ART. II.

Parallèle des Diverses Espèces de Taille. Thèse par M. MALGAIGNE, Membre de l'Académie Nationale de Médecine, Chirurgien de l'Hôpital St. Louis.—*Paris,* 1850. 8vo., pp. 72.

Comparison between the different kinds of Lithotomy. A Thesis by M. MALGAIGNE. *Paris,* 1850.

M. MALGAIGNE was the successful candidate for the Chair of Operative Surgery in the Academy of Paris, after a *concours* unparalleled in severity, and shared in by some of the most distinguished of the French surgeons. The Essay before us is a portion of the fruits of this competition, which has only just been brought to a conclusion, after a continuance of not less than a full third of a year. As might be expected, it is very complete in its way, elaborate in its history, and elaborate in its argument; such parts of it, therefore, as are likely to prove of general interest to the profession in this country, we propose to bring under the notice of our readers. The author commences by insisting upon the necessity of defining the *species* of Lithotomy which are to form the subject of the comparison; for without some restriction, it would be impossible even to enumerate all the modifications in the operation, which the lapse of eighteen centuries has brought forth. Some of these proposals have never been put in practice at all upon the living subject; or, having been tried, have immediately fallen into disuse, or, at best, have obtained only an ephemeral notoriety, and have subsequently been altogether forgotten. As lithotomy is practised upon the female as well as the male, and as the differences in the structure of the two sexes require corresponding differences in the operation, it is necessary to consider them separately.

In the male, lithotomy may be, and often has been, practised in three different situations; below, by the perineum; above, by the abdomen; and behind, by the rectum. The perineal operation is so ancient, that its origin is lost in the obscurity of past ages; but as its subsequent history and progress are well known, we shall not do more than refer to the practical conclusions which M. Malgaigne draws, when comparing it with its less popular companions. The same considerations induce us to omit a more particular account of lithotomy through the abdomen, the "high operation" as it is generally called. The operation by the rectum, as less known, demands a more special detail. Its origin dates little more than half a century back; and it was not until the year 1815, that the recto-vesical operation, as we now understand it, became recognised in surgery. Sanson proposed it with a view of avoiding the dangerous bleeding, so common in the lateral operation; but it will be seen that his original proposal was so hazardous that it was abandoned even by himself. He began by cutting from the anterior border of the anus, as far forward as the bulb of the urethra, and upwards, so as to divide six or eight lines of the rectum. At this point he gave the operator the choice of two courses,—either to divide a part of the base of the bladder, by cutting along the groove of the staff, from behind forwards, and from above downwards; or, if preferred, to open the membranous portion of the urethra, and then, having carried the knife just into the bladder, to divide from behind the neck of the bladder and the prostate gland. These proposals, coldly received in France, and hardly

judged serious in England and Germany, found warmer partisans in Italy. Vacca, however, having often observed the escape of stercoraceous matter into the bladder to be a consequence of the first-named proceeding, gave the preference to the second; and after warmly defending the recto-vesical operation against Scarpa, all at once abandoned it for his new proposal of lithotomy in the mesial line. Afterwards Dupuytren, having ingeniously modified it, by applying the lateral incision to the prostate, in his turn quitted it for the bilateral operation. And finally, Sanson being dead, the whole proceeding was nearly dead too, until its recent resuscitation by M. Maisonneuve, who does away with any external incision, and divides the prostate with a bilateral incision.

Comparison of the various modifications of the recto-vesical operation.—The advantage of the first proposal of Sanson was, that it offered a large space for the extraction of the calculus through the superior incision; but the escape of the fæces into the bladder, the symptoms which followed this, and finally the large number of persons who recovered with a permanent fistulous passage, caused its abandonment even by the inventor himself. On the other hand, the second method, while it did not admit of fæcal extravasation into the bladder, yet gave a less free exit to a large stone than the incision in the lateral operation, because it divided the prostate from behind, and through its shortest axis; and thus Scarpa in the dead, and Textor in the living subject, found the utmost difficulty in the extraction of moderate-sized stones, through the incision recommended by Vacca. Besides this, the left ejaculatory duct, the vas deferens, or even the vesicula seminalis itself, was almost always cut; and in a case that occurred to Géri, the peritoneum, which was abnormally prolonged, was also wounded. Finally, the most deplorable result was the number of recto-urethral fistulæ which remained after recovery. Cittadini had 1 fistula in 2 patients cured; Uccelli, 2 in 3; Guidetti, 2 in 8; Vacca himself, 6 in 25, without including a case in which the fistula did not form, until the wound appeared to have entirely cicatrized. It must be observed, however, that Giorgi and Cavarra only enumerate between them 2 fistulæ in 37 cases.

There still remains the question of the comparative fatality of the operation. Guidetti had 6 deaths in 12 cases; Vacca, though more fortunate, had yet 5 deaths in 30 cases. In 1832, Sanson enumerated, in the last edition of his 'Operative Surgery,' 89 cases, which terminated thus:—15 died; 62 were completely cured; 10 recovered with fistulæ; 1 had a fistulous opening which gave exit to the seminal fluid during its ejaculation; and in 1 other a fistula probably existed, since it is not included in the 62 cures. In other cases the operation was yet more disastrous; and the modifications proposed by Dupuytren and Maisonneuve do not seem to have diminished its fatality in any considerable degree.

In regard to the operations performed by M. Maisonneuve himself, the result is thus reported:

"The first operation was done on the 2d July, 1847.

"Patient 80 years old, 8 calculi, died 4 days after, of inflammation of the bladder and kidneys.

"Patient 79 years old, 2 calculi, died 5 days after, of inflammation of the urinary passages.

"Patient 28 years old; the cure was complete.

"Patient 45 years old, cured, but with a small fistula, which still exists, 3 months after the operation."

This mortality, however, it must be remarked, could not have been guarded against by any other mode of lithotomy; the existence of a fistula in one of the two patients who recovered, is a more significant fact.

After concluding this chapter upon recto-vesical lithotomy, M. Malgaigne draws a parallel between all the methods previously spoken of.

These are:—1. Among the operations by the perineum, the lateral operation by the large and the small incision, the operation in the mesial line of the urethra, the bilateral, and the quadrilateral operations.

2. Among the recto-vesical operations, the methods of Dupuytren and of Maisonneuve.

3. The high operation, without any wound in the perineum.

His conclusions, which are preceded by some observations upon the difficulty of making the comparison, are much as follows:

1. *With regard to the difficulties of the operation.*—In this respect the high operation is by far the easiest. It has not the first difficulty, that of finding the groove of the staff, nor that of carrying the instrument along a narrow passage; and the size and dilatability of the incision always insures an easy passage to the forceps and calculus. On the other hand, all these difficulties are incident to the perineal and recto-vesical operations; and the latter, moreover, has the additional inconvenience which results from the want of tension in the boundaries of the rectum. But there is yet another difficulty, which has, on more than one occasion, compromised the success of the operation. In cases where there are several calculi, or where the stone has been broken in pieces, the search for and the extraction of them are painful, tedious, and often incomplete. The high operation, again, in facilitating these processes, offers some advantages not possessed by the others.

2. *The pain.*—The pain incident to the first incision is common to all the operations; but it is not this which is the most to be dreaded. Ledran, after thirty-two years practice, received almost unanimously this reply to his question as to what was the most painful part of the operation,—the soundings, and the extraction of a large stone through a small opening. In these respects, also, the superiority rests with the high operation; and of the others, the large lateral incision, or the bilateral and quadrilateral incisions, have a great superiority over the small incision.

3. *Hemorrhage.*—This has occurred in all kinds of lithotomy. The median incision only wounds the bulb, and hardly touches the prostatic venous plexus. The lateral operation in the first incision may wound the transverse and the inferior hemorrhoidal arteries; but, above all, in the deep incision, it is liable to cut the superficial perineal, or even the internal pudic arteries. The bilateral operation of Dupuytren endangers the bulb, may wound the inferior hemorrhoidal artery behind, and, in the deep incision, puts the same vessels in peril as the lateral operation. The quadrilateral incision is precisely similarly circumstanced; and the same dangers are to be feared with the deep incision of the lateral or bilateral modification of the recto-vesical operation. But with the high operation, hemorrhage is an event so rare as to be inexplicable when it does occur.

4. *False passages.*—Here, again, the high operation is superior. If, says M. Malgaigne, some operators have too freely divided the cellular tissue which separates the bladder from the pubis and abdominal walls, such an error is so easy to be avoided, that it need not be enumerated in making the comparison. When once the finger is in the bladder, the instruments have a guide which effectually prevents them from going wrong. It is not so with any other mode of lithotomy. It is easy to get out of the groove of the staff, either with the knife, or the lithotome, or the gorget. After the incision is made, the forceps have to enter by an opening which recedes as they advance; often they injure the prostate or tear the rectum; and these accidents, though not occurring to an experienced hand, are yet the results of dangers which always exist.

5. *Tearing the soft parts.*—This is common to all the operations, except the high one.

6. *Wounds inflicted on neighbouring organs.*—These are, the rectum, the vesiculæ seminales and ejaculatory ducts, the bladder, and lastly, the peritoneum. Upon the latter of these dangers, the author makes the following observations:

"The wound of the bladder is generally considered as a source of danger in the operations below the pubes; it forms the basis, on the contrary, of the high operation, and at the same time, its greatest danger. It is certain that with a large opening for the escape of the urine, infiltration is generally avoided; but the danger is always there; and as it is that which has made surgeons dread the extra-prostatic incisions in the sub-pubic operations, where the urine escapes by means of a depending and direct opening, it is easy to understand that the fear is still greater in the high operation, in which the urine stagnates in the wound, and to find an exit, must rise to a level much higher than the floor of the bladder. Here, then, the large sub-pubic incisions must yield the superiority to the multiple incisions; and here the high operation has a fatal inferiority.

"This inferiority is further increased by the danger of wounding the peritoneum, which belongs exclusively, among all kinds of lithotomy, to the high operation." (p. 57.)

7. *Rapidity of the cure.*—Making due allowance for the difficulty of obtaining accurate data to go upon, it seems tolerably certain that lithotomy by the perineum affords the most rapid cures. By this operation, cures have been obtained in three or four days: the most rapid cases after the "high operation," have required twelve days; and a still longer period is required after the recto-vesical operation.

8. *Consecutive accidents.*—These are principally fistulæ, incontinence of urine, and injuries to the virile powers, which may amount to complete impotence. As regards fistulæ, the recto-vesical operation is the most unfavorable; and then the high operation. According to Scarpa, the lateral operation, well executed, should not afford more than two fistulæ in a hundred operations; but this is probably an unduly-favorable estimate. Incontinence of urine may follow the perineal and recto-vesical operations, however well performed; and it has been attributed by turns to the dilatation and to a large incision in the neck of the bladder. The high operation alone affords security against any injury to the procreative functions, or to consecutive affections of the testicle.

9. *Accidents which retard the cure or even occasion death.*—Arterial bleedings belong entirely to the sub-pubic operations; venous hemorrhage, also, is more common in them; and the other sources of bleeding,

as from the surface of the bladder, or from the kidneys, or even from the track of the incision, are alike incident to all.

Infiltration of urine on a large scale has been met with in the high operation, and in the lateral with a large incision; and on a small scale, terminating in circumscribed abscesses, has followed the small perineal incision as frequently as any other form. The recto-vesical operation, moreover, endangers the occurrence of inflammation of the rectum; and the high operation is liable to give rise to inflammation of the peritoneum, when this membrane happens to be injured. But, setting this aside, the chief causes of death after lithotomy, are inflammation of the bladder, inflammation of the kidneys engrafted on some chronic affection, inflammation of the gastro-intestinal membranes, often in connexion with the presence of worms, phlebitis, and the purulent diathesis. Pouteau, who performed lithotomy by the "apparatus minor," considered the condition of the lower belly as the index of the probable success, or the reverse, of the operation. Dupuytren, in 1834, stated that the causes of death among stone patients in Paris ranked in the following order:— 1st. Inflammation of the pelvic cellular tissue. 2d. Inflammation of the urinary passages. 3d. Peritonitis. 4th. Gastro-enteritis. Frère Côme frequently noticed the presence of worms in the autopsies; and at Naples, this complication is considered as of a most serious character. Finally, Morand has noticed, in lithotomy by the apparatus major, the occurrence of metastatic abscesses.

"Now," says M. Malgaigne, "Is there any species of lithotomy which excludes these essential causes of death? None. This affords us the key to two enigmas. The first is, the near approach that each kind of lithotomy makes to the rest in its fatality; and the second, the indifference that there is among surgeons, after so much dispute, as to arriving at any agreement in the choice of operations." (p. 59.)

10. *The mortality.*—This is not an easy question to decide. The proportion of deaths after lithotomy varies from year to year; and is especially affected by the ages of the patients, so that it would be easy enough to show an enormous disproportion between the different methods, by comparing the results of one operation among children with those of another among adults. Speaking generally, lithotomy is least serious in the first years of life; from 5 to 15 years of age, it affords the most fortunate results; above all, it is hazardous above the 50th year; and the care which M. Malgaigne has taken to ascertain the fact, enables him to state with certainty that, from the 70th to the 80th year, it is not more hazardous than in the 20 years preceding. After some further observations, indicative of the difficulty and even impossibility of making any dependable comparison of the relative mortality in the various kinds of lithotomy, the author concludes:—

1. That the incisions should be no larger than may be necessary to prevent tearing the parts; general reaction and purulent absorption being least to be feared with a small wound.

2. That as the pain of the operation must exhaust the patient, it should be abridged as much as possible; care being taken not to do unnecessary violence to the parts, or to substitute for a prolonged pain a more acute one.

3. That hemorrhage should be avoided by keeping clear of such vessels as are known to be in the way.

4. That the chances of infiltration of urine should be diminished by cutting the body of the bladder in as few cases as possible.

5. And, finally, that every care should be taken against such injuries of other organs, as might lead to fistulæ or incontinence of urine, or interfere with the integrity of the generative function. These things being premised, M. Malgaigne observes that there is no one method which is capable of fulfilling all these necessary conditions; and, therefore, there is no one method which can be said to be superior in all cases. For very small calculi, the median incision first, and then the lateral operation, keeping within the limits of the prostate, is to be recommended. For moderate-sized calculi, the lateral or bilateral operation; and for very large stones, the high operation. These, it seems to us, are just the conclusions which must naturally be drawn by a clear head from the premises which have been stated.

So much for the theory; but in practice it is not always possible to determine beforehand the size of the stone; and it is, therefore, desirable to be on the right side, and to judge it to be somewhat larger than we might suppose it to be before beginning to operate. M. Malgaigne inclines to the opinion, therefore, that those surgeons are right who commence by the lateral operation, which is easy to be completed in a few incisions; and who, if the stone then appears to exceed the medium size, immediately proceed to extract it by the high operation. This proposition we leave to the judgment of the reader without expressing any opinion upon it; our object being to record the views of M. Malgaigne, not our own, upon the important subject of lithotomy.

The rest of this Thesis we must pass rapidly over. The Second Part of it concerns Lithotomy in the Female; and, as in the case of the other sex, is preceded by an historical sketch of the operation. This, though very interesting, our space forbids us to dwell upon. We shall at once pass to the comparison which is drawn between the different kinds of lithotomy in the female. These are three in number, viz.: the sub-pubic method; the high operation, as in the male; and the vesico-vaginal operation.

1. *The sub-pubic operations.* Among these, though not exactly varieties of lithotomy, M. Malgaigne considers the extraction of calculi by dilatation; and to this question we shall confine ourselves. All the varieties of lithotomy in the female are very liable to be followed by incontinence of urine. It was Sir A. Cooper's opinion, that simple dilatation of the urethra gave the best chances of escaping this sad termination; but the whole question is one of great obscurity. Dionis, in whose time the practice of dilatation was much followed, stated that not more than one fourth of the women so treated recovered without incontinence of urine. Deschamps affirms that daily experience, and the experience of all ages, have proved that the extraction of a moderately-large, or even a small stone from the female bladder, is almost certainly followed by incontinence; and, therefore, except in the case of a very small stone, he preferred the high operation.

2. *The high operation.*—Little is stated on this head, that is not also referable to the same operation in the male; but the following table from Frère Côme shows that in his hands the mortality was less among females.

In 41 cases in which he gives the ages, the results are:

16 operations, from 3 to 17 years old, 2 deaths.
(These two deaths were at the ages of 5 and 9 years, respectively),
16 operations, from 20 to 50 years old, 5 deaths.
8 „ „ 50 to 70 „ successful.
1 „ 72 „ „

It is not surprising that, finding incontinence of urine to be an almost inevitable result of one method, and the proportion of deaths in the other to be as high as one sixth, surgeons should have endeavoured to devise some more successful plan.

3. *The vesico-vaginal operation.*—This operation has been performed in various ways; thus, Bussière and Gooch cut upon the stone; J. J. Rigal upon a catheter; M. Clémot rested the catheter upon a gorget introduced into the rectum, so as more certainly to guard its posterior part; Giorgi introduced into the urethra a *bistouri caché*, in a silver tube, the point of which protruded at the neck of the bladder, and was received upon a spatula which guarded the back part of the vagina, so as in this manner to divide the neck of the bladder and the vagina, from above downwards, and from within outwards. Vacca injected the bladder, and then plunged into it, through the vagina, either the "*bistouri-trocart*" of Thomas, or a common knife. The disadvantage of the vesico-vaginal operation, practised in any way, is that it endangers the formation of a fistulous communication between the two organs; but it is, in other respects, by far the easiest to perform. Velpeau estimates the chances of a fistula as, at least, one in four. It is, therefore, very difficult to determine the question, as to the admissibility of any of these operations in the female. The dangers of the high operation are such as to exclude it, except in very rare instances. The operation by the urethra has also its dangers; and moreover exposes the patient to the inconveniences of incontinence of urine. Dilatation endangers incontinence, without any other danger. Lithotomy through the vagina exposes the patient to great risk of a fistula. M. Malgaigne thus sums up:

"The inconvenience of a fistula and of incontinence of urine is about the same; while, thanks to the operation 'par glissement' of M. Jobert, a vesico-vaginal fistula is remediable, while incontinence is not so. I therefore think, with M. Velpeau, that the surgeon may practice dilatation when the stone is not larger than from five to six lines; but, notwithstanding this great authority, for all others, I prefer the vesico-vaginal operation." (p. 68.)

The Third Part treats of certain methods, applicable to both sexes. These are, lithotomy combined with lithotrity, when the stone is too large; and lithotomy in two distinct operations,—that is, after the incisions are made, deferring the extraction of the stone until a less or greater interval has elapsed.

Want of space prevents our entering into these subjects; but the remarks of M. Malgaigne are well worthy of the reader's attention.

The whole Essay is indeed a very complete examination of the subject of Lithotomy, and we cordially commend it to the notice of the profession in this country.

Before concluding, it may be interesting to know the names of the competitors for the chair which has been awarded to M. Malgaigne, and the names of the Judges who decided in his favour.

The names of the Judges were,—on the part of the Faculty, MM. Roux (President), Andral, Bérard, J. Cloquet, Cruveilhier, Denonvilliers, P. Dubois, Laugier, Moreau, and Velpeau;—on the part of the Academy, MM. Baffos, Bégin, Gimelle, Huguier, and Jobert.

The names of the Candidates were, MM. Chassaignac, Gosselin, Jarjavay, Lenoir, Maisonneuve, Malgaigne, Nélaton, Richet, Robert, and A. Sanson.

Art. III.

1. *Compendium de Médecine Pratique, ou Exposé Analytique et Raissonné des travaux contenus dans les principaux Traités de Pathologie Interne.* Par M. Louis de la Berge, Docteur en Médecine, Agrégé à la Faculté de Médecine de Paris, Chef de Clinique Médicale à la même Faculté; M. Ed. Monneret, Agrégé à la Faculté de Médecine de Paris, Médecin du Bureau Central des Hôpitaux; et M. Louis Fleury, Agrégé à la Faculté de Médecine de Paris, Membre Correspondant de l'Académie Royale de Médecine de Belgique. Ouvrage Autorisé par le Conseil Royal de l'Instruction Publique et par le Conseil de Santé des Armées de Terre.—*Paris,* 1836-46. 8 vols. 8vo, pp. 698, 638, 642, 636, 639, 634, 615, 496.
2. *Guide du Médecin Praticien, ou Résumé Général de Pathologie Interne et de Therapeutique Appliquées.* Par F. L. I. Valleix, Médecin des Hôpitaux de Paris, Membre Titulaire de la Société Médicale d'Observation et de la Société Anatomique, Auteur de la 'Clinique des Maladies des Enfans Nouveau-nés,' du 'Traité des Nevralgies,' &c.—*Paris,* 1842-47. 10 vols. 8vo, pp. 576, 600, 627, 559, 632, 608, 586, 599, 847, 1006.
3. *Handbuch der medicinischen Klinik.* Verfasst von Dr. Carl Canstatt, koniglich-bayerischem Gerichtsarzte und Mitgliede mehrerer gelehrter Gesellschaften. Zweite vermehrte Auflage.—*Erlangen,* 1843-47. 4 vols. 8vo, pp. 382, 1102, 919, 1109. Also published with the second title of *Die specielle Pathologie und Therapie vom klinischen Standpunkte aus bearbeitet von* Dr. Carl Canstatt, &c.
4. *Handbuch der Pathologie und Therapie.* Von Dr. C. A. Wunderlich, Professor der Medicin, Vorstand der medicinischen Klinik zu Tübingen. Dritter Band.—*Stuttgart.* 8vo, pp. 1238.

The titles which we have here recorded, pertain to four of the most extensive systems of medicine which have, during the last few years, appeared in France and Germany. Each work is well deserving of a separate review in our Journal; but we think that we shall be doing our readers a better service by considering them collectively in three or four continuous articles. In this manner, while we glean from them all that seems practically valuable, and, at the same time, presents any claims to novelty in Great Britain, we shall also be enabled to compare the state of medicine in those two countries, and to contrast French and German medicine with our own.

We must commence with a few introductory remarks regarding the style and nature of these works, and the conditions under which they were published.