It is necessary to take great care that the point of the needle be not too sharp; or there will be considerable danger of wounding the vein, whilst the needle is being passed between it and the artery. As to the tightness with which the ligature should be drawn, the surgeon should exercise his discretion, and is best taught by experience. It is frequently stated, that the inner and middle coats of the artery should be felt by the operator to give way under the ligature; but, in a very great majority of cases, Mr. Cooper has not been able to detect anything of the sort. In old persons, where the coats are more likely to be indurated or ossified, a less degree of force will of course be proper. In three cases, the patients were sensible of an injury at the moment at which the aneurysm may be supposed to have originated. This is an unusual circumstance.

In two of these instances, the predisposition to the disease seems to have been produced by carrying heavy weights: in the other, by the action of sawing, the straining attending which may be regarded as having affected the patient in somewhat the same manner as the carrying of heavy burdens.

Excision of the elbow-joint.

Mr. Cooper performed this operation in two cases of scrofulous affection of the joint, with success. The following is the description given by Mr. Longmore, of Mr. Cooper's method of operating:—

The patient was laid on his abdomen, and the diseased arm was flexed over the back of a chair; an excellent support being thus given to the joint, while it afforded the operator a perfect view and control over it. Mr. Cooper then made an incision from above, downwards, about three inches in length, over the external condyle; and followed it by a corresponding and parallel incision immediately to the inner edge of the olecranon process, connecting the two by a third and transverse cut. Having dissected back the flaps thus formed, and separated the tendon of the triceps from its insertion, Mr. Cooper removed about an inch of the olecranon process by a common saw; an assistant, at the same time, carefully retracting the ulnar nerve. The joint was thus fully exposed to view; and the diseased portions of the humerus and ulna were now removed, chiefly by means of a scalpel.

The observations of Mr. Cooper on excision of the elbow-joint are so practical, that we extract them without abridgment.

Operations of this nature are much more successful in joints which have been, as it were, prepared for them by a long course of diseased action, modifying and diminishing their vitality, than in healthy articulations. A joint, of which the structures and functions have been gradually modified by morbid processes, may be exposed, and partially or wholly removed, with perfect safety; but such an operation will be attended with much more dangerous symptoms where there has been no previous chronic disease.

The operation of excision of the joint is better suited for the upper than the lower limbs; because the actions of the former are more independent of each other; and the latter, moreover, have to support the whole weight of the body, and require

greater strength than is afforded by a new joint. Then, again, the injuries and diseases of the knee-joint are generally much more serious than those of the elbow, and their constitutional effects more alarming. The lower limbs having to act in concert during locomotion, the one supporting the body, whilst the other advances; if any motion remains in the new knee, it becomes less useful than an artificial support. The operation is indicated when it is evident that nature can only effect a cure by ankylosis, and when at the same time it is plain that the constitution is unequal to endure the prolonged and exhausting irritation attendant upon the exfoliation of bone and protracted discharges. Of course, the more the disease has been confined to the structures of the articulation itself, and the less the bone has suffered, the greater will be the probability of a successful result.—I may here remark, that in operating upon the elbow-joint, the inner incision should be carried close to the olecranon process, so as to run no risk of injuring the ulnar nerve, which should be then drawn inwards by a metal retractor. It will not be injured by this step; being protected by the adipose tissue, in which it lies imbedded, and by which, indeed, it is completely hidden. The outer incision should be made sufficiently distant from the olecranon to leave the extent of space required for the removal of the diseased parts; which is much facilitated by flexing the elbow-joint, after the transverse incision has been made. It has been recommended to divide the triceps muscle from the olecranon preliminarily, in order that, after the latter has been removed, it may be re-united with the ulna; but I do not think that such a union can occur, except by means of adventitious matter, which in all cases is deposited, and which is always sufficiently firm and continuous to maintain the function of the muscle, and protect the posterior part of the new joint.

With respect to the results and general bearings of the operation, I think the principal benefit derived from it is, that it lays open and perfectly exposes the affected tissues, and thus facilitates their separation; in order to effect which, Nature would otherwise have to form sinuses and ulcerations. The advantage gained by it is better estimated by the extent of surface exposed, than by the quantity of bone removed; no more of which should be brought away than is evidently affected by disease, which, we shall generally find, is confined to the articulating surfaces.

Great care is requisite as to the angle at which the limb is kept during the progress of ankylosis: for if it is finally left in an awkward position, it is not very uncommon for patients to desire amputation, rather than be burthened with a useless member.

ON THE SOLVENTS FOR CALCULOUS CONCRETIONS.

By ALEXANDER URE, M.D.

THE frequent occurrence of stone at every period and in every condition of life, the distressing, nay fatal, consequences with which its presence is fraught, and the pain, danger, and uncertainty of the surgical means employed for its

removal, are considerations which have induced the students of the healing art, from a very early date, to endeavour to find out some appropriate remedy against so formidable a malady. Unacquainted, however, with the real nature of the disease, and destitute of the true lights of science, they produced no satisfactory results. Nor was it till within comparatively recent times, that any authentic benefit can be referred to the administration of what are termed lithontriptic medicines. A considerable incentive to inquiries of this kind may be traced to the circumstance of parliament having voted a pecuniary reward to Mrs. Joanna Stephens for her vaunted specific—an expense, by the way, which might have been well spared to the nation, had our physicians, then consulted by the legislature, known anything of chemistry. We discover, no doubt, in the works of Whytt and others, published about the middle of the last century, a few cases of individuals completely relieved of their sufferings by the crude remedial agents then in use. Still, the method by caustic earths and alkalis never became very general, partly from occasional failures through indiscriminate adoption of the same routine of treatment, partly because the patients who had submitted to the practice, and were afterwards operated upon by the knife, invariably died. More lately, the attention of the profession has been again directed to the subject by the writings of MM. Patissier,* D'Arcet,† and Charles Petit,‡ in France; whose main object was indeed to prove the efficacy of the mineral waters of Vichy in dissolving urinary concretions.§ The highly favourable statements made by the last named author, one of the physicians at the spring, have, however, been controverted by M. Leroy d'Etiolles, who has attempted to show, from cases which came subsequently into his hands, that under the use of these waters, the symptoms were only masked for a time, while the disease gained ground, and eventually recurred in a more aggravated form than before.

Since stone in the bladder may be justly regarded as the result of disordered secretion, there appears no good reason why it should not be got rid of by suitable solvent means. This cheering idea has been entertained by three distinguished chemical philosophers, Fourcroy, Vauquelin, and Berzelius; and, assuredly, every true friend to humanity must ardently wish for its being realized. The most frequent variety of vesical concretion is that composed of uric acid. It has been reckoned to constitute nineteen out of twenty,|| if we except one or two districts of country, in which the oxalate of lime, or mulberry calculus, predominates. The following experiments have been undertaken accordingly, for the purpose of ascertaining the action of different solvents upon uric acid, as a first step towards establishing some definite views touching their therapeutic values. The substances tried were, carbonate and bicarbonate of potash, carbonate and bicarbonate of soda, borate of pot-

ash, biborate of soda, borate of ammonia, soluble carbonate of magnesia, smelling carbonate of ammonia, lime-water, and Castile soap.

One salt, namely, borate of potash, introduced into the preceding list, offers certain advantages, to be detailed in the sequel, which would dispose me to give it the preference over most other substances of this class, for any case of the above character requiring the aid of lithontriptics. Its intrinsic merits of course can be determined only by the test of experience.

The uric acid employed was of extreme purity, accurately prepared according to the process recommended by Professor Woehler of Goettingen. (Berzelius, *Traité de Chimie*, tom. vii. page 347.) A certain amount of the solvent was dissolved in a given quantity of distilled water at a uniform temperature, to which the acid was added in minute particles at successive intervals, and the whole freely agitated. This was continued until the liquid ceased to take up any more of the acid, as indicated by a faint haze.

One grain of common crystallized carbonate of soda,* dissolved in one ounce of distilled water, took up one grain of uric acid.

One grain of common carbonate of potash, dissolved as above, took up 1·4 grains of uric acid.

One grain of borax, dissolved as above, took up 1·2 grains of uric acid.

One grain of crystallized borate of potash, dissolved as above, took up 1·2 grains of uric acid.

The above solutions remained perfectly limpid after standing twenty-four hours.

Two grains of carbonate of soda, dissolved in one ounce of distilled water, took up 1·5 grains of uric acid; a slight flocculent deposit was perceptible after twenty-four hours had elapsed.

Two grains of carbonate of potash, dissolved as above, took up 2·4 grains of uric acid; deposit as in the last.

Two grains of borax, dissolved as above, took up 2 grains of uric acid; deposit less than in preceding.

Two grains of borate of potash, dissolved as above, took 1·4 grains of uric acid; here no appreciable deposit ensued.

Three grains of carbonate of soda, dissolved in one ounce of distilled water, took up 2·3 grains of uric acid; a slight precipitation presently occurred, which persisted during the next day.

Three grains of carbonate of potash, dissolved as above, took up 3·2 grains of uric acid; a flocculent deposit showed itself ere long, which increased considerably in the course of the day. Half an ounce of hot water was added to the liquid, so as to raise its temperature to 100 deg. Fahr., but the deposit still continued.

Three grains of borax, dissolved as above, took up 2·4 grains of uric acid; some deposition eventually appeared, which was not removed by the additional hot water.

Three grains of borate of potash, dissolved as above, took up 2·5 grains of uric acid, the solution remaining perfectly clear, even after the lapse of twenty-four hours. In a repetition of the ex-

* *Manuel des Eaux Minérales de France*, 8vo., Paris, 1818.

† *Annales de Chimie*, 1826.

‡ *Du Traitement Médical des Calculs Urinaires, et particulièrement de leur dissolution par les Eaux de Vichy*, &c., 8vo., Paris, 1834.

§ Two remarkable instances of their disintegrant power are cited in an able article published in the October number of the *British and Foreign Medical Review*.

|| *On Urinary Diseases*, by R. Willis, M.D., London, 1838, p. 248.

* The crystallized carbonate of soda and the common granular carbonate of potash have been selected for these experiments, as representing the state in which they must be present in the urine. The uric acid is well adapted for researches of this kind, on account of its sparing solubility in water. According to Mitscherlich, 10,000 parts of water, at 60 deg., are required to dissolve one of it.

periment, a slight precipitate manifested itself, which rapidly vanished upon the addition of half an ounce of hot water.

Three grains of carbonate of soda, dissolved in half an ounce of distilled water, began to deposit flocculi when 1·7 grains of uric had been added. Upon the following day the flocculence was very copious, and did not disappear after dilution with half an ounce of hot water.

Three grains of borax, dissolved as above, showed signs of decomposition with 1·9 grains of uric acid. The deposit on the next day was very considerable, and scarcely affected by the additional half ounce of hot water.

Three grains of borate of potash, dissolved as above, took up 1·2 grains of uric acid. The solution, after the lapse of twenty-four hours, displayed a slight deposit, which immediately vanished on its being diluted with the same quantity of hot water.

Four grains of carbonate of soda, dissolved in one ounce of distilled water, after taking up 2·5 grains of uric acid, began to exhibit an incipient deposit, which, after some hours' repose, was dense and abundant.

Four grains of carbonate of potash, dissolved as above, after taking up 3·5 grains of uric acid, showed ere long an incipient flocculence, exceeding that from the carbonate of soda.

Four grains of borax, dissolved as above, took up 3·2 grains of uric acid. The solution stood limpid, but several opaline globules, as large as millet seeds, were found adhering to the bottom of the vessel on the following morning.

Four grains of borate of potash, dissolved as above, took up nearly 3 grains of uric acid; a light and scanty deposit had formed during the course of the night.

An additional ounce of hot water was put into each of the above solutions, so as to bring them respectively to a temperature of about 100 deg. Fahr.; that of the borate of potash alone became perfectly and permanently clear.

Four grains of bicarbonate of soda, dissolved in an ounce of distilled water, took up 1·1 grains of uric acid, becoming faintly turbid, and letting fall a trifling deposit.

Four grains of bicarbonate of potash, dissolved as above, acted in the same way. Both remained without further change after twenty-four hours.

Four grains of smelling carbonate of ammonia, dissolved as above, became speedily troubled with half a grain of uric acid, producing abundant flakes of urate of ammonia.

The three last experiments go directly to prove that an excess of carbonic acid abates the solvent power.

Four grains of crystallized borate of ammonia, dissolved as above, took up two grains of uric acid, and passed presently into urate of ammonia.

A solution of four grains of Castile soap, in an ounce of distilled water, became almost directly opaque on the admixture of uric acid, and began to throw down a deposit when a grain and a half had been added.

One ounce of lime-water took up 2·2 grains of uric acid, but commenced very soon to let fall a flocculent precipitate, which ere long became very copious, forming in the course of a couple of hours an incrustation upon the sides of the vessel,

so coherent as to require muriatic acid for its removal.*

Half an ounce of lime-water, diluted with an equal quantity of distilled water, took up 1·5 grains of uric acid, but prompt decomposition ensued, as in the last experiment. It may be observed here, that Mrs. Stephens's nostrum for stone in the bladder consisted of lime-water, taken along with a solution of soap—truly a most unchemical mixture!

One hundred grain measures of Dinneford's fluid magnesia, diluted with water enough to constitute an ounce by measure, took up one grain of uric acid. The next morning the bottom of the vessel was studded over with numerous white pearly bodies, having a crystalline structure, resembling some varieties of the mineral zeolite, of very sparing solubility in water.

It ought to be noticed that all the above solutions, after having received their maximum of uric acid, betrayed more or less of an alkaline re-action with red litmus paper.

From the preceding investigation may it not be inferred, that the best direct solvents of uric acid, are the preparations of that alkaline base which is most germane to the system, namely, potash, and more especially its carbonate and borate? There is obviously no advantage in a surcharge of carbonic acid, except in so far as it renders the medicine more eligible for internal administration. Woehler could not discover more of this gaseous acid in the urine of a person who had been drinking plentifully of water impregnated with it, than in one who was taking nothing of the kind. Borate of potash has this important feature to recommend it, that any resulting precipitate is immediately re-dissolved by a slight excess of water, which is not the case with respect to the carbonates of potash and soda alone, or the biborate of soda. Hence it would appear, that a very excellent and efficient method of availing ourselves of the conjoint powers of the carbonate and borate, would be furnished by exhibiting the boro-tartrate of potash, the tartrate being converted in its transit through the circulation into carbonate of the same base, while the borate passes through unchanged.†

It is suggested, that probably a good plan for attacking a calculus after it has just made its way into the bladder, would be to give small and oft-repeated doses of the above triple salt, dissolved in a considerable quantity of any aqueous vehicle; and to inject at the same time into the bladder, by means of the double catheter, as modified and improved by M. Leroy d'Etiolles, a weak solution of the borate of potash or soda. I say weak, because it is demonstrated in the foregoing experiments, that no benefit is gained by employing a solution containing more than three grains of the salt to an ounce of water: besides, in working with a menstruum so dilute, no apprehension need be entertained of doing injury to the delicate lining of the bladder.

* Might not the excessive and prolonged use of lime-water (or strong calcareous spring waters) tend to produce somewhat analogous incrustations upon the mucous coat of the bladder, in individuals labouring under a uric diathesis?

† Professor Liebig mentions, that in the Rhenish provinces, where the inhabitants generally drink light wines containing a considerable amount of tartar, stone is unknown. *Traité de Chimie Organique*, Introduction, p. 92.

Although not prepared to deny the disintegrating power over uric calculi possessed by certain preparations of soda, yet I am inclined to think them open to objection, on account of their liability to decomposition when left in contact with uric acid, and still more on account of the very insoluble nature of the resulting compound, urate of soda.* Dr. Prout informs me that he has known several instances of persons who voided this salt, in consequence of taking the bicarbonate of soda; and an intelligent pharmaceutical chemist, in the vicinity of London, told me, that after using the above preparation for eighteen months, to relieve acidity of stomach and heartburn, he was seized with inability to retain his urine, accompanied with the discharge of white concrete matter from the bladder, which troublesome symptoms rapidly subsided on discontinuing the medicine. It need scarcely be stated that the same objections must apply to Castile soap.

Lime-water, smelling carbonate of ammonia, and soluble carbonate of magnesia being still more liable to decomposition than the combinations of soda, although the urates of their several bases more readily dissolve, must still be regarded as very doubtful solvents. Perhaps some exception may be allowed touching the first, the favourite lithontriptic portion of the celebrated Horace Walpole; since it is believed to operate in disaggregating calculi in another way, namely, by virtue of its action upon the cementing mucus; lime-water, as is well known, having the property of dissolving that animal secretion. May not the carbonates of potash and soda exercise a kindred agency?

It is my intention to carry out the application of this principle, of which the above is but a preliminary outline, to other rarer forms of urinary calculus, more particularly with regard to the effect of lactic acid upon the Phosphates, and to detail the results on some future occasion.—*Pharmaceutical Transactions*, No. V.

ANNIVERSARY MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

THE fourth annual meeting of this association was held on Thursday, the 21st instant.

Dr. Webster, the president, on taking the chair, having explained at some length the objects of the association, called on Mr. Harrison to read the report, of which we give the following abstract:—

NEW MEMBERS AND AUXILIARY BRANCHES.

Since the last anniversary meeting fifty-two new members have been admitted, and within the year three new auxiliary associations have been formed, viz. the Cornwall, the South Devonshire, and the West Somerset, pledged to promote the respectability and the reform of the profession in their respective localities.

* The circumstance of its forming the element of a calculus is recorded by M. Leroy d'Étiolles. *Comptes Rendus*, 1839.

MEDICAL REFORM.

With respect to medical reform, the council are of opinion that the principles which have been always held by this association, and those which have been lately recognised by the numerous other reform associations in conference assembled, should be laid before the ministers of the crown, and that they be requested to take up medical reform as a government question, upon these principles. At the same time it should be clearly explained, that such principles do involve neither the destruction nor the injury of existing institutions, nor the extinction of the present orders of the profession.

Should the government refuse to undertake this duty, then the profession must introduce a measure during the next session of parliament. As co-operation and unanimity are of vital importance in furthering the cause, it is highly desirable that a permanent joint committee should be formed in London, composed of delegates appointed by the numerous associations which now exist in the three kingdoms, (in short, a general representative medical council,) to take such steps as occasion may require, not only on this but on other important questions connected with the profession.

QUACKERY AND ILLEGAL PRACTICE.

These questions, though naturally allied, are yet considerably different. Quackery may be practised by either legal or illegal practitioners; while illegal practice is carried on by the unqualified, such as chemists, and other *pretenders* to medical knowledge. The council believe that quackery, in the sale of quack and patent medicines, is much less injurious to the public health, than the illegal practice of chemists and other unqualified practitioners. This state of things we owe almost entirely to the culpable supineness of the College of Physicians and the Apothecaries' Company.

A very simple and efficient mode of dealing with quacks and illegal practitioners might be followed: first, let the government at once withdraw its sanction of a stamp-duty from quack medicines, and forego the trifling revenue derived from such a dishonest source, which only amounts to 31,400*l.* on the average of the last five years; secondly, no reform bill will be perfect which does not prevent any but the legally-qualified and duly licensed practitioner from undertaking the responsible duties of the medical profession; thirdly, let a clause be inserted allowing a common information for illegal practice to be laid before any magistrate, who should have power to summarily fine and imprison, unless the accused can produce proof of being a legally-qualified practitioner.

VACCINATION QUESTION.

Instead of contracts with a few, the practice of vaccination should be open to *all* legally-qualified practitioners, and not less than 2*s.* 6*d.* should be offered as the minimum remuneration. Unless this be adopted, the Vaccination Act will prove a heavy blow and great discouragement to the practice.