their nature, are in a transition state towards the final resolution into inorganic elements, in completion of the mysterious circle, in which the living powers cause the matter subservient to their purposes to move; but it is obvious that we must be perfectly conversant with the nature and properties of these bodies, before we can determine what relative changes amongst them are the results of disease. The discovery of the constant presence of hippuric acid, and another crystalline organic compound, at present nameless, but having the composition $C_8 N_3 H_8 O_3$ together with the certainty which we now have that the *precise forms* under which many other constituents of the urine exist in that fluid are unknown, fully satisfies us, as pathologists, that the time has not yet arrived for us to derive any positive and satisfactory information respecting diseases, from a chemical examination of the urine. We do not, of course, deny that much has already been done, and that future discoveries in chemistry will accomplish more; but we want, first, a perfect knowledge of every element and every compound into which the organic tissues are resolved in a soluble form, their mutual affinities and reactions; and we look to pure chemists for this information, disagreeing *in toto* from Dr. Bird, who thinks that clinical observation will help us. Indeed, Dr. Bird (and this is the key to his character as a chemico-pathologist) assumes that our knowledge of diseased conditions is already so accurate, that we can employ it to correct the experimental inquiries of the chemist, as will be seen by the following quotation.

"Professor Liebig recognises one great cause of the appearance of an excess of uric acid in the urine, founded on his theoretical views of the conversion of this substance into urea. It may be thus briefly enunciated, that as, normally, the insoluble uric acid first produced by the metamorphosis of tissues is, under the influence of oxygen, conveyed in the red blood-discs, converted into soluble urea, whatever increases the number of blood-discs, or carriers of oxygen, or quickens the circulation, must cause the more complete conversion of uric acid into urea; and less of the former, and more of the latter, will appear in the urine. Conversely, whatever interferes with the perfection of oxygenation in the body, must necessarily produce an excess of uric acid. From this view, it follows that the quantity of uric acid ought to be positively or relatively to urea, decreased in

- " 1. Fever.
- " 2. Acute Phlegmasiæ.
- " 3. Phthisis.

"And conversely it should be increased in

- " 1. Chlorosis.
- " 2. Anæmia.
- " 3. Pulmonary emphysema.

"The only mode of testing hypotheses of this kind, emanating from a great and respected authority, is by clinical observation; and so far as recorded facts are concerned, they fail altogether to give the slightest support to the ingenious theory of Professor Liebig.

"The labours of Edmund Becquerel in urinary pathology, furnish us with a mass of carefully recorded observations, which, made with no view of supporting or disputing any preconceived notions, are peculiarly entitled to respect. The numbers in the following table are calculated from some of the analyses alluded to, and point out the actual quantity of uric acid and urea excreted in the twenty-four hours, and the relative proportion they bear to each other in several diseases.

	Quantity in 24 hours of		Ratio of uric acid to urea.
	Uric acid.	Urea.	
	Grains.	Grains.	
Healthy urine (Becquerel's average).....	8.1	255.	1 : 31.48
Chlorosis, minimum of five cases	1.8	77.5	1 : 43.
Chlorosis, maximum of five cases	6.	172.	1 : 29.
Pulmonary emphysema, extreme dyspnoea	4.9	172.	1 : 35.1
Phthisis, tubercles softened	9.1	66.7	1 : 7.33
Phthisis, three days before death	9.8	29.4	1 : 3.
Morbus cordis, with icterus	9.82	73.3	1 : 7.6
Acute hepatitis, with icterus	11.18	61.6	1 : 5.6
Icterus.....	17.75	285.6	1 : 16.1
Milk fever	19.	133.	1 : 7.47

"From this table, we find that in chlorosis, a disease of anæmia, in which oxygenization of the blood, on the theory of

Liebig, must be most imperfect; the uric acid, instead of being in excess, is positively and relatively below, rather than above, the healthy average. In pulmonary emphysema, again, the same thing is observed, although, from the want of integrity in the function of respiration, uric acid ought to abound; whilst in acute hepatitis, and in phthisis, diseases in which, on Liebig's own showing, excessive oxygenization is going on, the uric acid, both abstractedly and in relation to the urea, is at a minimum instead of a maximum. On this account, as well as for the reasons already alluded to, the theory of Liebig must, in the present state of knowledge, be deemed unsatisfactory.

"Is it possible in any manner to reconcile these facts, the actual results of clinical observation, with the hypothesis of Liebig?"

In reply to this query, we would observe, that this is not the only passage in which Dr. Bird shows how carelessly he has read the works of the German chemist; for we need scarcely say to the readers of *THE LANCET* that this "brief enunciation" conveys no just view of his theory. Whilst the assumption that we can employ the terms chlorosis, anæmia, &c., as if they represented definite and understood things, to controvert a purely chemical theory, is, as Liebig would say, iatro-chemistry, not chemistry. If the fact be, that in pulmonary emphysema, the relative amount of uric acid be diminished, how does this affect the statements of Liebig, that uric acid is convertible into urea by excess of oxygen?

The most valuable and original parts of the work relating to pathology are the chapters treating of the frequency of the oxalic acid diathesis, the occurrence of oxalates in the urine, and on the urine of pregnancy, which, however, have already appeared in the pages of a contemporary journal.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TUESDAY, APRIL 22.

DR. WATSON, VICE-PRESIDENT, IN THE CHAIR.

TWO CASES OF FORMATION OF ARTIFICIAL PUPIL, WITH THE DESCRIPTION OF A NEW INSTRUMENT FOR SEIZING AND DETACHING THE IRIS. By W. R. BEAUMONT, Professor of Surgery in the University of King's College, Toronto, Upper Canada.

In bringing forward these cases, the object of the author was to present to the Society a forceps which he has invented for seizing the iris, and detaching its ciliary margin from the corpus ciliare, or for drawing any portion of the iris through a wound in the cornea. After noticing the instruments used in these operations, and particularly the fine hook which is recommended by Mr. Travers, he remarks, that the hook sometimes tears its way out of the iris, instead of detaching it, but in using the forceps suggested by the author, this laceration of the iris without its detachment never occurred; and he never failed, in any instance, in seizing the iris at the first attempt, and close to its ciliary margin. The hook may possibly, in transfixing the iris, wound the capsule of the lens; the teeth of the forceps are too short, and are set in a direction which causes them to enter the iris obliquely. The point of the forceps, when the blades are closed, is perfectly smooth, the teeth being then concealed, so that the instrument may be introduced into the anterior chamber without risk of wounding any other part than that portion of the iris which it is the operator's intention to seize. After giving directions as to the mode in which the instrument is to be used, the author concludes his paper by narrating two cases. One was a case of leucoma, with contracted and adherent pupil, in which an artificial pupil was formed by the detachment of the iris from the ciliary ligament. The vision afterwards gradually improved, so that the patient was able to maintain himself by his labour: before this operation he could only distinguish light from darkness. The other was a case of central leucoma of the right eye, the pupil elongated towards the temple by a previous operation for artificial pupil. An artificial pupil was formed by detaching the iris from the upper part of the ligamentum ciliare, and by excision of some of the detached portion of the iris; vision was so much improved by the operation, that the patient was able to read large print and to sharpen the teeth of his saw.

Mr. CÆSAR HAWKINS had not seen the instrument alluded to in the paper, but it appeared to him that the cases related were hardly sufficient to recommend its adoption by surgeons in this country. In one of the two cases only was the operation rightly

performed, by separating the iris from the ciliary ligament. In the other case, the instrument got entangled in the iris, and had to be cut out.

CASE OF REMARKABLE HYPERTROPHY OF THE FINGERS IN A GIRL, WITH A NOTICE OF SOME SIMILAR CASES. By T. B. CURLING, Lecturer on Surgery, and Assistant-surgeon to the London Hospital.

Eliza H—, aged fifteen, the subject of this congenital malformation, is a pale, sickly girl, the daughter of poor parents. On the right hand the fore, middle, and ring fingers are of unusual size. The enlargement of the fore and ring fingers is only slight, but the middle one is of extraordinary proportions, measuring as much as five inches and a half in length, and four in circumference. On the left hand, the thumb, index, and middle finger, are hypertrophied. The index-finger, which is more enlarged, measures four inches and a quarter in length, and four in circumference. The middle finger has a lateral inclination, occasioned by the displaced extensor tendon, which forms a bridle along its outer edge. All parts of these hypertrophied fingers are equally developed in excess—the bones, articulations, integuments, and nails. The two largest fingers are fixed in an extended position, and the author attributes the girl's inability to bend them to the flexor muscles not having acquired a development corresponding to the fingers upon which they act.

The author observes, that in this remarkable example of partial hypertrophy there is an apparent absence of all those circumstances which seem favourable to excessive growth—a feeble constitution, sparing nutriment, no extraordinary exercise of the part, and no enlarged vessels or activity of circulation. It would seem as if the formative powers, which we see in some few cases exercised to excess in every part of the frame, so as to make a giant, had been limited in this instance to an insignificant part of the extremities.

The paper contains a communication from Professor Owen, giving an account of a case analogous to the preceding one. The subject was a child, two years old. The middle finger of each hand was nearly twice as long, and more than twice as thick, as the index-finger. The author gives the particulars of a hand, the cast of which was given to him by Mr. Dimond, of Frith-street. It is from a Spaniard, the governor of a fort in the Philippine Islands, and presents congenital hypertrophy of the first and second fingers of the right hand. The second, which is of enormous size, had the same kind of lateral inclination as was observed in one of the fingers of Eliza H—. The author also describes a cast, contained in the museum of King's College, London, of the hand of an adult, in which the middle finger is hypertrophied with a slight lateral inclination.

The author, after noticing the rarity of this malformation, refers to two published cases of it; one recorded by Mr. Power, of Dublin, the other, by Dr. John Reid. In the former, the fingers were divaricated from the middle. In all the four foregoing cases, in which the hypertrophied fingers were bent to one side, the author suspects that the inclination was produced, as in the case of H—, by the tension of the displaced extensor tendon, which had not elongated in proportion to the increase in the size of the finger.

The author inquires whether it is possible by any mode of treatment to arrest the inordinate growth of the fingers in early life. He doubts if this could be accomplished by any other means than by firm and long-continued pressure; but, in addition to the suffering attending it, the impairment of the functions of the part caused by pressure constituted an insuperable objection to its employment. In a case where one finger only was enlarged to a great extent, and nearly useless, he recommends its removal. In other cases, the enlarged finger might be reduced in size by amputation of the distal phalanx. The paper is concluded by a brief notice of two cases of hypertrophy of the toes.

DESCRIPTION OF A MALFORMATION OF THE DUODENUM.

By ROBERT BOYD, M.D., F.R.S.

This morbid specimen was from a male still-born infant. The duodenum was enlarged, and appeared like a bladder two-thirds filled, and contained a greenish-coloured fluid. The lower, or most distant part from the stomach, was imperforate, and of a larger caliber than the upper part, so that the malformed duodenum, as exhibited in the preparation, is somewhat of an oval shape. The intestine is completely closed by a transverse membrane at the lowest part; two inches and a quarter above this, a valve extends across, nearly half closing the gut, proceeding from its concave side. Around the membrane which closes the duodenum, the small intestine is attached, and when dried and distended with air, is only about the thickness of a writing pen. The author, in conclusion, refers to various writers who have given an account of similar divisions, and other malformations of the intestinal canal.

A CASE OF ABSCESS IN THE GROIN ATTENDED WITH SYMPTOMS OF HERNIA, FROM WHICH TWO LUMBRICI TERETES AND AFTERWARDS FÆCAL MATTER WERE DISCHARGED, AND THE PATIENT RECOVERED. By THOMAS HOWELL, Esq. of Risborough.

(Communicated by ALEXANDER SHAW, Esq.)

John S—, aged seventy, was attacked with symptoms of strangulated hernia. The author found a small hard tumour, about the size of a hen's egg, in the right inguinal region, lying over Poupart's ligament, about midway between the internal and external abdominal rings. At first he supposed it to be a hernia, but on careful examination, could detect no impulse on coughing, nor detect a neck towards the internal ring, and the tumour was not in the precise situation of inguinal hernia, and he was led to conclude that it was an enlarged inguinal gland. The symptoms were relieved by calomel and opium and a dose of castor oil, which acted freely. After two or three days, phlegmonous inflammation took place, and on fluctuation being perceived, the part was opened and four ounces of pus discharged. On the poultice being removed next morning, two worms, (lumbrici teretes,) each from five to six inches long, were found in it. After that, fæcal matter continued to escape from the wound for three weeks. He also passed, per anum, fæces, but not of so bright or yellow a colour as that from the groin. The discharge from the wound gradually diminished, and in five weeks the author succeeded, by means of pressure, in healing the orifice. The patient stated that he never had any hernia.

Mr. CÆSAR HAWKINS remarked that there was one point in the paper which he could not allow to pass without observation, particularly as he believed that it had in some other cases been the source of error. He alluded to the absence of impulse in the tumour from coughing; a circumstance which Mr. Howell and his partner had regarded as indicative of the hernia not being strangulated. Now he (Mr. Hawkins) should have considered this one reason for deciding that the hernia was strangulated, for in nineteen cases out of twenty of this obstruction, no impulse would be communicated to the hand on coughing.

Dr. CHOWNE had, some years since, seen a case bearing in some degree on that under consideration. The case was one of constipation, in which a considerable quantity of quicksilver was administered. A tumour formed in the groin, which eventually sloughed, and two ounces of quicksilver escaped with the fæces from the opening thus made. The case was attended with symptoms similar to those observed in Mr. Howell's case. The patient recovered.

Mr. ARNOTT mentioned a case which had come under his care some years since in the Middlesex Hospital. An abscess formed on the right side, in the same situation as that in Mr. Howell's case. Sloughing took place, and a discharge of fæcal matter ensued. The patient, a young girl, eventually did well. With regard to the point of diagnosis of strangulated hernia, alluded to in the paper, and subsequently by Mr. Hawkins, he (Mr. Arnott) had an illustration of the accuracy of Mr. Hawkins's remark in the very last case of hernia in which he had operated. It was a case of strangulated femoral hernia in an old woman. There was no impetus given to the tumour by coughing. He explained to the pupils that the absence of this symptom was a reason for operating, as it was an evidence of the existence of strangulation. The operation was performed, and the patient did well. Abscesses, in connexion with the intestine, were often a source of great anxiety to the surgeon. He had lately been called to a case in which a gentleman thought that he had committed a mistake by opening what he did not suppose was a hernial tumour. He had concluded, from the absence of impulse on coughing in the tumour, that it was an abscess, and had plunged his knife into the swelling. Finding that this proceeding was followed by a discharge of a quantity of fæcal matter, he became alarmed. This abscess was situated on the left side, not, as was usual, on the right. There was no hernia, but a communication between the intestine and the abscess, no doubt, existed. The patient did well.

CASE OF TRAUMATIC TETANUS SUCCESSFULLY TREATED BY LARGE QUANTITIES OF WINE AND BRANDY, WITH OTHER MEANS. By JAMES WILLIAM ILOTT, Esq. of Bromley, Kent.

(Communicated by JAMES ARTHUR WILSON, M.D., Physician to St. George's Hospital.)

The patient, a robust man, aged thirty, was thrown from his chaise, Nov. 28, and met with a compound fracture of the tibia and fibula, with considerable injury to the soft parts. By extension, the bones were placed in a good position, and it was determined to save the limb. The patient went on remarkably well until the 12th of December, when tetanic spasms first commenced. Healthy granulations had formed, and were covering the denuded bone. The spasmodic action affected the muscles for a time, and

then gave way, the muscles of the jaw being those chiefly affected. On the 14th he complained of cramp and spasm in the chest. A blister was applied, and calomel and cathartic medicine administered.—15th. The pain and spasm of the chest were somewhat relieved, but he was very weak. He was ordered brandy-and-water and medicine with ether, every two or three hours, after which he somewhat rallied. He continued much the same to the 18th, when the tetanic symptoms were much increased in severity, and in the evening there was opisthotonus. Mr. John Scott saw him, agreed in the propriety of continuing the stimulants, and suggested opiate enemata, and turpentine and castor oil internally. This treatment was pursued, with little variation, till the 21st, when he was observed to be extremely low, with a pulse about forty, and in a cold clammy perspiration. The quantity of brandy at this time administered amounted to rather more than three pints in the twenty-four hours; every part of the muscular system seemed affected with spasm.—Dec. 22nd. He was much the same, but the wound was looking more healthy. Dr. Wilson saw him, and urged the continuance of the stimulants, but recommended the entire discontinuance of opiates. He also recommended a suppository, composed of quinine, sesquicarbonate of ammonia, and camphor, to be administered every three or four hours. From this period he continued to improve, and on the 26th all tetanic symptoms had disappeared. During the eight days in which the disease was at its height, the patient took two gallons of brandy, besides wine, beef-tea, jelly, &c.—Jan. 29th. The wound was nearly healed, and he was daily gaining strength. In a supplement to this communication, Dr. Wilson remarks that the case affords a well-marked instance of traumatic fever, and that the principle on which it was treated was one of unremitting stimulus and support, opium and all other narcotics being entirely laid aside on the tenth day of the attack. The extent and severity of the constitutional disorder were strongly indicated by the indifference of the patient to all the ordinary effects of the alcoholic stimulus. From this case he draws the important pathological inference, that tetanus, like fever, is a disorder of the entire system. Determined specially to the muscles, it is continually operative in the other structures, as in the universal blood. Generated after a definite period of incubation, it requires time for its development—time for its cure. On these views and indications, that treatment which assumes to be rational must address itself to the general business of nutrition rather than to the partial agencies of the nerves. Under the great systematic error of our modern pathology, tetanus is encountered almost exclusively by opium and other narcotic poisons. There is no plausible theory to account for the preference of these fatal drugs. By experience they have long been utterly condemned.

Mr. DAVIS was surprised at the conclusion of the paper, in reference to its sweeping conclusion regarding the use of opium in tetanus. He had seen many cases of tetanus the result of gun-shot wounds, and he had no hesitation in expressing his conviction, that opium had saved many of these cases; opium in small doses, however, was nearly useless in this affection. He had given, frequently, ten grains for a dose, and in some cases as much as a scruple. At the time these cases occurred, the state of the medicine chest was such that, with the exception of opium, ether, and carbonate of ammonia, it contained nothing worth mentioning. He attributed the successful treatment of many cases to the employment of large doses of opium, and though mercurial ointment was applied over the surface, he thought it had been of little service. Time might modify the disease, but the patients, he believed, would not have survived unless by the aid of opium.

Dr. KING alluded to two cases of tetanus which had been cured by Dr. Sutton, of Greenwich, by the application of a very powerful solution of opium to the entire surface, a pound of the drug being employed in the mixture. He (Dr. King) had attempted the same treatment in one case, but the sedative effect of the application was such as to stop the heart's reaction, and produce a fatal result. He believed that if stimulants had been freely administered in this case the patient would have recovered. Opium might be good, but stimulants were also necessary. He alluded to two cases successfully treated by the tobacco injection.

Dr. SNOW said that this differed from most cases of traumatic tetanus. The disease often arose soon after an injury, and whilst the powers of the system were not much reduced, but in this instance it did not come on till the patient had suffered long-continued pain and copious purulent discharge. The disease commenced at first by simple spasmodic twitches, such as might occur in a state of great debility from any cause, and such as he had lately seen in a patient much reduced by rheumatism. The treatment adopted seemed, undoubtedly, the best suited to that

particular case, but it would require further experience to prove its applicability to tetanus generally.

Mr. CURLING, in reference to the paper just read, was desirous of awarding to Messrs. Scott and Ilott the credit of carrying the case detailed through its most perilous stages. This would be granted, he thought, when it was recollected that, as a general rule, if we could carry tetanus on to the tenth day, the termination would be favourable, and that there was no material change in the treatment until after that period, up to which the case was under the care of those gentlemen. He had seen a case at the London Hospital, under Mr. Scott, in which the same treatment as that followed in the present case was successfully pursued. Ten years since, he (Mr. Curling) had published a work on tetanus, in which he had given his opinion with respect to the use of opium in that disease. He had seen no reason to alter that opinion since. In the same work he had advised the employment of stimulants and support, because tetanus was an exhausting disease, and many cases were lost for want of adequate stimulation and support.

Mr. SOLLY had lately seen three cases of this disease succeeding each other very quickly. Two died, one recovered. He attributed this recovery to the free use of stimulants, which were administered night and day by a very intelligent and careful nurse. He was of opinion that the exhibition of opium in this disease was injurious.

Dr. JEAFFRESON considered that the great interest of the paper consisted in the addendum of Dr. Wilson, to the effect, that it was advisable to treat the disease on enlarged principles, and not by any arbitrary rule. He had had some experience both in idiopathic and traumatic tetanus, and had found the disease do well under various kinds of treatment. For instance, if there was a febrile condition, purgatives were administered, while under opposite circumstances, stimulants were employed. The disease must be treated under the circumstances of each case, in some instances neither opium nor stimulants being admissible. He agreed with Mr. Davis, however, that large doses of opium would occasionally be of service.

Mr. SIMON remarked, that in watching cases of tetanus, he thought it was obvious that the mischief we observed was reflected on a single system of the body from a local cause, and therefore the disease could not be called one affecting the system generally. The vital functions, as did most of the other functions of the nervous system, went on unaffected, and the intellect remained perfect to the last. The advantage of stimulants and tonics in this disease might perhaps be explained by their giving the patient power to outlive the disease, and not from any specific action they exerted on the poison—if he might use that term—of tetanus, the patient being thus kept alive until the disease expired naturally. This was particularly the case when the affection was of the chronic kind. If we really possessed any anti-tetanic medicine, one that exerted its influence directly on the disease, subduing the spasm, and reducing the violence of symptoms, it was tobacco, which, by its soothing effects, gave time for the employment of nutriment and tonics, and such other means as enabled the patient to outlive the disease.

Dr. KING, in answer to questions, said that in the case he had treated by the external application of opium, all the tetanic symptoms were relieved, but the patient never awoke from the sleep thus produced. If stimulants had been employed freely with the opium, he thought that the patient would have recovered. The opium was employed in his case for twenty-four hours; the quantity, a pound. The patient took a glass of wine at 12 P.M., and was dead at 3 A.M., the heart's action having entirely ceased.

Mr. STREETER regarded the application of opium to such an extent as likely to exert the poisonous effects of the remedy.

Mr. CÆSAR HAWKINS said, one mode of treatment had not been alluded to, that of Dr. Wells, which was doing nothing, and which, like most of the other vaunted remedies in this disease, was said to be successful.

Dr. WATSON said that Dr. Wilson particularly alluded in the paper to the element of time as a means of cure.

TUESDAY, MAY 13.

ON THE USE OF CREOSOTE INJECTIONS IN CAMP DYSENTERY.

By JOHN BRANSTON WILMOT, M.D., Cantab.

(Communicated by Dr. WATSON.)

By the term camp dysentery, the author means that epidemic form of the disease which has so often proved a deadly scourge in communities, and not those occasional cases which seldom prove fatal under proper treatment.

On the 3rd of October, 1844, the author was requested by Mr. Dakiens, surgeon of the Tunbridge Union House at Bem-bury, to visit the house with him, as a fatal dysentery was raging