ON
GOUT AND RHEUMATISM.
THE DIFFERENTIAL DIAGNOSIS, AND THE NATURE
OF THE SO-CALLED RHEUMATIC GOUT.

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IN this country, there is no one, I believe, whose opinion would be looked upon as an authority, who holds the doctrine of Chomel, that gout and rheumatism are one and the same disease; still there are very many who, allowing the complete separation of these diseases, in their characteristic forms, yet entertain an idea that one disease is able to merge into the other; and that a morbid condition to which the name of rheumatic gout has been given, is not uncommonly produced—a condition whose name is familiar both to the profession and the public, but of which it is difficult to find a precise description.

Can one disease merge into the other? Can rubeola become scarlatina, or scarlatina rubeola? Doubtless it is not unfrequently difficult to diagnose certain cases of either of these diseases, at any rate, simply from the present condition of the patient; it is not, however, customary to designate such cases by the compound name of rubeolo-scarlatina, or scarlatino-rubeola; for we feel confident that each of these diseases is produced by a special poison, and has its own special pathology, although the symptoms produced by one may occasionally simulate those of the other. It may be possible, but it is certainly extremely uncommon,

for a patient to suffer from the two affections simultaneously: to such a case the compound name above mentioned might be appropriate. So, also, it may be asked, can rheumatism merge into gout, or vice versâ? Has not each of these affections also its own special pathology, and is not the name of rheumatic gout, as generally applied, simply a cover for our want of knowledge of the precise affection under which any given patient may be labouring? I would not for a moment be thought to deny the possibility of a gouty patient becoming affected with rheumatism; but I have no hesitation in affirming, as the result of long experience and attention to the subject, that the disease is extremely uncommon, and that the cases ordinarily designated by that name are not those in which such a double disease is present.

The subject of the diagnosis of these masked cases, is, I consider, one of very great importance—important both as to the prognosis and especially to treatment; it is also a subject of no small difficulty.

To diagnose acute gout, when it occurs for the first time in a rich man, of middle age, and affecting the ball of the great toe only, preceded by dyspeptic symptoms, and accompanied by turgescient veins and œdema of the inflamed part, is a matter of the greatest ease; so, also, to diagnose acute rheumatism in a poor girl, with most of the larger joints inflamed, together with the endo- or pericardium, preceded by rigors, and not accompanied with œdema of the affected joints, is one of no great difficulty, even to a tyro in medicine; but the case becomes altered when either gout or rheumatism has never been very decidedly marked, or when, from repeated attacks, the symptoms have lost all their pristine characteristics.

To clear away the difficulties in making such a diagnosis, to enable the two diseases to be separated when they assume their masked forms, and to show the impossibility of the frequent occurrence of a disease which can correctly be called "rheumatic gout," is the object which I shall endeavour to accomplish in the present communication.

In a paper published in the Society's Transactions for 1848, entitled "Pathological Condition of the Blood in Gout and Rheumatism, &c.," I threw out the following suggestion with regard to the diagnosis of gout and rheumatism: "Might it not, in doubtful cases, be possible to determine the nature of the affection from an examination of the blood?" At that time, the amount of evidence on this point which I was enabled to bring forward was very limited, amounting only to four cases of gout, and the same number of rheumatism. Since that period, although I have not made known any further evidence on the subject, from an unwillingness to form conclusions from few or imperfect data, I have by no means been unmindful of the matter, and have lost no opportunity of putting the question to a most searching investigation; the results of which, founded as they are on 177 examinations of the blood, taken from 148 separate patients, will be given in the present paper.

I have avoided referring here to any case of either gout or rheumatism, when the blood has not been examined, although during the time in which these have been accumulating, very many others have come under my care.

The plan adopted for tabulating the patients, has been to divide the cases into four different classes.

1. Articular affections, in which was demonstrated the *presence* of an abnormal amount of uric acid in the blood.

2. Articular affections, in which the *absence* of uric acid in the blood was shown.

3. Articular affections, proved to be closely connected with *urethral* affection.

4. Affections *non-articular* in character.

The examination of the blood for uric acid, was in general performed in the manner described in my paper read before the Society this session, which I named the "Uric Acid Thread or Fibre Experiment," except in certain cases where the *acid* was separated and weighed, and the results of which are detailed: the history, symptoms, &c., of each patient are taken chiefly from my Hospital Case-Books, during the time I have been attached to the Institution as

physician ; some few have been the results obtained from patients in private practice ; but, as must be evident to all, on points connected with the condition of the blood, and requiring accurate investigation, no patients offer the same facilities as those residing for the time in the wards of an hospital.

It will be seen, in referring to the following tables, that the blister fluid has occasionally been analysed as well as the blood ; sometimes, but very rarely, in lieu of that fluid, from what I have shown in my last communication to the Society, the condition of the blood may be deduced from that of the blister-serum, when certain precautions are taken.

TABLE I.—*Articular Affections—Uric Acid in Blood.*

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Wm. Fletcher.	38	Gas-fitter, occasionally musician. Has never had lead colic	Drank much gin and beer, or porter.	Father gout-tism. Mother's father years since; gout, and all since then mother's affected with present disease. Also own brother. See below.	Pretty good. Fractured ribs about 6 years since.	Numerous. 4 or 5 well marked.	Much drinking before present attack.	Commenced in ball of left great toe; after 4 or 5 days, knees, elbows, hands, and fingers, and left ankle, much uric acid by Left metacarpal and phalangeal joints affected. Pitting on pressure of parts. Pulse 92, hard and full; tongue slightly furred; some thirst; deposits of urate of soda on palmar surface of left index finger. Not on ears.	Clot firm; serum left alkaline; sp. gr. 1029.4 at 68° F.; much uric acid by thread experiments.
Fred. Plant.	43	Painter (House.)	Drank freely, porter and gin. Not in great excess; 6 pints of porter when patient daily often.	Apparently hereditary from father, who, however, died when patient was young.	Good, except when suffering from gout or lead colic.	Numerous. First attack 11 years since, first in ankle, next in great toe.	None assigned for the present.	Commenced in left knee, then dorsum of left hand, right hand, and both feet; and ankles, small joints of hands. Pitting on pressure. Pulse 92, rather hard; tongue slightly furred; appetite pretty good. Deposits in both ears. No other deposits seen. permanent mischief to joints.	Clot slightly buffed and contracted; serum alkaline; sp. gr. 1028.0 at 68° F.; abundance of uric acid. <i>Bistur</i> fluid from inflamed joint; no trace of uric acid. <i>Bistur</i> from abdomen gave a moderate amount of uric acid.

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Jos. Elliot.	64	Stonemason.	Not stated.	Not stated.	Good.	Numerous. First attack occurred 20 years since in some part of foot.	Not stated.	Affection of hands, ankles, knees, hips. Pulse 80. Deposits in ears; and little nodules in integuments near eyes.	Uric acid in serum.
Wm. Finch.	40	Wine-cooper	Has drunk freely of beer and gin.	Father and grandfather on same side had gout, and father had chalkstones.	Pretty good.	Numerous. First about 10 years since in feet and ankles.	Patient had often brought on attacks by the use of port wine.	Commenced in knee, then elbow, and small joints of hands. Pitting acid. No deposits of urate of soda noticed.	Serum; considerable quantity of uric acid.
Chas. Farr.	38	Brewer's Man.	Has drunk very freely, chiefly porter; some gin.	Father's brother had gout.	Good, in general.	Not known; numerous. About 10 years since had first attack, confined to foot.	None assigned.	Both feet, knees, hips, small joints in hands, and in great toe. Pitting on alkaline; sp. gr. pressure. Pulse 80. No 1029-0 at 55° F.; thirst. Minute concretions abundance of urate of soda in left ear. acid. <i>Eluiter fluid</i> Large semi fluid collection from inflamed part, in left foot of creamy urate no trace of urate of soda; some also on right acid. <i>Eluiter fluid</i> from ankle, a few crystals of uric acid.	Clot firm; buffed and cupped; serum on alkaline; sp. gr. pressure. Pulse 80. No 1029-0 at 55° F.; thirst. Minute concretions abundance of urate of soda in left ear. acid. <i>Eluiter fluid</i> Large semi fluid collection from inflamed part, in left foot of creamy urate no trace of urate of soda; some also on right acid. <i>Eluiter fluid</i> from ankle, a few crystals of uric acid.
Chas. Fletcher.	35	Painter.	Temperate; about 2 pints of porter daily; formerly took spirits also.	See under, W. Fletcher, the brother of the present one.	Pretty good, except present disease.	Second attack. First 1½ year since, commenced in left foot.	Injury. Struck by shaft; and fracture of ribs, and pleuritis.	Commenced 2 days after injury, in left elbow and fingers; afterwards both feet and right knee, and right index finger. Pitting acid. on pressure. Pulse 108.	Clot normal; serum alkaline; sp. gr. 1026-8 at 50° F. Abundance of uric acid. <i>Eluiter fluid</i> from chest, a mo-

Thos. Bugg.	54	Farrier.	Has always been a free drinker—beer and gin.	Father had gout, also one brother.	Good.	Has had numerous attacks. First attack in feet 7 or 8 years since; does not remember whether the great toe was chiefly affected. Great toes have been specially affected in some attacks.	Injury from kick of horse on chest.	Tongue furred; thirst. Urate amount of fluid from right index finger (middle joint) obtained by puncture; milky from urate of soda (4 days after it was inflamed); concretions afterwards appeared on right ear, and in left middle finger. About 48 hours after injury. Dorsum of right hand and foot, and left line; sp. gr. 1026.64. Pitting on pressure. Pulse sprinkling of uric 80, full, hard; some thirst; acid on thread. Appetite good. No deposits of urates.
John Howel.	45	Publican for many years, formerly a post-boy.	Intemperate. Drank much beer and gin. Good diet.	Father had gout, also brothers.	Good, except gouty.	Numerous. First about 14 years since, in right great toe.	Drink.	Ankles and feet chiefly affected. Pitting freely on rum alkaline; sp. pressure. One knee also gr. 1029.6 at 47° F. much swollen; tongue abundance of uric clean; appetite good; no acid by thread ex-thirst. Pulse 76, not re-periment. Nodules of urate of soda on both ears.

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Sam. Norton.	68	Wheelwright.	Regular.	Not known. (Patient very deaf indeed.)	Pretty good.	About the 12th. First attack in ball of left great toe, next in right great toe, afterwards in large joints also.	Not given.	Great toes both affected; left knee slightly; patient has eczema of both legs; gr. 1026.0 at 65° F.; rather chronic. Pulse 92. Considerable prink-Appetite good. No de-ling of uric acid on posits of urate of soda.	Clot normal; se- rum alkaline; sp. gr. 1026.0 at 65° F.; rather chronic. Pulse 92. Considerable prink-Appetite good. No de-ling of uric acid on thread.
J. Z. Rumsey.	48	Stableman, formerly a soldier.	Lived freely, both in meat and drink.	None to gout or rheumatism.	Good.	About 3d attack. About 20 years since, swelling of ball of great toe; next attack commenced also in great toe.	Not assigned.	Commenced in right knee, hip, shoulders, hands, rum alkaline; sp. left knee, balls of both gr. 1028.0 at 60° F. great toes. Pulse 110. A few crystals of rather hard; tongue white, uric acid. <i>Blister</i> furred. Pitting on pre- <i>fluid</i> gave crystals sure. No deposits of urate of uric acid. <i>Blister</i> of soda on any part of <i>fluid</i> from inflamed body. knee no crystals of uric acid. Second bleeding 2 days after: Clot not buffed or cupped; serum alkaline; sp. gr. 1027.1 at 65° F. Pretty good quantity of uric acid. Third bleeding 8 days after: Clot firm; fibrinous coat; serum gave a moderate amount of uric acid by uric acid thread experiment.	Clot normal; se- rum alkaline; sp. gr. 1028.0 at 60° F. A few crystals of uric acid. <i>Blister</i> gave crystals of uric acid. <i>Blister</i> from inflamed knee no crystals of uric acid. Second bleeding 2 days after: Clot not buffed or cupped; serum alkaline; sp. gr. 1027.1 at 65° F. Pretty good quantity of uric acid. Third bleeding 8 days after: Clot firm; fibrinous coat; serum gave a moderate amount of uric acid by uric acid thread experiment.

Geo. Hugget. 56	Traveller.	Temperate, but has drunk much porter; 4 gallon or more per diem.	Not known.	Good.	About 6th attack. First much to cold attack con- before pre- fined to right sent attack. great toe, 10 years since. Other joints afterwards affected.	Was exposed	Commenced in right foot, then left foot, right knee, and hand; left shoulder and hand. Pitting on pressure. Pulse 108, hard; tongue white, furred. No deposits of urates.	Serum gave abundance of uric acid.
George Hull. 52	Cab-driver and proprietor.		No gout or rheumatism from father or mother; but uncles and aunts on both sides subject to gout.	Good, except gout.	Numerous. First attack 30 years since in feet; then second attack in ball of great toes (both). Knees did not become affected until 2 years since; and 1 year since, upper extremities.	None as- signed.	Affection of left elbow, wrist, and metacarpal joint of index finger. No deposits of urates. Pulse 86; tongue furred; no appealing of uric acid by titite. Pitting on pressure.	Clot buffed, firm; serum alkaline; sp. de-gr. 1025.56 at 64° F. Pretty good sprinkling of uric acid by thread experiment.
Jn. Steedman. 61	Pianoforte-maker.	Lived well; drank moderately of beer and some gin.	None known to gout or rheumatism.	Good, except occasional gout, and latterly some albuminuria.	First attack of gout about 20 years since.	Present attack came on after chest affection.	First examination of blood some little time before the joints became affected. Patient then suffering from chest symptoms and some cedema. Second examination after attack had completely passed off. During attack,	First examination: Clot normal; serum alkaline; sp. de-gr. 1021.6 at 66° F. A good quantity of uric acid; thread examination after studied with crystals. Second examination: Second examina-

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Chas. Heath.	46	Coachman until 3 years, since which a cabman.	Has drunk freely of beer and gin.	None to gout or rheumatism.	Good, except subject to attacks like the present one.	Numerous. First attack about 20 years since in right great toe and instep only. Second attack 16 years since in same part. Third, 12 years since in left great toe. In subsequent attacks knees and elbows. Attacks gradually increasing in frequency.	None assigned.	the right great toe and knee were affected. Pitting on serum alkaline; sp. pressure. Had albuminuria, gr. 1022.4 at 66° F. gradually lessening to a very few crystals of uric acid. Commenced 13 weeks before admission: partially recovered; for 3 weeks has kept his bed. Hands, knuckles, knees and feet, shoulders. Pulse 72, full, hard. No deposits of urate of soda. The first examination of the blood made during febrile turbance of the system the second when the patient had pain in joints, but no fever.	Clot normal; serum alkaline; sp. 1022.4 at 66° F. a very few crystals of uric acid. First examination: Clot firm, buffed; serum; sp. 1026.0 at 66° F. No uric acid found by thread experiment. Second examination: Clot normal; serum alkaline; sp. 1024.8 at 65° F. moderate amount of uric acid.
Jas. Bunyon.	60	Excavator.	Drinks freely.	None discovered	Good.	4th attack. First com-	Appears to have had	Dorsum of left wrist, hand, metacarpal and severe-	Clot buffed, firm; serum clear, alka-

Fr. Westcott.	47	Gentleman's servant.	Lived pretty freely. Drank beer chiefly.	None dis- covered clearly to gout or rheumatism.	to gout or rheumatism.	menced in right great toe.	attacks every one or two years.	ral phalangeal joints, and line; uric acid thread swelling of right side of experiment gave face. Pitting of parts on abundance of uric pressure. Pulse 72. No acid. deposits of urate of soda in any part of body. Pains of fingers, wrist, elbow, and shoulder of left side; then same on right side; left great toe, right knee. Pulse 104, rather of blood from loins full and sharp. Some thirst, by cupping gave moderate appetite. Pitting on pressure. Desquama- tion of cuticle. No deposits on body of urate of soda.	Serum; gave by uric acid thread ex- periment uric acid thread; serum of blood from loins gave cupping also the same.
Jas. Quinland.	58	Has been for a long time brew- er's dray- man.	Drank very freely of beer and gin.	None dis- tinctly dis- coverable.	to gout or rheumatism.	Numerous. Not known. Early at- tacks com- menced in great toe.	Cold. Tak- ing hard beer.	Left hand and arm, and knees slightly affected. Pulse 80. Pitting on pre- sline; sp. gr. 1.027-5 sure. Several small deposits at 54° F.; uric acid of urate of soda in ears; thread experiment and much distortion of gave much uric on small joints of feet and hands.	Clot not buffed; serum clear, alka- line; sp. gr. 1.027-5 uric acid thread experiment gave much uric on small joints of feet and hands. About 0.07 grain collected by analysis from 1000 grains of serum.
Mr. C——r.	About 60	Tradesman.	Drank free- ly, beer, &c.	Not known.	to gout or rheumatism.	Very nume- rous indeed.	The present attack seem- ed to be brought on by mental anxiety.	Present attack chiefly in head; delirium, heat of from loins; clot of the firm; serum clear; sp. gr. 1.029-2 at 70° F.; uric acid thread distinct deposits of urates. exp. gave abundance of uric acid.	Blood by cupping from loins; clot of the firm; serum clear; sp. gr. 1.029-2 at 70° F.; uric acid thread distinct deposits of urates. exp. gave abundance of uric acid.

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Thomas May. April, 1854.	53	Cook.	Eats freely of meat; has drunk pretty freely of beer. Not intemperate.	None to gout or rheumatism known.	Good, except when gouty.	Almost innumerable. First commenced in right great toe about 20 years since. For some time the disease attacked great toes only.	None assigned for any one attack.	This patient has had at different times all the joints of the body acutely inflamed, sometimes the larger, sometimes the smaller, chiefly affected in the attack. There is always much pitting on pressure. The pulse, during acute attacks, becomes quick and hard. Nodules of urate of soda on both ears; and chalk stones on many parts of body, both upper and lower extremities. Sometimes discharges of this urate, and formation of abscesses.	Clot buffed, and slightly cupped; serum clear, alkaline; sp. gr. 1027.12 at 60° F. By uric acid thread experiment an abundance of uric acid was obtained.
Feb., 1850.									Blood by cupping from loins; serum clear, alkaline; sp. gr. 1026.0 at 53° F. Uric acid thread experiment gave abundance of uric acid.
Nov., 1849.								large; serum clear, alkaline; sp. gr. 1029.1 at 50° F. By uric acid thread experiment an abundance of uric acid, from 1000 grains 0.04 grain collected.	Clot firm and

George Roos.	31	Cabman for many years.	Drinks freely of beer, some spirits.	None to gout or rheumatism.	Good before present affection.	About 6; has had joint affection without fever. About 8 years since had a joint affection, like acute rheumatism.	No swelling of joints. Symptoms, subjective only, not very firm; serum Appetite good. No thirst. alkaline; sp. gr. Pulse 70. Complains of pains in joints, and stiffness in walking, which he has of uric acid. A moderate amount had several months.	Clot not buffed.
Wm. Mitchell.	52	Printer.	Before having gout, drank rather freely of gin, some beer; lived well.	None known; but one younger brother has gout.	Good until 14 years since.	Very numerous. First for any one attacked right great toe, about 12 years since. Second attacked a year after, great toe also. Upper extremities have not been affected for more than 6 years, and the concretions not more than 3 years.	At different times, different joints are chiefly affected, sometimes nearly all to-cupped and buffed; together. Great toes, and smaller joints of fingers, as well as large joints. Patient covered with concretions of urates of soda; acid thread experienced. many in ears; much crimped.	March, 1853. — Acute attack; clot firm, buffed; serum alkaline; sp. gr. 1026.4 at 51° F. Abundance of uric acid, shown by uric acid thread experiment.
H. —.	50	Painter.	Irregular.	None known	Good until he had painter's colic.	Numerous. Not assigned. First attacked about 3 or 4 years since, in feet.	Present attack affects chiefly joints of hands; but knees and feet stiff and painful. Concretions in ears and around some joints.	July, 1852. — Acute attack; clot firm, buffed; serum alkaline; sp. gr. 1026. Gave uric acid in abundance on thread. Jan. 1851. — Acute attack. Abundance of uric acid in blood.

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
James Tousett.	42	Ginger-beer maker.	Takes beer freely, sometimes a little gin, but not intemperate.	None known to gout or rheumatism.	Pretty good, except gout.	Numerous. First attack about 10 years, very frequent within last 5 years. Not noticed in history which joint was affected in first attack.	A glass of rum will induce an attack. Over fatigue appeared to have brought on the present.	Commenced in hands, than knees, ankles, &c., became affected. Deposits of uric acid in ears only. gr. 1027.2 at 60° F. 1000 grs. of serum gave 0.044 grs. of uric acid.	Clot large and firm, buffed; sp. gr. 1027.2 at 60° F. 1000 grs. of serum gave 0.044 grs. of uric acid.
W. Builsworthy.	52	Coachman in gentleman's family for many years.	Drank pretty freely at one time chiefly wine.	None known to gout or rheumatism.	Good, until first attack of gout.	Very numerous, had suffered for many years. Came on first in great toe.	Any depressing cause, or drink, would induce fresh attack.	Scarcely ever free from some acute affection in one or more joints. Concrete-gr. 1030.0 at 60° F. 1000 grs. of serum gave 0.11 grain.	Clot normal; serum alkaline; sp. gr. 1030.0 at 60° F. 1000 grs. of serum gave 0.11 grain.
— Martin.	41	Porter; formerly in army.	Regular.	None to gout or rheumatism.	Pretty good, had some injury from poisoned wound, a few years since.	Third attack	Not known.	Commenced at midnight, in the ball of left great toe. Pulse 100, rather hard. Tongue furred. Appetite pretty good. Afterwards desquamation of skin over ball of toe. No deposits of urates on any part of body.	Clot normal; serum alkaline; sp. gr. 1026.0 at 70° F. Abundance of uric acid by thread examination. 2d. Bleeding, attack passed off; clot normal; serum alkaline; sp.

William Riley.	32	House painter.	Diet good; not inter- perate, but drinks beer.	Father had gout, bro- ther suffers also from gout.	Repeatedly had lead colic. Gout for 6 or 7 years; com- menced in ball of great toe.	Numerous. For 7 months has not been free from gout.	Subject to draughts.	Right foot, great toe, both ankles, knees, right wrist, middle finger of left hand. Tongue clean. No thirst. Appetite good, of uric acid by thread ex- periment. No de- swollen joints. No de- posits on any part of body, partial recovery. No per- manent distortion of joints.	gr. 1024-0 at 53° F. A few crystals of uric acid.
Wm. Brooker.	46	Coal porter	Good living; a consider- able amount of porter per diem.	Father af- fected with gout.	Good.	First attack. Re-attack about 3 weeks after.	Had much night work late, had been much exposed to cold.	Commenced at night, in ball of left great toe, then outer side of ankle. Con- siderable pitting on pre- sure. Pulse slow. Appe- tite pretty good. No de- posits of urates.	Serum gave much uric acid by thread experiment. Clot normal; sp. 1028-0 at 52° F.
John Day.	27	Farrier.	Regular. Diet good; takes a con- siderable quantity of	None to gout or rheumatism.	Good.	First attack.	Exposed to changes of temperature and right at work.	Commenced in right ankle, then left wrist, right knee and right wrist; same af- fection of ball of right toe. Pulse 64. No pitting of uric acid.	Serum of blood gave much uric acid by thread experi- ment. Clot normal; se- rum alkaline; sp. 1027-6 at 55° F. Abundance of uric acid. <i>Bistur fluid</i>

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
J. Channon.	30	House painter for 10 years, before a plumber.	Irregular; has drunk much. Porter and spirits.	One grandfather, and father subject to gout.	Not good from frequent syphilitic affections, and gout and painter's colic.	Ninth or tenth attack. First commenced in great toe.	Attacks brought distinctly by drink.	noticed in notes. No deposits on any part of body. Joint affection <i>immediately</i> cured when Colchicum was administered. Prior treatment gave no relief. Toes, ankles, fingers, and wrists. Desquamation of cuticle. Pitting on presure. Pulse 66. Appetite bad. Blue line on gums. A small deposit of uric acid soda in left ear; some distention of joints.	No clear, no coagula. No uric acid. Small quantity only from cured, and that from an inflamed joint.
Benjamin Fox.	38	Bricklayer.	Pretty regular; but drinks freely of gin and beer.	None to gout or rheumatism.	Good.	Fifth or Sixth. First, 2 years since, commenced in great toe.	Patient thinks exposure to wet and cold.	Commenced in left knee and foot, then right great toe, then both hands, especially index finger of left. Pitting of parts on pressure, and desquamation of cuticle. Pulse 96, sharp. Appetite good. No deposits of urates on any part of body.	Serum clear; sp. 1027. Abundance of uric acid by thread experiment.
Henry Clubb.	51	Grocer.	Regular.	Not noticed in case books.	Suffers from bronchitis and emphysema, and from occasional attacks of gout.	Numerous.	After attack of bronchitis which it greatly relieved.	Commenced in ball of left great toe, afterwards left knee. Pitting on pressure. Pulse 108, sharp. Thread well sprinkled with uric acid. No deposits of urates on any part of body. On second bleeding, patient gave also much uric	Clot normal; serum alkaline; sp. 1029.2 at 52° F. Thread well sprinkled with uric acid. On former bleeding

suffered from dyspeptic acid just before joint affection appeared.

FEMALES.

Eliz. Wells.	51	Laundress; a widow.	Regular.	Father had same joint affection in knees and feet. One brother also had joint affection, and white deposits with crippled limbs.	Good, till within last 10 years.	Numerous. First attack about 10 years since; knees were affected.	None assigned.	Commenced in knees, then ankles, elbows, wrists, serum alkaline; sp. and fingers. Pulse 92, rather gr. 1028-0 at 65° F. hard. No deposits of urate. A considerable amount of uric acid of soda in body.		
"	"	"	"	"	"	Another attack some months afterwards.	"	Affecting the left index finger first, then wrist and shoulders, chiefly small joints of right hand; left at 46° F. Much uric knee and instep. Desquamation of cuticle. No de-thread experiment. Abundance of uric posits of urate of soda in body.	Clot firm, slightly buffed; serum alkaline; sp. gr. 1029-2 left at 46° F. Much uric acid by thread experiments.	
Mart. Johnson.	53	Servant.	Regular, but has lived rather hard at times.	Mother had gout and chalk stones.	Not very good. Phtisical. Died a few	First attack.	Not assigned.	Commenced about six weeks ago, in ball of both great toes, afterwards knee when bled, joint disease at 60° F. A mode-	Clot cupped and buffed; serum alkaline; sp. gr. 1026-8	

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
				months afterwards from chest disease.				<p>was not at all intense. rate amount (small) Pitting on pressure. No of uric acid. <i>Blisters</i> concretions of urates of soda.</p> <p>gr. 1024.0 at 65° F.</p> <p>A few crystals of uric acid. Second bleeding, clot buffed and cupped; serum alkaline; sp. gr. 1027.8 at 62° F. A pretty good sprinkling of uric acid on thread.</p>	

Name.	Sex.	Account of Patient.	State of Blood.	Name.	Sex.	Account of Patient.	State of Blood.
C. Bowers.	M.	Attack present about 3 weeks. Undoubted gouty patient. No concretions noticed.	Serum alkaline; sp. gr. 1031.0 at 60° F. 1000 grains gave of uric acid, gr. 0.05.	— Hall.	M.	Gout for many years. Large joints now chiefly affected. Has had great toe affection. Deposits in both ears; but not elsewhere noticed.	Serum of blood contained much uric acid.
W. May.	M.	Acute attack. Chronic disease of long standing. Always relieved by col-1027.8 at 66° F. 1000 chium. Concretions in ears and joints.	Clot firm, not buffed; serum alkaline; sp. gr. 1027.8 at 66° F. 1000 grains gave of uric acid 0.062 grain.	C. H—	M.	A patient who has suffered many years from undoubted gouty attacks, Gave much uric acid, by bleed on account of re-uric acid thread experiment.	Serum alkaline; sp. gr. 1030.1 at 45° F. Gave much uric acid, by uric acid thread experiment.
U. N—.	M.	A patient with gout of great toe and foot.	Serum alkaline; sp. gr. 1031.5 at 60° F. 1000 grains gave of uric acid 0.044 grain.	E. P—.	M.	Disease diagnosed as true gout, by a physician. Attack disappearing rapidly.	Serum gave uric acid crystals on thread. Not numerous.
— Norton.	M.	Patient with great toe gout.	A small quantity of blood taken. Gave abundance of crystals of uric acid.	D. P—.	M.	Acute attack of gout; the first attack, in great toe for some days.	Serum alkaline; gave on thread abundance of uric acid.
Thos. Price.	M.	A painter (wrists and hands affected), gout for 10 years. Last attack one year since.	Serum alkaline; 1000 grains gave of uric acid 0.05 grain.	C. S—.	M.	Chronic gout. Great toe often alone affected. No deposits of urates on body.	Blister serum gave uric acid on thread, by uric acid thread experiment.
Thos. Hickson.	M.	Gout. Attack now in right hand. Several deposits of urate of soda in both ears. Edema of parts.	Clot firm, buffed; serum alkaline; sp. gr. 1028.2 at 70° F. Abundance of uric acid.	J. S—.	M.	Painter. Gout of great toe, of 2 days duration.	Clot firm, buffed; serum alkaline; sp. gr. 1028.0 at 65° F. Abundance of uric acid by thread experiment.
M. H—.	M.	Patient diagnosed to be gout by a physician.	Clot firm, buffed; serum alkaline. Gave much uric acid by uric acid thread experiment.	— Pavier.	M.	Gout, with many concretions in ears, and around joints. He died from fracture of femur.	Blood taken after death. Serum by uric acid thread experiment gave much uric acid.

TABLE II.—*Articular Affections—No Uric Acid in Blood.*

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Geo. Jones.	30	Cabman.	Regular.	None to rheumatism or gout.	Good till he had rheumatism.	Third attack. First about 8 years since.	Cold.	Commenced in knees, afterwards shoulder, elbow. Skin perspires freely. Pulse 112. Tongue white, furred; at 60° F. No trace of uric acid.	Clot firm, slightly buffed; serum alkaline; sp. gr. 1027.04
Jackson Jones.	31	Linen-dra- per's man.	Regular.	—	Pretty good.	Second at- tack. First 3 years before.	None as- signed.	Slight pericarditis; old heart affection. Commenced in feet, then in knees, wrists, and ankles. Pulse 112, full, hard. Tongue furred; no appe- tite; thirst. No cardiac affection.	Clot firm; a little cupped; serum al- kaline; sp. gravity 1026.8 at 69° F.
Wm. Kell.	20	Carpenter.	Regular. Temperate.	None to gout or rheumatism.	Good.	First attack.	None, ex- cept some draught.	Commenced in knees; then wrists, ankles, and feet. Pulse 84, hard; tongue furred; skin hot.	Clot normal; se- rum alkaline; sp. gr. 1028.0 at 63° F. No uric acid.
Thos. Ware.	33	Tailor.	Usually not intemperate. Lives well.	Mother sub- ject to rheu- matism; sis- ters and bro- thers not affected.	Good.	First attack.	—	No cardiac affection. Commenced in right shoulder, then left; after- wards right knee. Joints not very acutely affected. Pulse 88, hard; tongue furred; appetite moderate.	Clot buffed; not cupped; serum al- kaline; sp. gravity 1028.4 at 55° F. No uric acid.

Henry Webb. 28	Costermonger.	Not given.	None stated.	Good.	First attack.	Cold.	Commenced in hip, then left ankle, knees; afterwards wrists and hands. Pulse 96, hard; tongue furred; thirst; no appetite. No pitting on pressure. Free perspiration. No heart affection.	Clot firm; serum alkaline; sp. gravity 1028.8 at 48° F. No uric acid.
Joseph Smith. 57	Carpenter.	Lives well; not intemperate; drinks beer and a little gin.	Grandfather on father's side affected with rheumatism.	Good.	First attack.	Cold.	Commenced in left knee and thigh, then right foot and instep; afterwards right elbow. Pitting on outer side of foot. Tongue furred. Pulse 78. No heart affection.	Clot normal; serum alkaline; sp. gr. 1029.2 at 51° F. No uric acid.— <i>Bliss-fluid</i> . No uric acid.
J. Goodhall. 26	Labourer, lately a potman in a public-house	Not stated.	None to gout or rheumatism.	Not good for the last few years; scrofulous knee, &c.	First attack.	—	Commenced in right thigh, then knee, back, and cupped; serum shouldered, left elbow, wrist, alkaline; sp. gr. and hand. No pitting of dorsum of hand. Pulse 108, rather hard. Tongue furred; perspiration; thirst. No heart affection.	Clot slightly buffed and cupped; serum alkaline; sp. gr. 1030.4 at 47° F. No uric acid. 2d. Clot very slight buffed; serum alkaline; sp. gr. 1030.4 at 42° F. No uric acid.
Jas. Aldrich. 34	Cabman.	Not stated.	Not stated.	Good till he had rheumatism.	Second attack. First attack 8 years since; many joints affected.	—	Commenced in right hand, then feet, knees, shoulders, and hips and ankles, and left hand; fingers. Pulse 108, hard; tongue furred; thirst; no appetite. No cardiac affection.	Clot little buffed, firm; serum alkaline; sp. gr. 1028.0 at 52° F. No trace of uric acid.

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Chas. Garlick.	30	Carpenter.	Regular.	None to gout or rheumatism.	Good.	First attack.	—	Commenced in different joints of lower then upper; both wrists much swollen. No heart affection. Pulse at 100, hard. Tongue furred; perspires much; thirst.	Clot buffed, cupped; serum alkaline; sp. gr. 1028.0 No trace of uric acid.

FEMALES.

Harriet Miller;	27	Servant.	Regular.	Father had rheumatism, (not acute.)	About a year since had slight hemiplegia, and six years ago paralysis of right side of face.	First attack.	Cold.	Commenced with tonsillitis; after some days right foot and ankles, then knees, then wrists and shoulders. Slight pericarditis. No pitting on pressure. Pulse 120; tongue furred; thirst; no appetite. Perspires freely.	Clot firm, slightly buffed; much cupped; serum alkaline; sp. gr. 1026.7 No trace of uric acid.
Ann Mason.	32	Dressmaker.	Regular.	None to gout or rheumatism.	Pretty good until lately.	Second attack. First attack commenced about 4 months ago. Second attack had been neglected for many weeks.	Cold.	1st. Commenced about 4 months since, as an attack of acute rheumatism, with nearly all joints affected, and some heart affection. (Not in hospital.) 2d. All joints affected before; after 8 weeks came into hospital, with swelling of wrists, and dorsum of hands, and some small joints of fingers, knees ten-	Clot not buffed or cupped; serum alkaline; sp. gr. 1030.0 at 60° F. No trace of uric acid. <i>Serum of blister</i>

Elizabeth Ash. 40	Married.	Regular.	None to rheumatism or gout.	Good.	Second attack. First attack 14 years since, all joints affected.	Cold—wet.	der and left elbow, shoulder somewhat painful. Pulse 84; not very febrile. Commenced in shoulders, then ankles; afterwards elbows, wrists, knees. No heart affection. Pulse 105, hard; tongue furred.	Blood serum by after-thread experiment. No trace of uric acid.
Rebecca King. 21	Servant.	Regular.	Not stated.	Good.	Second attack. First attack 9 years since.	Not given.	Commenced in left foot and ankle, then right hand, wrist, and fingers; afterwards knees. Pulse 100, hard; tongue furred; perspiration; thirst. No acid.	Clot firm, slightly buffed, and cupped; serum alkaline; sp. gr. 1028.8 at 60° F.
S. Sturgeon. 17	Servant.	Regular.	None to gout or rheumatism.	Good.	First attack.	Cold.	Commenced in knees, then almost all joints of body; left wrist, right knee and ankle especially so. Pulse 130, hard; tongue furred; much perspiration. Endocarditis; pericarditis.	Clot buffed, slightly cupped; serum alkaline; sp. gr. 1024.08 at 40° F. No uric acid.
Sar. Southcott. 26	Married.	Regular.	Mother slightly rheumatic; one brother has had three attacks of rheumatism.	Good until lately.	First attack.	Not known; perhaps cold from washing.	Commenced in knees, then ankles and feet; afterwards hands, elbows, and shoulders. No heart affection. Pitting on pressure of dorsum of hand. Pulse 108, hard; tongue furred; moderate perspiration; thirst, &c.	Clot firm, slightly cupped and buffed; serum alkaline; sp. gr. 1027.6 at 48° F. No trace of uric acid.

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Cath. Lockyer.	25	Married; a laundress.	Regular.	None to gout or rheumatism.	Not very good.	First attack.	Cold and damp.	Commenced in ankles, hips, and knees, then in joints of upper extremities. No heart affection. Pulse 116, hard; tongue furred; thirst; no appetite. Commenced in shoul- ders, then loins, feet, and hips. Since admission, an- kles, knees, elbows, wrists acutely inflamed. Pulse 130, not full; pain increased at night; much acid perspi- ration; tongue furred; no appetite. Pericarditis with effusion.	Clot firm, cupped, buffed; serum al- kaline; sp. gravity 1031.6 at 69° F. No trace of uric acid. Clot firm, buffed, rather cupped; se- rum alkaline; sp. gravity 1029.5 at 60° F. No trace of uric acid by thread experiment.
M. A. Porter.	25	Laundress; for 5 weeks in service before.	Regular.	None to rheumatism or gout; or question- able to rheumatism from father.	Good.	First attack.	Cold.	Commenced in hip, then in knees, left wrist, and dorsum of hand. Little perspiration. Pitting of hand and legs on pressure. Albuminuria when admit- ted. Peri- and endo-car- ditis. Query if very recent.	Clot firm, buffed, rather cupped; se- rum alkaline; sp. gr. 1024.8 at 60° F. No trace of uric acid.
Ann Parkinson.	54	Cook; widow.	Regular.	None to rheumatism or gout.	Good.	First attack. Perhaps one 30 years be- fore, but doubtful. Said to arise from mercuri- al ointment on hands.	—		
Mary Ann Robinson.	17	Servant.	Regular.	None to rheumatism or gout.	Not very good. Weak and hysterical.	First attack.	Cold.	Commenced in both an- kles, then both knees, hips, shoulders, elbows, wrists, and hands. No pitting on	Clot firm, nor- mal; serum alka- line; sp. gravity 1026.32 at 65° F.

Ann Clarke. 30	Servant.	Regular.	None to rheumatism or gout.	Good.	First attack.	Cold in the feet.	pressure. Pulse 120, hard; No trace of uric tongue furred, white; much acid. thirst; no appetite. Distinct endocarditis. Commenced in knees; heart early affected; then what buffed; serum hips and shoulders. Tongue alkaline; sp. gr. much furred; much thirst; 1026-65 at 60° F. no appetite. Pulse 110 No trace of uric when admitted. Aortic re-acid. gurgitant in character. Perspiration moderate. Endo- and peri-carditis very severe.
L. Emherson. 31	Married. Household work.	Regular.	To rheumatism on father and mother's side.	Pretty good. Subject at one time to fainting (hysteria?)	Third attack.	None as- signed.	Clot firm, slightly Affection of knees, ankles, wrists, shoulders, buffed and cupped; Moderate perspiration, serum alkaline; sp. Pulse 96, moderate, full; gr. 1028-5 at 60° F. tongue brown, furred; No trace of uric thirst; no appetite. Slight acid. endocarditis.
Eliz. Smith. 27	Married.	Regular.	To rheumatism from mother. Two sisters affected.	For last few years has been in a weak state of health.	First attack.	Cold and damp.	Commenced in knee, then ankles, hips, shoulders, elbows, and dorsum of hands. No pitting. Pulse 1025-0 at 60° F. 105; tongue furred; thirst; No trace of uric no appetite; perspiration acid. moderate. No heart affection.
Eliza Wiggins. 43	Married. Takes in washing.	Regular.	To rheumatism from father. One sister affected.	Good.	Second attack. First at 16 years of age.	None as- signed.	Clot buffed, cupped; serum alkaline; sp. gravity shoulder, muscles of one line; sp. gravity side of neck and head. 1029-0 at 50° F.:

Name.	Age.	Occupation.	Habits of Life.	Hereditary Predisposition.	General state of Health.	No. of Attacks.	Cause of.	Symptoms during Attack.	State of Blood.
Elizabeth Eck.	43	Widow.	Regular.	To gout from father. Two brothers had gout, and one acute rheumatism.	Very weakly.	First attack.	None discoverable.	pulse 96, hard; tongue white, furred. Pitting of wrist and hand on pressure. Endocarditis (slight), old probably.	no trace of uric acid.
Eliz. Fisher.	18	Lives at home.	Regular.	To rheumatism from mother.	Not strong.	Fifth attack. First at 9 years of age.	Cold.	Commenced in left hip, then in ankle and knee; after wrists and dorsum of hands. Pitting on pressure. Pulse 108, full and hard; 1026·4 at 55° F. tongue furred; thirst; no appetite. No heart affection.	Clot firm, large, buffed, slightly cupped; serum alkaline; sp. gravity 1026·4 at 55° F. No trace of uric acid.
Jane Shay.	38	Married.	Not stated. Lives poorly, insufficient food.	No tendency to gout. Father has rheumatism.	Good.	First attack.	Damp residence; insufficient clothing. Nursing child when admitted.	Commenced in ankles, afterwards in knees, shoulders, elbows and wrists, and joints of hands. Pulse 135, hard; tongue furred; perspiration moderate; skin hot. No heart affection.	Clot buffed, cupped; serum alkaline; sp. gravity 1028·0 at 63° F. No trace of uric acid.
Amel. Ranson.	25	Servant.	Regular.	None stated.	Good, except rheumatism.	Second attack. First attack 9 years since;	—	Commenced in palmar surface of limbs, great toe much affected; also dorsum of foot; then hip, right arm, wrist, hand, &c. No heart affection. Pulse 100, hard; tongue furred; thirst.	Clot slightly buffed; serum alkaline; gravity affection; both hands, elbows, knees, and feet. No

Eliza Wynne. 34	Married.	Regular.	Not stated.	Good until lately; since last confinement has felt very weak. Good.	all joints affected. First attack.	Nursing at the time. No very evident exposure. None known.	heart affection. Pulse 108; No trace of uric tongue furred; thirst, &c. acid. Commenced in joints of lower extremities; then cupped; serum alkaline; sp. gravity 1030.0 at 50° F. No cardiac affection. Pulse 1030.0 at 50° F. 92; tongue furred; thirst. No uric acid. Commenced in right wrist, then right shoulder, tracted and cupped. Slight endocarditis. Pulse 116; thirst; perspiration. line; sp. gr. 1030.4 at 53° F. No uric acid.
M. A. Sheen. 22	Servant.	Lived pretty well; worked hard in general.	None to gout or rheumatism.	Good.	First attack.		Commenced in left wrist, then right; then right foot. Pulse 112, rather hard; serum alkaline; sp. tongue furred; no marked perspiration. Some pitting over dorsum of foot. No cardiac affection.
Mary Barry. 16	Servant.	Regular.	None to gout or rheumatism.	Good.	First attack.	Not known. Lived in London a month.	Clot buffed, moderately cupped; serum alkaline; sp. 1028.4 at 68° F. No trace of uric acid.

Name.	Sex.	Account of Patient.	State of Blood.	Name.	Sex.	Account of Patient.	State of Blood.
N. N—.	M.	Acute rheumatism, diagnosed by a physician.	Clot buffed; serum alkaline; sp. gr. 1030.0 at 56° F. Uric acid thread experiments gave no trace of uric acid.	A. B—.	—	Patient with acute rheumatism and pericarditis.	<i>Blister fluid</i> ; serum alkaline; sp. gr. 1026.64 at 60° F. No trace of uric acid by uric acid thread experiment.
M. C—.	M.	Patient suffering from sub-acute rheumatism. Commenced about 1½ year since in wrist and ankle, then other joints. Great toe never affected.	<i>Blister serum</i> alkaline; sp. gr. 1024.0 at 56° F. No trace of uric acid by uric acid thread experiments.	G. C—.	M.	Sub-acute rheumatism of several years' standing. Great toe never affected; weather, and not diet, produces exacerbations.	<i>Blister serum</i> ; serum alkaline; sp. gr. 1023.0 at 60° F. No uric acid by uric acid thread experiment.
A. K—.	M.	No gout in family. Acute rheumatism, diagnosed by a physician.	Clot firm, buffed, and somewhat cupped; serum alkaline; sp. gr. 1028.0 at 60° F. Uric acid thread experiments gave no trace of uric acid.				

TABLE III.—*Articular Affection connected with Urethral Inflammation.*

Name.	Sex.	Account of Patient.	State of Blood.	Name.	Sex.	Account of Patient.	State of Blood.
F. Neville.	M.	Joint affection, following urethral affection, and afterwards accompanied by it. Much febrile disturbance, and several joints affected (knees and ankles), iritis afterwards.	Clot buffed and cupped; serum alkaline; sp. gr. 1028.2 at 65° F. No trace of uric acid by uric acid thread experiment.	— Grant.	M.	Joint affection connected with urethral discharge, large joints. No cardiac affection.	Clot normal; serum milky; sp. gr. 1026.8 at 52° F. No uric acid by uric acid thread experiment. <i>Blaser serum</i> ; sp. gr. 1022.8 at 52° F. No uric acid by uric acid thread experiment.
John Connell.	M.	No heart affection. Joint affection, chronic, following urethral discharge. No cardiac affection.	Clot firm, buffed; serum alkaline; sp. gr. 1024.68 at 74° F. No trace of uric acid by uric acid thread experiment.	— Thomas.	M.	Chronic rheumatic affection, possibly syphilitic. Large joints affected. No cardiac affection.	Clot slightly buffed and cupped; serum alkaline; sp. gr. 1028.0 at 65° F. No uric acid by uric acid thread experiment.
Jos. Diplock.	M.	Joint affection, connected with urethral affection. No cardiac affection.	Clot normal; serum alkaline; sp. gr. 1027.2 at 66° F. No trace of uric acid by uric acid thread experiment.	Wm. Grand.	M.	Rheumatic or neuralgic affection of many of the larger joints. No cardiac affection.	Clot slightly buffed and cupped; serum alkaline; sp. gr. 1031.0 at 65° F. No trace of uric acid by uric acid thread experiment.

TABLE IV.—*Non-articular Affections.*

No	Sex.	Disease.	Uric Acid.		No	Sex.	Disease.	Uric acid.	
1	M.	Albuminuria	Blood serum	gave no indication	31	M.	Accident, surgical case	Blood serum	gave no indication
2	M.	"	"	"	32	F.	Surgical patient (Bursitis)	"	"
3	M.	"	"	"	33	F.	Quartan ague	"	"
4	F.	"	"	"	34	M.	Jaundice	"	"
5	M.	"	"	a moderate amount	35	M.	Conjunctive headache	Blister serum	"
6	M.	"	"	a few crystals	36	F.	"	Blood serum	"
7	F.	"	"	a moderate amount	37	M.	Paraplegia	"	"
8	F.	"	"	"	38	M.	"	"	"
9	M.	Albuminuria, 1st blood — after recovery	"	considerable "	39	F.	Hemiplegia	"	"
10	F.	Acute eczema	"	scarcely a trace	40	M.	Epilepsy	"	"
11	F.	Eczema	"	no indication	41	M.	"	"	"
12	M.	Eczema impetiginosus	"	"	42	M.	"	"	"
13	F.	Psoriasis	"	"	43	M.	Wrist drop	"	"
14	M.	"	"	"	44	M.	Colic	"	"
15	F.	"	"	"	45	F.	Peritonitis	"	"
16	F.	Lepra	"	"	46	M.	Ascites	Blister serum	"
17	M.	Acute pleurisy	"	"	47	M.	Anasarca	"	"
18	F.	Pleurisy with effusion	Blister serum	"	48	M.	Renal calculus	Blood serum	"
19	M.	"	Blood serum	"	49	M.	Suspected calculus	"	"
20	M.	Chronic pleurisy	Blister serum	"	50	F.	Diabetes mellitus	"	"
21	F.	Pleuro-pneumonia (acute)	Blood serum	"	51	M.	After fever	Blister serum	"
22	M.	"	"	"	52	M.	Acute inflam. of the eye	Blood serum	"
23	M.	"	"	a few crystals	53	F.	Inflammation of eye	"	"
24	F.	Bronchitis	"	no uric acid	54	M.	"	"	a few crystals
25	M.	"	"	no indication	55	M.	Hypertrophy of liver	"	no indication
26	M.	Phthisis	"	considerable amount	56	M.	Disease of spleen	"	"
27	M.	Phthisis, 1st stage	Blister serum	no indication	57	M.	x. x.	"	much uric acid
28	F.	Phthisis and bronchitis	"	"	58	M.	x. x.	"	"
29	F.	Phthisis	"	"	59	M.	x. x.	"	"
30	M.	Emphysema	"	"	60	M.	x. x.	"	"
			"	"	61	M.	Collapse of cholera	"	"

Table I contains a more or less detailed account of 47 patients suffering from articular disease, in whom the examination of the blood was made, and it will be found that there are many peculiarities both in the history of such patients, and in the symptoms exhibited by them; the most important are as follow:

Sex.—Only two patients out of forty-seven affected with articular disease, whose blood contained an abnormal amount of uric acid, were females.

Age.—The average of the ages of those patients in whom this point was noted, amounting to thirty-two in number, was forty-seven years; this applies to the ages of the patients when in the hospital, and not when first attacked with the disease.

Hereditary predisposition.—In twenty-six cases, it was found that thirteen, or one half, could trace what they called gout to some close blood relation. In patients in hospitals, it is not unfrequently difficult to get very clear accounts of family peculiarities, or hereditary predispositions; in the remainder of the cases, no account of such matters had been noticed.

Habits, &c.—Out of twenty-eight cases where the habits of the patient were particularly given, twenty-one acknowledged themselves to be free livers, and for the most part took largely of malt liquors, either with or without spirits, not uncommonly combined. Seven said they were very temperate, but most of these, which included the two female cases, strongly inherited the articular affection.

Occupation.—The occupation was noted in thirty-three cases; and it is very singular to observe, that eight of these or nearly twenty-five per cent., were painters or plumbers, at any rate had made use of lead in their work, and had been affected with lead disease. Any comment on this point, however, we must defer to a subsequent paper. The occupations of the remaining patients were very miscellaneous:—brewers' men and wine-coopers, gentlemen's servants, cabmen, &c. No one occupation, with the above exception, appeared to have much influence; but in those

in which the patients could readily procure malt liquors, the cases were the most numerous; but this refers more especially to the habits of the individuals.

Exciting Causes of Attack.—The causes to which the patients especially referred the attacks under which they were suffering at the time, were noted in eighteen cases. Many could assign no cause for any given attack. Of these eighteen patients, seven referred it to over-drinking, two to drink combined with fatigue or debility, two to cold, one to cold and debility, two to severe injury; in two, it came on during the course of some chest affection, and in two other cases, after epilepsy. So that over-drinking seems to be by far the most powerful exciting cause; and it is not every patient who will readily acknowledge to this fault, or it is most probable the proportion would have been much greater.

Symptoms, Affection of ball of Great Toe.—In thirty-five cases, the fact as to whether the patient had suffered from any special affection of the ball of the great toe, either in the attack under consideration or any prior one, was particularly dwelt upon; and it was found that, in twenty-nine cases, the great toe affection had been well marked, in two it was absent; in the remaining four, the feet only were affected, and in some of these latter the presence or absence of the special affection of the toe could not be positively asserted. It will be observed that in the first attack this part was more *especially selected* by the disease.

Edema of affected parts.—Edema occurring on the subsidence of the inflammation of the affected parts, especially the dorsum of the hands and feet, or where the surface was much affected, was noticed in twenty-four cases to be present. It was never *stated* to be absent; in many cases, desquamation of cuticle was found—a symptom doubtless intimately connected with the œdema.

Concretions or Tophaceous Deposits, or Chalk Stones.—In thirty-seven cases, the presence or absence of concretions of urate of soda upon the surface, or in such situations as to be undoubtedly recognised, was noted, and they were found

to be present in seventeen patients—absent in twenty. Some points of interest with regard to their locality were also observed. In the above seventeen cases, they occurred in the ears (on the surface of the cartilages) alone, in seven cases; in ears and around joints, &c., in nine; and in one case only could they be recognised in the other parts of the body, without also being present in the ears. Of this peculiar selection of the ear for the deposition of urate of soda, I have seen many examples in private patients, of which I have notes; and I may state, that they fully agree with the results contained in the table. These deposits may vary very greatly both in number and size, from one to eight or ten, and from the size of a small pin's head to a pea; they are beautifully crystalline, and of a consistence varying with the time at which the matter was thrown out. A representation of an ear, pretty freely studded with deposits of urate of soda, will be seen in the annexed drawing; it was made from a patient in No. 1 Table, whose blood was examined, and found to be rich in uric acid.

Acute Heart Affection, Peri- or Endocarditis.—In no one case was recent endo- or pericarditis found. Some had slight old valvular disease.

From a review of the symptoms exhibited by patients in Table I, it is evident that the majority of them are such as no physician would hesitate to affirm to be those of *true gout*, and in some, whose symptoms were not so striking during the attack under consideration, the history at once gives the clue to the nature of the disease: still there are a few, where no hereditary predisposition could be discovered, who never had the great toe specially affected, who never appeared, from their own statements, to have lived very freely, whose symptoms might, according to the definition of the diseases gout and rheumatism usually given, be referred either to gout or rheumatism, provided that the condition of the blood, or the effects produced upon the disease by remedies, were not taken into consideration; and it is the true nature of such cases that it is the especial object of the present communication to endeavour to elucidate.

Very many patients called the disease under which they were labouring, *rheumatic gout*, and on questioning them, said that their former medical attendants had so called it: as a rule, however, it was not the really difficult cases which were so named, but those in which the patient had formerly suffered from acute gout, but which disease had, in process of time, merged into a chronic affection. Not unfrequently, these so-called rheumatic gout patients exhibited abundance of chalk-like deposits of urate of soda in different parts of the body. With regard to the amount of uric acid contained in the blood, I think that it bears no direct proportion to the intensity of the local symptoms; often, I believe, an inverse ratio may hold good, as I have reason for suspecting that the local inflammations tend greatly to destroy this body, and therefore, in cases where the joint affection has remained a long time, we should not be surprised to find it greatly diminished. This was evidently the case in the blood taken from the patients Rumsey, Heath, and Rous, in Table I. At first, in Heath's blood it was not detected, but this, probably, was from the too rapid drying of the serum; it being in summer, and I not then taking all the precautions enjoined in my former communication this session. I hope to recur to this subject at a future time, but I would advise, that in cases of this kind, the serum should be put up in rather large quantities, as from a fluid drachm and half, to two drachms, and allowed to dry carefully and slowly. The presence of other inflammatory disease will probably also tend to lessen the amount of uric acid in the blood, as appeared to be shown in Johnston's case: here, however, the joint affection was by no means of a severe character.

Table II, contains an account of thirty-five cases of articular disease, not connected with urethral affection, and in which no uric acid was found in the blood. On making an analysis of these cases similar to the last, the following facts are eliminated.

Sex.—Out of the thirty-five patients, twenty-one were females, and fourteen males.

Age.—In thirty cases the age was determined, and the average was thirty years; as in Table I, the ages were those of the patients at the time of the attacks for which they were admitted.

Hereditary Predisposition.—In twenty-four cases where an account was obtained as to the existence or non-existence of hereditary predisposition to the disease under which the patients were suffering, it was found, that its existence could be made out in eight cases, its non-existence in fourteen, in two there was considerable doubt.

Habits of Patients.—Of twenty-seven cases, twenty-six considered their mode of life very regular, and that they took no unusual amount of malt liquors, wine, or spirits. In one case the patient had lived freely, and taken a considerable amount of alcoholic fluid.

Occupation.—No peculiarity was observed on this point in any of these patients.

Exciting Causes of Attack.—In eighteen patients, some cause of the attack was ascertained: of these, sixteen referred it to direct exposure to cold, and two to debility. In no case could excess of drink be ascertained to be the exciting cause.

Symptoms, Affection of Great Toe.—In thirty-one cases, where the symptoms of the present and prior attacks were given, thirty had never experienced any great toe affection, in one patient only was it stated to have occurred, and then the plantar surface of foot was also much affected, and during the attack, which was the first, the joints of the upper extremities were inflamed equally with those of the lower.

Edema of the inflamed parts.—The presence or absence of this symptom was noticed in thirty-one cases. In twenty-seven it was absent, and in four only present to a marked degree.

Concretions of Urate of Soda or Chalk Stones.—Not present in any case examined, though particularly looked for in those in which the symptoms are detailed.

Acute Heart Affection, Peri- or Endocarditis.—In thirty-one cases examined, recent peri- or endocarditis was present in thirteen, and absent in eighteen patients.

As will at once be seen, the majority of these cases were such as physicians would pronounce to be true rheumatism, simply from a consideration of the symptoms: in some, the histories would readily clear up the diagnosis, but, as in Table I, a few remain, where the condition of the blood must be looked for to enable us clearly to refer them either to gout or rheumatism.

The most important results obtained from Tables I and II may be conveniently summed up as follows. In

Articular Affection with Uric Acid Blood.

The average age of patients was	47 years.
The males formed	about 95 per cent.
Hereditary predisposition was traced	in 50·0 „
Free living and drinking had existed	75·0 „
Painters or plumbers formed	24·3 „
Drink acted as the exciting cause	in 39·5 „
The great toe had been specially affected	82·9 „
No great toe affection	5·7 „
Doubtful	11·4 „
Œdema noticed	68·5 „
Deposits of urate of soda	45·9 „
Acute cardiac affection	none.

In Articular Affections (Non-urethral) with the Absence of Uric Acid in the Blood.

The average age	was 30 years.
The males formed	but 40·0 per cent.
Hereditary affection was traced	in 33·0 „
Cold acted as an exciting cause ¹	88·8 „
Œdema noticed	12·9 „
Acute cardiac affection	41·9 „
Deposits of urates of soda	none.
Great toe <i>especially</i> affected in	none.

¹ And alcoholic fluid did not appear to be either a predisposing or exciting cause.

In Table III will be found the results of the examination of the blood in 6 patients; in whom, although the joint affection simulated very closely true rheumatic disease, yet were separated from the cases in Table II on account of a clear relation being established with urethral inflammation; it was not thought necessary to enter into detail with regard to these; suffice it to say, that the larger joints were generally most affected, that in none was cardiac affection present, and that the febrile disturbance was by no means proportionate to the joint affection, when compared with genuine acute rheumatism, thus separating them from the cases in Table II; and from those in Table I, the want of special great toe affection, and the absence of uric acid in the blood, at once serves to remove them completely.

All the patients in this Table were males.

Table IV gives the results of the examination of the blood from sixty patients suffering from various diseases, and it will be noticed that uric acid was stated to be absent in forty-seven, and present in thirteen. On making an analysis of these thirteen cases, it is found that five were patients suffering from albuminuria, temporary or permanent, a disease which, as I have observed in a former paper, may or may not be accompanied with excess of uric acid in the blood; and the above results fully confirm my former statement, for we also find in Table IV other cases of the same disease where no uric acid was discovered. One was a case of cholera, and during collapse both urea and uric acid are retained in the circulating fluid (I might have given other analyses in this disease, showing this fact, but they have already been brought forward in a paper on the 'Pathological Condition of the Blood in Cholera.') In a specimen of blood from a surgical ward, stated to be from a patient with inflammation of the eye, a trace of uric acid was exhibited by the thread experiment; nothing was known of the case, whether gouty or not: again, a few crystals were seen in a case of a man with pneumonia, and much in one with bronchitis,—with regard to the pneumonic pa-

tient, it could not be discovered that he had ever had gout, and a very small amount only of the acid was found; the bronchitic man, although nothing is stated in his history as to any hereditary predisposition to gout, yet exhibited peculiar nervous symptoms not at all unlike those which precede a gouty attack, and these perhaps may be explained by the condition of the blood. In Table I is contained a case which bears upon this subject; the patient, Clubb, was admitted for chest affection, bronchitis and emphysema; the blood was examined, and found loaded with uric acid; the affection did not yield to the ordinary treatment for bronchitis, but after a few days the chest symptoms almost instantaneously vanished upon the appearance of gout in the great toe and knee.

With regard to the remaining four cases, marked x, x, I may state, that they were not suffering from articular disease; and the nature of the affection is withheld on account of the subject having much interest, and being at present under investigation.

We must, in the examination of blood taken from various patients, expect to find now and then some uric acid, although its presence may have no connexion with the disease under which the patient is suffering; for when once the gouty diathesis is established, the blood, even in the intervals of the attacks, seldom becomes pure: this remark applies, no doubt, with much greater force to cases in which tophaceous deposits have taken place, and perhaps more to the asthenic than sthenic forms of the affection; for it is in such cases, more particularly, that the amount of uric acid eliminated by the kidneys is found so greatly below the normal average. It will be observed, that all the patients suffering from non-articular disease, and in whose blood uric acid was found, were males; this point is interesting, when connected with the fact of the much greater frequency of gout in the male than in the female sex. I have, however, occasionally seen the most severe forms of gout, with excessive chalky deposits, in the female.

In conclusion, as we have found that the blood in every

patient suffering from genuine gout, contained an abnormal amount of uric acid, and that in acute rheumatism such was not the condition of this fluid; and again, that in all cases which could be traced up to gout (although the symptoms exhibited at the time might not be very characteristic), uric acid was present, whereas it was absent in those cases where no such phenomena could be found, I think we shall in future be fully justified in considering this condition of the blood as not only a most important, but even a *pathognomonic* sign, and one more to be depended on than any of the other symptoms taken separately; and that in an otherwise doubtful case, where the diagnosis rests between gout and rheumatism, the presence or absence of this acid in the circulating fluid (determined either from the examination of the serum of the blood or blister exudation) may be looked upon as decisive of the question. I have little doubt, but that many of the cases of rheumatism which have been described by different authors, especially the capsular form of Dr. Macleod, are really gouty in their nature. Many, however, are neither gouty nor rheumatic, and evidently closely connected either with urethral affection or purulent condition of the blood. It will be seen, that the specific gravity and reaction of the blood has been noticed in the majority of cases; with regard to the latter property I may state, that I have *always* found it *alkaline*, both in gout and rheumatism, and I am perfectly confident that the opinion which has been held by some, to the effect, that in acute rheumatism it becomes acid, is completely erroneous. On calculating the specific gravity of the serum of the different bloods, reduced to a uniform temperature, the average was found to be rather less in gout than in rheumatism, but to so small an amount that nothing valuable in diagnosis could be obtained from it. It would also be necessary, before placing any value on this fact, to eliminate from the calculation certain cases in which the specific gravity of the blood might have been altered by other causes than the diseases under consideration. With regard to the urine of gout and rheumatic patients, nothing is mentioned in the present paper; the

omission has been intentional, for I do not consider that our present knowledge of the subject is sufficient to enable us to make use of it in the diagnosis of obscure cases of these diseases. The difference between the condition of gouty and rheumatic urine becomes characteristic only when the other symptoms or signs are so. Much that is erroneous on this subject is doubtless often entertained, the appearance of copious deposits of urates being taken as indications of excess of uric acid in the blood; the converse, however, is more frequently correct, and impurity of the blood from urates is usually dependent on their deficient elimination by the kidneys.

POSTSCRIPT.—*October 10, 1854.*

Since the above paper was read, I have examined the blood in fourteen cases. In four patients there was an abnormal amount of uric acid. Three were males: all had had a special great toe affection: two had chalk stones in ears and around joints: one was a painter, and had suffered from lead colic. In five cases, where the symptoms were those of genuine acute rheumatism, no uric acid was detected: the remaining six were cases of a miscellaneous character, and the blood was free from the acid.