

Bell (Geo.)

Case of twenty-eight calculi

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OF

TWENTY-EIGHT CALCULI

EXTRACTED FROM THE BLADDER WITHOUT CUTTING.

BY

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## CASE.

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**C**ALCULUS Vesicæ, or stone in the bladder, has, from the earliest ages, been justly deemed one of the most formidable diseases to which mankind is liable, whether it be in reference to the agony it excites, or to the pain and danger attending the operation requisite for the cure, and the uncertain event of that operation. The pain attending the division of parts is trifling, the danger scarcely to be named, when compared with the dreadful consequences of an ignorant or mal-adroit person tearing out the stone hastily from the bladder; and, therefore, many patients rather submit for life to the known misery excited by the stone, than to an operation so painful and uncertain; and even surgeons, from want of confidence in their own dexterity and success, have declined performing it altogether.

We need not be surprised, therefore, that, in all ages, from Prosper Alpinus, to Franco, Bromfield, Sir Astley Cooper, Civiale, and Le Roy, practical surgeons have sought for, invented, and detailed, various methods of removing calculi from the bladder through the urethra, without cutting, ere the calculi have attained such size as to prevent their passage through this narrow canal. Each of the methods detailed have proved more or less successful, in the hands of their proposers and of others, but none of them seems to have been useful in any great variety of cases, and they have consequently, though undeservedly, fallen into disuse. This want of success under any one mode of management arises from a variety of causes:—the limited number of cases susceptible of the requisite manipulation falling under the view of any one practitioner,—the indifference of patients to the symptoms at the commencement of the disease—the difficulty of ascertaining the presence of a very small calculus in a large or diseased bladder,—the unwillingness of a patient to submit to a minute examination when his uneasiness is trifling, until the stone or stones have acquired too great a size, may be mentioned as part of the causes of this want of success.

It is not my intention to enter into a detailed quotation of what has been done on this subject, as I have not at present sufficient leisure to do so. I shall merely allude to a method of extracting stones from the bladder, lately revived and brought to great perfection by Sir Astley Cooper, founded on the principle of dilating the urethra, and on the improvement of the instrument employed for seizing the stone in the bladder, and then detail the particulars of a case which lately fell under my care, and terminated successfully.

Sir Astley Cooper gives an account of his success in removing a great number of calculi from the bladder of a gentleman 64 years of age in November and December 1820, by means of a pair of forceps prepared for him by Mr Weiss, delineated in vol. xi. of the *Medico-Chirurgical Transactions*, p. 349. The patient was prepared for the experiment, by the repeated introduction of a bougie, previous to the operation; but I doubt much whether this dilatation was ultimately of any use, as it induced great irritation of the urethra, and then retention of urine, for many days. But the cure was eventually completed, 84 calculi having been removed.

The instrument employed by Sir Astley, is one of great simplicity, ingeniously contrived, and capable of being modified in many ways, so that it may be adapted to a variety of cases. Within these few months I have had an opportunity of proving its utility in a very interesting case. An eminent medical practitioner, of extensive practice, in a distant part of the Western Highlands, who had previously enjoyed good health, about the 18th of May 1825, when riding on horseback, experienced a sudden and irresistible propensity to void his urine, and before he could alight it passed from him. He discovered several small calculi of the size of mustard seed on his shirt; and from that period downwards he never rode or walked half a mile without voiding bloody water, experiencing severe pain in the glans and perinæum, and occasionally passing small calculi, from the size of a millet seed to that of a grain of wheat or barley, about forty of which in all he got rid of. The pain, irritation, and bloody urine continuing, he was laid entirely aside about the beginning of August. Being unable to proceed with his professional business, for which there was a great demand, he came to Edinburgh in the beginning of April 1826, to undergo the operation of lithotomy. On examining his bladder, I ascertained the presence of several calculi, which, from the feeling communicated by the staff, as well as from the short duration of the complaint, I considered to be of a small size. I proposed to the patient to attempt the removal of them by means of an instrument similar to that used by Sir Astley

Cooper;—he readily assented; and, on the 12th April, I removed four small calculi of the size of a pea, at six introductions of the instrument. The prostate was enlarged; there was some difficulty in finding the last stone, and I was unwilling to increase the risk of irritation and of bloody urine, by prolonging the attempt to remove more on the first trial. He sustained very little injury from this attempt; no hæmaturia followed; and I repeated the introduction on the 17th, having previously explored the bladder with the common lithotomy staff which I usually employ in that operation, and removed three calculi of a similar size. The staff (see Plate Fig. 1.) informed me that more were yet remaining, but, for the same reason as formerly stated, I declined farther interference until the 23d, when two more were extracted.

I ought to mention here, that, from the shape of the instrument, the curve being too small, I could rarely discover the calculi by means of it, until I had previously ascertained their precise situation by means of the staff; so that I had other extractors made, of various curvatures, and at last I found that none answered so well as that delineated in the Plate, Fig. 2. which has a curvature, as nearly resembling the staff Fig. 1. as could permit the stilette *d* to work smoothly. With this I removed seven or eight, between 23d April and 16th May, when one of these calculi having projected rather more than usual beyond the edge of the forceps, greater difficulty was experienced in the removal of it, and probably a portion of the membrane lining the prostate gland was irritated or abraded, as a swelled testicle and retention of urine supervened. These continued for nearly a fortnight, when the patient experienced great relief from the pain and irritation at the neck of the bladder, by the free use of pills composed of camphor and extract of hyoscyamus, \* after which the forceps were again introduced on the 29th, and several calculi were removed. Between this and the 12th July, more were extracted at different times, and on this day four were taken away, by one introduction of the forceps, making in all twenty-eight since the commencement. My friend Dr Thomson, and my son Mr B. Bell, were present at several of the operations (as was my partner Mr Russell), who examined the bladder very carefully, but neither of us could discover any remaining stone; and the patient being under the necessity of returning home on urgent affairs, after walking about the city for five or six days, without experiencing any return of pain or hæmaturia, left this on the 18th of July, and I have

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\* Vide a paper on these medicines in this Number of the Journal by Mr B. Bell.

had the gratification of receiving from him the following statement of his present feelings :

“ In regard to myself, I continue to recover health and strength gradually ; my appetite is good, and I sleep well. I have no serious symptoms of calculi, though I have still a sense of irritation and slight pain about the neck of the bladder, and along the urethra, when I have an inclination to make water, which I cannot retain when that inclination comes on, and the discharge of a teaspoonful relieves me, though there is much more in the bladder. This uneasiness, will, I trust, wear off, for had there been any calculi in the bladder, I am convinced I would have felt more inconvenience from walking so much as I did at Glasgow.”

The irritation, and the desire he has to make water without emptying his bladder, proceed, I have no doubt, from the inconvenience experienced on the 29th May in removing one of the calculi, and from the state of the prostate gland, which was known to be enlarged before any thing was done, and not from any remaining calculi in the bladder.

As I consider the form of the instrument a point of great importance, an accurate delineation is given in the Plate, Fig. 2. of that which I latterly employed. The curve of the instrument ought to be considerable, that a larger extent of the blades when separated by drawing back the stilette (*a, d*), may be contained within the bladder, and thus the chance of seizing the stone or stones be increased, when the instrument is moved backwards and forward, and from one side to another. The bulb (*e*), the thickest part of the instrument, answers the purpose exceedingly well, of dilating the urethra in its passage into the bladder, where the urethra is tolerably healthy, and it serves admirably for dilating the passage, and paving the way for the transmission of the stones, when these are contained within any part of the concave blades. I have found that the best mode of using these forceps, was to place the patient on his back, across the middle of the bed, his breech nearly overhanging it, and his feet planted on the edge—the surgeon standing or sitting before him—a moderate quantity of urine in the bladder—an ordinary sized staff is then to be passed—the situation of the stone ascertained—then the forceps to be introduced gently, until the bulb is within the neck of the bladder, when the stone being touched, the blades are to be opened by drawing back the stilette, and the instrument being moved in various directions, is to be opened and shut occasionally, until it is known, or supposed, that a stone is engaged between the blades. The surgeon will readily discover whether this has happened or not, by the greater or smaller difficulty in remo-

ving the instrument from the bladder, by the distance of the blades from each other, as indicated by the greater or smaller distance of (c), from (d) at the neck of the instrument, and above all, by a peculiar feeling communicated upon seizing the stone, which it is impossible to describe, but with which every surgeon ought to be, if he is not, acquainted. In removing the stones, I never found any difficulty or obstruction, excepting about half an inch behind the glans, and on one occasion, when I could not force the instrument through, I succeeded readily by pushing it back about an inch, and turning the side of the instrument instead of its concavity to the pubis.

I consider this instrument to be nearly as perfect as it can be made, for the purposes for which it is adapted—that is, for removing calculi of a small size, such as of a pea or bean, or even of a small nut, or in very large, elastic, healthy urethras, of a small olive. But much larger stones than these have been removed, by being broken down, by Le Roy and Civiale:—these it is not my intention to say any thing of at present. In a few cases the method detailed by Le Roy, may be of great benefit; but Sir Astley Cooper's plan is calculated for more general employment.

I shall only farther slightly allude to a very simple instrument, contrived by a Scottish clergyman for his own use. He had laboured for many years under enlarged and indurated prostate; symptoms of stone supervened; perpetual retention of urine, which was never passed for years without the catheter, by the eye of which several small calculi were at different times brought out. His urethra was of very large caliber, quite callous, bearing any freedom. He cut off the vesical extremity of the catheter, had it plugged up very neatly with a ball of silver, attached to a silver wire, to enable it to pass smoothly into the bladder. When introduced, the ball was withdrawn; his forefinger applied to the outer orifice of the tube, and, after discovering the quarry of stones, he removed his finger, when the sudden gush of urine in a large stream, often brought one or two calculi along with it\*. When I saw him in Galloway, three years since, he had removed upwards of 150 in this way, and he has continued to remove many more since that time; and although it is known, and he is fully aware, that he still has at least one very large stone, yet he has experienced so much relief from incessant pains at the neck of the bladder, by having removed so many small calculi, that he cannot bring himself to submit to the removal of the larger calculi by the lateral operation.

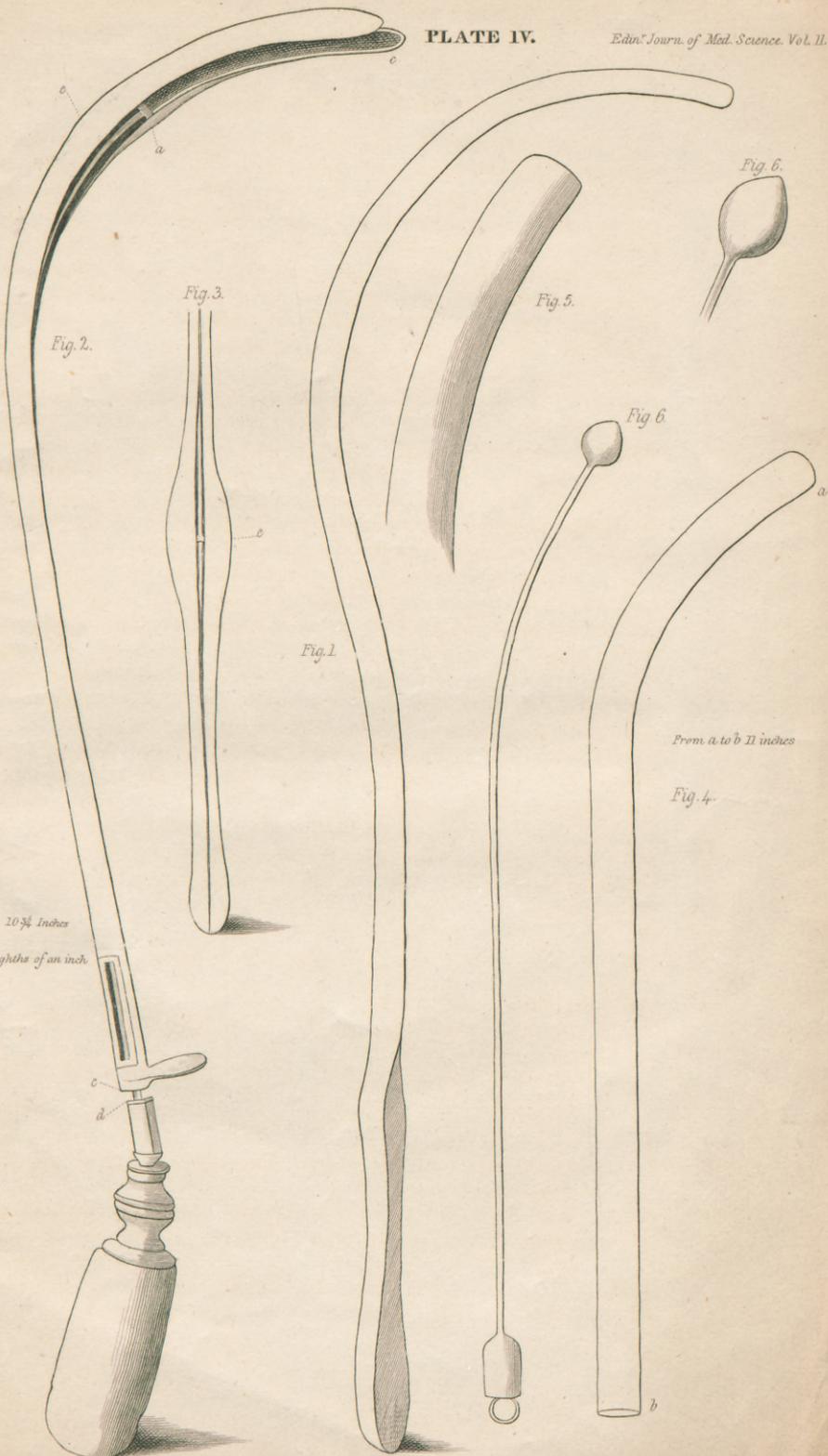
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\* A representation is given of this instrument in the Plate, Fig. 4.

In having recourse to this operation, a question arises, whether any, and to what extent, dilatation of the urethra ought to be practised, previous to its performance, for some urethras will bear a great deal, others very little interference. On this point I am very doubtful whether any previous dilatation of the urethra ought to be practised in all cases, when small calculi are to be removed; because, in general, where the urethra is *healthy*, although it be apparently narrow, considerable dilatation will take place, when the trial is made, but each trial is so often succeeded by spasmodic or inflammatory symptoms, that a delay of some days takes place before another can be made. In such cases I would be inclined to make no previous *inefficient* trials, but to let the trial be made when it *may* be *efficient*, by the extraction of one or more calculi; and thus, although it may be followed by more or less irritation, yet some good is done, at the same time, and I am persuaded that the bulb of the instrument (*e*) is sufficiently large to dilate the urethra, and to prepare it for the transmission of the largest stone that one would wish to extract in this way, without breaking it in pieces. If the instrument shall embrace a portion of an irregularly shaped stone, which is too large to pass through the canal, and any difficulty is experienced on its entrance into the vesical extremity of the urethra, this may be easily remedied, by introducing the finger into the rectum, and disengaging the stone from the forceps. If, again, the stone shall have been brought so far as the bulb, and cannot be adjusted so as to pass through the remainder of the urethra, without tearing the lining membrane, there should be no hesitation in removing it, by cutting down upon it; the wound will soon heal, while the laceration of the membrane might be the cause of permanent irritability of the urethra.

*Explanation of Plate.*

- Fig. 1. Staff described, p. 347.
2. Reduced view of the instrument for extracting calculi from the bladder, vide p. 347.
3. Is a front view of the bulb of the instrument (Fig. 2.) of the proper size,
4. Catheter employed for removing small stones from the bladder, vide p. 349.
5. Represents a small portion of the catheter (Fig. 4.) of the proper magnitude.
6. Silver ball and wire by which the orifice of the catheter was plugged up, in order to facilitate its introduction into the bladder.



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