HISTORICAL SURGICAL INSTRUMENTS IN THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND (5)

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In this contribution a selection of instruments has been taken from Section "G," which comprises instruments for operations on the genito-urinary system in the male. This section is the largest in the whole collection of surgical instruments and contains nearly 400 exhibits. There are numerous examples of catheters, staffs, gorges, lithotomy forceps, lithotrites and other instruments employed in operations on the genito-urinary system.

A flexible spiral catheter made of silver (Fig. 37) is a very old type of metallic catheter ascribed by M. G. Purmannus in Chirurgia Curiosa (1706), where it is described and illustrated, to Dr Solingen, "Practitioner in Physick and Chirurgery at The Hague." Another flexible catheter, made of pewter, is preserved in a wooden case (Fig. 37). The donor, Sir George Buckston Browne, when presenting it stated: "I have every reason to believe that it belonged to my great-great-grandfather Dr Theophilus Browne (1715–1786), who practised in Derby." Figure 37 also illustrates two "flexible metallic catheters invented by the donor Mr W. Smyth, Apothecary, Tavistock Street, Covent Garden." Smyth published an account of his invention entitled Brief Essay on the Advantages of flexible Metallic Bougies (1804) and presented a copy with the instruments. Samuel Cooper described them in his Dictionary of Practical Surgery (1818) under the article "Bougie," where he stated: "They are either solid or hollow, and are said to answer extremely well as catheters." The two illustrated were received on September 29, 1804, and are therefore among the earliest instruments presented to the Museum. A telescopic catheter (Fig. 37) designed by W. H. B. Winchester, contains four sizes in one, and is intended to avoid the introduction of separate instruments. Mr Winchester, best known as the inventor of splints (see first of this series of articles*), did not explain how this catheter was to be used.

A bundle of bougies once the property of John Abernethy and used by him in his practice is seen in Figure 38. Abernethy left these instruments to his son-in-law, Sir George Burrows, who in turn bequeathed them to his son-in-law, Alfred Willett, the donor.

A set of five metal searchers for stricture (Fig. 38) are examples of an early form of the bulbous exploring instrument used in the diagnosis of stricture. They were used and presented by James Luke, F.R.C.S., F.R.S. (1799–1881), of the London Hospital.

There are three cases of lithotomy instruments which have associations of special interest. The first belonged to Sir Astley Cooper (Fig. 39) and bears his name inscribed on a silver plate on the lid. It came into the possession of Astley Cooper’s nephew by marriage,
Mr Edward Cock, surgeon to Guy's Hospital, who presented it to the Museum in 1872. It contains four sounds, a curved staff, three lithotomy knives, six forceps, a double scoop, three Cline's gorgets, and three serge bandages to secure the patient. The second case (Fig. 39) was formerly the property of Joseph Swan (1791–1874) and was presented, according to a silver plate on the lid, to "Mr Joseph Swan by Mr Astley Cooper and Mr Henry Cline, as a mark of appreciation of services rendered in assisting their students in the dissecting room," about 1812. The instruments are similar to those in the previously mentioned case. Joseph Swan presented this case to the Museum in 1871, three years before his death. The third case (Fig. 40), covered with sharkskin and lined with green plush, belonged to Joseph Bellot, R.N., surgeon to H.M.S. Pegasus in 1790. He was also surgeon to the Corps of Volunteers, Stockport, commissioned by King George III in June 1798. It contains an incomplete set of instruments consisting of a nest of four gorgets, three forceps and a double-ended scoop. It was presented to the Museum by Joseph Bellot's nephew, W. H. Bellot, F.R.C.S. (1811–1895).

Two instruments designed for the detection of calculi are Leftwich's sound with tube and ear-piece, and a sounding board (Fig. 41). The former instrument consists of an india rubber tube, one end of which is stretched over the handle of a sound and the other connected to an ear-piece. Dr Ralph Leftwich, who presented the instrument, described his invention in the Lancet of 1876 as an "auscultatory sound." The sounding board (Fig. 41) was presented by Edward Cock in 1872; it was probably his own invention, and was described by him as a "sounding board to be placed on the top of the sound in searching for stone."

A lithotomy staff with combination knife and gorget, designed by Hugh Owen Thomas, is seen in Figure 42. It was fully described by the inventor in an article entitled "A New Lithotomy Operation" in the Provincial Medical Journal (1888). It was presented by Sir Robert Jones in 1918.

Sir William Fergusson's lithotomy knife, used by him in hospital practice, is also seen in Figure 42. On the handle is engraved Fergusson's crest, a hand with a dart, and the letter "F" and the date 1850. At the extremity of the handle notches are cut on the ivory, nine on one side and eleven on the other. Fergusson cut a notch every time he used it. A case containing two of Fergusson's knives (Fig. 42) was given by him to Albert Carless, F.R.C.S. (1863–1936). Mr Carless gave it to Sir Cecil Wakeley, P.R.C.S., who in turn presented it to the Museum in 1927. This case has therefore passed through the hands of three successive generations of surgeons connected with King's College Hospital. One knife has twenty-seven notches indicating the number of lithotomies performed with it, and the other five.

Pârè's dilator seen in Figure 43 was illustrated in his Oeuvres complètes (1840). It was a prominent feature in the performance of the barbarous Marian operation or "lithotomy by the apparatus major." Other instruments used in this operation were the two conductors, male and female, both shown in Figure 43. These conductors were figured by Heister in A General System of Surgery (1753).

A typical example of Cheselden's gorget, small size, is seen in Figure 44. It closely resembles the instrument illustrated in An Appendix to the History of the Lateral Operation for Stone, containing Mr Cheselden's Present Method of Performing it, by Dr James Douglas (1731). The handle is stamped with the letter "C" surmounted by a crown, "The Mark of that excellent Workman, Mr Cooke in Lombard Street." This gorget was preserved in a case with several others now in the Lister Collection, and was probably given or bequeathed to Syme by an older surgeon, Syme leaving the set to Lord Lister. Figure 44 illustrates two further examples of Cheselden's gorgets, full size. On each the trade-mark is an arrow pointing to a letter "B," which suggests that they were made by a different maker, but, as there is no maker's name on any of the three gorgets, they were made before 1780. The two full-size gorgets were once the property of Lord Lister and were found in a box of instruments dating, according to a note, between 1760 and 1780. Sir Rickman Godlee presented them to the
Figure 40—Joseph Bellot's lithotomy case (late eighteenth century). Figure 41. Left—Leftwich's sound with tube and ear-piece. Right—Sounding board for detection of calculi.

Figure 42—H. O. Thomas's staff with combination knife and gorget. Top right—Sir William Fergusson's lithotomy knife. Bottom right—Case of two lithotomy knives used by Sir William Fergusson. Figure 43. Left—Pâtre's dilator (sixteenth century). Right—Heister's conductors, male and female (early eighteenth century).
Museum in 1912, but they did not form part of the Lister Collection of surgical instruments presented by Lister’s executors.

Cline’s gorget (Fig. 44) is described in Sir Astley Cooper’s Lectures on the Principles and Practice of Surgery (1825). “Mr Cline made the greatest improvement upon the cutting gorget, in having the left side entirely removed, leaving only the beak and its right blade, which has a sharp anterior edge . . .” Henry Cline (1750–1827) left no medical or surgical writings. An early mention of his gorget without description is in a manuscript copy, preserved in the College Library, of The Substance of Seven Lectures on the Operations of Surgery, etc., by Mr H. Cline, 1785. This example was presented by Robert Liston.

William Bromfield’s double gorgeret (Fig. 44) is described and figured in his Chirurgical Observations and Cases (1773). In this instrument the two ” gorgerets” are united as when in use, the upper with the cutting edge, the lower blunt.

The massive instrument for crushing stone seen in Figure 45 was made for a special case. A note by Sir William Flower, Conservator of the Museum, in the manuscript catalogue says: “A powerful forceps made specially (for Sir Benjamin Brodie) for crushing a large stone during the operation for lithotomy; it proved unnecessary, as the stone being smaller, was removed entire.”

The Collection possesses four examples of four-bladed lithotomy forceps, a very ingenious instrument. Two are nine inches in length, one nine and a half inches, and the fourth eleven inches. The four blades can be opened or closed, and fixed by the screw nuts, to a degree corresponding to the size of the calculus. All four instruments are of similar design, and only one is illustrated in Figure 46. They were entered in the manuscript catalogue as ” Mr Key’s
instruments, donation by Sir Charles Blicke, Jan. 22nd, 1811.’ This entry appears to be the only evidence that Charles Aston Key (1793–1849) may have been the designer; he was only eighteen years of age when they were presented to the Museum. These forceps seem to be a development of Bromfield’s figured in his *Chirurgical Observations and Cases* (1773).

An example of Heurteloup’s percussor lithotrite is seen in Figure 47. ‘A lithotrite used by Baron Heurteloup and given by him to Mr Mathias Rowe who presented it to the donor.’ The donor, John Birkett, gave this instrument to the Museum in 1873. Mr Mathias Rowe qualified M.R.C.S. in 1810 and, living to a great age, was in active practice during the development of lithotritry. Another example of this lithotrite (Fig. 47) is one of the original models brought from France by Sir William Fergusson. In Baron Heurteloup’s *Mémoires sur la lithotrisie par percussion* (1833) he described how he operated with this instrument, not only in London, but at hospitals in Greenwich, Derby and Nottingham. In 1834 he was in practice in Holles Street, Cavendish Square, London (Lancet 1834.)

The first rack and pinion lithotrite made is also seen in Figure 47. It was used by Robert Liston and Sir William Fergusson and is constructed to allow of percussion if preferred. It is described and illustrated in Sir William Fergusson’s article ‘On Lithotrity, with a Description of the Instrument Used,’ published in the *Edinburgh Medical and Surgical Journal* (1835). Liston wrote to Fergusson from Edinburgh on February 6, 1834: ‘I have made trial of the percuteur, modified as you described; and although I do not think lithotrity very generally applicable, I have no hesitation in saying that after having used on the living body nearly all the instruments which have been invented and recommended for breaking

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**Fig. 46**

Four-bladed lithotomy forceps.

**Fig. 47**

*Top*—Heurteloup’s percussor lithotrite. *Centre*—Another example of Heurteloup’s lithotrite. *Bottom*—The first example made of Sir William Fergusson’s rack and percussion lithotrite.
FIG. 48
Top to bottom—Original model of screw lithotrite; part of rack and pinion lithotrite and wooden model of rack and pinion of lithotrite, both made by Sir William Fergusson; early improvement of Fergusson’s rack and pinion lithotrite; a later model.

FIG. 49
Case containing set of Civiale’s drilling instruments (1830).
down calculi in the bladder, the instrument in question appears both safer and more efficient than any I have yet seen" (Lancet 1834).

An interesting series is a number of instruments designed and presented by Sir William Fergusson to illustrate the development of the lithotrite. In Figure 48 is seen the original model of a screw lithotrite, "the inner to be drawn against the outer blade." The illustration in the centre is a "model in wood of rack and pinion of lithotrite made by the donor," and Figure 48 also shows "portions of a rack and pinion lithotrite made by the donor." The other illustrations in Figure 48 are of an early improvement on the inventor's original model (next to bottom), and a still later model (bottom).

![Image of a drilling instrument](image)

**Fig. 50**

Civiale's drilling instrument ready for use.

![Image of a set of catheters](image)

**Fig. 51**

Joseph Clover's evacuating catheters, original pattern, and aspirator or evacuating bulb.

In Figure 49 is seen a very fine set of Civiale's drilling instruments, made in Paris about 1830. The ivory handle of the bow is stamped "W.L. Carter's Surgical Instrument Maker, Rue de l'Odeon, Paris." In Figure 50 a similar instrument, made by "Charriere à Paris," is displayed mounted and ready for use, except for the bow-drill. In Civiale's Lettres sur la lithotrite (1827) it is shown in use on a patient.

Clover's evacuating catheters and aspirator or evacuating bulb, original pattern, are seen in Figure 51. These instruments, among others, were bequeathed by the inventor, Mr Joseph Clover (1825–1882), to Mr (afterwards Sir George) Buckston Browne, who presented them to the Museum. These instruments are figured in Sir Henry Thompson's Clinical Lectures on Diseases of the Urinary Organs (1888). Thompson ascribed the aspirator to Sir Phillip Crampton of Dublin. It was first employed in 1846, and "no further advance took place in this direction, until early in the year 1865, when Mr Clover designed an india-rubber aspirator with a glass cylinder trapped to prevent reflux of fragments, which answered its purpose very well."

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