

The

# Rise of a specialty

Marking 100 years of the Royal Society  
of Medicine's Urology Section



**Free admission**

10 February 2020 - 25 April 2020



The Library, first floor,  
Royal Society of Medicine,  
1 Wimpole Street, London





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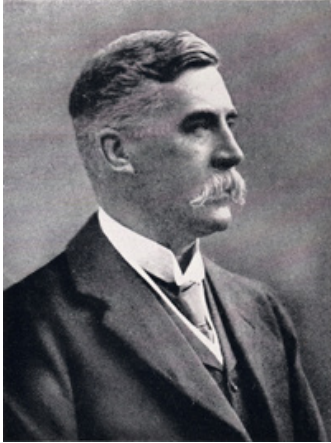


The founding of the RSM Urology Section 100 years ago this year was crucial to the establishment of urology as a specialty in its own right.

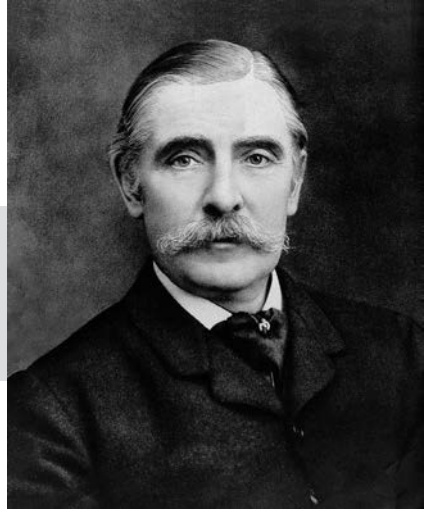
To mark this anniversary, the library of the RSM have curated this exhibition, named ***The Rise of a Specialty***.

It features items from the Society's archive, a selection of historical urological instruments, and works from the Society's library from John of Gaddesden in the 15th century to the major innovators in urology and urological surgery of the 18th, 19th, and 20th centuries.

# Introduction



◀  
Edwin Hurry  
Fenwick



▶  
Sir Francis  
Champneys

Edwin Hurry Fenwick (1856 – 1944), joint President of the International Association of Urology, which held its second Congress in London in 1911, was the prime mover in a campaign to create a Section of Urology at the Royal Society of Medicine.

In an exchange of letters, written in May and June 1913, with the Society's President, Sir Francis Champneys, Fenwick argued that *“such a step, if undertaken with tactfulness and zeal, would help to diffuse the great advance in the knowledge gained in the last decade by Urologists more rapidly and more effectually than the proposed Congress would.”* Modestly declaring his own opinion as *“nothing,”* Fenwick proposed writing to the 28 Members of the British Section of the International Society of Urology to ask their opinion on the matter.

Fenwick wrote: *“It is right, I think, to get this consensus, for Urology has not just sprung into being. It has a strong organisation in 28 countries and a code of ethics of its own to prevent a genital section from stopping real progress.”* It had already been suggested to Fenwick that Urology should form a sub-section of the Section of Surgery, but Fenwick considered a sub-section to be a misnomer. *“Urology is far from being merely a subsection of Surgery. For instance, the modern work on the Nephritides has imported into the work good men in Medicine, Gynaecology, Bacteriology, Radiology – even diseases of Children.”* His letter closes by asking: ***“Is there any reason why Urology should not be a Section?”***

## ***“Is there any reason why Urology should not be a Section?”***

Champneys' reply acknowledges how much Urology, *“from my own experience”* is *“linked up with gynaecology, and how much I have to depend upon the help of Urologists. Indeed it is this experience which made me suggest the formation of a Sub-Section.”*

He answers Fenwick's question as to why the RSM should not have a Section of Urology by saying that the "*principal objection is that I am sure that the proposal would not be carried*" but describes Urology as "*a modern and rapidly developing Department, the future relations of which no one can at present foresee.*"

Fenwick delayed replying to Champneys until he had "*obtained the views of the majority of the British Section of the International Society of Urology about it.*" Fenwick reported that the majority of those who had answered "*do not feel inclined to devote their time & experience to a Sub-section, though they all express their willingness to be active in furthering the interest & the work of a Section.*"

In the 1913/14 session of the Society papers on ureteral calculi and the kinked ureter were presented at meetings of the Surgical Section and published as part of that Section's Proceedings. The matter rested throughout the 1914 – 1918 War and it was not until 1920 that Urology re-emerged as a full Section of the Royal Society of Medicine.

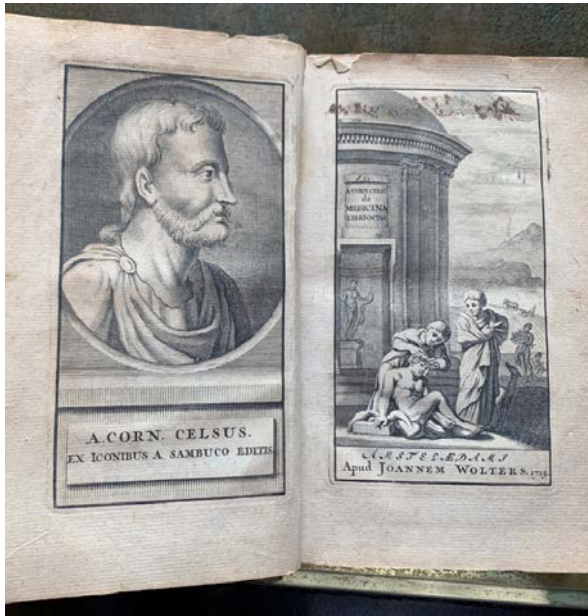
The inaugural meeting of the Section of Urology was held on May 27th, 1920. The Section's first President was Sir Peter Freyer. In his Presidential address, Freyer congratulated the Section members on the formation of the Section. He went on to say: "*As you are aware, when we approached the Council with the proposal to establish a urological branch within the Society our pretensions were of a very modest character, for the proposal was to found a Sub-section of Urology in the Surgical Section. It came as a pleasing surprise to us to have greatness thrust upon us, in the formation of a distinct Section of the Society. Perhaps I may be permitted to say that this recognition marks a distinct and healthy advance in the attitude of the surgical world in England, and particularly in London, which till recently looked askance at the idea of urology being a distinct specialty, though this specialty has long been recognized in, I may say, every other country.*" The subject of Freyer's address was Modern Progress in Urinary Surgery. He concluded by saying:

***"I hope that many of the members of the Section will live to look back on still greater achievements in urinary surgery. I believe that the formation of this Section, by creating a healthy and friendly rivalry in your efforts, and by co-ordinating your work, will have a vast and favourable influence in continuing the progress of recent years."***

A full account of the history of the Urology Section can be found in Penelope Hunting's History of the Royal Society of Medicine. London, Royal Society of Medicine Press, 2002.

*The early days of the Royal Society of Medicine at 1 Wimpole street*





Illustrations from *De Medicina*, including one of Aulus Cornelius Celsus

## Aulus Cornelius Celsus (25BC - 40AD)

Cornelii Celsi De medicina liber.

Florentiae : A Nicolao impressus, 1478.

Librarian's Room 38

The most famous description of the early method of perineal lithotomy was by the Roman encyclopaedist Cornelius Celsus in his 'De Medicina'. In fact this description was so famous the operation is called the Celsian method. It is also known as the 'Apparatus Minor', the 'Lesser Operation' or the old English term, 'Cutting on the Gripe'.

The description is as follows:

*"A strong and intelligent person being seated on a high stool, lays hold of the patient in a supine posture, with his back towards him, and his hips being placed on his knees, with his legs drawn backwards he orders the patient to seize his own hams with his hands, and to draw them towards his body with all his power, and at the same time he secures them in that position. Then the physician, having carefully pared his nails, introduces his index and middle fingers of the left hand, first the one gently, afterwards the other into the anus, and places the finger of his right hand lightly on the lower part of the abdomen.*

*First of all the stone must be sought for about the neck of the bladder and when it has been brought into that position a lunated incision must be made through the integuments immediately over and extending to the neck of the bladder near the anus, with the horns a little inclined towards the ischia; then a second incision is to be made in the transverse form in the convex part of the wound so as to open the neck of the bladder. The stone is then extracted by finger or hook."*

As you can see, all you need is your fingers and a knife and perhaps a hook, hence the name 'Apparatus Minor'. This technique was only recommended for young boys because, as you can imagine, the prostate would get somewhat in the way in an adult man. Obviously, with no alternative method available this technique must have been used on adults; the outcome was often catastrophic haemorrhage, sepsis and death, or incontinence, impotence and fistulae for the lucky few survivors.



A page from John of Gaddesden's *Rosa Medicinæ*, a 14th century work

## John of Gaddesden

*Rosa Anglica practica medicine a capite ad pedes.*

Papie [Pavia : Joannesantonius Birreta im] pressioni tradidit, 1492 die 24 Januarij. Librarian's Room 37

The first textbook of medicine by an Englishman, who was the 'doctour of phisik' in Chaucer's *Canterbury Tales* and physician to Edward II, gives an insight into medical history and medieval life, of the remedies then applied, and the prevailing vanities and superstitions of the time. It is commonly referred to as the *Rosa Anglica*. John describes how to perform a lithotomy "once all palliative measures are exhausted". He goes on to describe the process step by step. The method is similar to the Celsian method with an alternative incision given. We believe that John's description of lithotomy is the first by an English trained doctor. In the early English text, the Saxon Leechbook of Bald c900, no reference to cutting for the stone is given. A little later John of Ardene c1390 writes of urethral stone surgery but not lithotomy. It is unclear if Gaddesden ever performed lithotomy but he gives references to his stone patients.

## John Douglas, d.1743

*Lithotomia Douglassiana ; or, A new method of cutting for the stone.*

London : C. Rivington, 1723.

Marcus Beck Library

Tract D.161(6)

In 1720, John Douglas (c.1690 - 1743), a surgeon living and working in London, published a book describing a novel technique of removing bladder stones. The book, *Lithotomia Douglassiana* suggested accessing the full bladder via an incision in the lower abdominal wall, a suprapubic cystostomy. Today, this approach is standard for large stones, if a little old fashioned in the face of new technology. In the surgical world of the Eighteenth Century, this was a bold statement tantamount to medical heresy. John Douglas first carried out his high approach to remove a bladder stone on 23rd December 1719. The patient was a boy of sixteen or seventeen. The operation took one minute, the stone was removed and the boy was said to be fully recovered within five weeks. His next attempt was on 12th May 1720, on an eight year-old boy who was well in six weeks. The third patient, a three year-old, was operated on the following August. Sadly, he died fifteen hours post operatively. Douglas described the mode of death as "convulsions." The fourth patient was a boy of fourteen, operated on 23rd March 1721. This time, Douglas accidentally opened the peritoneum. This was the worst fear of the suprapubic approach. Ether anaesthesia was 125 years in the future; surgery prior to this was carried out with no anaesthetic.



◀ Portrait of William Cheselden, who is famous for the invention of the lateral lithotomy approach to removing bladder stones, which he first performed in 1727.



▶ Plate XXXIII of William Cheselden's Osteographia, which depicts the skeleton of a boy about nine years old beside a horse's skull.

## William Cheselden (1688-1752)

A treatise on the high operation for the stone : with XVII. copper-plates.

London : Printed for John Osborn ... , 1723.

Marcus Beck Library

L.6.c.25

The lateral lithotomy of Cheselden

A staff with a groove on the left is passed into the bladder. A left lateral perineal incision is made medial to the left ischial tuberosity. The incision is deepened between the ischio cavernosus and bulbo cavernosus and through transverse perinei. The rectum is held away by the left hand. A cut (from below up to avoid the bowel) is made onto the groove in the staff dividing the urethra and prostate. A gouget is passed into the bladder opening the wound and allowing the stone to be grasped and pulled out.

William Cheselden, of the Middlesex Hospital, London, was one of the most gifted anatomists and surgeons of the time. He experimented with the dissection and mastered the technique that made him probably the best lithotomist of his age. With a mortality rate of 6% in his first 100 patients his fastest time from knife to skin to stone extraction was 54 seconds. This lateral lithotomy was still the technique of choice until the late 19th Century but it is alien to modern urologists.

## Charles Louis Stanilaus Herteloupe

Principles of lithotriety : or, a treatise on the art of extracting the stone without incision.

London : Whittaker, Treacher, and co., 1831.

263.c.26

Baron Charles Louis Stanislas Heurteloup (1793 -1844) was the first person to practice lithotriety in England. In 1829, he set up practice with the support of Anthony White, surgeon to Westminster Hospital. Whilst operating on a clergyman in Sanderstead, Heurteloup decided to strike the end of his lithotrite instead of drilling. He described this "percuteur courbe à marteau" in 1832. To protect the bladder, the patient was positioned on a specially made table (design pictured below) and the lithotrite was stabilised in a vice connected to one end. Once the instrument is in the bladder, the stone is grasped in the jaws (above) and the end of the instrument is hit with a hammer to fragment the stone. Despite the earlier-described crushing lithotrites, Heurteloup's percussor was the most popular in the early years of lithotriety.



## William Coulson (1802- 1877)

On lithotripsy and lithotomy. London : J. Churchill, 1853.  
Based on lectures given at St. Mary's Hospital, most of which  
were published in the Lancet.  
289.g.19

In 1851 Coulson became Senior Surgeon at the newly-established St Mary's Hospital and carried out the first operation to take place there, a lithotomy from the perineal approach on a boy of four years under anaesthesia administered by John Snow.



William Coulson

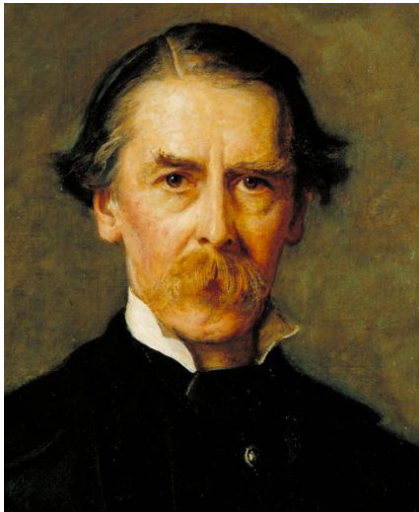
## Sir Henry Thompson (1820 – 1904)

Practical lithotomy and lithotripsy: or, an inquiry into the best modes of removing stone from the bladder.  
London : John Churchill & Sons, 1863. A.10.d.20

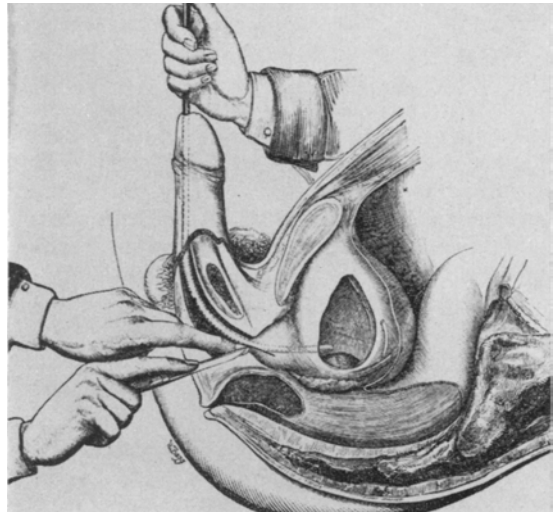
Thompson, Professor of Clinical Surgery at University College, London, was Vice President of the Royal Medical & Chirurgical Society in 1888. His public fame stemmed from his successful lithotripsy of Leopold, King of the Belgians' bladder stone in 1863. Thompson was called in for his opinion after both Civiale and Langenbeck had failed to rid the king of his stone.

He was later called upon to treat the bladder stone of Napoleon III of France. He passed his lithotrite on 2 January 1873 and again on the 6th. Unfortunately the Emperor died on the 9th of chronic obstructive uropathy and urosepsis. Although this procedure was unsuccessful, Thompson's reputation remained intact. Thompson however, was much more than a urologist or even a surgeon. Sir Henry Thompson's interests were broad and varied and ranged from poultry farming, painting and astronomy to the collecting of rare porcelain. He was winner of two Jacksonian prizes for essays on stricture and the prostate and, in 1862, gave the Lettsomian lectures on the subject of "*Practical Lithotomy and Lithotripsy*".

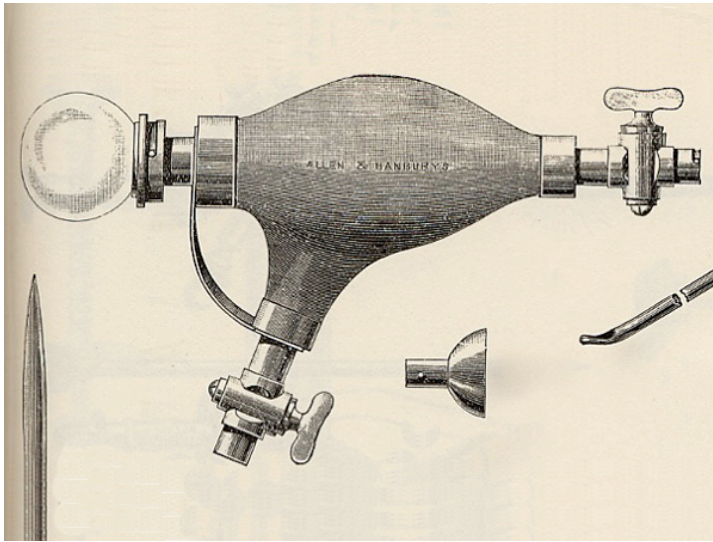
Thompson was particularly adept at passing instruments urethrally and championed per-urethral lithotripsy against open stone surgery. In 1847 Thompson travelled to France to be elected as a member of the Société de la Chirurgie and, at that time, was taught the technique of lithotripsy by Civiale himself.



Portrait of Sir Henry Thompson, painted in 1881



The anatomy of lateral lithotomy (Sir Henry Thompson).



*Diagram of the Bigelow evacuator, a vital part of Henry Jacob Bigelow's new operation of litholapaxy.*

## Henry J. Bigelow (1818 – 1890)

Litholapaxy : or, rapid lithotrity with evacuation.

Boston : A. Williams ; New York : Wm. Wood, 1878. A.2.b.5

The Bigelow evacuator was a vital part of Henry Jacob Bigelow's new operation of litholapaxy. For the first time, Bigelow showed that the operation of blind litholapaxy (breaking up a bladder stone with a instrument passed along the urethra, without actually looking into the bladder) could be carried out in a single sitting. The evacuator was used to wash out all the stone fragments via a Bigelow evacuating catheter.

## Sir Peter Johnston Freyer (1852 – 1921)

Litholapaxy (modern lithotrity). One hundred and eleven cases.

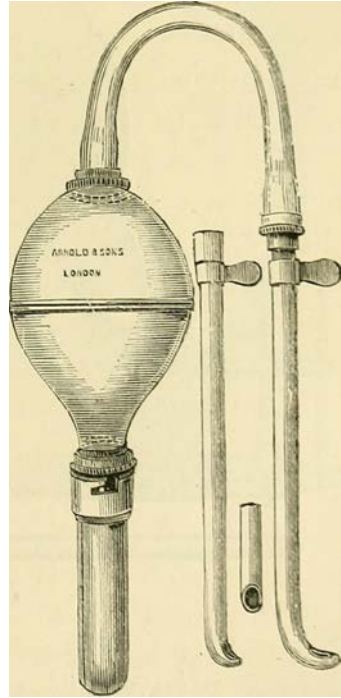
Calcutta : Thacker, Spink & Co., 1885. Reprinted from: Lancet, London, 1885, i.

Tract 4000

In 1872 Freyer obtained a first class honours degree, winning the gold medal. He then studied medicine for another two years, being a resident pupil at Dr Steven's Hospital in Dublin. He won another gold medal when conferred with his MD in 1874. He came first in the competitive examination for a commission as a medical officer in the Indian Medical Service travelling to India as acting civil surgeon at Azamgarh in 1877. In India, Freyer became proficient in operating on bladder stone and, while based at Moradabad, attended the Nawab of Rampur, crushing his stone with a lithotrite. In gratitude for his services, the Nawab gave Freyer a lakh (100,000) of rupees, equivalent to £6,600. This caused trouble with his superiors and he subsequently returned to England to set up a private practice at 46 Harley Street where he rapidly established a reputation as a surgeon specializing in the treatment of urinary problems. In particular he became renowned for his treatment of stone. In 598 cases of transurethral litholapaxy his mortality was 1.84%, compared with a mortality of 12.5% for open lithotomy that was common at the time. He was elected to the staff of St Peter's Hospital for Stone in 1897. In December 1900, he first performed a total extirpation of the prostate using a transvesical method at St Peter's Hospital. Although he was not the first to do this, he certainly popularised this procedure. In 1912, he published his first 1000 cases in the BMJ. Remarkably, he only had a mortality of 3% in his last 200 cases. He was made a Knight Commander of the Order of Bath in 1917. In 1920, he was elected the first president of the Royal Society of Medicine Section of Urology.



*Photograph of sir Peter Johnston Freyer, taken in 1917.*



*Instrument used in the treatment of stone in the bladder by litholapaxy.*

**Sir Peter Johnston Freyer (1852 – 1921)**

The modern treatment of stone in the bladder by litholapaxy; a description of the operation and instruments, with cases illustrative of the difficulties and complications met with.

London : Churchill, 1886. 252.f.46

**Sir Peter Johnston Freyer (1852 – 1921)**

The Modern treatment of stone in the bladder by litholapaxy : a description of the operation and instruments, with cases illustrative of the difficulties and complications met with.

2nd edition. London : Baillière, Tindall & Cox, 1896. 294.g.17

**Sir Peter Johnston Freyer (1852 – 1921)**

Clinical lectures on stricture of the urethra and enlargement of the prostate.

London : Baillière, Tindall and Cox, 1901.

Reprinted from the Lancet and Clinical journal. 616.6 FRE

**Sir Peter Johnston Freyer (1852 – 1921)**

Clinical lectures on stricture of the urethra and enlargement of the prostate.

2nd edition. London : Baillière, Tindall and Cox, 1902.

Reprinted from the Lancet, Clinical journal and British medical journal.

616.6 FRE

**Sir Peter Johnston Freyer (1852 – 1921)**

A further series of 57 cases of total extirpation of the prostate for radical cure of enlargement of that organ : being a paper read in the section of surgery, annual meeting of the British Medical Association, Oxford, July, 1904. [London, 1904]

Reprinted from the British Medical Journal, October 29, 1904. Tract 4377

**Sir Peter Johnston Freyer (1852 – 1921)**

110 cases of total enucleation of the prostate for radical cure of enlargement of that organ. [London, 1904]. Reprinted from the Lancet, July 23, 1904.  
Tract 4376

**Sir Peter Johnston Freyer (1852 – 1921)**

Total enucleation of the prostate in advanced old age. [London, 1905]. Reprinted from the Lancet, Feb. 25, 1905.  
Tract 3935

**Sir Peter Johnston Freyer (1852 – 1921)**

Clinical lectures on enlargement of the prostate; with a description of the author's operations of total enucleation of the organ. 3d edition. London : Baillière, Tindall & Cox, 1906.  
616.65-007.61 FRE

**Sir Peter Johnston Freyer (1852 – 1921)**

Clinical lectures on the surgical diseases of the urinary organs. London : Baillière, Tindall and Cox, 1908.  
616.6-089 FRE

**Sir Peter Johnston Freyer (1852 – 1921)**

An address on cancer of the prostate delivered before the Nottingham Medw-Chirurgurgical Society on December 4 1913. Reprinted from The Lancet December 13 1913.  
Tract 5314

**Sir Peter Johnston Freyer (1852 – 1921)**

A case of hydrophobia eighteen months after infection. [London, 1919]  
Reprinted from the 'British Medical Journal', June 28, 1919.  
Tract 6441 and Tract 6442

**Sir Peter Johnston Freyer (1852 – 1921)**

Clinical lectures on enlargement of the prostate with a description of the author's operation of total enucleation of the organ. 5th edition, London, Bailliere, Tindall, and Cox, 1920  
616.65-007.61 FRE

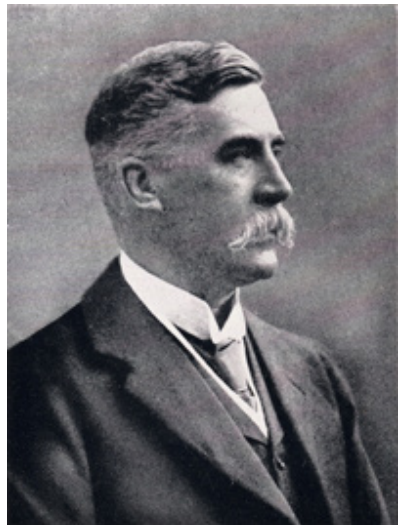
## **Edwin Hurry Fenwick (1856 – 1944)**

Tumours of the bladder; their pathology, diagnosis, and treatment. Being the Jacksonian prize essay of 1887, rewritten, with 200 additional cases. London : Churchill, 1897. 222.e.20

A consultant surgeon at the London and St Peter's Hospitals, he also contributed greatly to the formation of urology as a specialty in Great Britain. Fenwick was elected joint president of the International Society of Urology and chaired its second meeting in London in 1911. Fenwick served as a Lieutenant Colonel in the RAMC during the First World War, commanding the Bethnal Green Military Hospital.

**Edwin Hurry Fenwick (1856 – 1944)**

The electric illumination of the bladder and urethra as a means of diagnosis of obscure vesico-urethral diseases. London, 1888. 248.b.23



*Edwin Hurry Fenwick*



*Sir Henry Morris supported Sir William Osler in the founding of The History of Medicine Society at The Royal Society of Medicine, London in 1912*

## **Sir Henry Morris (1844 - 1926)**

Surgical diseases of the kidney and ureter including injuries, malformations and misplacements.

London and New York, etc., Cassell & co., [1901] 616.6 MOR  
Morris was second President of the RSM, and was educated at Epsom College and University College London. Thereafter, he gained his medical degree at Guy's Hospital London where he worked as a House Surgeon and Resident Medical Officer. His surgical career began in 1870 at The Middlesex Hospital. At a very early stage in his career, Morris developed an interest in cancer surgery and the Cancer Department at the Middlesex Hospital was formed during his tenure. As a result of his interest in cancer, he founded a research institution specifically to investigate cancer treatment; this came about at a meeting in his house and that institution eventually became Cancer Research UK. Morris's greatest claim to fame, however, came as a Lecturer in Anatomy at the Middlesex Hospital. He wrote several books on anatomy during this time and had a particular interest in joints and articulations.

In 1880 a domestic servant, aged 19, was diagnosed with a stone in an undilated kidney, the diagnosis being made from the signs of pain and hæmaturia only. Morris removed the stone on 22 October 1880, and the case was reported as the first planned operation of its kind in the UK. The patient made a complete recovery. This enhanced his reputation, and gave him the opportunity to publish a number of books on urology. For a time, he was a leading authority on urology, but the arrival of X-rays and cystoscopy made his clinical expertise secondary to more accurate investigations.

## **John Swift Joly (1876 – 1944)**

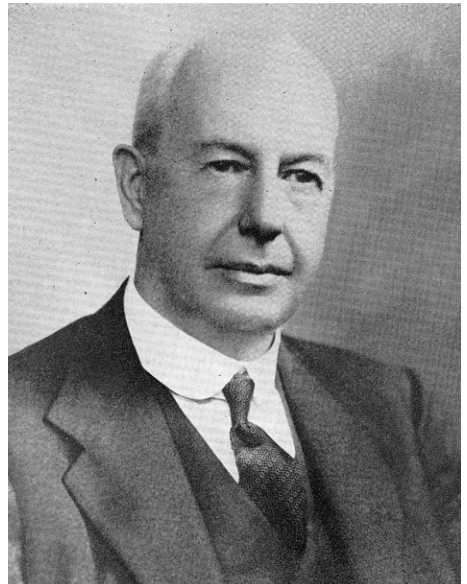
Stone and calculous disease of the urinary organs.  
London : W. Heinemann Ltd., 1929. 616.62-003.7 JOL

Joly studied at Berne and Vienna and then in London, being appointed Assistant Surgeon at St Peter's Hospital for Stone and later senior surgeon following Sir John Thompson-Walker.

He served as a major in the RAMC in Egypt and Palestine during the First World War and was later Consulting Urologist to the Navy.

He was particularly interested in stone disease, this being the subject of his presidential address to the Royal Society of Medicine Section of Urology and the theme of his famous 1929 book, "*Stone and Calculous Diseases of the Urinary Organs*".

According to Cuthbert Duke, who wrote his obituary, Swift Joly often jokingly signed his letters "*Yours in haste*", yet he never seemed to be in a hurry, always radiating confidence and tranquility. He described a new posterior urethroscope in 1922 and an abdominal ring retractor (with modifications now known as the Turner-Warwick retractor).



*John Swift Joly*



*Horace Powell Winsbury-White*

## **Horace Powell Winsbury-White (1889 – 1962)**

Stone in the urinary tract. 1929

616.62-003.7 WHI

Winsbury-White was Resident Surgical Officer at St Peter's Hospital for Stone and, in 1925, was appointed to the staff of St Paul's Hospital for Urological and Skin Diseases. He was later surgeon to St Peter's, St Paul's & St Philip's Hospitals (The Three "P's"). Hunterian Professor at the Royal College of Surgeons in 1925 and in 1933, and was President of the Royal Society of Medicine Section of Urology in 1938.

On the foundation of The Institute of Urology, in 1947, Winsbury-White was appointed to the academic board. With Frank Kidd, Winsbury-White founded the British Journal of Urology in 1929. He also edited (with JD Fergusson) the "Textbook of Genito-Urinary Surgery". This was published in 1948 despite all the material for the book being ready in 1941 when it was destroyed at the publishers by an air raid.



*Cuthbert Esquire Dukes*

## **Cuthbert Esquire Dukes (1890 – 1977)**

Urine examination and clinical interpretation. London, New York [etc.] : Oxford University Press, 1939. 616.63-07 DUK

He became President of the Royal Society of Medicine Section of Urology in 1957. He was also president of the sections of Proctology and the History of Medicine and was made an Honorary Fellow of the Society in 1974. He was awarded an Honorary Fellowship of the Royal College of Surgeons in 1950. Dukes was also President of the Association of Clinical Pathologists in 1952.

He is perhaps most well known for the Dukes classification of Cancer of the Rectum but he was also very active in the field of Urology. In 1929 he was appointed to St Peter's Hospital for Genito-Urinary Diseases and in 1939 published a book the Examination and Interpretation of the Urine. Following his research on cancer of the prostate and bladder he provided a well-used classification for both these diseases. He designed an apparatus for drainage of the bladder which was in general use between the Wars.



*Terence Millin*

## **Terence Millin (1903 – 1980)**

Retropubic urinary surgery.  
Edinburgh : E. & S. Livingstone, 1947.  
616.65-089 MIL

Millin was senior house surgeon at the General Hospital in Northampton and assistant surgeon at Sir Patrick Dun's Hospital in Dublin. He then went to London and specialised in genitourinary surgery.

Millin became an expert and proponent of transurethral resection of the prostate but, in 1945, published his paper in *The Lancet* that introduced the retropubic approach to prostatectomy. This differed from the usual transvesical approach popularised by Sir Peter Freyer.

Terence Millin served as President of British Association of Urological Surgeons (from 1953 - 55), was awarded the St Peter's Medal, held honorary fellowships of the American and the Royal Australasian Colleges of Surgeons, was the first honorary member of the Irish Society of Urology and was an honorary member of the the Royal Society of Medicine Section of Urology.

## **James Gordon Gow, Harold H. Hopkins; with contributions by D. M. Wallace and A. G. England**

Edinburgh ; New York : Churchill Livingstone, 1978.

James Gordon Gow (1917 – 2001), a urologist from Liverpool and a keen amateur photographer, was frustrated by his inability to photograph bladder tumours via the cystoscope. He saw that the problem was insufficient light and so, in search of a solution, he contacted the physics department at Liverpool University. They suggested he contact the optical physicist Harold Hopkins (1918-1994). Gow obtained a grant of £3000 from the Medical Research Council and persuaded the initially reluctant Hopkins to assist him. Hopkins began to take apart cystoscopes and to look at the problem of light transmission. He found that to take a colour photograph with a 1/60th second exposure, the light intensity traveling to the camera would have to be increased by a factor of 50 times. Light travels better through glass than through air, so Hopkins swapped around the array of glass relay lenses and air spaces in the cystoscope in such a way that long glass rods replaced the air spaces and lens-shaped air gaps. A prototype of this new cystoscopic camera increased light intensity by four times and was demonstrated at the 1959 annual meeting of the British Association of Urologic Surgeons. An antireflective coating was applied to the glass lenses as a proportion of light was reflected back from each lens instead of passing through it.

The combined innovations made by Hopkins increased the light reaching Gow's camera by 80 times. In 1965, after having failed to find a British cystoscope manufacturer to take on the new prototype, Hopkins was approached by the precision instrument manufacturer Karl Storz who expressed an interest in the rod lens system. In 1960 Storz had developed a cystoscope with a cold light source reflecting very bright light from an external source via a fibre optic cable replacing the miniature electric bulbs placed on the end of scopes and which were fragile and emitted heat. Combining Hopkins' design and Storz's skills in instrument-making and his cold light system, the Rod Lens Cystoscope was launched in 1967, thus revolutionising endoscopy and urology. Excellent photographs were produced by the bright, clear images, and surgeons were able, at last, to view previously inaccessible parts of the human body.

# Special items on loan to the Library



## Freyer Evacuator

Modification of Bigelow's extractor.

The evacuator was designed by Sir Peter Freyer.

It was, basically, a modification of Bigelow's evacuator and was illustrated in many of Freyer's books. The instrument was connected to an evacuation catheter through which the bladder contents were aspirated; the evacuation catheter could be inserted using its obturator.

## Bigelow Lithotrite

Used for Litholapaxy. This type of blind lithotrite was invented in 1878 by Henry Bigelow, an American surgeon. It was bigger than previous blind lithotrites because, in 1872, FN Otis had demonstrated that the male urethra was much larger than previously thought, at 32Ch. Bigelow utilised this information and employed the new chloroform anaesthesia to break bladder stones and wash out the fragments in one sitting. The bulbous handle (pictured right) differs from the wheel type of handle seen in the English blind lithotrite. This new operation was named litholapaxy by his friend, Oliver Wendell Holmes, the American physician and author (from the Greek, λιθος = stone, and λαπαξιν = to crush or wear away). The pieces were washed out using a Bigelow's evacuator.







## Millin's resectoscope

This is a Millin's resectoscope from the 1950s or 1960s. It was manufactured by the Charles F Thackray Instrument Company based in Leeds. It was common for surgeons to alter and adapt instruments and then re-badge them as their own. This resectoscope is Millin's modification of the Stern-Davis-McCarthy and Canny Ryall resectoscopes.

Terence Millin (1903-1980) worked with Edwin Canny Ryall (1865-1934) at All Saints' Hospital in London. Canny Ryall was a pioneer of TURP in Great Britain and trained Millin.

In the Canny Ryall resectoscope, the telescope moved simultaneously with the cutting and coagulating loops during excursion, so they were both under continuous vision. With Millin's instrument, the telescope could either be locked in a fixed position (as in the original McCarthy one) or moved with the cutting or coagulating loop (as in the Canny Ryall instrument). There was also a rotating, two-way irrigating tap and deflector in the beak which placed the loop behind the obstructing tissue before cutting. This particular instrument was used by Mr Richard A Mogg in the Royal Hamadryad Seamen's Hospital in Cardiff, as can be seen from the label on the box. Although the instrument is incorrectly labelled as a McCarthy resectoscope, a little research with an old Thackray catalogue soon clarified the true situation.



## Thompson Lithotrite

Designed by Sir Henry Thompson, the round “wheel” handle is typical. This model is late nineteenth century and was made by the US instrument makers Tieman & Co.



## Nitze Cystoscope

Made by Hennemann of Leibzig, Germany. Very early twentieth century. Labelled on the box lid “Kystoskop von Prof Nitze.” German cystoscopes were commonly used in Great Britain up until the First World War. At that point English makers had quickly to manufacture their own. This led in 1920 to the formation of the famous GU Manufacturing Co. Ltd.

## Lister's Sounds

This is a boxed set of sounds designed by Lord Lister. They have a characteristic “lollipop” handle and “olive” tips. The rounded olive tip was felt to be safer to use when probing urethral strictures, being less likely than a blunt-ended sound to cause a false passage. What we normally refer to as sounds are actually urethral probes or dilators; a sound is actually a solid instrument inserted into the bladder to make a noise (or “sound”) when it touches a stone, hence confirming the diagnosis of a bladder stone.



## Vanity Fair original prints - ‘Men of the Day’



**‘Spy’ print of Sir Henry Thompson**  
Dated 1st August 1874



**‘Spy’ print of Sir William Fergusson**  
Dated 17th December 1870. Fergusson was one of the first to advocate surgery for the obstructing prostate.

Original prints from Vanity Fair magazine. A series of cartoons called, ‘Men of the Day’ The artist is actually ‘Ape’ not ‘Spy’. Ape was the artist Carlo Pellegrini (1839 - 1889).



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