copious evacuation of the bowels and well marked diuresis. For the ensuing three or four days, only the single morning dose was taken. Though menstruation had now begun, yet the alarming "spell" which had always hitherto accompanied it, had now degenerated into a slight headache and some vertigo. She passed through the dreaded week with nothing more serious.

The same plan of treatment was adopted at the next period, while occasional doses of the solvent were taken in the interim sufficient to cause fairly free movements of the bowels. The result was even more satisfactory than before. A mild headache was the only symptom. This plan has since been followed regularly for the past three years and, during all that time, the patient has failed to suffer one of her old attacks—passing through the monthly ordeal with comparative ease and comfort.

## CLEAN OUT THE SEWERS.

BY G. G. WILLIAMS, M. D., CHICAGO, ILL.,

(Reprinted from the *Alabama Medical Journal*, February, 1904.)

The practice of bleeding and purging so long resorted to by our forefathers in medicine, and the ancient custom of the laity in cleaning out the sewers of the system every spring of the year by means of calomel and squills or similar drugs, had a scientific basis for their well-known beneficial results, which is becoming better recognized by the modern physician every day. The increased facilities now offered us for studying the minute processes at work in disease, and of witnessing the manner in which nature's microscopical defenders repulse her foes, has not only widened our knowledge of the *modus operandi* of the drugs we employ, but enables us to better appreciate the practical value of the simple mode of treatment which was clung to with such faith by our predecessors. Our Revolutionary sires were in the habit of "*cleaning their house*" in the full sense of the term, believing that the rationale of such a proceeding received its justification in the feeling of well-being which invariably ensued.

We know to-day that our body is the laboratory in which various chemical actions and reactions are constantly going on between the cellular elements of the tissues and the nutritive elements in the blood introduced with our food. We know that there is a continual breaking down of used up tissue elements, and that as the resulting waste products can serve no further useful purpose, they are to be eliminated from the body *via* the sewers. We also know that only a part of the food introduced is utilized by the system, and that the remainder is simply to pass on and out as so much worthless material. We know that one form of this sewage finds outlet by way of the kidneys and the other by way of the bowels.

Were it not for the fact that much of the waste debris referred to is actually poisonous in character, its retention in the system would not be so deleterious, but, as it is, the toxic effects are no more than ought to be expected. Not only do the capillaries become choked from the presence of a foreign substance, interfering with the normal function of the parts supplied, but the irritant action of the substance itself on the contiguous tissues results in direct chemical changes, giving rise to various symptoms of disease. It will be seen that the processes of elimination are of the greatest importance in insuring the proper working of the human organism; in short, that in order to enjoy good health and well-being we must keep open the sewers and get rid of the sewage. It must be remembered, that, notwithstanding the vital importance of removing the sewage which collects in the bowels, it is of equal or even greater consequence that that which is thrown into the blood as a result of broken down tissue waste should also be removed by way of the urinary tract. It is essential, therefore, that our remedy should perform the double purpose of a laxative and cholagogue agent, as well as a solvent and eliminant of urea and the urates—the latter two end products being the most common form of waste tissue debris. Instead of bleeding and purging our patients in the violent manner of our forefathers, our object may be more easily and effectually achieved by prescribing some alkaline agent which serves to aid and stimulate the functions of kidneys and bowels in their essential physiological processes of elimination. As a practical illustration of the clinical value of this simple method of treatment in cases of choked up capillaries and retention of "sewage" in the system, we cite the following:

G. B., physician, aged 42, asserted that for ten years he had not felt mentally and physically as a man in ordinary good health ought to feel. He had no organic trouble, but was satisfied that something was wrong, although the only objective physical signs to be discovered were constipation and an occasional overacid urine, scant, highly colored, containing frequent "brick dust" deposits. His subjective

symptoms were frequent headaches, "tired feeling," "fits of blues," muscular pains and aches, sleeplessness, poor appetite, mental and sexual torpor. Various tonic and anti-rheumatic drugs had been taken, but the only relief yet obtained was that which followed temporarily from the action of compound cathartic pills. He had, in truth, become almost entirely dependent upon the latter in order to secure a satisfactory bowel movement twice a week.

Believing the doctor to be a sufferer from hepatic insufficiency and the concomitant retention of underoxidized waste of the uric acid type in the circulation, he was advised to try the efficacy of the solvent and eliminative mode of treatment with the new laxative lithia salt, thialion—an anti-uric-acid and cholagogue agent, whose virtue in cleaning out this form of sewage from the system has become well established. At the end of two months he reported himself satisfied that the solution of the problem in his case had been found. Though, during the first few days of the treatment the symptoms were somewhat aggravated, yet, as this had been looked for, he continued to follow directions conscientiously, and with the most gratifying results. His bowels were now moving fairly regularly, his headaches gradually disappeared, while mentally, physically and sexually he felt himself equal to any ordinary emergency.

The plan adopted in this case was to take on the first day a teaspoonful of the salt, dissolved in a glassful of hot water, the first thing upon getting out of bed in the morning, repeating the dose every two hours until the bowels moved freely. For the ensuing fortnight two daily doses were taken—morning and evening. During the next two weeks, only the early morning dose was taken. It was then gradually reduced until only two doses were taken per week. Three four ounce bottles were taken in all, and the doctor has now become a firm convert to this simple plan of treatment. He believes, as does the writer, that much of the obscure invalidism so prevalent in modern times may be made to disappear by merely "cleaning out the sewers" of the system.

The writer has treated several chronic cases of so-called "malaria" and "neurasthenia" in this manner, which had previously baffled himself and others; and, though in every instance, the patients reported at first that the symptoms were aggravated, yet eventually they were relieved—sometimes within a month or two, sometimes longer. It is our personal opinion that the successful therapeutic results obtained are due entirely to the fact that the remedy employed aids the metabolic and eliminative organs, liver, kidneys and bowels, in excreting from the body the waste tissue debris which has served as a foreign body to choke the capillaries, as well as a toxic irritant to nerve tissue, thus causing the many and varied symptoms which are so troublesome to doctor and patient alike.

## MALARIA.

BY A. N. COUTURE, M. D., AUBURN, CAL.

Read before the Eclectic Medical Society of the State of California, May 22, 1900.

(Abstract from the *Cal. Med. Jour.*, August, 1900.)

I have been requested by the Chairman of this Section to contribute a paper reciting my experience, and have chosen that hydra-headed monster, malaria, as my subject. What a multitude of sins have been laid at his door! What an amount of ignorance that word has hidden! If you cannot diagnose your case, call it "malaria," and it is an even gamble you are right. Well, malaria has been known as "fever and chills," "break-bone fever," "fever and ague," "intermittent fever," etc. Certain conditions are required for the propagation of this poison or miasm, such as the turning of a new soil, heat and moisture. What the exact nature of the poison is, I leave to future generations of bugologists; the result we have always with us.

Malaria generally calls upon us in spring and summer, but may decide to remain the year round. It has one peculiar feature, it stays close to the ground, seldom reaching to the second floor of a dwelling, never crossing a stream, fence or hedge unless blown by the wind. It may jump certain localities for a while, but usually gives all a call sooner or later. It is no respecter of age, sex or condition of life—takes the rich as well as the poor—and one call is seldom sufficient; he comes again, and yet again.

The period of incubation is not definitely known, varying with different people. We may have just a slight indisposition, occipital headache, backache, or just "that tired feeling."

In a complete case of *intermittens*, we have a chill, fever, then sweat, or we may have just the reverse, or may have any two without the third, or but one, which is called the incomplete. We may have a masked form, as neuralgias, rheumatism, etc.

In the chill stage, the face is pale, nose shrunk and pointed, lips blue, chilly sensations up and down the back bone, bones all ache, the base of the brain aches, or the front of the head, over the eyes aches, a peculiar motion of the lower jaw which no effort of the affected individual can keep still, the blood seems to have all passed to the internal organs. This stage may last from a few moments to half a day, then comes the fever.

The heat creeps slowly till all the body is ablaze; they may or may not have thirst, delirium at times. Usually the bones stop aching at this time. The spleen and liver are enlarged and tender to the touch, fever from 104 degrees to 108 or 109. This may last from one hour to several hours, then comes the sweat and general relief.

In this stage, the fever gradually diminishes and great beads of perspiration cover the body until every garment is soaked. Then come the apyrexias and a repetition, unless checked.

These symptoms may vary—i. e., some be present or absent—but this is the usual run.

We may have these paroxysms every day, every other day, every third day or every seventh day, or they may be doubled on each of these days. Then, again, they may always come at the same hour, or postpone or antepone.

Now, if these conditions are allowed to continue, they may result in dropsy in consequence of the enlargement of the spleen, due to the disturbance of its function, chronic parenchymatous nephritis, or general ague cachexia.

Besides this form of malaria, we may have relapsing remittent, or other forms.

The prognosis is good, with frequent recurrences, although the patients usually pray for death and get wrathful because their prayers are not answered.

*Treatment.*—I do not expect all to agree with me, but my favorite axiom is, the less quinine the better (my belief is that quinine predisposes to the recurrence of the paroxysms); and *no calomel*. In its stead I use, after the fever has left the patient, a pill composed of the following:

℞ Aloin,  
Ext. colocynth comp.,  
Ext. nux vomica, aa gr. 1-10.  
Podophyllin, gr. 2-10.  
Ol. croton, gr. 1-15.  
Ol. capsicum, gr. 1-128.

Using two or three pills at bedtime, depending on the patient.

Where there is habitual constipation, with rheumatism or neuralgia, I have used with good results thialion.

After the sweat stage is over, have the patient sponged with tepid water.

*Diet.*—Keep fruits and acids from the patient, so as to have as sweet a stomach as possible. Allow soup, milk, broths, eggs and a general light diet.

For the enlarged liver and spleen use the Faradic current, using the negative pole on the affected organ, the positive pole on the hand or under the foot.

No matter what disease you are treating, when your remedies fail to act, suspect malaria, which must be first removed, then your efforts will be crowned with success.

#### A USUALLY UNRECOGNIZED CAUSE OF AMENORRHEA.

BY W. H. BENTLEY, M. D., LL. D., WOODSTOCK, KY.

(Reprinted from *The Medical Summary*, October, 1903.)

In the early part of the present year a family from another county bought land in this immediate neighborhood and removed to it. They left a married daughter where they came from and a widowed daughter making her home with the former. The widow remained with her sister for the purpose of being treated for amenorrhea which she had had for about two years. Five physicians had exhausted their skill to no avail in her case. About the time the family removed a sixth physician put in his appearance alleging that he could cure her in three weeks. Although he treated her until the 1st of May he utterly failed and she was brought to her parental home nearly a complete wreck, for in addition to her amenorrhea she had a well defined case of neurasthenia.

In a few days she was brought to me for examination and treatment. Her amenorrhea had followed a severe case of meningitis, the neurasthenia rather naturally accompanying.

I made a very thorough examination and became satisfied she was a victim of uricacidemia.

*Treatment.*—After clearing her system from the uric acid by means of thialion I gave her triple arsenites and nuclein.

She had taken the thialion but a few days until her menses reappeared and were fully re-established.

I continued the treatment, keeping the urine neutral by means of the thialion and administering the nuclein and triple arsenites six times daily to re-establish the

cell-work. The result was complete recovery in every respect by the 15th of June, and she remains well at this writing.

I have no doubt but that the former physician used the remedies common in such cases, but that the uric acid in the system impeded or entirely prevented the proper action of their remedies.

## ASTHMA AND ITS TREATMENT.

BY A. E. MAY, M. D., NEW HAVEN, CONN.

(Reprinted from *Gaillard's Medical Journal*, October, 1900.)

It is doubtful if any other human affection has had more widely conflicting theories advanced in explanation of the real nature and causation of the symptoms manifested, than has the disease known as "spasmodic" or bronchial asthma. Dr. James F. Whittaker pronounces it, "a paroxysmal dyspnoea caused by a peculiar catarrh, with spasm of the bronchi." Dr. Sidney Martin (*Deutsche Medicinal-Zeitung*, July, 1872), says: "Spasmodic asthma is a nervous affection and occurs primarily as well as secondarily." Williams, also, advocated the neurotic theory. Traub wrote of hyperæmia; Clark of diffused hyperæmic swelling; and Webber of vaso-motor turgescence.

More recently, however, owing to various lesions found by pathologists in the dead room and disclosures made by physical diagnosis, the causation of asthma has been directed to organs found affected—as the lungs, heart, brain and cord; until, finally, the very existence of the disease as an independent affection has been denied altogether, and it is to-day regarded as merely a symptom of some constitutional affection.

In the etiology of this troublesome malady, therefore, modern classification recognizes only the indirect or intermediate causes, e. g., (1) those operative through the nervous system (centric-excitomotor), and (2) those operative through the blood, as in gout, syphilis, renal disease, etc. The diathetic nature of asthma is a fact now quite generally accepted; the theory of Haig being, that the causative factor of the symptoms, in the majority of cases, is uric acid in the blood and the high arterial tension it produces,—a condition brought about by a disturbance of the equipoise between the functions of nutrition and excretion; i. e., a faulty metabolism.

After five years of the most terrible sufferings, the writer, having carefully studied the disease, is firmly convinced that asthma is due to an abnormal biochemia of the blood, which impairs its oxygenation; that the lungs and nerves take no active part in its etiology, other than the performance of their physiological duty; that the blood dyscrasias which figure most prominently in the causation of asthma, are the anæmic, lithæmic and leukæmic.

About six years ago I developed asthma, which soon assumed such proportions as to compel me to relinquish active practice altogether. Attacks became more and more frequent and increased in severity,—relief coming only when I had reached an extreme degree of exhaustion. One attack followed another, and in turn was treated by every remedy known to the regular, as well as the advertising physician, with only temporary relief. After many months' suffering of this character, I observed a series of prodromal symptoms warning me of an approaching attack,—such as headache, occipital pain, stiffness of the muscles of the neck, muscular pains, neuralgias, great mental depression, etc., these symptoms recurring and recurring until it seemed as though there were no place for me on Earth.

I finally learned that when a severe attack of asthma came on, a full dose of calomel followed by a draught of Hunyadi Water gave me quicker and more substantial relief than anything yet I had previously obtained, and it dawned upon me that my trouble was perhaps due to deficient elimination; that my asthma was produced by a con-



dition of lithæmia, not sufficiently marked to be called "gout" but all sufficient to account for the symptoms heretofore mentioned.

It seemed to me, after every relief obtained from the diuretic and cholagogue action of the drug employed, that I must have been suffering from the effects of certain toxins absorbed into the circulation from some portion of the alimentary tract, or, perhaps, left in the system from inefficient action on the part of the excretory organs. In other words, my condition appeared to be that of auto-intoxication brought about probably by a defective working power inherent in the organs primarily concerned in the processes of digestion and excretion—especially the liver and kidneys.

The object, then, of treatment in asthma, should be to encourage such a mode of life as will tend to procure and maintain a normal condition of the blood. No disease in the whole domain of medicine, unless it be rheumatism, is more benefited by a proper diet, or more aggravated by an improper one, than is asthma. Those foods should be selected which are most rapidly assimilated and readily oxygenated, and first upon the list is fresh, rare beef—roasted or otherwise. I believe that rare beef not only generates a blood favorable to oxygenation, but one that is unfavorable to the osmotic outpourings of mucus so characteristic of the asthmatic.

Baths, light, altitude, etc., are also prominent factors in curing the asthmatic. Altitude may, in many cases, be advantageously substituted for drugs. In choosing a location for an asthmatic, however, the main object, other than altitude, is to avoid malarial districts, for there is no disease more destructive to the cellular constituents of the blood, than is malaria. Some eight months ago my attention was called to thialion, a remedy much lauded as a solvent for, and to promote elimination of uric acid. I used the drug four weeks, taking each morning a large teaspoonful of the salt in a goblet of hot water, and drinking, besides, during the day, three pints of Apollinaris water.

The above constituted the whole course of treatment, the results of which were simply astonishing. For five months I have had no asthmatic seizure; no pain; no headaches; and am able to walk rapidly about with no shortness of breath nor disturbance of any character. I have since used thialion in several cases of asthma, and results in all of these instances were uniformly good. The value of the remedy would seem to lie, not altogether in its virtue as a solvent of uric acid (for there are many other such solvents), but largely in its power to enhance cellular action of the liver—incidentally increasing the flow of bile and initiating intestinal peristalsis. In other words, it not only possesses the properties of certain other remedial agents, in removing from the system the uric acid already formed; but, in addition, owing to its peculiar cholagogue action, serves as a *prophylactic* agent in preventing the formation of any more,—for, that the liver is the principal uric acid factory in these lithæmic conditions, is a fact now quite generally accepted.

In this brief paper it has not been my intention to mystify, theorize, nor idly speculate, but rather to emphasize the value of thialion as a remedy in uric acid toxæmias; and to deal, also, with a few well-established facts in such a manner that some of my friends in the medical profession may be able to cope with the advertising physician in the treatment of asthma.

#### IS CALOMEL NECESSARY?

BY G. A. GILBERT, M. D., DANBURY, CONN.

(Reprinted from *New England Medical Monthly*, January, 1900.)

Since the method of its preparation was first made generally known to the profession, by Beguin, at the beginning of the 17th century, it is doubtful if any other drug has been used any more extensively in actual practice than has the mild chloride of mercury. In the form of calomel, or of blue mass, it has probably been introduced

into the stomach of nearly every English speaking adult person born into the world during the last three hundred years. That a metallic poison of this character should be administered so long, in so liberal a manner, suggests an inquiry as to the reason therefor.

The first thought that presents itself, in considering this question, is, that man has a system prone to disorder and that the *prima via* are peculiarly susceptible; and second, that either calomel is a specific in these cases or else no other remedy has been found to meet the indications.

It is doubtless because of its supposed cholagogue properties that this drug has been hitherto so generously prescribed, notwithstanding its well-known constitutional ill-effects in chronic cases. It has been popular, too, because of its convenience of administration, its inexpensiveness, and its certainty of action upon the bowels, experience having demonstrated that in cases of so-called acute "biliousness," relief is often prompt and effective.

Modern investigations reveal the fact, however, that the virtue of calomel in these instances is not owing to any direct stimulation of the biliary secretion—which, on the contrary, is found to be lessened under purgative doses—but to its antiseptic properties; the characteristic green stools following its administration being due principally to the arrest of certain chemical changes, which ordinarily take place in the intestinal contents, and partially to the formation of subsulphide of mercury. "Under normal circumstances," says Prof. Nickles, "the bile pigments, bilirubin and biliverdin, are destroyed by putrefactive processes taking place in the intestines, so that unaltered coloring matter cannot be found in normal feces. Calomel prevents these decompositions, hence the biliary pigment retains its green color, and in consequence of the accelerated peristalsis, is discharged from the body before reabsorption can take place."

Buchheim has shown, too, that notable quantities of the products of pancreatic digestion, peptone, tyrosin, and leucin, are also found in the evacuations produced by calomel. Thus, by arresting these chemical changes of the bile and digestive products, and preventing their absorption, it will be understood why this drug has been of utility in certain cases. By diminishing the amount of material absorbed into the portal circulation, the liver is depleted, its functional activity reduced, and the biliary secretion *lessened* instead of increased. Whenever, therefore, it is our object simply to remove the intestinal contents and relieve the portal circulation, giving temporary rest to the liver, calomel is indicated.

But it will at once be seen that the drug should be employed for this purpose only occasionally, for owing to its arrest of the ultimate processes of pancreatic and intestinal digestion and lessening of biliary activity, the various tissues will eventually become starved and the system materially weakened. It should be avoided, therefore, in all chronic cases—especially of constipation. Against its use for the latter trouble, repeated warnings are given by the system itself, many patients becoming nauseated and ill from its effects, or, sometimes, from the mere sight or mention of the drug, especially after having been purged a few times. While it operates kindly, then, in hepatic disturbances of an acute character, yet it should be prescribed only at rare intervals.

The various other objections urged against the too frequent employment of this drug are too well-known to be referred to in this connection. Suffice it to say that the members of the profession are becoming less prodigal in its use, and that the physician of to-day prescribes calomel much more rarely than did his predecessors. Chemistry and pharmacy have made rapid strides in the last few years, and many crude remedies of the past are being supplanted by the more elegant and effective productions of the modern laboratory.

Among other remedies sought, a substitute for calomel has long been desired, and many physicians are of the opinion that such an agent has been found, one which not only possesses the more desirable therapeutic qualities of the former, but which, in

addition, is a true cholagogue in effect, as well as a uric acid solvent of the highest character. We refer to the new laxative salt of lithia, thialion.

In the West and South, where it has been used most extensively, this latter drug has superseded calomel almost entirely, especially in malarious districts. The physicians of those sections report that the action of quinine, when combined with this salt, is enhanced manifold and that malarial cases are easily controlled, which had, hitherto, baffled their most persistent efforts. [Cf. article on "Malaria," by A. N. Couture, M. D., published in the *California Medical Journal*, August, 1900.] Its beneficial action in these cases is attributed to its virtue as an hepatic stimulant, increasing the flow of bile and initiating peristalsis, at the same time removing from the circulation the uric acid toxin, and thus aiding indirectly the metabolic processes.

In the variable climate of the New England states, where rheumatic troubles and tonsillitis are prevalent, thialion is fast taking the place of calomel, as an evacuant or preliminary agent to febrifuges and other drugs, preparing the way for their more ready absorption, by stimulating the functional activity of the liver and removing noxious intestinal waste.

It is in chronic constipation, however, that the new lithia salt has been found of the greatest utility. In cases of long standing of this character, a teaspoonful of the salt is administered in a cupful of hot water, every two hours, the first day, until a free mushy movement of the bowels is produced, which usually occurs immediately after the second or third dose. Thereafter, for about a month, a teaspoonful is administered every morning upon arising. The dose is then gradually diminished, or given less frequently, until the patient is cured, or until such time as he is enabled to secure a daily evacuation without the aid of the drug.

Another great advantage inherent in this remedy as compared with calomel, is its well-known efficiency in removing uric acid from the system. So common has the lithæmic condition become, as a result of modern living, that an effective uric acid solvent is now one of the most important weapons in the hands of the general practitioner. Though, with calomel, he may remove noxious material from the intestinal tract, and often abort a threatened illness or fever from auto-intoxication, he cannot remedy the ills resulting from faulty metabolism. A rational treatment will aim at relieving the system of the toxin already existing, besides stimulating to the normal the functions of the organ principally at fault in order to prevent the formation of any more.

The writer has thus dwelt upon these various points, to emphasize the question as to the necessity of prescribing calomel. In his own opinion there are certain occasions, when immediate and temporary effects are required, that calomel may be used to advantage. But in the vast majority of those cases in which this drug has been generally supposed to be the remedy *par excellence*, it is believed that the welfare of the patient and repute of his physician will both be conserved, if a true cholagogue agent, like the one above described, be given a fair trial.

## SUCCESSFUL TREATMENT OF BRIGHT'S DISEASE.

BY F. J. SPILMAN, M. D., CONNERSVILLE, IND.

(Reprinted from the *Interstate Medical Journal*, Dec., 1900.)

The only case of Bright's disease in which I have tried thialion, is my own, and the history is as follows:

I first discovered albumen in my urine in the winter of 1894-95 while at work in the chemical laboratory of The Medical College of Ohio, but thought nothing of it until last year, on being rejected by a life insurance company, which, fortunately started me thinking. I sent a specimen to Chicago for analysis, with the following result: Color, clear;

specific gravity, 1.015; reaction, acid; urea, 1.02 per cent.; albumen, 9 per cent.; sugar, absent; epithelial cells, few; hyalin casts, very few. Diagnosis, desquamative nephritis, and instructions to use absolute milk diet as treatment, which I tried, but finding it impossible to continue my business on so little nourishment (having an extensive country practice at that time, which as you know is very trying on one's constitution), was forced to seek some other source of relief, and meanwhile keeping close watch on the amount of albumen present, found it rapidly on the increase, and, naturally being very anxious as to my future prospects, consulted ever so many physicians with but very little encouragement, each, however, recommending a remedy, I trying all without results, until one day while looking through my copy of *The New Albany Medical Herald*, I saw a letter from Dr. Kibbee, of Illinois, stating the case of his son in which he had used thialion with such marked success, and I determining to give it a trial, ordered a supply immediately and used it according to the directions. In two months the albumen had disappeared entirely, and I left off the remedy; but a few days ago I noticed a slight return, when I commenced to use it again, with the same result.

I just wish to state that from the time of the analysis (Chicago analysis), until I found thialion, the amount of albumen had doubled. I am sure the medicine will undoubtedly effect a cure, if I continue its use a sufficient length of time. I certainly consider thialion a great remedy, and feel grateful for what it has accomplished in my case.

## TWO CASES OF BRIGHT'S DISEASE AND THEIR TREATMENT.

BY C. H. SANGSTER, M. D., BUFFALO, N. Y.

(Reprinted from the *Massachusetts Medical Journal*, January, 1901.)

I have met several cases of this disease during the last year, which have been treated on the theory that an excess of uric acid in the system is the cause, and with success beyond my most sanguine expectations, and I note the following cases as typical of this mode of treatment:

The way in which the medicine acts, if the uric acid theory is correct, is easily explained, for this drug will sweep that toxine from the system as nothing else will, but I believe its effective action upon the liver is also a factor to be considered. Saundby in his lectures on Bright's disease, published in 1899 by E. B. Treat & Co., the New York publishers, says of lithaemic nephritis: "It occurs mostly in the habitual beer drinkers and those who use alcoholics to excess; but may occur in those who inherit a gouty diathesis. It is rare under forty, becomes common after that period is passed, and after fifty is so common that nearly one-third of all persons dying above that age, show more or less signs of its action in the kidneys." Striking cases have also been published by Meigs and Kidd.

CASE I. Mrs. M., of Buffalo; age, 39; called on me last year with the following symptoms.

A constant loss of flesh; headache persistent. The stomach was irritable, not taking good care of the food ingested; bowels, constipated; tongue, furred; complexion pallid, and general debility. Insomnia was a persistent symptom, as it generally is in this disease. She had also dimness of vision, accompanied by attacks of vertigo.

An examination of the urine revealed the following: Increased flow, much over normal, almost colorless, reaching 94 ounces in the 24 hours; specific gravity, 1.008—the density varied with the quantity, and particular samples passed during the day were much higher than the total quantity. Albumen slight in quantity; sugar, none; phosphates, diminished; reaction, decidedly acid; urea diminished. Under the microscope it showed a few hyaline and granular casts—uric acid crystal numerous.

The pulse was full and hard and showed decided tension. The several cardiac sounds were sharp and loud. She had diarrhoeal attacks, during which she had marked dimness of vision and drowsiness during the day time.

Diagnosis: Interstitial nephritis of uric acid origin.

I put her on a milk diet, and ordered regular hot baths, giving internally  $\frac{1}{10}$  grain of chloride of gold three times a day. A month of this treatment and no improvement was noticeable. A physician friend advised that I use thialion. I prescribed it in teaspoonful doses given in a cup of hot water, as hot as it could be drunk three times daily before meals (one hour), for three days, when the urine showed by the litmus test that it was *nearly alkaline*. The thialion was continued once a day one day and twice a day the next, so that the bowels would not be too free. The improvement began at once, and in two weeks it was very marked, when the urine was diminished to almost normal in quantity; specific gravity, 1.022; urea markedly increased and subjective symptoms had nearly disappeared. At this writing there is no albumen, no casts, and she is feeling better than she has in three years.

CASE II. I. C., age 54, mechanic, had to rise four or five times during the night, and this feature of his case decided him to call upon me for advice. Urine examination showed the specific gravity to be 1.010; very acid; albumen absent; no sugar; urea diminished; with hyaline and granular casts. He complained of post cerebral neuralgia, dimness of vision. Pulse was full and hard.

Diagnosis as in the preceding case, and the treatment consisted of thialion given as in case I. In three weeks the urine showed a specific gravity of 1.022, increased urea.

#### A CASE OF URICACIDÆMIA; MISTAKEN SYMPTOMS; ERRONEOUS TREATMENT; RECOVERY.

BY W. H. BENTLEY, M. D., LL. D., WOODSTOCK, KY.

(Reprinted from the *Uric Acid Monthly*, Vol. IV, No. 3.)

In September, 1903, Mr. W. G. applied to me to treat his wife, who had previously been treated unsuccessfully. He lived at the extreme border of the county, twenty-three miles distant. The history of the case, as given by the husband, is succinctly as follows:

Patient, 25 years old; mother of one child, a daughter a little over 7 years of age. Since the birth of the child, until recently, she had enjoyed the best of health, but had not been pregnant.

About the middle of July, she noticed that every time she passed water, at or after 4 o'clock P. M. until 4 o'clock next morning, she had a quick, sharp pain in the bladder, followed by a slight aching. After 4 o'clock in the morning, until 4 o'clock in the evening, all these symptoms ceased to be felt. They were followed at and after 4 P. M. until 4 o'clock in the next morning by the same train of symptoms above described. After some days, she called the attention of her mother to her peculiar situation. The mother recommended "parsley tea," and when this failed, she tried a decoction of the seeds of the watermelon. This, too, failed; not only so, but after the use of these, all the symptoms were aggravated; but the periodicity continued. Then, for the first time, she told her troubles to her husband, and he determined to at once seek medical aid. He prepared to take his wife to a doctor the ensuing day. Accordingly they set out at an early hour. They lived 15 or 16 miles from a small city in the adjoining county, whose few doctors had acquired more than local fame. The oldest of these was Doctor X, who, after graduating in medicine more than a third of a century ago, located in the city and had remained there ever since. By his courteous attention to business, his skill in the treatment of the sick and his gentle-

manly deportment, he had, deservedly, won the confidence of everybody in the community. To his office, therefore, Mr. G. took his wife. After a history of her case and due examination, the doctor said: "Before the examination I feared uterine disease, but the womb is entirely healthy and in nowise displaced. It is evident that the trouble is neuralgia of the bladder, and its persistent periodicity points unerringly to its malarial origin. A cure will follow a thorough saturizing of the patient's system with quinine." So saying, the doctor took from a shelf a full ounce bottle of "P. & W.'s" quinine and carefully weighed out a half drachm and divided it into four equal sample powders, giving bottle and powders to Mr. G., with the direction that one powder was a dose and that a like dose should be taken three times a day before meals and another at bedtime; that the quinine should be continued until all was used, unless a cure was effected earlier.

When the quinine was all used according to the foregoing directions, the following was about the state of the case: Pain was more pronounced and more persistent; for, instead of relaxing and leaving at 4 o'clock A. M., it continued until 9 o'clock. It still came promptly at 4 o'clock P. M. There was partial, nearly half, blindness, and almost total deafness. There was, at times, partial strangling, and a constant drumming and roaring in the ears. It is needless to say that Mr. G. lost no time in repairing to the doctor and reporting the status of the case. The doctor gave him an ounce of benzoic acid, teaspoonful doses to be given before each meal and on retiring. The results: Periodicity still continued as in the last report; urine, free; blindness and deafness improved a little; drumming and roaring in head little if any improved. Mr. G. returned to the doctor, who said: "I think I should see Mrs. G. again. In making the prior examination I failed to explore the bladder, and the trouble may be due to a cystic calculus, or there may be calculi (more than one, he explained)." Mr. G. took the doctor home with him. The exploration was made next morning. He failed to find any stone. He announced this fact and fell back to his former diagnosis, leaving with the patient an ounce of Fowler's solution, explaining that arsenic often cured malaria when quinine had failed. After the usual precautions, the doctor left, and the patient took all the solution as directed, but was in no way benefited. The pain still came promptly at 4 o'clock in the evening; but lasted until 11 o'clock next day. Then Mr. G. went to Dr. X. once more, who now advised that a consultation be held. To this Mr. G. readily consented and Dr. Z. was called in. After learning the history of the case, the latter diagnosed cystitis, and proposed to prescribe arbutin,—a comparatively recently introduced glucocide from *uva ursi*. Dr. X. consented, and they prescribed 250 five grain tablets, to be taken, at first, in one tablet doses, four times daily, soon to be doubled if the first dosage did not speedily prove effective. The result was *nil*.

There was no regular physician living nearer to Mr. G. than those of the little city already referred to; but there was a self-constituted doctor living six miles distant. He was considered successful in fevers and "worms," as he treated these disorders with the numerous indigenous plants which his thinly settled neighborhood furnished in profuse abundance. It is said that his library consisted of a single volume—"King's Domestic Medicine," purchased second-hand from a lot that was sold at auction in 1875. After the exhaustion and utter failure of the last named prescription, Mr. G. was deeply considering what to do next. Just then, fortunately, the disciple of Dr. King's Domestic Medicine chanced to be passing, and Mr. G. concluded to consult him. The doctor readily told him that the patient needed nothing save a good alternative, which he had with him in the shape of half a pound of iodide of potash. He took from his saddle an eight ounce vial and a bottle of the iodide of potash, of which, according to Mr. G., he put about two ounces into the vial, and after filling with water, directed a teaspoonful three times a day before meals. But then a new trouble arose, for in a few days undoubted evidence of iodine poisoning presented itself. Patient had suffocating spells, the heart was irregular, often nearly ceasing to beat, and then beating for a time most furiously; there was complete loss

of appetite. The dose was lessened by half or more, and she took all the medicine. The eyesight and hearing were greatly improved, the roaring in the head was lessened, but the pain and periodicity continued as before except that the pain now continued until 12 o'clock (noon).

After a few days of reflection, Mr. G. concluded to consult his uncle as to the best method of procedure. His uncle was a thrifty farmer and country merchant living three miles distant. After hearing Mr. G. through and being asked what he had better do next, the uncle replied: "Go to Dr. Bentley, at Woodstock, he is the only doctor that I have had for twenty-seven years. You need not take your wife along, but I think you had better take along a vial of her urine. This, with a fair description of the case, will enable him to treat her satisfactorily." The ensuing day, Mr. G. came, and brought the urine, which he had secured and placed in his saddlebags the evening previous. The September weather being rather cool, the urine chilled and deposited uric acid crystals on the bottom and sides of the vial, so they could only be removed by an alkali. The urine was still quite acid. Patient was quite costive and had taken many doses of cathartics. She was likewise dyspeptic, very pale and had a meagre appetite. When the specimen of urine was produced, I introduced a small piece of litmus paper to show the manner of using. I then instructed him in its further use, and gave him a full bottle of thialion, with instructions to give a heaping teaspoonful every three hours till the bowels acted freely, and to continue it at such intervals as would keep the bowels soluble, but to discontinue when the urine became highly alkaline. He was to report the case in 8 or 10 days. He did not return until the end of three weeks, when he reported that the pain was much modified and had been rendered lighter with the first copious discharge of the bowels produced by five doses of thialion; that on the second day the pain only slightly returned at 7 o'clock at night, and ceased in an hour, since which time there had been no return of the pain; that both the appetite and good digestion returned at once, and, save some physical weakness, she (the patient) seemed well by the time all the thialion was used. But the urine stayed positively acid. He did not think it necessary to return till then, but the urine was plainly more acid and the patient was plainly on the background; but she had had no more pain. He thought that she had quit the medicine too soon, and wanted two other bottles. I accordingly gave them to him; and though he promised to report soon, I did not see him till the 15th of January, when he came along with his cattle seeking a market. He stopped and reported his wife in perfect health. She had only used the half of one bottle ere the urine seemed normal. She then felt well and discontinued it. Said he would keep what he had and use again if he thought necessary. Patient had no medicine from me other than thialion.

I have been somewhat prolix in this paper, I am aware, but I desire to call attention to the importance of the doctor's recognition of the presence of uric acid in any case coming under his treatment. No doctor knowing Dr. X. or Dr. Z. has any doubt of his ample equipment in medical science; yet in this case the joint failure of both gentlemen to recognize the presence of that insidious foe to human health, *uric acid*, doomed both to humiliating failure.

From a close study of the subject extending over several years, I believe that medicine is powerless—except, of course, an eliminant—in the presence of uric acid. I have tried many drugs that profess to eliminate this deleterious acid from the blood. I have used these preparations in good faith and to the best of my ability. In these experiments I have met with more or less success. Not one that I tried, however, was found thoroughly reliable till I came to use thialion. This, after an extensive use for five years, has never disappointed me. I rely on it; and while it continues as reliable as it has thus far proven in my hands, I shall not seek a better remedy.

## THE URIC ACID SOLVENT IN DENTAL PRACTICE.

BY G. K. HAWLEY, D. D. S., DANBURY, CONN.

(Reprinted from *Uric Acid Monthly*, Vol. IV, No. 5.)

That certain lesions of the teeth and gums may be due to the same underlying constitutional factor as that which gives rise to gout and other manifestations of the uric acid diathesis has long been suspected; but it was not until recently that our principal dental authorities became convinced by careful investigations that this intimate etiological relationship actually existed, and advocated the employment of the uric acid solvent as essential to any really permanent cure, in the treatment of such conditions.

It is now the general consensus of opinion among stomatologic pathologists, that, during the molecular storing of the salts of uric acid in the synovial tissue, a same principle is obeyed by the deposit in other somatic tissue. In other words, it is maintained that the same predilective irritation is offered by the joints of the teeth, as by the metatarso-phalangeal articulation of the toe, and that pain and inflammatory symptoms in each case may be caused by the deposition of urates. It is now pretty generally understood that there is an approximate relationship existing between gout attacking the joint of the great toe and that which predilects the gomphosis articulation in the maxillæ; and also a similar nature existing in soft tissues in different places of the organism, and that assailing the gums and periodontum.

In the Fifth Edition of his celebrated work, "Uric Acid as a Factor in the Causation of Disease," (p. 660), Alexander Haig, A. M., M. D., F. R. C. P., of London, who has long been recognized as the greatest authority on this subject, has this to say: "As it bears specially on treatment, I may mention the well-known connection between gout and certain teeth troubles. And indeed, it has been quite a common experience with me that the dental troubles called periostitis, or other inflammation of the pulp or surroundings of a tooth, such as are started by a cold wind in spring or autumn, yield at once and promptly disappear if uric acid solvents are taken for any purpose. And it seems to me quite possible that we have here again to deal with a gout of fibrous tissues, originating just like gout or rheumatism elsewhere in the local action of cold, and like them yielding at once to the administration of the uric acid solvent. I have gradually come to use the latter remedy with the utmost confidence in all such troubles of the teeth—for the purpose of sweeping out urates from the system."

The proneness, in the gouty subject, for tartar to collect upon the teeth has long been observed by both the physician and dental surgeon. The latter now knows that such tartar is usually composed of urates, and that the so-called serulum calculus or exudate from the peridental membrane, is similarly constituted. He also knows that after extraction of a tooth, or even when it is held *in loco*, he may discern the peridental membrane gone and the naked root seen to some high extent in the alveolus; and in advanced cases the alveolar process that surrounds the root, loose, completely exfoliated, with pockets that are deep and high, which are welling out pus and sanious matter; and at a time find a *uratic lithos* (or stone) at the very apex of the root. "In making its egress from the gingival festering," says one author, "the tissue disintegration is cast off and trickles along the root; and as this destructive process continues, a sinus or *cul-de-sac* is formed. Now, as we have these abnormal pouches, the result of pathogenetic change, during mastication food-stuff may lodge there and latterly set up or form pyogenesis, and finally define into an abscess." Pyorrhœa alveolaris may be similarly caused, inasmuch as uric acid salts can also be demonstrated on the sides of the fangs in this disease. The acid solution, it is claimed, has disintegrated the peridental membrane, and from this effect, the tooth or teeth become loose and oscillate in their sockets.



Concerning this latter affection (the so-called "pyorrhœa alveolaris" of the older authors), J. Lambert Asay, M. D., D. D. S., of San Jose, Cal., in a paper, entitled "Oral Manifestations of Lithæmia," read before the Santa Clara County Medical Society, April 15, 1903, states: "Accompanying this form of the disease, there exists that peculiar dyscrasia expressed in a lowered vitality, disturbance of the nerve centers, and other functional phenomena. In other words, it is essentially a disease of suboxidation, and its identity with the uric acid diathesis cannot be consistently questioned."

Personally, we are in thorough accord with this last statement, and would also make the same application to certain cases of dental caries and to many instances of oral acidity. The particular point which we wish to emphasize, therefore, is, that the uric acid solvent is of great therapeutic value in dental practice. If local measures alone be employed in these cases, relief may be obtained it is true, but it can only be temporary. Our chief object should be to open the avenues of elimination and rid the organism of the causative factor which is at the root of the trouble. In no other way can *permanent* results be secured. As Dr. Asay has pertinently said: "As well try to quench the fires of Mount Pelee by scraping the sides of its crater with a hoe, as to attempt to cure these local conditions by instrumentation and mouth washes alone." To which we may add: And as well try to quench the fires of gout by scraping out the deposits in the great toe joint, or from the joints of the teeth, instead of scraping them out from the system entirely by means of an effective solvent and eliminant.

It has been the practice of the writer for some time past, in the treatment of dental caries, erosions, sensitive dentine, gingivitis and pyorrhœa, espec. <sup>ly</sup> if occurring in patients of a gouty or rheumatic tendency, to prescribe thialion internally for its well-known antacid and solvent effects, in conjunction with the usual alkaline antiseptics applied locally. Since the adoption of this plan, the results obtained have been so far more successful than under the older routine methods of the schools, that we feel it almost a duty to bring this important subject to the attention of others and urge them to test the efficacy of the treatment we here suggest.

For the correction of oral acidity it has been our experience that thialion possesses properties which are farther reaching than other similar agents we have used, and, in all cases of caries, pyorrhœa, etc., characterized by uratic deposits, is far more efficient and speedy in effecting a cure. It should be given at the outset in sufficient doses to thoroughly clean out the intestinal tract, and afterward kept up at such intervals and in such amount as to insure regularity of the bowels and the alkalinity of the urine. For this latter purpose, two or three daily doses are usually sufficient—morning, noon and night. We cite briefly here the following case, selected from among many others of a similar character, which is fairly illustrative of the type of the disorders in which the uric acid solvent is indicated, and which shows the value of this form of treatment in dental practice; to wit:

Patient, Mr. S., a man slightly under middle age, living in a distant town-ship, came to the office about a month ago for treatment of a painful and inflammatory affection of the teeth and gums, which had existed for only a short time but which caused him considerable trouble and anxiety. He was of a rheumatic tendency, and frequently suffered from muscular and joint pains.

Examination revealed the fact that the patient was suffering from gingivitis with a strongly marked tendency toward pyorrhœa. It was an aggravated case. The teeth in the affected locality were somewhat loose and oscillated in their sockets, and upon slight percussion caused considerable flinching. The inflammation, swelling and pain were acute.

Upon careful exploration, minute nodular calculi could be detected adhering to the neck of the teeth, at the labial and buccal margin of the gums, in the form of tartar. Believing the latter to be composed chiefly of urates, and that serumal calculi of like composition deposited upon the alveolar surface of the periodontal membrane served as the source of mechanical and chemical irritation which had given rise to the

inflammatory process, extending itself to the contiguous soft tissues, it was decided that sufficient evidence existed to prove a gouty condition of the system, and to demand the employment of the uric acid solvent in the treatment.

On the first day, therefore, the bowels of the patient were thoroughly flushed out by administering a drachm of thialion, dissolved in a glassful of hot water, every two hours, until four doses were taken. He was then directed to take a teaspoonful of the salt, three times daily, dissolved as before, holding a mouthful of the solution allowing it to flow about the teeth and gums before swallowing.

After a few days of this treatment, the patient was again seen. The improvement was much greater than we had reason to have expected. The teeth had become quite firm (tapping upon the crown showing little or no tenderness), the swelling and inflammation had almost entirely subsided and the gums had become fairly healthy in appearance. Indications pointed to a positive cure, although instructions were given to continue taking the thialion for two or three weeks, every other morning early upon arising.

While it would, perhaps, be unwise to declare that this patient had received a permanent cure, during so brief a period of treatment, still we are convinced that such speedy and marked relief as was obtained in this case could have been procured by no purely local measures which the dentist usually employs. Moreover, we have adopted the same line of treatment recently in several cases of so-called "sensitive dentine," and with equally satisfactory results.

#### A CURE FOR SLEEPLESSNESS.

BY J. MCFARLIN, M. D., ST. LOUIS, MO.

(Reprinted from the *International Journal of Surgery*, August, 1904.)

By the term "sleeplessness," as used by me in this connection, I do not refer to the constant deprivation or complete absence of sleep, indicative of approaching insanity, nor yet to the inability to sleep caused by physical pain, acute disease, or emotional disturbances due to some recent great affliction; but rather to that morbid wakefulness, which is apparently without cause, and which is so commonly met with in people who live a sedentary mode of life. I mean the imperfect sleep and restlessness, which seems to keep pace with our modern civilization—at least our forefathers in medicine had much less of it to contend with than have we.

The majority of the patients who complain of this troublesome symptom are to be found among clerks, business and professional men, and women of the so-called "nervous temperament." The man whose occupation is chiefly out of doors, or who earns his living with his muscle instead of his brain, is seldom troubled with sleeplessness. That the man of brain, and not the man of brawn, is usually the victim, is a matter of common observation and would seem to augur some etiological relationship. Prof. Huxley (Cf. *Physiol.*, § 502) is of the opinion, that "sleeplessness is both a symptom and an immediate cause of cerebral disorder." I am in perfect accord with the first half of this statement, if, by "cerebral disorder," is meant congestion of the cerebral capillaries.

Mental effort is as much the result of cerebral action and disintegration of brain tissue, as physical exertion is that of muscular action and breaking down of its tissue; and both require that the supply of nutriment (or building material) should equal the demand, and that the waste débris resulting from such activity should be removed. The capillaries, therefore, must serve in the double capacity of supply tubes and waste pipes. Now, if the general process of elimination is properly performed (by way of kidneys, liver and bowels), the capillaries are kept open and free and this waste débris is effectually removed. But the man of brain is notoriously negligent in this respect,

and the inevitable consequence is the blocking up of those capillaries into which the most waste is thrown—i. e., the cerebral capillaries, in his case; we then have cerebral congestion, with its concomitant headache or sleeplessness. The man of brawn is sometimes equally careless of his emunctories; and the result is the blocking up of the capillaries of the muscles in his case, with the consequent pains and aches of the part, or muscular rheumatism.

If this be true, it is evident that the "sleeplessness" in one case is due to the same cause as "muscular rheumatism" in the other, and both should be treated in the same manner. In short, we believe that the toxic waste of cerebral action should be removed from the system in the same way as toxic waste of muscular action. We should aid the eliminative organs. Frequent examination of the urine in these cases, will show occasional uric acid "explosions" as indicated by the highly colored, acid water, containing an abundance of "brick dust deposit." Nature is here endeavoring to rid herself of the underoxidized waste which has accumulated in excess owing to the heedlessness or laziness of the patient in attending to her calls. In one of his sleepless nights, he will often find it necessary to arise and attend to such calls.

In the treatment of these cases we can do no better than to imitate nature. It is evident that hypnotics, or acid remedies, will not effect a cure. They merely cause the precipitation of the uratic waste salts from the capillaries into the contiguous tissues, thus removing the congestion temporarily. As soon as the immediate effect of the drug is over, reabsorption of these waste salts into the blood occurs, and the patient requires another dose the next night, and so on indefinitely. To cure him, we must remove the offending substance from the body entirely. This may require several days, but it is the only rational course to pursue. We must furnish aid in the way of increasing the solubility of uratic waste salts; and, at the same time, effect their removal by stimulating the action of the eliminative organs—kidneys, liver and bowels. We cite briefly here the outlines of the following interesting case, in which this solvent and eliminative mode of treatment proved successful:

J. B., clothing merchant, aged 45, called to be examined for life insurance. The usual routine examination proved him to be a satisfactory risk and the company was so advised. Mr. B. then stated that he was surprised at my acceptance of him, since he was certain that something serious was wrong with him. Asked to explain, he stated that he had long been a sufferer from insomnia, for which he had been treated without benefit. To get much needed rest, he was obliged to take either sulfonal or large doses of bromide two or three nights in the week.

Upon the earnest appeals made by this gentleman, I agreed to attempt a cure of his case. The only objective clinical sign of significance, was a scant highly colored, acid urine, which, according to the patient, would at times become profuse in amount, and contain copious deposits of a reddish-brown powder. Headmitted, too, that his bowels were "very irregular,"—that he often skipped two or three days without a movement.

Satisfied that this was a case of autotoxæmia, due to retention of uratic waste products, and that the "sleeplessness" was merely a symptom (the chief one in this instance) of congestion of the cerebral capillaries, the laxative lithia salt, thialion, was at once prescribed for its solvent action, as well as its well-known effect upon liver and bowels. To accomplish this purpose effectually, the salt was given (a heaped teaspoonful dissolved in a glassful of hot water) every two hours, the first day, until free evacuation of the bowels occurred—which was effected soon after the fourth dose, the initial dose being taken immediately upon arising in the morning. For the balance of the week, a teaspoonful was given in the morning, and again just before retiring at night.

At the end of the week, the patient returned for another bottle of "the salts," stating that although he had begun to sleep somewhat better and his bowels moved more regularly, he thought that the medicine caused some "muscular pains" of which he complained during the last four days. Being told that this was to be expected,

that it was simply an indication of the withdrawal from the tissues of the toxic waste which was being thus absorbed into the circulation and removed from the body by way of the kidneys, he left with renewed confidence and continued taking the remedy for another fortnight, once daily—early in the morning.

Three weeks after beginning the treatment, Mr. B. called and expressed himself entirely satisfied with the results. He considered himself completely cured. He slept well, his bowels were regular, and he had not felt so well in many years. He was furnished with another supply of the salt, however, and told to take a dose once or twice a week—more especially if any signs of constipation were observed.

Since treating the above case, the writer has obtained equally satisfactory results in many other similar instances, in which sleeplessness was a prominent symptom of uricacidæmia; and, as an outcome of this experience, he has become firmly convinced that the *cure* of these obstinate cases may often be obtained by stimulating and aiding the processes of elimination in this simple manner.

### SOME NOTES ON URIC ACID AS A CAUSE OF GASTRIC DISORDERS.

BY WILLIAM H. MURRAY, M. D., DANBURY, CONN.

(Reprinted from *The Woman's Medical Journal*, Toledo, Ohio, December, 1899.)

It is fast becoming the opinion of careful investigators that the majority of functional disturbances of the stomach, together with certain organic diseases of the same, may be traced directly or indirectly to the uric acid toxin as the principal etiological factor and that the innumerable cases of indigestion, dyspepsia, biliousness, etc., may very properly, as a rule, be considered local manifestations of a general uricacidæmia. Of course, organs which are associated physiologically are apt to become associated in morbid action as well, and thus we see in disorders of the stomach, disturbances likewise of those important organs directly associated with it in the digestive process, and for ostensible reasons the liver is the organ usually primarily affected.

The trite old saying of Feuerbach, the philosopher, that "Man is what he eats," was never truer than it is to-day, and certainly never more significant in its application. We have long had the reputation of being "a nation of dyspeptics," as well as a "gouty people," and we are now just beginning to realize that the fault in both instances, lies in "error and excess at the table." Had we, as a people, a more thorough knowledge of the chemical composition of food stuffs, and understood better the mode of their introduction into and acceptance or rejection by the animal economy, many egregious errors might be avoided. Few outside of the medical profession appreciate the distinction that carbohydrates (starch, sugars and fats) are simply energy producers, while proteids are the actual tissue builders from which is derived tissue waste. We cannot over-estimate the importance of an exact physiological knowledge of the digestion and metabolism of the proteids inasmuch as from them as a class, most of the damaging toxins of food arise—especially uric acid.

As a minute study of the secretions and excretions of the body has received greater attention during the past year than almost any other subject, it will be quite unnecessary here to enter into any explanatory statement regarding the mode of formation of uric acid as a product of faulty nitrogenous metabolism—which is the generally accepted faith; but it may be well to refer to the fact that Dr. Taylor, in his experiments upon himself, has recently demonstrated (Cf. *Jour. Amer. Med. Sciences*, Sept., 1899,) that only about one-third of the uric acid found in the urine is formed in this way. The other two-thirds is clearly the result of a long continued excessive ingesta of albuminous food stuff, and the consequent final inability of the liver and its associate digestive organs to perform thoroughly the act of luxus consumption. It should be understood that although nature has provided a way for disposing of the surplus in over-eating, yet, as it is necessarily an exceedingly delicate and highly specialized process, a too

frequent occasion for its use is bound to result mischievously. Normally, one-third of the proteids is changed in the stomach by the gastric juice into peptone, which with the remaining portion enters into the duodenum and is there further disintegrated by the pancreatic secretion and proteolytic ferments of the bile into hemi-peptones and albumoses, which are readily absorbed by the intestinal villi, and thus taken up into the general circulation. In case of the ingestion of a too heavy meal—as in many so-called "game suppers"—the excess of proteids remaining partially undigested and not needed by the system, instead of passing off as waste with the fæces, is mostly changed by the trypsin of the pancreatic juice (assisted by the ferments of the intestinal secretions) into the well-known crystalline substances, leucin and tyrosin, which are carried by the portal vein to the liver, and there transformed into the soluble urea, which is then excreted as waste matter by the kidneys.

Such is the normal process of *luxus* consumption, but it will be readily seen that if the over-taxed liver should be too frequently called upon, this work will eventually be less thoroughly performed, and, instead of the end-product urea, the less oxidized uric acid will result. In some instances, of course, as in atrophy of the liver, the process is even more imperfect than this, and leucin and tyrosin themselves are found in the urine. These various nitrogenous substances, however, differ only in degree of oxidation, all being members of the cyanide of ammonia group; and, with the exception of urea, all are difficult of excretion by the mammalian kidney, which, like the liver, finally becomes injured in these unusual efforts.

The uric acid toxin, being thus left to accumulate in the system, certain morbid results invariably follow. Urate salts are formed from the sodium carbonate in the blood, and are sooner or later deposited in those tissues for which there is a predilection, especially the connective tissues—probably because less alkaline than the blood. The slow, but certain atheromate is formed owing to the gradual deposition of uric acid tophi, not only in the fibrous tissue of joints, but in the fibrous tissue of the muscular coat of arteries and capillaries throughout the body, thus destroying their important properties of contractility and expansibility. In this way has the high liver exposed himself not only to gout and apoplexy, but to the various phases of indigestion and dyspepsia.

Hepatic and renal diseases, especially those interstitial in character, start originally with these same deadly atheromatous changes from the urate deposits, which invariably interfere with the function of the organ affected. Indeed the entire principle of excretion and nutrition, including digestion and absorption, depends for its normal working on the uniformity of arterial tension and free and unobstructed capillary circulation. It is well known that the gastric secretion is normally associated with vascular dilatation, and, that, if the latter be interfered with, the former will be suspended or diminished; but even as disease of the cerebral arteries is not often surmised until we have apoplexy, so with the gastric arteries; atheromatous degeneration may not be suspected until too late, unless we early recognize in the dyspepsia a history of uric acid poisoning and treat the case accordingly. The entire muscular system of the body, including the fibrous coat of the stomach, sometimes becomes affected, and thus the mechanism of digestion is interfered with through disturbance of its muscular movements, as well as by suspension or perversion of the gastric solvents.

Of all the predisposing causes of dyspepsia, it is generally recognized that deficient gastric secretion with resulting fermentation of food is the most prevalent, and as normal secretion depends upon the most important properties of contractility and expansibility of the gastric blood-vessels, it will at once be seen that the beginning of atheromatous changes caused by the deposition of uric acid salts is a question of supreme importance in these cases. The glands are of course affected, and when they fail to properly secrete their *pro rata* of digestive fluid to complete the process of gastric digestion, a pathological condition confronts us which cannot be met by make-shifts. The hydrochloric acid and pepsin both being diminished in quantity, much of the proteid food will be left undigested and become to the stomach an irritant foreign

body, causing fermentation and ultimately catarrh of the gastric mucous membrane with all its attendant evils. The symptoms which result are legion and certainly very distressing in character, life being rendered so disagreeable that it is essential that the same careful study should be devoted to the etiology of the dyspepsias as to any of the most serious organic diseases.

In regard to the treatment of any case whose history is similar to that we have attempted to outline above, it is evident that advice should first be given on the subject of over-eating, while albuminous foods should be largely interdicted. As this latter procedure will necessarily result in the loss of a certain amount of iron to the system, which is usually taken in with the proteids, it becomes our duty to supply this important element in about the same quantity and in a similar form as that found in the food. For this purpose *small* doses of an organic preparation are indicated; and, furthermore, it should be predigested on account of the delicate condition of the stomach. One of the best preparations known to the writer, answering to this description, is the peptonized albuminate of iron, called feralboid, manufactured in tablet form, one-third grain each, plain or combined with strychnia or alkaloids. The advantage of such a preparation in these cases lies in the fact that the iron is readily and *entirely* absorbed. No portion is left behind to blacken the stools and irritate the intestinal mucous membrane, causing constipation with all its attendant evils.

In deciding on the next step in the treatment, it is obvious that lack of the usual amount of gastric secretion must be met by restoring the physiological conditions upon which the secretion depends. Pepsins cannot do this. They are simply artificial solvents of albuminous foods and can by no means cure the indigestion; i. e., cannot remove the cause and thus restore normal digestive powers. It is clear that before we can restore elasticity to the gastric arteries and obtain normal vascular supply, the deposits of uric acid already formed and being formed must be removed, and the overburdened liver assisted in the performance of its duty in order to prevent the formation of any more. The uric acid solvent is therefore required, as well as an hepatic stimulant. For the former purpose lithia has proven itself the most efficient agent, inasmuch as urate of lithia is formed, which is the most soluble of all the uric acid salts and is consequently the most easily excreted by the kidneys. For the second purpose a laxative saline is indicated, one distinctly cholagogue in effect in order to enhance cellular action, excite the flow of bile and initiate intestinal peristalsis. A therapeutic agent which combines within itself both of these essential qualities must be the remedy *par excellence* in the treatment of these cases. Fortunately we have such a remedy in the laxative salt of lithia, thialion, a drug which has been recently added to our list of standard therapeutic agents, and has already proved itself most efficient in the treatment of the various phases of uricacidæmia.

The following two cases, in which this drug was used with exceptionally gratifying results, were reported to me by a distinguished brother practitioner, and are cited here in illustration of the fact that some of the most distressing cases of stomach disorders may be treated successfully by removing the uric acid toxin, at the same time stimulating the action of both liver and bowels.

"Mrs. M., widow, American, mother of four children, height five ft. seven in., weight, 190 pounds, consulted me in regard to trouble of the stomach, which she said had existed for nearly two and a half years, and which had become so alarming and distressing that it had begun to affect her general health. It started, so she said, during a spell of very warm weather, when one extremely hot day, after walking for a considerable distance, she partook of some ice cream—after which she cooled off quickly. Subsequent to this acute gastritis developed with which she was confined to her bed for two weeks. Since her recovery from this sickness, she has suffered frequent attacks of indigestion, accompanied by the eructations of large quantities of gas. Throughout her life she has been an extremely heavy eater, taking no choice of what she ate; but now she had to be particularly careful in regard to the quality and quantity of her food.

At the time of my first visit to her, she informed me that for an hour after meals, as a rule, gulpings of gas and wind were so great, as not only to cause herself much annoyance, but to annoy everybody else within hearing. But the worst was at night. On retiring, she would go to sleep and after about an hour would awake with a distended stomach—and gulping wind. This would continue for an hour and sometimes longer, until she would become quite exhausted. These gases, as they came up, scorched and burned her throat from their excessive acidity. The bowels were not regular—sometimes being loose and at other times constipated. The tongue had a white coating and there was a great deal of frontal headache. On certain days there would be no desire for food whatever. She said that she felt as if the whole digestive tract had been 'pickled in vinegar.'

In this case it was evident that the gastric solvents were much diminished and that the greater portion of the food, being undigested, remained in the stomach as a foreign body, setting up excessive fermentation with the formation of gases. Desiring first of all to relieve the torpid condition of the liver and move the bowels thoroughly, believing also that there might possibly be an excess of uric acid in the blood, owing to her full habits, I directed her to take a teaspoonful of thialion, dissolved in a cupful of hot water (drunk as hot as it could be, all taken down at once) three times daily until she had obtained free movement of the bowels. The first movement occurred after the third dose and a freer one after the fourth dose. To her surprise and delight, after the first dose the eructations of gas became less frequent and at the end of the fifth dose ceased entirely. I then directed her to continue taking a teaspoonful on rising in the morning, three times a week. From this time on improvement was rapid; appetite returned; and, at the end of four weeks, there was no further trouble of any kind. She discontinued the remedy entirely at this date. It is now several months since I treated her and she has remained perfectly well, showing not the slightest return of the former troubles."

The lesson to be learned from this case, is, that oftentimes an excess of uric acid in the blood plays an important part in the digestive tract as well as in complicating diseases of other organs, and there can be no question as to the salutary effect of thialion in this class of cases.

Case No. two was in many respects entirely different from No. one, yet the treatment was the same and the results equally gratifying, to wit:

"Mrs. C., a sallow, anæmic woman, consulted me for extreme debility, belchings of wind and burning in the throat 'when it came up,' together with much distress after eating. The bowels were exceedingly constipated, a movement being procured only about twice a week, and then only by the aid of active cathartics. The appetite was poor, skin sallow and yellow and conjunctiva injected. Liver marks were on the cheeks. In fact, she showed a marked derangement of the liver, not an organic disease but simply torpidity, with an excessive fermentation of food in the stomach.

She was directed to take a teaspoonful of thialion, in hot water as given in the above case, and to report on the third day, which she did. The acidity was much relieved; she had had fairly good movements of the bowels; and the general condition seemed much improved. Being anæmic, I ordered her to take a tablet of feralboid, quinia and strychnia as a tonic, before each meal, and to continue taking the dose of thialion every morning as before. She returned the second week after this, when she said that she had had several *large* stools, one of which was very black and foul smelling. Her general health was much improved; appetite was better; the pale, anæmic appearance had disappeared; the eyes had brightened, and the change was marked in every way. The dose of thialion was now reduced to three times a week, then to twice a week, and, finally, at the end of five weeks, to once a week.

It is now four months, and she only takes thialion occasionally. I saw her yesterday and found that she was very much improved in every way. The appetite was excellent; no eructations of gas whatsoever; the bowels were normal, a movement being had every day—a large mushy stool; and the patient was full of gratitude."

## SOME LESIONS OF THE TEETH AND GUMS.

BY JOHN C. DOWNS, D. D. S., DANBURY, CONN.

(Reprinted from *Uric Acid Monthly*, Vol. IV, No. 5.)

In days gone by it was quite generally believed that decay of the teeth was due to the ravages of worms which infested the oral cavity. The fact that worms, grubs, or maggots, were found in decayed tree trunks, putrid meat and other decaying vegetable and animal matter, rather than in these same substances when in the sound condition, led to the notion that decay was the result of worm action, and that the "worm-eaten" or decayed tooth was no exception to the general rule.

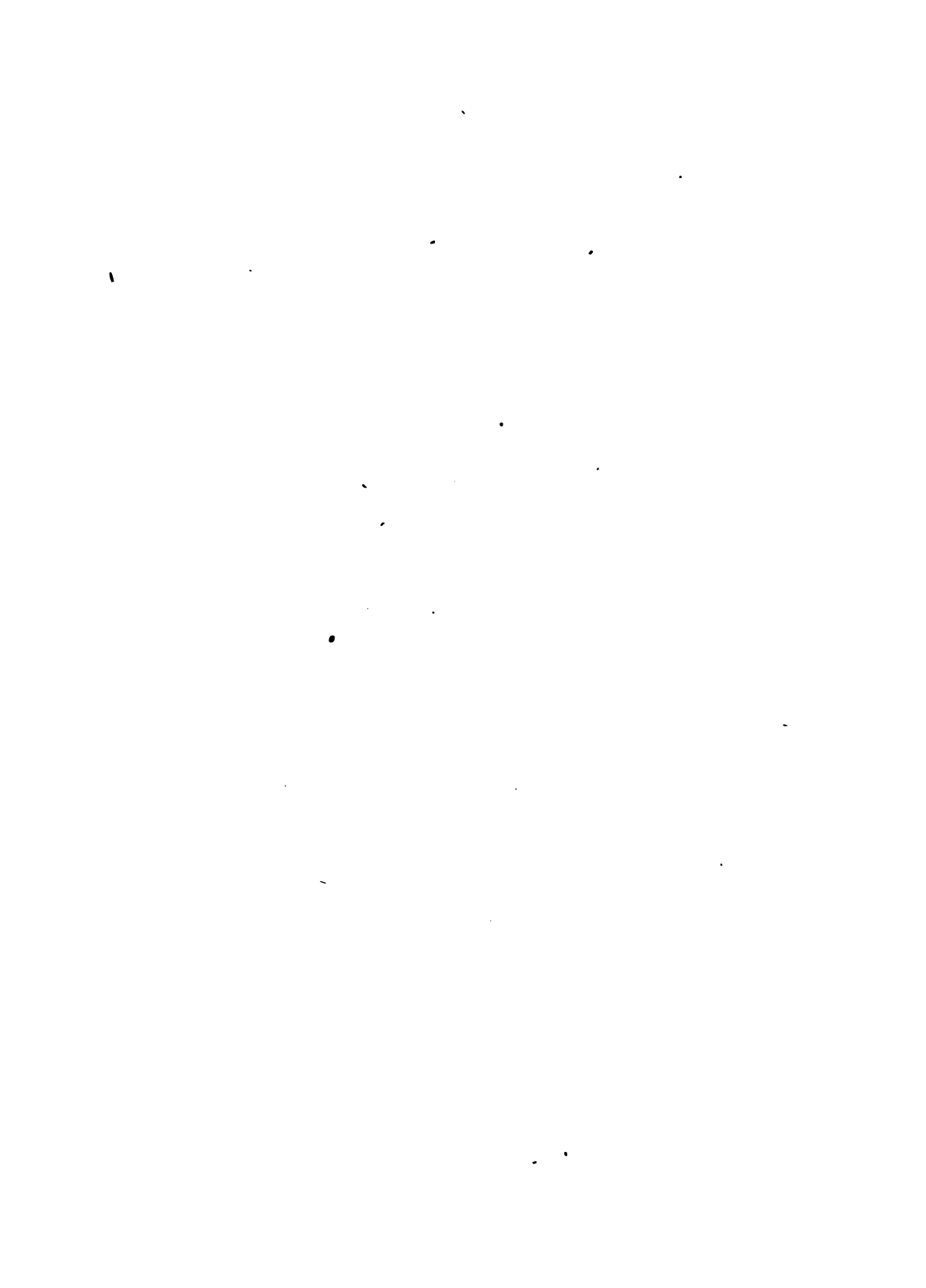
That there was a germ of scientific truth in this crude idea of the ancients, may be seen from the results of our modern investigations, which reveal to us the presence of a micro-organism, the so-called *leptothrix buccalis*, which lives on the buccal mucous membrane and in the fur of the teeth,—under some conditions becoming parasitic on the teeth and causing decay. The "conditions" referred to here, which favor the growth and development of staphylococci and the bacteria of dental caries, are those that often result from the fermentation of food, weak acids being formed in the mouth from the presence of starch particles in the substances which adhere to the teeth.

But there is another agency productive of oral acidity, equally active with the one above mentioned. We refer to the various glandular secretions of the mouth, which, like other analogous secretions and tissue juices of the body, frequently become acid in character owing to some constitutional dyscrasia in which the alkalescence of the blood has become lowered. According to the investigations of Wm. H. Potter, D. M. D., of Boston, Demonstrator of Operative Dentistry, Harvard Dental School. (Cf. Ref. Handbook Med. Sci., vi-759): "In some places, as in the crowns of molars and in the spaces between the teeth, the acid secretions are so protected that they are able to retain their reaction and attack the enamel, decomposing the phosphate of lime and other mineral constituents, of which it is largely composed. Having penetrated the enamel the acids act in a similar manner upon the dentine. According to this theory the tissues of the tooth are affected by chemical decomposition."

The fact is now pretty generally accepted that the blood dyscrasia, which most commonly gives rise to acid secretions and excretions, is that in which faulty metabolism and deficient elimination exist, and the circulation becomes charged with an excess of underoxidized waste tissue-débris of the uric acid type—a condition known as "URIC-ACID-ÆMIA" (uric-acid-blood). The increased acidity of the urine, the hyperacid gastric secretions, the lowered alkalescence of the blood itself, observed in these cases, all indicate that the salivary and mucous secretions of the mouth must necessarily participate in this general acidity. It is now known that such is indeed the case; and, that, like various other portions of the body characterized by acid conditions, as in the joints and other fibrous structures, there is a strong tendency for the urates to become precipitated out of the circulation and deposited at this predilective point, resulting in the usual irritation of the part and inflammation of the contiguous soft tissues. This is especially true of that form of pyorrhœa, known to stomatologists as "gouty pericementitis."

In "The American Text-Book of Operative Dentistry" (p. 524), C. N. Peirce, D. D. S., of Philadelphia, a recognized authority on this subject, says:—"The supposition that pyorrhœa alveolaris is a local expression of the general diathesis has been converted into an actuality by the demonstration of the presence of uric acid and its allied salts in the incrustation found on the roots of the exfoliated teeth. The chemical analyses made by Prof. Ernest Congdon of the Drexel Institute (Cf. *International Dental Journal*, 1894, xv-1) have demonstrated the presence of these salts beyond question. All of the established tests for uric acid were employed and in all instances crystals of uric acid, sodium urate, and calcium phosphate were detected. In several instances sodium urates were most abundant. The constant presence of





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