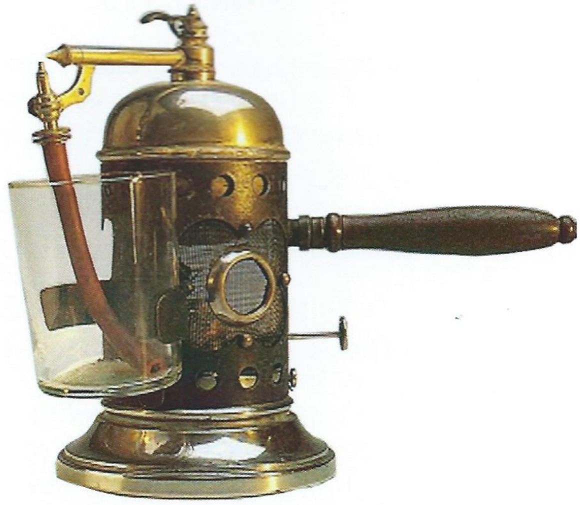
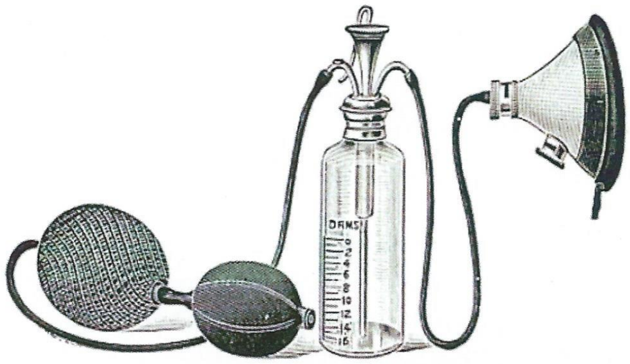




The Historical Medical Equipment Society

BULLETIN NO. 33 ISSN 1366 - 4719 SEPTEMBER 2018

EXECUTIVE COMMITTEE

CONTENTS

FUTURE MEETINGS

NEXT MEETING: EXETER SAT 6th APRIL 2019

EDITORIAL

Thirty-nine members, guests and speakers attended the HMES meeting on Saturday 14th April at the Thackray Medical Museum in Leeds. We owe thanks to Natasha Brazel (conference manager) and Alan Humphries for their help organising the meeting. Alan opened the meeting with a history of the Museum and later guided some members on a 'behind-the-scenes' tour. The Museum's origins can be traced from the chemist shop opened by Charles F Thackray (1877-1934) in 1902 opposite the Leeds Infirmary. The business supplied sterile dressings to the Infirmary and went on to become a major manufacturing company of surgical instruments including prostheses for Charnley's total hip replacement. The business merged with a multi-national company in 1990 and the grandson, Paul Thackray, established the Museum to promote medical education to the general population. The Museum is housed in the old Leeds Workhouse (1861). The vast collection is on two floors and the exhibits cover every aspect of medicine, public health and pharmacy and includes the famous Wilkinson apothecary drug jar collection.

Ravi Kunzru described the classification of early Indian surgical instruments used from around 500BCE, described by the surgeons Susruta and Vaghata. These ancient texts had no illustrations and difficulties in translations gave rise to errors which were repeated down the centuries. Nevertheless, instruments for cataracts, lithotomy etc. can be recognised and even reconstructed for 'replica' surgery on cadavers. Adrian Thomas demonstrated a formidable collection of needles for injection of radiological contrast media. As angiography became more complex, there was a need for more special training, especially as the radiologist's role changed from a 'diagnostic' to 'therapeutic' one. Mick Crumplin provided a detailed account of the terrible injuries at Waterloo (1815), with illustrations of the campaign's surgical instruments. The rediscovery of a collection of surgeons' notes from military hospitals around Brussels has revealed details of the treatment of sixty-thousand soldiers. The notes often included line drawings of the injuries and have provided a mass of data for statistical analysis. Margaret Wilson traced the evolution of the dental pedal drill from its early use to carve ivory dentures. A lack of flexibility made it impossible to use for clinical dental work until the flexible cable coiled drill was invented by engineer James Nasmyth (1808-90). Dr Parson Shaw DDS (1825-97), Dean of the Manchester Dental School, popularised the use of 'Shaw's dental engine' (1881). Johnathan Goddard described the work of urologist Sir Eric Riches FRCS (1897-1987) and demonstrated Riches' personal cystoscope which he designed in 1955 as a 'British' model with interchangeable parts. Riches was awarded the Military Cross in WW1. He was consultant at the Middlesex Hospital and vice-President and curator of historic surgical instruments at the RCS. Noel Snell introduced his collection of spittoons and sputum pots. They range from plain enamelled hospital models to beautifully designed Worcester decorated ceramic pots or bottles, usually with an upper part which drains into a collecting lower section. 'Spitting', once socially acceptable, declined following epidemics of influenza and tuberculosis. A final short paper described three home-made disability aids found while demolishing the Rhodes Memorial Home in 2016. The equipment dates from when the building was used as the 'Manchester Home for Cripples' during the 1930s. Dr John M Rhodes MD (1847-1909) was a Manchester doctor who did much to reform conditions in workhouses and children's homes.

These papers are examples of 'object-based' medical history. The objects themselves have a technical history but they also trigger wider exploration of their inventors, the people who used them and their place in the changing medical and social history of their time. Some historians question the epistemological value of 'objects': the answer is that they are just another layer of historical evidence along with written and printed texts, newspapers, oral history, photographs, film, etc. Old medical equipment is an important part of documenting the history of technology - equivalent to archaeological finds for the antiquarian or an 'old engine' for the industrial historian.

John Prosser chaired a short business meeting. A small increase in new members was noted. Evelyn Barbour-Hill reported that the website has just come on-line, but it will need further development and support from the HMES members www.historicmedequip.org .

Peter Mohr, Honorary Secretary

THE THACKRAY MUSEUM

ALAN HUMPHRIES

The Thackray Museum derives ultimately from the Chas. F. Thackray surgical instrument manufacturing company. This itself had its origin in an existing chemist's shop taken over in 1902 by two schoolfriends, Charles Frederick Thackray and Henry Scurrah Wainwright. Charles was a qualified pharmacist and Henry was one of the first

Fig.1 The original Thackray shop(left) in Great George St.

Chartered Accountants. As it was considered at the time a bit 'infra dig' for Henry to be 'in trade' the company was always just known as Chas. F. Thackray.

The situation of the shop was perfect (fig.1), opposite the Leeds General Infirmary, and the shop prospered as all the consultants from the Infirmary had to go past at least twice a day, as they went to and from their consulting rooms in Park Square.

Thackrays were soon being asked to provide surgical instruments, and then one of the consultants, Berkley Moynihan, later Sir Berkley, and eventually Lord Moynihan, suggested that Thackrays ought to start making instruments and equipment themselves. Perhaps one reason for this was that Moynihan had devised several instruments himself (fig.2), and needed extra large bows on the instruments due to his large fingers. The instrument side of the business expanded rapidly, and by the 1930's the firm was making and retailing a full range of instrumentation and equipment from surgical needles to operating tables and sterilizers.

Fig.2 Moynihan bows (left) on instruments

After the Second World War the company was first contacted by Mr John Charnley, who asked them to make various instruments for him, and by the 1960's he was concentrating on the development of hip replacement implants (fig.3). Thackrays made the steel hip stems, whilst Charnley actually turned the high molecular weight polyethylene hip cups himself on his own lathe, which was presented to Thackray's and is now in the Museum.

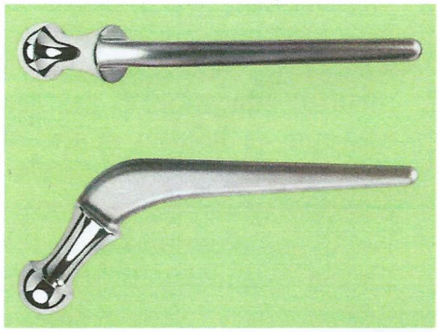


Fig.3 Charnley hip femoral components

Orthopaedic implants quickly became a major part of the Company's products, but this presented a problem in that it became very expensive to get the implants through the American licensing system. In the late 1980's the family decided that the company would have to be sold to someone who had greater resources, and in 1990 the company was sold to the American orthopaedic company DePuy, who were themselves a subsidiary of the German pharmaceutical company Boeringer Ingleheim.

Paul Thackray, a grandson of the founder, had been collecting instruments and equipment illustr-

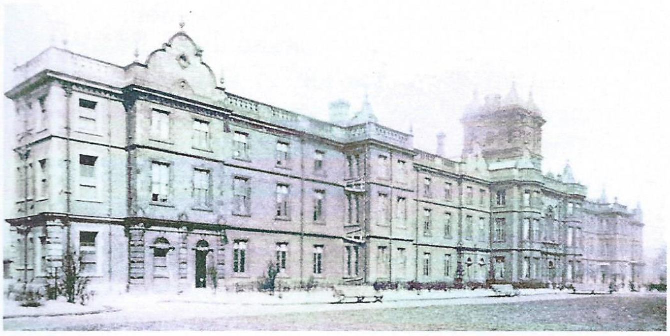


Fig.4 The Leeds Union Workhouse c.1905

ative of the history of the surgical supply trades within the company. He founded the Thackray Medical Museum Trust to set up a Medical Museum in Leeds, and endowed it with this collection and part of the company library as well as some of the money he had got for his shares. The museum took some years to plan, and find a suitable building, and it finally opened to the public in 1997, in what was the Leeds Union Workhouse (built 1858-61), and later part of St. James's Hospital. The original collection has since expanded to over 50,000 items, with 10,000 books and 16,000 trade catalogues in the library (fig.5).

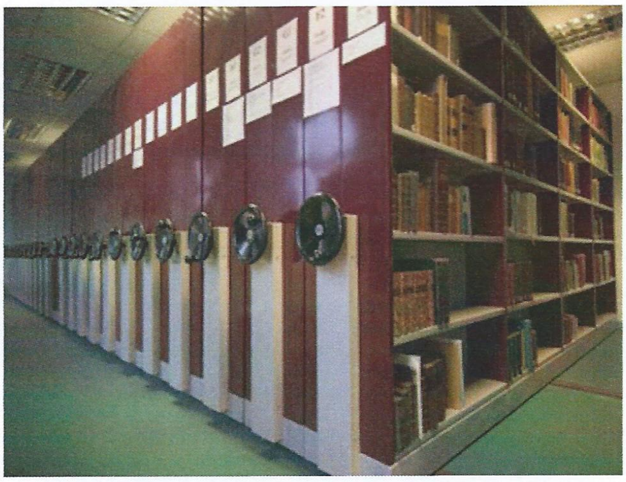


Fig.5 The Museum library

We have been lucky to have been given several significant collections, such as Dr J.F. Wilkinson's apothecary jars (fig.6), over 400 anaesthetic items, two significant collections of hearing aids (fig.7), (120 items, mainly acoustic) one dating back to the early 1800's and the other 800 electric and electronic ones from the early 1900s-1990s.

The Museum has proved popular (fig.8), with visitors from around the world, with some visitors returning again and again. One school from the Isle of Man has been coming every year for more

Fig.6 The Wilkinson gallery

Fig.7 Part of the hearing aid collection

than 10 years. The Museum celebrated its 20th year in 2017, and is showing its age in many ways, so we are at present in the process of planning for a £4.5 million project which involves a revamp of the galleries (as well as repairs to a

Fig.8 Scene from the museum. Hannah Dyson having her leg amputated, c.1842

leaky Victorian roof!). Most of the money has been given or pledged, though we have small shortfall of about £150,000 which we are actively raising money to cover. The project is hopefully to be finished at the end of 2019, and we aim to fully reopen in 2020. Here's hoping for another 25 successful years or more.

THE HOFFBRAND COLLECTION

ALAN HUMPHRIES

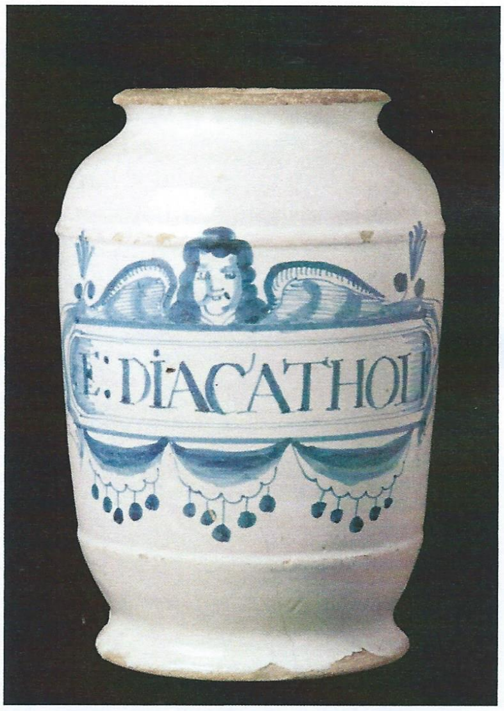


Image 2

I have been interested in Victor Hoffbrand's collection for over sixteen years. I first encountered it as part of a project I have been pursuing for nearly 20 years now, trying to track down and record every surviving English delftware drug jar. This was inspired by the acquisition in 1996 (at first on loan, and later by bequest) by the Thackray Medical Museum of Dr John F. Wilkinson's collection of over 400 English and nearly 200 continental jars.

Part of my job at the time involved checking off the jars against the Dr Wilkinson's typescript catalogue, adding the data to our collection database, and adding what further information I could. As I was doing this I began to notice connections between jars in the collection, and also with others I'd come across in my reading about the jars in general, and I thought that if a corpus could be put together it might illuminate some of the problems I could see people were having with identifications and dating. The result is a listing of (as of August 2018) 2,437 jars and 178 pill tiles (as well as a few plates, jugs and other related material using the same motifs as the jars or the Apothecaries' Arms).

I was told about a collector in London who had over a hundred jars, and on contacting him (it was Victor Hoffbrand) he was most welcoming and gave me the opportunity to record and photograph the collection. I found it contained many fine examples of rare and interesting jars, as well as the usual more common 'Bird and Basket' and 'Cherub and Shell' types. The first photograph I took was on the 17th April 2000, and at that time the collection contained 125 jars. Over the years Victor has several times said 'That's it, I think I have enough jars', but then a few months later comes the phone call 'I've got another half dozen for you to record', and so nearly seventeen years later the magnificent collection comprises 202 jars and four pill tiles.

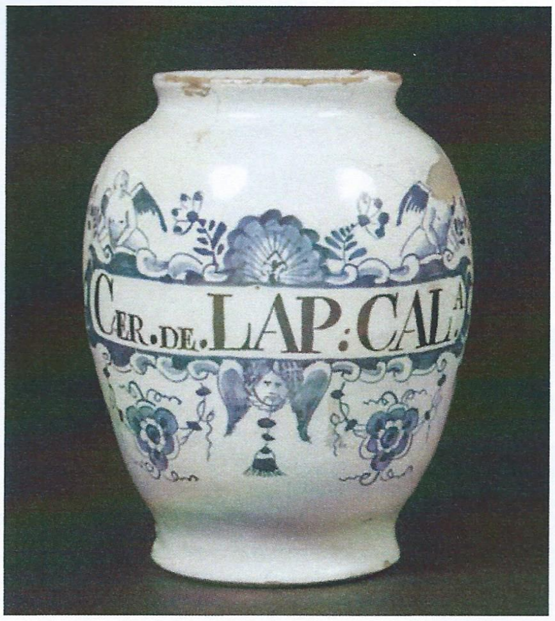


Image 1

[Image 1] Victor was inspired to collect the jars after hearing a lecture by Dr Wilkinson at a Brit-ish Society for Haematology meeting in Avie-more in 1975, his first jar being this Cherub and shell jar for Ceratum de lapis calaminaris, a zinc oxide ointment. Others quickly followed.

[Image 2] The usually accepted earliest English drug jar design is the so-called pipe smoking man, dated between 1652 and 1665. This is fol-lowed by the Angel type, dated 1659 to 1722. The Hoffbrand collection has one of the only two hybrid jars, with a pipe smoking man cartouche surmounted by an angel: this example has a series of balls hanging down from swags below the car-touche, whilst the other example (in a private Scottish collection) has a normal pipe smoking man cartouche with the angel above. These are closely related to a polychrome jar in the Colonial Williamsburg collection dated 1661, and it is probable that they are all c. 1660-65 and from the Montague Close pottery.

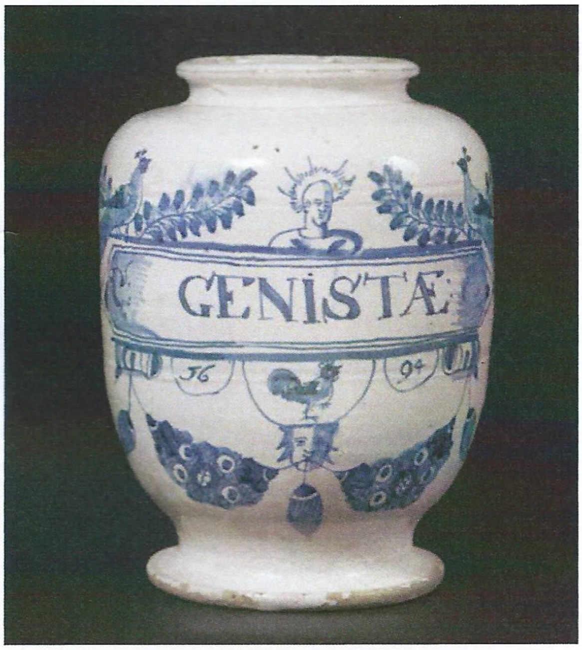


Image 3

[Image 3] One of the commonest motifs is that of songbirds and a basket, nearly 550 examples of which survive. There is a tiny group of jars, just 2 specimens, which appear to be a precursor to these, and they are in this collection and that of the Royal Pharmaceutical Society. These jars have a standard type of cartouche with two songbirds at the upper ends and a bunch of leaves and flowers in the middle. The birds are flanked by two 'tassels' (sometimes described as carnation buds), and in the bottom of the cartouche is a miniature version of the birds and bunch of leaves. Finally, under the cartouche are three swags and two tassels. The jars bear the date 1672 and the initials 'GB', probably for George Bearcroft.

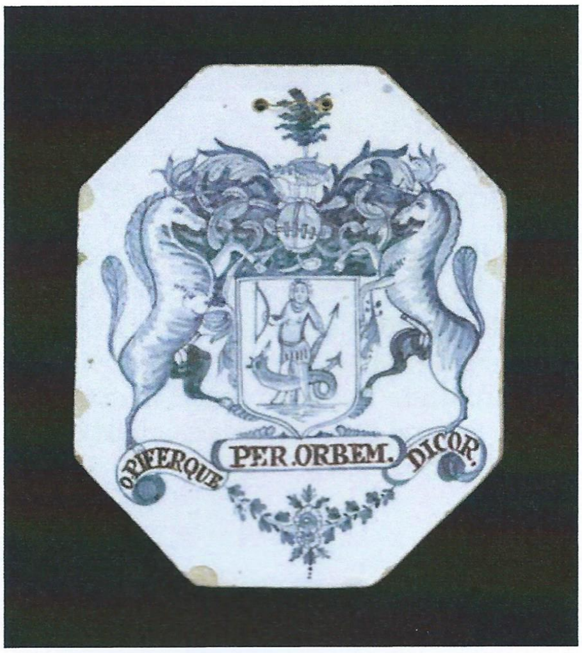


Image 4

[Image 4] Another important piece of the apothecaries equipment is the pill tile or pill slab. These were used to roll out the pill mass, made of powdered ingredients bound into a paste with a little oil or syrup, into a thin 'sausage' which was then divided into the required number of pieces with a knife or spatula, and finally rolled into the spherical pill shape. These tiles come in rectangular, hexagonal, oval, shield and heart shapes, and I have traced just over 170 of them. This particular type has often been attributed to the Bristol or Liverpool potteries, but in 1985 fragments of at least six were excavated from the site of the Mortlake pottery in London, and it is clear that they were made there.

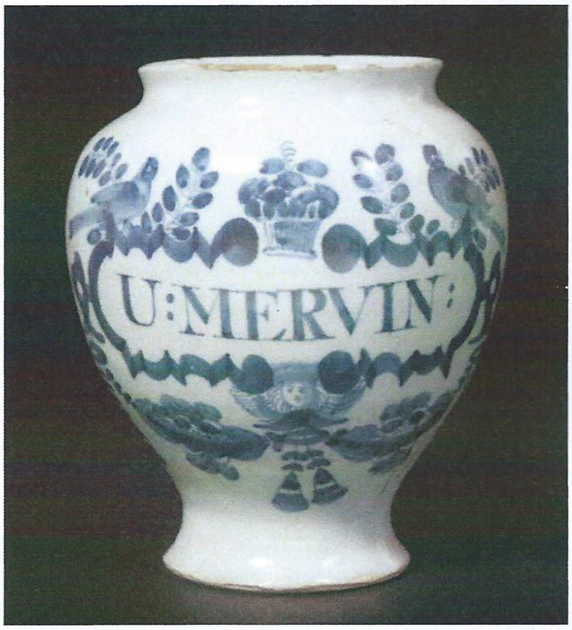


Image 5

[Image 5] It is obvious in some cases that errors are made in the painting of the inscriptions. The sequence seems to be that the pot is thrown, biscuit fired, dipped in white glaze, the basic design is painted on, followed by the inscription (presumably from a list supplied by the apothecary), and the jar is then given a final firing. At the inscription painting stage errors can occur, and this is a good example, where instead of U NERVIN (Ointment for the nerves) the painter has inscribed U MERVIN, a meaningless inscription.

[This paper was presented by Alan Humphries at the meeting of the HMES in 2017 at the Royal College of Physicians in London. The Hoffman collection is the second largest collection of English Delftware apothecary jars in the world (after the Wilkinson collection in Leeds) and is displayed at the Royal College of Physicians.]

SURGICAL INSTRUMENTS OF ANCIENT INDIA: REVISITED

RAVI KUNZRU

Two decades ago I presented a paper on these surgical instruments at the Bath Meeting of the Society[1]. There are three reasons for revisiting this subject.

First: I have acquired greater knowledge of Sanskrit, with the ability to translate the text myself, and to critically appraise the text and its inconsistencies and variance suggesting additions by other authors. My translations have been validated by two Sanskritists.

Second: having successfully completed the History of Medicine course, and acquired the Diploma of the Society of Apothecaries, I am better able to evaluate historical evidence from primary and secondary sources.

The classification and description of some of the instruments in *Suśruta's* Compendium is given in the original paper[1]. I will emphasise that the instruments are well described, mostly, but there are no accompanying diagrams. 19th and 20th Century commentators have published diagrams based on their reading of the text, sometimes inaccurately.

Based on my translation my co-authors and I had *Suśruta's* cataract couching instrument made (fig1), and used it to demonstrate the effectiveness of the technique in an animal model. We reported this to the Society at its meeting in 2013 .

Fig.1 reconstruction of the cataract couching instrument described by Suśruta

In another experiment (reported to the Society in 2016) my two surgeon co-authors and I demonstrated that, in removing the urinary bladder stone (perineal lithotomy) *Suśruta* did not describe the use of a hook (either blunt or sharp), both of which proved to be unwieldy and useless; as all three of us had predicted. The instrument described as *Agravakra,* is "curved at the front end", like a Macdonald's Dissector, which proved to be just the right instrument for delivering the stone from the perineal incision. The term used for a hook by *Suśruta* is *Baḍiśa*.

We also showed that a non-surgeon, with scant knowledge of female perineal and pelvic anatomy, and pathology, has added a description of removal of stone in a woman! The style and vocabulary of this addition are different from the main perineal lithotomy text.

Firstly, urinary bladder stones are rare in women. Two of us have practised surgery in India, with several cysto-lithothomies to our credit, but none in females in any age group.

Secondly, the new writer describes a procedure anatomically impossible: "cutting a little further anterior/ higher in the perineum (than in a male), but not through the vagina", while presumably pushing the stone down with fingers in the rectum! Feeling the bladder stone in a woman is not possible with fingers in the rectum: the uterine cervix gets in the way! And, there is no other way into the bladder in the female from the perineum, except through the vagina!

The third reason for my revisiting this subject was the new evidence provided by publication by Naqvi (a member of the Society) of surgical instruments found in Taxila[2]. Taxila, in N.W. Pakistan, was an ancient seat of learning (including medical practice) from before the arrival of Alexander the Great, right down to the 5th. C. CE. The "White Huns" (a nomadic tribe from the Steppes) destroyed it in the 6th.C. CE. The instruments found there in archaeological excavations, therefore, predate this destruction.

At the Bath meeting, and at subsequent meetings, a valid criticism about our description of *scissors* with a central axial pin (as opposed to *shears,* which do not have such rotation) was that no such instruments had been found in excavations in India. Several instruments described by Naqvi have

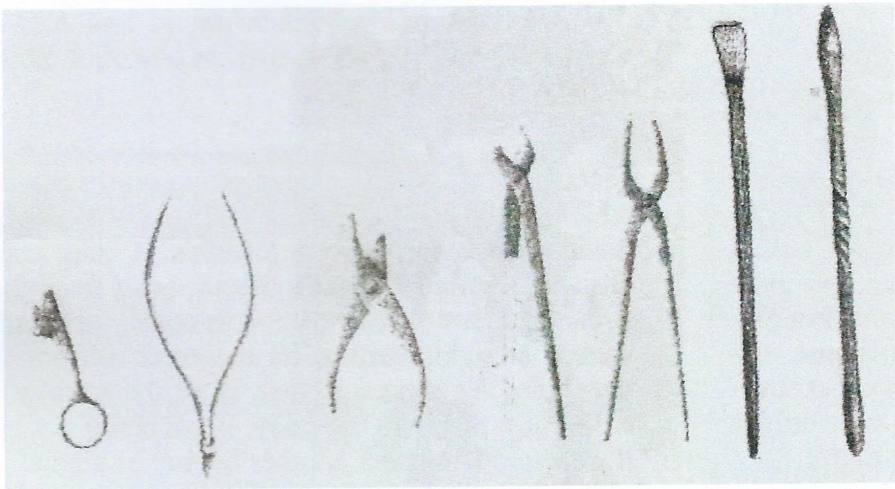


Fig. 35

Some trade objects of iron and copper excavated from Taxila

A. *Fragment of a scissor*
B. *Forceps*
C. *Tongs*
D. *Tongs*
E. *Tongs*
F. *Stylus*
G. *Kohl rod*

(From Marshall)

Fig.2 examples from Suśruta's Compendium

a central axle (as we had found in the description of both the scissors, and of the grasping instruments) in *Suśruta's* Compendium (fig.2). These scissors, thus, predate the ones that originated in Europe.

Acknowledgements: Mrs. Isabelle Glover, and another Sanskritist (who preferred anonymity) have validated the Sanskrit translations, including the detection of the addition of the other, later author's contribution to the text on bladder stone removal.

References :

[1] HMES (1999): HMES Bulletin No.6.

[2] Naqvi, N.H (2011): A Study of Buddhist Medicine and Surgery in Ancient Gandhara (Delhi: Motilal Banarsidas)

NEEDLES IN RADIOLOGY, GETTING THE POINT!

ADRIAN THOMAS

Angiography was started in England in Sheffield at Firth College on 1 February 1896. Prof. Hicks and Dr. Addison had injected specimens with a radiopaque material, and had achieved excellent renal and hand arteriograms. The branching pattern of the arteries was shown clearly and elegantly in the radiogram. Having shown that specimen angiography was possible, it was only a matter of time before it was achieved in life.

Clinical angiography was developed in Portugal in the 1920s, in what became called The Portuguese School of Angiography. The group included Egas Moniz (1874-1955) who developed cerebral angiography, and Reynaldo Dos Santos who developed aortography using the trans-lumbar route.

There are three essential techniques for invasive angiography: the cut down, needle angiography, and catheter angiography.

The Cut Down

A cut down is a minor surgical procedure with the vessel being reached following an incision. Cut downs in the ankle were used for venous access in cases of shock. Carotid arteriography could also be performed in the neck using a cut down.

Needle Angiography

In needle angiography (fig.1) the vessel is punctured percutaneously, and contrast is injected to fill the vessel and its branches. The patient would commonly require sedation or a general anaesthetic since in the days of traditional high osmolar ionic contrast media the injections were very painful. For example, if the carotid artery was being punctured for cerebral angiography it was essential that the patient remained still.

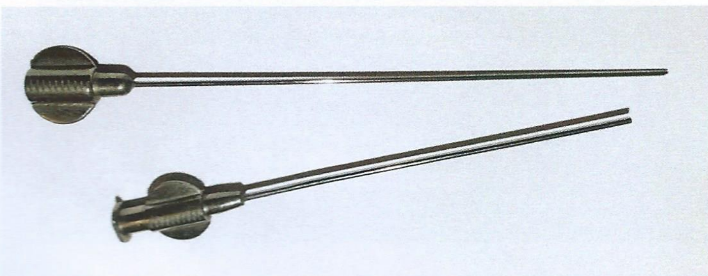


Fig.1 Traditional angiogram needle

Trans-Lumbar Aortography (TLA)

I started radiology in 1981 at Hammersmith Hospital in London, where we were taught the technique of TLA. The patient was given a general anaesthetic (GA) and placed prone on the X-ray table. The X-ray department had a regular anaesthetic session for these procedures. A long needle was inserted a hand's breath away from the spine and just below the lowest rib, and advanced straight down to hit the aorta in front of the spine. We were told that, since the aorta was the largest artery in the body, if we could not hit it we should consider another branch of medicine such as dermatology! For a high puncture the needle was angled cephalad. When arterial blood was obtained a test injection was made to confirm position, and then the full injection was made. Whilst we were taught to use a hand injection, in some departments a pump injection using a Talley pump could be used (fig 2). The Talley pump was attached to a gas cylinder to provide the necessary pressure.

The images obtained on film were excellent and of high resolution. Surprisingly my complication rate was low. The major complication I saw was when I was a consultant, and a colleague had not noted that the patient was on warfarin, and the patient developed a large retroperitoneal haematoma. It was obviously possible to dissect an artery, and to this end a needle with a short bevel was chosen to avoid the risk of the needle being in the lumen and wall at the same time. Needles with a blind tip and a side hole (fig.3) helped to ensure a luminal injection. I still remember doing

Fig. 2 Talley pump

a TLA and seeing atheroma coming from my needle followed by arterial blood! The TLA was

Fig.3 Pencil point needle with side hole

a good technique and was quick with few complications, and from its inception in the 1920s was still being performed in he late 1980s. It is interesting to note that in some departments the TLAs were performed by the surgical registrars, with the technique being taught by the outgoing registrar to the incoming one.

Catheter Angiography

What is obvious retrospectively is not so obvious prospectively. Seldinger was a radiologist and performed many angiograms. It was whilst holding a needle, a guide wire and a catheter that he had an idea. If the vessel were to be punctured with a needle, then after blood was obtained, a guide wire could be inserted along the needle into the lumen of the vessel. The needle could be removed leaving the guide wire in the vessel. A catheter could be passed along the guide wire into the vessel and then the wire removed leaving the catheter in the vessel (figs. 4 and 5). The catheter could be advanced into any desired position and a contrast injection made. So, if a patient had poor or absent femoral pulses a TLA could be performed, and if the femoral pulses were good a femoral arteriogram with a

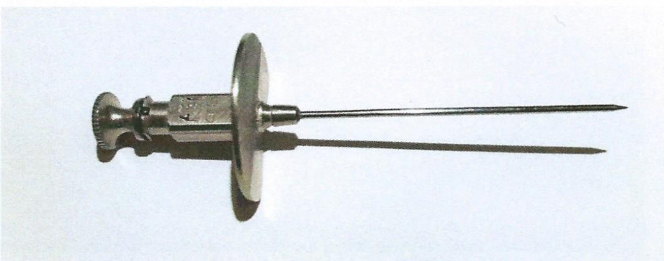


Fig. 4 Pencil point Seldinger needle

catheter was used for aortography.

The catheters as used were initially straight, however they could be heated to make any desired shape to facilitate selective arteriography when a branch of the aorta could be catheterized. Various companies were set up to provide catheters of preformed shapes in presterilised packaging.

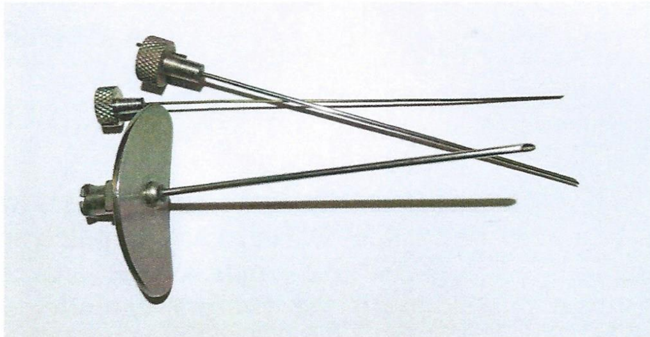


Fig.5 Three part Seldinger needle

Conclusion

Conventional diagnostic angiography reached a level of considerable sophistication, however it has all now been swept away by modern non-invasive imaging. Invasive angiography is now almost always reserved to guide interventions.

Further Reading:

1. *Dolby T.* Angiography and Cardiac Catheterisation. Massachusetts: Publishing Sciences Group, 1976 (A detailed general overview of angiography.)

2. *Stirling W Barr.* Aortography, Its application in urological and some other conditions. Edinburgh & London: E&S Livingstone, 1957. (Aortography as performed by the translumbar route, written by a urologist.)

3. *Sutton D.* Arteriography. Edinburgh & London: E&S Livingstone, 1962. (The classic book on all aspects of angiography in the pre-digital world.)

4. *Thomas AMK, Banerjee AK, Busch U.* Classic Papers in Modern Diagnostic Radiology. Berlin: Springer, 2005. (Contains a section on Seldinger and the development of modern angiography.)

A PAINFUL VICTORY

MICHAEL CRUMPLIN

The bicentenary of the Waterloo Campaign is now three years past. The war against Napoleonic France was virtually over and, as the armies marched or fled from the Brabant battlefields, what became of thousands of damaged men? This topic is skimmed over or excluded from most of the written works on this memorable campaign that changed the face of Europe.

This Society is rightly committed to the study and research based on surgical tools and equipment. However, we do need to put in perspective that, what we do with them also resonates. I discovered a new data source in the University of Edinburgh, which permitted study of the fate of many victims wounded at Waterloo. Around 200,000 soldiers gathered in an area around 3 square miles pounded each other for around nine hours, leaving about 50,000 men dead, dying, wounded or missing (fig.1) and also around 6,000 equine casualties.

The four-day campaign left over 60,000 damaged men. Images of the types of wounds inflicted at

Fig. 1 The aftermath of Waterloo

this battle have been poignantly illustrated by Sir Charles Bell and are well-known to the Society. On the battlefield, little definitive therapy could be given - haemostasis, bandaging, reassurance, water to drink and removal from the battle zone were paramount issues - as today. Field surgery was limited to amputation, simple foreign body removal, ligation, suturing and splinting (fig.2). The onetime eminent French Service de Santé was fractured and wasted, leaving the care of thousands to the Allied medical officers. A few cases of limb ablation were performed actually at the combat site, but most men were removed to field dressing stations for this procedure (fig.3). In the shambles

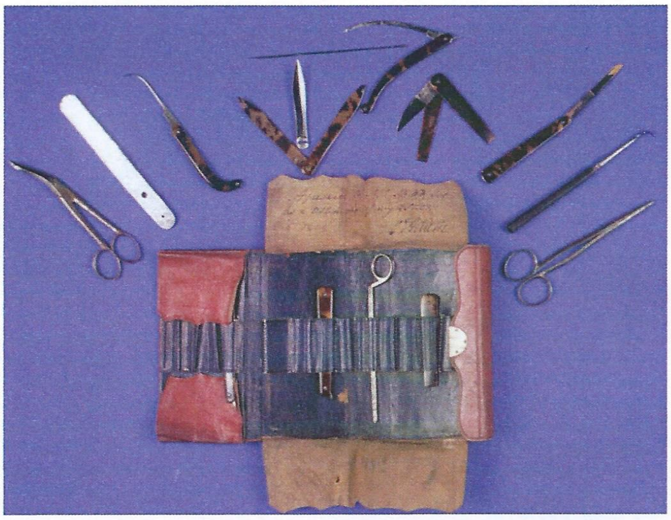


Fig. 2 Contemporary surgical instrument pocket set carried by itinerant surgeons

of busy field hospitals, there are accounts of instruments being lost and also being shared by the staff and regimental surgeons.

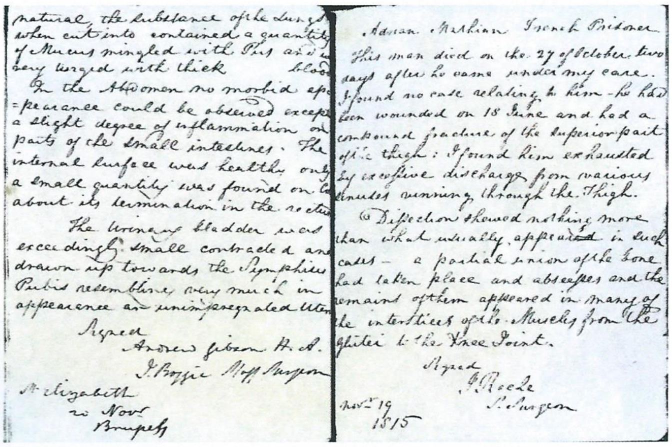
The nigh-impossible challenge for the Army Medical Department (AMD) was the timely evacuation of masses of wounded men. The density of the lat-

Fig.3 An amputation set used by an assistant surgeon to the Life Guards at Waterloo

ter was 2,291 per mile of front (cf the first day of the Somme - 234 for each mile of front). At Mont St Jean and at Braine l'Alleud to the west, wounds were explored, missiles and implanted detritus removed and some amputations -usually of the guillotine type - carried out.

Patients were then removed to over 30 hospitals and thousands of homes around Brussels, Antwerp and Louvain. It took around 2 weeks to bring all victims in. There was satisfactory team work and liaison between Inspector Grant (principal AMD inspector) and Inspector Brugmans - the senior French-trained Belgian medical officer in Brussels. Around 8,000 patients were distributed into hospitals and private homes. Extreme measures were taken to maintain as high a standard of hygiene as possible in the crowded city and the heat of summer. Wandering teams of Dutch/Belgian surgeons did what they could for the wounded out-with the towns.

The data for this paper emanates from 25 detailed case reports (fig.4), 173 simple sketches of wounds and surgical results from five Brussels hospitals, each with a British staff surgeon in


natural, the substance of the lungs when cut into contained a quantity of Mucus mingled with Pus and ... very loaded with thick ... blood

In the Abdomen no morbid appearance could be observed except a slight degree of inflammation on parts of the small intestines. The internal surface was healthy only a small quantity was found on ... about its termination in the rectum

The urinary bladder was exceedingly small contracted and drawn up towards the Symphisis Pubis resembling very much in appearance an unimpregnated uterus

Signed
Andrew Gibson H. A.
J. Boggie Staff Surgeon

St Elizabeth
20 Novr
Brussels

Adrian Mathian French Prisoner

This man died on the 27 of October two days after he came under my care. I found no case relating to him - he had been wounded on 18 June and had a compound fracture of the superior part of the thigh: I found him exhausted by excessive discharge from various sinuses running through the Thigh.

Dissection showed nothing more than what usually appears in such cases - a partial union of the bone had taken place and abscesses and the remains of them appeared in many of the interstices of the Muscles from the Glutei to the Knee Joint.

Signed
J. Roche
S. Surgeon

Novr 19
1815

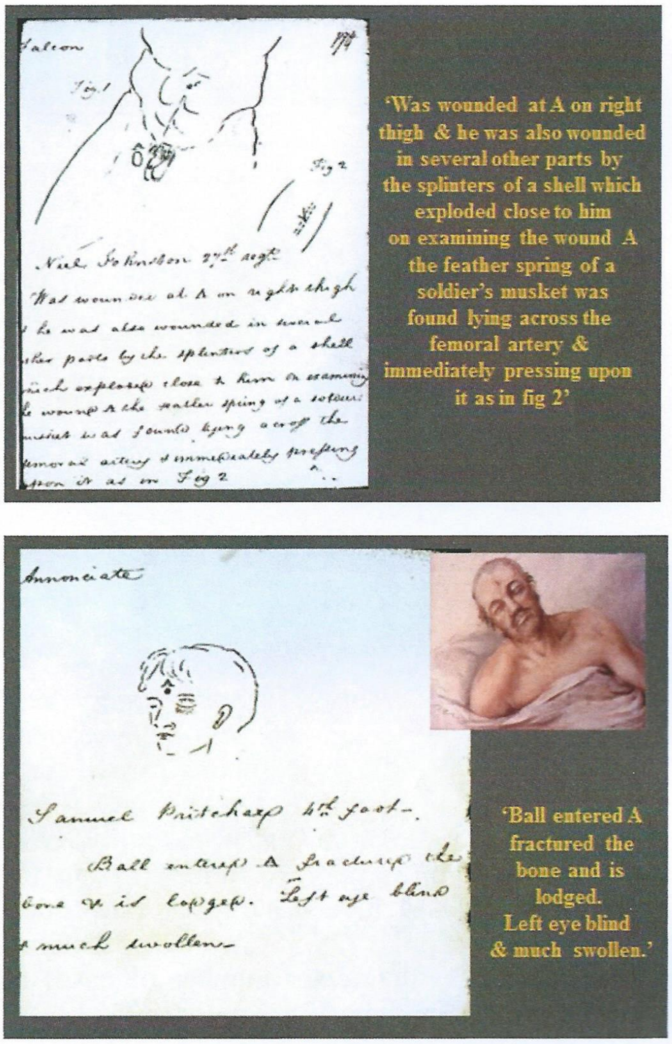
Fig.4 Part of one case report and a complete second case report written by staff surgeons

charge of medical care. The case reports were legible and informative, with some detail of surgical procedures. The combined mortality of 60% reflected the honest reporting of difficult cases.

The 173 sketches (figs 5&6), mainly focussing on entry wounds gave a good spread of injuries over the anatomy of patients.

These are unique records of casualties, annotated by a visiting chair of military surgery from Edinburgh, John Thomson. They were part of a batch of official records sent back to Berkeley Street in London - the HQ of the AMD. Finally there was much data in various formats from five Brussels hospitals. Wound types and their causation were described, as were outcomes of surgery and fate of many wounded, between June and August, 1815.

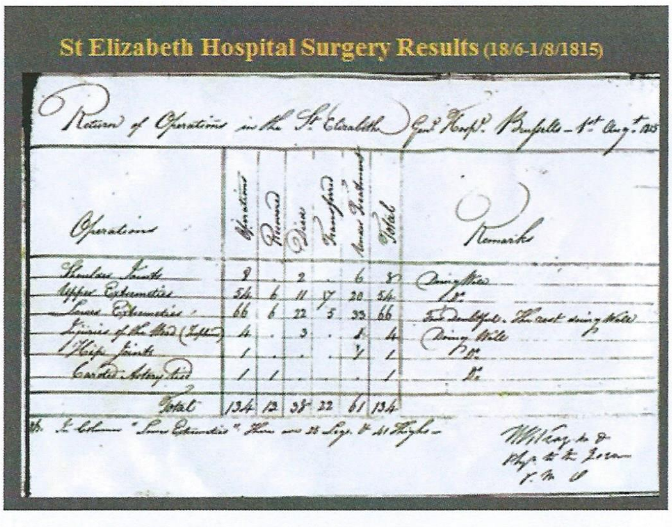
The features of this unique data were: the lists of wounds, what caused them and surgical procedures recorded in varying formats and on differ-



Figs.5 & 6 Two of the annotated line drawings

ently designed forms. Two examples of the hospital reports are shown below (figs 7 & 8).

Results from one large hospital series gave mortality rates for sundry anatomical sites damaged:


St Elizabeth Hospital Surgery Results (18/6-1/8/1815)

Return of Operations in the St Elizabeth Genl Hospl. Brussels – 1st Augt 1815

Operations	Operations	Removed	Died	Transferred	Remain under Treatment	Total	Remarks
Shoulder Joints	8	.	2	.	6	8	Doing Well
Upper Extremities	54	6	11	17	20	54	Do.
Lower Extremities	66	6	22	5	33	66	Four doubtful. The rest doing Well
Injuries of the Head (Trephined)	4	.	3	.	1	4	Doing Well
Hip Joints	1	.	.	.	1	1	Do.
Carotid Artery tied	1	1	.	.	.	1	Do.
Total	134	13	38	22	61	134	

In the Column "Lower Extremities" there are 25 Legs & 41 Thighs –

[illegible]

Fig. 7 Hospital report listing wound types and surgery with some outcomes

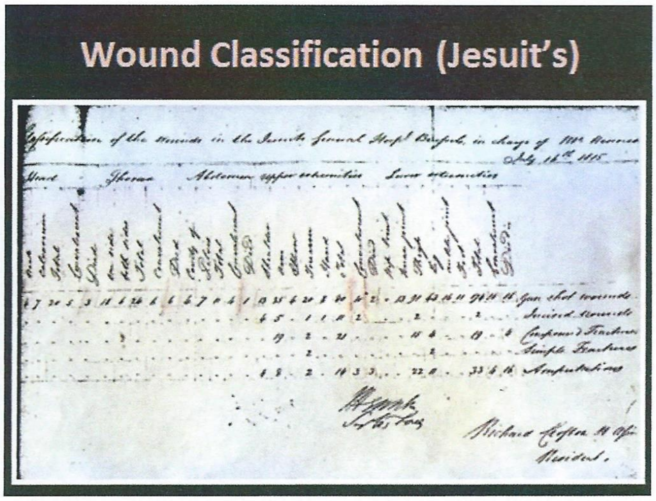


Fig. 8 Second hospital report

Head/neck - 15%, thorax - 24%, abdomen and pelvis - 9%, upper limb - 3%, but lower limb - 9%. The lower limb was the site of serious and frequent damage. Overall, early surgery had a 22% death rate, compared with delayed operation - 37%. Similarly operations carried out in larger general hospitals, for obvious reasons proved more dangerous (55% mortality), when compared with surgery performed in the field hospitals (38%). There was a varied rate of death in the five hospitals (28-56%). Two of the hospitals dealing with greater number of cases had better results (both had 28% mortality).

Staff surgeons, working at these sites, purchased their own capital sets at c. £20-£30 a box. Two such sets are illustrated - one a general capital set, this one a French set, belonging to Baron Dominique Larrey along with his dressings satchel (fig.9) and the other a rare amputation set belonging to a cavalry surgeon, carried as a saddle pack (fig.10).

Of the 6,636 wounds treated with or without sur-

Fig.9 Baron Larrey's capital surgical set, uniform and dressings pack

Fig.10 A rare example of a regimental cavalry officer's amputation set

gery, 745 died - 11%, but the 508 cases which underwent surgery had a surprisingly high mortality of 42%. This reflects delay, varied surgical experience and patient fitness at the time of surgery. Of all the Allied wounded spread over the cities and towns (n= 9,500), 850 died, giving an overall mortality of 9%. This seems 'acceptable', but it should be recalled that we do not know of the thousands who died bleeding out on the battlefield, through lack of timely and proper evacuation. To reach hospital was a survival indicator!

How fascinating it would have been to witness some of these surgical procedures. What remains plain, is that there were sometimes ill-defined protocols, poor nosology and much delay in surgery. On the positive side, the Almighty and surgeons of this campaign had some excellent results. The quality of the instruments used by the contemporary armies reflected a very different type of surgical craft. Apart from the skills of the operator, the important issues were what to do and when (as now)! As a tribute to the suffering of thousands and the efforts of the surgeons, there is now a surgical museum on the battlefield of Waterloo, housed in what was the 1st Corps Allied dressing station, in the Ferme de Mont St Jean. A variety of instruments, books, models and battlefield relics remind us of an oft-hidden aspect of conflict. Waterloo marked the end of a protracted war against France and introduced the 'militarisation' of surgery into the British Army.

THE DEVELOPMENT OF THE FOOT PEDAL ENGINE

MARGARET WILSON

Introduction

Prior to the 19th century, the restoration of teeth was limited to the use of hand instruments, such as excavators, chisels, hatchets and trimmers. Operative dentistry on the teeth was slow. There was clearly a need to speed up treatment and find a way to reach more inaccessible parts of the mouth. The invention of the foot pedal dental engine is attributed to James Morrison, however, as with many inventions, there were several other contributors, who have largely been forgotten but who played a vital role in the development.

Treadle power

The foot treadle powered spinning wheel or "Saxon Wheel" had been introduced into Europe at the beginning of the sixteenth century. Foot treadling made spinning faster and gave the operator the opportunity to use both hands to control the thread. The hand lathes for mechanical dentistry, as pictured in Fig.1, encountered the same problems as in the spinning industry, in that only one hand could hold the item being shaped or polished.

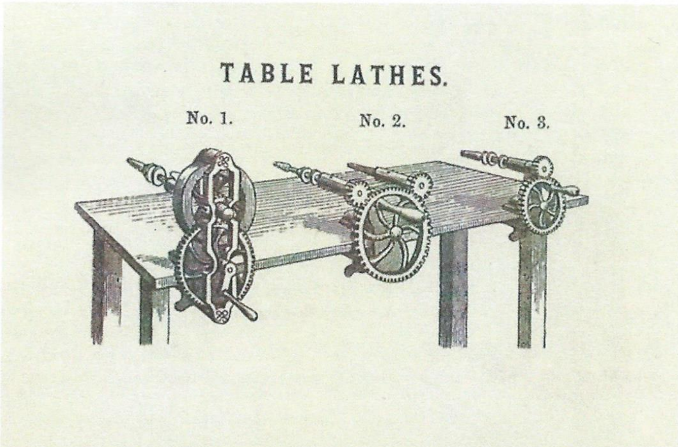


Fig. 1 Hand powered table lathes as advertised in the SS White catalogue

John Greenwood (1760-1819) (Fig 2).
He became a dentist, working in New York. In 1790 he is attributed with adapting a pedal powered spinning wheel to turn a lathe for use in mechanical dentistry. The pedal powered drill was used for drilling holes for pivots and posts and turning ivory for dentures Fig 3. Unfortunately he did not take the next step of adapting the technique for use in the mouth.

Fig.2 John Greenwood

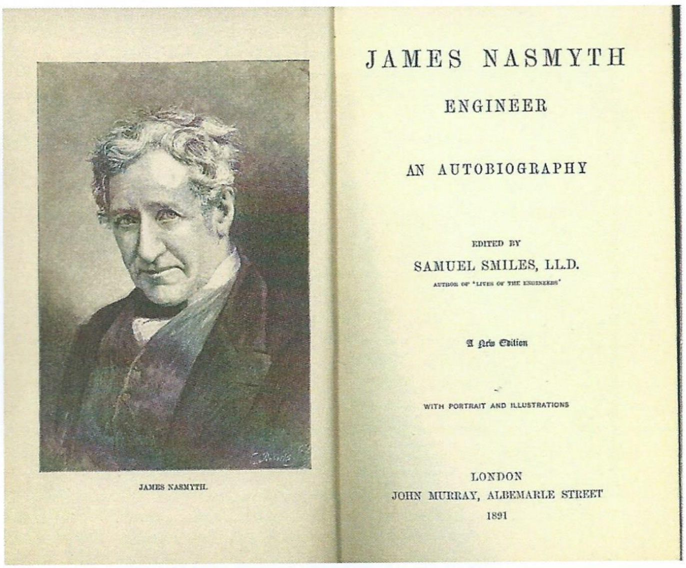
Fig 3 Ivory dentures with springs, BDA Museum

The engineer- James Nasmyth (1808-1890)

James Nasmyth was born in Edinburgh (Fig 4), the son of a well know Scottish landscape artist. He was inspired by James Watt, to become an engineer and began work at Henry Maudslay's works in London.

James Nasmyth produced numerous mechanical inventions from 1825, whilst working for Mr Maudslay. Subsequently, in 1836 he opened his own engineering works, the Bridgewater Foundry in Patricroft, Lancashire.

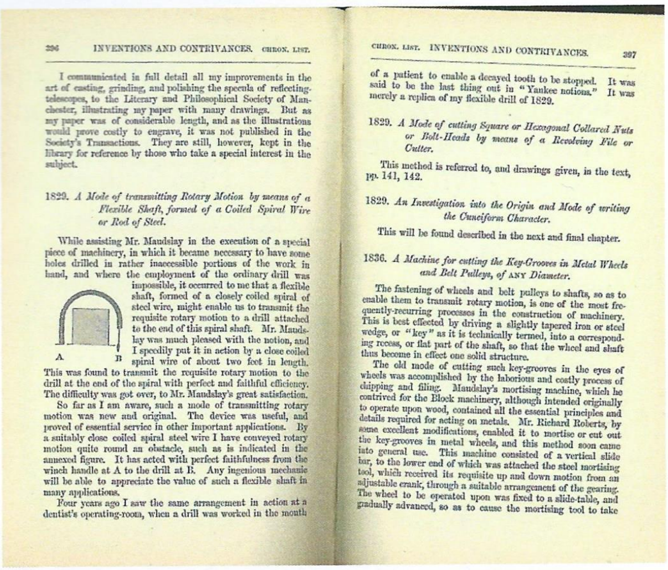
His autobiography includes a list of all his inventions, the most well-known was the Steam Hammer. An entry for a date in 1829 describes, "A


JAMES NASMYTH.

JAMES NASMYTH
ENGINEER
AN AUTOBIOGRAPHY
EDITED BY
SAMUEL SMILES, LL.D.
AUTHOR OF "LIVES OF THE ENGINEERS"
A New Edition
WITH PORTRAIT AND ILLUSTRATIONS
LONDON
JOHN MURRAY, ALBEMARLE STREET
1891

Fig.4 James Nasmyth and his autobiography

mode of transmitting Rotary Motion by means of a Flexible Shaft, formed of a Coiled Spiral Wire or Rod of Steel"(Fig 5). He used a flexible shaft formed of a closely coiled spiral of steel wire


396 INVENTIONS AND CONTRIVANCES. CHRON. LIST.

I communicated in full detail all my improvements in the art of casting, grinding, and polishing the specula of reflecting-telescopes, to the Literary and Philosophical Society of Manchester, illustrating my paper with many drawings. But as my paper was of considerable length, and as the illustrations would prove costly to engrave, it was not published in the Society's Transactions. They are still, however, kept in the library for reference by those who take a special interest in the subject.

1829. *A Mode of transmitting Rotary Motion by means of a Flexible Shaft, formed of a Coiled Spiral Wire or Rod of Steel.*

While assisting Mr. Maudslay in the execution of a special piece of machinery, in which it became necessary to have some holes drilled in rather inaccessible portions of the work in hand, and where the employment of the ordinary drill was impossible, it occurred to me that a flexible shaft, formed of a closely coiled spiral of steel wire, might enable us to transmit the requisite rotary motion to a drill attached to the end of this spiral shaft. Mr. Maudslay was much pleased with the notion, and I speedily put it in action by a close coiled spiral wire of about two feet in length. This was found to transmit the requisite rotary motion to the drill at the end of the spiral with perfect and faithful efficiency. The difficulty was got over, to Mr. Maudslay's great satisfaction.

A B

So far as I am aware, such a mode of transmitting rotary motion was new and original. The device was useful, and proved of essential service in other important applications. By a suitably close coiled spiral steel wire I have conveyed rotary motion quite round an obstacle, such as is indicated in the annexed figure. It has acted with perfect faithfulness from the winch handle at A to the drill at B. Any ingenious mechanic will be able to appreciate the value of such a flexible shaft in many applications.

Four years ago I saw the same arrangement in action at a dentist's operating-room, when a drill was worked in the mouth

CHRON. LIST. INVENTIONS AND CONTRIVANCES. 397

of a patient to enable a decayed tooth to be stopped. It was said to be the last thing out in "Yankee notions." It was merely a replica of my flexible drill of 1829.

1829. *A Mode of cutting Square or Hexagonal Collared Nuts or Bolt-Heads by means of a Revolving File or Cutter.*

This method is referred to, and drawings given, in the text, pp. 141, 142.

1829. *An Investigation into the Origin and Mode of writing the Cuneiform Character.*

This will be found described in the next and final chapter.

1836. *A Machine for cutting the Key-Grooves in Metal Wheels and Belt Pulleys, of* ANY *Diameter.*

The fastening of wheels and belt pulleys to shafts, so as to enable them to transmit rotary motion, is one of the most frequently-recurring processes in the construction of machinery. This is best effected by driving a slightly tapered iron or steel wedge, or "key" as it is technically termed, into a corresponding recess, or flat part of the shaft, so that the wheel and shaft thus become in effect one solid structure.

The old mode of cutting such key-grooves in the eyes of wheels was accomplished by the laborious and costly process of chipping and filing. Maudslay's mortising machine, which he contrived for the Block machinery, although intended originally to operate upon wood, contained all the essential principles and details required for acting on metals. Mr. Richard Roberts, by some excellent modifications, enabled it to mortise or cut out the key-grooves in metal wheels, and this method soon came into general use. This machine consisted of a vertical slide bar, to the lower end of which was attached the steel mortising tool, which received its requisite up and down motion from an adjustable crank, through a suitable arrangement of the gearing. The wheel to be operated upon was fixed to a slide-table, and gradually advanced, so as to cause the mortising tool to take

Fig.5 Nasmyth's invention

that would allow the transmission of rotary motion to a drill bit at the end of the spiral. In his autobiography published in 1891, he states,

"Four years ago I saw the same arrangement in action at a dentist's operating room, when a drill was worked in the mouth of a patient to enable a decayed tooth to be stopped. It was said to be the last thing in "Yankee notions". It was merely a replica of my flexible drill of 1829"

A hand drill with a flexible shaft- Charles Merry

In 1858, nearly thirty years after James Nasmyth's invention of transmission of rotary movement via a flexible shaft, Charles Merry a dentist in St. Louis, introduced a drill using this idea. He described cavity preparation to the St Louis Dental Society in 1859. Unfortunately this drill was difficult to use and was not adopted. He did not refer to Nasmyth in his report.

The foot treadle drill - James Beall Morrison (1829-1917)

James Morrison (fig 6) began his dental apprenticeship in Ohio in 1848. In 1857 he moved to St Louis and practiced dentistry with his brother

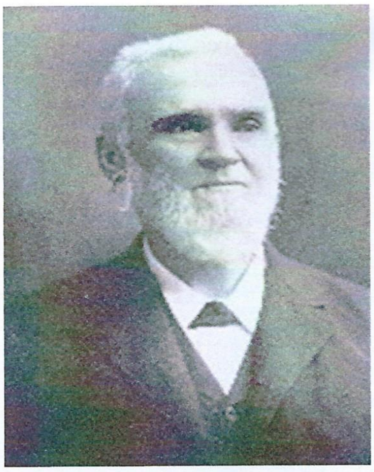


Fig.6 James Morrison

William until 1861/2. He moved to Paris for one year before working in London for six years. Returning to Missouri in 1870, he patented the foot treadle drill in 1871 (Fig 7).

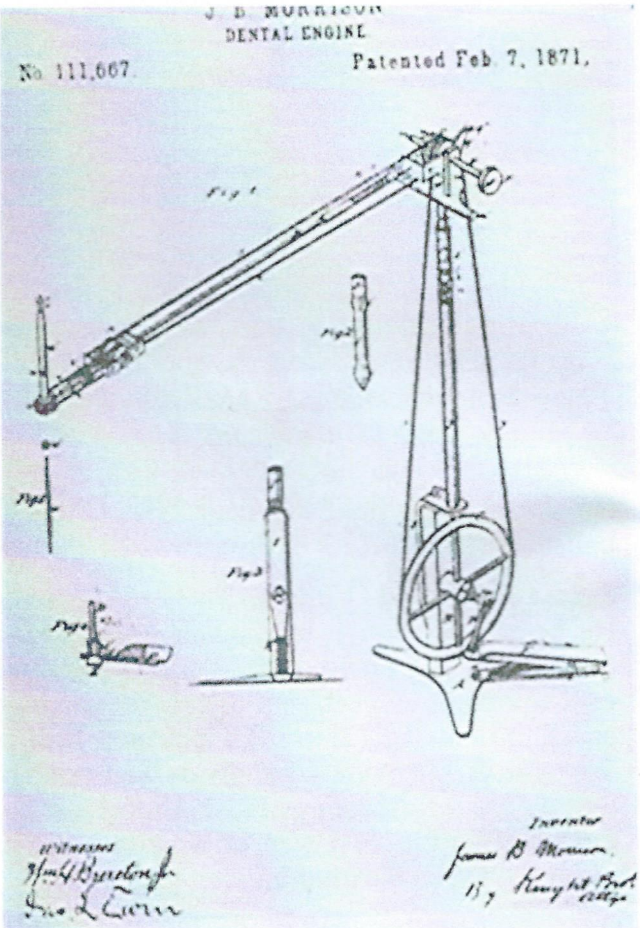


Fig.7 Patent for J. B. Morrison Dental Engine. No. 111.667, United States Patent Office.

The Morrison's foot pedal drill enabled dentists to obtain 2,000 rpm. In his patent application, with no mention of Nasmyth, he claims the invention of transfer of power using a flexible coiled wire. This had first been described by Nasmyth forty two years earlier.

Dr Parsons Shaw's (1825-1897) Modifications

Parsons Shaw DDS, was an American dentist working in Manchester, UK. (Fig 8). He was the first Warden of Manchester Dental School, returning to the USA in 1891. More flexible connections between the hand piece and the treadle drill were needed. The modifications designed by Parsons Shaw resulted in Shaw's Dental Engine,
patented in1881 (fig.9).

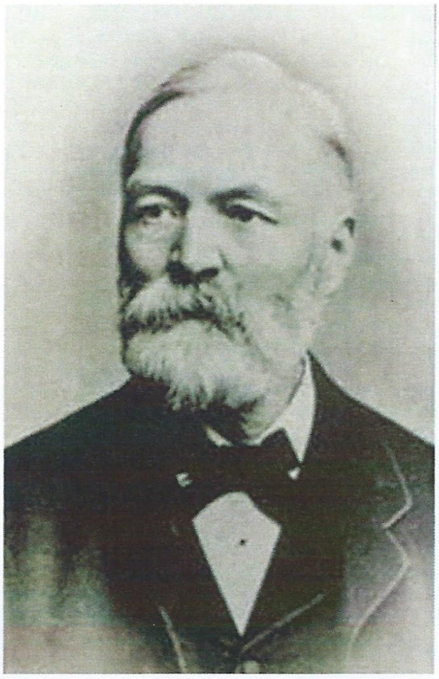


Fig.8 Dr Parsons Shaw DDS

Conclusion

Although the name Morrison is always associated with the foot treadle drill, it is important to remember the part played by others. One can only speculate whether Morrison and Merry were aware of Nasmyth's invention or merely opportunistic in adapting the technology. Clearly Nasmyth recognised his own invention when he observed the foot pedal dental engine in a surgery. Nasmyth is well known in engineering history, had he patented his invention, his name would surely be more widely known in dental history.

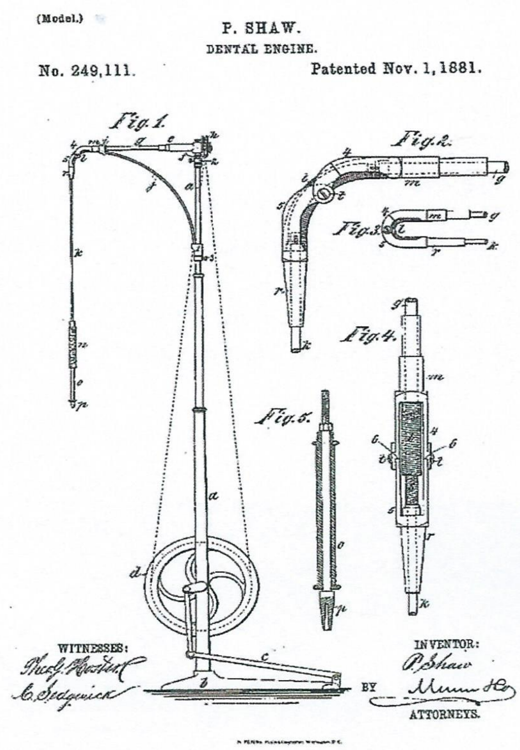


Fig. 9 Shaw's dental engine

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THE RICHES' CYSTOSCOPE

JONATHAN GODDARD

In July 2017 at a meeting for retired and honorary fellows of the British Association of Urological Surgeons (BAUS), two boxed cystoscopes were presented to the Museum of Urology by Mr Peter Worth, a retired urological surgeon. These were examples of the Standard Cystoscope designed by Sir Eric Riches in 1955 and indeed previously belonged to and were used by Sir Eric. [figs 1 and 2]

Fig.1 Riches' Cystoscope in a metal sterilization box 1. With single and double catheterisation sheaths and bulb lights

The Cystoscope

The cystoscope is a surgical instrument which allows visualisation of the inside of the bladder via the urethra. To achieve this several things are required. Firstly, a tube which can be passed into the bladder, secondly light to illuminate the interior of the body and thirdly an optical system to conduct that light back out to the user's eye. The development of the cystoscope took over a century and many innovations.

It is usually accepted that the Lichtleiter of the German-Italian Philip Bozzini (1773-1809) of Mainz was the first endoscope. The Lichtleiter used an in-built beeswax candle with adjustable viewing ports to perform basic endoscopy of body cavities including the urethra and possibly but not necessarily the bladder. In 1826, Pierre Sègalas (1792–1874) in France attempted to improve on the Lichtleiter, not least by adding a second candle[1].

The next advance also came from France; in 1853 Antonin J. Desormeaux (1815–1894) used an oil lamp burning a mix of alcohol and turpentine as a light source. This enabled him to diagnose and treat diseases of the urethra. In 1865 Sir Francis Richard Cruise of Dublin, published an improved version of Desormeaux's endoscope increasing its light intensity by the use of dissolved camphor and petroleum as fuel and improving the lens system. Cruise's endoscope did enable visualisation of the bladder[2].

Thus far, light sources had been external; the light was reflected down the urethra into the bladder.

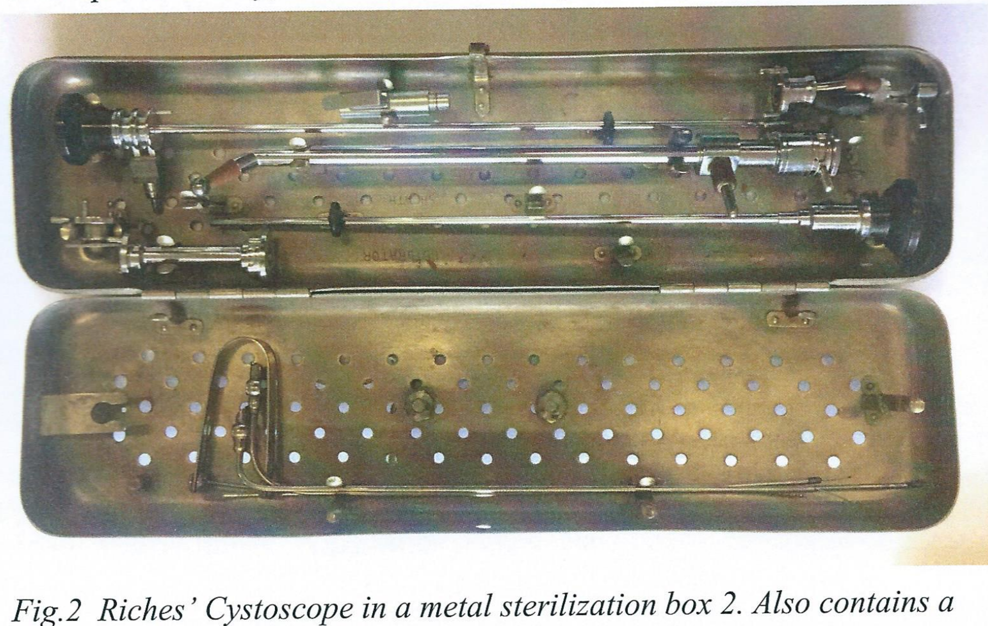

Fig.2 Riches' Cystoscope in a metal sterilization box 2. Also contains a diathermy ball and a rod lens.

The next stage of endoscopy introduced a light source into the body cavity. Maximilian Carl-Friedrich Nitze (1848 – 1906) working with instrument maker Joseph Leiter (1830 – 1892) used a heated magnesium strip in their Kystoskop of 1879. But it was too hot and required a large and complex cooling system[1].

In 1878 Sir Joseph Swan and Thomas Edison, developed the incandescent light bulb. In 1888, both Nitze and Leiter (who had by this time fallen out) incorporated this incandescent bulb into the first truly usable cystoscopes[1]. This type of lighting system was still in use on the Riches Standard Cystoscope in the 1950's and 60's. However, a different telescope type is also included with our Riches Cystoscope, a Hopkins' Rod Lens (fig.3A).

The Rod Lens

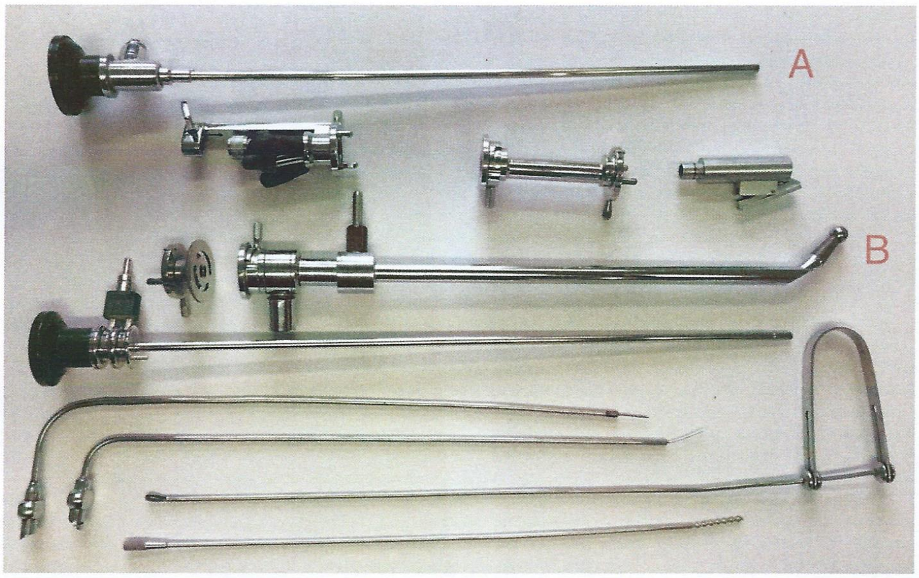

Fig.3 Riches' Cystoscope, contents of box 2. Hopkins' Rod lens telescope labelled 'A' and Kidd's diathermy ball, labelled 'B'

In 1957 the Liverpool urologist James (Jim) Gow (1917 – 2001) frustrated by his inability to photograph bladder tumours via a cystoscope contacted optical physicist Harold Hopkins. Hopkins calculated that the light intensity down the cystoscope would need to be increased by a factor of 50 times. This required a radical new idea in optics theory. Hopkins swapped round the array of glass relay lenses and air spaces in the cystoscopes such that there were now long glass rods replacing the airspaces and lens shaped air gaps. Light travels better through glass than air. Hopkins then applied an antireflective coating to the glass lenses. The combination of these two ideas increased the light reaching Gow's camera by 80 times. Finally working with German instrument manufacturer Karl Storz (1911 – 1996) he added a very bright light from an external light source via a fibre optic cable into the cystoscope[3].

The need for a Standard Cystoscope

The first practical cystoscopes of Max Nitze and Josef Leiter were introduced in 1887 and within the year were being used in Great Britain. The instruments were imported from Vienna and Berlin but soon British surgeons were asking their instrument makers to alter them and designing their own. New designs came from home and abroad and soon there were many types of cystoscope available. Instruments from different makers were not interchangeable and this could cause frustration if different attachments were required during an endoscopic operation.

In 1955 Eric Riches, a urologist at the Middlesex Hospital proposed a standardisation of the irrigation, lighting and locking systems of British cystoscopes. He approached the Genitourinary Manufacturing Company of London to make his new standard cystoscope, acknowledging the help of Mr Schranz and Mr Bean of the company in making the optics and biopsy forceps respectively[4]. The Riches Cystoscopes were popular.

Frank Kidd and the endoscopic treatment of bladder tumours

Our Riches' cystoscopes also include a Kidd's Ball attachment (fig.3B). The concept of fulgurating (cauterising) bladder tumours down a cystoscope was introduced by the American Edwin Beer (1876 – 1938) in 1910. Frank Kidd (1878 – 1934) a urologist from the London Hospital introduced his diathermy ball in 1925 utilising the new invention of Bakelite once again with the help of Mr Schranz[5].

Sir Eric Riches

Eric William Riches was born at Alford, Lincolnshire, on 29th July 1897. He won a scholarship to Christ's Hospital and a further scholarship won him a place at the Middlesex Hospital Medical School, however, the year was 1915 and he deferred his place to fight for his country. During the First World War he was an infantry officer serving with the Lincolnshire regiment and later with the Suffolk regiment. In 1917 Riches won the Military Cross for bravery on 26th August at Hargicourt, on the Somme (fig.4).

After the War he took his place at the Middlesex. He developed an interest in surgery and was appointed to the Middlesex Hospital in 1930 as general surgeon specialising in urology. He was particularly interested in Renal

Fig.4 Eric Riches in the uniform of the Lincolnshire regiment, 1915

Cancer and was a very fine surgeon; many flocked to watch him.

BAUS

Eric Riches was one of the founder members of BAUS, in fact the first meeting of this group of interested urologists took place at his house at 22 Weymouth Street on 11th December 1944 (fig.5). Riches was the first honorary secretary of BAUS and was made President in 1951. Eric Riches was knighted in 1958. Sir Eric Riches died at the age of 90 on 8th November 1987.

Summary

These cystoscopes donated to the Museum of Urology are not merely fine examples of these instruments but form a direct link to one of the most British famous urologists of C20th and a founder member of BAUS. They are linked with Harold Hopkins, Jim Gow and Frank Kidd and demonstrate the development of this instrument through time.

Fig.5 Eric Riches portrait as a famous Harley Street Surgeon of the 1930's

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SPUTUM POTS AND PERSONAL SPITTOONS

NOEL SNELL

Spitting in public was once widespread, and as late as 1914 in the UK spitting on the floor in factories and hospital waiting rooms was apparently still acceptable[1], although spittoons had been widely available in bars, hotels, clubs, railway stations and other public buildings for many years; these were usually wide, squat, cylindrical vessels with a central funnelled opening, set on the floor or counter; often called 'cuspidors' in the Americas[2]. As early as the 1760s the London Hospital records note that 'Dr Dawson and the apothecary, having recommended that a number of Pots be provided for each ward to prevent the patients spitting against the walls…ordered that a dozen coarse earthenware spitting pots be provided for each ward'[3]. In March 1887 the Council of the Brompton Hospital decreed that the ward spittoons should be emptied and disinfected at least once a week[4]. Campaigns against public spitting began to appear in the 1880s, driven by concerns about tuberculosis (TB) – Koch had described the causative agent in 1882. In 1886 France became the first country to make spitting in public places illegal, and this was followed by similar ordinances in most cities in the USA. Strangely, spitting in public was not banned in the UK, and was still common in some localities in the 1930s [1].

Fig.1 Personal spittoons

Smaller spittoons for personal use were manufactured from the 17th C in a variety of shapes, with or without a spout or handle. Examples of English and Dutch tin-glazed spittoons, English and continental porcelain, and blue-and-white transfer-printed earthenware are included in the two main reference works [2, 5]. Later examples may have detachable funnelled lids to facilitate cleaning. Fig. 1 shows a blue-and-white cup with detachable lid ca 1845, Ridgway's 'Humphrey's Clock' pattern (familiar patterns such as 'Spode's Italian' and 'The Tower' are also found); a German porcelain example ca 1850 with a fixed lid and short spout (variously described as the head of a lion, or bird, in different catalogues); and a later blue glass cup with metal lid.

Recognition of the potential infectivity of sputum prompted prohibition of public spitting in TB sanatoria; regulations at the Mundesley Cottage Sanatorium stated that 'Patients are informed that consumption is spread by the matter coughed up by the lungs. Under all circumstances therefore they must spit into the flask provided for the purpose. Neglect of this regulation will be followed by summary dismissal'[6]. To facilitate this (and provide samples for bacteriological analysis) patients were issued with personal spittoons, often portable. The blue-enamel pots used at Harefield Hospital (known as 'Mickey pots') were collected daily by the porters and sterilised in a copper of boiling water [7]; a student nurse in the 1960s described the unpleasant task of collecting sputum pots for analysis and recording of the contents [8]. A 1903 publication surveys a number of sanatoria in the UK and abroad, listing types of sputum pot (paper cups, portable flasks), fluids used in the receptacles (water, lysol, phenol, formalin etc), methods of disposing of the sputum, and of cleaning the flasks (boiling, antiseptics)[9]. The portable spittoons were usually made of glass and/or met-al, often pewter; some examples are shown in Fig.2.

The Dettweiler flask and its imitators were in use from the 1870s until the 1930s and after; the more sophisticated types had a sprung hinge to the cap, and a secondary access to allow the flask to be flushed through. The metal example is a 'Diskret'. The simple green-glass 'Crossley' pot came from the Reading Chest Clinic where they were probably still in use in the 1950s-60s; it may be named after the Crossley sanatorium in Cheshire. A simple portable spittoon, 'Seabury's Sanitary Pocket Cuspidor' was available in the USA; this was just an accordion-folded heavy paper envelope filled with absorbent cotton, advertised as holding 24 hours' worth of 'normal' spitting[10].

Fig.2 Portable spittoons

Perhaps because of the subject matter this seems to be a very under-researched topic. Apart from the references discussed, illustrations can be found in contemporary trade and sales catalogues. Two articles on spittoons have been published in antique magazines[11,12], and illustrations and brief paragraphs on personal spittoons can also be found in two Shire publications[13,14].

Acknowledgments
My thanks to Dr Nigel Cooke for giving me a copy of his monograph and for his encouragement. Photographs are of items in the author's collection.

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HOME-MADE WALKING AIDS & THE RHODES MEMORIAL HOME

PETER & JULIE MOHR

During the demolition of an old Manchester school in 2016 a workman found three unusual pieces of 'physio' equipment for disabled children. The 'Rhodes Memorial Home' (fig.1) in Withington, Manchester had opened in 1909 as a reception home for children destined for Withington Hospital workhouse. During the 1930s the building was the base for the 'Manchester Residential School for Crippled Children' and

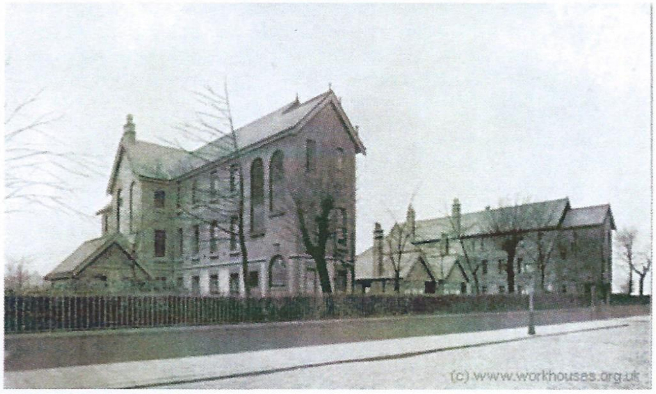


Fig.1 Rhodes Memorial Home 1909

the equipment probably dates from this period. During WW2 the building was used as a centre for the air raid wardens and after the War it became a school for the blind and later part of a primary school.

The equipment

The first object was a simple home-made walking frame (78cm high) consisting of two ordinary wooden walking sticks joined by two strong wooden bars in an 'X' arrangement (fig.2). Improvised walking frames are not uncommon – a similar one with the walking sticks

Fig.2 Homemade walking frame

joined by horizontal metal bars was demonstrated at a conference of the Manchester Disabled Living organisation. Other examples can be found in communities without adequate medical facilities.

Fig.3 The 'ski walker'

The other two objects are more complex and present a puzzle as to their use. The 'ski walker' (fig.3) consists of two short wooden foot planks (38x11cm) joined by two angled metal bars and two vertical poles (brush handles) which fit into the front of the planks. Smooth metal studs under each corner allow them to slide. The shoes are strapped to each plank and the child can shuffle forward, sliding alternate feet and holding the poles. The poles are long enough for an assistant to hold from the front. Perhaps this might have been to help a child with a spastic paraparesis or cerebral palsy.

Fig. 4 'The 'scooter'

The 'scooter' (fig.4) is also a short wooden plank (48x15cm) with a side panel (6cm high) and a metal handle from a scooter or tricycle. This equipment is well engineered with two metal rails along the base and six small rotating wheels

Fig.5 'The scooter' side view

carefully counter-sunk into the outside panel (fig.5). This appears to be designed to run along some sort of track and perhaps used for a child with a polio or wasted leg.

Dr John Milson Rhodes LRCP LRCS (Edn) MD JP (1847-1909)

Dr Rhodes (fig.6) was a GP in Didsbury, Manchester. He studied at the Manchester Royal School of Medicine and qualified at Edinburgh in 1874. He was an expert on Poor Law and became famous for his work improving the conditions in workhouses and children's homes. He died from

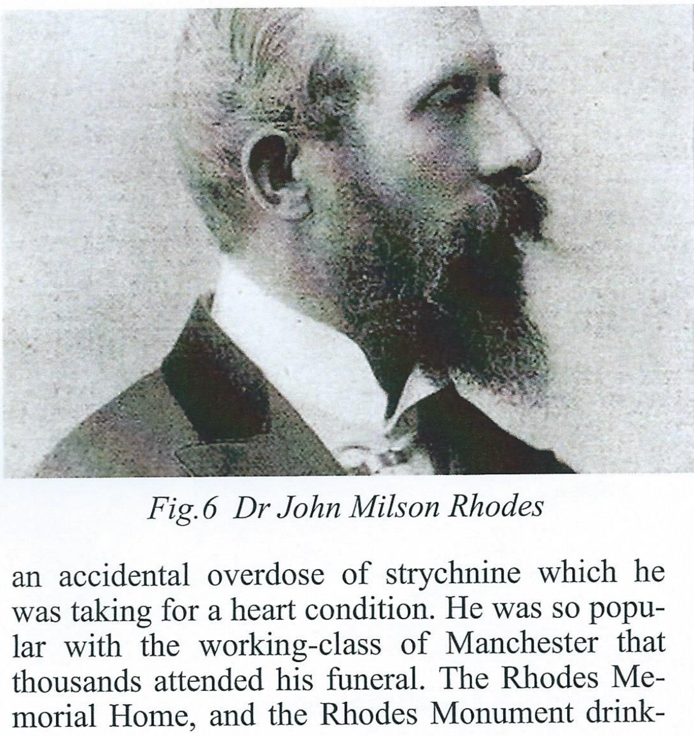
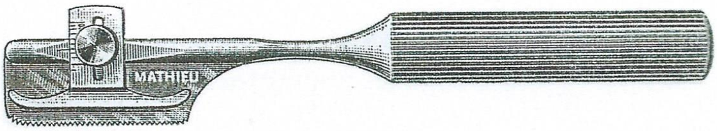


Fig.6 Dr John Milson Rhodes

an accidental overdose of strychnine which he was taking for a heart condition. He was so popular with the working-class of Manchester that thousands attended his funeral. The Rhodes Memorial Home, and the Rhodes Monument drinking fountain outside Didsbury Station, were erected in appreciation of his social work.

We would like to hear from anyone who has seen any similar pieces of equipment.

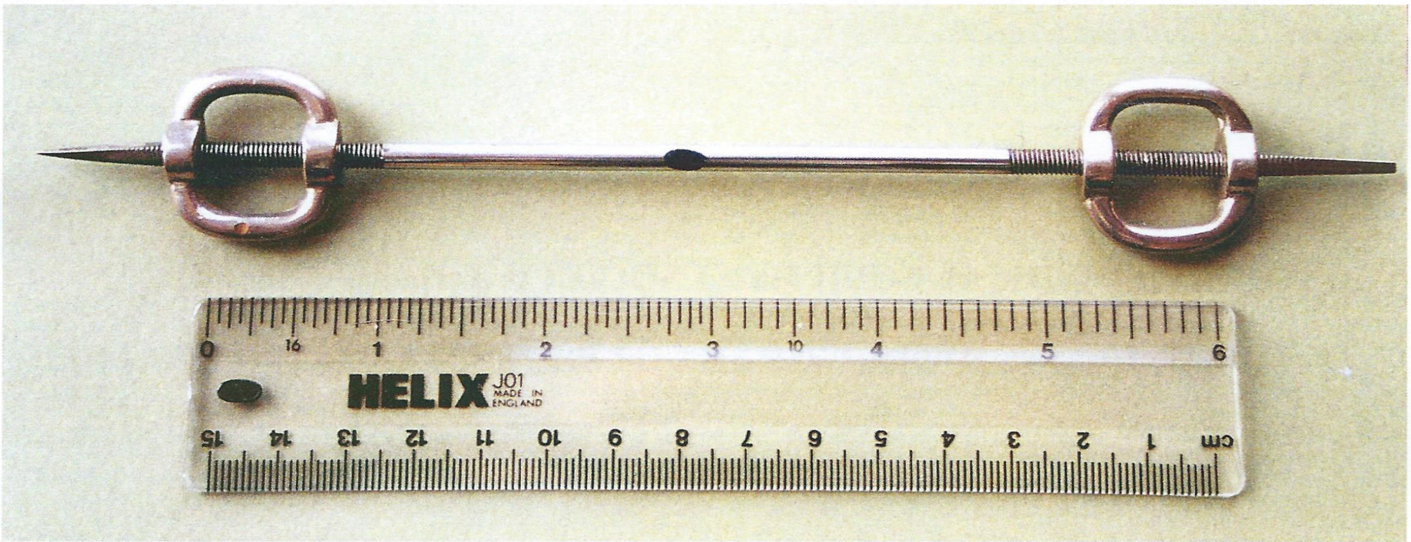
WHAT IS IT? (August 2017)



This is Eugene Doyen's adjustable skull resection saw of about 1895-1900, nickel or chrome plated, made by Mathieu who was almost as outstanding as the Parisian maker Charriere. Doyen was very active in Paris just as heat sterilisation of instruments blossomed in the later 1890's and formulated many new instruments; he died aged 56 in 1916.

WHAT IS IT? (September 2018)

What is this instrument?



The 'What is it?' series in the Bulletin are all compiled by John Kirkup. Any correspondence please to john.kirkup@doctors.org.uk

HISTORICAL MEDICAL EQUIPMENT SOCIETY: Accounts 2017/2018.

The officers of HMES have agreed that for clarity the Society's accounts will appear later in the year:

Opening Balance (Barclays) 26th April 2017 £2058.36
18th April 2016 *£2862.06*

Income			Expenditure		
*Subs (@£10 or £15{Joint})	£480.00	*£425*	Meeting cost 2018	£962.00	*£702.72*
Meeting (14th April '18) fees	£618.00	*£540*	Newsletter costs	£303.52	*£313.58*
			†BSHM sub x 2	£60.00	*N/A*
			Overpaid sub	£10.00	*N/A*
			Website costs	£130.68	*N/A*
			Treas. expenses.	£5.00	*£ 5.00*
Total:	£1098.00	*£955*	Total:	£1471.20	*£1021.30*

Closing Balance on 21st July 2018 £1685.16
Deficit for 2017/18 = £373.20

*Includes 1subs (£10) & 2 joint subs (£30) paid twice in the extended accounting period.
†British Society for the History of Medicine sub; debited twice in extended accounting period.

Total membership: 50, of whom 16 are joint members (2016-17: 45 and 8) (Includes 7 new members). 2 joint members rejoined paying £30 for 2 years subs. 1 member resigned. 3 members unpaid for 2 years: deemed to have resigned.

HISTORICAL MEDICAL EQUIPMENT SOCIETY: Accounts 2016/2017.

Opening Balance (Barclays) 18th April 2016 £2862.06
15th April 2015 *£2516.22*

Income			Expenditure		
Subs (@£10 or £15{Joint})	£425.00	*£465*	Secretarial services	0.00	*£102.00*
Meeting fees (21st April '17)	£540.00	*£420*	Meeting costs 2016	£747.40*	*£181.48*
			" " 2017	£702.72	
			Newsletter costs	£313.58	*£250.68*
			Hon Treas. exps.	. £5.00	*£ 5.00*
Total:	£955.00	*£885*	Total:	£1768.70	*£539.16*

Closing Balance: post meeting 30th April 2017 £2058.36

** Paid May 2016. Includes donation of £100 to Urology Trust*

Total members: 45 of which 4 are joint members (44 and 5: 2015-16), including one new member today. Received £25.00 (£15 and £10) from RCP and S; Glasgow. Also £15 for 2 from PJ in April '17. 1 resignation, 3 institutions unpaid and 3 members unpaid deemed to have resigned.

HISTORICAL MEDICAL EQUIPMENT SOCIETY: Accounts 2015/2016.

Opening Balance (Barclays) 15th April 2015 £2,516.22

Income		Expenditure		
Subscriptions (@£10 or £15{Joint})	£465.00*	Secretarial services		£102.00
Meeting fees (for 15th April 2016)	£400.00	Meeting (2015) costs	£181.48	
		Newsletter costs	£250.68	
		Hon. Treasurer exps.	£ 5.00	
Total:	£865.00	Total:	£539.16	

Closing Balance 14th April 2016 £2842.06

Cost of Meeting April 2016 not included

**Received £30 from RCP & S Glasgow on 29/1/16. Total members: 44 of which 5 are joint members. 7 resignations, 2 institutions unpaid and 3 joint members deemed to have resigned after not paying subscriptions*

GUIDANCE TO CONTRIBUTORS TO THE BULLETIN

Articles should be between 500 and 1000 words. Font and format are not important but please refer in the text to images as (fig.1) and so on. Images should be separate JPEGs and not contained within the text. Resolution should be as high as possible as images are an important part of the Bulletin. There is no strict guidance on the number of references.

Book reviews, museum reviews and correspondence are always welcome.