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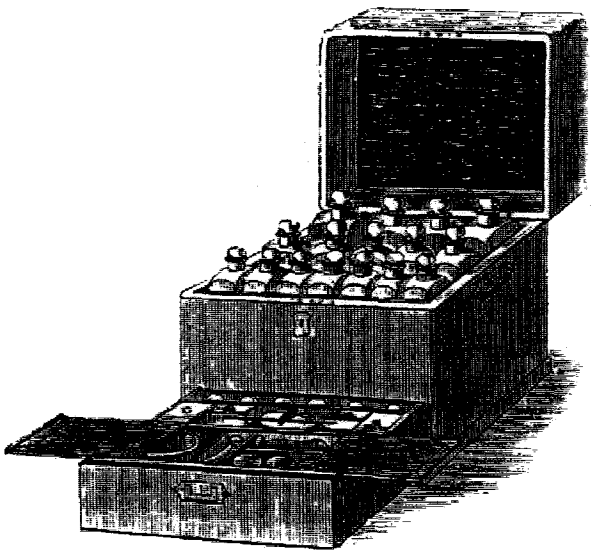
Historical Medical Equipment Society



Bulletin
No 9

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NEXT MEETINGS

The next meeting will be held on Saturday 12th May 2001 at the Royal Berkshire Hospital, Reading, directed by Dr Tim Smith.

The subsequent meeting will be on Saturday 6th October 2001 at Green College, Oxford, directed by Mr Alfred Gunning.

Fuller details of the meetings and programmes will be circulated nearer the date, but please put these in your diaries NOW!

Historical Medical Equipment Society

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Editorial

It is with a considerable amount of trepidation that I put pen to paper (or more accurately, fingers to keyboard) for this, my first Bulletin. It will be very difficult to follow Belinda Heathcote's able lead, but until we can find someone else more capable than I (which should not really be too difficult), here goes.

The three papers in this issue were delivered at the meeting held on 21st October 2000 at the George Elliott Hospital in Nuneaton. Jennifer Burton led with her well illustrated paper on 'Medical equipment in churches and cathedrals', followed by my own 'Uses of trade catalogues'. After a leisurely lunch at the former home of the hospital's namesake, George Elliott, we were fascinated by John Kirkup's paper 'Identifying surgical instruments with school ruler and kitchen scales'. There is obviously a lot more work that could be done on this subject, but it would probably be a full-time project for someone. Finally we travelled back to ancient Crete for Robert Arnott's paper on a fascinating set of surgical instruments from a Mycenean tomb.

The meeting was a great success, despite the rather poor turnout. Jennifer Burton and her team have done very well to create their museum against the usual background of managerial disinterest. This disinterest culminated in some of the display cabinets being shifted without notice the week before our visit! Thankfully, everything was back in place for the meeting. I gather that the climate has changed somewhat, and she can look forward to much more positive disturbance in the future.

I will end this note with the traditional (but none the less heartfelt) editorial plea for people to submit anything of interest for the bulletin. If you see or hear of anything that you feel might be of interest to any of your fellow members, please let me know: I can be reached by phone, fax, email (or even the traditional post).

The Thackray Medical Museum has published a 'Handlist of pre-1971 Medical Trade Catalogues' in its collection. This lists over 2,000 different catalogues on 148 pages, and is available from the Museum for £10 including p&p.

Identifying Surgical Instruments with School Ruler and Kitchen Scales

John Kirkup

Introduction

Measurement systems for surgical instruments are variable and often difficult to comprehend. For example, Bard Parker scalpel handles were numbered originally from one to nine, dependent on length and shape, but today only sizes three, four and five are made. Scalpel blades continue the sequence from 10 to 27, again related to size as well as shape, but several numbers are no longer available, and others have 'A' numbers, e.g. 22 and 22A. Catheters and bougies are determined by their diameter, or in one case by circumference, and several scales exist, only to confuse. More precise are fracture implants which are usually stamped with lengths or

diameters, or both, either in imperial or metric systems. Other instruments may be marked with an integral scale which tells the surgeon his depth of penetration during operative procedures. And although many general instruments are advertised by length, others are simply described as small, medium or large, or as number one, two, three, etc.

In the absence of an obvious maker's catalogue entry, precise identification of an instrument involves an instinctive assessment of shape or form, of composition or material, of style and method of manufacture. A more analytical approach may consider length, breadth, depth, weight, capacity, strength and power.

Closer examination confirms that instrument dimensions are closely related to specific functions and I wondered if a scale of measurements could be established to help identification. To investigate this concept, methods were kept simple using a school ruler marked in inches and centimetres, and a simple kitchen scales weighing grams. Early conclusions with respect to three factors, measured on British 20th century instruments, are summarised with a few examples.

Total Lengths

It is evident instruments of 10 centimetres are too short for thoracic and pelvic procedures but admirable for eye operations whereas those 30 centimetres in length are ridiculously inappropriate for the eye. In between these figures, there is a general relation to function although this is refined by measuring the length of the jaws or blades as a percentage (ratio) of the total length.

Jaw and Blade Lengths

These vary irrespective of the total length and also match functional requirements. The three main categories of pivoting or articulating instruments are (i0 clamps, haemostats, etc. (ii) dilators, retractors, etc and (iii) scissors, clearly differentiated with average jaw or blade ratios of 51%, 36% and 28% respectively. Each category can be refined again: for example, general eye scissors have a blade ratio of 24% but for eye enucleation scissors, this is 33%; the latter is related to the fact that longer blades are required for enucleation even though their total length is similar to general eye instruments. A graph of scissors total lengths against jaw ratios demonstrated the possibility of identifying the function of unknown scissors; perhaps similar graphs for other categories would also help?

Rack-Catch Closure Powers

By downward pressure on bow handled instruments steadied between the hand and top of a kitchen scales, it is possible to read off the power or weight transmitted to close rack-catches step by step. Instruments of the early 20th century were subjected to this analysis. Three categories of rack were identified (see figure):

(i) for permanent vascular crushing (three catches or less), achieving 6.5 kilograms very rapidly.

(ii) for temporary vascular compression (five to ten catches), achieving 6.5 kilograms slowly.

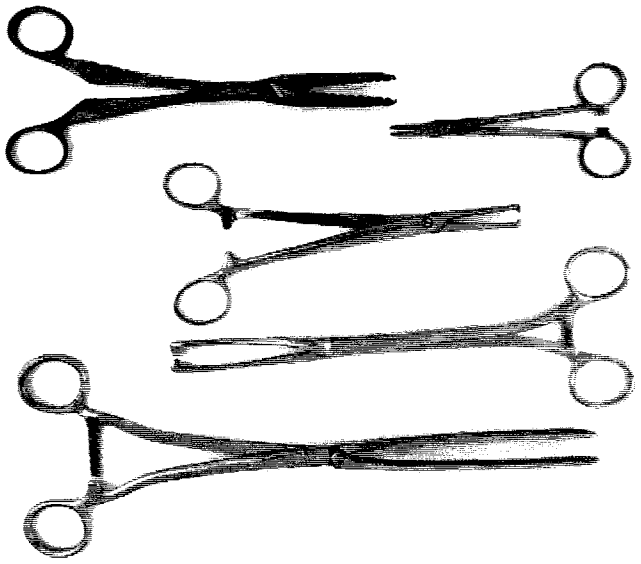
(iii) for simple tissue holding (five to six catches), achieving a maximum of 0.4 kilograms only.

Conclusions

No similar communications have been traced but these summarised preliminary studies suggest not only potential value in identifying difficult items, but a new method of appraising the function, development and history of instrumentation. In addition, the investigation indicates that specific instrument dimensions were determined by slow empirical trial and error between surgeons and instrument craftsmen.

Figure captions (top to bottom)

1. *Wells uterine clamp (permanent vascular crushing), three catches.*
2. *Wells artery forceps (permanent vascular crushing), one catch.*
3. *Kocher toothed artery forceps (permanent vascular crushing), three catches.*
4. *Museux uterine vulsellum (simple tissue holding), six catches.*
5. *Moynihan gastric clamp (temporary vascular compression), eight catches.*



Medical equipment in churches and cathedrals

When visiting a church or cathedral, it is well worth looking for illustrations of medical equipment, or even sometimes the objects themselves. This is particularly so if it is a pilgrimage centre, where there are sometimes ex votos, from grateful pilgrims. These may be a letter, a painting depicting the patient or even a model of an arm, leg or an afflicted organ. Nowadays these and other illustrations

have usually been moved to a nearby museum.

More common are scenes of equipment in use. The most commonly depicted operation is that of the circumcision of the infant Jesus, often showing the knife used. Other operations are rare: for instance, in Bamberg cathedral in Germany the tomb of one of the kings has a panel showing him having his bladder stone removed. Another operation that can sometimes be seen is the transplantation of a leg by the two patron saints of doctors and surgeons, Cosmas and Damian. More commonly they are shown standing in contemporary costume with the tools of their trade: a urine flask and a medicine pouch for the physician, and a pouch for their instruments for the surgeon.

There are two cycles of illustrations which are worth a closer examination. The first is the life of the Virgin Mary. This may be found on a carved altar, in window glass or even tapestry. The first scene, the birth of the Virgin, usually shows her mother after delivery in bed, the baby being bathed. On one of the 16th century altars in Bamberg cathedral the scene includes scissors on a bench, perhaps to cut the umbilical cord. A later scene in the cycle, her deathbed, portrays a sickroom.

The other cycle of paintings to look for is the 'seven corporal works of mercy'. The visitation of the sick may show a hospital ward or an individual patient, as in the mediaeval glass of a window in the church of All Saints, North Street, York, where alongside the patient's bed is a commode.

Scenes depicting the distribution of alms to the poor and feeding the hungry often show that some of the beggars are amputees. Another such depiction is in carvings of St Hubert, giving his cloak to a man who has lost both legs. They are shown with different aids for getting around. The simplest is a T-shaped crutch: others are more complex, showing a combination of crutch and peg-leg, with a platform on which a below-the-knee amputee kneels. Double amputees seem to have had to shuffle along the ground, their stumps secured in wooden gutters with straps and buckles, and sometimes raised on small legs above the ground. In both hands they have a small 4-legged crutch, rather like a small stool with a handle.

In the case of those who had difficulty with sight, (often a gospel saint or doctor of the church), they are shown reading with a pair of spectacles. An example of this can be seen in another of the windows at St Mary's North Street, York.

As a result of the Reformation, English churches are not as rewarding as some of the continental churches. However, hidden under the seats in the choir can sometimes be found amusing illustrations making fun of the doctor. On a misericord in Malvern priory a doctor is shown receiving a pouch of money from the patient's wife at the same time as he examines a flask of urine. In Beverley St Mary's the doctor is portrayed as an ape, again with his flask. The one I have yet to photograph is in the church in Stratford on Avon. Here, not only is the monkey depicted examining the urine, in another scene he is filling the flask himself!

Although photography in dimly-lit conditions can be frustrating, it can be very rewarding seeking out medical scenes in the churches and cathedrals of Europe, particularly if one widens ones search to look for examples of various diseases.

Relevance of trade catalogues

Trade catalogues are an invaluable (though often underused) source for researchers in all aspects of recent history. The history of medicine and surgery, and especially of the associated instruments and equipment, is no exception

For the purposes of this paper I define a trade catalogue as 'a priced list of products for sale, usually (but not always) illustrated'. All other advertising material comes under the broad umbrella of 'trade literature'.

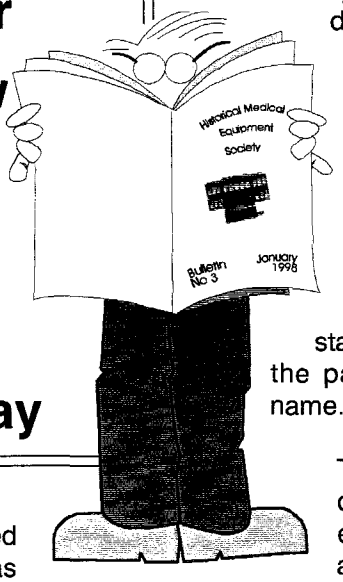
The earliest trade catalogue in this sense was an unillustrated four page list bound in at the end of a surgical textbook in 1732. The earliest illustrated English catalogue was Savigny's *A Collection of Engravings, Representing the Most Modern and Improved Instruments used in Surgery* published in 1798. This is totally unpriced, but small price lists were issued at intervals, such as the one of 1800 in the RAMC museum. In 1772 J-J. Perret, a Paris master-cutler, published his *The Art of the Cutler*, Vol.2, 'The expert in surgical instruments'. This is usually regarded just as a book, but on closer inspection all items are found to be priced within the text.

The Thackray Medical Museum, from its inception, has tried to acquire as comprehensive a collection of medical (and especially surgical) trade catalogues as possible. The collection now contains between 3,500 and 4,000 catalogues from 1772 to the present. These range from 1-page flyers printed on cork to massive tomes like the 1,864 page 1902 catalogue of Arnold & Sons. A printed handlist of the catalogues which were transferred to the Science Museum with the Wellcome collection was published in 1985, listing c.1,280 catalogues published between 1831 and 1980. This, however, includes 'many items which are only loosely related to medicine...'. Other lists have been published by the Museum Boerhaave, the Dutch equivalent to the Science Museum, (322 catalogues c.1850-1939, the Thackray collection holds 1,290 catalogues for same period), and the New York Academy of Medicine, who have c.1,400 catalogues 1831-1964. An indication of the large number of catalogues produced is that the overlap between these collections is surprisingly small, c.25-30%. The actual number printed of some of these items is very small.

Trade catalogues can be used for many purposes, from the identification and dating of instruments and equipment, through the study of the history of medicine, company and trade history, to art history and even social history. I want to cover briefly a few of these aspects.

'If you know what the item is, it is easy to find'
Catalogues can be very useful in the identification of instruments, but things can be easier to find if you have an idea which part of the catalogue to look in. A few 'rules of thumb' can help to localise the item somewhat. If it is c.23 cm or more in length it is possibly obstetric or gynaecological if older, possibly thoracic/abdominal if more modern. If it is a small angled instrument it could be ear/nose; medium angled, throat (tonsil, adenoid etc.), and the longest angled bronchoscopic. If the item is cylindrical then the diameter is a guide: c.2cm or thicker it might be uterine, thinner possibly urethral. Unfortunately, serendipity is probably the greatest influence in identification, aided by a good visual memory.

REMEMBER!
Deadline for copy is now the end of November and the end of May



Catalogues can be used to date the introduction and period of use of instruments, eg. if it appears in catalogues between 1914 and 1932, then it was probably invented around 1910-12, and its period of general use was probably c.1912-1935. However, to do this with any certainty it is necessary to date catalogues as accurately as possible. The main dating references are, in order of importance, the title page or cover, the copyright details, the preface, the printer's information at the back of the book (more usual in continental works), or the printer's job code. Dates can also be ascertained from other less reliable sources such as associated material, eg. price lists, the address of the company, dated testimonials, dated references to published material, or (much less reliable) the style of the publication. There are many pitfalls to this last source, such as the continued use of old blocks for illustration, eg. ebony handled instruments shown as late as 1910, when the instruments actually provided would have had nickel plated handles

Catalogues are also very useful in tracking the development (both rise and fall) of the various medical specialisations. This can most easily be done by noting when instruments for particular specialisations first (and last) appear, and by comparing the amount of space devoted to each of them in the various editions of the catalogues.

Sometimes useful information can be drived from catalogues, such as the date of foundation of the firm, but some of these claims can be dubious, eg. James Hatrick & Co. claim to have been established in 1670. This firm was actually started in the late 19th century, but took over Evans & Wormull, who were genuinely founded in 1670, at a later date. Similarly, G. Carsberg claimed a foundation date of 1865 in one edition of their catalogue, and 1770 in the next. This was based on a business card, the printer's job number on which is 1770. The firm does not appear in the trade directories until 1800. Catalogues can also help trace the movement of the company through its various changes of address.

Catalogues can give us an insight into the way in which equipment was distributed and branded by its manufacturers. For instance, in the United States, Haslam issued their catalogues with individualised preliminary pages and covers for other companies. This is evident from the way in which 416 page catalogues dated c.1922-1927, and 458 page catalogues dated c.1929-30 turn up with the names of widely separated companies, but with identical contents, most of which are marked with the Haslam logo. Kny-Scheerer issued their catalogues in a similar way, but the Aesculap snake and staff logo is always present, and the pages bear the Kny-Scheerer name.

The EEDEE (Edward Doherty) catalogues are a British example of the same practice, and they even issued their catalogues with the title page perforated so it could be torn out easily. The Hatrick 1931 catalogue was issued for Boots the Chemists with a red (rather than green) cover, and Boots introduction: the whole catalogue was printed in a pale dull brown ink rather than the usual black. As an aside, many of Hatrick's instruments were imported from Germany and seem to be totally unmarked: however, there are many instruments with a simple 'H' stamped on them which could possibly be some of theirs.

The production style of catalogues seem to reflect the difference in marketing practice between British and American companies. In the US the trade starts, as in the UK, with many small manufacturers. As the market expands we soon find that a few big manufacturers (or importers) start issuing catalogues with 'personalised' introductory pages for their local distributors (mostly in the less developed and industrialised west?). Now there are a very few big companies, mostly subsidiaries of pharmaceutical firms, and many small, usually very specialised, firms.

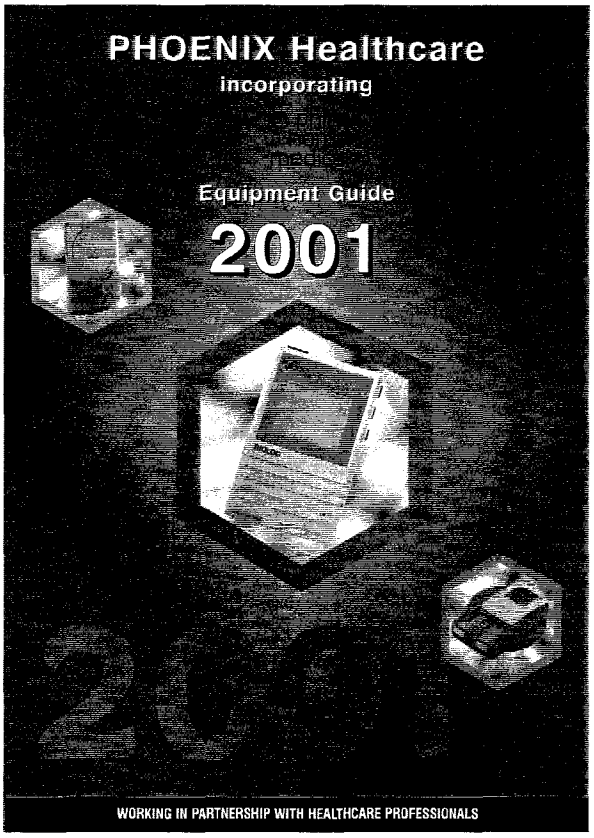
In the UK a small number of relatively subservient reps were going round hospitals and larger GP practices, politely soliciting trade with staid old fashioned literature.

In the US a larger number of 'pushy' reps were more actively canvassing trade, often with attractive 'newspaper' style 'special offer' literature, from at least 1918.
The situation in Europe seems to have been very similar to the UK, but the customer was supplied with generally much more 'stylish' literature.

One can also study catalogues from an 'art historical' perspective, as examples of typography, printing and illustration methods. There are many superbly produced catalogues with coloured lithograph plates, or even with actual examples of beautifully printed labels stuck painstakingly onto the page. Some of the American literature shows very early examples of the use of photogravure just after the First World War, at a time when in Britain it was mainly used for much more sumptuous productions, or the lower denomination postage stamps, which required a certain degree of security

Catalogues can be a good source for certain aspects of social history, such as the history of contraception. Examples are the 'discrete' advertising and supply of condoms and check pessaries, and the involvement of the medical profession in the promotion of products such as Dr. H.A. Albutt's quinine pessaries by the firm of E. Lambert & Son under the trade name of 'Lambutt'. Allbutt was actually struck off for this involvement, and titles himself 'Late MRCP' on many of his publications.

I hope this has given you a taste of some of the ways in which trade catalogues can be of use to the student and collector of medical equipment, but also pointed out that they have to be used with care.



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