

Historical Exhibition Brochure

# BRITISH PIONEERS OF EUROPEAN UROLOGY



EAU  
History  
Office

  
THE BRITISH ASSOCIATION  
OF UROLOGICAL SURGEONS

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# From Stonecutters to Surgeons

From ancient times specialist surgeons were called upon to carry out perineal lithotomy to remove bladder stones. Hence, urology is known as the oldest surgical specialty. But these stonecutters were separated from surgeons who had undertaken an apprenticeship and then been admitted to a guild or college. They were often looked down upon, and away from large towns and cities were felt to be at best itinerant travelling practitioners, and at worst dangerous quacks.

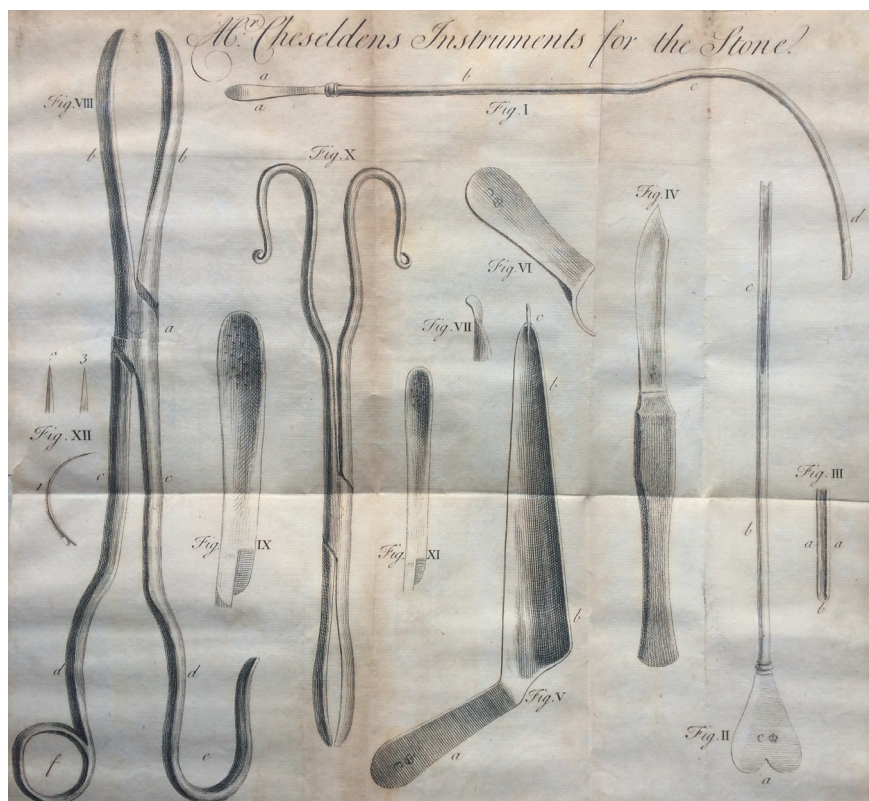
The technique of perineal lithotomy remained unchanged from ancient times until Marianus described a modified more complex technique in the sixteenth century. In the eighteenth century a different technique emerged in Italy, and was popularised in France by Frère Jacques de Beaulieu. Frère Jacques unfortunately typified the unqualified travelling stonecutter.

In the Eighteenth Century William Cheselden, an English surgeon and member of the London-based College of Barber Surgeons travelled to Holland to observe this new technique with Jacobus Rau. Rau had learned it from Frère Jacques but was reluctant to share the surgical details.

Cheselden returned to London and began anatomical studies to determine the exact technique of this new lateral lithotomy. William Cheselden was one of the most gifted anatomists and surgeons of the time. He experimented with the perineal dissection on cadavers 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.

At about the same time James Douglas, a Scottish surgeon and anatomist, was conducting anatomical experiments on the different surgical approaches to the bladder. His brother John, also a surgeon, used this information to show that suprapubic lithotomy was possible and a viable alternative to the perineal procedure. Both Cheselden and the Douglas brothers published their findings thus finally applying science to the dark art of the stonecutter and bringing urology towards acceptance in Britain.

*A selection of William Cheselden's instruments.*

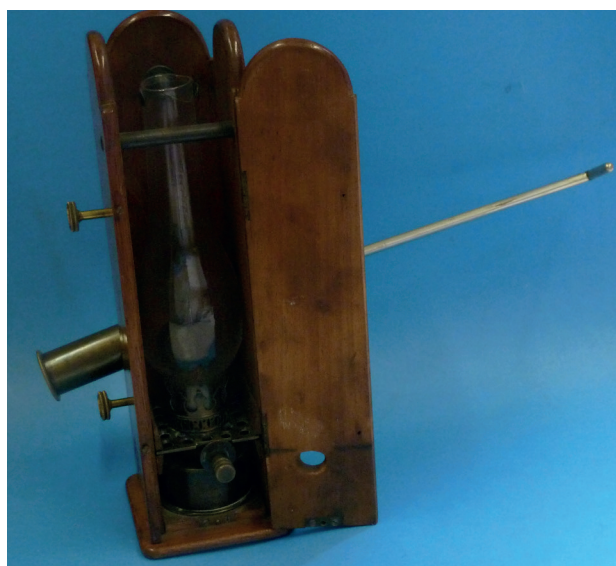
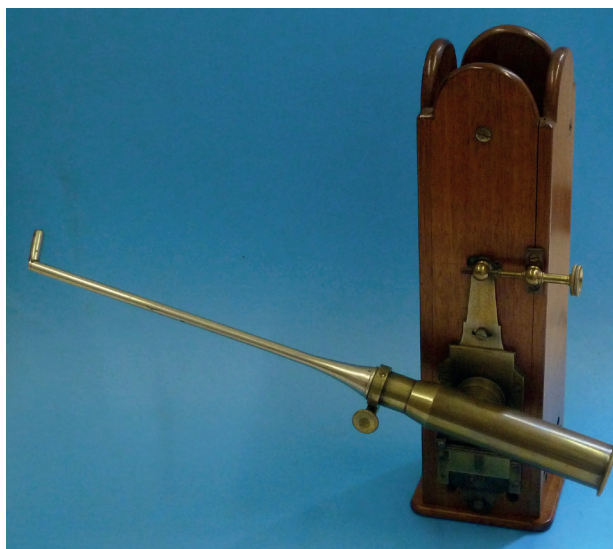
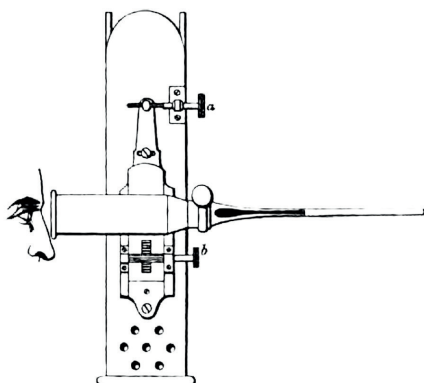


## The Cruise Endoscope

The Cruise Endoscope was designed by Sir Francis Richard Cruise of Dublin in 1865. In 1853, Antonin J Desormeaux (1815–1894) designed an early endoscope using a spirit lamp as a light source. He was the first to use the term 'endoscopy'. Francis Cruise acquired a Desormeaux instrument but was disappointed with its poor illumination. He improved it and on 15 March 1865 presented his version of the endoscope to the Medical Society of the King and Queen's College of Physicians of Dublin.

While Desormeaux used a mixture of alcohol and turpentine to light his scope, Cruise, after some experimentation, found that a petroleum flame was the brightest light source available. The light intensity was further improved by the addition of camphor to the petroleum. He also added a tall glass chimney which helped draw and steady the flame. A mixture of burning petrol and camphor however creates a lot of heat so Cruise encased it in a mahogany box; mahogany being a good insulator. Interestingly he felt that holding a box containing a burning mixture of petrol and camphor was a safe option, although he was comparing it with the alternatives of a burning magnesium wire and limelight (where a jet of oxyhydrogen ignites quicklime).

Using his early endoscope, Cruise was able to see cystitis, stones, trabeculations and bladder tumours. On 4 April 1865 his friend and colleague (and former teacher) Dr Robert McDonnell set Cruise a little test. Into the bladder of a fresh cadaver (via a suprapubic incision) he placed three objects. Cruise correctly identified a brass screw, a bullet and a piece of plaster of Paris (gypsum) with his endoscope. Along with Antonin Desormeaux, Sir Francis Cruise was considered the most successful endoscopist of his time.





## Sir Henry Thompson

Henry Thompson was born in 1820 in Suffolk, the son of a tallow chandler. He died in 1904 a knight and a renowned surgeon famous for his skills in urology even before the specialty developed. A typical Victorian gentleman, his lifespan closely mirrored the years of Victoria's reign (1837-1901).

Thompson seems to have taken an early interest in urological conditions. Interestingly, he heard of and possibly saw the new instruments of Civiale's lithotritry as a boy. Later he was winner of two Jacksonian prizes from the Royal College of Surgeons of England for essays on stricture and the prostate and in 1862 gave the Lettsomian lectures on the subject of "Practical Lithotomy and Lithotritry".

Thompson was particularly adept at passing instruments urethrally and championed per-urethral lithotritry against open stone surgery. In 1847 Thompson travelled to France to be elected as a member of the Société de Chirurgie and at that time was taught the technique of lithotritry by Civiale himself. His public fame stemmed from his successful lithotritry of the bladder stone of Leopold, King of the Belgians in 1863. Thompson was called in for his opinion after both Civiale and Langenbeck had failed to rid the king of his stone.

Thompson was later called upon to treat the bladder stone of Napoleon III of France. He passed his lithotrite on 2nd January 1873 and again on the 6th. Unfortunately the Emperor died on the 9th of chronic obstructive uropathy and urosepsis. Despite this unsuccessful operation Thompson's reputation remained intact.

Thompson was the first well-known British surgeon whose practice was almost entirely urological and along with Cheselden vies for the title of the first British Urologist.



*A "Spy" cartoon of Henry Thompson from Vanity Fair in 1874.*



*A Thompson-style blind lithotrite.*



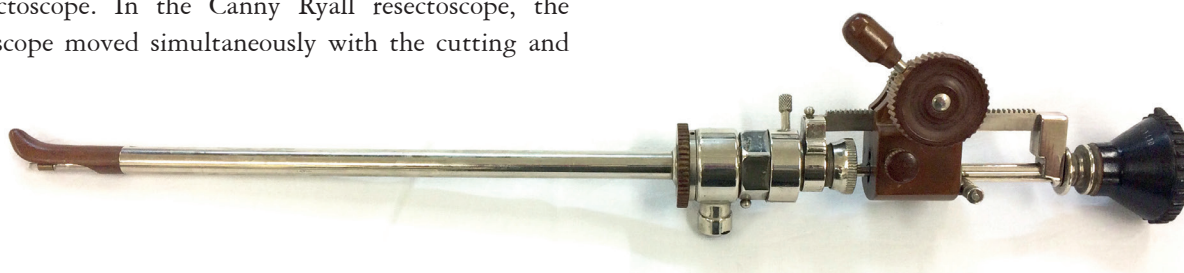
# The Millin Resectoscope

Terrence Millin (1903–1980) was born and trained in Ireland. He subsequently worked with Edwin Canny Ryall (1865–1934) at All Saints Urology Hospital in London. Canny Ryall was a pioneer of TURP in Great Britain and trained Millin. Canny Ryall was a great advocate of transurethral, minimally invasive surgery and had already treated patients by coagulating their prostates with a Collings' electrotome. Following the introduction of the Davies and McCarthy resectoscopes in 1931 Canny Ryall was keen to try them and it is likely that he carried out the first TURP in Great Britain in October of that same year.

It was common for surgeons to adapt new instruments adding their own small changes and modifications. Surgeons often collaborated with favourite instrument companies and the modified instrument took on the name of the (usually well known) surgeon, soon appearing in the company catalogue. Both Canny Ryall and Terrence Millin adapted the Stern-Davis-McCarthy resectoscope. In the Canny Ryall resectoscope, the telescope moved simultaneously with the cutting and

coagulating loops, 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 resectoscope). Also, there was a rotating two-way irrigating tap and deflector in the beak, which placed the loop behind the obstructing tissue before cutting.

However, during the Second World War diathermy equipment became difficult to source, the electrical components being requisitioned by the War Office for use in Radar. Millin began to look into other techniques and in 1946 presented his method of open retropubic enucleation of the prostate. This technique was easier for non urologists without endoscopic skills to perform and it became quickly very popular. Within two years he was able to report 1,700 operations by 16 surgeons with a mortality of 5.3%.



## Resectoscopes

The first resectoscope was designed by Maximilian Stern (1843–1946) of New York in 1926. This allowed him to carry out early transurethral resections of the prostate (TURPs) but the undamped radiofrequency electrical cutting current didn't coagulate well so bleeding was a problem.

In 1931, Theodore Davis (1889–1973), a South Carolina Urologist with a background in electrical engineering, invented his own resectoscope with both cutting and coagulation current diathermy. In the same year Joseph McCarthy (1874–1965) combined Stern's resectoscope, Davis's dual current and his own excellent panendoscope to produce a practical and usable instrument. The Stern-McCarthy resectoscope soon became the choice of urologists worldwide and TURP took off.



# Erectile Dysfunction

Male sexual dysfunction is a unique human disorder because it is not only a non-life-threatening disease, but also bound by cultural, religious and legal issues. You will hardly find any scientific publication on the topic before the 1960s, and if you do, it was probably described or referred to as a psychological disorder!

The first socio-economic epidemiologic study on this theme was published by Kinsey and associates in 1948. Until the mid-20th century the complaints were divided in psychogenic versus organic-related disorders. Around 60% was classified as psychogenic, and if organic it was determined to be related to a hormonal dysfunction.

Soon after the interest in male impotence in the mid-1960s, the problem became cause for more serious investigation. The differentiating diagnosis was made between psychogenic, neurogenic, vascular or hormonal causes.

The relation between drug-induced erectile dysfunction and opium or cytotoxic agents was already known. By the 1970s, the documentation and registration of drug-related origin of impotence became evident. More drug groups like anti-hypertensive medications, diuretics, tranquilizers, antidepressants, H2 antagonists and the anti-cholinergics became associated with male (and also female) sexual dysfunction.

If a person was handicapped after severe trauma of the pelvis, spine or head, it was realized that this accident would influence his sexual "life". After acceptance, no further investigation was done. Since many new diag-

nostic tools came available in neurology and vascular imaging in the latter half of the 20th century, determination followed to which extent the real cause of the damage was responsible for the lack of potency.

This was also investigated after pelvic surgery as prostate operations (not only radical abdominal or perineal prostatectomy), cysto-prostatectomy, vascular bypass surgery for aorto-ileac-femoral artery insufficiency, low anterior resection, proctocolectomy and also damage acquired after radiation therapy in the pelvis and retroperitoneum. Also neuro-surgical head and neck surgery, spine surgery and retroperitoneal lymphnode operations were related to sexual dysfunction and sometimes combined with different forms of incontinence.

By the early 1980s, systemic diseases like arteriosclerosis, diabetes mellitus, arterial hypertension, myocardial infarction, renal failure and liver cirrhosis would be correlated with erectile dysfunction (ED) as the new description of male impotence was given by upcoming multidisciplinary medical societies, dealing with these problems.

*Left: Heyer Schule Penile Implant Size Set. 13 silicone shafts and 1 steel length measure.*

*Right: Erecaid System: UniVac cylinder with manual pump. For smaller types of penis, the system provides two adapters. Including several types of elastic bands: primitive and production type. Note the shape to minimise compression to the urethra and the two "ears" to ease the removal with both hands.*







*Auto-injector Set for Intracavernous Self-injection. Called a “pistol” by many patients, used for Androskat® (Papaverine/Phentolamine) and Caverject® (Prostaglandin E1).*

In the 1970s and 80s many diagnostic tools and investigations were invented, such as the erectiometer, the ambulatory Rigiscan, the cavernosometry and cavernosography. More or less simultaneously with these developments, knowledge was acquired about drugs that could be injected in the corpora cavernosa giving a semi-physiologic erection. After the invention by accident by Dr. R. Virag, vascular surgeon in Paris, France, who as a part of a arterial reconstruction injected Papaverine in the femoral artery and described the persistent erection by backflow during this operation.

Other drugs that would become effective were Phentolamine and Prostaglandin E (Commercially available as CAVERJECT by Upjohn Pharmaceutical). During the 1983 Congress of the Urodynamics Society in Las Vegas, Dr. Brindley surprised the audience by intracavernous injecting himself during his lecture a combination of Papaverine and Phentolamine (commercially available as ANDROSKAT, Byk Pharma), and showed his persistent erection!

These drugs were not only used as a diagnostic tool but became popular as therapy by injection, either by the patient by himself or his partner, sometimes using an injection ‘pistol’! (Auto-injector).

A lot of surgical operations and penile implant procedures were pushed aside by the performance of intracavernous injection therapies, not only by the ease and the less costly solution but also by the numerous reinterventions that became necessary after implant of flexible penile prosthesis.

In the 1970s and 80s these investigations and operations were introduced in most urological clinics, not only in the USA but worldwide. Together with the progressive knowledge about male infertility, so many different medical professionals got interested in this field of male sexual dysfunction that a new specialty was born: **andrology**.

### **Andrology**

Although not all efforts to treat ED were successful, the real breakthrough came in the 1990s with the commercialization of oral drugs like Viagra. A more minor introduction were the intra-urethral applicable medications as the Medicated Urethral System for Erection or “MUSE”. Mr. John Pryor, one of the pioneers and leading professionals in Andrology in the United Kingdom recently donated his collection of artefacts to the EAU. The collection includes many prototypes of penile prosthesis and different tools including also prosthesis and implants related to sperm aspiration (retrieval). They have been proudly showcased at the EAU Central Office in Arnhem, The Netherlands for the past few years. We are pleased to show and explain to you the history of this recent specialty with the help of some parts belonging to the Pryor Collection, as brought back to London for EAU17!

## The EAU History Office at EAU17

### Special Session of the History Office

Saturday, 25 March, 8.30-11.30

Room 9, Capital Suite (Level 3)

This session is divided into two parts. The first part deals with the evolution of British urology, presenting interesting highlights of the long history of urology in the United Kingdom. The second part will discuss some important aspects of urology in Nazi-occupied Europe, as published in the book *Urology Under the Swastika*.

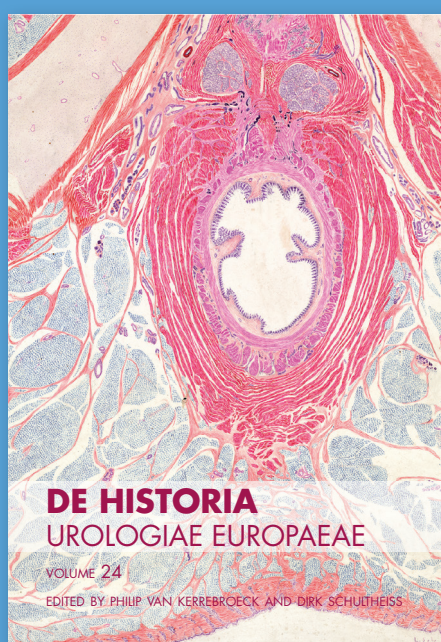
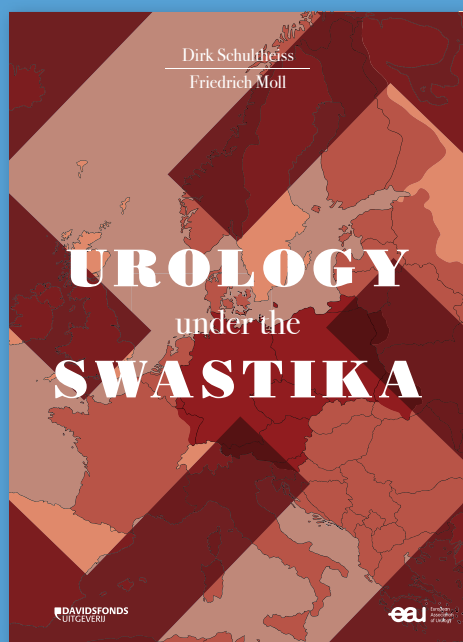
### Poster Session 38: History of Urology

Sunday, 26 March, 12.15-13.45

Room 7, Capital Suite (Level 3)

This poster session features submissions on a wide variety of topics from the history of our field.

## Available at EAU17 for EAU Members



*Urology Under the Swastika* and *De Historia Urologiae Europaeae* Vol. 24

Both books can be collected by entitled EAU Members at the EAU Booth (G50) in the Exhibition on a first-come, first-served basis.