

# Reginald Harrison; Liverpool's first Urologist

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## Abstract

Reginald Harrison (1837 – 1908) was one of Liverpool's most famous surgeons; in the late 19th Century he was well known to both the London and provincial medical world. Working at both the Royal Infirmary and Northern Hospital in Liverpool he developed an interest in genito-urinary surgery, becoming a notable expert. Hence, in 1899 he moved to London where he was appointed Surgeon to St Peter's Hospital for the Stone, England's first urology hospital. Harrison observed Bigelow's early cases of litholapaxy in Boston, USA and championed the technique in England. He was an expert in urethral stricture disease, favouring gentle dilatation with filliform bougies, which became known as Harrison's Whips.

He was an energetic Dean of the Liverpool Medical School and was active in its eventual rise and transformation into the University of Liverpool. He also tirelessly campaigned for the introduction of ambulances to Britain's towns and cities. His efforts led to Europe's first civilian hospital ambulance being introduced in 1883 at the Northern Hospital in Liverpool.

Reginald Harrison is a somewhat forgotten name in urology today, but his contributions to Liverpool's University, the Ambulance Service and British urology should be celebrated and remembered.

## Keywords

19<sup>th</sup> Century, Harrison's Whips, litholapaxy, Liverpool, Reginald Harrison, St Peter's Hospital

## Introduction

The British Association of Urological Surgeons (BAUS) 2016 annual meeting is being held in Liverpool – a city with a strong medical and urological history. One of Liverpool's most famous urologists was Reginald Harrison (1837 – 1908). However, many contemporary urologists may not recognise his name (Figure 1).

## Early years and training

Reginald Harrison was born in Stafford on 24 August 1837, the eldest son of Thomas and Mary Harrison. His father was Vicar of Christ Church, Stafford. He was educated at Rossall School in Fleetwood. Harrison spent a short time as a surgical apprentice at the Staffordshire General Infirmary and then moved to London to study at St Bartholomew's Hospital. He achieved Membership of the Royal College of Surgeons (MRCS) England on 15 April 1859, obtaining the Licence of the Society of

Apothecaries (LSA) the same year<sup>1</sup>; this 'conjoint' qualification was common practice.

After qualifying, Harrison returned to the North West of England and was appointed House Surgeon at the Northern Hospital, Liverpool in 1859 (Figure 2). The following year he became Senior House Surgeon to the Liverpool Royal Infirmary. In 1864 he became Assistant Surgeon to the Northern Hospital and was made a Full Surgeon there in 1866. In the same year he became an Assistant Surgeon to the Liverpool Royal Infirmary and passed his Fellowship of

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**Figure 1.** Reginald Harrison, 1888. From John Leyland's *Contemporary Medical Men and their Profession*.



**Figure 2.** The Northern Hospital, Liverpool, 1886. Author's collection.

the Royal College of Surgeons (FRCS) on 13 December. By 1874 he was Full Surgeon to the Royal Infirmary as well<sup>1,2</sup>.

Harrison was also Medical Officer to the City Lunatic Asylum, surgeon to the Cyfarthfa Iron Works in the Welsh town of Merthyr Tydfil between 1862 and 1864, surgeon to the Liverpool Bluecoat School from 1864 and also served as Quarantine Officer to the Port of Liverpool.

At this time surgical appointments to hospitals were honorary posts, unpaid or carrying a small stipend. To make a living a surgeon had to earn his money in private practice. The hospital positions of course brought recognition, social standing and therefore paying patients (as well

as a wealth of clinical material). In 1864 Reginald Harrison therefore began working as a surgical assistant to a well-known Liverpool surgeon, ER Bickersteth (1828—1908), at his private practice at 18 Maryland Street. By 1868 he had set up his own practice at 38 Rodney Street.

Reginald Harrison married Jane Baron, a 24 year old spinster and daughter of James Baron, a Liverpool broker, on 11 August 1864 at St Helen's Church in Sefton. They subsequently had a son and two daughters.

## Medical Education and the University of Liverpool

In 1864 Reginald Harrison became Registrar (Dean) of the Liverpool Royal Infirmary School of Medicine. He was also Demonstrator of Anatomy and later Lecturer on Descriptive and Surgical Anatomy. Harrison was Registrar of the medical school from 1864 until 1874, acting as secretary and manager, organising the medical teaching and attracting suitable and energetic lecturers<sup>2</sup>. Harrison was active in raising the small Royal Infirmary School of Medicine to something that eventually became the University of Liverpool. The medical school had its origins in the Liverpool Royal Institution School of Medicine and Surgery formed in 1834. This was absorbed by the Royal Infirmary School of Medicine, which was formed by the physicians and surgeons of the then Liverpool Infirmary (only 'Royal' after an 1851 visit by Queen Victoria).

The medical school of the Infirmary became a joint-stock company in 1869. Harrison was involved in raising funds to improve and extend the school and new laboratories were built. In 1881 the school became University College of Liverpool. This combined with the College of Manchester in 1884 and later Leeds to become the Victoria University. In 1903, it became the University of Liverpool<sup>3</sup>. In recognition of his work, Reginald Harrison held a life appointment as a Governor of University College and then the University of Liverpool<sup>2</sup>.

## Harrison and ambulances

Reginald Harrison also took an active part in establishing the system of civilian ambulances. Whilst visiting America and Canada he noted the ambulances used there to transport casualties to the city hospitals. Due to Harrison's efforts, in 1883 the Northern Hospital became the first hospital in Europe to have its own ambulance (Figure 3). It cost £227 a year to run, incidentally costing the hospital more to hire the horse than to pay its driver! The average time of each journey from call to return was 18 minutes 30 seconds (well within the Golden Hour). A houseman or medical student accompanied the driver and the ambulance was equipped with drugs, splints, dressings and surgical instruments (including a tracheotomy



**Figure 3.** The Liverpool Horse Ambulance, 1886. Author's collection.

set). Thus, the patient had medical care from door to door, making it more like a modern paramedic service than the 'scoop and run' ambulances that came later. Prior to this, patients were bundled into a taxi or transported by other private means. Incidentally, a sedan chair had been provided for ill or injured patients by the Glasgow Royal Infirmary since 1794<sup>3</sup>.

Reginald Harrison wrote many pamphlets in support of ambulances and was active in promoting the Metropolitan Street Ambulance Association for developing the system throughout England<sup>4</sup>. He served as its President until the time of his death.

## Harrison and urology

In 1878 Harrison visited Boston in the United States and on 6 April at Massachusetts General Hospital saw Henry Bigelow remove a large uric acid calculus by his new method of litholapaxy. Using the relatively recent knowledge of the size of the male urethra (32Ch) and following the widespread use of anaesthesia Bigelow demonstrated that a bladder stone could be crushed, using a blind lithotrite and then the fragments washed out, all in a single sitting. Previously, repeated short but painful operations were used with the patient voiding the fragments over a few days or weeks in between sittings. As expected, this new and very different technique drew suspicion at first, but Harrison saw its advantages. He reported it to the Surgical Section of the British Medical Association at Bath in August 1878, demonstrating the instruments and technique for the first time in England<sup>5</sup>. Harrison was amongst its earliest advocates and thus helped to establish this improved method in Britain<sup>6</sup>.

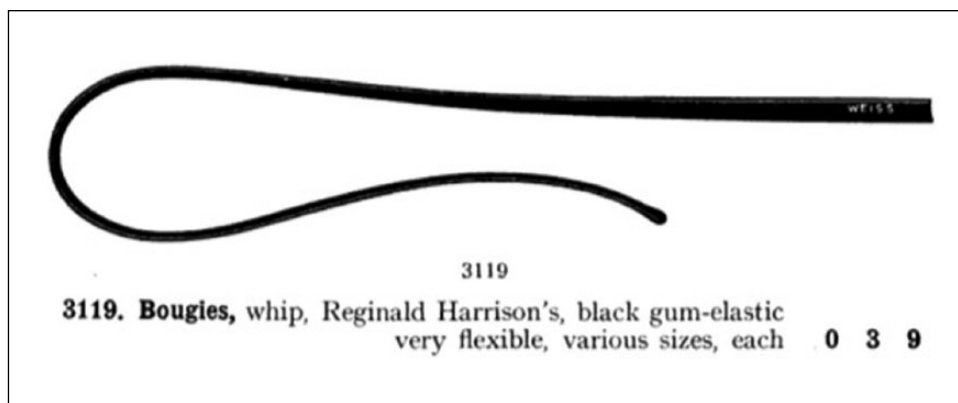
According to Rushton Parker (1847 – 1932) one of Harrison's colleagues at the Liverpool Medical School and writing after his death, it was after this time that Harrison took more interest in genito-urinary diseases<sup>2</sup>. However, he had certainly published on urological topics before this

time. In 1868, for example, he wrote in the *British Medical Journal* about the use of the endoscope<sup>7</sup>. He was using a Cruise endoscope (only introduced in 1865) and was clearly familiar with its predecessor, the French Desormeaux instrument. He discussed its use in urethral stricture and was unimpressed with it as a diagnostic tool, but felt it was useful for direct application of topical treatment to difficult-to-reach urethral ulceration<sup>8</sup>. This does however show Harrison to be a very early user of endoscopy, certainly well before the introduction of the more practical 1888 Nitze cystoscope.

In October 1889, Reginald Harrison came to London to work at St Peter's Hospital for the Stone. St Peter's was England's first dedicated urological hospital. Harrison's election as Surgeon to St Peter's Hospital was to replace the popular Victorian Urologist Walter Coulson (1884 - 1889) after his sudden death. Harrison was chosen, although he was a provincial surgeon, because of his experience and profound knowledge of urology. He authored a popular textbook, which passed through four editions. The book was based on lectures given to students of the Liverpool Royal Infirmary and indeed the book was dedicated to them. The first edition was written in 1878 and was originally called *Clinical Lectures on Stricture of the Urethra and other Disorders of the Urinary Organs*<sup>8</sup>. By the second edition of 1880, it had become the more general *Lectures on Surgical Disorders of the Urinary Organs*.

Stricture was one of the commonest genito-urinary presentations and was often, in this pre-antibiotic era, the result of gonococcal infection. Harrison, working in the Port of Liverpool, had therefore ample opportunity to study and treat the disease. Harrison makes it clear that this was a common disorder among the 'seafaring population' due to the 'gonorrhoea contracted on shore during the debauch that frequently precedes a vessel's departure for some foreign port [which] breaks out two or three days afterwards' – at this point of course with the vessel at sea for some considerable time any treatment that was available for the ailing sailor was dealt out by the ship's Captain or First Mate, not a doctor. Sometimes attempts were made aboard ship to 'treat' the stricture or retention by passing a wire or skewer or piece of whittled wood and even on one occasion a piece of lead gas pipe<sup>8</sup>. The sad results of these managements ended up at one of the Liverpool hospitals.

Harrison preferred gentle dilatation of strictures to closed or open urethrotomy (also practiced at this time) although he also suggested in select cases these methods were resorted to. Indeed in an 1885 paper he suggested that both procedures should be done<sup>9</sup>. In cases in which the strictures were too severe to dilate, he performed an internal urethrotomy with a Holt's Divulsor (which forcibly tore open the stricture) or Maissonnerve urethrotome (a blind transurethral cutting instrument). He then suggested an open procedure on the urethra to drain the urine and prevent the often-fatal fever. He also encouraged patients



**Figure 4.** Harrison's Whip. From Weiss' Instrument Catalogue early 20<sup>th</sup> Century.

to practice self dilatation. He popularised the Filliform dilators which became known as Harrison's Whips particularly at St Peter's (Figure 4). Harrison certainly did not invent (nor did he claim to have) this form of dilator. Harrison wrote that the term 'Whip' was coined by Edward Lund (1823 – 1898) a surgeon of Manchester when he demonstrated them to him<sup>10</sup>.

In 1881 Harrison reported a case to the Medico-Chirurgical Society where part of the prostate was enucleated at the time of open lithotomy for stone<sup>11</sup>. This was not the first time it was done and Harrison notes other examples, however, he was certainly one of the earliest English surgeons to do this. Arthur Magill of Leeds was the first English surgeon to purposely enucleate the whole prostate for lower urinary tract symptoms in 1887.

In 1903, Harrison suggested that this open prostatectomy technique could be used for symptomatic relief of prostate cancer. It is clear he felt this was a temporary and palliative treatment. He also notes on the likely unrealised high prevalence of indolent prostate cancer. In his Bradshaw Lecture to the Royal College of Surgeons in 1896, he remarked, 'I have long thought that slowly progressive carcinoma of the prostate is far more common than is generally believed to be the case.'<sup>12</sup>

## Harrison in London

Reginald Harrison soon took to the London social life and medical circles of late Victorian England. In 1888 he was made Lettsomian Lecturer at the Medical Society of London and then President in 1890. At the Royal College of Surgeons he was a Member of the Council from 1886-1902, Vice-President from 1894 to 1895, Hunterian Professor of Surgery and Pathology in 1890-1891, and Bradshaw Lecturer in 1896. In 1903 he visited Egypt officially to inspect the School of Medicine at Cairo on behalf of the Royal College of Surgeons, and was rewarded with the Imperial Ottoman Order of the Medjidie (1<sup>st</sup> Class). He was also made Knight of Grace of the Order of St John of Jerusalem.

Harrison ceased active professional work in April 1905, when he resigned his post at St Peter's hospital. He died on 28 February 1908, and is buried in Highgate Cemetery in London.

## Conclusion

Reginald Harrison (1837 – 1908) was a well known surgeon in Victorian England<sup>6</sup>. He spent his early career in Liverpool where he ran a busy private and hospital practice. He was instrumental in developing the Medical School into the University of Liverpool and his efforts led to the introduction of the first hospital ambulance service in Europe. He became an expert in the field of genito-urinary medicine, such that he was invited to join the surgical staff of St Peter's Hospital in London. His contributions to urology were widespread; at the time he authored a popular textbook and until recently his name was remembered in his eponymous urethral whips. Now, Reginald Harrison is a mainly forgotten name in urology but you should remember his name for his contributions to urology, the medical and university education in Liverpool and every time you hear an ambulance.

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## Funding

The authors declare that there is no conflict of interest.

## Informed consent

Not applicable.

## Ethical approval

Not applicable.

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