V.—*Practical Lithotomy and Lithotriety ; or, an Inquiry into the best Modes of Removing Stone from the Bladder.* By HENRY THOMPSON, F.R.C.S., University College Hospital. London: Churchill & Sons. Pp. 274.

STUDENTS of medicine have had inscribed to them this valuable work from the pen of Mr. Thompson, whose great experience must have afforded him ample material for its production.

Mr. Thompson, whose essay on the Diseases of the Prostate was recently noticed favourably in these pages, tells us in his preface, that "the sole object of this work is to present a consideration of the best operative procedures now in use for the removal of stone from the male bladder;" an object which he has carried out most successfully.

He divides his book into two parts, the former of which is devoted to Lithotomy, and in the latter he discusses the subject of Lithotriety. We admire the methodical and painstaking manner in which he writes. At the outset he gives a clear and elaborate description of the surgical anatomy of the region of the body to be operated upon. Getting over the anatomical difficulty, we have presented to our notice in Chapter II. the mechanical construction of the many instruments used in performing lithotomy, with their practical application illustrated. These described, we have next an account of the operation, with the position of the patient. Mr. Thompson, like all sound surgeons, enjoins much care to be used while introducing the forceps and extracting the stone; he says, "Much dilatation of the neck of the bladder and prostate is necessary, and it is important for the patient that the extraction be done slowly and judiciously. . . . Extraction must be made in the direction of the wound, and consequently in a line obliquely downwards towards the operator's right side." Our author is anxious that the caution for slow extraction be attended to, for again he says, "It is impossible to overestimate the importance of slow and cautious action in this stage of the proceeding." Next, with clearness and ability he elucidates the many complications and difficulties that arise while performing the operation, and with precision and care he lays down rules for our guidance.

In treating of the causes of death following lithotomy, Mr. Thompson not only calls in question, but regards as a source of serious error in practice, the opinion expressed by most authors of the present day, that infiltration of urine is the most frequent cause of death. He says:—

"Infiltration of urine is one of the causes of suppuration and destructive inflammation of the perivesical cellular tissue, but it is by no means the universal one. The doctrine based on this belief is as follows:—If the internal incision

passes beyond the limit of the prostate in any direction, so as to open up the cellular interspaces behind the deep fascia, urine is almost certain to find its way into them, and, if it does so, fatal inflammation will result. In order, therefore, to avoid this danger, the internal incisions must be extremely limited. But, sound as the principle is, to keep the internal incision strictly within the prostate in adult patients, in practice I am satisfied that the desire to limit it has been carried to an extreme degree, and that another and not less serious danger attends an attempt to drag the calculus through an opening of insufficient size. From what I have seen of the practice of lithotomy in various hands, both in town, in the country, and abroad, I am persuaded that insufficient internal incisions are equally dangerous with those which are too free, and that the tendency in the present day is towards the former extreme. The purely anatomical view of the subject appears just now to be in the ascendant. The vital attributes and dispositions of the organs involved are not sufficiently regarded. The student is taught to fear beyond all things an approach of the knife to the peripheral limit of the prostate, and, in overdread of cutting it, he barely divides the prostate at all. Hence the no less dangerous injury which results from violence inflicted by the forceps and by the stone upon the neck of the bladder, and from the powerful traction upon it, which injures, often irreparably, the loose cellular connections in which the viscus is imbedded; connections which are delicate in structure, and loosely applied, for the purpose of permitting free extension of its parietes to the varying condition of size, which its function as a reservoir of urine demands. Inflammation of these delicate structures is easily produced by that process of forcibly dilating the neck of the bladder, which insufficient incisions render necessary, through the pressure, sometimes producing sloughing, to which they are thus subjected; it is also no less certainly caused by traction downwards of the viscus, which inflicts injury upon them in the manner just indicated. And when inflammation has once extended through these structures, it rapidly invades the peritoneum, which very probably is more frequently implicated in this manner than by any other agency. In connection with this subject there is a very significant fact, the bearing of which will be presently examined, viz., that while it is certain that the boundaries of the prostate are invariably overstepped by the knife in children, infiltration of urine very rarely occurs in their cases. Happily, also, infiltration does not necessarily follow such incisions in the adult, but they render it more likely to occur. That the prostate has often been completely divided with impunity for the removal of a large stone is certain, and the risk incurred from that cause is unquestionably serious. Danger is always great in a ratio in proportion to the size of the calculus; but this arises quite as much from violence inflicted in removing it as from the incisions employed." Page 80-82.

In opposition to the generally expressed opinion that when the incisions are too deep, urinary infiltrations into the cellular interspaces between the pelvic viscera produce rapidly-spreading inflammation and cause death, Mr. Thompson supposes that this does not take place so frequently; still he admits that it undoubtedly occurs sometimes. He says—

"It is true that at a post-mortem examination, after a large stone has been with difficulty extracted, the cellular connections of the neck and base of the bladder are found to be broken up; sloughs of the connective tissue appear bathed in fluid sero-purulent and urinous, and marks of peritonitis, especially severe in the pelvis, are observed. But there is good reason to believe that, in most cases, urinary extravasation is not the primary cause of the inflammation, but that inflammation has been the occasion of the urinary extravasation. Cellulitis,

produced by violence, has first destroyed the connections in the manner described above, and then the urine has rapidly infiltrated the disintegrated tissue, and has lighted up a virulent peritonitis, or intensified a previously existing one."

Many are the other causes of death liable to follow the operation for lithotomy, and each of these is ably discussed in the present work.

The concluding chapter of Part I. is devoted to the "difficulties and dangers met with in lithotomy," these he sub-divides in—1, Those peculiar to the age of the patient. 2, Those from personal peculiarity in the subject. 3, Those due to peculiarity in the stone; and 4, Those due to accidents.

Part II. treats of lithotrity at considerable length. Mr. Thompson begins with a short *resumé* of the history of this operation, which, though mentioned in the works of Hippocrates, and of Albucasis of the Arabian school, has but within the last thirty or forty years been acknowledged as a special and tolerably successful operation. We admire the instructive and pains-taking manner with which Mr. Thompson discusses this operation in all its points. In his illustrations we perceive much that is original and well worthy the attention of every member of our profession. After describing the many and somewhat complicated mechanical contrivances used for crushing the stone, and giving a lucid delineation of the manner of operating, Mr. Thompson concludes in Chapter X. by recapitulating a few practical maxims, which he has regarded throughout as of much importance to the lithotritist. We cite these:—

"1. Let the urethra at the outset be accustomed to contact with the instruments, so that the lithotrite, which it is necessary to employ, can be passed without causing much uneasiness, or any bleeding.

"2. Always operate, whenever it is possible, without previously disturbing the bladder by injecting or sounding.

"3. Having determined the position of the patient according to the necessities of the case, slowly introduce the lithotrite, and take care that the blades reach or pass beyond the centre of the bladder before the male blade is withdrawn.

"4. Execute every movement deliberately; open and close, incline or rotate, slowly, without any jerk whatever; and all without bringing the blades into contact, as far as it is possible, with the walls of the bladder.

"5. Maintain the long axis of the instrument in the median line of the body, and the blades at or near the centre of the bladder, this being the area for operating most to be chosen. In screwing home the male blade to crush, it is especially necessary to keep the instrument steady, otherwise much vibration of it may be occasioned, and much lateral movement of the blades from its axis at each turn; a small deviation at the handle produces a large one at the blades.

"6. The usual position of a large stone is near the neck of the bladder, of a small one at or near the back of the trigone; and the lithotrite should be applied accordingly.

"7. When the stone is caught, especially if in the fenestrated lithotrite, rotate it a fourth of a turn on its axis before screwing up firmly or crushing, to make certain that nothing is included besides the stone.

"8. Having broken a stone or a large fragment, the operator may pick up and crush piece after piece consecutively, without further searching, if he is only careful to work the lithotrite exactly at the same spot—the patient, of course, not shifting his position—since fragments fall immediately beneath the blades of the instrument, and rest there.

"9. Never withdraw a lithotrite loaded with calculous débris; a moderate quantity will come away between the plain blades; but if an impediment is felt at the neck of the bladder on withdrawing, return to the centre of the cavity and unload them. This can always be done with a properly constructed lithotrite.

"10. No sitting should exceed five minutes in duration, except under very peculiar circumstances. The large majority of sittings should occupy only three minutes, some less. The mere sojourn of a lithotrite, without any movement, for three minutes in the bladder, causes uneasiness, and often subsequent irritability, which may be considerable if the time is prolonged.

"11. If the patient experience an unusual amount of pain at the commencement of any sitting, it is wise to postpone it till another day, or make it very short. Such unlooked for pain is a useful intimation that the urinary passages are not at this time in fit condition for our purpose, and, by acting upon it, we may avoid serious mischief.

"12. After the first sitting it is generally desirable that the patient should have hot fomentations to the hypogastrium and perineum, remain in the horizontal position, and pass his water in that position if he can. He should remain tolerably quiet until the débris has passed, which usually happens within three days of the sitting.

"13. The removal of débris by injecting and washing out the bladder is to be considered the exception to, and not the rule of, practice."

Chapter XI. is devoted to the "choice of proceedings best adapted to the different cases." To this subject Mr. Thompson devotes much care and time in elucidating every point connected with diagnosis, and in showing the necessity of considering well the history of the case—"the age of the patient; the absence or presence of local disease; the susceptibility of constitutional disturbance; final deductions as to the choice of the operation for different patients; when not to operate; the immense importance of detecting the stone at an early period." Of this last Mr. Thompson says, "It must be our aim to reduce the stones to the process; that is, to detect them early, and consequently small, rather than to extend the process to large and compact stones."

The concluding chapter is one of very great interest, illustrating, by the citation of twenty cases, the applicability of Mr. Thompson's principles to practice.

We have perused this volume with much pleasure, and examined its woodcuts. It will prove very useful to the practitioner as well as to the student. The correct manner in which it is arranged, the lucid style in which the operations have been described, and the fulness of the practical details, will commend the book to both.

It is only fair to the Messrs. Churchill to add, that the book has been got up in a style which well sustains their publishing celebrity.