

Report made to the Institute of France, on the 22d of March, 1824 / by Baron Percy and Chev. Chaussier on a memoir presented by M. Civiale, M.D., of the faculty of Paris, entitled A new method of destroying the stone in the bladder without the operation of lithotomy ; translated from the French by R. La Roche.

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REPORT

MADE TO THE INSTITUTE OF FRANCE

On the 22d of March, 1824,

BY BARON PERCY AND CHEV. CHAUSSIER,

ON A

MEMOIR

PRESENTED BY M. CIVIALE, M. D.

OF THE FACULTY OF PARIS :

ENTITLED

A NEW METHOD

OF

Destroying the Stone in the Bladder,

WITHOUT THE OPERATION OF LITHOTOMY.

TRANSLATED FROM THE FRENCH,

BY R. LA ROCHE, M. D.

PHILADELPHIA :

Printed by J. Harding.

1824

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Percy.

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PRELIMINARY REMARKS

BY THE TRANSLATOR.

PROFESSOR BROWN, of the University of Transylvania, on his return a few weeks ago from a visit to France, handed me the Report made by Messrs. Percy and Chaussier to the Institute, on a new method employed by Dr. Civiale of Paris, for extracting the stone from the bladder without having recourse to the dangerous operation of lithotomy. Sensible of the great benefit that would be conferred on my fellow citizens affected with the stone, and of the service rendered to every surgeon endowed with a feeling heart, by making them acquainted with this method, and encouraged by the information derived from the learned professor, that he had assisted at eight operations of the kind performed by that distinguished surgeon, all of which had been attended with very satisfactory results, I immediately resolved to undertake, and present to the medical public of this country, a translation of the Report, in order that the method recommended should be soon adopted, and the proper cases, as indicated by the authors, carefully selected.

When we reflect on the great number of valuable lives that fall a sacrifice to the ordinary methods of operating, the proportion of which, according to Dr. Marcet, amounted in the Norwich Hospital to one in seven and a fourth, or four in twenty-nine, and according to Dr. Sansom of Paris, and Baron Koreff, counsellor of the king of Prussia, amounts to a greater number, we cannot but feel grateful

to the individual who has invented, or reduced to practice, a method offering the prospect of relieving from their sufferings a great majority of calculous patients, without the necessary consequence of much pain and long confinement; and which has hitherto been unattended with any danger whatsoever. Nor must we neglect to express our great obligation to the philanthropist who, with unexampled zeal, has endeavoured to introduce this great surgical improvement into his native country.

Already, at his instigation, and from the detail of the success of this operation, witnessed frequently by himself in Paris, several of the most distinguished surgeons of this country, are making active preparations to give it a fair trial. Among the names we might cite of surgeons on this side of the Atlantic, who have eagerly embraced this method, it will be sufficient to notice that of Dr. Physick, in order to show with what degree of confidence it should be estimated. Those who are acquainted with the caution with which this eminent man adopts new plans,—of his attention in never risking the life of a fellow being by the performance of operations, or the use of instruments, of the utility and propriety of which he is not perfectly sensible, will naturally conclude that the new method must offer advantages far superior to those presented by any of the ordinary modes of extracting or destroying the stone. It is confidently expected, that before many weeks have elapsed, this great surgeon will put Mr. Civiale's method to the test; that by Dr. Parrish it will be resorted to in the case of a calculous patient, expected soon in the Pennsylvania Hospital; and that my ingenious and valued friend, Dr. Stevens of New York, is making preparations to perform it in that city.

One of the advantages that must certainly result from the introduction into general use of this method, will be the future prevention of large stones, and consequently the

shorter duration of suffering in the unfortunate patient. It is a fact well known to all physicians, that from the fear of submitting to the painful operation of lithotomy, the individual afflicted with the stone endeavours to conceal it; or if by his sufferings he is induced to seek the aid and advice of a surgeon, he constantly endeavours to postpone the critical moment, and in some instances is unable to surmount his dread, and submit to the operation. In this way, the stone is allowed to enlarge,—the irritation of the bladder becomes permanent, the prostate gland is secondarily affected, the bladder is finally organically diseased, and the patient drags out a miserable life, and is soon placed beyond the resource of the art. Let Mr. Civiale's operation be adopted,—let our surgeons learn to employ the instruments with dexterity, and few large stones will henceforward be found,—and the train of symptoms we have detailed will be of rare occurrence; for the operation being attended with comparatively little pain,—far less indeed than the disease itself,—patients will not hesitate to submit to it early; and by its means avoid much suffering, and be able to return in a few days to their accustomed occupations.

In concluding these prefatory remarks, I shall present an extract from the *Journal des Debats* of Paris, for the 8th of September, being the latest printed account we have of this interesting operation. “The new method of Mr. Civiale for destroying the stone in the bladder without the operation of lithotomy, sanctioned by the Institute, on the report of Mr. M. Percy and Chaussier, receives each day from experience a confirmation very consoling to humanity. Of twenty-three patients who have sought the assistance of this expert operator, nine have obtained a complete cure, and the others are in a fair way of obtaining it. Among the patients who have been cured, is a woman of seventy-five years of age. Mr. Civiale has met with a small number to whom he has not judged his method applicable, owing to

the enormous size of the stone; and especially to the degree of alteration of the viscus which contained it. The stones have presented many varieties in respect to volume and hardness. Among them one was found composed of uric acid, and as large as a hen's egg, and which necessitated eight repetitions of the operation for its complete destruction. In general, the smaller and more friable they are, the sooner and with more facility the cure is effected."

Institute of France.

ROYAL ACADEMY OF SCIENCE.

THE perpetual Secretary of the Academy of Natural Sciences certifies, that what follows is extracted from the minutes of the meeting of Monday the 22d of March, 1824.

The Academy commissioned Mr. Chaussier and myself, to present it a Report, on a Memoir submitted to its judgment at the meeting of the 14th of January last, by Mr. Civiale, Doctor in Medicine of the Faculty of Paris, and the title of which is, "*A New Method for destroying the Stone in the Bladder, without the operation of Lithotomy.*"*

In every age, men have endeavoured to discover the means of relief from the stone, without the painful aid of an operation, which, from its remote origin, has been the terror of patients, and which, although carried to the highest degree of perfection, by the efforts of modern surgery, continues so even at this present time.

* Nouveau moyen de détruire la pierre dans la vessie sans l'opération de la taille.

The venerable sage of Cos felt a deep regret at his inability to free humanity from the necessity of an operation, which he very properly called cruel and murderous, and against which he had formed such prejudices, as to cause him to compel his pupils to swear they would not have recourse to it themselves, and would follow his example in abandoning its practice, more lucrative than honourable, to the itinerant operators who made it their principal occupation.

As Hippocrates very improperly regarded wounds of the bladder as mortal, we readily discover the motives of an aversion, which, however, was well founded from the frequently fatal manœuvres of those to whom he allowed the privilege of practising in all directions their rude art.

Among these itinerant operators, there appeared a certain *Ammon*, of Alexandria; who, failing on many occasions in extracting the stone, in consequence of the small opening made, at that time, in the neck of the bladder, was bold enough to break it down with a kind of statuary's chisel, from which circumstance he received the title of *Lithotomos*, or breaker of stone, a title afterwards applied to those who performed the operation, which, doubtless, was more improperly called cutting, (*la taille*.)

The Egyptians, from fear, would not submit to the operation of Ammon or his followers; and for a long time were content with drinking abundantly of the holy water of the Nile. Apprized,

however, by fatal experience, that this water is inefficacious against the stone, they submitted to another set of curers, whose proceedings, unattended with the loss of blood, presented nothing frightful or painful.

These proceedings consisted in passing into the urethra a tube of ivory or wood, of more or less length and thickness, the orifice of which they shut and opened at will, and through which they introduced, gradually, air into the bladder. Having previously, by the anus, pushed the stone towards the neck of the bladder, they forced the air to escape quickly from this viscus, either by compressing or striking the hypogastrium; and when the calculus was once engaged in the entrance or course of the canal, (which they had enlarged by means of the same insufflation,) they drew it forward, most generally by means of a powerful suction, and sometimes with the aid of some instruments, or of an appropriate manipulation.

Such was the method employed so late as the days of Prosper Alpinus, who relates that he saw an Arab, of the name of Haly, cure in this way the Turkish commandant Horam Bey; and a short time afterwards two Israelites, from the younger of whom he extracted, with the greatest facility, eight stones of a certain magnitude.

Roveretti, a physician sent to Egypt by the republic of Venice, had witnessed a similar operation on a Christian Copht, by an Arab from Sidon;

but in this case the stone was so large, that the operator could extract little more than one half only, and was compelled to postpone to a future day the extraction of the rest; which, however, he performed with ease.

Curious details of the same facts may be found in Berovicius, and in our Tollet; the latter of whom agreeing in sentiments with Roveretti, thinks that enterprising and skilful men of the art could derive a great advantage from this singular method of extracting the stone,—an operation of which our learned and celebrated members of the Institute of Egypt, and particularly barons Desgenettes and Larrey, have discovered traces among the physicians and inhabitants of that ancient country.

For a long time Rome knew no sort of operation. The cabbage of Cato was regarded as the only medicine; and when Archagatus spoke of incising calculous patients, he was soon banished from the city and territory. In the progress of time, however, the Greek curers soon inundated the one and the other; and each by a spirit of emulation extolled and sold dearly his lithontriptic tisans, pills, and opiates, from a fear of proposing any other remedy for the cure of the stone, which all pretended to dissolve in the bladder, but which none succeeded in dissolving.

Nevertheless among these empyrics, true lithotomists appeared, who gradually accustomed the Romans to hear of operations, and who performed that for the stone agreeably to the method

employed by Ammon, Evelpistes, Gorgias, and Meges, and described after those ancient Greeks by Celsus, who could hardly suspect that it was one day to bear his name.

In France, where during twelve centuries the clergy practiced almost exclusively the healing art, whenever a man was so unfortunate as to be affected with the stone, he was doomed to suffer and die; the ecclesiastical physicians having nothing to prescribe but inert remedies, and being unable or unwilling to perform any operation, and that for the stone less than any other, not only because blood was shed, but also because they regarded it as vile, foul, and indecent. Consequently all resounded with the cries of the unfortunate sufferers from the stone, to whom no other prospects were left than that of perishing, worn out by innumerable sufferings, and inefficient medicines, which were, notwithstanding, pompously denominated divines saxifrages, or infallible lithontriptics.

Some of the ecclesiastical surgeons, whom the physicians of the time had not been able to dishonour or subject, touched with the inefficacy and variety of these fallacious remedies, obtained from Louis IXth, permission to make on a bowman of Bagnolet, condemned for theft to the gallows, and tormented from his infancy with the stone, a trial, on which they said the lives of a number of people suffering with this disease depended. This trial, it is maintained, met with complete success; and the culprit obtained, at the same time, his

pardon and his cure; but the kind of operation to which he was subjected, has never been well ascertained. Monstrelet and Mezerai, have mentioned it so differently, that neither art nor humanity has derived advantage from a trial which, though bold and no doubt laudable, required, in order to succeed, more knowledge and experience than was possessed at that time.

Some compilers, as Williams, Salicet, and Guy de Chauliac, sterile echos of writers as little versed as themselves in the practice of operations, had, it is true, pointed out the method of performing that for the stone, agreeably to the manner transmitted to them by the Arabians. But physicians as well as they, preferred to restrict themselves to the easy advice of remedies, always useless, but always employed; so that the French really had no lithotomists before the memorable year of 1525, when a rich nobleman labouring under the stone, for the extraction of which he found no one in Paris, incurred great expense in calling from Italy, an operator named Octavius de Villa, who rendered him this important service; and cut, on the same occasion, and with equal success, two magistrates, who, like the former, had languished a long time for want of lithotomists.

Our Italian,—pupil of Marianus Sanctus, who himself had been the pupil of John de Romain, author of the best method known at that time, having stopped, in the course of his voyage, at Traisnel in Champagne, Laurent Collot, who

practiced surgery in that little town, eagerly received him at his house, and treated him with the most marked distinction. Octavius, touched with this great kindness, and anxious to recompense such generous hospitality, revealed the secret of his method to Collot, in whose family it remained hereditary till the end of the seventeenth century, without having been practiced by any others than by the sons or sons-in-law; and even Ambrose Paré, the confident and the friend of Laurent, and who performed so many no less difficult operations, did not venture to attempt it.

During this time, at the bare name of Collot, the unfortunate calculous patients trembled, and implored with importunity for the means of escaping from his tools. The remedies which until then had been in vogue, could no longer satisfy them; new ones were invented; among which the juice of onions took the lead for some time, and although it was seen occasionally to dissolve stones, out of the bladder, after a long maceration, it only served to inspire a false security.

Soon after this, all Europe resounded with the praises of the supposed incomparable virtues of the uva ursi, against which no stone, it was imagined, could resist. The books of medicine, the journals, and the newspapers, were filled with little else than observations on this pretended specific, and with cures attributed to its use.

The mineral waters had their turn, and Spa, Seltzer, &c. were soon crowded with patients, who,

having hoped too readily to leave their calculi in these places, were still reduced to the wretched necessity of returning home with them. In the midst of these false hopes and of these deceptions, the successors of Collot did not want occupation; but their success was now more rare and difficult, owing to the time lost by the patient in vain attempts—time during which the stone increased, the bladder became affected, and the constitution impaired.

Twice, during the same age, calculous patients thought themselves certain of eluding the operation. Every one recollects the fine dreams excited in them by Miss Stephens; similar in many respects to those of that French lady who formerly had promised to convert our worst wine into nectar and ambrosium. No stone, it was imagined, could resist the power of the Stephen remedies. The first physicians of France and England, and even the most distinguished lithotomists, became their advocates. Their eulogies, however, proceeded more from the heart than the head. With what pleasure and confidence did they not swallow the wonderful dissolvent, which, as every one knows, consisted of nothing but prepared lime water. The smallest deposit, the least concreted mucous discharged with the urine, was hailed as a miracle. It was the stone which was dissolved—it was the remnants that escaped. And such was the wonderful infatuation of the people of the world, and even of some professional men, that the instru-

ments used in lithotomy were declared to be useless, and interdicted; they received a facetious trial, and by a sentence half serious, half comic, were consigned to perpetual concealment.

After having laughed, tears followed, and calculous patients were not long in perceiving that they had only been dreaming. A melancholy experience silenced all imprudent eulogists. The instruments were restored in gloom, and the patients, deceived in their expectations, bestowed on Miss Stephens and her blind partisans, both sarcasms and maledictions.

The operation which a charitable hermit had by instinct or imitation changed and improved, made progress not less essential in the hands of another monk, endowed with more industry and sagacity; and during the fifty years which separated these respectable reformers, the most distinguished surgeons of France, England, and Holland, applied themselves with unceasing industry, to devise and try new processes, calculated to render safer and more perfect, the methods which at one time chance, and at another genius, had discovered.

It was during this space of time that Ledran, Morand, Le Cat, Cheselden, Louis, and many others whose names we delight to repeat, flourished; but the zeal, the talents, and the efforts of these distinguished men, could not strip the operation which they had so skilfully improved, of the pain

and formidable appearance which alarmed all the calculous patients who apprehended it.

In consequence, what has not been imagined or tried to supersede it? Hales, a learned English philosopher, not satisfied with his own attempts, and rejecting those of others, thought that a long immersion of the calculus in water mixed with urine, *ought* to be the best dissolvent; and invented a method quite simple for passing into the bladder, in the course of twenty-four hours, a ton of water, without danger or considerable fatigue to the patient; which, as much by the continued impetus of the aqueous column against the stone, as by the immersion of this latter, was imagined sufficient to wear it down, soften, and gradually decompose it. The means employed consisted of a sound formed of two canulæ joined together; by one of which he could make the liquid enter into the bladder, whilst after running through this viscus, the water escaped by the other; a very ingenious idea, which very shamefully has gone into oblivion; and which one of our young and learned associates has recently renewed; having undoubtedly had the good fortune to conceive it in his turn, without the assistance of Hales' book, or of the work of our honourable colleague Deschamps, in both of which its description is contained.

It is painful to reflect, that among us the trial of Hales' sound has been but superficially made; whilst among our neighbours it has been employed with a perseverance, carried even to an almost

ridiculous extent. It is said that in Vienna, ealculous patients having this sound in the bladder, have been exposed, with their legs in the air, during days of rain, to spouts arranged in such a way as to furnish without interruption a column of water, which, falling from a height, was thought likely to produce a powerful attrition of the stone, and wear it away insensibly. This is all we have learned in regard to this singular manœuvre; it is possible, however, we may have been deceived. But it is not the less true, that restricted within the bounds of a cautious reserve, it merits all the attention of professional men; and that it ought especially to fix that of chemists, who will find, perhaps, one day, a liquor more active than simple water, and equally inoffensive to the bladder; and which, introduced constantly and abundantly into that viscus, will finally succeed in dissolving the stone.

This is a wish cherished by all feeling hearts, and especially entertained by our good and learned Fourcroy; and of a colleague not less feeling or less enlightened, who hears us at this moment, and who laments in secret at his inability to furnish to his suffering and unhappy brethren, the present which science promised them, and which they expected from the most sincere and generous devotion.

It is not without a pleasure, mixed with gratitude and respect, that we remember the zeal with which these chemists, so justly celebrated, endea-

voured to discover agents capable of dissolving, even in the bladder, and without wounding its parietes, the different calculi, of which they had so well succeeded in ascertaining and analysing the nature and elements. Nothing can equal their transports when they offered to the public their first observations, or the excess of their joy when they imagined they had succeeded in attaining their object. One of these chemists, who was most susceptible of enthusiasm, declared to us also, that soon our lithotomic instruments would become useless; and that if we chose to preserve them, it would only be for the purpose of exhibiting them to our pupils as mere objects of curiosity. The pious exultation of Fourcroy only served to show more clearly the deplorable necessity of instruments, which he had prematurely proscribed; and calculous patients, so ready to deceive themselves, were once more obliged to seek their deliverance in the operation, from which it had been so pleasant to imagine themselves exempt.

The same thing had occurred a few years before, when Dr. Manduyt de la Varenne, guided by the illusion of a good man, announced so eagerly to the Royal Society of Medicine, that by means of a prudent use of electricity, directed even into the bladder, it would be possible to fuse the stone, or reduce it to dust,—a project which no one, not even its author, was ever sufficiently bold to attempt.

Can Messrs. Prevost and Dumos be more suc-

cessful with the galvanic pile, and in introducing into the bladder two conductors, separated from each other, and performing the functions of two poles, in order to exercise on the stone, which is in contact with them, the same action which the fluid exercises on this concretion, (if it contains very little or no uric acid,) when, together with the conductors, it is immersed in a vase filled with water? What a blessing would it not prove to the calculous patient, could these two distinguished philosophers one day apply so fine a theory, and realize such high expectations! But how many difficulties will they not have to surmount! How many subsequent meditations, attempts, and trials of all sorts, will they not be under the necessity of resorting to, before obtaining a success of which they are so worthy; but which will possibly soon appear to them still more impossible than it does to us, notwithstanding the assurance to the contrary given by the Bavarian physician Gruithuisen, who, anticipating by ten years our philosophers of Geneva, announced to the public that with six hundred plates the experiment would succeed.

It is said that a monk of Citeaux, affected with a stone, for which Hoïn, the father, a skilful surgeon of Dijon, had been on the point of operating, had succeeded in introducing into the bladder a flexible and hollow tube, through which he passed a long, straight, and round piece of steel, terminating inferiorly in a small chisel, and which he pushed to the stone. Having accomplished this, he struck

the exterior end of the steel by short and quick strokes, with a steel hammer. By that means he succeeded in detaching small fragments, which were discharged with the urine, and served, in the course of a year, to fill a small box, which he willingly exhibited to the curious.

If this fact were well authenticated, we could discover in it the first idea of the process, undoubtedly more rational and methodical, of which we are this day to make a report to the Academy.

Another fact somewhat analogous, but more recent and known, is that published some years ago by Dr. Scott of Bombay, in the Journal of the Royal Institution,—of which Dr. Monro of Edinburgh does not fail to detail the principal circumstances in his lectures; and which may have been read some time ago in the *Bibliothèque Britanique*, edited by Mr. Pictet. The subject of the case was an English colonel, of the name of Martin, employed in India, and who then resided at Leschnow. Having the stone, and being in consequence in an uninterrupted state of suffering, he contrived the following expedient. He constructed a large stilet of steel, curved in form of a punch, on the convexity of which he adapted a well-tempered file: this instrument he passed, by means of a hollow elastic sound, into the bladder; where, by causing it to pass and repass on the stone, he succeeded in wearing the latter, and reducing it to powder. Such at least is the fact related in the public papers, and certified to Dr. Monro, in whose possession the

instrument itself of Mr. Martin is at this moment. A drawing of this instrument is found at the close of the chemical history of calculi, by Mr. Marcet, translated lately in our language by Dr. Riffau.

Were this fact more clearly exposed, and its date better established, it would be impossible to deny that it was well calculated to direct the attention of Dr. Civiale, and lead him to imagine the possibility of grinding the stone in the bladder by well combined mechanical means. But in the position in which this physician was then placed, he was in need of nothing but his own powers and inspiration to arrive at his discovery. For some time past, he was pre-occupied with the idea of dissolving the stone by means of an unalterable sack, susceptible of being carried into the bladder, opened and closed at will, and in which the stone being drawn and enclosed, could be attacked by means of chemical agents, injected into the viscus,—a kind of chimerical notion which, before he had thought of it himself, had been pursued by several young physicians; who, nevertheless, having met with no greater success, have not, like himself, arrived at a result much more interesting and positive. For the purpose, however, of selecting the chemical agent proper to attack the stone, it was first necessary to ascertain the nature of this latter, and obtain from it some specimen: and how was it possible to succeed without applying to it a hard body, an instrument capable of scratching or perforating it, and of carrying exteriorly some

portions for analysis, and consequently for determining the proper reagent? It was precisely in the midst of these meditations, that the project of breaking the stone,—of grinding, and destroying it mechanically, instead of attempting to decompose it by chemical agents, naturally suggested itself to the mind of Mr. Civiale, which it now entirely engrossed. In this supposition, it only remained for him to invent the mechanical means proper to accomplish an object incomparably more rational and practicable than the former. But it was first necessary to mature and arrange ideas, which he thought entirely his own; whilst views, if not similar, at least analogous, were contained as early as 1813 in a German medical Gazette of Salzburg, even of the existence of which he was necessarily ignorant.

It was in this paper that, to his great astonishment, he discovered that the original idea of his lithontriptic system, belonged to the same physician who had likewise anticipated, by eleven years, the interesting experiments of Messrs. Prevost and Dumas. It was sufficient for him to cast his eyes on the design and explanation of the instruments, though rude and imaginary, of Mr. Gruithuisen, to assume the second rank after him, although on his part he had likewise discovered all, and without borrowing any thing from another. But if Mr. Civiale contents himself modestly with the second place relative to time, of the vague, incoherent, though ingenious plan of the Bavarian physician,

we believe that he is entitled to the first, for the happy, and we could say wise manner, in which he has established, developed, and executed, a project scarcely sketched in a foreign Gazette,—unowned and forgotten in the country where it had originated,—completely theoretical and speculative,—and the instruments and application of which had not even been commenced.

Be this as it may, in the month of July 1818, Mr. Civiale presented to the Minister of the Interior, a request for pecuniary advances, to enable him to get instruments of his invention made, which he said were adequate to the destruction of the stone in the bladder, without having recourse to the operation of lithotomy. This request was referred, some days after, to the Society of the Medical Faculty, with a memoir explanatory of many designs relative to a theory of the pocket of which he spoke, and secondly of the instrumental apparatus, which he already named lithontriptor. On the 14th of the same month, the society gave to Mr. Civiale, the same two commissioners whom the Academy have lately given to him; but on that occasion they made no report, and here the matter rested.

Nevertheless, this lithontriptic apparatus, with its present modifications and perfections, was executed the year following by a mechanician of Paris; so that the origin of this method, which now occupies us, may be traced four or five years

back, although it has not acquired its full standing for much more than three years.

The first step, and perhaps the most difficult to perform, was the introduction of a straight sound into the urethra and bladder. Desault and Mr. Deschamps, it is true, had sounded with a semi-curved catheter; and it is also true that Lassone, in offering an anatomical description of the urethra, has given to understand, that this tortuous but flexible canal—extensible in every point except at the exterior orifice—could assume all directions, and even become straight by means of a straight sound. Nor is it less true that in the office of a surgeon of Portici, long brass sounds, quite straight, and which could only have been employed as catheters, were found. We must likewise observe, that the Bavarian physician had also thought it possible, and even easy, to introduce into the urethra and bladder, the silver tube of fourteen inches in length and four lines in diameter, by which he proposed to commence his operation; but no one had as yet made use of this instrument among us; unless Dr. Amusat, who openly aspires to priority on this point, and whose fine work on the urethra is well known, had employed one similar in 1818. But it is no more our purpose to examine this subject, than to decide between Mr. Civiale, to whom the whole discovery is attributed, and his colleague Mr. James Le Roy, who claims it in part. We prefer thinking that these estimable physicians, cotemporaries,

and fellow students, without confiding in each other, entertained the same thought in the same way that Mr. Civiale could make the same discovery as the physician of Saltzburgh, without having heard of him or of that gazette; and that having started from the same point, and followed the same rout, Mr. Civiale could have arrived first.

Consequently it was with the straight sound that it was necessary to commence; and our physician soon acquired the habit of using it with as much facility and dexterity as the common curved catheter.

There was no other way than that for introducing the other instruments to the stone, or allowing them the necessary movements. But what are the other instruments? One is requisite to seize the stone completely, and allow it to escape only at the will of the operator. We cannot say, in respect to this instrument, that it is truly of Mr. Civiale's invention; since we find models of it among the ball extractors described and engraved in Bartholomy Maggi, and André de la Croix; since it is met with in Franco's work, who has called it his *vesical quadruple*; and since Mr. Deschamps has had it engraved in one of the plates of his work. But if he has not altogether invented it, which he would not have found much difficulty in accomplishing, it can with propriety be asserted, that he has succeeded in giving it its most appropriate application. It is likewise a sound; but one

of steel,—which can enter the former,—straight and hollow like it, and terminating by three branches, very elastic, curved, and remaining closed and hidden so long as they continue in the principal sound, which performs the office of their sheath. When pushed out, they open by virtue of their elasticity, and form a kind of cage or steel purse, in which the stone is sooner or later made to enter, and which is immediately shut upon it, in pulling the sound backward, as far as the volume of the extraneous body, or the direction in which it has entered, will allow.

In the second sound, or rather in the cylinder forming the forceps, there is contained a long steel stilet, which enters and turns in it with ease, and is terminated at the end towards the bladder, and between the branches of the forceps, by a file, made in form of a strawberry, or by a small circular saw,—a pyramidal trephine, according to circumstances, size, and supposed nature of the stone. This latter being firmly fixed, the moveable stilet is pushed towards it, and by means of a pulley with which it is provided at its exterior extremity; of a whirl on which it is mounted, and of a long bow with a catgut string, it is made to turn, in a manner similar to that resorted to when we wish to bore a hole through a plate of metal. No sooner is the machine in operation, than the hollow or sonorous sound of the breaking or grinding performed on the stone, according to its softness or hardness, is heard; and the patient suffers little or no pain.

As the work progresses, the stilet is made to advance in the same proportion towards the stone; and this is done by suspending for a moment the action of the bow, which is soon resumed, in order to pulverize more and more the stony concretion; and, if the operator or patient is not too much fatigued, to hasten its destruction; but as it is intended to accomplish this in two or three operations, it is postponed to periods more or less distant. A spontaneous discharge of urine, or an injection of warm water into the bladder, usually terminates the operation, and causes to pass by the urethra, now dilated by the large sound, fragments of the stone, more or less numerous or considerable, or a muddy sediment, which soon precipitates and is easily collected.

At first Mr. Civiale instead of the bow, employed a handle, which he is a good deal disposed to resume; first because he finds it more simple and quite as convenient, and in the second place, because it is his own idea, whilst the other is the suggestion of a stranger.

We omit, through design, a number of descriptive details, and minute precautions, which though they concur to the *ensemble* of the operation, could not be easily understood in a simple lecture. But it is important to say, and it is necessary to be known, that we have assisted at the various and indeed almost public trials, which Mr. Civiale has made of his method, as well upon the dead as upon the living body; and that we have been com-

pletely satisfied of the truth of every thing he had previously announced to us.

Thus real stones having been introduced by an incision into the bladder of many dead bodies, and made fast almost without difficulty in his pincers, were broken into pieces and pulverized almost instantly by the lithonriptor.

We remarked in the course of these trials, that during the pulverization of the stone, the bladder is beyond the reach of any bruise from the instrument; and that we convinced ourselves there was little foundation for the fears we had entertained with regard to this point, in the operation on the living subject.

How much must we not redouble our attention and vigilance in this latter operation, in order fully to observe all its circumstances, appreciate all its proceedings, and weigh also its advantages and inconveniences, for the purpose of establishing the degree of confidence that should be bestowed upon it, and to pronounce knowingly and with the most rigorous impartiality, the rank it ought to occupy among the inventions essentially useful.

CASE I.

On the 13th of January last we proceeded to the house of Mr. Civiale, where we met several physicians and surgeons of high reputation, such as Messrs. Larrey, Giraudy, Nauche, Sue, Sedillot, and others; and where also we found Mr. Gentil, thirty-two years of age, who had suffered for the

last four years from a pretty large and hard stone, of the existence of which we assured ourselves by a decisive examination; and who, full of courage and resolution, anxiously waited the commencement of a trial, from which he expected to escape safe and sound, and the chances of which he had carefully weighed before submitting himself to it, and giving it the preference over the ordinary operation.

Having placed himself upon a small bed, and the stone being felt once more, Mr. Civiale introduced down to it, and almost at the first attempt, the large straight catheter, having in its centre the forceps and the lithonriptor. The urethra offered no resistance to the passage of this sound, previously lubricated with cerat, and the stone was seized immediately. Mr. Civiale next proceeded to the trituration. Each stroke of the bow occasioned in the ears of the assistants a noise and cracking which indicated the hardness of a stone of oxalate of lime, and the promptness of its destruction. Three times the operator rested, and afforded respite to the patient, who experienced more uneasiness than real pain. After about forty minutes, Mr. Gentil left the bed alone, voided, together with a little urine, the water that had been injected into the bladder, and was much pleased to reject at the same time, numerous pieces of the stone, which was estimated to have been reduced about one third by this operation.

The operation was again resorted to on the 24th of the same month, and we had the satisfaction to see at the house, besides the witnesses before mentioned, our learned colleague Mr. Magendie, and Messrs. Serres and Aumont, whose names are so advantageously known. The breaking of the stone was continued, but was unattended by any circumstance worthy of remark.

On the third of February following, the deliverance of Mr. Gentil from the stone was completed; there escaped from the washed bladder a larger quantity than ever of fragments and pulverized stone, which, when collected together, gave the approximate size of the calculus.

A few baths and injections, and the use of a mild and mucilaginous drink, were the only auxiliaries to an operation, for each repetition of which Mr. Gentil walked to Mr. Civiale's, and which changed this young man, who for a long time was gloomy and suffering, into the most lively and happy of mortals.

We have since seen Mr. Gentil several times, and have sounded him without discovering any thing. All in fact announces a perfect cure; excepting, however, the risk of a relapse, from which lithotomy itself does not preserve, and against which we can so much the less be assured, since in the operation of Mr. Civiale, the stone being minutely divided, it is easier for a fragment to remain in the bladder, and there become the nucleus of another calculus.

CASE II.

Mr. Laurent, of Reims, was sent to Mr. Civiale by Dr. Simons of that city, for the purpose of being operated upon for the stone, the nucleus of which was thought, agreeably to a declaration of the patient, which it would be superfluous and indiscreet to communicate here, to be a white bean. We accordingly assembled at the house of the patient on the 4th of February of the same year, accompanied by Mr. Souberbielle, a very experienced and distinguished lithotomist, who was led more by the desire of witnessing the success of the new method, than by the curiosity with which he was inspired. Some days before, Mr. Civiale had introduced into the urethra a flexible sound of small diameter, and gradually increased its size, in order to enlarge this canal, and render the introduction of the large sound of the stone breaker more easy. This last was introduced without difficulty, after we had assured ourselves of the existence of the calculus, which we judged to be of little hardness, and of the size of a large chesnut. The bow was now put in operation, and the foreign body soon cut into, without, however, occasioning any thing more than a hollow and sometimes very obscure sound. The bladder being very irritable and contractile, the operation was shortened, and repeated only on the 7th, after the application of some leeches, and the frequent use of emollient injections. In the interval, seve-

ral small pieces of friable stone, and a great quantity of saline earthy sediment, had made their escape. The result of the second operation was the rejection of some pieces of the broken calculus, and of two or three small masses of an animal viscous matter, which when pressed between the fingers, gave the feeling of small and feebly agglutinated granulations.

At a second meeting, which took place on the 10th, the forceps having seized something which appeared to possess little solidity and volume, it was discovered to be the bean that served as the nucleus of the stone. It was deprived of its incrustation, and presented a projecting portion, pretty large, and as fresh as when in full germination.

A few days after, we assembled for the last time, with Drs. Souberbielle, Nauche, Delattre, &c. in order to terminate our undertaking. The large sound with the three branches brought away but small pieces, together with which a sort of membrane was extracted, which was at first mistaken for an empty hydatid, but afterwards recognized to be the pellicle of the bean. Dr. Souberbielle, having sounded the bladder in all directions with a common sound, announced the existence of another fragment, but porous, small, and easy to extract. In effect, this latter fragment, having advanced beyond the neck of the bladder, it was easily extracted by Mr. Civiale by means of the long pincer, called Hunter's, but which might as well

be called Hales's, as this latter was the first who made mention of it.

Laurent, quite freed from his stone, and full of joy and happiness, left Paris a few days after for Reims, from which place it is his intention to send us, through the medium of Dr. Simon, occasional intelligence of his health.

CASE III.

Mr. P. of Paris, has very recently offered himself as the subject of a third observation, not less conclusive than the two former. This young man having, himself, made some preparation for the operation, either by using occasionally hot baths, or by dilating the canal of the urethra with bougies of graduated diameters, submitted to it for the first time on the second of the month, in our presence, and under the eyes of Mr. Souberbielle and many of his colleagues. The stone being of the size of a pigeon's egg, or thereabouts, but of middling hardness, was seized and attacked with complete success. On the 5th, the calculus not having been discovered, this second trial had no success. Mr. Civiale having found it necessary to make use of a lithonriptor of larger size than that employed three days before, made a small incision at the mouth of the urethra; and by this means opened a free access to the instrument, which now acted with liberty and great force.

On the 18th the third operation took place, and

on that occasion Dr. Canin, ex-principal surgeon of the armies, Dr. Puzin, first surgeon of the body guards of Monsieur, the king's brother, and more than a dozen of other equally enlightened and honourable witnesses were present.

On this day, to introduce the lithonriptor, find and seize the calculus, although much diminished, and file a great portion of it away, was the work of a minute. Small agglomerations of gravel, and a great quantity of fine sand, comparable to that of cutlers, were rejected with the urine and injections. By means of the long pincers of Hales, three or four small packs of mucus, enveloping some calculous grains, were extracted. The cure was considered as nearly effected; and it was agreed that in a few days Mr. P. would be once more examined and sounded, and that in case some fragments of the stone which had escaped the last researches were found, they could be removed by means of injections, and if necessary, by the use of the pincers; an operation which he was far from apprehending.

This third operation will soon be followed by many others, which have been decided upon; and soon a person of eminent name and merit, will submit to it for the removal of a stone, which for a long time has occasioned the torment and misfortune of his life.

We could have desired very much to find a calculous woman, for the purpose of treating and

curing her by means of the new method, which must be much easier in women than in men, owing to the very different structure of the organs,—a structure which, in addition, gives to the sex the advantage of being much more rarely affected with the stone, the first elements of which they are able to void early.

But however promising the facts may be which we have just related, it must not be believed that the result will invariably be so favourable. It will soon be seen that in addition to the temerity that would be shown in anticipating constant and unchecked success, there are cases in which the lithontriptic instruments can neither be applied nor fulfil the objects of their application. For example, if a stone has dimensions extraordinary, and not proportioned to the development of the pincers destined to seize it, it will readily be conceived that under these circumstances, which fortunately are only met with at long intervals, it would be necessary to renounce the lithontriptic method, and have recourse to the high operation. It will also be ineffectual in cases of adhering and encysted stones, which also are fortunately very seldom met, and owing to their adhesiveness and immobility, cause much less pain, and are a longer time supportable than free calculi, the only kind that are capable of being seized and destroyed by the instruments of Mr. Civiale.

Stones having for nucleus a large metallic needle,

—a tooth-pick,—an ear-pick of gold, ivory, bone, or whale-bone,—a steel awl,—a piece of pipe of horn or iron,—a leaden bullet, or a fragment of bomb, &c. of which examples may be found in the memoirs of the Royal Academy of Surgery; of which we have seen examples, and placed specimens in the cabinets of the Medical Faculty of Paris; and of which before us, Collet, Moinicken, Cavillard, Mareshal, J. L. Petit, Morand, Desault, &c. had found examples in their practice. Such stones assuredly would not be destructible by our mechanism; although, to say the truth, they might by means of it be reduced in volume and weight, and thereby become a little less painful; which, however, would not remove them from the domain of lithotomy.

By the method of Mr. Civiale, we might, it is true, succeed in breaking a prune kernel, forming the nucleus of a calculous concretion, and such as has been met with two or three times. With much more facility could we succeed with an ear of wheat, of rye, or with a piece of pine match, a fragment of wax, large beans, &c. such as lithotomists have found in the centre of several stones. In respect to French beans, we have established the fact in an unanswerable manner. But there are bladders so sensible, contractile, and shrivelled, in fact so affected, that the lithontriptic instruments could not be used in them without the greatest difficulty, and that it would be imprudent

to introduce them, although it is perfectly well ascertained that the pathological state of the bladder depending very often exclusively on the presence of the stone, especially when it is *mural*, it is sufficient to remove or destroy the foreign body in order that the viscus may promptly recover.

Children, although very young, do not appear to us to be absolutely excluded from the operation of Mr. Civiale. The small size of their penis, will, perhaps, be offered as an objection; but independently of the circumstance that this supposition is gratuitous, since the handling and forced elongations which the pain at the extremity of the urethra accustoms them to exercise on that part, increases singularly and prematurely its length and volume, is it not possible to make instruments proportioned to this very interesting class of calculous patients, as has been done in the other method, to which we are not sure, however, that notwithstanding this precaution, we should not be compelled to refer many cases.

From what precedes, and anxious to preserve a just medium between enthusiasm, which exaggerates, and the prejudice opposite, which endeavours to underrate all things, we believe that the method proposed by Mr. Civiale for destroying the stone in the bladder, without having recourse to the operation of lithotomy, is equally glorious to French surgery, honourable to its author, and

consoling to humanity ; that notwithstanding its inadequacy in some cases, and the difficulty of its application in others, it cannot fail to form an era in the healing art, and be regarded as one of its most ingenious and salutary resources ; finally, that Mr. Civiale, who has well deserved of his noble profession, and of his fellow men, has likewise merited the thanks of the Academy, in the bosom of which philanthropy has its altars, as well as the sciences their votaries.

CHAUSSIER,
PERCY.

Copy.

BARON CUVIER, *Perpetual Secretary.*



