

MEDICAL



COLLECTORS



ASSOCIATION

NEWSLETTER NO. 16
October 1989

Dear Colleagues:

I am pleased to present to the membership the latest and last Newsletter for 1989, which marks the 16th since the group was formed. The Association is alive and well and doing better than any of us could have anticipated. As of this date, the membership has reached 165 persons and the activity of the members has greatly increased, as evidenced by the number of interesting contributions in this issue.

The first item to report is, of course, the meeting which was held in Cleveland under the auspices of Olgierd Lindan. The Dittrick Museum provided a gracious site for the occasion, which was highlighted by an extremely interesting series of talks, a visit to the Dittrick Museum, including a behind-the-scenes tour of the Museum and the library in which it is situated and a spectacular view of Dr. Olgierd Lindan's personal collection of medical quackery which literally filled his entire house. All of the 24 members and 8 guests who attended this meeting will surely recall it as a fascinating and most enjoyable experience. As a result of the meeting, the Association was able to donate \$810 dollars to the Cleveland Medical Library Association for use in the care and acquisition of their collections; thus maintaining our tradition of helping to support the various institutions which have so kindly agreed to serve as hosts for the annual meetings.

Next year's meeting will be held at the Mutter Museum in Philadelphia, which is run by the College of Physicians of Philadelphia. Gretchen Worden, Director of the Museum, will be coordinating this meeting, which will include talks, a visit to the Richard Berman Memorial Museum - hosted by Ros Berman, and a behind-the-scenes tour of the Mutter Museum. The Berman collection includes a General Store and Apothecary Shop. **THE DATES FOR THE MEETING ARE SET FOR AUGUST 2ND AND 3RD, 1990.** Any of the membership who wish to participate by giving a lecture, showing some interesting items, or in any other way, should contact either me or Gretchen, so that we can make the appropriate arrangements. Any help offered will be gratefully accepted. Material describing the museum is included at the end of this Newsletter.

For the first time in a while, we have received not one but two responses to the Identification Column. Dr. W.H. Weston-Davies has pointed out that the Ebony handled item is some kind of bone gouge from the first quarter of the 19th century. He points out that if the handle is checkered, it would indicate that the item is older than if the handle is smooth; an interesting point to keep in mind in dating medical items. We are also grateful to Dr. Davies for his kind permission to reproduce "The Surgical Instrument Maker, An Historical Perspective", which appeared in the Journal of the Royal Society of Medicine, volume 82, January 1989. This is a very interesting and informative article and is reproduced in this Newsletter. We also should thank Lloyd Zbar for bringing

Founder: M. Donald Blaufox, M.D., Ph.D.

the article to my attention, which resulted both in an interesting addition to the Newsletter and in Dr. Davies joining the Association. Another member of the Association, Michael D. Cohan, pointed out that the Actinometer that was pictured is not a medical item but is rather an instrument used for calibrating solutions of silver for photography. Phil Gore has sent us an enclosure for this Newsletter. Unfortunately, the photo is in color and, therefore, the photo offset leaves something to be desired, but I hope that someone can identify it.

John H. Monroe has raised once again the perennial debate of "is it an ink eraser or is it a bleeder"? He has given us a photocopy of a page from THE CHRONICLE, which I have included here, with some very interesting letters to the Editor. I recently received a gift of a very nice ivory handled instrument of this type which was signed by an early 19th century English instrument maker and was sold to a friend as a bleeder.

Wynona Crossgrove, who has dropped out of membership in the organization, was kind enough to provide me with some photocopies from a book of patents which reproduce the entries in 1855, along with a few of the instruments that were patented during that time period. For those of you who want to put the general scheme of developments in medical instrumentation into perspective, this is an interesting little item. These books can be found in most large public libraries and are fascinating to review.

Dr. Albert Kuhfeld from the Bakken Museum has been kind enough to provide us with a description of the reanimation chair of Dr. De Sanctis. This most remarkable device described in the Bakken publication is included for your interest.

Finally, I would like to bring to everyone's attention the Medical Instrumentation Fair which was held at the Portman Hotel on Sunday, October 22nd. This is just about the only major exhibition devoted largely to medical instrumentation and is held twice a year under the auspices of Peter Delehar. Unfortunately, my schedule has only permitted me to attend one of these exhibitions, but it was most rewarding and I look forward to overcoming my scheduling problems so that I can get to the next one.

Unfortunately, an item of business has to be brought up once again and that is that it is time to renew your membership. As I indicated earlier, this is the last Newsletter for 1989 and, therefore, those of you who wish to remain members in 1990 should renew your membership on the enclosed form. We appreciate whatever you can do to save us the administrative problems of having to send out numerous reminders.

News of the meeting for 1990 will be formally announced in the next Newsletter, which I anticipate to publish sometime between January and February.

I hope all of you have a happy holiday season and I look forward to your continued participation in the group.

Sincerely,
M. Donald Blaufox, M.D., PhD.

MDB:IR
Encs.

A LOOK BACK

FASCINATING ARTIFACTS FROM THE HISTORY OF MEDICINE



MEMORABILIA COURTESY OF ROBERT E. KRAETZ, M.D., CURATOR, MEDICAL MUSEUM, PHOENIX BAPTIST HOSPITAL. PHOTOGRAPH BY RAY LITMAN.


Pictured above is a handsome magneto-electric device dated about 1880 of English origin. It is complete with coil and magnet and a set of gear wheels in brass, all contained in a polished mahogany case.

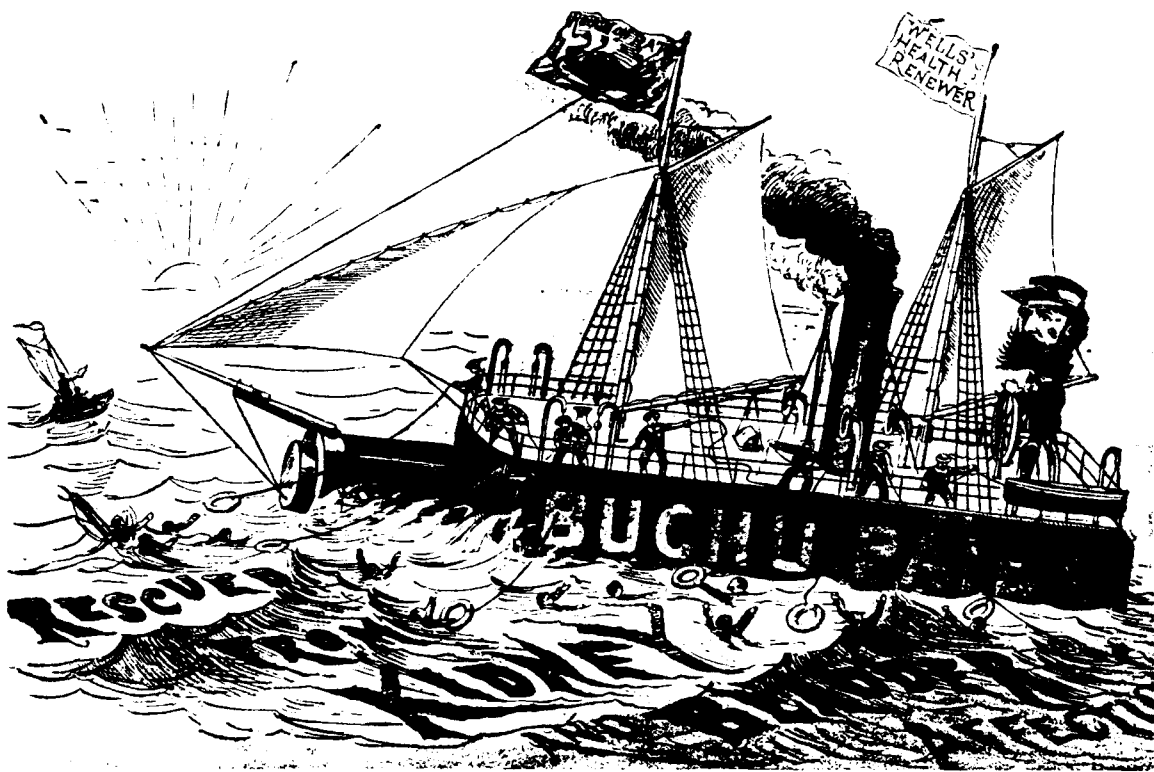
Electrotherapy was modernized in about 1850 and was utilized in a variety of different mechanical devices. Unfortunately, most of them were no more than quack machines used by charlatans and

were of no benefit to the patient.

The following is a list of some of the conditions 19th-century practitioners claimed would benefit from electrotherapy: acne, arthritis, asthma, constipation, corns, high blood pressure, insomnia, menstrual troubles, obesity and ulcers — just to mention a few.

Today, however, there are valid and justified reasons for the medical use of

electricity. Some of the areas where it is useful are in cardiac machines to stimulate the heart, TENS units for chronic pain, diathermy machines for arthritis and muscular problems and electrical testing of muscles for various nerve problems. There are many other uses and it would be fair to say that electricity has come into its own and has found an acceptable place in modern medical therapy. 



Historical Images of the Drug Market—IX

by William H. Helfand

THE Buchu plant, *Barosma betulina*, was long used as a domestic remedy by blacks living at the southern tip of Africa. It was first imported to England in the 1820s for use as a diuretic in disorders of the genito-urinary tract. Subsequent use in the United States began in the mid-nineteenth century and the plant became widely popular as the active ingredient in Helmbold's Fluid Extract of Buchu, a product that received extensive advertising. Similar products containing Buchu abounded, and the chromolithograph advertisement for Buchu-Paiba shown here is typical of publicity at the end of the century. Buchu-Paiba was a key product in a line of proprietaries offered by the E. S. Wells Company of Jersey City, New Jersey, later Wells

and Richardson, a firm that specialized in heavily promoted brands. In addition to the bottle of Buchu-Paiba (of which the ship is made), two other Wells specialties are mentioned. Rough on Rats and Wells' Health Restorer. The ship floats on waves into which several figures have plunged; they will shortly be "rescued from kidney and bladder infections." Helmbold's advertisements were less imaginative and invariably showed native blacks harvesting leaves of the Buchu plant for shipment to H. T. Helmbold, Druggist, 595 Broadway, New York, where they would be put into bottles to be marketed. (*The size of the advertisement is 5½ x 8¼ inches. The original illustration is in the W. H. Helfand Collection.*)

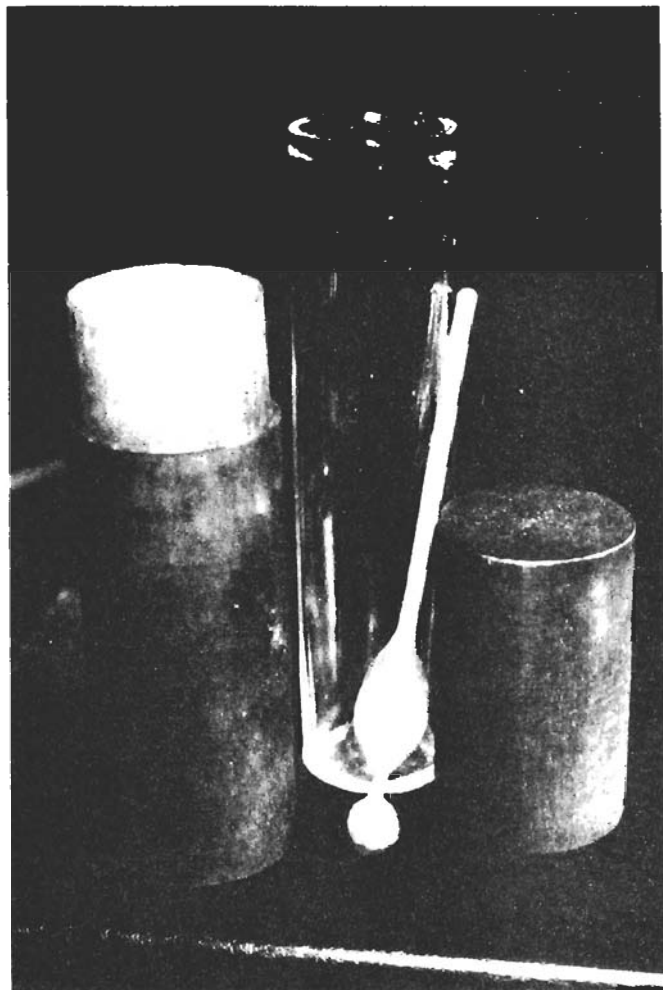
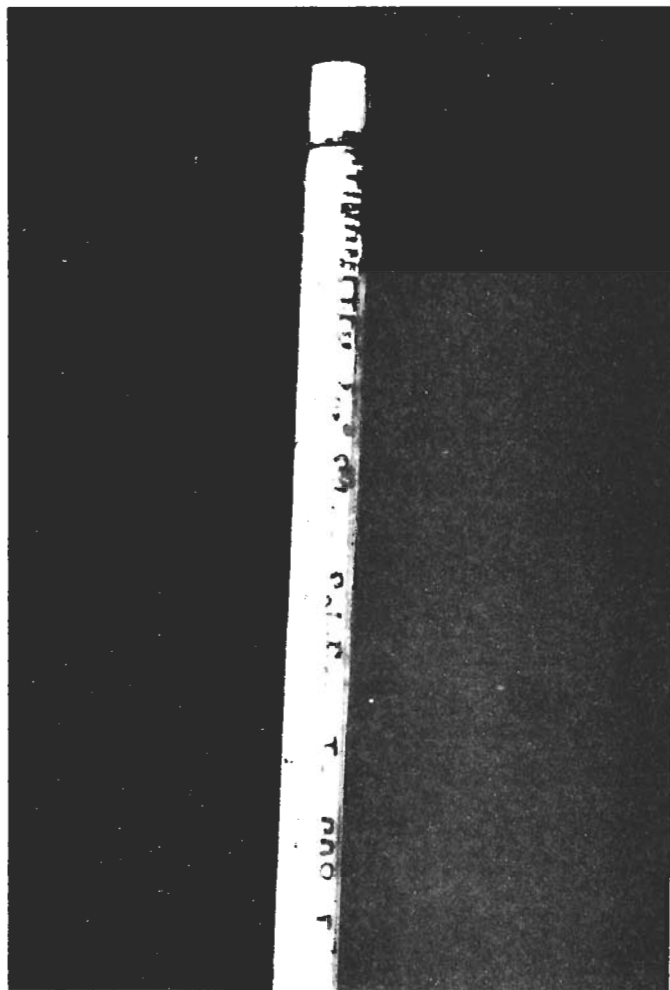
CAN YOU IDENTIFY THIS

Material: Glass, Actinometer for silver solution

Maker: Unknown

Presumed Use: Unknown

Date: Unknown



I Think This is: An Actinometer for photography developing

From: Michael Cohan

Please Return To M. Donald Blaufox, M.D.,PhD.

CAN YOU IDENTIFY THIS

Material: Wood and metal

Maker: Unknown

Presumed Use: Unknown

Date: Unknown



— EBONY
HANDLE



ACTUAL
SIZE

I Think This is: A bone gouge, circa 1800-1825

From: W.H. Weston-Davies, FRCS

Please Return To M.Donald Blaufox, M.D.,PhD.

C. 1780?

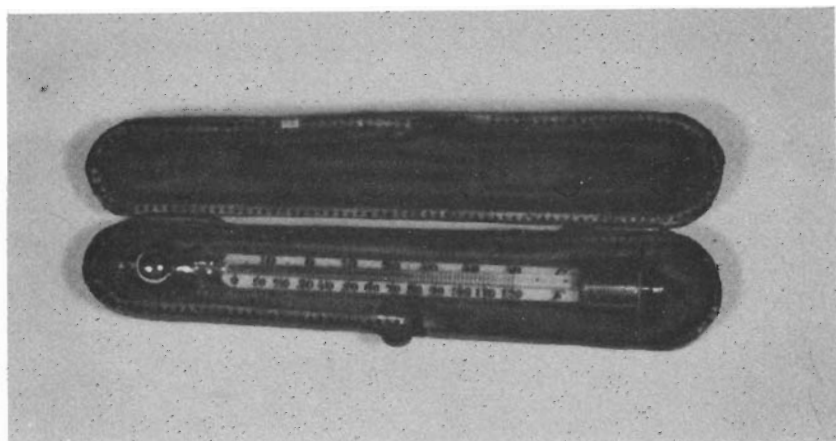
CAN YOU IDENTIFY THIS

Material: WOOD CASE WITH BROWN LEATHER, GREEN VELVET LINING
IVORY OR GLASS SCALE WITH BRASS TOP 3 7/8" x 1/2"

Maker: WEIL OPTICIEN TAU

Presumed Use:

Date:



I Think This is:

From:

Please Return To M.Donald Blaufox, M.D.,PhD.

Medical Museums in Paris (1989)

By Audrey Davis, PhD.
Curator of Medical Sciences
National Museum of American History
Smithsonian Institutions

In this year of the Bicentennial of the French Revolution many French museums are taking advantage of this major event to spotlight unique items which are in any way related to the Revolution and its participants. The Louvre, the Queen of French museums, in commemorating the Revolution, offers a new symbol for the next century or two. Its new entrance, beneath a pyramid of glass, placed in the center of its eighteenth century chateaus, was designed by I. M. Pei, who also designed the East Wing of the National Gallery of Art in Washington, D. C. Opened to the public in April of 1989, "La Pyramide" invites controversy with its streamlined, shimmering peak of glass surrounded by a flowing pool of water, when placed in conjunction with the centuries old museum buildings decorated with life size statues, partially obliterated by the ravages of pollution and stained in various shades of gray and green as a result of chemical changes. However debateable the esthetics of "La Pyramide" may be, the structure proclaims a new generation of museum visitors and a new approach to collections and exhibitions. In fact, the novel entrance also provides more storage space for collections, accessible and plentiful conveniences for tourists, and a new underground exhibit on the history of the Louvre, which includes an overlooked foundation. The message brought by this glittering entrance, that museums are appealing to wider audiences and contributing more to the cultural life of all people is important, and one that museums worldwide are accepting

and responding to with varying enthusiasm, energy, and resources.

A number of French museums without the finances of the Louvre were not able to mount elaborate and expensive new structures or exhibitions, but they have put up separate sections devoted to Revolutionary events or its consequences, or have singled out those items already on exhibit whose history grows out of the Revolution.

The museum visitor in Paris this year with a special interest in medical history will quickly go to the cornerstone of medical museums and medical collections, the Musée de l'Histoire de la Médecine of the Faculté de Médecine of the Université de Paris on 12 Rue de l'École de Médecine. Alas there is no special exhibition to commemorate or capitalize on the French Revolution. However there is a more subtle revolution taking place within this institution, which should prove beneficial to the collections and the exhibit area in the future. A new Curator (Conservatrice), Madame Clin, who succeeded Madame Jacqueline Sonolet, was recently appointed. Trained in medieval history, she is avidly learning the history of medicine and the medical collections she curates. However the budget and level of support which the university will give the museum is unknown and is crucial to implementation of plans. As we shall see below French museums, except for the most outstanding, are not well financed and have suffered great losses as a result. Support from Americans for any museum collections will certainly help to remind administrators and keepers of the budget that these French collections are worth preserving and displaying.

While some temporary exhibits were mounted in the medical

history museum over the past years, of which a few partially illustrated catalogs exist, the main exhibit hall has remained the same. I saw the museum in 1975 and it appears very similar to the one I visited in April of 1989. The rectangular gallery is an architectural wonder with an open skylight, wood floors, brass trimmed cases lined up along two long walls and an exquisite iron railing around the upper level. None of these elements could be produced today due to the expense and the shortage of craftsmen to duplicate such fine work. Mde. Clin has a good architectural foundation to work with in refocusing and redesigning the exhibit hall.

She will undoubtedly want to feature some of the special pieces presently on exhibit. Among the instruments, models and personal items exhibited are some of the most outstanding historical pieces of medical significance. These objects represent the beginning of nineteenth century diagnostic techniques such as two Laennec stethoscopes, one made of cardboard and the other composed of wood, the plessimeter of Pierre A. Piorry, the sphygmograph of Etienne Marey, as well as a sphygmophone of ivory and brass, which I have never seen anywhere else. A Marey volumetric sphygmometer for use on the finger and other blood pressure devices and a Boullitte pneumograph used by Paul Bert, which is very rare, are among the other cardiology related instruments in the case. Some of the earliest endoscopic devices include a large set belonging to Dormeaux and A. Nélaton's set of sounds. From the twentieth century there is a 1935 Wolf made gastroscope.

Other cases devoted to otolaryngology, lithotomy, urology, aspects of surgery, neurology, dermatology, dentistry, and acupuncture contain fine pieces, some of which were manufactured by the unparalleled French medical instrument maker, Charriere. Amputation and trepanation are among the practices well represented. There is also a silver circumcision set. An unusual scarification set by Brève^{te} of Paris is the highlight of a bloodletting case. An ivory handle Garengot dental key and several pelicans and other keys add unusual interest to the dental case. Free standing between the cases is a pneumatic machine by Deleuil of Paris and a Ramsden electrostatic machine.

Of special note are the four anatomical models. There is a full size wood mannikin made around the turn of the nineteenth century by the Florence craftsman, Felice Fontana. It is constructed of over one hundred pieces. The life-size model stands outside the entrance to the museum and reflects a need for repair by the fact that it is held together with leather straps. Two other full size wax models, also from Fontana, but of lesser intricacy, stand nearby. These three models were sent to Paris after Napoléon saw similar ones in Italy and asked for copies. Although Fontana never finished the models he was making, which were to be used in teaching anatomy in Paris, these specimens were sent from Vienna around 1805.¹ The Italian artistry in making anatomical models for instruction inspired the French medical student, L. T. J. Auzoux to construct models which could be disassembled by students who were learning anatomy. Within the museum in a case beside a primitive birthing

model is a small model, about two feet high, made by the incomparable French papier mache model maker, Auzoux in 1838.

One of the most bizarre pieces is a small table constructed in 1866, whose top is formed into a geometric design made from animal parts removed by Dr. E. Marinn, who served as physician to Emperor Napoléon III. A small sculptured foot and ankle stands on the table and holds the placque which provides the information about the construction of this table.

In Paris, the Napoléons are featured in exhibits as is George Washington in the U.S. Therefore it is not surprising to discover a set of scalpels reputed to have been used on Napoléon I which were donated by the Faculty of Anatomy. These include six ivory handled pieces.

For those unfamiliar with French museums there is another museum devoted to anatomical specimens which is curated by an irascible person who does not speak English and very reluctantly arranges to show the museum to visitors, which is the only way it can be seen. Discoveries of medical relevance also await the observant in other museums such as the lower jaw bone of Louis IX which is displayed in the Cathedral of Notre Dame Museum. Although missing all the teeth it is of interest to dental historians and the Curator of the Dental Museum in Paris was surprised when I pointed it out to him.

Another museum deserving special notice, which might serve as a model for the History of Medicine Museum and certainly should be linked intellectually, is the Musée de L'Assistance Publique. This appears to be the most successful medical museum in Paris. Its

current extensive and very informative exhibit was mounted in 1981. The history of L'Assistance Publique is a complex one which is reviewed in an exhibit catalogue published in 1981 by Yvonne Saint-Geours, P. Nicolas Sainte Fare Garnot and Nadine Simon-Dhouailly.² The extensive collection was obtained from Parisian institutions including the famous Charity and Hotel Dieu hospitals which were founded in the middle ages. The intermingling of church and hospital is well represented in this museum. Paintings, sculptures, drawings, books, laws and regulations signed by rulers, equipment, clothing, and medals all attest to the struggle to assist the poor, foundling, and epidemic-stricken population over the centuries. The museum provides a social history of disease and medical care supported by some of the most important documents in the history of western medical culture. Each item on exhibit is well described, and in some instances, illustrated in the catalogue.

There are many conceptual possibilities for bringing together these two fine collections or at least viewing them in conjunction. Item 344 in the illustrated and well produced catalogue of this exhibit is a placque of Etienne Marey showing him with the instruments he invented: the pulse registering sphygmograph and the method of photographing animals in motion to study the positions of the body during fractions of a second. This artistic rendition of Marey's achievements would serve as an esthetic and intellectually satisfying addition to the case of his instruments in the medical history museum.

Paris, in the tradition of great cities, has an abundance of riches in medical history as it does in other areas. Many of these items still remain in spite of the devastation of the many wars endured by the city. Of direct relevance to the world wars of this century and, to a lesser extent, earlier military conflicts is the Museum Val-de-Grâce situated in a monastery building founded by Anne of Austria in 1621. Two other institutions are located nearby: a military hospital and a school for military physicians. The school and hospital became famous for its outstanding teachers including Desgenettes (1762-1837) and Dominique Larrey (1761-1842). The museum was originally organized for the students in 1850. In 1916 the Archives and Documents de Guerre was founded and in 1918 the museum and library became the Museum Val-de-Grâce.

Significant objects in the museum include Larrey's thesis (1786), uniform, death mask, and case of instruments. Many models depict the methods of coping with battlefield wounds and strategies to avoid casualties. Bacteriology and epidemiology were pursued by the faculty including such individuals as H. Vincent, who vaccinated against typhoid fever in the first world war. Items representing the famous military pharmacists Parmentier, Poggiale, and Roussin are also in evidence. Paintings showing some of these figures in action tending the sick and wounded are artistically and medically important. The Val-de-Grâce is a unique museum including scientific, historic, military and artistic collections with primary documents preserved in the adjacent library.³ There are many potential research topics which could be based on the contents of

this library and museum.

Professor Pengelley has reported on the Pasteur Museums in Paris and other French cities, however I would like to note here that the Museum in the Pasteur Institute is one of the most ideal settings for learning modern medical and biological history. In fact while visiting the living quarters and laboratory exhibit, I was inspired to suggest that the Medical Collectors Association plan a trip to Paris just to see this and other medical museums. Like many others, I had taken for granted much of what Pasteur accomplished and paid little attention to his scientific methods and the interesting details of his life.⁴ However one is quickly introduced to the man and the scientist-medical investigator by visiting this museum-shrine. My French was put to a severe test as I was guided by the Curator since 1982, Annick Perrot, who delighted in showing me every part and explaining in detail the meaning of each piece. This all took place even though I arrived at a time when the exhibit was closed and I did not have an appointment. She also assisted me with research on an object which had belonged to Pasteur's grandson, Valery-Radot.

One of the Bicentennial gems among those exhibits of particular interest to historians and collectors of science and technology is the new hall on the Metric System in the Conservatoire National des Arts and Métiers.⁵ This museum is devoted to preservation of the evolution of the graphic arts, photography, electricity and electronics, industrial machines, physical instruments, astronomy and the metric system. The institution was created in 1794, on the

site of a monastery built in the ninth century, to be a public repository of machines, tools, models, drawings, designs and books concerning skills and techniques. In 1799 the Priory of St-Martin-des-Champs, extending back to the thirteenth century, was taken over for the Museum and 495 objects deposited. Its first public exhibition opened in 1802. A National Testing Laboratory was set up in 1901, although now it has been transferred out of the building. In the former church are exhibited the transport collection and the former refractory contains the library.

The chemist and revolutionary figure, Antoine Laurent Lavoisier is well represented for his work on combustion and the application of chemistry to biology. His desk, balances, thermometers and calorimeters are featured in a bicentennial section and a pair of his spectacles reside unobtrusively in a small case hung on the wall.⁵

The Conservatoire is a glaring example of an important science and technology museum that is woefully undersupported. Some of its collections are poorly preserved, the building needs repair, and the staff is not fully educated or properly supplied with the resources to care for this building and its precious contents. A colleague at the National Museum of American History has recently returned from spending a year at the Conservatoire and prepared a report on its condition and made suggestions for improvement.⁷ Anyone who is in a position to offer assistance should come forth.

Of course the consequences of the Revolution take center stage in exhibits, performances and discussions. Museums such as those

devoted to the history of coinage, stamps and general history are duly engaged in this dialogue with the public. Small but well publicized exhibits like one on the history of electricity, which is mounted in the Curie Institute of the University of Paris, are sponsored by major industries, in this instance, the Electric Company.

Museums are the guardians of the past through the objects they keep in storage and on display. Instruments, artifacts, memorabilia, documents, notes, drawings, photographs, books and verbal information are all thrust into museums to preserve, conserve, exhibit, loan, and disperse as the caretakers, administrators, and financial support permits. Therefore museums are constantly changing to reflect their constituencies, supporters, and staff. Changes occur in accordance with the availability of objects, information, financial resources, and the desire of visitors to see and learn. At present, perhaps more than ever, museums are consciously appealing to more visitors in their displays and providing a meaningful and educational environment by adopting compelling exhibit techniques, enrichment programs, and advertizing their activities which go beyond exhibition. Collectors of historic items should keep informed of these changes and offer their support whenever feasible.

Notes

1. Jacqueline Sonolet, "A Propos d'un Mannequin Anatomique en Bois: Napoléon Bonaparte et Felice Fontana," in Atti Del i Congresso internazionale sulla Ceroplastica nella Scienza e nell'arte. (Florence, 1975), pp. 443-458.
2. Musée de L'Assistance Publique de Paris. (Paris: Tardy Quercy, 1987).
3. Médecin General A. Fabre, Le Val-De-Grace. (Paris: 1975).
4. Albert Delaunay and Hilda Benichou, Pasteur Institute, English translation, (Paris, undated).
5. Les Arts et Métiers en Revolution: L'Aventure du Metre, 4 April-30 October, 1989.
6. Musée National des Techniques, Conservatoire National des Arts et Métiers (in English), 24 pages.
7. Nance Briscoe, "Report of Arts and Métiers," unpublished, 1988.

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Editorial Staff
Editor: Elliot M. Sayward
Whatsit Editor: Harry J. O'Neill
Contributing Editors: Charles Reichman
Frank G. White
Special Graphics: Tom O'Conner

Address Editorial Communications to:
60 Harvest Lane, Levittown, NY 11756

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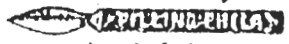
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To the Whatsit Editor:

The illustrated French Poultry Killing Knife is from the Montgomery Ward, Catalog 56 of 1894-95. It raises a question. Over the years I have collected several implements of similar appearance, although each had a hardwood handle of tropical wood. I have always understood that my implements were "erasers" used before India rubber erasers were available to scrape pen and ink errors from writing paper. I must admit I have never tried the process. However, my examples were marked by English cutlers and are apparently of the early 19th Century if not before. Are they, in fact, poultry killers, or are they another example of the "look-alikes" that seem so prevalent among tools and implements? The handles of my implements taper downward in thickness from the point. I had guessed this was because they had a secondary use as paper folders.

Charly Gedney

French Poultry Killing Knife.
24318 Every poultry raiser should have one. They are made of finely tempered instrument steel, with nicked handles, will last a life time.
Each.....\$0.40. Postage.....\$0.05

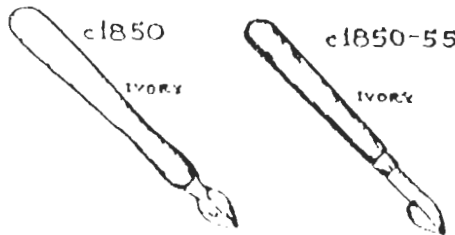


Excerpts shared by
Jay Gaynor Curator
of Mechanical Arts
Colonial Williamsburg

Vol. 41 No. 2 June 1988
(ISSN 0012 8147)

To the Whatsit Editor:

Illustrated in C. Keith Wilbur's *Antique Medical Instruments* is a scalpel lancet dated 1777 and others with dates, c1850 and c1875. These closely resemble in their



From *Antique Medical Instruments* - C. Keith Wilbur, M.D.

Steel Ink Erasers.



16467 Steel Ink Eraser with spear point; cocco wood handle; length, 5 inches.



16401 Steel Ink Eraser with knife blade, polished ebony handle; length, 8 inches.

Montgomery Ward Catalog 1894-95

business ends the illustration of the French Poultry Killing Knife supplied by Charity Gedney in the March '88 *Chronicle*. In fact, the earliest of the scalpel lancets shown was apparently found by Dr. Wilbur in an 18th Century French work. Could this be why the more modern instrument is called French? None of the handles of the scalpel lancets are patterned quite like Ms. Gedney's illustration although one is reasonably similar. However, Dr. Wilbur's text includes these words under the heading *A Minor Mystery*. "Many an antiques dealer (and Sears Roebuck Catalog of 1906) will tell you that [the instruments] are 'Steel Ink Erasers and Envelope Opener'." The same Montgomery Ward catalog (#156, 1894-95) in which Ms. Gedney found the poultry killer also illustrates ink erasers of this sort. Dr. Wilbur hazards that, as lancets with handles of horn, ivory or wood became obsolete because of the advent of sterilization procedures, the instruments became surplus and makers or retailers had to find new, non-surgical uses for them.

I am reminded of a fine article by John R. Grubb, *Chronicle*, Sept. 1970, called *New Uses For Old Tools* in which he discusses a number of tools designed for particular tasks but later marketed for different ones.

Barbara Hopfe

Coincidentally, our Spring Summer Booklist offers *Antique Medical Instruments*, C. Keith Wilbur, MD at \$10.50. — ED.

ckw
394 Hayes St
Northampton
01060

To the Whatsit Editor:

In the March '88 *Chronicle*, there was some discussion of "erasers" in the letter from Charity Gedney on Poultry Killing Knives.

I would like to shed a bit of light on the implements used as "erasers." Although I do not have such an implement, my father had one. He attended the equivalent of today's technical school around 1910-12. The item had a somewhat differently shaped blade (see sketch) as I recall. I don't remember the



About full size

About full size

handle at all.

It was used to scrape India ink from drafting linen (not paper). This was (or maybe is) a specially treated woven line linen so that it had a smooth glass-like surface for the draftsman to work on. It was transparent enough so that drawings would reproduce on blueprint machines.

John White
Avalon Forge
Baltimore, MD

Vol. 41 No. 3 September 1988
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The "poultry killer" question propounded by Charity Gedney (March, 1988) has produced a good deal of comment, much of it overlapping. Because the letters have been so interesting and the subject is so illustrative of the truism that tools, not always having been used for the purposes for which they were made, resist light classification according to use or trade, we have decided to run as much of the comment as space permits.

The resemblance between scalpel-lancets and ink erasers to which we were led by Ms. Gedney's question about French Poultry Killing Knives was, as it turns out, rather thoroughly explored in the *Ohio Tool Box*, periodical publication of the Ohio Tool Collectors, in December 1985. We heard about this from Editor Ray Townsend too late to include notice in our June issue then with the typesetter. The *Ohio Tool Box* article, by R. Roades, a very interesting study of fleams and bloodletting instruments used by veterinarians, not only points out the resemblance between the scalpel lancet and ink erasers but also reproduces the French Poultry Killing Knife advertisement as run in the Sears Roebuck catalog of 1903. A question remains. Were the lancets discovered to be unhygienic in the 19th Century as suggested by Dr. Wilbur (*Antique Medical Instruments*) and did the makers find a new market for the instrument as erasers and poultry killers or is the resemblance just an unintentional look alike among the multitude of tools and implements developed over the years. In this instance we incline toward the first idea.

A letter from England suggests still another use for the implement.

To The Whatsit Editor:

It seems that the French Poultry killing knife illustrated in the Whatsits in the March 1988 edition of *Chronicle* is one of many tools that were sold for a variety of uses.

An eraser is undoubtedly one of those uses as the enclosed photocopy from the 1899 Catalogue of Richard Melhuish of London clearly shows. They came with a variety of handles, including ivory as well as various woods, from both this and other firms. I believe that at an earlier date, knives of a similar type were used for cutting quill pens.

I can also vouch for their methods of use, i.e. to physically scratch or shave the ink from drawings to correct errors. This is still today the most widely used method of correction for architects and draughtsmen and I personally use exactly this technique to erase errors when producing ink drawings on tracing paper in my work as an architect, the only difference being that I tend to use a humble razor blade!

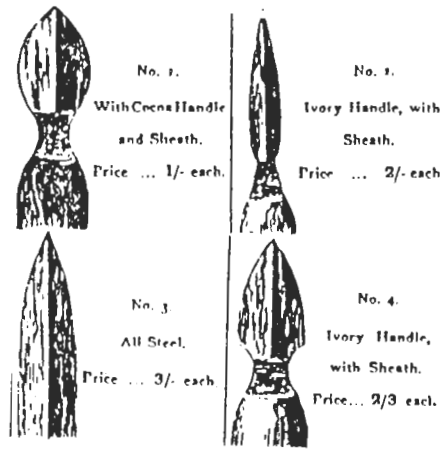
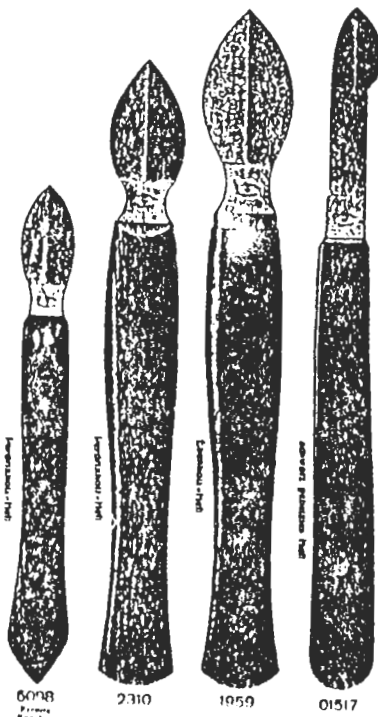
Jane Rees

The 1935 Ed. Wuesthof catalog (the manufacturer of the famous Trident line of cutlery) still shows the Poultry Slaughtering Knife, *Chronicle* Vol. 41 No. 1.

The similarity of different knives is apparent in the enclosed illustrations, which show the Radiermesser (Eraser Knife), the Gelleugelschlachtmesser (Poultry Slaughtering Knife), and others in actual size.

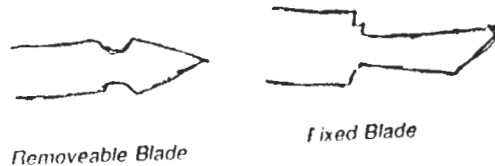
G. Meincke

Radiermesser



To The Whatsit Editor,

Regarding the so-called steel ink erasers, they have been recently in use. When I was with B. F. Sturtevant Co., in the 1940's, I used them. I dug mine out and find that one is a steel blade permanently mounted in a wooden handle with a brass ferrule. The



other was a throw-away model that could be inserted into a wooden pen holder. These holders were common before ball point pens appeared. The scraper, as I would call it, is made by the R. Esterbrook & Co. It is #331 and is labelled Esterbrook No 35. It was indeed used to scrape the ink off the drawing linen.

A day like today - hot and humid - would always make us curse. The humidity would cause the drawing to stretch and wrinkle. The other problem we had involved the humidity, also. If it was hot and if you were sweating and printing at the top of the drawing for a period of time, it was possible to have your forearm leave a long white mark across the lower part of the drawing from the moisture. The only good thing about the stuff, was that all draftsmen had good linen handkerchiefs. It was very simple to rinse out the starch or sizing and have a good quality piece of real linen.

Karl H. West, Jr.

We are only able to show some of the "Radiermesser" knives which had to be reduced. The Wuesthof *Trident* catalog is an extraordinary one and we hope to have other illustrations from it in a later issue.

With this issue we are putting to bed the topic of the poultry killer/ink eraser/scalpel/pen knife. Actually a good deal less space than that taken by a moderate-size article has been expended and we've learned a lot. We feel our correspondents have made good use of the columns of their magazine. However, until somebody comes up with a definitive explanation of why the same tool has been marketed for so many different purposes there's not much point in further exploration of its different roles.

To the Editor:

Although you have cut off discussion of the topic of poultry killers versus ink erasers, it seems to me that one further point should be mentioned.

In medieval scriptoriums, penmen copying on parchment the beautiful manuscripts of which, fortunately, so many are left to us, made "lapsus calami", or slips of the pen, just as we do today. They corrected their slips by scraping with a knife much as Ms. Gedney suggested in her Whatsit inquiry (March '88). There are many manuscript illustrations of medieval scribes holding both pen and knife. The knives were mostly short bladed with handles perhaps three or four inches long. It is not hard to see why Ms. Gedney's version was used by draughtsmen and others even if they may have been designed for surgical use.

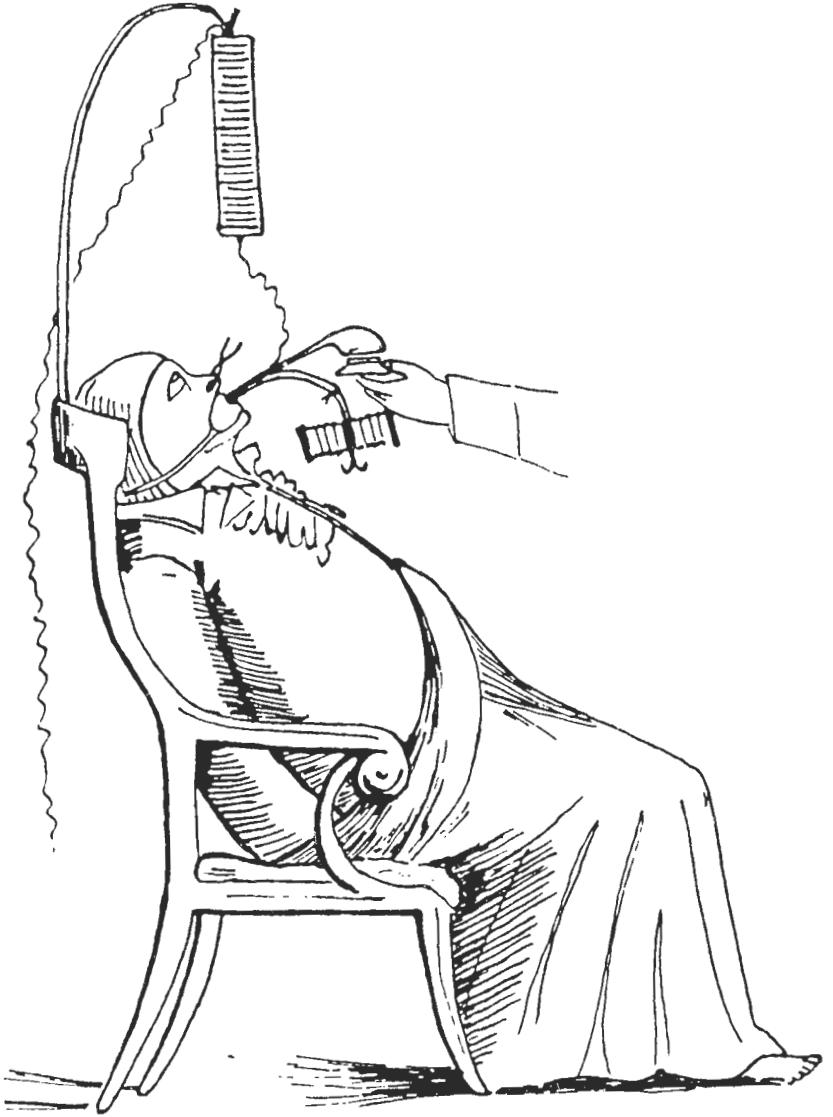
Karen Ward

All right already! Please note we have let down the bars. There is a fine discussion of tools of this sort in the context of the recent past by Don Armistead in the Wareroom - ED



A medieval illustration showing a penman at work. With his right hand he dips his pen, probably a trimmed down quill, in the ink pot. In his left he holds his erasing knife. It looks as though the scriptorium boss might have caught him in a mistake.

The Re-animation Chair



Electroresuscitation in
The Medical Guide
by Richard Reece, M.D. (London, 1820)

The stimulating effects of electricity were noticed early in the investigation of the subject. **Galvanic** electricity was discovered in the twitching of frog muscles, and the Voltaic Pile was used to create a simulacrum of the electric eel; there was a strong association between galvanism and "animal electricity".

Reece's book is contemporaneous with Frankenstein by Mary Wollstonecraft Shelley (1818). They share a common interest: restoration of life where death has apparently taken hold. And they share a common opinion, that **galvanism** is one of the stronger weapons in the fight against death. (It is well to remember that, in context, Frankenstein was **not** fantasy: it was an early form of science fiction.)

The "reanimation chair" of Dr. De Sanctis, described in The Medical Guide, has three extremely pertinent features: a bellows to give forced ventilation; a metallic tube to be inserted in the esophagus; and a voltaic pile attached at one pole to the esophageal tube, and at the other to an electrode. This electrode was to be successively touched to "the regions of the heart, the diaphragm and the stomach...". In short, De Sanctis and Reece were recommending cardiac electrostimulation by way of an esophageal electrode; and if the electrode were to be touched at perhaps one contact per second, a form of manually regulated pacing to boot.

It is always difficult to estimate the voltage of early piles, before battery construction was well-understood; but the galvanic pile of "one hundred plates" would probably have an output somewhere in the vicinity of 20 to 100 volts. This, coincidentally (?) is just the range of voltage found effective by Shafiroff and Linder in their 1956 study of esophageal electrostimulation of the heart. Quoting Schechter's analysis of their results¹,

"Withal, control of rhythm was obtained. To do this, however, the voltage had to be between 20 and 50; and above 60 volts, chest pain and diaphragmatic flutter became intolerable"

In any case, the chapter "Of Suspended Animation, and the Means of Recovery" from Reece's book is herein reprinted in its entirety, for those who might be interested in this illuminating early mention of electroresuscitation.

-- Albert W. Kuhfeld, Curator --

¹ Schechter, David Charles Exploring the Origins of Electrical Cardiac Stimulation (Reprinted 1983 by Medtronic, Inc.)

THE
MEDICAL GUIDE,

FOR THE USE OF THE
*CLERGY, HEADS OF FAMILIES, AND PRACTITIONERS IN
MEDICINE AND SURGERY.*

COMPRISING A

Domestic Dispensatory,

AND

PRACTICAL TREATISE

ON THE

SYMPTOMS, CAUSES, PREVENTION, AND CURE,

OF THE

DISEASES INCIDENT TO THE HUMAN FRAME;

WITH

THE LATEST DISCOVERIES IN MEDICINE.

By **RICHARD REECE, M.D.**

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, IN LONDON; AUTHOR OF THE
PRACTICAL DICTIONARY OF DOMESTIC MEDICINE, THE CHEMICAL GUIDE,
EDITOR OF THE MONTHLY GAZETTE OF HEALTH, &c. &c.

THE THIRTEENTH EDITION, WITH ADDITIONS.

Medicine is God's second Cause of Health.

LONDON:

PRINTED FOR LONGMAN, HURST, REES, ORME, AND BROWN,
PATERNOSTER-ROW.

1820.



One of the College's most important contributions is in providing the lay public with access, through the museum and library, to information about the history and modern practice of medicine which is rarely available to those outside the profession.

Biology students enjoy the specimens and models illustrating the development of the human fetus, and everyone appreciates the impressive array of 139 skulls, assembled by a Viennese physician to show anatomical variations. The collection is particularly unusual because the name, age, birthplace, occupation, and cause of death is recorded for each skull.

The College continues to fulfill its original intention to provide a place where Philadelphia physicians can meet and discuss the latest medical discoveries, united by common professional interests and removed from the atmosphere of competitive institutional loyalties. Membership in the College is by invitation and election. The over 1700 Fellows, who provide much of the financial support of the College, represent all specialties and are drawn from most of the Philadelphia area medical schools and hospitals, where they are recognized as outstanding teachers and leaders in clinical medicine.

MÜTTER MUSEUM

ADDRESS

19 South 22nd Street
Philadelphia, PA 19103
(east side of 22nd,
between Chestnut and
Market Street)

TELEPHONE

College: library
(215) 561-6050
Museum: gen'l info, group
tours
563-3737 Ext241

HOURS

Mütter Museum Tues.-Fri.
10-4
Library Mon.-Fri. 9-5
Closed Federal holidays.

ADMISSION

Free; donations accepted.

GROUP TOURS

Available by appointment
for groups of 10 to 30 per-
sons. Three weeks notice
required for guided tours;
groups may tour on their
own but must schedule in
advance.

PUBLIC TRANSPOR- TATION

Within one or two blocks
of bus routes nos. 7, 12, 42,
44, 48, D, Penns Loop. Sub-
way-surface stop at 22nd
and Market; elevated train
and railroad Station at 30th
Street, 3 blocks east of Col-
lege; 6 blocks west of Sub-
urban Railroad Station,
Penn Center; 10 blocks west
of Reading Terminal Station.

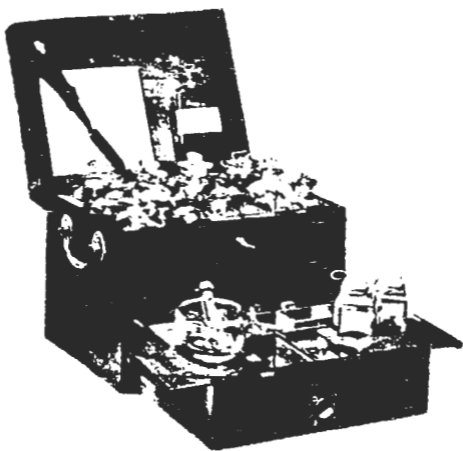
PARKING

Indoor and outdoor lots
within one or two blocks.
Metered parking on Market,
Chestnut, and adjoining
streets.





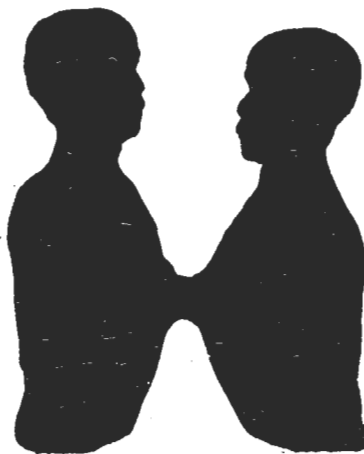
In 1858 Dr. Thomas Dent Mütter formally presented his unique collection to the College of Physicians of Philadelphia, though it was not opened to the public until being installed in the College's new quarters at 13th and Locust Streets in 1863. Dr. Mütter had been the popular professor of surgery at Jefferson Medical College from 1841 to 1856, and during that time had gathered a remarkable teaching collection of anatomical and pathological specimens and models. When he retired from teaching, three years before his death in 1859, he expressed a wish to found a pathological museum which would be open to all physicians and medical students without charge, "to serve at once the cause of science and humanity" and to repay the profession for the many benefits he had received from it.



THE COLLEGE OF PHYSICIANS OF PHILADELPHIA



The College was an appropriate home for the Mütter Museum. Founded in 1787 as a private medical society by twenty-four of the leading physicians of the city, it was organized to gather scientific and medical knowledge from America and abroad, to promote the use of this knowledge for the public welfare, and to encourage the highest standards of professional practice and conduct among its members and their colleagues. The museum joined the College library, begun in 1788, to make the College a major resource in the study of current and historical medicine, especially as practiced in Philadelphia.



Around the nucleus of Dr. Mütter's gift, the museum added noteworthy anatomical and pathological specimens acquired by purchase or donation both locally and abroad. The museum also began to collect instruments, which show the dramatic changes in the medical professional's tools and techniques in the last three centuries. Other artifacts joined the collections, representing pharmacy, dentistry, nursing, military medicine, quackery, and folk medicine. Gifts were often made to the College of memorabilia of internationally-famous physicians and scientists, who are also commemorated in the large medical medal collection.

In the 19th century exhibit cases around the two-story balconied gallery of the main museum area, the visitor will find such fascinating objects as the tumor removed from President Grover Cleveland's jaw in a secret operation in 1893; the skeletons of a 7'6" giant and a 3'6" dwarf; the medicine chest and walking stick of Benjamin Rush, a Signer of the Declaration of Independence and a founder of the College of Physicians; a plaster cast of the bodies of Chang and Eng, the original Siamese Twin, and the actual connected livers which were removed when their autopsy was performed in the museum in 1874.

THE

ALAN MASON

September 14, 1989

CHESNEY

MEDICAL

M. Donald Blaufox, M. D., Ph.D.
Medical Collectors Association
1300 Morris Park Avenue
Bronx, New York 10461

ARCHIVES

Dear Dr. Blaufox:

I tremendously enjoyed my first issue of the Medical Collectors Association Newsletter and I am looking forward to the next issue. May I have the following announcement printed in the next issue:

The Alan Mason Chesney Medical Archives of The Johns Hopkins University is in the beginning stages of collecting medical instruments and artifacts that have significant scientific and historical value to The Johns Hopkins Medical Institutions. The collection is encyclopedic, yet its scope and its strengths and weaknesses have not been determined. I am interested in obtaining these medical objects, especially from alumni, faculty, medical personnel and others who are or have been affiliated with The Johns Hopkins Medical Institutions. I am also in need of catalogs of medical instruments, 1900's to the present.

Thank you for your time and effort with the Medical Collectors Association.

Sincerely,

Mary E. Garofalo
Fine Arts Curator

College of Physicians of Philadelphia

On January 2, 1787, twenty-four of Philadelphia's most prominent physicians formed the College of Physicians of Philadelphia. Their purpose was to establish an organization to promote the exchange of medical information, discuss and debate health care issues, and to preserve and uphold the highest ethical standards of the profession.

Since that time, the College has grown considerably. In 1788, College Fellow John Morgan, donated 24 volumes from his personal library to the College. Today, the Library contains current journals and its Historical Collections contain extensive historic works on a broad range of medical specialities. The Mutter Museum of the College, begun in 1858 by Dr. Thomas Dent Mutter, is one of the few medical museums in the world. Pathological specimens, medical memorabilia and artifacts broaden ones understanding of the human body and medical practice past and present. The F.C.Wood Institute for the History of Medicine was founded in 1976 to examine contemporary health issues in historical perspective.

Built in 1909, the Hall of the College has been called a "great classical Renaissance jewel" by architect Vincent G. Kling. Its meeting rooms, halls and foyers are meticulously decorated to compliment the building's design and historical significance. Here, the Fellowship of the College, composed of physicians and medical scientists elected by their peers, hold programs, lectures, workshops and special events on health-related matters for the benefit of the medical profession and the public.

The College is located at 19 South 22nd Street, between Market and Chestnut Streets with ample parking nearby. A wheelchair entrance is located at the rear of the College on Van Pelt Street. All floors are wheelchair accessible as are rest rooms.

**College of Physicians of Philadelphia
19 South 22nd Street
Philadelphia, Pennsylvania 19103**

Hours

Library: 9-5 Monday-Friday
Museum: 10-4 Tuesday-Friday
Historical Collections: 9-5 Tuesday-Friday

Fees

Library & Historical Collections - Small daily usage fee; fees for reference and other services on request
Museum - Admission free; donations appreciated

General Information: 215-563-3737

Library: 215-561-6050

but not stay in (with his head above water) longer than half a minute, if the water be very cold; after this he must go in for three times a week, for a fortnight longer. The person must be bled before he uses the medicine."

In the space of thirty years, the doctor asserts, that he had an opportunity of giving this plan a trial no less than *one thousand times*, with (as he observes) *uniform success!* No experienced practitioner, however, I am persuaded, will attribute to it any antidotal power whatever, or think of employing it to the exclusion of more plausible remedies. If mercury be applied, it must be used both internally and externally, so as to excite salivation as soon as possible. Two drachms of the strongest mercurial ointment at least should be rubbed into the inside of the thighs and the part surrounding the wound, two or three times a day, and a pill composed of three grains of calomel, with a grain of opium, taken twice a day. If symptoms of hydrophobia * should occur, a vein should be opened in the arm, and the blood suffered to flow till the patient faints. This practice has, in some instances, succeeded, and is by far the most rational. If the patient has the power of swallowing, two grains of the sugar of lead, in a little water, may be given every two hours, or made into a pill with conserve of roses. (See Hydrophobia.)

By a communication from Dr. Spalding, an eminent physician of New York, (in the 49th number of the Gazette of Health,) it appears that the scull-cap plant has been administered in many parts of America with the most complete success, both as a preventive and cure. The testimonies there related in favour of this remedy are so numerous and respectable, as to induce one to suppose that a specific has at length been discovered for this most distressing malady.

OF SUSPENDED ANIMATION, AND THE MEANS OF RECOVERY.

The suspension of the vital powers, produced by immersion in water, called drowning, and that by strangulation and suffocation, by noxious vapours † and lightning, are very similar, and require

* It is thus named, because the person dreads the sight or noise of falling water.

† The unhappy incidents that occur on the opening of subterraneous places — such as tombs, cellars, vaults, &c. — are produced by the quantity of fixed air contained in them, which being unfit for respiration, occasions immediate suffocation. The air is considerably heavier than common air, hence it occupies the lowest situations, such as wells, caverns, &c. From the famous lake

the same resuscitative means. As in poisons, so in cases of suspended animation what is necessary to be done should be done *quickly*; therefore, on the *first alarm* of any person being drowned or suffocated, while the body is searching for, or conveying to the nearest house, the following articles should be got ready:—viz. *warm blankets, flannels, a large furnace of warm water, heated bricks, a pair of bellows, warming-pan, sal volatile, clyster pipes, and an electrifying machine.* In conveying the body to the house, the head and chest should be placed rather in a reclining position, that in case any water should have got into the lungs it may run out at the mouth, which the slight agitation occasioned by carrying the body will accelerate. The head, however, should not be kept much lower than the shoulders, or even in a reclining position, many minutes, otherwise the blood will gravitate in such quantity into the vessels of the head, as very considerably to impede the restoration of life, by compressing the brain.

The body being placed on warm blankets, in a *spacious* room with a good fire, and only five or six attendants, the *first attempt* * should be to restore its *heat* and the *circulation* of the blood, by friction with warm flannels, and by placing bladders, filled with warm water, to the pit of the stomach, and soles of the feet. Ether and other spirits, recommended by the Humane Society, for external applications, are *very hurtful*; the

of Averno, where Virgil placed the entrance of hell, this air is exhaled in so large a quantity, that birds cannot fly over it with impunity. Before a person enters a vault or cell that has been for some time shut up, or descends a well, the experiment should be made whether a candle will burn in the atmosphere of the place; for ignition and respiration are so very similar, that the same air that will support the one will also the other. The best method of rendering the air of such places fit for respiration, is to explode in it some gunpowder, in proportion to the size of the place; for this purpose, the fire-works named bomb and cracker will answer best, as they may be thrown to the bottom of the well, or end of the vault, &c. To purify the air of the vaults at Dijon, M. Morveau threw in bottles of muriatic acid, with such force that the bottles might be broke, and the acid spilt in the place: but this experiment was made to correct putrid effluvia, and not fixed air. If nitric acid were employed in the same manner, it would not only destroy putrid effluvia, but render fixed air fit for respiration, by disengaging a quantity of vital air.

* If the suspension be occasioned by noxious vapours taken into the lungs, the first object must be their expulsion, by compressing the ribs and bowels so as to force up the diaphragm, the air will be thus in a great measure expelled, and on removing the pressure, the atmospheric air will rush into the lungs, when the heart generally begins to flutter, and life gradually to return.

degree of cold produced by their evaporation * counteracting the effects of friction.

The restoration of the important functions of the † lungs, should be attempted by forcing air from a bellows through one nostril ‡; the other and the mouth being kept *closely* shut, an assistant should gently press down the ribs, so soon as their elevation indicates a distension of the lungs, and this alternate inflation and compression should be continued some time, so as to imitate natural respiration: the friction of the body, &c. being still continued by the other assistants.

The brain and the heart should be stimulated by passing through them the Galvanic fluid. For this purpose, Dr. De Sanctis, an eminent physician of London, has lately invented a cheap Galvanic apparatus which is accompanied by instructions to enable any person to use it. The primary moving powers of the body or the seat of vitality itself being in the brain, this remedy is of such importance, that the apparatus should be kept in every parish.

The bowels should be fomented and stimulated, by throwing up a quantity of warm water, with a handful of common salt dissolved in it, which may be done with a clyster pipe and bladder. The injection of tobacco fumes up the fundament, recommended by the Humane Society, from the *narcotic* quality of the herb, is more likely to prove hurtful than otherwise. It is strange, a herb, noted for its extraordinary effects

* It is a well-known fact, that an animal may be frozen to death by applying ether on the surface of the body; its rapid evaporation carrying off the vital heat.

† Dr. Cullen, in a letter to Lord Cathcart on the subject of suspended animation, says, that very often the water does not enter the lungs in any material quantity, and that death ensues in consequence of the stoppage of respiration, and the consequent ceasing of the action of the heart, whereby the body loses its heat and vital principle. Mr. Hunter, in the *Philosophical Transactions*, Vol. XLVI., advances the same theory, and asserts, that the restoration of breathing is all that is necessary to restore the heart's motion.

‡ During this process, it will be proper to draw the tongue forward, in order to elevate the epiglottis, which, by opening the larynx, will facilitate the admission of air into the lungs. If this be neglected, the air will be more likely to pass down the gullet into the stomach, the distension of which, by forcing up the diaphragm, will, in some degree, elevate the chest, and thus deceive the attendant by giving the appearance of the air having entered the lungs. Great care, however, should be taken, that the air does not escape through the mouth, instead of passing into the lungs, on account of the drawing forward of the tongue.

in *diminishing* the vital functions, should be proposed as a *stimulant* in cases of their suspension.*

A slight agitation of the body, every six or ten minutes, will act as a great auxiliary to those means.

Bleeding having a tendency to weaken the force of the circulation more than promote it, should be employed only when deemed necessary by a medical practitioner. When, however, there is an evident congestion of blood in the vessels of the head, which is generally produced by strangulation, the opening of the jugular vein will prove very beneficial, and should not be delayed.

On the appearance of any symptom of returning life, a teaspoonful of sal volatile, or a table-spoonful of warm brandy, should be got into the stomach, either at once, or by small quantities frequently repeated.

The matter of heat being the stimulus most likely to bring the vital powers into action, warm water heated to about 100 degrés (Fahr.) may also be injected into the stomach and rectum.

If, after a *vigorous* employment of these means, for the course of *two hours*, there should be no symptom of returning life, and any brewhouse or warm-bath can be obtained, the body should be carefully conveyed to such a place, and remain in the bath, or surrounded with warm grains or ashes †, for three or four hours; but if not, the plan proposed should be *persisted* in for an hour or two longer, there being instances of lives having been restored after *three hours'* unremitting perseverance.

If the subject be very young, it may be placed between two healthy persons in a bed; the natural vital warmth having in this manner proved, in many cases, successful.

The apparatus for inflating the lungs and Galvanizing the body invented by Dr. De Sanctis, and the drag, recommended by the Humane Society, should be more generally kept at public or farm-houses, near to rivers and canals, many lives being undoubtedly lost for want of the latter.

* The fumes of tobacco thus administered in cases of spasmodic affections of the bowels and strangulated rupture, I have known, in many instances, to destroy life in a few hours.

† Tissot mentions an instance of a young girl who was restored to life, after she was taken out of the water to all appearance dead, by laying her naked body in hot ashes: after remaining in that situation for half an hour, the pulse returned, and she soon afterwards recovered speech. This author also relates the case of a man who was restored to life after he had remained *six hours* under water, by the heat of a dunghill!

For the following remarks, and representation of a new Galvanic apparatus and instructions for its use, the author is indebted to Dr. De Sanctis.

“In every case of suspended animation endeavour, as soon as possible, to restore the functions of the lungs and heart. To accomplish this, extend the body of the patient either on the moveable back of the re-animation-chair, and fix it there with bandages; or, on a convenient table, should the chair not be at hand. The position, in which the body is to be placed, is an important consideration. The head and shoulders should be somewhat raised. Having placed the body in the best and most convenient posture, introduce the inflexible metallic tube into the stomach, and fix it properly by means of the elastic regulator. Pass also the silver tube into the larynx, and close the mouth perfectly with the coated plate and its appendages. Close also the nostrils with the forceps, and the ears with cotton. Adjust the box bellows to the tube placed in the larynx, and alternately force the air into, and withdraw it from, the lungs: the latter operation may be effected by pressure on the chest and upper part of the abdomen.

Whilst employed in these operations, an assistant should be preparing the Pensile Galvanic Pile, as hereafter directed; and having attached it to the top of the chair, one of the wires is to be applied to the tube passed down the gullet, whilst the other is to be successively made to touch different parts of the external surface of the body, particularly about the regions of the heart, the diaphragm, and the stomach during the inflation of the lungs; then of the neck, describing the course of the par vagum or eighth pair of nerves; along the course of the spine, &c.

Let the globe, filled with ether or any other stimulating fluid that may be thought proper, be fixed to the tube in the gullet and be warmed by means of the spirit lamp, which may be lighted by the *ignitor* in the chest, which also contains lancets, ribands, &c. in case of being required.

As soon as natural respiration is observed to take place, remove the coated plate, regulator, tubes, &c. but continue to apply Galvanism and warmth aided by gentle frictions of the whole of the body, until some time after the pulse at the wrist shall have become perceptible, and of sufficient strength to maintain its action.

The plates composing the pile being properly arranged, mix nitric acid and water in the glass tube in the proportion of from one to two, or even three-fifths of acid, according to the state of the atmosphere. The nitric acid is preferable to the muriatic as it produces a more powerful effect. The cover of the bottle

serves the purpose of a measure. Having introduced the needle through the small glass tube, press the plates closely together and then immerse the pile in the bath: move it up and down in the solution from ten to thirty seconds, according to the strength of the fluid; remove it, dry it carefully with a linen cloth, press the plates closely together and give it to an assistant to hold. Dip a finger of each hand into the solution, and then ascertain the force of the pile. Should it be found of sufficient strength, fix the conducting wires at whatever height you think proper, and add pieces of moistened linen to their ends; dip some cotton into the same liquid, and apply it to those parts of the patient which are to complete the circle; then Galvanize either by current or by shocks at such distances of time as the case may appear to demand.

Should it be necessary to continue this process for any longer time than the strength of the pile remains, say half an hour, the pile must be again immersed in the acid solution, taking the precaution of previously plunging it into pure water and then wiping it dry.

The use of the pile being finished, and the knot of the string which connects the plates, unstring them and the cloths, and wash them well in clean water; dry the latter on blotting paper before the fire, the former by means of a linen cloth, after which polish them with the rubber on fine emery paper; then wax the silken twist, knot it and string the plates as before, taking care that the zinc is the uppermost. Should there be more than one pile employed, the same attention must be paid to them in their connection and arrangement with the chief pile.

In other cases than those of suspended animation, the pile may (having first disposed different coated wires at various heights of the column) be enclosed in a glass vessel to avoid any inconvenience from the acid fumes.

The silken twist and the cloths require to be frequently changed, particularly after having been immersed in a powerful acid solution. Care must be taken that the holes of the plates are *completely* filled up by the silken twist."

The following is a representation of the improved Galvanic Apparatus of Dr. de Sanctis.

PLATE I.

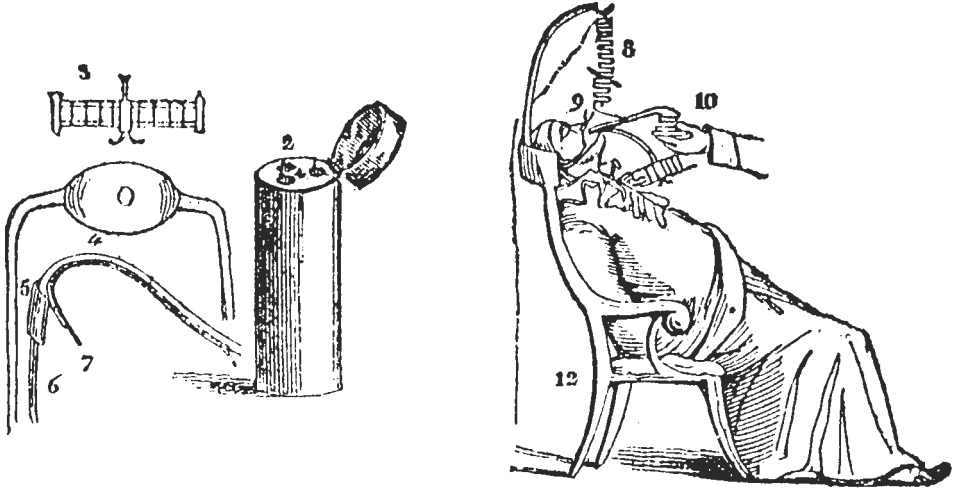
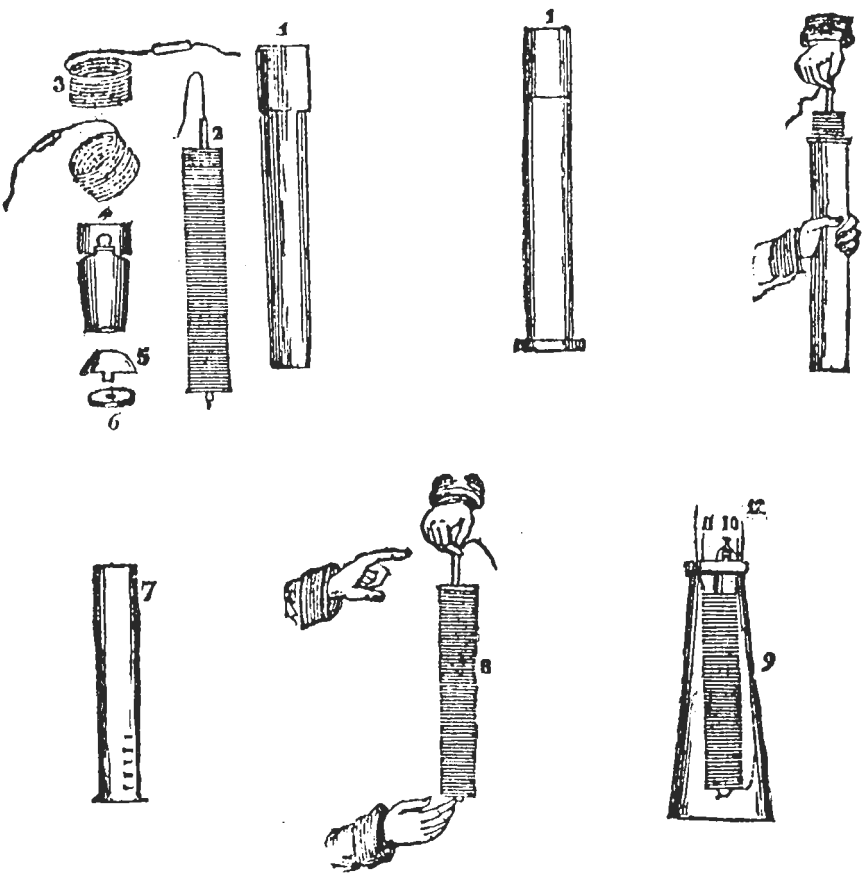


PLATE II



* * * This Apparatus is sold at the Medical Hall, 171. Piccadilly.

EXPLANATION OF PLATE I.

- Fig. 1. Chest of Apparatus for restoring cases of Suspended Animation.
2. Three large Cavities, one for the reception of a Galvanic Pile composed of one hundred plates, with its glass tube, &c. Another for inclosing two half piles, to be employed as appendages in cases of sudden recovery, or to form one pile for supplying the place of the exhausted one, as it is necessary to change them every half hour in cases of slow recovery; which is never to be despaired of until after four hours' ineffectual application. The remaining cavity is for the bottles of nitric acid, æther and brandy. The small hole in the case is for receiving the flexible metallic tube for the stomach. The remaining spaces will contain the other instruments. The box-bellows is to be placed inside the cover. The length of the chest does not exceed fifteen, and the diameter scarcely four inches.
 3. Box-bellows fully extended.
 4. Coated plate, with part of the elastic appendages for closing the mouth. It has a hole for the reception of the tubes for the larynx and stomach.
 5. Regulator for fixing the tube in the stomach, closing the gullet, and for directing and fixing the tube for the larynx.
 6. Part of the tube going to the stomach.
 7. Termination of the tube for the larynx.
 8. The chief pile fixed to the hook attached to the re-animation-chair. Should the patient be laid on a table, the pile must be supported by an assistant.
 9. The forceps closing the nostrils.
 10. The spirit-lamp heating the globe of æther adjusted with the neck, to the end of the gullet-tube.
 11. Box-bellows attached to the end of the larynx-tube.
 12. Re-animation-chair. The back and front are movable, so as to adapt it to patients of different ages: After the operation, it may be converted into a convenient bed.

EXPLANATION OF PLATE II.

- Fig. 1. Portable Galvanic Pile enclosed in its tube, for any medical case in which the application of Galvanism may be deemed advisable.
2. A pile of one hundred plates, each plate one inch and an eighth in diameter and one-sixteenth in thickness, with cloths of three quarters of an inch diameter. The needle has been introduced into the little glass tube.
 3. Wires, with the movable glass tube near the end.
 4. Stopper bottle for the acid. The cover serves for a measure. The bottle is surrounded by blotting paper, the pile by emery paper, and cotton is placed in the upper part of the cover of the tin tube.
 5. The rubber.
 6. A piece of yellow wax.
 7. The pile plunged into the bath, in which it is to be moved up and down.
 8. Mode of trying the strength of the pile.
 9. The pile enclosed in a glass vessel.
 10. The needle, with the remaining silken-twist passed through a piece of cork and attached to a glass supporter.
 11. The lowest of the coated wires attached to the positive pole
 12. The highest ditto attached to the negative pole.
- The height of the wires attached to different parts of the pile denotes their strength.

The surgical instrument maker: an historical perspective

W H Weston-Davies MB FRCS *Squibb Surgicare, 141 Staines Road, Hounslow*

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The dawn of instrument making

It was once said of Astley Cooper that he 'could operate as easily with an oyster knife as with the best bit of cutlery in Laundry's shop'¹. This indirect slur on the prowess of Joseph Laundry, instrument maker to St Thomas's and Guy's Hospitals, belies the importance of the Instrument Maker in the evolution of surgical technique. As in so many other fields of human endeavour, suitable tools are a prerequisite to progress.

The earliest surgical instrument makers were probably the users themselves who fashioned flint edge tools and adapted reeds and other hollow stems for crudely medical purposes. Abscesses must have been common at a time when man lived close to nature and penetrating injuries, including animal and human bites, were a daily hazard. Personal observation of the natural history of an abscess with the characteristic relief of pain following its rupture must eventually have planted the idea that surgical intervention by opening the abscess cavity with a suitable sharp object could accelerate the process and lead to even earlier resolution of the uncomfortable symptom. Attempts to relieve acute retention by bougienage or catheterization, or even by direct puncture of the bladder would also have engendered the need for suitable tools for the job. Craniotomy and the splinting of fractures are also known to be procedures practised by primitive societies and suitable instruments were devised for the purpose. In time those most skilled at fashioning tools of all kinds would have emerged as the forerunners of the surgical instrument maker, although it is likely that even if the implements themselves may have had particular functions, the makers would not have devoted themselves exclusively to their manufacture.

Flint tools from this period exist and some of them may have been intended to have a specifically medical purpose, although this is not apparent now. Skulls dating from the Palaeolithic period showing evidence, in some cases, of multiple craniotomies are known, including one in the Wellcome collection. Crude surgical instruments, of a type that Neolithic and Bronze Age man may have used, have been identified in primitive cultures in New Guinea and elsewhere, in relatively recent times, examples of which may be seen in collections such as the Pitt-Rivers Museum and the Royal College of Surgeons. Little is known about the makers of these implements or whether they could in any way be regarded as specialists in their own right.

More sophisticated tools appeared in the late Bronze and Iron ages and the early Egyptian civilization reached a high degree of skill in the production of beautiful and very functional instruments. There was considerable overlap, however, between instruments used for surgery and those used for domestic, cosmetic

and funerary purposes and it is unlikely that the makers devoted themselves exclusively to any one function. It is more probable that the material in which they worked was the constant, so that the worker in bronze would have made anything from knives used in surgery to ornaments for personal adornment and likewise the worker in iron, obsidian, ivory and so on.

Surgery in Roman times was dominated by military requirements and it is known that armies had their own cutlers, armourers and blacksmiths who were trained to produce surgical instruments as needed². During this period, however, instruments with an exclusively surgical function, such as screw-acting rectal and vaginal specula, were produced and the complexity of manufacture of some of these suggests that the makers may have had to devote themselves largely or wholly to this activity. These men may, therefore, have been the first specialist surgical instrument makers.

The development of the specialist instrument maker

In the Middle Ages and the Renaissance surgical instrument development continued in Europe and a whole range of instruments used exclusively for surgery emerged. Many instruments show a high degree of ornamentation suggesting specialized makers, but more mundane examples were undoubtedly produced by armourers, blacksmiths and common cutlers. By the early 18th century the cutler had become the predominant maker of surgical instruments, reflecting the fact that amputation, the incision of abscesses and phlebotomy were still the most commonly performed operations, all of which required sharp-edged instruments.

Some authorities, such as Mitchell-Heggs and Drew have stated that the surgical instrument maker as such did not exist before 1800³. This is not the case, since several makers traded and described themselves as surgical instrument makers well before this date. These include Best (1760), Savigny (1720), Ferris (1770) and Young (1777). Many others who were clearly surgical instrument makers continued to call themselves cutlers including Jean Jaques Perret of Paris whose standard work on the subject published in 1771 is entitled *L'Art de coutelier*⁴. For a large part of the late 18th and early 19th century, the description 'Cutler and Surgical Instrument Maker' continued to be used and can be seen on trade cards and in trade directories of the period.

Another influence during this period was the growth of interest in natural philosophy, including physics, astronomy and biology, which led to a demand for suitable instruments and apparatus. To a large extent the optician served this function since

microscopes and telescopes were a natural extension of his art, but many surgical instrument makers also began to stock and sell instruments of natural philosophy made elsewhere, but often labelled with their own name. By a similar process pharmacists who had initially only been concerned in the production of medicines began, in the 19th century, to sell under their own name, surgical instruments made by other manufacturers. Some, such as Allen and Hanbury, eventually went on to set up their own workshops. The major evolutionary influences in the development of the surgical instrument maker are illustrated in Figure 1.

Another important factor in the evolution of the surgical instrument maker from the cutler was probably the growth of teaching hospitals in the 18th century. This led to a concentration of surgical practice in certain areas and this attracted skilled cutlers to the vicinity. By the end of the century most hospitals appear to have had a symbiotic relationship with a specific instrument maker, or in some cases more than one. Thus, Arnold and Ferguson became associated with St Bartholomews, Evrard with the Middlesex, Mathews with Kings College, Coxeter with University College Hospital, Laundry and Milikin with Guy's and St Thomas's and Grice with the London.

The sub-specialities

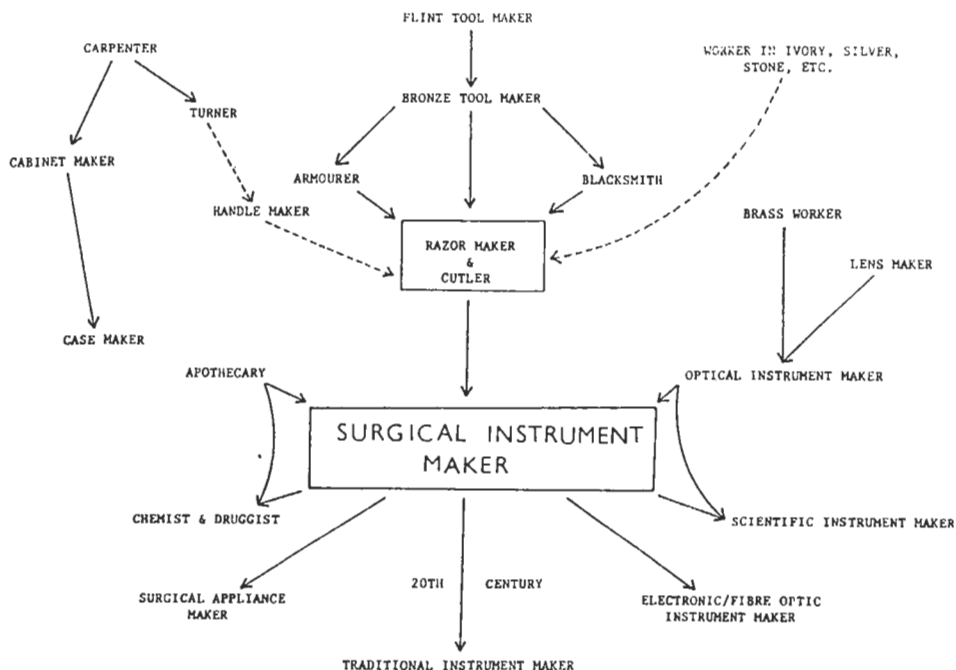
For centuries the processes involved in surgical instrument manufacture changed very little. Broadly speaking, instruments fell into 3 categories: those with a cutting edge such as saws, knives, bistouries and trephines, all of which required a handle of some sort; non-cutting instruments such as probes, tenacula, hooks and cauteries, which also usually required handles and articulated or spring forceps for grasping tissues, which did not need separate handles. The stages in production, therefore, would have needed someone to forge the metal bar into the rough form of the instrument, a fitter to assemble articulated instruments, a grinder and polisher to take it to its finished form and possibly another

participant to fashion the handle. Whether all of these processes could have been carried out by one man is not known, but it seems likely that by the 18th century the instrument maker employed smiths to produce the rough blanks which he then turned into the finished instrument. The London Tradesman of 1747, advising parents on the choice of a trade for their sons, stated that no special strength was required to be a surgical instrument maker and that working conditions were pleasant⁵. This would seem to imply that the initial forging at any rate was carried out by a sub-contractor working to the instrument maker's specification, and very likely on different premises.

An important ancillary to the surgical instrument maker was the case maker. Most instruments were supplied in sets for a particular function, for instance amputation or lithotomy and were sold in a suitable carrying case, important in the days when the surgeon rather than the hospital owned the instruments and surgery was a largely peripatetic activity. Case making was a separate trade, a minor specialized branch of cabinet making and the case maker had two major customers, the surgical instrument maker and the gunsmith. From the outside it is almost impossible to distinguish a case made to accommodate a pair of pistols from one made to house surgical instruments.

The instrument maker as innovator

British surgical instrument makers have not, on the whole, been very innovative in the design of their products. There are exceptions but in general the typical surgical instrument maker seems to have been very conservative and to have deferred entirely to the whims of his customer, the surgeon. The same appears to hold true today, and the willingness with which the British instrument maker continues to produce fanciful and often wholly uncommercial instruments to the design of individual surgeons is legendary. By contrast, the continental instrument makers, particularly the French, have often pointed the way in operative surgery by designing instruments which enabled a particular surgical advance to be made. An



outstanding example of this is the introduction of the screw action lithotrite. The origin of the operation of lithotripsy is shrouded in uncertainty and fierce contemporary controversy. Ultimately, it led to the famous case, heard by the French Academy of Surgery in 1831, which awarded the honour to Leroy (James Leroy d'Etoilles 1798-1860), but which later reversed the decision in favour of Jean Civiale⁶. The principle of crushing a stone in the bladder per urethram, however, probably occurred to several surgeons long before the date of the first wholly successful operation, which had perforce to await the invention of a suitable instrument. This was finally designed by Joseph Charrière of Paris (1806-1876) and was later modified by Weiss in London for Sir Henry Thompson. Charrière was a superb and highly inventive instrument maker whose reputation was such that he has quite often, mistakenly, been assumed by medical authors to have been a surgeon. To him also belongs the credit for the first ratchet artery forceps of modern type, which he designed in 1855⁷.

The contribution of the British instrument maker

Of British instrument makers, probably only John Weiss and Archibald Young Junior are notable for being innovative in their own right. Young was a friend of James Simpson and helped the latter in his early experiments in anaesthesia, often at great personal risk, and he produced some of the early apparatus. Syme, writing in the monthly journal *Medical Science*, recorded that the inflammable nature of ether had been a cause of much concern to Simpson and that 'Mr. Young, a cutler, deserves recognition in the pages of medical history for submitting to full ether anaesthesia and allowing a naked light to be applied to his mouth'⁸. Weiss is mentioned by John Hunter's protégé Everard Home as being one of the few contemporary instrument makers steady enough to stick to the task of furthering the design of new instruments rather than merely cashing in on the expanding trade in established ones⁹.

Other instrument makers, however, have made their contribution by interpreting the ideas of the surgeon. Krohne made the ratchet artery forceps to the design of Spencer Wells and this was later modified by Hawkesley¹⁰. Spencer Wells was not the inventor of the ratchet artery forceps, however, having been preceded by Péan and Koeberlé, who both designed artery forceps based on Charrière's original invention. In general, conservatism is what seems to have characterized the craft of the surgical instrument maker. An extraordinary example of this can be seen in the design of the double ended probe (or director) and scoop. This instrument, common in Roman times, can still be found in many operating theatres today and appeared in surgical instrument makers' catalogues until well after the Second World War. As can be seen from Figure 2, the design, including the almost functionless, decorative finial in the centre, has changed hardly at all for nearly 2000 years. This conservatism has very often been the downfall of the surgical instrument maker. The preface to Brady and Martin's catalogue of 1897 reads: 'Great advances have been made in aseptic surgery as a result of Lord Lister's work . . . however, we do not think that the day when metal handled instruments will replace ivory and ebony is near at hand'¹¹. Within a few years the firm had ceased to exist. British makers,

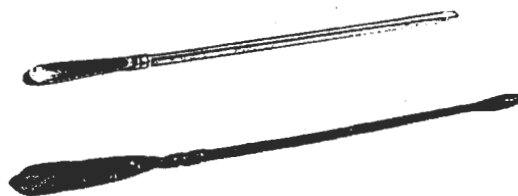


Figure 2. Top: combined scoop and director, silver, British, early 20th century. Bottom: combined scoop and olivary tipped probe, bronze, Roman 1st century AD. There is a remarkable similarity between these instruments manufactured nearly 2000 years apart, including the decorative detail

however, continued to produce ebony, ivory and tortoiseshell handled instruments for 20 or 30 years after they had been discontinued by most continental manufacturers and catalogues contain a dwindling number of examples until the third decade of this century.

The trade of surgical cutler was at its height numerically by the early 19th century. Almost every town of reasonable size listed at least one in its trade directory and large cities had many, London being, of course, the foremost. A thriving export trade to the colonies and to the developing nations of the world, as well as a demand for instruments by the Army, Royal and Merchant Navies ensured that many firms were needed to maintain the output.

The decline of the species

Gradually a contraction set in as the focus of surgery shifted in the latter half of the 19th century from the patient's home to the hospital operating theatre. No longer was it necessary for every surgeon to possess his own sets of instruments. One set could now serve 10 or 20 surgeons. Firms closed or merged with others.

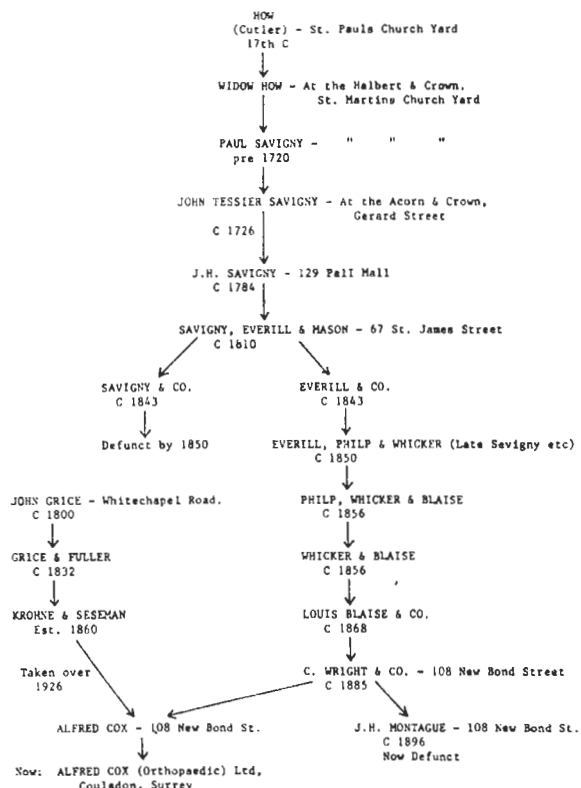


Figure 3. The origins of a modern surgical instrument firm

Mass production by firms like Allen & Hanbury and Maw furthered the decline of the small instrument making business and the industry became dominated by relatively few major companies. The complex process of takeover, merger and inheritance is illustrated in Figure 3, which shows how a company still trading today, can trace its origins back to the mid 17th century at least.

The craft of surgical instrument maker has evolved over the years from being a mere offshoot of the trades of the domestic cutler or blacksmith to one of the most skilled of manufacturing occupations. Unfortunately, the financial rewards in relation to the time needed to acquire the necessary skills are such that, in common with so many other areas of craftsmanship, much of the manufacture of surgical instruments has now passed to the Third World, where time and skilled labour are cheap. The British surgical instrument maker, once the finest and most prolific in the World, is a declining species. Ninety-six surgical instrument makers are listed in the London Post Office directory of 1894. Today, there are probably fewer than a dozen instrument manufacturers in the whole of Britain. The rewards have never been other than modest and public recognition has been limited to a specialized clientele. Their contribution to the progress of British surgery at a time when it was pre-eminent in the World was vital,

however, and patients undergoing surgery today owe an unacknowledged debt of gratitude to them for providing the surgical pioneers with the right tools for the job.

References

- 1 Bettany GT. *Eminent doctors, their lives and their work*. London: Hogg, 1885
- 2 Milne J. *Surgical instruments in Greek and Roman times*. London: Clarendon Press, 1907
- 3 Mitchell-Heggs F, Drew HGR. *The instruments of surgery*. London: Heinemann, 1963
- 4 Perret JJ. *L'Art de Coutelier, expert en instruments de chirurgie*. Paris, 1771
- 5 Campbell R. *The London tradesman*. London: T. Gardner, 1747. Reprinted: David and Charles, 1969
- 6 Murphy LJT. *The history of urology*. Springfield: Thomas, 1972
- 7 Moller-Christensen V. *The history of the forceps*. Copenhagen: Levin & Munksgaard, 1938
- 8 Shepherd JA. *Simpson and Syme of Edinburgh*. London: Livingstone; 1969
- 9 Weiss J. *Catalogue of surgical instruments*. London: Weiss 1825
- 10 Spencer Wells T. Report of medical & surgical practice in the hospitals of Great Britain. *Br Med J* 1874; Jan-Jun: 47
- 11 Brady & Martin, *Catalogue of surgical instruments*. Newcastle upon Tyne: 1897

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