

"These vessels are formed to convey the fluid of the thymus gland into the veins. Although their size is so large as readily to admit of their being injected with wax, yet I believe them to be more of the structure of absorbent vessels than of excretory ducts.

"An excretory duct is in itself a gland (the ureter, for example); it is generally a muscular tube on the outer side, and a secreting membrane within; is free from any valvular apparatus, excepting at its termination, like the ureter and common duct of the liver. But the vessels I am now describing, although of large size, are transparent, and possess valves, and, above all, if quicksilver be thrown into the absorbent gland of the thymus, small vessels are filled from them, which open suddenly into a tube of considerable diameter, forming the two vessels I have mentioned; and, further to show that they partake more of the nature of absorbent vessels than the structure of an excretory duct, they cannot be injected but in their course towards the veins from the valves which they contain. Around the thoracic portion, numerous absorbent glands are found, which send vessels into the veins at the junction of the jugulars with the superior cava. These vessels I consider, and shall name, the absorbent ducts of the gland, and they are the carriers of the fluid from the thymus into the veins of the lower part of the neck."

Sir Astley has examined the gland in other animals, and the following is the result:—

"In the dog it is divided into two thoracic, and two cervical portions; it is relatively much less in this animal than in the foetal calf. It consists of lobes which are but loosely connected, and they admit of being easily unravelled. In the lobes small cavities are found, which may be injected with quicksilver or alcohol.

"In the dog of six months old I found cavities of considerable size, and the gland, though larger than it usually is at birth or in the foetal state, was hollow, and had little solid matter in its composition. In the kitten, the gland resembles in form that of the human subject, and contains numerous small cavities. In the ass the gland is broad, thin, and flat; it is divided into numerous large lobes, which are further subdivided into smaller. Each of the lobes contains many cavities which are of considerable magnitude. The thymus gland in the lamb bears a close resemblance to that of the foetal calf, being composed of a thoracic portion, of an isthmus, of a cervical portion, and of two cornua. It is divided into large lobes, and then into smaller, and

they contain secretory cells and reservoirs, which are easily injected with quicksilver, and which differ only from those of the foetal calf, in being absolutely less, although relatively to the size of the animal, they bear the same proportion.

"In the pig, the gland is formed of two thoracic portions, of an isthmus and two cornua; its lobes are of considerable size, and minutely divided into smaller ones, and the gland is large in proportion to the weight of the animal. It contains secretory cavities so full of fluid, that it is difficult to inject them."

We shall continue our extracts from this little work in a future Number.

ROYAL INSTITUTION.

June 8, 1832.

LECTURE ON THE HISTORY, ORIGIN, PROGRESS, AND PRESENT STATE, OF LITHOTRIPSY.

By D. O. EDWARDS, Esq.

MR. CHAIRMAN. Two years ago Mr. Burnet did us the kindness of giving in this theatre a demonstration of the lithontritic apparatus then in use. Since that time, several modifications have been made in the old instruments, and others have been constructed upon new principles. Many operations have been performed upon patients of all ranks, and much additional experience has in consequence been acquired. Many things that were then problematical, are now matters of fact; and, in short, our knowledge in relation both to the principles and the practice of this branch of surgery is so much extended as to give it an almost entirely new aspect.

In order to afford a distinct idea of the present state of lithotrity, I may perhaps be permitted to take a transient retrospect at the old methods employed in the relief of the formidable disease which it is the object of our labours to remove, as well as to glance at the origin and progress of the new method.

Stone in the bladder, arising as it does from purely physical causes, is a disease pretty nearly as ancient as the human constitution itself. In times when men were entirely ignorant of anatomy, it would be long before the group of symptoms characteristic of this malady could be accurately referred to their true cause. The two circumstances most likely to afford a clue to the just interpretation of these symptoms are, the occasional escape of small calculi through the urethra; and the occurrence

of the same malady in certain quadrupeds.

The nature of the complaint once fully understood, it would not perhaps be difficult to conceive the means of relief that would first suggest themselves. The use of narcotics was very early known, and it is reasonable to suppose that these and other anodynes conveyed into the alimentary canal, would be selected as remedies.

The idea of dissolving the calculus implying a degree of chemical knowledge, would probably be a much later suggestion. The fugitive good effect or total inefficiency of such remedies, which only act indirectly and remotely through the nervous system, or by passing through the round of the circulation, would naturally lead to the contemplation of more direct and decisive measures.

To extract the stone through the natural avenue, and to break it in pieces for that purpose, are very obvious indications; but the deficiency of mechanical means at early periods would render such a plan impracticable, and occasion its immediate abandonment. A less obvious method of relief, it is true, is that of cutting into the bladder, in order to effect the extrication of the stone, but it was the only remaining alternative for the patient's torments.

The incision through the perineum was the first means adopted for penetrating into the bladder; that is, if we may trust the early records of medicine, which are nothing more than collections or compilations of current traditions. The method of Celsus, vulgarly called cutting on the gripe, is evidently but a slight improvement upon the rude means originally adopted, and is indeed the only operation that could have been performed by any person ignorant of anatomy. The prominence produced on the perineum through the traction of the stone by the fingers, would with very little knowledge of the parts afford a sufficient guide to the operator's knife. It is not to be imagined, that many patients could be found willing to submit to such a barbarous process, and of which the consequences were often as disgusting and calamitous as the disease itself.

In the course of ages, but few modifications were effected in the practice of lithotomy. The high operation, or incision above the pubes, is comparatively of modern origin, and may in point of safety and success be considered on a par with the more ancient plan.

The proportion of deaths to recoveries in these operations was always considerable, and amounts, even in the practice of the most accomplished surgeons of the present day, to the ratio of *one in seven*.

In the Norfolk and Norwich Hospital,

where, from the number of cases, the surgeons have always been celebrated for their skill in lithotomy, the proportion has been but a little more favourable.

During a period of 44 years, from 1772 to 1816, five hundred and six persons were cut for stone in that hospital; out of these, seventy died, being a proportion of *one to seven and a quarter*.

In the practice of Mr. Chesselden, the most successful lithotomist of his time, out of 213 cases which he treated in St. Thomas's Hospital, 20 died, being a proportion of nearly one in ten.

Mr. Lynn, senior surgeon of the Westminster Hospital, who for coolness and dexterity as an operator has never been surpassed, informed me the other day, that at the commencement of his professional career, he performed thirty operations successively without losing a patient; but immediately afterwards he had a series of seven fatal cases. He also acquainted me that the average of fatality in *his* practice, during 50 years, has been one in eight.

From these statements it will be evident that lithotomy, under the most favourable circumstances, is rather an appalling remedy; and it is not surprising that patients should rather continue to bear all the anguish of their actual sufferings than resort to such a perilous alternative. Singular instances of long suffering, arising from the repugnance of patients to submit to lithotomy, are on record. One very striking example it may not be amiss to allude to, as affording a very apposite illustration. A baronet residing in one of the midland counties, suffered from this disease for a period of fifty years. The stone grew to such a size as to fill the whole bladder; the ureters or conduits coming from the kidneys became distended into reservoirs, and when the patient wanted to relieve himself of their contents, he was obliged to rest his head on the ground, and raise his pelvis to the utmost extent of his lower limbs. He ultimately submitted to lithotomy, and the perineal operation was performed by the late Mr. Cline. As much of the substance of the stone as would fill a breakfast cup was scooped away; but the patient derived no material relief, and died soon after.

No means of removing this fearful malady less severe than that described, was resorted to during a long series of years, though many speculative plans were probably entertained. Mr. Edwards here gave a general history of the origin of the lithontriptic art, alluding to the labours of Leroy, Civiale, and several others, of which accounts have already appeared in this Journal. Mr. Edwards also minutely described the routine of practice adopted by the continental lithotritists, and pointed out its various

defects. He then enlarged upon the plan of treatment established by Baron Heurteloup. He observed, that in contemplating the performance of this operation, two subjects pressed particularly upon the attention of the surgeon. First, the bearings and condition of the bladder, the chamber in which he is to work. Secondly, the nature and properties of the calculi which are the objects of our search.

The lecturer apologized to the audience for alluding to anatomical points, and gave a general description of the relations of the bladder in health, and its modifications by disease. It was not to be supposed that a concretion could go on accumulating in the bladder without deranging its health; and it was a pretty general rule that the larger the stone the more contracted was the bladder, and it not unfrequently happened that the relative magnitude was so much altered, that the one could not be turned in the other. In some cases the organ was irritable and spasmodic, presenting a partial hypertrophy, or thickening of its muscular fibres. At other times it was perfectly helpless and paralytic.

The second subject related to the nature and position of the stone. Chemists have classified these bodies according to their constitution; but these relations, though highly interesting in themselves, are of secondary importance to the lithontrist, except in so far as they tend to modify their mechanical properties. In nine cases out of ten calculi are composed of uric acid, or the triple phosphates, or of both. Simple uric acid calculi are shown by the experience of lithontrists to be smooth on the surface, laminated in texture, frangible, and generally flat. Those consisting of ammonio-magnesian phosphate, are hard, compact, crystallized on the surface, and spheroidal. The calculi formed by a combination of these constituents, tend to flatness, or sphericity, according to the predominating ingredient. Of the other urinary concretions, the bone-earth and the oxalate of limestones are generally spheroidal. The first is easily broken, but the last is more cohesive. Calculi of other kinds occasionally infest the human bladder, but they are so rare, and generally so small, as to occasion little trouble to the operator. It is sufficient for the purpose of the lithontritic surgeon to distinguish these bodies into three classes, the *spherical*, the *oval*, and the *flat*; for it is principally in respect to form and size that they influence his manipulation.

The position of all moveable stones is chiefly determined by their gravitation, unless when they are held by a convulsive action of any part of the organ. When the patient is erect, they are in the *bas-fond*, or

pouch. When he expels his water they are impelled into the neck, and, in short, their place is generally influenced by the posture of the patient. Spheroidal stones are usually moveable, but those that are flat and oval are most commonly fixed in the *bas-fond*, and not unfrequently held against the prostate gland by a morbid contraction. Occasionally the stone escapes into a herniary sac, and then it ceases to annoy the patient, as in the celebrated case treated by Mrs. Stevens.

Mr. Edwards proceeded to make some observations on the proper position of the patient, and alluded to the rectangle bed, and *point-fixé* of Baron Heurteloup. He stated that the process of the operation might be conveniently divided into the following stages. First, the injection of the bladder. Second, the exploration of that organ and its contents. Third, the seizure of the stone. Fourth, its destruction. Fifth, the removal of the resulting fragments and molecules. Some german observations were here made touching certain prejudices that prevail on the subject of the bladder. The application of sudden force in the interior of so delicate an organ was long considered as utterly impracticable; and all that anatomists could bring themselves to contemplate was, the exertion of a regulated friction upon the calculus. The intimate acquaintance, however, recently acquired as to the structure and use of these parts, has led to the adoption of highly energetic measures.

A description was next given, seriatim, of all the instruments employed in the lithontritic process. Their construction was explained, and mode of action illustrated. In this way were brought under review, the recto-curved catheter, the surgical syringe, the *perce-pierre*, the *trois-branches à virgule*, the *evideur à forceps*, the perforator, the *crête de coq*, the *percuteur droit*, the *pince-servante*, the *brise-coque*, the *percuteur courbe à marteau*, and the *sonde évacuatrice*, of all of which the *modus operandi* has been explained in this journal.

In conclusion the lecturer observed, it was remarkable so little success should have attended the endeavours of surgeons generally in this branch of their profession, and then proceeded thus:—

An examination into the causes of their failure would form an interesting subject of inquiry. That it is not due to any want of ability is evident from the eminence of those who have made unsuccessful attempts. To prove this we need only mention the names of Dupuytren, Roux, and Lallement, who are amongst the most able surgeons in Europe. If I might presume to form an opinion on the subject, I would suggest, that their failure was due to two causes. First, the

peculiar habits induced by surgical manipulations; second, a want of acquaintance with the condition of the living bladder, especially whilst influenced by the presence of calculi.

There is nothing singular in the dependence on the touch only which is observed in lithontritic operations; for the obstetric surgeon, in his manœuvres, is equally deprived of the assistance of sight. Indeed the education of the touch generally, is a subject of so much importance in the practice of surgery, that a power of discrimination through this sense has been termed the *tactus eruditus*. The manipulation of these instruments, therefore, out of sight, is a task that may be easily mastered.

There is this peculiarity in almost all surgical instruments, that they have no moving property, except what they derive from the hand of the surgeon. The knife and the forceps move in exact obedience to his volition, and produce an effect no greater or less than that which he meditates. The importance of this circumstance may be conceived, when a tissue as fine as a spider's web under the knife, is the difference between life and death to the patient. The intervention of elasticity, or any other eccentric mobile property, would materially increase the difficulties of the case. The surgeon's hand is, therefore, not prepared immediately to adapt itself to these secondary properties. The difficulty in manœuvring lithontritic instruments appears to me to arise, if difficulty exist from their possessing this property of elasticity. A mechanic would probably find less difficulty in their management than a surgeon. The knowledge of the anatomy of the bladder is usually derived from an examination of the dead organ. In the usual mode of showing this organ, it is distended to the utmost, and consequently but one of its relations with the surrounding parts is exhibited. In the living state, since the sides of the organ exactly adapt themselves to its contents, its shape must constantly vary according to the quantity of fluid it contains. While the organ is empty, it forms a disk applied on the posterior aspect of the pubic bone, and presents a concavity in that view. As it enlarges, its form varies according to certain laws, which it is beside my purpose to specify.

That rash attempts with these apparently complicate instruments, without preliminary practice, or a clear conception of the field of action, should have been unsuccessful, cannot excite surprise.

At the conclusion of the lecture, Mr. Faraday came forward and made the usual address on the conclusion of the season. He stated, that in consequence of the want

of patronage* the publication of the Journal of the Institution had been abandoned. In other respects, he was happy to say the institution was in a flourishing condition.

The business of the evening was concluded at the request of Mr. Edwards, by a demonstration of the action of the lithontritic instruments upon real calculi, in which BARON HEURTELoup exhibited such tact and dexterity.

ST. GEORGE'S HOSPITAL.

CLINICAL REMARKS

MADE BY

MR. BRODIE.

May 31, 1832.

ABSCESS IN THE MEATUS AUDITORIUS.

A MAN was admitted with this abscess, arising from disease of the bone which had been caused by a blow, and a poultice has been applied to the part. Mr. Brodie said, that such an abscess frequently arose from disease of the bone, and that disorganization frequently went on to a very great extent; matter was formed between the dura mater and the bone; the membranes of the brain became inflamed, and death was the result. "I once attended a young gentleman," continued Mr. Brodie, "who had always been from his earliest youth remarkably dull and listless. He had a discharge from the ear, and as long as that discharge continued things went on very well. This discharge, however, one day stopped; he died very soon afterwards; and on examining his body after death, an abscess as large as an orange was found in one of the lobes of the cerebrum, and a small aperture through the temporal bone, leading to the meatus auditorius internus, was also discovered, through which the matter had been discharged. This aperture had been stopped up, and the patient had died from the collection of matter pressing upon the brain. But such cases as this are rare; one, however, somewhat similar to it has been in the hospital under the care of Mr. Hawkins; and after death abscess in the brain was discovered."

25. Mr. Brodie examined this patient again to-day; and after probing the meatus externus, to discover if there were any dead bone, and where it was situated, he found he could not detect any; and said that

* We marvel at the use of such a word, on such an occasion, by Mr. Faraday. He should have said, "in consequence of the want of sense displayed by the public."—ED. L.