

Section 7. Illustrations of the application of the solvent treatment in practice; first in renal calculi, secondly in vesical calculi.—Two cases of complete dissolution of uric-acid calculi in the bladder are quoted from other authors. The author relates three cases which occurred in his own practice. In none of the latter did complete dissolution occur. One of the cases proved to be an example of mulberry calculus; another, an alternating calculus of uric acid and oxalate of lime. This second specimen offers peculiarities of surface which indicate with certainty that dissolution of the uric acid had taken place: these peculiarities are explained by the aid of drawings of the stone after extraction. The third case proved abortive apparently because the treatment was not carried on sufficiently long. In neither of the cases was the treatment carried out as effectively (as the later experience of the author showed) as it might have been. The principal instruction from the cases is, the proof they offered that alkalisng the urine does *not* cause the stone to be encrusted with a phosphatic deposit, so long as ammoniacal decomposition of the urine does not take place.

Section 8. Discrimination of the cases in which the solvent treatment is and is not applicable.—The conclusions come to are: That the solvent treatment is inapplicable in all cases where the urine is ammoniacal. When the urine is acid (before treatment) the case is *prima facie* suitable for the alkaline solvent treatment; but exceptions must be made of cases where it is known or strongly suspected that the stone is composed of oxalate of lime, also where the stone is large. In cases where the urine is acid, and there is no indication of the nature of the stone, it may be either uric acid or oxalate of lime, or an alternating calculus composed of these two substances. Such cases deserve a trial of the solvent treatment for a limited period of a month or six weeks. The cases which are especially suitable for the solvent treatment are those in which (the urine being preliminarily acid) it is known or strongly suspected that the stone is composed of uric acid, and has not yet reached any large size.

Section 9. Directions for carrying out the solvent treatment effectually.—The urine must be kept *continuously* alkaline, and alkaline to a mean degree corresponding with the maximum solvent powers of solutions of carbonate of potash. The treatment must be given up immediately if the urine become ammoniacal.

Section 10. An examination of some of the objections which have been urged against the principles of the solvent treatment.

The appendix to the first part contains some experiments showing that cystine is even more amenable to the alkaline solvent treatment than uric acid.

The second part of the paper contains three sections.

Section 1 contains experiments on the solvent treatment of uric-acid calculi by injections into the bladder. Solutions of the following substances were tried in a manner to imitate injections into the living bladder: bicarbonate and carbonate of potash, common phosphate of soda, basic phosphate of soda, borax with liquor sodæ, potash soap, carbonate of lithia, liquor potassæ, and liquor sodæ. The results obtained demonstrated conclusively that their operation was so slow that no practical advantage could be obtained from their use.

Section 2 records some experiments on the effects of a solution of carbonate of potash and dilute nitric acid on oxalate-of-lime calculi: neither solvent promised any useful result.

Section 3 shows the unsusceptibility of phosphatic calculi to solutions of the alkaline carbonates. Brodie's method of injecting dilute nitric acid into the bladder was imitated in one experiment, with results confirmatory of his statement respecting the use of this treatment in phosphatic concretions.

Dr. HARLEY had derived pleasure and benefit from the reading of the paper. It was valuable, as it combined chemical research with clinical instruction. Upon these two all improvements in medicine must be based. A want of the knowledge of the chemical constitution of calculi formed the real obstacle to this mode of treatment in its earliest history. We now know that the uric-acid and phosphatic calculi require different chemical agents for their solution. That which was the antidote to the one was the bane to the other, one requiring the treatment by acids, and the other by alkalies. It was in cases of renal calculi, which he believed were more common than vesical, and in which no operation could be performed, that the plan advocated by Dr. Roberts was most valuable. Renal calculi were more easily dissolved by means of chemical agents than vesical, in consequence of the constant flow of urine over them. By a judicious regulation of tests, and a careful examination of the urine at short intervals, the nature

of the calculus might be determined, and he believed in many cases might be successfully treated by chemical agents.

Mr. MOORE referred to a difficulty which might arise where there were two calculi in the bladder of different chemical constituents; where, for instance, one had a coating of urate of ammonia, and the other was a fusible calculus.

Dr. ROBERTS having briefly replied, the Society adjourned.

THE OPERATION OF LITHOTRITY.

To the Editor of THE LANCET.

SIR,—I have read my friend Mr. Coote's reminiscences of early lithotritry with much interest. I am well acquainted with the operation and its voluminous apparatus, as it existed between 1830 and 1840. What George Stephenson's first machine, "The Rocket," was to the present locomotive, such was lithotritry of that date to the lithotritry of to-day.

But in respect to the question at issue, I see only one remark necessary from me. I should never have ventured to make a comment on Mr. Coote's opinions on lithotritry had he not, in December last, limited its application "almost exclusively to cases of men in middle or advanced life, of gouty habit, and with a deep perineum, in whom, after intervals of a few months, a small uric-acid calculus drops from the kidneys into the bladder." He now considers a calculus of one inch diameter suitable for the lithotrite. I am glad to hear it. I, for one, had never imagined that a calculus of that size could be included within the scope of the description quoted above. A hard uric-acid calculus, the mean of whose several diameters is an inch, rarely takes less than two, three, or even four years to form. I have ventured to denominate such a one a calculus of medium size, and I think fairly so, as distinguishing it, on the one hand, from the small calculus, about the size of a bean, which has but recently descended from the kidney, and is too large to traverse the urethra; and, on the other hand, from the calculus of an inch and three-quarters or two inches in diameter, which is certainly large. I may further add that no calculus ought ever to attain even the size so regarded as "medium" if the patient has the advantage of fair medical supervision. I have no doubt that before another fifty years has passed away, with improved diagnosis and superior preventive treatment, such a one will be the large calculus of that time. If so, lithotritry will be applicable to every adult case, and lithotomy will be employed only for the child.

Mr. Coote speaks of "Mr. Thompson's statistics" as "too small." In my first paper I particularly avoided claiming for my nineteen cases of the year 1864 any weight as "statistics," purposely referring to them only as "numerically much more valuable for inferential purposes than so small a number as four cases, of which two were fatal, which furnished the theme of Mr. Coote's remarks." The inference, which cannot be denied, is, that stones of middle size, and of very hard texture, may be easily and safely removed from adults of all ages by lithotritry. What an admirable illustration of this appears in that case which Mr. Marriott, of Leicester, reports in the last number of THE LANCET.

I am, Sir, yours obediently,

Wimpole-street, April 3rd, 1865. HENRY THOMPSON, F.R.C.S.

THE MUSEUM OF THE COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—The Council of the Royal College of Surgeons have availed themselves of the services of Dr. Cobbold, the well-known helminthologist, to remodel the collection of entozoa in the College museum. The specimens will all be remounted and correctly named. As it is hoped that a well-arranged collection of this remarkable group of animals will be of great use to the profession for purposes of reference, it is desirable that it should be made as complete as possible before the catalogue is published. Any contributions of the parasites, either of man or animals, addressed to Dr. Cobbold or myself at the College, will therefore be very acceptable at the present time.

I remain, Sir, your obedient servant,

W. H. FLOWER,
Conservator of the Museum.

April 4th, 1865.

THE HEALTH OF SIR CHARLES HASTINGS.—We are gratified in stating that Sir Charles Hastings has so far recovered his health as to be able to attend to his professional, and partly also to his public engagements.