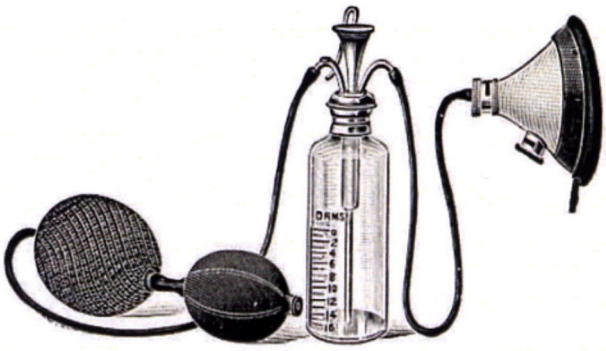

# The Historical Medical Equipment Society


BULLETIN NO. 20 ISSN 1366 - 4719 AUGUST 2008

ing lists! When I retired in1988, the Bath orthopaedic service had five consultants; now there are seventeen which certainly contributes to shorter waiting times, despite an increasing work-load as the population ages. Undeniably, we are getting closer to European staffing but with prescription and other charges, the concept of a 'free' service remains an illusion.

May I remind readers firstly, that the Congress of the European Association of Museums of the History of Medical Sciences takes place in Edinburgh, 17th-22nd September and includes visits to Glasgow and St Andrews. Secondly, the Lecture Course in Medical History of the Society of Apothecaries, 2008-09 commences on 27th September with fortnightly Saturday morning meetings until June, 2009, either at Apothecaries Hall, Black Friars Lane or The Wellcome Trust Centre for the History of Medicine, Euston Road, London. Some 34 lectures are given by distinguished experts but attendance at every lecture is not necessary to take the examination for the Diploma in the History of Medicine, and in any event, there is no obligation to take the Diploma and many do not; this involves a written examination, presentation of a research dissertation and a short lecture relating to one's experience. Most attendees are not medically qualified. Applications should be made to the DHMSA Course Director, Apothecaries' Hall, Black Friars Lane, London EC4V 6EJ.

Our excellent meeting in Sheffield is reported below and our next meeting will be organised by John Broberg with a veterinary theme and will take place on 18th October, 2008 at the James Herriot Centre, Thirsk, Yorkshire.

## THE SHEFFIELD MEETING APRIL 2008

Our meeting at the headquarters of B. Braun Medical Ltd, Thorncliffe Park, Sheffield on Tuesday, 22nd April was attended by 26 members, and proved a valuable introduction to the skills of manufacturing surgical instrumentation and equipment. Organised by Adrian Padfield, we were welcomed to Braun's headquarters by Mark Storr, Senior Product Marketing Manager who also enabled us to inspect and handle a magnificent display of modern instruments made by Braun.

After papers by your editor on "My Fascination with Surgical Scissors", by Peter and Julie Mohr on "Lowenstein's Coital Training Aid" and by David Radstone on "100 years of Radiotherapy in Sheffield , Adrian Padfield and Derek Holdsworth demonstrated "Items from the Royal Hallamshire Hospital Collection". After an excellent sandwich lunch, we were taken by coach to the Allen Street manufacturing facility of Braun Medical (previously Down's Surgical) where an intensive guided tour of modern instrument manufacture took place. Although some manufacturing processes were automated, to the surprise of most members many vital steps in manufacture required skilled hand-work. Can I remind you that, originally, *manu*-facture meant handmade, and that surgical instruments are relatively fragile, some for the eye resembling engravers' or jewellers' tools and even the heaviest orthopaedic instruments are much lighter and refined than engineering tools, hence the greater contribution of hand work. On return from our educational and all too short factory tour, to Thorncliffe Park, Mark Storr made a short presentation and then tested our obviously poor knowledge of naming current instruments; it is always more difficult to identify objects projected on a screen rather than handling them.

Finally, Mark told us not to forget to collect a present from Braun on leaving which awaited us outside the lecture theatre. Astoundingly this remarkable gift was a pair of gold-plated curved surgical scissors, 18.5 cms. in length, of the Metzenbaum type for tonsil dissection, in a protective card-board box. Even more exciting was to find each pair was engraved with our individual names and 'The Historical Medical Equipment Society'. It was indeed a superb gesture on the part of B. Braun Medical Ltd. and a fitting end to a highly informative visit.

# MY FASCINATION WITH SURGICAL SCISSORS

JOHN KIRKUP

Following a short introduction, this paper developed into a demonstration of some 25 different surgical scissors which were circulated for the audience to examine closely, in order to appreciate the range of structural and functional styles. Selected from the author's collection of some 75 distinct pairs, suggesting a great number, this collection pales into insignificance compared to some 800 variant scissors offered for sale by Braun Medical Ltd, involving every speciality, although many of these are different lengths of the same pattern.

Of the eight basic surgical instrument forms, the Romans were familiar with seven but not the true scissors, a complex and sophisticated construction which demanded better quality steels than those available until much later and

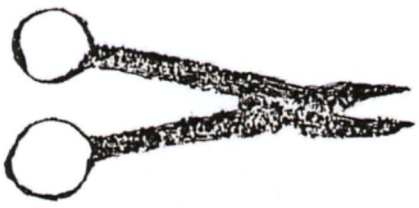

*Fig. 1A. Scissors from Viking burial, c.1050 (Simonsson, H., "Ett Senvikingatida Gravalt" Forvannen 64 (1969): 89*

also expert workmanship (1). However, their genesis is obscure, some considering a Middle Eastern and others a Viking origin, perhaps before the 11th century AD (fig.1A). By the 12th century, scissors were employed by tailors

*Fig. 1B. Seal impression of Geoffrey the Barber, end of 13th century*

and later barbers (fig.1 B,C) whereas surgical use is not proven before the 15th century. The Huntington manuscript of Albucasis, dated

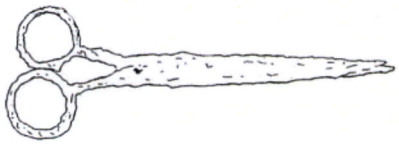

*Fig. 1C Drawing of possible barber-surgeon's scissors, grave find, Avebury, UK, c. 1320.*

1465, has drawings of scissors for eye surgery and circumcision whereas the earlier Marsh

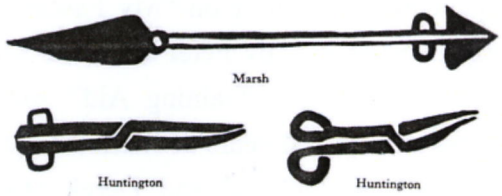


*Fig. 1D. Drawings of surgical scissors, Marsh MS c.1272 and Huntington MS c.1446 (Spink, MS. & Lewis, GL.), Albucasis on Surgery and Instruments (London: Wellcome Institute, 1973)*

manuscript equivalent is unclear (fig.1D); the first printed book representation is by Brunschwig in 1497 (2). 'A pair of scissors' is a common descriptive term but why 'pair'? One blade cannot function without the other and the two blades make it a single instrument? I would be pleased to have your comments on this terminology.

Shears are often confused with scissors, although of a totally different structure being derived from a single piece of metal, as for sugar tongs and spring forceps, and usually controlled by the palm of the hand unlike true scissors, divided into two halves acting through a stable pivot or joint, with bow handles for control by thumb and fingers. Perversely, certain rib cutters are termed rib

shears when their structure and action are clearly related to scissors. Scissors are not composed of a pair of scalpel blades, as has been claimed, for cutting edges or bevels do not have to be blade-like and indeed are more efficient at just below 90 degrees (fig.2A), for scission depends on accurate contact pressure between the blades, generated by skilled bending and twisting on the part of the 'putter-together' as he is termed in Sheffield. Moreover the majority of surgical scissors are curved beyond the pivot to improve vision of their tips when working in deep wounds and to ensure cutting throughout this curve demands an exceptional degree of workmanship. Scission is also associated with punch cutters characterised by one circular blade passing inside another and again the cutting edges or angles approach 90 degrees (fig.2B). By contrast Liston's bone cutters function by simple linear contact between the blade edges (fig.2C) and are of little use for other tissues. Likewise bone-gouge cutters have linear contact around their U-shaped extremity, rather like the bite of human teeth, in order to literally 'chew-off' bone, cartilage or other tissues(fig.2D).

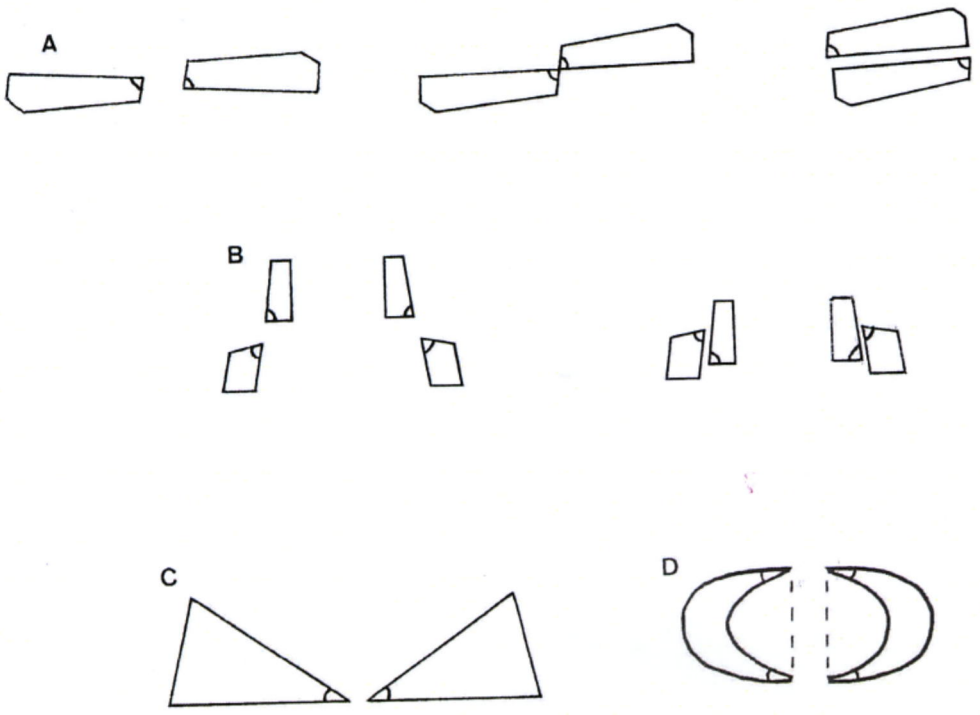


*Fig.2. Transverse sections of scissor and cutter blades, cutting angles indicated. A. Scissor blades open, cutting and closed; the gap between the closed blades denotes efficient scission. B. Punch cutters in open and punch position. C. Bone cutters' blades making linear contact without scission. D. Gouge cutters also achieve linear contact only.*

The total length of scissors is also relevant (1). For example, dissection in the chest or deep in the pelvis requires much longer instruments than those for mastoid or eye surgery. In addition, the length of the blades relative to the total scissor length is also very specific for differing functions. Thus although chest and abdomino-perineal scissors are long their blade lengths are relatively short, being about 30 per cent of the total length. By contrast, the blades of bandage and umbilical cord scissors, and indeed most domestic scissors, are 44 percent or more of their length, whilst at the other end of the scale tonsillar and sympathectomy scissors have blade ratios of 23 percent. General eye scissors also have blade ratios of about 23 per cent whereas eye enucleation scissors increase to 33 per cent, understandably for penetrating deeper. It is likely these specific differences have evolved gradually over time by trial and error.

The shape of scissors blades also varies consid-

erably (fig.3), and a few examples are described. We have already noted the curvature on the flat of many scissor blades but the curvature may be in-line with the handles or more often angled (fig.3B). The curvature may be associated with unusually wide and blunt blades, as for umbilical section or tonsillar excision (fig.3A,D). For certain stitch cutting scissors the blades are excessively narrow and sharp (fig.3C). Angled blades can be adjustable by compound action, as for a particular gynaecological scissors which proved expensive due to exceptional craftsmanship and hence never popular (fig.3E).

gical instrument which has evolved remarkably in the last century. Now tiny scissors are in use endoscopically and doubtless other modifications will prove equally fascinating.

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1. Kirkup, J., *The Evolution of Surgical Instruments* (Novato: historyofscience.com, 2006), p.247-262.

2. Brunschwig, H., *Dist ist das Buch der Cirurgia* (Strasbourg: Gruniger,1497), p.xix.

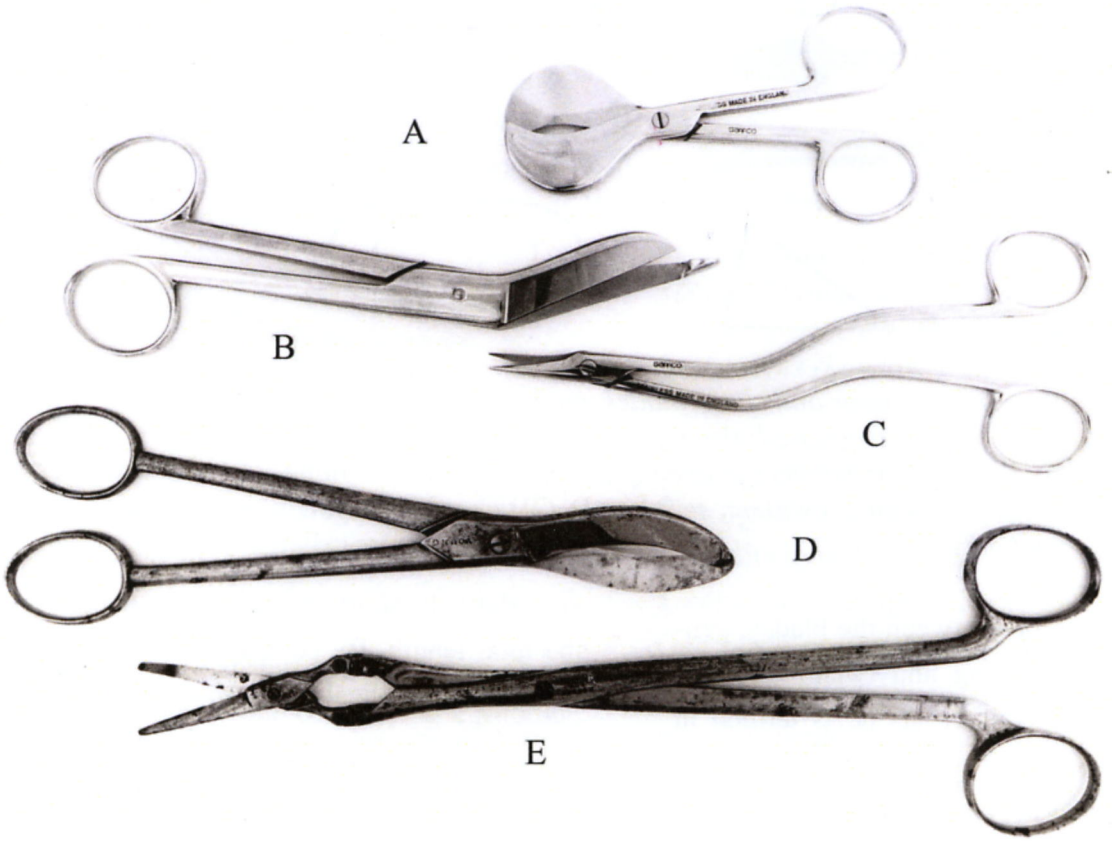



*Fig. 3. Top to bottom; A. American umbilical cord scissors; B. Lister's angled bandage scissors; C. Heath's stitch scissors with sharp points and S-shaped handles. D. Erichsen's tonsillar scissors with concave blades which cradle excised tissues from inhalation. E. Heywood-Smith's gynaecological scissors with four compound joints and an adjustable angle.*

Conclusions

This brief resume of certain variations in surgical scissors is but an introduction to a key sur-

# LOEWENSTEIN'S COITUS TRAINING AID

PETER & JULIE MOHR

The 'coitus training aid' (CTA) is an unusual medical device – a type of mechanical splint for treating impotence, manufactured during the 1940s-50s. The CTA (Fig. 1) has been in

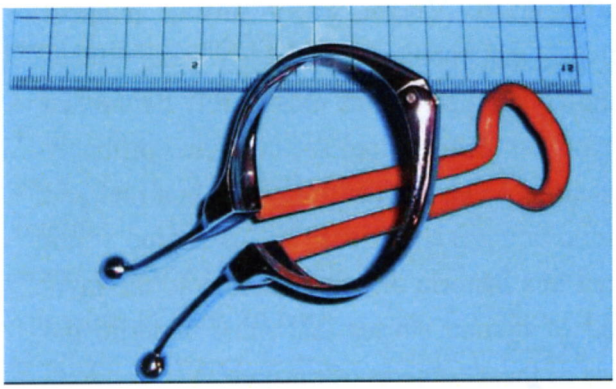
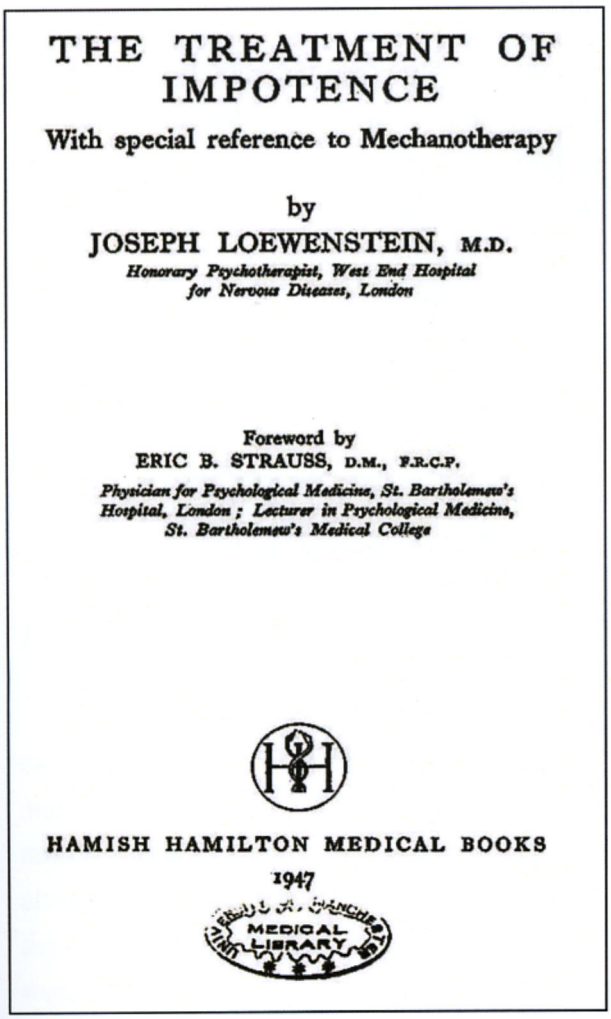


*Fig.1*

the Museum for twenty years, but has only recently been identified in the literature. It was



THE TREATMENT OF IMPOTENCE

With special reference to Mechanotherapy

by

JOSEPH LOEWENSTEIN, M.D.

*Honorary Psychotherapist, West End Hospital for Nervous Diseases, London*

Foreword by

ERIC B. STRAUSS, D.M., F.R.C.P.

*Physician for Psychological Medicine, St. Bartholomew's Hospital, London; Lecturer in Psychological Medicine, St. Bartholomew's Medical College*

HAMISH HAMILTON MEDICAL BOOKS

1947

MEDICAL LIBRARY

*Fig.2*

designed by Dr Joseph Loewenstein (*d.*1958), honorary psychotherapist at the West End Hospital for Nervous Diseases. He qualified MD (1897) from Breslau and was appointed head physician at the Lewald's Hospital for Mental Diseases, but moved to London during the 1930s.

Loewenstein had a special interest in treating impotence and his monograph (Fig.2), *Treatment of Impotence with special reference to Mechanotherapy* (1947) describes the history and use of the CTA. He claimed that previous splinting devises such as the 'Sklerator' (1922) or 'Virtutor' (1923) were difficult to fit, uncomfortable, and easily broke, whereas his CTA was a single unit, made-to-measure, of stainless steel. A proximal split-ring is joined to smaller, distal ring by two ventral rods

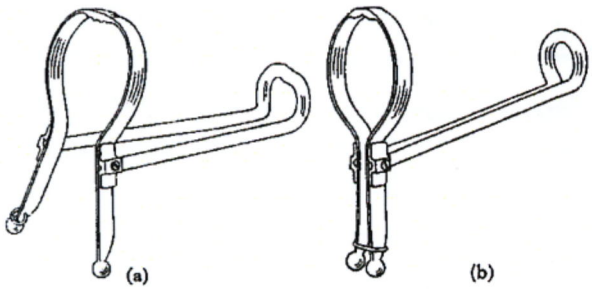



*Fig.3*

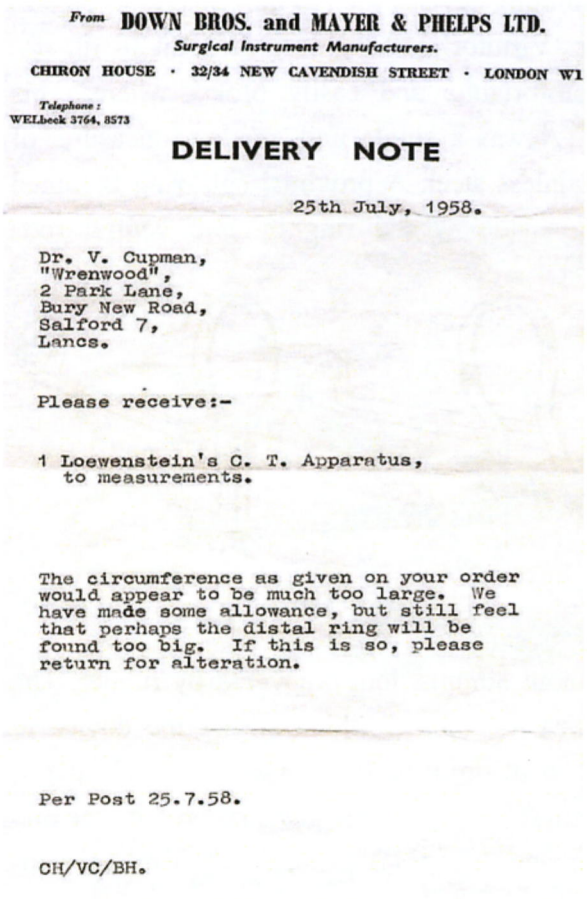
(about 80mms. long), covered by rubber. The rings are hinged which allows the device to open in order to fit it onto the flaccid penis, with the sulcus of the glans secured by the distal ring. The CTA is then closed by approximating the two short ventral arms on proximal ring, and held together by a small rubber band (Fig.3). The whole apparatus is then covered by a condom.

Dr Loewenstein stressed that the CTA was

only of value for cases of functional impotence that had failed to respond to psychotherapy. Careful training in the use of the device, continuing psychological support, and of course, a cooperative female partner, was all essential to success. He regarded 'mechanotherapy' as a short-term measure – a 'course of treatment', designed to restore normal sexual function. Within these limits, he claimed cure or improvement in seventy-five percent.

**Dr Verner Cupman (1907-59)**

The Museum's CTA is accompanied by a delivery note from 'Down Bros. and Mayer & Phelps Ltd' to Dr V Cupman of Salford and dated 25 July 1958 (Fig.4). Dr Cupman



From **DOWN BROS. and MAYER & PHELPS LTD.**
*Surgical Instrument Manufacturers.*
CHIRON HOUSE · 32/34 NEW CAVENDISH STREET · LONDON W1
*Telephone:* WELbeck 3764, 8573

**DELIVERY NOTE**

25th July, 1958.

Dr. V. Cupman,
"Wrenwood",
2 Park Lane,
Bury New Road,
Salford 7,
Lancs.

Please receive:-

1 Loewenstein's C. T. Apparatus,
to measurements.

The circumference as given on your order would appear to be much too large. We have made some allowance, but still feel that perhaps the distal ring will be found too big. If this is so, please return for alteration.

Per Post 25.7.58.

CH/VC/BH.

*Fig.4*

had graduated MD from Berlin in 1932 as 'Werner Kupfermann'. He moved to Britain where he gained his LRCP, LRCS, LRFPS (1934) and DA (1941). He worked as an anaesthetist at the Manchester Jewish Hospital and Hope Hospital in Salford. He also had a private practice in hypnotherapy, and it is in this context that cases of impotence may have come his way for treatment.

**Summary**

'Cures' for impotence are legion: from votive offerings to Viagra, every sort of magical charm and medicine has been tried. Mechanotherapy and splints must surely be the last resort – embarrassing, secretive and probably useless. As an artefact, the CTA is a rare and important survivor: it gives us a clue – not just to a historic therapy, but also to the myriad of human stories that must underlie the use of these 'objects of intrigue'.

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McLaren, A, *Impotence, a Cultural History*, (Chicago, 2007), 183-5.

www.wroclaw-life.com/wroclaw/breslau. Although originally linked to Poland, Breslau was part of Germany from the 18th century. After World War II the city was restored to Poland and renamed 'Wroclaw'.

Loewenstein J, 'Treatment of Impotence' *BMJ*, **2**, 1941, 49-50.

Loewenstein J, 'Mechanotherapy of Impotence' *Medical Practitioner*, **381**, 1944.

Loewenstein J, *Treatment of Impotence with special reference to Mechanotherapy* (Hamish Hamilton, 1947).

Obituary, 'Dr Verner Cupman', *Manchester Evening News*, 2 November 1959.

# MULTIBLADE SURGICAL INSTRUMENTS; NOT SUCH A GOOD IDEA

DERRICK BAXBY

During the second half of the 19th century there was a vogue for multi-component, spring-back 'gadget' knives; in effect the forerunner of the modern Swiss Army knife(1). Models were made for various markets, (sportsmen, horsemen, fishermen, gardeners, etc), and it was perhaps inevitable that versions were produced to enable surgeons to carry to carry a single compact instrument which incorporated multiple blades. Figure 1 illustrates one stamped for Salt of Birmingham. Kirkup (2) reproduced illustrations from the Arnold (1895) and Harris (1900) catalogues showing

*Fig. 1. Four-blade surgical instrument; handle 77mm, length open c. 133mm. Stamped for Salt of Birmingham.*

examples with four blades (two at each end) and six (three at each end). Although the Arnold catalogue quoted by Kirkup, enthuses about the 'convenience…neatness which renders it of special value… a great boon', one wonders how convenient such items were in practise and to what extent they were actually used.

Writing as an occasional dissector (retired) of small mammals and bird species, such instruments are most inconvenient; this is certainly true of the one illustrated. It is short and bulky, which makes handling difficult when compared to the more traditional folding scalpel with one blade or one at each end. In particular with a four-blade instrument, each is offset from the central line to one side or the other, (fig.2) which makes accurate alignment and precise work difficult. Even an instrument with three blades at each end will have only the two central blades properly aligned. Also, despite careful assembly (see below), it is not easy to open the inner blades, and selection of the second blade would be a messy affair. Additionally, cleaning and maintenance would be difficult even before the need for all-metal sterilizable instruments was appreciated. One suspects such items were bought in a flash of enthusiasm (or as a Christmas present?) and then left largely unused at the bottom of a surgeon's case.

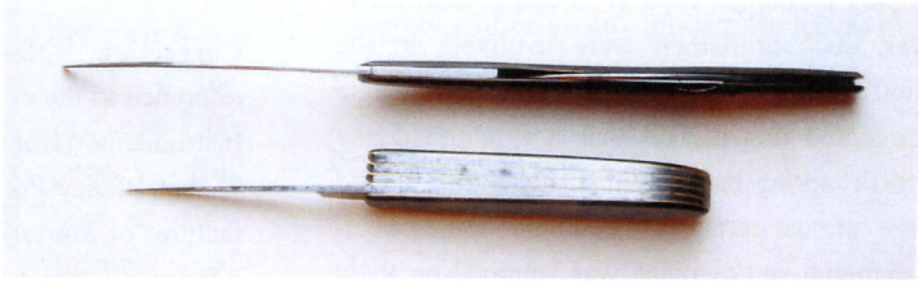

*Fig. 2. Comparison of the Salt instrument in fig. 1 with a folding double bistoury; handle 110mm, one blade open, c. 188mm. Stamped for Weiss of London*

Finally, a comment on the manufacture of these items. It seems probable that they were made *for* rather than *by* the well-known names

stamped on them. The assembly and final fitting of a four bladed instrument such as that in figure 1 apparently took 154 separate steps (1), acquired during a seven-year apprenticeship (3). The market for multi-blade surgical instruments was probably small and it is unlikely that surgical instrument makers could or would employ craftsmen capable of such work. However, such craftsmen were available in the Sheffield spring knife industry (1,3,4) They so dominated this market that it is claimed any British spring-back multi-blade knife would have 'almost certainly' been made there, whatever name and/or place was stamped on them (1). We know that anonymous Sheffield firms made surgical instruments for Arnold, Weiss, Down and others in London, Edinburgh and Birmingham (1,4), and it is unlikely that multi-blade even two-blade instruments such as that shown (fig. 2) would be made anywhere other than in Sheffield.

Although as suggested here, multi-blade surgical instruments were probably impractical and little used, they make an interesting addition to the surgeon's armamentarium and represent outstanding knife making skills.

*Acknowledgement* I would like to thank John Kirkup for kindly supplying photocopies of full extracts from the Arnold (1895) catalogue.

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2. Kirkup, J., *The Evolution of Surgical Instruments: an Illustrated History from Ancient Times to the Twentieth Century* (Novato CA: historyofscience.com, 2006)

3. Symonds, J., *The Historical Archaeology of the Sheffield Cutlery and Tableware Industry* (Oxford: British Archaeological Reports No 341, 2002)

4. Grayson, R. & Hawley, K., *Knifemaking in Sheffield* (Sheffield: Hallam University, 1995)

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## LETTERS

**Correction**: Derrick Baxby points out with reference to the editor's paper on "Vaccination Instruments" (Bulletin 19, February, 2008, p.6-7) that Blanzy-Poure was a French nib manufacturer of Mareschalls' vaccinostyles, and not a Belgian penmaker; Dr. Mareschal was a Belgian practitioner.

**Letter**: Derrick Baxby also writes on the important issue of verifying crown marks on instruments, observing:

"There seems to be four patterns.

A. To indicate a Royal Warrant as in V(crown) R + J Rodgers + Cutler to Her Majesty

B. The simpler G(crown)R + Maker's name.

C. Less the monarch's initials, (crown) + Maker's name.

D. Simply marked with a (crown).

Type A seems obvious, but the others are less so. Types B&C might indicate some official approval. Type D could mean anything.

Davis and Appel (p.53, fig. 118, fleam no. 4) suggest the crown indicates British origin. I find this doubtful as I'm not sure how appropriate a military analogy is valid. Official Tower of London issued weapons (usually made in bulk for the ordinary soldier were stamped with a crown or Royal Cipher, i.e. G (crown)R)."

Derrick would be pleased if any Member could throw light on this topic with respect to surgical instruments.

# OBITUARY

## WILLIAM (BILL) JACKSON (1927-2007)

We are sorry to report the death of Bill Jackson who died on 14th December, 2007, at the age of 80 years. Bill was an early member of the HMES and was well known for his contribution to the history of pharmacy. Early in life he was struck down with poliomyelitis; despite this, he completed his education at Manchester Grammar School and qualified BSc (Pharm) from Manchester University in 1950 and became a Fellow of the Pharmaceutical Society in 1955. He pursued a career in both manufacturing and community pharmacy. Over the years Bill assembled a valuable collection of hundreds of drug jars, medicine bottles and other medical objects, which were often used in his articles or historical exhibitions.

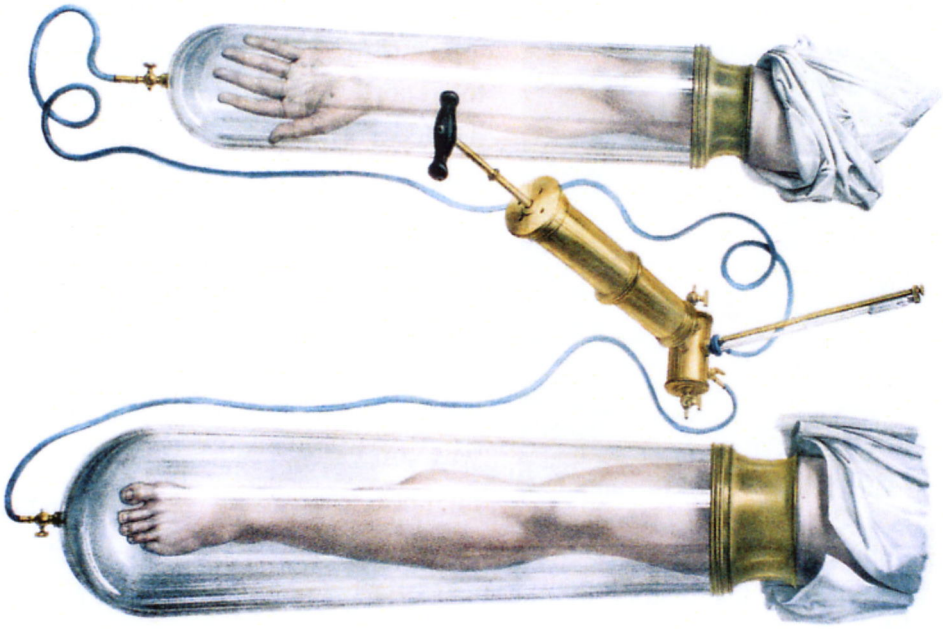
His interest in medical history was passionate. He contributed many communications to the *Pharmaceutical Historian* and other journals; his article on 'the uses of unicorn horn' in the *Pharmaceutical Journal* (2004) illustrates his typical combination of humour and expert knowledge. His MSc in the history of medicine was devoted to a study of the development of the stomach and enema pumps and his *Victorian Chemist and Druggist* (Shire Books, 1981, 2005) is a popular and valuable aid to identifying pharmaceutical artefacts. For many years he acted as honorary curator to the Manchester Medical Museum. He was past-president of the Manchester Pharmaceutical Association and the British Society for the History of Pharmacy, and was awarded the Society's Leslie Matthews medal.

He was an erudite and amusing man who always had something interesting to say. His company will be greatly missed. He leaves his wife Audrey and their family.

Peter & Julie Mohr

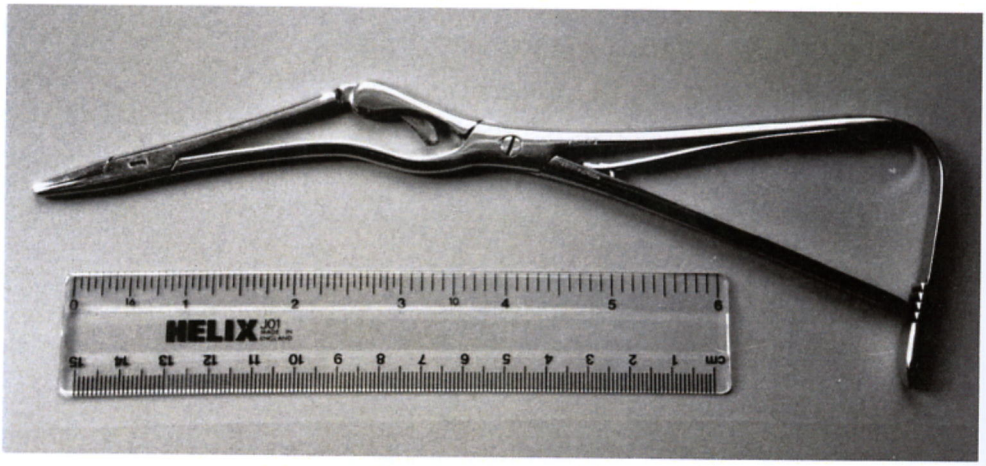
## WHAT IS IT? [August 2008]

These glass containers are connected to an exhausting pump. What is the purpose of this therapy and whose name is associated with it? What complications may result?



## WHAT IS IT? [February 2008]

This is known as both Halsted's and Cushing's needle-holder and is angled for gall bladder surgery. It is closed by the palm of the hand and opened by the little finger disengaging the rack with slight pressure at its tip. As William Halsted (1852-1922) became Professor of Surgery at Johns Hopkins Hospital, Baltimore in 1889 and Harvey Cushing (1869-1939) was appointed Halsted's assistant in 1896, it appears probable that Halsted was the originator of this instrument and that Cushing suggested a later modification? My earliest reference is in Down's catalogue of 1906 where it is listed as Halsted's. I would be grateful for further information which explains why both names are associated with this needle-holder.



## BOOK REVIEW

**Drulhon, Jimmy,** *Frédéric Charrière (1803-1876): Fabricant d'instruments de chirurgie* (Paris: the author, 2008), 8vo, paperback: vi, 263; 8 col. plates with 30 figures and 8 black and white plates with 29 figures. ISBN: 978-2-908752-82-3. To be obtained from the author at 132, rue d'Assas, 75006 Paris, France; email: jimmy644@orange.fr

Frédéric Charrière who established the famous company Maison Charrière in Paris is believed by many to be the most innovative and successful surgical instrument manufacturer of the 19th century and perhaps of all time. Despite this, particulars of his life have been obscure before Jimmy Drulhon's detailed biographical study. Born in Switzerland, he arrived in Paris aged 10 years and three years later was apprenticed to a metal grinder and sharpener, becoming a master cutler in 1821 about the time his master died. Acquiring his master's premises, he worked prodigiously and gained the interest of important surgeons including Baron Dupuytren and Jean Civiale making for the latter the first effective lithotrite in 1826. In 1833 he moved to larger premises near the Medical School, publishing his first catalogue in 1834, the first of many. Eventually he added a manufactory outside Paris and by 1844 was employing over 400 artisans. In 1837 he had visited Sheffield and London, collecting information especially about cast steel manufacture. Eventually he was not only supplying superb instruments in France but an equal quantity abroad, including those for St Mary's Hospital, Paddington, London at its foundation in 1851.

Jimmy Drulhon has produced useful lists of the patents, catalogues, prizes and medals of the Maison Charrière, illustrating many documents and title-pages, and also excellent colour photos of Charrière's superb instruments mostly made for exhibition purposes. His son Jules who continued the enterprise, died prematurely in 1865 and the Maison Charrière was acquired by Robert and Collin, and then Collin, and eventually Gentile who retired in 1972 bringing to a close the Charrière tradition.

For members interested in the historical development of surgical instrumentation this book is an invaluable source.