QUTTAINAH MEDICAL CENTRE

MEDICAL MUSEUM

A Collection of Antique Medical and Surgical Instruments

By: Dr. Adel Quttainah

QMC MEDICAL MUSEUM

The medical museum collection of QMC is a personal collection of medical and surgical equipment that Dr. Adel Quttainah has collected and documented over many years.

From Dr. Quttainah's personal travels, conference and lecture excursions as well as visits to extreme locations for volunteer medical missions, he has gathered the items you will see in the collection. From the far east, his years abroad in Ireland and North America, as well as many destinations in Europe and the Middle East, he has acquired a comprehensive collection of medical and surgical instruments. Some were collected from interesting locations with significant history that are detailed in the book.

Most of the collection consists of pieces that he hopes would be of interest to medical professionals as well as his clients and patients.

This manual will give you a brief history and outline of each piece. We hope to enlighten you on how medicine has developed over thousands of years. It is fascinating to see how primitive, by modern standards, this equipment was, yet the pioneer surgeons and doctors of their time achieved so much with what they had.

Many of today's medical treatments are directly based on theories and equipment developed many years ago. Even the simplest of inventions continue to be the basic standard of care for many illnesses. Other devices are completely outdated and no longer recognized as suitable forms of treatment.

We hope this guide will enhance your knowledge and ignite a passion and interest for the history of medicine in the Middle East and the rest of the world. May the remarkable discoveries of those who have ventured before us motivate you to learn about and assist in the advancement modern science and medicine today.

Dr. Quttainah visiting the oldest operating room in Europe – The theatre is located at St Thomas' Hospital in London which was founded in 1100.

CATEGORIES

A. Dental

B. Stethoscopes

C. Ear Trumpets

D. Prosthetic Devices

E. Surgery

- **Orthopedic/Amputation**
- **Neurosurgery**
- **ENT**
- **Plastic Surgery**
- **General Surgery**

F. Pharmaceutical

G. Bloodletting

H. Syringes/Needles and Irrigation

I. Obstetrics and Gynecology

J. Antique Microscopes

L. Ophthalmology

M. Antique Medical Books

N. General Medical Instruments

"Every tooth in a man's head is more valuable than a diamond"
~ Miguel de Cervantes Quotes, Don Quixote, 1605

DENTAL

Dental problems have existed since the Stone Age. Early history of the human race has shown that the evolution of dentistry had a beginning in prehistoric times. The retention of deciduous teeth, caries and mandibular fractures were evident in primitive man (Homo mousteriensis) as shown in skeletal materials collected in the. Evidence of skeletal structural deformities such as irregularities in the position of the teeth and impactions were found in prehistoric man.

Dental decay and pain has also been an issue for eternity. Through experimentation, research and documentation over the historical timeline, dentistry has progressed from a dreaded, extremely torturous procedure to a tolerable one. The following summary of dental discovery highlights will give you a basic understanding and appreciation of some equipment used in the development of dentistry.

Some well known names in the medical and surgical professions have also been responsible for the most important discoveries regarding human teeth, oral anatomy and the development of the profession of what we today know as 'dentistry'.

A brief summary timeline will highlight the major developments and discoveries of dental history

BC

-100,000 Homo mousteriensis shows prehistoric man had impacted teeth, caries, fractures and rickets

-3000 – 525 Specialization in ancient Egypt - individuals who treated only the teeth, the earliest known dentist being Hesi – Re, Great One (chief of the toothers and the physicians)

-2750 mandible of the Old Kingdom Period showing evidence of surgery to relieve alveolar abscess

-2500 earliest evidence of simple retentive dental prosthesis found in Tomb 984 at Giza Egypt linking the lower left second and third molar with gold wire woven around the gingival margins of the teeth

-480 The Roman period began, dentistry was probably practiced before medicine

-460–370 Hippocrates, the founder of Medicine, freed medicine from philosophic ideas and superstition. He was first to recognize the teeth in utero, humoral pathology. Earliest recorded information as to teeth in his De Carnibus (use of gold wire for fractures, instruction on how to handle instruments and technique for dislocated jaw)

-400 evidence of Roman dentistry – the use of gold shell crowns

AD

-130 Galen, the prince of Physicians – earliest to mention nerves of teeth

-936-1013 Albucasis (Abul-Qasim) his 'Dechirurgia' contains illustrations of both surgical and dental instruments (devised elevators and scalers)

-1363 Earliest documentation of the term 'Dentist' (Vatican Library)

-1452 Leonardo da Vinci manuscript - the earliest accurate drawings of the skull, teeth and maxillary sinus

-1498 Invention of the toothbrush by the Chinese

-1542 Ambrose Pare military surgeon, mentions filling of teeth and compression of nerve trunks to produce local anesthesia

-1702 Robert Bunon, father of oral hygiene

-1759 Medical designation "dentist" first to be used

-1774 Introduction of porcelain into dentistry by French apothecary Duchatenu

-1819 Mixing of coin silver fillings and mercury into a silver paste by Tavenu in France and Bell in England

-1832 James Snell developed the first dental chair

-1839 First publication of a dental journal -– The American Journal of Dental Science-

-1846 Use of ether as an anesthetic – Dr. Morton

-1882 Miller announced the chemo-parasitic theory of dental caries-

-1895 Roentgen discovers X ray

-1896 Kells demonstrates use of x-rays in dentistry

-1915 McKay and Black publish results of investigation of fluoride in drinking water -

-1953 Nelson developed the turbo jet drill

-1956 Air rotor drill developed by Borden

(Source American College of Dentists)

Listed is a summary of the antique and historic dental pieces in the collection and their use.

Dental Pelican

Dental 'pelicans' are so-called because they supposedly resemble the shape of a pelican's beak. They are believed to date back to the 1300s and are among the very earliest instruments designed to remove teeth. Invented by Guy de Chauliac in the 14th century, the device was a type of forceps that often damaged the teeth in the process of removing them. The local blacksmith usually created the dental pelican. Made of wrought iron, with its single claw mounted to a block in an adjustable slot in the frame with a winged nut for sizing.

1-001

There are many variations in the design of these simple instruments and this is an example of a double-ended pelican. This dental pelican is from c 1796 and made of iron with a rosewood handle. Likely designed for a child's mouth, the claw is adjustable for elevation and extraction of small teeth.

When using the pelican, the tooth was removed sideways after the claw was placed over the top of the tooth and the fulcrum. The semi-circular piece of metal at the end was placed against the gum. The pressure from the lever was intended to remove the tooth. The process was undoubtedly painful for the patient and possibly caused damage to the gums and surrounding teeth. Tooth pulling was the only cure for diseased teeth or toothache and was carried out by barber-surgeons and travelling practitioners.

Dental Tooth Keys

As dental practitioners sought new and more effective ways to remove teeth from patients, the dental key came along to replace the pelican. The key did little to reduce the amount of pain and damage caused when extracting teeth. The dental key came on the scene in the 1700s and removed teeth by clamping down over the damaged or decayed tooth. The dental practitioner then twisted the device handle to loosen the tooth for removal. The dental key often caused patients to suffer with broken teeth and jaws after an extraction. Early extractions also damaged the soft tissue of the mouth for dental patients.

The "toothkey", is so named because of its similarity to an eighteenth-century door key.

1-002 1-003 1-004

1.1750 wrought iron dental key – hand forged wrought iron basic tooth key.

2.Wood handle dental key c 1800

3.Wood oval handle c 1805

4.Straight tooth key 10.5 cm hand forged iron with light wood handle

5.White Ivory/black ebony dental handle tooth key

6.Ivory handle tooth key c 1850 likely for a child

1-005 1-006 1-007

1-008

Dental Scaling Kit 1850

Antique dental scaling instruments in this set were probably for personal use. Ivory handles with sterling silver inserts, tortoise shell blades which would be used similarly to a toothpick to clean between teeth. The handles have detailed workmanship with silver inlaid design.

Pocket Dental Scalers

Fine set of pocket dental scalers in a small leather-covered case just 3" x 2½". The set is complete and in beautiful condition with polished steel "tools" and a finely-turned ivory handle. There is a set of 6 pieces including knife, lancet, plugger and scalers.

1-009

Circa 1800 set of dental cleaning instruments

Wrought iron with delicate worn ivory handles. Set of six pieces.

1-010

1-011

Antique parrot beak extraction forceps c 1750

Antique forged iron dental forceps. The claw is shaped in the form of a beak and the handle typical of late 18th century simple style. Long with a narrow bite.

Wood handled antique dental elevators early 1800s

Elevators are used to loosen and 'elevate' the teeth in their sockets prior to extraction.

A simple set of elevators with a similar appearance and function to a goats foot elevator.

The shaft is made from tempered steel. The handle is made from rounded and smoothly polished wood which allows pressure to be applied though the hollow of the palm.

1-012

The dental instrument is a double elevator. It was used to apply hard pressure to the tooth. This forced the tooth against one of the sides of the socket causing the bone around the tooth to compress. After repeating this step many times, the socket became larger, loosening the tooth. The next step was to use the bottom instrument, a claw attached around the patients tooth allowing for extraction.

Antique 72 piece dental crown (gold) tooth mold marked Central Tool Co. 1908

Ceramics have played an integral role in dentistry. Their use dates as far back as 1889 when Charles H. Land patented the all-porcelain "jacket" crown. A crown is a type of dental restoration which completely caps or encircles a tooth. This new type of ceramic crown was introduced in 1900s. The procedure consisted of rebuilding the missing tooth with the porcelain covering, or "jacket" as Land called it. Dental crowns could also be formed from gold silver or aluminum historically.

1-013

This sample of a dental crown mold was used for gold crowns.

Wood handled hand forged iron dental instruments c 1850s

1-014

Dental Phantome

At the Annual Meeting of the British Dental Association in 1894 - Dr. Oswald Fergus first demonstrated his invention, the Dental 'Phantom' for use by dental students and demonstrators. It consisted of 3 parts: a metal rod, and two brass representative jaws. Fergus demonstrated the value to the student by noting that the teeth can be secured into the jaws and that "The introduction of roots, in place of teeth, allows crowning to be practiced in almost any conceivable form, from which bridgework is but a short and easy step"

Our model is an early 1900 s Dental Phantome. Made of an aluminum skull with steel gums.

These phantoms have been used for quite some time, this being a choice specimen. Dental students would work on these for practice. Interestingly the little rivets protruding from the facial area would anchor a rubber face to make it more "human" to work on. Articulation of the teeth with an included articulator. The device allows casts of the upper and lower teeth to be fixed in place and reproduces recorded positions.

1-015

An articulator assists in the fabrication of removable prosthodontic appliances such as artificial teeth (dentures), fixed prosthetic restorations (crowns, bridges) and orthodontic appliances.

This outstanding contribution of Dr. Edward Oswald Fergus, who was known as the pioneer of simulated clinical dental practice in dental education, has stood the test of time. The phantom head, which has undergone many refinements, remains an essential component of dental education and training internationally.

Two c1899 automatic dental pluggers

1-016

In excellent condition, marked the Snow Dental Co. Buffalo. Each plugger is made of a metal barrel with ebonite grip and replaceable end point.

On pressing the end-point against tooth, an internal spring is depressed against cylindrical weight; the spring is then automatically released and the weight strikes on the rear end of the end-point. The strength of the strike can be adjusted by turning the cup screw. The pluggers were used with different stopping amalgam materials such as tin, lead or gold.

Dental crown press c1890

Here is an antique W.M. Sharp dental shell crown press used for making temporary crowns. Fancy plate on upper area reads: Patent Applied For and Manufactured by The W. M. Sharp Co. Binghamton, N.Y. U.S.A. This one probably predates that to the late 1800s.

1-017

It is a screw action press with 15 graduated cylinders on the upper driving plate (numbered from largest to smallest 1 to 15) which are forced into corresponding openings on the lower forming plate. A thin metal disc (usually copper) was placed over the opening through which the upper cylinder was forced forming a cup shape which was in turn placed over a tooth die where the desired form was hammered into shape, then burnished and buffed to be fitted over the patient's prepared tooth. Different sizes were available to size any tooth.

Dental plaster teeth from old dental school c1900s

Vintage anatomical tooth model: A dental teaching aid comprising 8 individual teeth, each cast in Plaster-of-Paris and enamel-painted, circa 1930s.

Students would practice applying treatments to these extreme size teeth

1-018

Antique dental mold c 1940

1-019

This mold is possibly for forming teeth or denture

"We are not the makers of history, we are made by history"

- Martin Luther King

STETHOSCOPES

Methods of Assessing Sound in Medicine

Assessing the sounds of the human body was reported in ancient medical literature. Amongst the earliest known medical manuscripts are the medical papyruses of ancient Egypt dating to the seventeenth century B.C., which referred to audible (hearing) signs of disease within the body.

Hippocrates, the Father of Medicine, in 350 B.C, discussed a procedure for shaking a patient by the shoulders (succussion) and listening for sounds evoked by the chest. Hippocrates also used the method of applying the ear directly to the chest and found it useful in order to detect the accumulation of fluid within the chest.

In the sixteenth century, the renowned surgeon Ambroise Pare noted that "if there is matter or other humors in the thorax, one can hear a noise like that of a half filled gurgling bottle."

The French physician Jean-Nicolas Corvisart, who is considered the founder of French clinical medicine, was accustomed to placing his ear over the cardiac region of the chest to listen to the heart. A student of Corvisart, by the name of Rene Laennec changed the way physicians will and forever more assess sounds of the body. He is credited with the invention of the first stethoscope and although primitive, its concept has remained unchanged till this day.

Rene H. Laennec (1781-1826)

Born in Quimper, France 1781, Laennec was a physician and is credited with inventing the stethoscope.

In 1816 he was working at the Hospital Necker and pioneered its use in diagnosing various chest conditions.

Immediate Auscultation

"Immediate" ausculatation, was the practice of the doctor placing his ear on the chest of the patient directly, to hear the sounds made by the lungs or heart. The evolution from listening with the unaided ear (immediate auscultation) to the aided ear (mediate auscultation) awaited Laennec's invention of the stethoscope in 1816.

Mediate Auscultation – Invention of the First Stethoscope

The stethoscope was invented in 1816 after a young French physician named Rene Theophile Hyacinthe Laennec was examining a young female patient. Laennec was embarrassed to place his ear to her chest (immediate auscultation), which was the method of auscultation used by physicians at that time.

He remembered a trick he learned as a child that sound travels through solids and thus he rolled up 24 sheets of paper, placed one end to his ear and the other end to the woman's chest. He was delighted to discover that the sounds were not only conveyed through the paper cone, but they were also loud and clear.

The first recorded manuscript documenting auscultation using the stethoscope was on March 8, 1817, when Laennec noted examining this patient, named Marie-Melanie Basset, who was 40 years old.

Laennec was a skilled wood turner and set up a small shop in his home with a wood-turning lathe and stocked different types of wood. He created a stethoscope from a turned piece of wood with hollow bore in the center. It was made of two pieces.

One end had a hole to place against the ear and the other end was hollowed out into a funnel shaped cone.

There was a plug that fit into this cone which had a hollow brass tube placed inside it. This plug was put in the funnel shaped end at the stethoscope to listen to the heart, and removed to examine the lungs.

Laennac examining a patient with tuberculosis using his handmade wood stethoscope.

Laennec published his classic treatise on mediate auscultation in 1819 in which he discussed mediate auscultation and illustrated the design of the stethoscope. He initially called his invention the "cylinder" or tube but then later chose the name "stethoscope" from the Greek 'stethos' – chest and 'scope' – to observe.

In his book, Laennec tells of how he went through several experiments to get from the rolled up paper to the hollow wooden cylinder. He also gives the reader strict guidelines on how a proper stethoscope is to be constructed, as well as used.

His stethoscope could be bought for 2 francs along with the purchase of the text "Treatise on Mediate Auscualtation".


A TREATISE
ON THE
DISEASES OF THE CHEST
AND ON
MEDIATE AUSCULTATION.

Shown is the title page from Laennec's 1819 text on mediate auscultation with the plate illustrating his invention.

The original version of the Laennec stethoscope was made of a turned dense, finely grained, light colored wood, circa 1819. This cylindrical stethoscope is made with three parts fitting together by wood screw thread and brass tube fitting with an overall length of 12.6 inches and a diameter of 1.5 inches. Both ends are slightly concave.

This first version is illustrated in Laennec's first edition text on auscultation which described the stethoscope as having an overall length of 12 inches and a diameter of 1.5 inches. Laennec turned the first stethoscopes himself and these were somewhat longer than described in his text.

Laennec was the first to describe the auscultatory signs we still use in medicine today, such as 'bruit,' 'rales,' ' bronchophony,' and 'egophony.' He was also well known for his work on cirrhosis, which is still referred to as "Laennec's cirrhosis."

The stethoscope allowed him to extensively study chest diseases and especially tuberculosis.

In 1826, Laennec -- the inventor of the first monaural stethoscope, died from the very disease he spent long hours studying on his patients - Tuberculosis.

Further Development of the Stethoscope

Piorry 1828

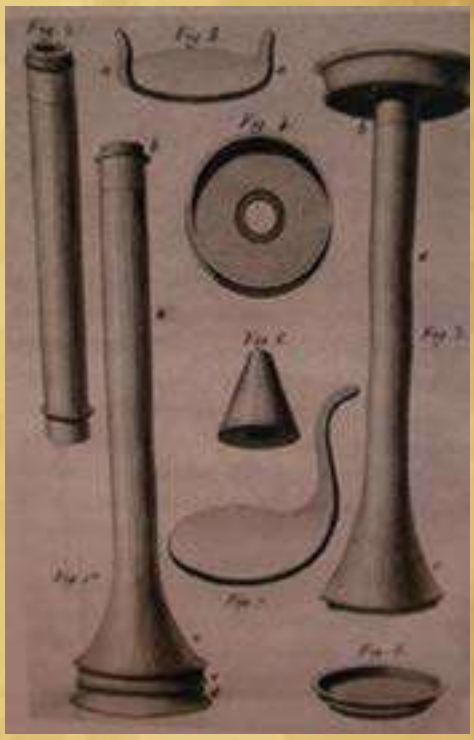
There were several improvements to Laennec's stethoscope over the years, the most notable was that of Pierre Adolphe Piorry in 1828.

Piorry also incorporated another diagnostic instrument, known as a "plexímeter" into his stethoscope.

The original Piorry stethoscope was made of wood and ivory, circa 1828. This is the stethoscope illustrated in Piorry's text on percussion published in 1828.

The Piorry stethoscope evolved to have a thinner stem without an extension piece and was about half the size of Laennec's. It was trumpet shaped, made of wood, and had a removable wood plug, ivory earpiece and chest piece. The ivory chest piece also served as a plexímeter.

Most stethoscopes made after 1830 were modeled after the Piorry design.



Piorry stethoscope and plexímeter.
Taken From the original plate in his textbook 1828

Williams 1843

Charles James Blasius Williams developed another approach to the design of the stethoscope. He introduced a two-piece monaural stethoscope in 1843 with a trumpet shaped chest end that fit more comfortably and snuggly against the chest wall. His stethoscope had a removable ear piece.

Fergusson

Sir William Fergusson's model of the monaural stethoscope was designed in England and became the most popular model used in the later half of 19th century medical practice. It was made of straight grained, less dense woods with a small bore central hole such that sounds were readily transmitted. It measured approximately 7 inches in length with a slender stem that had a rounded chest-end bell about 1 inch in diameter that rested comfortably on the patient. The ear plate was approximately 2.5 inches in diameter and fit snuggly over the ear in order to prevent dispersion of the transmitted sounds

Continued Evolution

In general, there were many variations in the shape and form of different models. Some stethoscopes were designed for special purposes. And some were made from special materials that generally signified a physician with "upper class" patients.

The early development of the stethoscope took place on the wards of hospitals, where physicians could study the use of the stethoscope for mediate auscultation. Many patients were in hospitals because they had pulmonary infections, such as pneumonia or tuberculosis. Others were poor with little previous medical attention and, therefore, had far advanced disease often from a variety of infectious diseases. Although Laennec's stethoscope was a foot long, after the introduction of the Piorry stethoscope, most stethoscopes were about 7 inches in length.

Yet unusually long stethoscopes could be seen in the hands of physicians examining these hospital ward patients. These stethoscopes became known as "ward" or "pauper's" stethoscopes. This type of long stethoscope was intended to keep the doctor a distance from the infested patient.

Stethoscopes were also developed for obstetrical and pediatric auscultation. Laennec's friend Jacques-Alexandre Lejumeau de Kergaradec was the first doctor to use the stethoscope for fetal auscultation and this technique was discussed by Laennec in his second edition text on ausculataion.

The fetal stethoscopes that emerged usually had a very wide or flaring bell and a wide earplate, which prevented the stethoscope from rocking on the abdomen of the mother during fetal auscultation. Stethoscopes for children tended to be shorter than those for adults and were probably used as either pediatric or obstetrical. The monaural instrument was used exclusively for about 30 years, and were used into the late 19th and early 20th centuries. In fact, they are still used today in some less advanced countries.

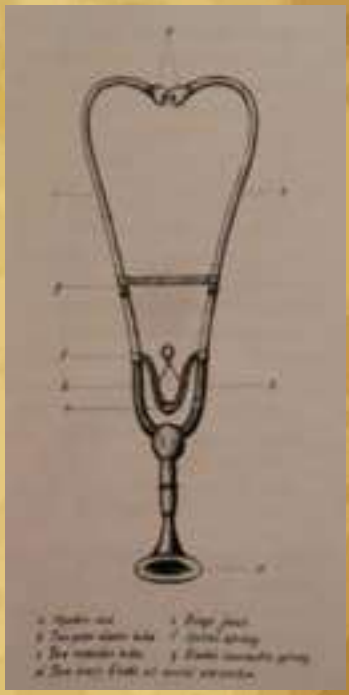
Binaural Stethoscope Advancement

Eventually physicians decided to find out if an instrument using both ears would be better than the simple monaural. In the early 1850's there was a rush of designs for a new stethoscope that used both ears.

This new "binaural" ('bi-aural') instrument was felt to be the future of auscultation. Actually, the idea for a binaural stethoscope was first introduced in 1829, just ten years after the publication of Laennec's text illustrated his original instrument. The idea belonged to Nicholas Comins, who devised a stethoscope that he described as "a bent tube" that had several hinges, allowing the physician to not have to assume uncomfortable positions during the examination. He offered the suggestion of making his instrument binaural, but there are only sketches of his instrument.

In 1852, Dr. George Cammann of New York produced the first recognized usable binaural stethoscope

Cammann did not claim to have the original idea for a binaural stethoscope, only to have developed a practical instrument that could be used in clinical practice. Cammann had some help in designing his stethoscope and, interestingly, never patented the stethoscope believing it should be freely available to physicians. The stethoscope was named Cammann's Stethoscope by the manufacturer of the original instrument, George Tiemann. Cammann's model was made with ivory earpieces connected to metal tube that were held together by a simple hinge joint, and tension was applied by way of an elastic band.



The earliest known original model Cammann binaural stethoscope was made by George Tiemann, circa 1852.

During the later half of the 19th century, well educated physicians used advances in medical technology to aid their ability to diagnose diseases in their patients. The

stethoscope rapidly became the main symbol of the highly skilled physician.

There were many different modifications to Cammann's original instrument.

At the turn of the century, membrane stethoscopes were coming into use on binaural stethoscopes. The use of a membrane on monaural stethoscopes was distinctly unusual, although an early twentieth century Aesculap catalogue shows a metal monaural with a membrane cap that could be placed on or taken off the chest piece

Also during the first part of the twentieth century, there was considerable interest in developing stethoscopes that differentiated the intensity of heart and lung sounds.

The stethoscope has become the hallmark of the physician and has had a profound effect on the art of physical diagnosis. It remains today an indispensable diagnostic instrument and the rest, as they say.... is history.

The following antique stethoscopes can be found in our museum display

Antique monaural stethoscope Bulgaria early 1900s

Unusually long stethoscopes could be seen in the hands of physicians examining these hospital ward patients. These stethoscopes became known as "ward" or "pauper's" stethoscopes.

2-001

Jointed metal monaural stethoscope c1900

2-002

Antique monaural wooden Pinard c1900

A fetal monaural stethoscope by Pajot which is characteristically short and with a relatively wide chest piece. This particular example is carved form a single piece of fruitwood with a beautiful concentric grain

2-003

Metal aluminum folding monaural stethoscope c1900

Made of nickel plated brass. Folding and portable to be carried by physician with bag of medical supplies.

2-004

Fruitwood small monaural stethoscope removable ear piece 1890

Similar to Furgessons straight grained, less dense woods with a small bore central hole such that sounds were readily transmitted. It measures approximately 7 inches in length with a slender stem.

2-005

Ebony Monaural Stethoscope

Some were made from special materials that generally signified a physician with "upper class" patients such as ebony and ivory.

2-006

Fruitwood large wide base shaft c 1850

Two piece. Stem and earpiece are joined with a firmly threaded screw and the wood has rich patina.

2-007

Yellow/light fruitwood stethoscope 1850

Two piece monaural stethoscope, shaft detaches and can be placed in hole for carrying.

2-008

Piorry stethoscope 1830

Very attractive fruitwood and ivory Piorry stethoscope. There is an ivory ear piece and the plexiometer is within the stethoscope. The height is 16 cm.

2-009

Solid one piece wood monaural stethoscope c 1850

Made of straight grained, less dense wood with a small bore central hole such that sounds were readily transmitted. It measures approximately 7 inches in length with a slender stem that has a rounded chest-end bell about 1 inch in diameter that rests on the patient. The ear plate is approximately 2.5 inches in diameter and fit snuggly over the ear in order to prevent dispersion of the transmitted sounds.

2-010

Original Laennec – First Form Stethoscope

On display is an authentic original first form stethoscope hand made by the inventor of the stethoscope - Rene Laennec himself circa 1820.

It is made of turned wood, French walnut. It measures 12 inches long and 1.5 inches in diameter with a 3/8 inch central bore hole throughout its length. The cylindrical stethoscope has three parts fitting together by wood screw thread and by brass tube fitting. In use the two halves must be screwed together and the conical funnel shaped opening placed to the chest. Laennec recommended this arrangement for studying sounds communicated by respiration. The optional conical plug could be inserted, forming a complete tube to study both heart and lungs.

Laennec made these instruments himself by hand and sold them with his book describing its use. The hand crafted brass tube fitting shows the seam where it was joined and fused by hand.

This is the model illustrated in the first edition of Rene' Theophile Hyacinthe Laennec's Treatise.

2-011

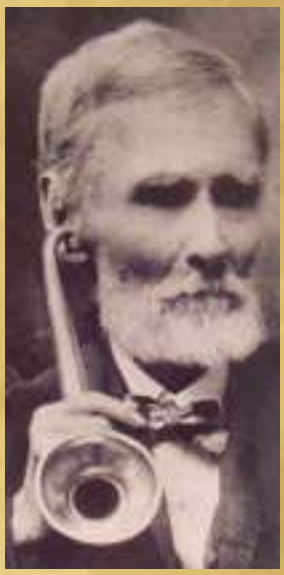
Original first form stethoscope crafted by Laennec himself, made within the first year or two of the invention of the stethoscope c 1819

"Kindness is the language which the deaf can hear and the blind can see."

- Mark Twain

Ear Trumpets

The First Hearing Aids



Ear trumpets are tubular or funnel-shaped devices which collect sound waves and lead them into the ear. They serve as hearing aids, resulting in a strengthening of the sound energy impact to the eardrum and thus improve hearing for a reduced or decreased hearing individual.

Ear trumpets were probably man's first attempt at coping with hearing problems. In pre-historic times, hearing trumpets were simply hollowed-out horns of cows, rams or other animals. Later versions in wood and metal followed the same general contours as the natural horns.

In later centuries, man continued to refine trumpets, experimenting with the acoustical properties of such materials as silver, shell, horn, artificial tortoise shell, and most recently, plastic.

The hearing trumpets shown here date from the Eighteenth and Nineteenth Centuries. In this period, it was common to fashion hearing trumpets from metal covered with vulcanite (hard rubber), or from brass, and them paint them black. In either case, it was hoped that the black finish would make the hearing trumpet less conspicuous against dark clothing worn by the user.

The general theory behind ear trumpets is to capture more sound and to provide some directionality towards the wanted sounds, while at the same time sheltering the ear from the unwanted background sounds. This is not much different from what modern digital hearing aids attempt.

Ear trumpets were most effective when used close up with the person speaking directly into the opening. By necessity, they could also be used to listen to sounds from a distance, such as a lecture or concert, but naturally suffered from the same limitations as older hearing aids. For example, they would pick up more background and environmental sounds

Early manufacturers of note include, F. C. Rein of London, established in 1800, T. Hawksley Ltd. of London, established in 1869, and G. P. Pilling & Sons of Philadelphia, established in 1814. In fact, the earliest ear trumpet in the collection is signed F. C. Rein, Inventor, 108 Strand, London. As near as can be determined, he began working from this address in 1855. There are also examples of items from T. Hawksley and George P. Pilling in the conversation tube category of the collection.

Two ear trumpets are all of a type known as the London Dome, also sometimes called Grand Opera Dome. This type of ear trumpet was strongly resonant in the speech frequency. The exterior tube continues inside the dome, flaring out so that the mouth of the funnel faces the top of the dome. London Domes were made in many sizes, and the greater and individual's hearing loss, the larger sized instrument he was advised to use.

Celluloid faux-Tortoise shell hearing trumpet telescopic 1850 -1900

3-001

An English Faux Tortoise shell telescopic ear trumpet. The slightly irregular celluloid seams dating this to the late 19th or early 20th century.

It is a large size collapsible hearing trumpet that is almost 40 cm when fully extended. It collapses to only 23cm making it more compact for carrying. The earpiece rotates allowing the ear trumpet to be used on the left or right sides

London Dome Style sterling silver ear trumpet by F C Rein (London) with an ivory ear piece 1855

3-002

In near perfect condition which would be a noteworthy feature in any old ear trumpet, but especially so for this beautifully engraved example which dates to the middle of the 19th Century. In his style, around the lower circumference of the dome

is engraved 'F C Rein and Son patentees sole inventors and only makers 108 Strand London'. . .An exquisite sterling silver plate c. 1855 antique ear trumpet by F.C. Rein & Son they were custom made and ordered. Due to the great detail and extravagance they were used mostly by rich and aristocratic clients. The bell and tube of the ear trumpet are expertly and fully hand-engraved in an elaborate foliage pattern. The pierced grill is particularly attractive and refined. The ear tip is ivory.

1860 London Dome Style Ear trumpet

These were effective ear trumpets and the smaller examples were popular because of their portability. The grille has an attractive perforated pattern of holes. The ear piece is gutta percha. Excellent condition for its 150+ years. This simple trumpet would be used as a daily functioning hearing aid for the average to poor customer.

3-003

Brass Banjo two-draw central stem hearing trumpet late 1890's (Arnold and Son) London

3-004

A good English made copper and brass banjo style telescopic ear trumpet with a black ear piece made from gutta-percha. This ear trumpet, represents an attempt at reducing the size of ear trumpets while maintaining their effectiveness. It is collapsible and can be reduced in size from its full length of 34 cm to 22.5 cm .

The parabolic reflector measures 10 cm in diameter and focuses the collected sound into the tube running to the ear.

Telescopic (collapsible) Bakelite ear trumpet/horn early 1900's

3-005

A telescopic German Ear Trumpet made from an early bakelite material.

The joint has a metal ring seal and the original earpiece is present. There is a small loop for carrying at the narrow end.

This two-section collapsible Pipe" Trumpet is typical of those manufactured from about 1900 through to about 1920. Fully extended it is 38 cm and closes to 25 cm. This ear trumpet probably dates from somewhere around 1900. It is unmarked as to maker.

These were most likely the last of the ear trumpets in use as the development of smaller more compact hearing aids was occurring.

Conversation tube c 1900

Fine conversation tube with bakelite head and earpiece. The tube and covering is immaculate and the earpiece and bell have no chips or cracks and the piece is in overall excellent condition.

3-006

The tube is wound with dark silk and is tapered, being wider at the

bell end than at the earpiece (a feature which made the construction and subsequent covering of the tube much more difficult)

Speaking tubes all operate on a common principle - they pick up sound close to its source and direct it via a narrow pathway, usually a flexible tube, to the ear. In operation, the speaker talks directly into a funnel at one end of the tube and the listener holds the small tip at the other end in his ear.

German Telescpic 'Umbra" Bakelite hearing trumpet c. 1900

3-007

Collapsable Bakelite trumpet with unusual umbra or brownish colored bakelite material.

PROSTHETIC DEVICES

A prosthetic or prosthesis (for addition, application, attachment) is an artificial device that replaces a missing body part lost through trauma, disease, or congenital conditions.

The evolution of prosthetics is a long and extensive history, from its primitive beginnings to its sophisticated present, to the exciting visions of the future. The prosthetic limb is a contribution to the mechanical engineering of the human body. Antique prosthetics elicit feelings of pity, fright and utmost respect for those who have the burden of adapting to their use.

As in the development of any other field, some ideas and inventions have worked and some haven't. Some prosthetic devices have been impractical and needed improvement to allow individuals to function easily on a daily basis.

There have been many refinements to the first peg legs and hand hooks that have led to the highly individualized fitting and casting of today's devices. But to appreciate how far the prosthetics field has come, we must first look at ancient Egypt.

The Arabs were the early pioneers of prosthetic technology. Their rudimentary, prosthetic limbs were made of fiber and it is believed that they were worn more for a sense of "wholeness" than function. However, scientists recently discovered what is said to be the world's first prosthetic toe from an Egyptian mummy and it appears to have been functional.

An artificial leg dating to about 300 B.C. was unearthed at Capua, Italy, in 1858. It was made of bronze and iron, with a wooden core, apparently for a below-knee amputee.

In 424 B.C., Herodotus wrote of a Persian who was condemned to death but escaped by amputating his own foot and making a wooden filler to walk 30 miles to the next town.

The Dark Ages (476-1000) saw little advancement in prosthetics other than the hand hook and peg leg. Most prostheses of the time were made to hide deformities or injuries sustained in battle. Many were made of iron and very heavy and impractical.

It was common for tradesmen, including armorers, to design and create artificial limbs. People of all trades often contributed to making the devices; watchmakers were particularly instrumental in adding intricate internal functions with springs and gears.

The progression of prosthetics began about 1500 B.C and has been evolving ever since. Though amputation was one of the first recorded surgeries, mentioned in the Hippocratic treatise "On Joints" around the 4th century BC, the procedure really only became a viable option in the 15th and 16th centuries when improvements were made in the surgeries and survival rates were slightly improved.

Pare

French Army barber/surgeon Ambroise Paré is considered by many to be the father of modern amputation surgery and prosthetic design. He introduced modern amputation procedures (1529) to the medical community and made prostheses (1536) for upper- and lower-extremity amputees. He also invented an above-knee device that was a kneeling peg leg and foot prosthesis that had a fixed position, adjustable harness, knee lock control and other engineering features that are used in today's devices. His work showed the first true understanding of how a prosthesis should function.

4-001

A colleague of Paré's, Lorrain, a French locksmith, offered one of the most important contributions to the field when he used leather, paper and glue in place of heavy iron in making a prosthesis. This focused of function and ease of use.

As the U. S. Civil War (1861) dragged on, the number of amputations rose astronomically, forcing Americans to enter the field of prosthetics and develop more functional attachments.

As for the development and production of modern prostheses today, devices are much

lighter, made of plastic, aluminum and composite materials to provide amputees with the most functional devices. Computers and mechanical devices have allowed prosthetics to become extremely lifelike and useful.

Our collection ranges from cast iron to wooden and some metal devices. All would be considered extremely primitive and difficult to use compared to today's highly advanced prosthetics.

Prosthetic right forearm with mechanical wood hand early 1900

4-002

A prosthetic leather arm solid formed leather. The wooden hand with articulated thumb (with spring), can open and close tightly to hold items. Nails are carved into the wood and joints of the finger are carved to give the hand more realistic appearance. The leather arm is well stitched with metal nails to hold wrist in place.

Right prosthetic arm with mechanical hook late 1800s

4-003

Made of leather and iron with copper punch buttons to hold in place. Hook is opened and closed with olive shaped knob that has to be moved manually. Triple buckle can be used to tighten the arm in place. The iron rods running bilaterally on either side and the iron formed hook make the arm very heavy and impractical for use. The hook continues to have firm grip however. Split hooks were driven by function and ease of use rather than the desire to mask one's disability.

Antique Wood Left Arm with Prosthetic Spring Tension Left Hand c 1900

The prosthesis consists of a left arm and hand with metal spring loaded fingers . Prosthetic Hand is 7" in length and 3 1/2" wide, original and in excellent condition with a faint chip below the thumb. Made of enamel over wood with metal springs that are tipped with rubber. It is operated via a cable running from its end near the wrist and attached to the arm of the prosthesis. The proximity and angle of the bent arm would dictate the closing and opening of the fingers. Thumb and top four fingers open. The thumb and first two fingers have special padding of leather to protect gripping items.

4-004

19 c childs antique prosthetic leg 16" wood and leather

An extremely rare 19th C. Antique child's prosthetic leg. It is constructed of wood & leather and measures 16 inches in overall length with a 4-3/4 inch foot length. The padding on the underside and portion that would cover the front of the foot has worn quite a bit, but the overall condition of the rest is very nice and appears to be very well made.

4-005

Becker Imperial Hand

4-006

Wood and metal body. Spring tension fingers with full five finger opening using single cable control. It was manufactured in 1930 and the company still produces hand prosthetics with slightly more advanced technology, but the basic design is still the same. For its time it was quite advanced, it had separate 3rd and 4th finger action and an automatic lock when closed allowing more function.

Full leg prosthetic with wood foot

Antique 1890 prosthetic leg, with its laced leather leg cuff. Solid wood lower leg and foot with leather straps and corset like thigh cuff

4-007

Prosthetic shoes (child's) - polio walking shoe with brace

polio braces from the early 1900's. Poliomyelitis is a viral disease that reached epidemic proportions in the US during 1840 to around 1950. It primarily affected children and since it was passed with simple person-to-person contact, children in schools would spread it to other classmates and siblings in the span of less than three days. Polio varied in intensity and could either be paralytic, non-paralytic or simply subclinical therefore, the requirement for leg braces varied. This particular brace must have belonged to a small child with minimal paralysis as it only extends to the calf area. It is in pristine condition for its age with almost no rusting. A beautiful dark piece of history. It measures approximately 8" tall with the sole of the shoe measuring 6 3/8". All leather and steel with working buckles and full hinge movement.

4-008

Hand prosthetic salesman sample mechanics exposed

This artificial hand from the 1940s demo model would be attached to a prosthetic arm. The control cable visible at the wrist worked the fingers. The internal mechanism illustrates how the fingers were made to move. It consists of a spring loaded mechanism that allows for the fingers and thumb to grip and carry objects.

4-009

Left half – leg Victorian era 1891

4-010

Leather, wood and metal structure. This lower leg prosthetic consists of a solid wood foot with leather base on the sole of foot as well as leather binding on top. Metal pins have been hammered into the wood to keep in place. It tightens on the leg with buckle and lace up hooks. The metal strips running at each side give it support for the weight of the leg.

WWII prosthetic arm with shoulder strap and hook

4-011

This leather and metal prosthetic arm would be strapped around the shoulder and the hook manipulated by upper shoulder movements to tighten or pull the wire attached to the hook. The hook could be opened and closed to grasp items to assist with daily living. Multiple strips of metal as well as the hook itself made this arm very heavy and difficult to use although over time, amputees would become quite efficient manipulating it.

American Civil War - Cast Iron and Leather Prosthetic Limbs 1864

4-012

These bilateral cast iron prosthetic arms belonged to American Civil War Survivor James Galusha who served with the New York Heavy Artillery. They were purchased from the descendants of the soldier. Galusha was involved in many battles in the war. His regiment was ordered to blow up underground Confederate bunkers. The charges went off prematurely and blew off both of Galusha's arms up to the shoulders.

The pieces still have the original buckles, studs and iron pins. The aged leather harness would hold these extremely heavy and impractical arms in place. Galusha was discharged from the army as full corporal with disability discharge December 1864.

Multi attachment prosthetic arm "swiss army" style. C1880s.

A possible working mans arm…it has multiple instruments available for the amputee. The mechanical attachments are from specialized makers that were the only way the amputee would be able to find work again and manipulate instruments. It has an articulated hand made of rubber and carved wooden figures (sprung thumb). Two graspers, one hook hand, two scoop like apparatuses and two functional tools. All still have strong grip that would be used in a possible work setting. To grasp instruments or tools.

4-013

"War is the only proper school for a surgeon"

- Hippocrates

SURGERY

Orthopedic/Amputation

Amputation is the removal of a body extremity by trauma, prolonged constriction, or surgery. As a surgical measure, it is used to control pain or a disease process in the affected limb, such as malignancy or gangrene.

Amputation is derived from the Latin amputare, to cut away, from amb (about) and putare (to prune).

Archeological findings reveal that amputation procedures have been performed since ancient times. The earliest amputations, though, were performed mainly to remove tissue that was already dead. The reason for this limitation is that early surgical techniques could not control the blood loss, called hemorrhaging, that results from cutting healthy arteries.

Surgeons in ancient Greece and Rome dealt with the problem of hemorrhaging by introducing the technique of tying off, or ligating, blood vessels during surgery. Surprisingly, their techniques appear to have been forgotten for many centuries. It was during these times that blood vessels were instead cauterized using hot irons or boiling oil.

One of the earliest methods for amputation was the circular technique, first described by Aulus Cornelius Celsus (25 B.C.-50 A.D.). Military surgeons preferred this technique because the wound healed quickly, and there was less soft tissue to be exposed to the possibility of infection. Additionally, circular amputation resulted in less operative pain, and patients could be transported with fewer complications.

The bone saw was used in amputation, which the Romans knew prevented gangrene. Thanks to surviving images and actual tools, such as those at Pompeii, we have a very strong understanding of their use in the ancient world, and the advancement of Roman medicine. Archaeological digs have produced tools dating as far back as 500 BC, just about the time Hippocrates was writing the Hippocratic Oath.

Advancements in amputation surgeries have tended to follow major wars. The techniques introduced by French military surgeon Ambroise Paré, as discussed in prosthetics section, are a good example of this. Due to the rise of gunpowder and the weapons of war associated with it, Paré needed more effective methods of treating soldiers with devastating battlefield injuries. Among his several important contributions, Paré reintroduced the technique of ligating blood vessels in 1529.

Other notable advancements throughout history include the introduction of the tourniquet in 1674, which enabled further control of blood flow during the amputation procedure.

An innovation that patients undoubtedly appreciated – anesthesia. It's hard to imagine, but anesthetic gases weren't developed until the 1840s. Amputations were performed without anaesthesia. Drawing on the work of Louis Pasteur, British surgeon Joseph Lister recognized the connection between germs and infections after surgery. He pioneered modern techniques of sterile surgery by using chemical disinfectants to kill microorganisms on surgical tools and within wound sites. With these progressions surgical amputations that were done with some form of sterility were much more successful.

Pre listerian amputation knife – c 1790 by Lesuere Paris

Thick blade with clover shaped knob to tighten and remove the blade. The ebony cross hatched handle is in very good condition.

5-001

These fine old instruments date to around the mid-1800's. They are immediately identifiable as "Pre-Listerian" (before Joseph Lister's germ theory of disease became widely accepted and antiseptic surgical procedures adopted after 1880 or so) by the handle material: they are carved of dense ebony wood. The knife, while the blade shows some tarnish and light pitting, is still very sharp The diamond grip pattern carved into the handle which would harbor colonies of organisms (bacteria) is an example of a source of infection. These more elaborate handles that distinguished instruments of upper class surgeons were no longer used after the discovery of the importance of sterilization of instruments.

The wide blade is meant to compensate for the brittleness of the metal at the time.

Eighteenth century circular amputation knife

This is an eighteenth century circular amputation knife with the sharpened edge on the top of the knife. With one quick swipe of the blade, a limb could be removed in a matter of a few minutes, a blessing in the days before anesthesia was available. It has a carved wood handle with forged iron blade.

5-002

It is an example used for earliest method for amputation , the circular technique, first described by Aulus Cornelius Celsus (25 B.C.-50 A.D).

Knives used for amputations during the 18th century were typically curved, because surgeons tended to make a circular cut through the skin and muscle before the bone was cut with a saw. By the 1800s, straight knives became more popular because they made it easier to leave a flap of skin that could be used to cover the exposed stump.

Liston Amputation Knife 1858

The knife was made out of high-quality metal and had a typical blade length of 6-8 inches. The knife designed according to a design of Robert Liston, early Victorian, used for the very rapid removal of limbs, without anaethestics. It has an ebony cross hatched handle and marked Blackwell instrument makers.

Robert Liston (28 October 1794 – 7 December 1847)[1] was a pioneering Scottish surgeon. Liston was noted for his skill in an era prior to anaesthetics, when speed made a difference in terms of pain and survival. Liston was "the fastest knife in the West End. He could amputate a leg in 2½ minutes" Speed was essential with amputations in this age as anaesthetic was not available and patients could not tolerate long torturous amputations.

c 1780 wood handled amputation saws

5-003

Three samples of typical amputation saws of this era. Note the wing nut tension screw, saw frame and turned maple wood handle grip. The black frame is made of heavy iron.

c. 1760 amputation saw - German signed Gockel

This type was available during the French and Indian War and the American Revolutionary War. The saw pre-dates the use of ebony for handles, and here the wood is walnut. This classic antique surgical saw is 41.5cm long.

5-004

c. 1760 amputation saw

5-005

Similar type available during the French and Indian War and the American Revolutionary War. The saw pre-dates the use of ebony for handles, and here the wood is walnut. This classic antique surgical saw is cm long and was probably made in Great Britain.

1890 Dr. Butcher's antique amputation saw

5-006

The saw is in superb condition, with even the blade tightening-screw retaining its original bluing. An unusual feature of the Butcher is a blade that can be rotated to cut at any angle and beneath a flap. Dr. Richard Butcher (1819-1895), a English surgeon, invented the instrument in 1851. This is one of the more interesting and attractive nineteenth century surgical saws.

Plaster cast (not for bone) saw by Max Wocher, plated, c. 1899

5-007

Rare Russian antique XIXc Medical Surgical Amputation saw

This saw is with trade mark "E.S. Trindin and Sons". Imperial two heads/eagle makers mark. Saw was made from nickel plated steel. The curved spine gave extra strength to the blade to cut through bone when necessary.

5-008

Gigli Saw c 1890- 1900

An late 18th century saw used for craniotomy or orthopedic amputation. It is composed of a wire or chain and two handles. In the case of craniotomy three holes were drilled in the skull with the trephine and the flexible Gigli chain saw was passed under the skull and sawed through to remove a triangle of bone. It was also used for orthopedic bone amputations of limbs. The manual traction and sawing would eventually cut through even large bones as well as tissue. It is used still to this day in surgery however electrical motorized cutters have replaced it in many cases.

5-009

1900s Antique Surgical Amputation Chain Saw with Case

Antique surgical amputation chain saw w/case for use in the war battle field for immediate amputation

5-010

Gigli type saw. The set includes two handles and two sets of cutting wires. In the 1890s the Gigli replaced the chain saw as the resectioning instrument of choice. It has the same sort of handles as a chain saw, but a wire is used instead of the chain. The wire made for a finer and quicker cut. It also did not clog as easily as the chain, it was easier to clean, and it was cheaper to replace. This set is an example of a WWII device with a carrying case for the field. In war or combat situations a portable Gigli saw saved many wounded soldiers who had immediate amputations to save their lives.

1830s capital amputation saw by Tiemann, New York

5-011

Sattertlee's saw by Tiemann, the ivory handle has antecedent in eighteenth century saws. This saw is circa 1850. There is a sharp serrated edge that could cut through bone.

putation Saw with Hinged Spine c. 1874.

5-012

Saw with fine blade and teeth, hinged spine and ebony handle. The spine stayed in place initially, to reinforce the blade. It could then be swung by the surgeon upward to allow the last deeper cut when sawing the bone. Evans and Co were London Surgical instrument makers from 1676 to 1874.

c 1900 Invernizzi Butcher type amputation saw

5-013

c WWII Aesculap amputation saw.

This fine saw is of high quality steel and has the makers mark of Aesculap the exclusive german company distributor during WWII. The blade was removable and could be replaced as it wore down. It was light weight to allow for use in the field as well. Aesculap was monitored by the Nazi's and production was controlled by them during the war. It included production of Nazi weapons and equipment. It continues to be one of the leading medical supply companies to this day.

5-014

AMPUTATION SETS

Surgeons were proud of their cased amputation sets and regarded them as a status symbol. Fine hand carved tools of rare and expensive products were commonly used in surgery by high profile surgeons. They displayed intricately carved ebony and ivory handled instruments (which could not be adequately sterilized) to their patients long after the principles of asepsis had been well established. The boxes were made of the highest quality wood of the time, with fine detailed engravings or emblems.

The sets also served a purpose to be used in the field during wartime as well ensuring the surgeons had all the tools necessary to complete a full amputation of a limb when necessary.

Hippocrates is quoted as saying that 'war is the only proper school for a surgeon'. Certainly, medical services have been associated with the military since the days of Ancient Greece. This relationship declined in the Middle Ages, but after a radical reorganization of medicine during the 1700s the links between the two grew stronger with each passing year.

By the 1500s and 1600s guns and cannons replaced swords and spears, presenting army surgeons with new types of wounds. Innovative methods of treatment were tried in the field to attempt to save as many lives as possible. Amputations were one of the most commonly performed procedures.

One of the most interested sets on display are a part of the history of London:

John Weiss, whose company exists to this day, primarily engaged in Surgical Instruments. He came to London from Rostock in 1780. His father had been a cutler and served as Master Cutler to the Rostock Guild of Smiths. Weiss took to the manufacture of surgical instruments and in 1787 opened for business at 42 Strand London under the name of White, before moving to 33 The Strand in 1805 and trading as 'John Weiss'. His surgical instruments were well regarded and sold around the world, and the company which he founded still trades as 'John Weiss and Son' In 1826 Weiss was granted permanent resident status by King George IV, and he was appointed 'Razor Maker to the King' a title he was very proud of. William IV had bestowed this upon him and Weiss actually began a friendship with many of the Royal Family.

His experience making razor blades and research to find the strongest material for these led

him to examine the materials that were to be disposed of when the London Bridge was to be demolished and rebuilt … By the end of the 18th century, it was apparent that the old London Bridge that had spanned the River Thames between the City of London and Southwark, — by then over 600 years old — needed to be replaced. It was narrow and decrepit, and blocked river traffic… The old bridge continued in use while the new bridge was being built, and was demolished after the latter opened in 1831. Some of the ore from the over 600 year old bridge was what was refined by Weiss.

These blades from this ore possessed a degree of toughness not normally found in common iron, and which in fact produced iron of a quality infinitely superior to any which in the course of his business Mr. Weiss had ever before met with. The fame of Mr. Weiss's iron discovery soon spread.

This set has the damp odor of the smell of an old damp bridge still when opened. The blades are still extremely sharp and strong.

Mr. Weiss had spent his life making surgical devices. For his death he made a special item. Having a dread fear of being buried alive, Weiss fashioned an instrument designed to pierce his heart as his coffin was closed. Instruction and direction for its use were contained within his will. John Weiss died on December 26th 1843. He was buried at St Nicholas Ground with his surgeon Mr Benjamin Vallance in attendance. Vallance carried out his wishes in full, to ensure his certain death.

1835 Set of Weiss Double Edge Amputation knives

5-015

The handles are made from wood from the second London Bridge, dismantled in the early 1830s. The blades are signed Weiss London. The blades were forged from the iron and steel that came from the 600 plus year old ore sourced from the Old London Bridge.

August 27, 1830 this drawing is taken from the steps of the city, and looking south during the progress of the works of dismantling the old London bridge (left) and building of the new London Bridge (right). This bridge was functioning from 1831-1967 when it was dismantled and replaced with the London Bridge that is standing today connecting London to Southwark.

Amputation cased set (ca.1650) Italy

c 1700s Surgical Amputation Set from Medical School – engraved on wood carved storage chest – Surgic----------

This Italian amputation set is one of the earliest to survive with digital amputation knives and chisels not found in sets after 1700. The wide blade is characteristic of the sets of this time as the metal was weak and the width would compensate for the thin metal to ensure a proper amputation. Chisel for amputation is present in this set which is very rare and not found in sets after 1800s. The chisel would be used to chip

5-016

away at digits such as toes and fingers for amputation and the hammer was used to slam the chisel hard enough to break the bone.

INSERT PHOTO FOR CHISEL TOE AMPUTATION …..

Portable Ebony Cross Hatched Amputation Set c 1870 Sheperd and Dudley

5-017

This amputation surgical set would be used by a surgeon who would perform amputations possibly in the patient's home. Upper class patients were able to have surgeons come to their home and perform the procedure as the hospitals were at a time used mostly by the poor. Infections rates were higher in hospitals at the time and survival was some times more likely if done in the patient's own home. The set is lined velvet fitted for all instruments. The handles are ebony cross hatched for fine grip. It includes a Hey saw, tourniquet, multiple scalpels and steel handled amputation saw.

Post Mortem Set 1850

5-018

Red velvet lined post mortem set in walnut case. This is a mid 19th century English post mortem set with large cross-hatched ebony handle. The smaller scalpels also have ebony handles. The blow-pipe was used to inflate ducts, arteries, veins, hollow organs (stomach, bladder, gall bladder, etc.) and aided in seeing where those parts of the body connected or attached.

NEUROSCIENCE

From the ancient Egyptian mummifications to 18th century scientific research on "globules" and neurons, there is evidence of neuroscience practice throughout the early periods of history. The early civilizations lacked adequate means to obtain knowledge about the human brain. Their assumptions about the inner workings of the mind, therefore, were not accurate. Early views on the function of the brain regarded it to be a form of "cranial stuffing" of sorts. In ancient Egypt, from the late Middle Kingdom onwards, in preparation for mummification, the brain was regularly removed, for it was the heart that was assumed to be the source of intelligence

Over the next five thousand years, this view came to be reversed; the brain is now known to be the seat of intelligence,

Trepanning, also known as trephination, trephining or making a burr hole, is a surgical intervention in which a hole is drilled or scraped into the human skull, exposing the dura mater to treat health problems related to intracranial diseases.

The trephine is an instrument used for cutting out a round piece of skull bone.

Trepanning is one of the oldest known surgeries. During the later Neolithic and New Stone Age it was practiced to allow the release of a "demon" inside the head that would be causing headaches, seizures or other or neurological symptoms.

Evidence also suggests that trepanation was primitive emergency surgery after head wounds to remove shattered bits of bone from a fractured skull and clean out the blood that often pools under the skull after a blow to the head. Such injuries were typical for primitive weaponry such as slings and war clubs.

Trepanation was also practiced in the classical and Renaissance periods. Hippocrates gave specific directions on the procedure from its evolution through the Greek age, and Galen also elaborates on the procedure.

During the Middle Ages and the Renaissance, trepanation was practiced as a cure for various ailments. Out of eight skulls with trepanations from the 6th to 8th centuries found in southwestern Germany, seven skulls show clear evidence of healing and survival after trepanation suggesting that the survival rate of the operations was high and the infection rate was low.

Surgical devices used for trepanning of the skull included ancient flint knives

made of sharpened stone, and small skull saws with crescent shaped blades that gave the best contact on the shape of the skull. The metal bladed saw was first used in ancient Rome.

Neurosurgical tools of the past

On display we have the following neurosurgical equipment and sets:

Trephine Set 1860

A complete neurosurgical trephine set from late 19th century. It contains a trephine handle with two attachments, each with their own retractable centre pin (to anchor the bit, but prevent damage to brain tissue during drilling). A 19th century trephine drill with ebony handle and two drill attachments. The spiked centre of the drill bit was applied to start drilling into the skull. This could then be retracted to avoid damage to the brain when the drill hole was established

Elevators were used to pull up the bone from around depressed skull fractures. This also double as a rasp to scrape soft tissue from the bone and as a scalpel (trephine).

A bone chisel, two lenticulars, an elevator and a hand drill (used to tap the skull manually). The tools fit perfectly into the original purple silk and velvet lined case. The case shows age related wear and is missing one latch but closes securely. In order to smooth the edge of the circle cut from the skull, surgeons used file-like instruments called lenticulars. These had a smooth end with a sharp blade around it to depress the brain without causing soft tissue damage and still be

able to file the bone edges. Frequently the circle of bone would fracture as it was removed and jagged edges were left which needed to be smoothed.

Drilling and cutting bone created bone dust which would have to be removed from the from the cut site as well as the drill and crowns. Early on the bone brush was invented to clear these particles from the instruments

Large Manual Trephine Brace Drill c 1760

The trepan is a frame or brace with drill bits that was probably introduced in the 16th century by Andrea de Croce of Venice. Both detachable perforators and circular saw bits were used with the frame or brace. Often there was a central pin in the circular bit to "get things started." This was a dangerous addition since the central pin had the possibility of penetrating the brain (a very bad idea) so the pin had to be removed.

This is a rare trepan brace, with a wood handle. It is the classic shape for ca 1760-1780. While the trepan brace was a sometimes cumbersome two handed instrument, the 16th century saw the development of the trephine which could be operated with one hand.

One hand rotating trephine drill c 1800

Fabricius (1537-1619) first described the use of this T-shaped skull drill. Samuel Sharp improved on this by developing a central pin that was removable to prevent brain penetration. The trephine survived in one form or another well into the 20th century. The handles of these instruments were made of many materials such as bone, wood, ivory or ebony.

5-019

Hey Saw

Sir William Hey (1736-1819) spent years developing an improved skull saw in Leeds, England. His work came to fruition in 1803 when he finalized the saws that came to be known as Hey's saws. Since that time no large general surgical or specialized neurosurgical set was complete without at least one of Hey's saws. These often had one or two straight or curved blades which were used to cut the cranium around a skull fracture until the dura, or brain covering, was exposed

While Hey's saws were most likely used to cut circular or rectangular holes in the skull a seemingly more efficient way was with trepans or trephines.

Neurosurgical Set c1790-1800

A fine fitted neurosurgical set dating to the early 19th century. The velvet lined wood case contains compartments which accommodate a full set of instruments made from unplated polished steel, brass and ebony handles. The boxed set was made specifically to accommodate these instruments. With the removable handle there are two trephine attachments, a scalpel, elevator, brush, and forcep. Samuel Sharp invented a special type of forceps in the early 1700's that was used to lift up the circular piece of bone. One of these type is present. The instrument was placed around the circular piece of bone to lift it off the brain.

5-020

In order to smooth the edge of the circle cut from the skull, surgeons used file-like instruments called lenticulars as seen in this set. These had a smooth end with a sharp blade around it to depress the brain without causing soft tissue damage and still be able to file the bone edges. Frequently the circle of bone would fracture as it was removed and jagged edges were left which needed to be smoothed.

Drilling and cutting bone created bone dust which would have to be removed from the cut site as well as the drill and crowns. Early on the bone brush was invented to clear these particles from the instruments.

Neurological Set 1850

A blue velvet lined fitted neurosurgical set. Consists of ivory handled Hey saw, detachable handle of wood, two trephine attachments and large elevator to lift the skull bone. Once a trepan or trephine was used to bore the hole in the skull an elevator was used to lift up the cut bone flap.

5-021

Sir William Hey (1736-1819) spent years developing an improved skull saw in Leeds, England. His work came to fruition in 1803 when he finalized the saws that came to be known as Hey's saws. Since that time no large general surgical or specialized neurosurgical set was complete without at least one of Hey's saws. These often had one or two straight or curved blades which were used to cut the cranium around a skull fracture until the dura, or brain covering, was exposed.

"Wherever the art of Medicine is loved, there is also a love of Humanity"

Hippocrates

PHARMACEUTICAL

The history of pharmacy as an independent science is quite old. The pharmacy profession can be traced back at least as far as the Sumerian population, living in modern day Iraq. From around 4000 BC, they used medicinal plants such as liquorice, mustard, myrrh, and opium.

There were separate people who worked to prepare medicines, apart from the role of diagnosis and treatment which was carried out by medics. These precursors to pharmacists also combined their role with that of a priest. The Sumerians wrote the earliest surviving prescriptions from at least 2700 B.C. – so nearly 5000 years ago.

The Ancient Egyptians had specific preparers of medicine, known as Pastophor. Pharmacy was viewed as a high status branch of medicine, and again, like the Sumerians, these pharmacists were also priests who worked and practised in the temples.

From surviving papyrus scrolls, notably the Ebers Papyrus which dates from 1500 BC, we know that the Egyptians made and used infusions, ointments, lozenges, suppositories, lotions, enemas, and pills. The Ebers Papyrus includes 875 prescriptions and 700 drugs.

Meanwhile, in China in about the same era (2000 BC), a man called Shen Nung wrote the first Pen T'sao or native herbal, which contained descriptions of 365 plant-based drugs.

The earliest known compilation of medicinal substances was the Sushruta Samhita an Indian Ayurvedic treatise. The earliest preserved text dates to the 3rd or 4th century AD.

In Ancient Greece, before during and after the time of Hippocrates there was a group of experts in medicinal plants. Probably the most important representative of these rhizotomoi was Diocles of Carystuss (4th Century BC). The Latin translation De Materia Medica (Concerning medical substances) was used as a basis for many medieval texts. It was build upon by many middle eastern scientists during the Islamic Golden Age. Islamic physicians greatly extended the range of ingredients used in medicines. Moreover, whereas Greek remedies generally used only one drug at a time – they were 'simples', the Islamic method used several at a time, a concept that came to be known as Polypharmacy

Galen

Of the men of ancient times whose names are known and revered among both the professions of Pharmacy and Medicine, Galen, undoubtedly, is the foremost.

Galen (130-200 A.D.) practiced and taught both Pharmacy and Medicine in Rome; his principles of preparing and compounding medicines ruled in the Western world for 1,500 years; and his name still is associated with that class of pharmaceuticals compounded by mechanical means - galenicals. He was the originator of the formula for a cold cream, essentially similar to that known today. Many procedures Galen originated have their counterparts in today's modern compounding laboratories.

Islamic Medicine and Pharmacy

Like other branches of medical learning, pharmacy in the Islamic world must be seen as a continuation and development of the Greek tradition. In particular, Islamic physicians greatly extended the range of ingredients in medicines. Greek remedies had generally one medication at a time – they were 'simples' --- Islamic ones used several drugs together, a practice later called polypharmacy.

From the 9th century AD, pharmacists were examined an licensed by a representative of the Caliph of Bagdad. The occupation of the pharmacist was thus separated from that of the physician. In this respect, as in so many others, the example of the Islamic world was to be followed four centuries later in Western Europe.

The advances made in the Middle East in botany and chemistry led medicine in

medieval Islam substantially to develop pharmacology. Muhammad ibn Xakariya Razi (Rhazes 865 – 915) pioneered the preparation of medicines by sublimation and distillation. His Liber servitoris is of particular interest as it provides the reader with recipes and explains how to prepare the simples from which were compounded the complex drugs then generally used.

Sabur Ibn Sahl (d869) was however the first physician to initiate pharmacopoedia, describing a larger variety of drugs and remedies for ailments. Al-Biruni (73 – 105) wrote one of the most valuable Islamic works on pharmacology entitled Kitab al Saydalah (the Book of Drugs), where he gave detailed knowledge of the properties of drugs and outlined the role of pharmacy and the functions and duties of the pharmacies. Ibn Sina (Avicenna) too described no less than 700 preparations, their properties mode of action and their indications. He devoted in fact a whole volume to simple drugs in The Canon of Medicine.

Stalls and shops selling medicinal goods existed around 1900 B.C. in the town of Sippara on the Euphrates river. In Europe, pharmacy like shops began to appear during the 12th century. The first pharmacy in Europe was opened in 1241 in Trier, Germany.

Islamic treatises on pharmacy and toxicology continued to exert considerable influence on the West well beyond the end of the Middle Ages.

Page from an Arabic translation of the De Materia Medica of Dioscorides (1224)

Mortar and Pestle

The mortar and pestle is a traditional tool important for many medical treatments, used to grind and blend plants and minerals into a wide range of remedies

The English word mortar derives from classical Latin mortarium, meaning, among several other usages, "receptacle for pounding" and "product of grinding or pounding". The classical Latin pistillum, meaning "pounder", led to English pestle.

Mortars and pestles were traditionally used in pharmacies to crush various ingredients prior to preparing an extemporaneous prescription. The mortar and pestle, along with the Rod of Asclepius, the Green Cross, and others, is one of the most pervasive symbols of pharmacology

They remain the modern symbols of the apothecary shop, and pharmacists have used them for grinding and mixing medications for hundreds of years. Composition varied and included vessels made of wood, stone, bronze, Wedgwood, porcelain, and glass. At the turn of the last century, pharmacists rightfully stopped using metal for fear that some of the material might be escaping into the medications.

A solid and heavy brass mortar and pestle dating to the 19th century.

6-001

Gothic style with ribbed handles c 1880

6-002

Miniature Brass Mortar and Pestle c. 1890

6-003

Antique apothecary case portable (ca.1875)

This portable collection of medications allowed physicians to take a small pharmacy with them to treat their patients. This set contains remnants of many medicinal used in the 19th century. Some of the names are familiar still to this day such as

6-004

1870 Pill Former

A fine Victorian pill roller made from brass and matured mahogany. The gradations are marked in grains. Signed by S. Maw and Son & Thomson who were established makers of quality medical equipment from 1870 to 1901. The makers name and address 'Maw & Son & Thompson, 11 -12 Aldersgate St. London' and graduation marks are stamped into the surface. The pill roller instrument was used to make 24 small-sized pills. It comprises of a flat handle bar with an attached grooved brass plate which wheels over a sloping board with a corresponding grooved brass plate. These grooves are graduated marking off the 6th, 12th, 18th and 24th groove.

6-005

Paste with the required pharmaceutical ingredients would be rolled into a tube and places across the brass corrugated sections. The handle would then be put in place and moved over its rail to divide the roll of paste into equally sized parts which would then be rolled into pills.

Antique German Apothecary Jar

6-006

Wooden apothecary container 1860s sem:Nigellae The seeds were used as a carminative and stimulant to ease bowel and indigestion problems, and were given to treat intestinal worms, nerve defects, to reduce flatulence, and induce sweating. Dried pods were sniffed to restore a lost sense of smell. It is also used to repel some insects.

Apothecary jar – porcelain

6-007

6-008

6-009

Opium hand painted jar, Darvon porcelain jar, ammon.sulfo-ichthyol storage porcelain jar

Lebenswecker

6-010

Lebenswecker (medical instrument), wood / metal, made by Carl Baunscheidt, Endenich, Bonn, Germany,1865-1875
An instrument used in homeopathic medicine called a lebenswecker (directly translated as life awakener).
The lebenswecker consists of a turned, cylindrical length of ebony with a moveable shaft protruding from a fixed stem. There is a lid on the bulbous head of the instrument that unscrews to reveal thirty small steel needles fixed to a metal plate. The instrument was used by holding the head against the patient's body, drawing back the spring-loaded shaft, and letting it go quickly to cause the top layers of skin to be punctured by the steel needles. A drop of Baunscheidt's oil would then be applied to encourage the formation of blisters.

The theory was that rubbing the skin with toxic oils and piercing it with the Lebenswecker would produce a counter irritation which would divert the bodies attention away from illness and infection and a host of other complaints and so doing restore health.

Eye Bath Cup

6-011

Eye baths were used in England in the 16th century Through the years there have been many devices used to install liquid eye medicines into the eyes for irrigation or treatment. The eye cup or eye bath was the most popular until eye drops were developed.

To use the eye cup, the patient applied it to the eye with the head bowed forward, threw the head back with the eye open, ensured lavage of the eye by blinking several times and then removed the cup with the head once more bowed forward

The term collyrium was used by the Romans to denote a number of medications molded together in gum to form a solid cake, a small piece of which was dissolved in water or oil and applied to powders and ointments, but today its use is generally confined to watery solutions used for instillation into the eye.

Vaporizer antique Victorian – for vaporization of inhalation medications

James H. Valentine made a crude vaporizer in 1879 in an effort to ease the pain of his young daughter, who lay racked with whooping cough.

In desperation the father put a coal tar acid named Cresolene in a tin cup and suspended it over a small kerosene lamp. The girl found quick relief as soothing fumes filled the bedroom. Valentine recognized that he had discovered a commercial product: named 'Vapo' for vaporizer and'Cresolene' for the coal tar acid."

The basic premise of the invention was to heat a dish suspended over a small heat source to vaporize the chemical contained therein.

Vapo-Cresolene was used to "cure or considerably alleviate" primarily diseases of the respiratory system and throat such as whooping cough, asthma, diphtheria and scarlet fever. It was also used to sanitize rooms – bedrooms, "sick rooms," or other areas where there were sick or infected patients, or where the bacteria were thought to be lurking.

6-012

The liquid is vaporized in the apparatus and the air is thus rendered antiseptic and as breathed by the patient it is carried through every passage, tube and cell of the breathing organs and produces a direct action on the very seat of the disease

19thC Pharmacy Apothecary Konseal Filling & Closing Apparatus

The cachet machine was invented in France at the end of the 18th century. The hard to find Konseal Filling & Closing Apparatus, made by The J. M. Grosvenor Co., Boston was the most widely used device in American drug stores for the preparation of cachets.

6-013

A Cachet, (Cachet Or Konseal) is made of two concave plates of rice paper within which the medicament is enclosed and which is then sealed by moistening the contiguous borders of the plates with water. They offer an elegant method for completely covering nauseous and insoluble powders which were too bulky to be made into pills

The device came in a large wooden box with directions on the underside of lid. The apparatus consists of the main nickel mold, funnels, tampers, water pan and roller. The box also has compartments for the storage of several sizes of the konseals (cachets). The box is 18 inches x 10 inches x 2 inches. There is one in the Throop Museum.

"Though the doctors treated him, let his blood, and gave him medications to drink, he nevertheless recovered."

-Leo Tolstoy, War and Peace

BLOODLETTING

Bloodletting (or blood-letting) is the withdrawal of small to larger quantities of blood from a patient to cure or prevent illness and disease. Bloodletting was based on an ancient system of medicine in which blood and other bodily fluids were regarded as "humors" that had to remain in proper balance to maintain health. It was the most common medical practice performed by physicians from antiquity until the late 19th century, a span of almost 2,000 years.

The procedure involved the cutting of a vein or vessel to drain a certain amount of the ill patients' blood directly from his body, usually into a bowl. Bloodletting began with the Egyptians of the River Nile one thousand years B.C.,and the tradition spread to the Greeks and Romans; its popularity continued throughout the Middle Ages

The custom of bloodletting as practiced over the centuries might seem repulsive to the modern practitioner of medicine. However, the physician and his treatment must be judged in the light of the contemporary theory of disease. Primitive man looked on disease as a curse cast on him by an evil spirit; his treatment consisted of driving out the demon that possessed him.

Bloodletting was supposed to facilitate the release of evil spirits from elsewhere in the body.

Later use of bloodletting in hypertension, apoplexy, dropsy, and nervous disorders had a more physiologic explanation.
The story of bloodletting is intertwined in the mysterious fabric of medical lore; it originated from magic and religious ceremonies. Witch doctors and sorcerers were called on to drive out the evil spirits and demons. Bloodletting was a method for cleansing the body of ill-defined impurities and excess fluid.. Wall paintings dating from 1400 B.C. depict the use of leeches for drawing blood from human beings.

Four body humors

Prior to the time of Hippocrates (460 to 377 B.C.), all illness was attributed to one disease with variable symptoms. Careful clinical observations by Hippocrates led to the recognition of specific disease states with identifying symptoms. It was during this time that the concept of body humors developed. The four fluid substances of the body were blood, phlegm, yellow bile, and black bile. Health depended on the proper balance of these humors. Bloodletting was, therefore, a method used for adjusting on of the four body humors to proper balance. This clinical concept led to the decline in the doctrine of evil spirits in disease.

Indications for venesection

Venesection was the most common method of general bloodletting.

The specific indications have varied over the years.

In the early nineteenth century adults with good health from the country districts of England were bled regularly, this was considered to be preventive medicine. In earlier times specific veins were described as heart veins, breast veins, and head veins and were bled according to the specific illness.

The following quotation comes from Watson and Condie's Practice of Physic in 1858.

"The main object of general blood- letting is to diminish the whole quantity of blood in the system, and thus to lessen the force of the heart's action"

Rapid bleeding by venesection with the patient standing was advised. It was believed that the early onset of faintness and softness of pulse was beneficial. Slow bleeding with the patient supine led to more blood loss before the soft pulse and faintness developed, which was thought to be undesirable. Blood losses averaged 16 to 30 oz. Sufficient bleeding had occurred when the fever subsided and the pulse had become soft.

Variations of the concept of body balance persisted until the end of the nineteenth century. Most physicians of that century believed that illness was due to either an excess or deficiency of some body product. Bloodletting allowed the physician to reduce body fluids and decrease body temperature. The febrile patient with a full pulse, red skin, and agitated state could be rendered pale and cool. The physician concluded that this represented clinical improvement.

A number of different methods were employed. The most common was phlebotomy, or venesection (often called "breathing a vein"), in which blood was drawn from one or more of the larger external veins, such as those in the forearm or neck. In arteriotomy, an artery was punctured, although generally only in the temples.

Bleeding bowls were used to collect blood during bloodletting

Did You Know?

US President George Washington is thought to have died after being bled too heavily as treatment for a simple throat infection from weather exposure. Within a ten hour period, a total of 3.75 liters of blood was withdrawn prior to his death in 1799.

Scarification

In scarification, the "superficial" vessels were attacked, often using a syringe, a spring-loaded lancet, or a glass cup that contained heated air, producing a vacuum within (cupping).

There was also a specific bloodletting tool called a scarificator, used primarily in 19th century medicine. It has a spring-loaded mechanism with gears that snaps the blades out through slits in the front cover and back in, in a circular motion. The case is cast brass, and the mechanism and blades steel. One knife bar gear has slipped teeth, turning the blades in a different direction than those on the other bars. The scarificator would cut the skin enough to elict bleeding and then the patient would be "bled" using the technique of cupping.

Cupping

Bloodletting cups were used with the scarificators. When wet cupping, the skin surface would be cut with a scarificator and cups would be applied. A vacuum would be created within the cup by exhausting the air, either by a flame or by a pump, and with a tight seal formed against the skin, the blood would be drawn into the cup. Dry cupping used the same idea for creating a vacuum within a cup, but a scarificator was not used and the skin was not broken, so no blood actually flowed into the cups Cupping has also been used as an ancient treatment and we have on display an ancient Islamic cupping instrument dated 11th century.

An extremely rare ancient glass Islamic cupping instrument, dating to the 11-13th Century.

The cupping instrument is of pale green glass, with applied spout emerging from the bottom and arching upwards. The ancient technique of cupping involved heating the air on the inside of the cup, by insertion of a burning rag or other such material. The cup was then placed on the patient's body and the air allowed to cool, reducing in volume and drawing blood upwards and into the cup. This ancient Islamic cupping glass was unearthed in Iran and dates to the first centuries of the Islamic Era.

Height: 1 7/8 inches.

Condition: Good condition. The very end of the spout fractured.

A similar artifact is on display at the Louvre.

7-001

Leeches

The first recorded use of leeches in medicine was in 200 BC by the Greek physician Nicander in Colophon.

In medieval and early modern medicine, the medicinal leech (Hirudo medicinalis and its congeners Hirudo verbana, Hirudo troctina and Hirudo orientalis) was used to remove blood from a patient as part of the process to "balance" the "humors".

Leeches were used for blood letting and the withdrawal of so much blood as to induce syncope (fainting) was considered beneficial, and at this point many sessions would end. Leeches became especially popular in the early nineteenth century. In the 1830s, the French imported about forty million leeches a year for medical purposes, and in the next decade, England imported six million leeches a year from France alone. Through the early decades of the century, hundreds of millions of leeches were used by physicians throughout Europe.

These forms of treatment may seem primitive to us in this modern age.

It is easy for us to criticize ancient treatments that seem unsafe and detrimental to a patients well being. However, today, we can see some of the general principals at use in our medical treatments. Therapeutic phlebotomy refers to the drawing of a unit of blood in specific cases like hemochromatosis, polycythemia vera, porphyria cutanea tarda, etc., to reduce the amount of red blood cells,which is a necessary and legitimate form of medical treatment. So the actual process of "bloodletting" is still in use today in a safer and more appropriate way.

As well today, cupping and scarification have made a comeback in alternative medicine. Leeches are still used today in hospitals to reduce swelling (blood congestion/coagulation), relieve venous pressure from pooling blood (venous insufficiency), and in reconstructive surgery to stimulate circulation in reattachment of extremities in reconstructive microsurgery and plastic surgeries.

Turkish bleeding bowl c 1800

7-002

Ancient iron fleam (c 1700) hand forged iron fleam (Italy)

7-003

Scarificator Brass

7-004

19th century medicine. It has a spring-loaded mechanism with gears that snap the blades out through slits in the front cover and back in, in a circular motion. The case is cast brass, and the mechanism and blades steel. One knife bar gear has slipped teeth, turning the blades in a different direction than those on the other bars. There is a depth adjustment bar at the back and sides.

Scarificator circular silver - 1850

A high quality round French scarificator with 12 rounded blades.

The blades have some rust in keeping with its age but the scarificator remains in good working condition. The depth of cut is adjusted by turning the screwed base. The mechanism cocks halfway. There is no makers mark.

7-005

Spring Lancet in leather case 1750

The inside is suede lined and ornately embroidered, but with signs of ageing. The lancet has not been cleaned and is in excellent working condition

7-006

Leech jar – Marked Hirudines c 1880

Leech jars were used in pharmacies to stock leeches for use by physicians. There are

hole perforations in the container at the base and near the top to allow air to get in but small enough so the leeches cannot escape. The leeches were kept in the jar in water and sent to surgeons and doctors who would use them to drain congested blood after surgery or for other procedures. The section which has a perforated base, hangs supported by the outer jar and raised above water in the bottom of the main container.

"Somewhere, something incredible is waiting to be known"

Dr. Carl Sagan

Syringes/Needles – Irrigation

A syringe consists of a piston in a cylinder. When the piston is raised or lowered, liquid flows in and out of the syringe. The invention of the syringe has definitely been one of the most important in medicine. It allows us to insert medications directly into the body, which had never been accomplished so easily before.

Hypodermic - Hypo – Greek for "under" and Dermic – refers to the skin or dermis. Syringes were used as long ago as 1000 AD when the Muslim surgeon Ammar ibn Ali of Mosul used a syringe and suction to extract soft cataracts of the eye. The syringe was an astounding medical breakthrough that we cannot do without in today's medical treatments.

Disposable, fine, sharp syringes and needles as we know them today may still seem somewhat frightening to most patients, but in comparison to poor sterilization, blunt and reused instruments of the past, current technology has come a long way.

With the invention of plastic and the concept of sterilization, today's hypodermic needles and irrigation sets are sterile and completely disposable. There is no need to reuse any instruments and every patient is assured a clean and safe needle or enema. The risk of bacteria or disease transfer is virtually eliminated when all sterile protocol of today's standards are followed.

In the past, equipment was made of much different types of materials than disposable plastic that we use today. From brass, ivory, animal bone, iron and wood, instruments such as syringes were reused and very difficult to clean between each patient if done at all. Pieces were heavy and large. They were often elaborate, fancy pieces and the more detail meant the surgeon or doctor was of a higher status. This fine detail and engraving was later shown to harbor the most bacteria and disease that was difficult to clean. Instruments were frequently used and shared between patients and surgeries allowing for the transfer of bacteria and spread of disease.

Antique syringe with metal carrying case c1900

8-001

This case would have been used in either a war field kit or by a physician visiting patient in their home. There are multiple needles that were not disposable. As well remnant of morphine tab case that would be dissolved for injection.

Glass ear syringe from approx 1890 – glass with circle handle at end

8-002

This would have been used for irrigating the ear. The body of the syringe has a bulbous terminal for fitting in the ear canal. The piston is also made from glass and is sealed at the plunger end with a coil of thread and the proximal end with a perforated cork bung.

Antique pewter syringe with ivory tip c1880 possibly aural syringe

8-003

Large antique full pewter syringe used for irrigating.

8-004

1830 fine brass and ivory example ENEMA comes in its original case which contains the attachments and fittings

The telescopic metal tubes have water tight valves at each junction. The body of the syringe is marked.

8-005

Syringe metal with needle – portable carrying case – self / home admin early 1900

8-006

Flemmings black gutta percha fistula syringe 1860

8-007

Brass syringe with triple loop handle c 1880

8-008

Medical syringe glass inside original wood carved case 1900

8-009

Irrigation syringe pewter 1870 with clover like tip

8-010

BMCC syringe civil war in silver case for burying

8-011

Dental syringe with curved tip vintage

8-012

Small white celluloid irrigation syringe – pediatric piston syringe

8-013

8-014

Antique Sterilizer Jar for metal and glass syringes early 1900s - Cook Waite glass syringe cleaner.

8-015

Antique 19th century aspiration syringe set boxed Maw and Son

8-016

Antique Down Brothers Brass surgical ear syringe c1874.

8-017

Potain Aspirator – Torino 1890

The Potain aspirator is designed for the aspiration of fluids and gas from the

8-018

body - especially the pleural space. This set is essentially complete, including the valved, all-metal aspirator syringe, the rubber bunged valve head to a collection bottle (not supplied), a range of aspirating needles and trocarred cannulae and connection tubing. The container and support frame are of nickel plated metal and are suitable for heat sterilization. It would have been in regular use until the antibiotic era became well established.

In 1875, Potain was appointed as the Professor of Clinical Medicine to the Nekker Hospital, Paris where he remained until retirement in 1900. He died in 1901.

Pewter syringe with wood pump handle

8-019

Large antique pewter syringe used for performing enemas and irrigating other body cavities with wooden handle c1820. This antique medical pewter enema syringe instrument. Dates late 1700s. Pewter barrel unscrews to remove head and plunger. Being made of beautiful walnut wood, pewter and leather that provides good suction. The syringe end screws on with original leather washer. Barrel is decorated with fine etched design circling the barrel on both ends and center. Instrument has a wonderful original color and patina showing lots of old medical history.

"Medicine is a science of uncertainty and an art of probability"

- William Osler

Obstetrical and Gyenecology

Obstetrics is a medical/surgical specialty concerned with the care of women from pregnancy until after delivery and gynecology - with the diagnosis and treatment of disorders of the female reproductive system.

Childbirth in the past was difficult and complications many. Obstructed labor or difficult deliveries can be dealt with fairly routinely today. Unfortunately, obstructed labor in ancient times usually meant the death of both the mother and fetus.

The early medical literature contains a variety of descriptions attempting to resolve the problems of obstructed labor. In most cases the attempt was to remove the fetus whether alive or not.

The ancient Japanese attempted to extract the fetus with fillets of whale bone placed over the fetal head. Hindu writing long before the birth of Christ refer to a knife and hook for perforation of the fetus head and extraction. This technique was described by Hippocrates in 400 BC. The best illustrated instruments were those of Albucasis in 1000 AD, but all instruments for destruction and removal of the obstructed fetus.

The Almisdach of Albucasis was used to crush and extract a large head. The forfex albucasis had teeth to grasp and crush the head. Vertigo Albucasis was used to open the matrix and Embryotome of Albucasis was used to perforate the fetal head.

Only Avicenna alluded to the possibility of an instrument that would extract an infant alive. He wrote that if manual traction is not successful it should be followed by the use of a fillet. He added that if the fillet is unsuccessful "let the forceps be applied and let it be delivered by them" He concluded with the significant statement that should the forceps be unsuccessful the infant must be withdrawn by incision "as in the case of a dead fetus" (Laufe).

Obstetrics had for a long time been the province of female midwives , but in the 17th century, European physicians began to attend on normal deliveries of royal and aristocratic families; from this beginning, the practice grew and spread to the middle classes.

The obstetric forcep has a history that is based in secrecy and mystery. For such a standard tool it has had many variations - however the basic concept of the tool and many other gynecological equpment has remained the same.

Instruments of Destruction of Fetus

Blots arrow perforator - ebony cross hatched handle

9-001

Destructive forceps used to open the head (craniotomy) of the infant and break the skull itself.

Hippolyte Biot of Paris designed this perforator for obstructed labor. The points of the blades are like diamond-shaped spears. The spring-loaded handle of these perforators facilitates one-handed use. After the fetus is perforated, compressing the handle engages the spring, which allows the blades to open and enlarge the perforation.

Brauns Cranioclast

Powerful destructive craniotomy forceps. The smaller blade is introduced to the perforated skull, the larger blade is placed to the outer surface of the skull. The blades are locked (with screw and wing nut) and the fetus is extracted out. A late 19th Century example of this powerful instrument used to crush and extract foetal parts in arrested labour.

9-002

The heavy blades can be pulled together with considerable force using the large wing nut clamp

Braun's Decollator c1900

Metal handled destructive obstetric instrument. Decapitation was accomplished by introducing the blunt hook around the fetal head or was used to hook around neck to pull out obstructed fetus.

9-003

Smellies perforator unplated steel

William Smellie (1697-1763), British obstetrician, designed this perforator to work like a scissors. The operator was required to use both hands ro open the blades and cut the tissue. The end of the short pointed blades has a shoulder, which prevents the device from being introduced to too great a depth.

9-004

1890 Vicarelli Trephine

9-005

Vicarelli's Trephine Cranial Perforato

This destructive instrument was screwed into the baby's head, when it was unable to pass naturally through the birth canal. It would cause the skull to collapse for an easier extraction. Ultimately this was done to save the life of the mother who could not deliver the live baby.

Antique Italian Decapitating Hook

9-006

Hook could be used to pull the baby by the neck to aid in extraction, this would end in the death of the fetus. Also to be used to extract parts of a dead fetus.

Holmes Perforator c1874

9-007

The joint mechanism allowed the point to be opened within the skull by pushing the handles together, which allowed more force to be applied than would be possible by pulling them apart. The second half of the blade was truncated allowing a single perforating point. (Other perforators required various locking mechanisms). A rare example with beautifully carved and cross-hatched ebony handles.

Forceps

These early instruments to assist the fetus in its travel through the female pelvis were not useful to extract live fetuses. In 1554 Jacobus Rueff illustrated a concept of fixed pivot forceps and the concept did not work to extract live infants. It was nearly impossible to expand the blades as they had to be introduced together and thus could not enclose the head. Their only use was to extract a dead fetus.

To hasten the progress of prolonged and difficult labor, the midwives of the earliest times often felt the desire of being able to hold the head of the child between their hands. However, the human hands are too thick and large. Thinner and slimmer, the obstetrical forceps were used, which are in reality nothing else than a pair of iron hands.

The era of modern operative obstetrics began over 300 years ago with the introduction of the Chamberlen forceps.

The Chamberlen family of the 17th century is widely known to have invented the forceps as we know them today, thus taking credit for delivering a live baby in an obstructed labor. The Chamberlens -- a long line of male physicians beginning with two brothers both named Peter -- kept their invention a secret for over a hundred years. They were a family of physicians of four generations from 1600 -1728. They practiced midwifery in England. Which member of the family invented the forceps is not known but all achieved fame as accoucheurs. They kept their invention secret to improve their reputation and demand as successful surgeons with successful deliveries of live infants.

Dr. Peter Chamberlen (1601-1683)

One reason the use of forceps could remain a secret so long was the fact that male midwives operated with the bed sheet tied around their neck so no one could see the instrument. The Chamberlen forceps were a simple but effective instrument. Each branch was about 12 inches long. Each had a fenestrated blade with a cephalic curve. The success of the instrument was based on the fact that the branches were separable and they could be inserted individually. Once applied they were rejoined with either a rivet or rope. They then functioned as a lever and the infant could be extracted alive.

The original forceps were passed from father to sons and in 1715 the family estate was sold…not until approximately 100 years later the mystery was solved when several original Chamberlen instruments were discovered in 1813 beneath the floorboard in the family home attic, known as Woodham Mortimer Hall. Photo (left) shows the original discovery in the Chamberlen's attic.

Each pair of forceps discovered showed an improvement on the first, providing a visual history of the Chamberlen forceps. They had fenestrated blades with a cephalic curve for a better hold on the fetal head.

They could also be separated and positioned before joining the blades and this pivot lock made the forceps very functionally allowing the Chamberlens the successful deliveries they were known for.

By the early eighteenth century, the secret was out and the use of forceps by male physicians spread throughout Europe. Shortly afterwards various obstetricians began to refine the design as they saw fit. In skilled hands these instruments aided the positive outcome of many obstructed labors. On the other hand, the overuse of forceps in an era before control of infection, could lead to the death of the mother from puerperal fever or to damage of the baby. Some historians have argued that it was not until the twentieth century that physicians as obstetricians held any clear advantage over traditional midwives.

Our display of antique forceps contains the following:

Collin forceps c 1850

9-007

Hand forged iron with wooden handles. Made in France marked Collin 1680. Measure 16.5" long

Hodges type forcep by Thorp & Lloyd Brothers co. late 1800s forceps.

9-008

All metal long forceps with olive screw cap. A French screw locking mechanism secures the two blades. Handles are slightly hooked for grip.

ges type metal forceps late 1800s

9-009

With hooked handles and ovid blades. Parallel shanks increased pelvic curve and a Siebolds lock (A modification of the French lock. A pivot is screwed into the shank of the left branch, while the right presents an opening which can be adjusted to it) The olive screw cap is tightened after articulation.

G. Tiemann metal c 1880 forceps with olive screw cap, Siebolds lock and longer blades.

Note the slight refinements to the handles, otherwise, forceps similar to most of the time.

9-010

Tarnier's Axis Traction Forceps Circa 1900s

For very difficult labor and delivery traction forceps would be necessary and often used by two doctors at the same time. One holding the forceps and the other pulling full force with the traction handle.

Traction on the handle guides the operator the precise direction of the pelvic axis. Unplated steel blades, bilateral handle, double connecting rods attached to the side of the blades.

9-011

Tarnier traction forceps in use to extract obstructed fetus. One doctor would grasp handle and one the traction pull device.

Bedford's Forceps Circa 1878

9-012

Wooden handle with ring finger rest and German lock. Unplated steel. Marked Shepard and Dudley. 30 cm. (15 1/4")

Barton Type Hinged Forceps 1925

A rotational forceps introduced in 1925 by Lyman Barton of New York . The blades join the shanks at an angle. One of the blades is hinged. This ob forceps has a sliding lock . The handle has a finger rest.

The forceps have 2 fenestrated blades with a sliding lock. The posterior blade has a deep cephalic curve and the anterior blade has a hinge that extends the blade from the shank at about a 50 degree angle when in use.

9-013

Lyman G. Barton, MD, designed forceps with a hinged anterior blade for use in vaginal deliveries when the fetal head is arrested in the transverse position at the pelvic inlet.1,2 Although this type of operative vaginal delivery is no longer part of obstetric practice, we have found Barton's forceps to be useful in delivery when the fetal head is in the high transverse position, which frequently is encountered during a cesarean delivery. This is particularly true in repeat cesarean deliveries through a low transverse incision on a woman with a thick abdominal wall.

Elliot forcep by Tiemann 1860

9-014

Elliot forceps (1860) are similar to Simpson forceps but with an adjustable pin in the end of the handles which can be drawn out as a means of regulating the lateral pressure on the handles when the instrument is positioned for use. To avoid compression to the fetal head, the Elliot forceps provides the sliding pivot on the wooden handles to keep it at a desired distance apart.

Hale's Forceps Circa: 1880

9-015

Hale's Forceps were introduced in 1880 in both long and short sizes. This is the short handled version.

Short forceps with German lock (the shank of the left branch bearing a pivot with a broad, flat head, while the right is provided with a notch which corresponds to the pivot.) Ebony cross hatched handle, unplated steel. 27 cm (10 1/2").

The small handles were deliberately made this way to prevent undue pressure being applied to the fetal head during delivery.

Busch type forceps by Leiter in Wein c1900

9-016

Johann David Busch (1755-1833) is credited with introducing finger rests or flanges, at the proximal end of the handles to allow for oscillating traction. His son D.W.H. Busch (1788-1858) improved on the original design by elongating the handles and a marked pelvic curve.

German lock forcep Hodges Type D. Simal maker c1900

Mid 1900s modern style forceps

Gynecology

1880 Breast Pumps

This c.1880 brass breast pump is in its velvet lined mahogany box. The glass cup was placed over the nipple and milk aspirated with the use of the brass pump.

These were common adjuncts to the Victorian household but in the absence of refrigeration were not used to store and feed to babies later, as commonly done today, but for relief of congested breasts of mothers who did not want to breast feed.

In the late 18th and early 19th century the poor infant mortality associated with babies wet nursed in care homes resulted in maternal breast feeding being encouraged as a wholesome practice. The first artificial food formulas were introduced in 1867. In the following decades maternal breast feeding fell from fashion and artificial feeds were promoted by many doctors as being better alternatives, however, today we realize that breast feeding is the best choice for newborn babies.

The glass collection bottle had varying shapes to catch the extracted breast milk.

Midwife Stork Clamp

A delightful rare late 18th / early 19th century European, silver stork forceps/ clamp.

An attractive feature is the cocooned baby on the inside of the stork's stomach, visible only when the scissors are open.

They are made of solid silver and the midwife would have used these to clamp the umbilical cord following delivery. This is though the function most commonly attributed to them.

Vaginal Specula

The use of specula to aid visualization of a body cavity is thought to date back to 1300 BC. References to such an instrument can be found in works by Galen and Paracelsus. It was not until much later that the specula specifically for vaginal use was developed.

The vaginal speculum was introduced to gynecology in 1801 by Joseph Claude Recamier. His first vaginal speculum was a slender tin tube five inches long he used to introduce treatment for cervical ulcers. Later he widened this tin conical tube to inspect the cervix. Some doctors considered the speculum essential for an adequate pelvic examination, while others regarded it as unnecessary and objectionable. "The use of the speculum was, for respectable women, a serious sacrifice of their delicacy." The vaginal speculum underwent numerous modifications since Recamier's time.

Fergusson's vaginal specula c1850

These are tubular specula made from glass with the inner surface mirrored so as to reflect as much light as possible and the outer surface covered in black gum. Because of the fragile nature of these pieces few survived through to the 20th century intact.

Obliquely cut milk glass vaginal specula c 1860

"If I have seen further than others, it is by standing upon the shoulders of giants."

– Sir Isaac Newton

MICROSCOPES

So remarkable was the invention of the light microscope! An instrument that enables the human eye, by means of a lens or combinations of lenses, to observe enlarged images of very tiny objects.

During the 1st century AD (year 100), glass had been invented and the Romans were looking through the glass and testing it. They experimented with different shapes of clear glass and one of their samples was thick in the middle and thin on the edges. They discovered that if you held one of these "lenses" over an object, the object would look larger.

Magnifiers and "burning glasses" or "magnifying glasses" are mentioned in the writings of Seneca and Pliny the Elder, Roman philosophers during the first century A. D., but apparently they were not used much until the invention of spectacles or glasses, toward the end of the 13th century. They were named lenses because they are shaped like the seeds of a lentil.

The Simple Microscope

The earliest simple microscope was merely a tube with a plate for the object at one end and, at the other, a lens which gave a magnification less than ten diameters -- ten times the actual size. These excited general wonder when used to view fleas or tiny creeping things and so were dubbed "flea glasses." The bi-convex lens was fixed on a mount.

The 'inventor' of the microscope is lost to history, however, microscopy as we know it was possibly introduced by the Dutch spectacle makers Janssen.

Compound Microscope (Monocular)

About 1590, two Dutch spectacle makers, Zaccharias Janssen and his son Hans, while experimenting with several lenses in a tube, discovered that nearby objects appeared greatly enlarged. They found that magnification could be increased by adding a second lens (the objective) to that of the simple microscope (ocular or eye lens).

The first compound microscope was made in 1590 in The Netherlands by Hans Lippershey, Zacharias Jansen, and Hans Jenssen, all eyeglass makers. It was capeable of maginification of specimens up to ten times when fully extended. That was the forerunner of the compound microscope and of the telescope.

In 1609, Galileo, father of modern physics and astronomy, heard of these early experiments, worked out the principles of lenses, and made a much better instrument with a focusing device. Galileo heard of their experiments and started experimenting on his own. He described the principles of lenses and light rays and improved both the microscope and telescope. He added a focusing device to his microscope and of course went on to explore the heavens with his telescopes. The early simple "microscopes" which were really only magnifying glasses had one power, usually about 6X - 10X

In 1632 Stelluti published his Anatomy of the Bee as Revealed by the Microscope and the Italians were at the forefront of microscope development in this period.

The name "Microscope" which some claim was invented by Giovanni Faber was in common use from the 1650's.

Anthony Leeuwenhoek (1633-1723) of Holland became very interested in lenses while working with magnifying glasses in a dry goods store. He used the magnifying glass to count threads in woven cloth. He became so interested that he learned how to make lenses. By grinding and polishing, he was able to make small lenses with great curvatures. These rounder lenses produced greater magnification, and his microscopes were able to magnify up to 270X

Anthony Leeuwenhoek became more involved in science and with his new improved microscope was able to see things that no man had ever seen before. He saw bacteria, yeast, blood cells and many tiny animals swimming about in a drop of water. From his great contributions, many discoveries and research papers, Anthony Leeuwenhoek (1632-1723) has since been called the "Father of Microscopy".

Our collection of microscopes includes many for different purposes. The microscope details and intricate working parts are extremely well made and still function well and smoothly to this day. Some of the microscopes are hundreds of years old and continue to focus and give very fine images under the lens. The hand made work and expertise that was put into these microscopes cannot be found today.

The microscope was an important part in the doctor and surgeon's treatment and diagnosis. A microscope would have been essential in a doctor's office many years ago. Today's surgeons do not need to rely on the use of a microscope in their daily practice, there are many specialized labs and individuals who read and analyze microscopic results and report data to the doctors and surgeons. Microscopic analysis is now a complete independent field of study.

Culpeper Microscope (monocular) 1810

All brass larger Culpeper microscope signed in copperplate script on the stage Dolland London. The microscope is a polished mahogany case on dark French polished mahogany box base with an internal drawer. It is made of solid mahogany unlike later versions in which veneer was used. Dove tailed joints are present at the back.

The Culpeper has a tripod base with a sliding tube for focusing.

The microscope diamond shaped feet hold the scrolled legs which slot into the circular stage plate. The stage plate is pierced for accessories. The long nosepiece is engraved 2- 5 with the numbers of the objectives so the

user can set the leiberkuhn carrier to the correct height. The eyepiece has a single field lens and a single lens at the top. The microscope accessories consist of five ogjectives engraved 1 to 5 and a bone talc box.

The Dolland microscope was made in 1810 and would have been built by the firm of Peter and George Dolland who worked from 1805 – 1820 at St Paul's Churchyard in London.

Optically the microscope is fully functional with good clear magnification. It is extremely well preserved and in excellent condition, for being over 200 years old.

Bausch and Lomb c. 1896

The Grand Model Continental Microscope

The "Grand model" was the top-of-the-line instrument produced by the firm at the end of the 19th century. Fully equipped, it cost $200.00 in 1898

The stand if of the finest brass throughout. The base is claw shaped and prolonged at the back to virtually form a tripod base. The stage is large size and it is fitted with a vulcanite plate. The substage consists of three parts arranged above each other. All move separately and can swing laterally. The Iris Diaphragm can be adjusted to control light entering the objective. The Abbe condenser swings laterally free for changing accessories.

For its time is was a highly advanced microscope. I was perfect in design and construction and allowed the operator many fine adjustments to maximize viewing.

Paul Waechter Berlin Antique brass Trichinen Microscope Stativ X Microscope c 1889

It features pivot lenses with a dual plate glass compressorium.

It is an antique lacquered brass and black metal specialty microscope manufactured by the German optician, Paul Waechter, of Berlin-Friedenau, Germany. Trichinoscope (In German: "Trichinoskop").

The microscope featured here is especially designed for the examination of raw pork for the presence of Trichinae.

Trichinella spiralis is a tiny nematode worm that is responsible for the serious parasitic disease, Trichinosis. The cause of this disease was finally discovered in the 1870s and these specialty microscopes were developed mainly in Germany for the microscopic examination of pork. This is a fine sample in good condition and functional.

Students microscope monocular c. 1890

Heavy Base and Arm of cast iron, the body and all other parts of well finished brass. a plain Stage with spring clips for holding the object slides. The brass body has an extension draw tube that is adjusted by the single focus hand piece. The mirror is mounted with universal motion on jointed bar. A simple but functional apparatus for the student. These would be found in many colleges and universities of the time.

Miniature French Microscope c.1860

Small brass Pillar Microscope 4 3/8 inches tall

Made of brass throughout, the case is for the slot – mounting microscope. It stands 4 3/8 " tall with circular base. There is a vertical rear pillar, drawtube focusing with fixed stage and gimbaled mirror. Condition is fine with some spotting to the lacquer and is complete with preparation slides mounted under glass.

Antique Henry Crouch Twin Eye Binocular Microscope. Brass . Dates from around 186.

Extremely large marked 'Henry Crouch London', a renowned maker of scientific instruments also there is the original prism in a drawer at the base of the turret.

This is a very large microscope approximately 22" high with a complex stage and sub stage assembly. 22" (56cm) high, 10" (25.5cm) deep, 7" (17.7cm) wide

Comprising, rack and pinion focussing with micrometer adjustment, Wenham prism and triple nosepiece. The circular stage is calibrated 0°-360° rotation and is fitted with mechanical stage and a large substage condenser and a large fully articulated plano-concave mirror. the eyepieces with rackwork adjustment above the rackwork coarse focu. Prism box mounted above the single objective, Various lenses and accessories are present and complete microscope pivots on shaped base marked Henry Crouch – London.

C 1865 Compound microscope by J Parkes and Son, Birmingham

Black and brass compound microscope with tripod base. Rotating mirror and fine adjustment tuning pinion at top of the limb. The stage plate is brass. There is a rotating disc with multiple sized apertures to allow light to enter. It is engraved Medical Supply Association - distributors for

J. Parkes and Son Birmingham, makers of scientific instruments. This was a limited demonstration model to show fine mechanics to interested purchasers.

1895 R and J Beck Antique Brass Microscope

An R. & J. Beck, London, brass microscope numbered 19870, with triangular base. Produced from 1867-1894. 15.75" (40cm) high. It is an all lacquered brass single pillar microscope. There is rack & pinion main focus and thumbwheel fine focus. The plano-convex mirror is mounted on an articulated arm from the joint, which allows it to be swung to the side of the stage for oblique illumination. All this pivots on a compass joint above a fine solid brass pillar rising from a flat triangular form base.

Bulls Eye Condenser c. 1870

The bulls eye lens condenser was used with an oil lamp flame that would be focused

onto the object to be examined by means of a plano-convex lens. This could be on a stand as shown or fixed to the microscope. The bulls-eye lens could be used in this way with modern electric lighting as well to increase illumination to the specimen.

It can be used to cast a direct beam onto a specimen, or can be positioned to pass the light onto the mirror and then through the subject. To broaden a light source and smooth it out over a large area, such as the sub-stage microscope mirror, the plane side is kept toward the microscope.

For throwing a pin point of light onto a specimen, the convex side is turned toward the subject and the plane side towards the light source. Used correctly, the bull's eye condenser can be a great asset in the control of lamplight, daylight or electric light.

Our sample is a good high magnification scientific "bullseye" lens.

Made from brass, the stand is telescopic. The lens is convex. Extended the stand is 7.5 inches (19cm) high. Retracted it is 5.25 inches (13.5cm). The arm is 4 inches (12.5cm) long. The lens itself is 1.5 inches (approx 4.2cm) in diameter.

Antique small students microscope – Victorian drum microscope 1880

The drum microscope was apparently invented by Benjamin Martin about 1730, and original versions were first made of cardboard and wood, sometimes with ornate leather covering. This design is grossly inferior to even early 19th century microscopes, but compared to others remained one of the least expensive to produce. For this reason the production of drum microscopes, initially non-achromatic, continued for many years and even into the twentieth century. They were equipped with achromatic objectives by the French, but usually nonachromatic objectives by the English.

Antique tripod magnifier for specimens in case c 1890

The focal length can be adjusted via a screw thread mechanism in the lens surround.

The magnifier stands 1.75 inches (4.4 cm) high and is 1.75 inches (4.4 cm) across the widest part of the top. Would have been used to view specimens and documents.

"Just because a man lacks the use of his eyes doesn't mean he lacks vision"

- Stevie Wonder

OPTHAMOLOGY

Ophthalmology is the branch of medicine that deals with the anatomy, physiology and diseases of the eye. An ophthalmologist is a specialist in medical and surgical eye problems. Since ophthalmologists perform operations on eyes, they are both surgical and medical specialists.

Some of the earliest know information written about the eye is from the Indian surgeon Sushruta. He wrote Sushruta Samhita in Sanskrit in about 800 BC which described 76 ocular diseases (of these 51 surgical) as well as several ophthalmological surgical instruments and techniques. He has been described as the first cataract surgeon.

Medieval Islamic Arabic and Persian scientists also had numerous contributions regarding the study and treatment of the eyes.

Ibn al-Haytham (Alhazen) an Arab scientist with Islamic beliefs wrote extensively on optics and the anatomy of the eye in his Book of Optics (1021).

Ibn al-Nafis an Arabic native of Damascus wrote a large textbook, The Polished Book on Experimental Ophthalmology, divided into two parts, On the Theory of Ophthalmology and Simple and Compounded Ophthalmic Drugs.

The progression of the study of the eyes continued and the prominent opticians of the late 19th and early 20th century included Ernst Abbe (1840–1905), a co-owner of at the Zeiss Jena factories in Germany where he developed numerous optical instruments. Hermann von Helmholtz (1821-1894) was a polymath who made contributions to many fields of science and invented the ophthalmoscope in 1851. They both made theoretical calculations on image formation in optical systems and had also studied the optics of the eye

Antique Model Eye c 1880

This anatomical eye is made from gypsum and hand painted inside and outside. The inner central compartment which would hold the vitreous and aqueous humor is made from glass, as is the lens and the conjunctiva. The internal retinal hemisphere is made of a type of composite. It is complete with all parts and measures 17 cm high. It was used in an old medical school.

Fischer Schematic Eye c 1900

The Fisher Schematic Eye was a model used to practice the use of the ophthalmoscope and evaluate eye diseases for students of opthamology.

The apparatus was designed by William A. Fisher in 1907. Dr. Fisher (1859-1944) was president of the Chicago Eye, Ear, Nose and Throat College. The model comes with twelve inserts of twenty-four fundus illustrations (two normal, two congenital, and twenty pathological).

The set consists of a barrel-shaped viewer on a cast iron stand, with lens and a diaphragm like shutter for viewing disc simulations of the interior of the eye. The viewer has a lens to represent the crystalline lens of the human eye, and a diaphragm shutter to represent the iris that when fully open represents a pupil of 30 millimeters. A retina simulation disc can be put into the viewer, and then the student with an ophthalmoscope can look inside the viewer as if looking into an eye. This is also known as a "Skiascopic Model Eye". It shows the retinal image in

the rear. Doctors trained with these to learn how to examine the fundus of the eye and to perform retinoscopy to determine the refractive error of the eye. It is identified to be early 1900s. It is made of brass (painted black) and inside the barrel is a detailed print of the inside of an eye. It is made of brass with printed retinal image on focusing slide in a dark chamber, visible through the lens and with a mount and astigmatism scale for use with standard corrective lenses.

The set consists of a cast iron barrel-shaped viewer on a stand with a lens and rotating disc to hold the slides. There are 12 color printed slides of the interior of the eye for the observation of these conditions.

Ophthalmometer

This is a device used to quantitatively examine corneal irregularities and astigmatism. There is a telescope on examiner's side to see the light reflexes of the projected images on the patient's cornea. It is made of painted and unpainted brass and wrought iron. Marked C.I. Ophthalmometer, PAT Aug 22, 1899 Chicago, Ill USA. Measures 23" X 23 length X 12" wide.

Opthalmophantome c1900

The Opthalmophantome is an antique surgical tool used to train ophthalmologists circa the 1800s..

A rare c. 1890 classical head ophthalmophantome that was made by George Pilling and Son, Philadelphia. These ominous looking contraptions were cast in iron.

It is signed by Pilling twice on the cast iron base and on each porte-oeil (eye carrier). The mask phantom was invented ca. 1827 by Dr. Albert Sachs (1803-1835), an ophthalmologist practicing in Berlin, and it was used to teach ophthalmic surgery with practice upon cadaver's eyes or pig's eyes (similar in size to the human eye and readily available). The orbs (eye orbits) are held in place by spring-loaded concave disks that push them against a ring of prongs. Both of these porte-oeils (eye carriers) removable sockets are present. The set screw at the center of the throat allows the head to be tilted back to various positions. This Augustan style, full classical bust is the most desirable of the various types of antique ophthalmo-phantomes.

Follins type Opthalmoscope 1865 French with ivory handle

Francois Follin (1823-1867) was a French ophthalmologist.

The opthalmoscope is a staple instrument of the optometrist. Introduced in the 1850s it was the first proper device for examining the interior of the human eye by means of a beam of light which illuminates otherwise invisible tissues.

Mortons type cased opthalmoscope 1890

Morton used the lens arrangement that another ophthalmologist John Couper had reported in 1883. Twenty nine lenses are arranged in a closed chain of lenses and seventeen concave ones. There is also a disc that has an empty opening. Most models have the large concave mirror and plano mirror that can be flipped to make a selection.

Antique human skull with optical nerves display for study in medical school. c1890.

This is an actual split human skull with hand made optical nerve display for students to observe in a medical school from the United States

It has a delicate pattern of cords hand built to display the 3D anatomy of the optic nerves. It would allow students to view the pathways of the optical nerves in an accurate display.

PICTURE PICTURE PICTURE

Allen and Hanbury early 1900 Opthalmoscope

Schoetz Tonometer early 1900

Tonometers measure the internal pressure of the eye and tonometry is one of the principal tests for glaucoma, but until relatively recently their use in the eye examination was far from routine.

The link between ocular pressure and what was later identified as glaucoma seems to have been recognized as far back as the 10th century AD by Al-Tabari an Arabian surgeon. By 1622 Bannister was discussing the use of the fingers by the practitioner to feel for the pressure. This is called palpation or (confusingly, given the other modern meaning of the word) 'digital' tonometry.

The principal technique however has proved to be tonometry.

PICTURE OF PROCEDURE

In 1862 Von Graefe, a professor in Berlin, was the first to design an indentation tonometer for testing the pressure of a seated patient's eyeball and reading it off a scale. The instrument recorded the depth of indentation caused on the eye by a known weight.

In 1865 Donders designed the first tonometer intended for use against the sclera, the white part of the eye and Priestly Smith would independently come up with something similar in 1884.

However the tension of the eye was still most often measured by pressing a finger onto it, with all the consequent risks of infection.

Impression Tonometers

Professor Hjalmar Schiøtz, the first Director of the Eye Department at the Rikshospitalet, Oslo, from 1897 devised his impression tonometer, originally for use against the sclera of the eye, in 1905. He then developed this into a corneal plunger. The higher the pressure of the eye, the lower amount of indentation would result.

For the next half century the Schiøtz was generally accepted as a reliable means of measuring IOP and became the first tonometer to achieve mass sales.

Schiøtz manufactured the instruments personally and from the 1920s offered a calibration service in Norway for some years before licensing various companies, including Weiss & Co and Theodore Hamblin Ltd, to produce it. At the time of its introduction it had the advantage that the pressure of the fingers in steadying the instrument was virtually nil.

The Schiøtz was offered as a 'traditional' instrument but it is now rarely used in the developed world.

Perrin Artificial Eye c 1910

Maurrice Perrin (1875–1956) was a French physician and professor of medicine.

This artificial eye consists of a hollow brass ball, representing the eye, and it is mounted on a vertically adjustable stand with a heavy brass base. The dark screen is used in viewing. This phantom eye can turn through 360 degrees and can nod up and down. All three original lenses are included in the set, with dioptric powers corresponding to a hypermetropic, an astigmatic and an emmetropic eye. On the back of the ball could be placed 12 different brass discs painted on the convex side with the different/common retina diseases. There is a shutter at the back of the ball, in which 1 of 12 normal or pathological representations of the posterior part of the eye can be placed, each painted on a concave copper disc. A projection screen can be fitted to an arm attached to the stand.

Perrin notes that this screen is intended to allow a beginner to see the movement of the ray of light through the lenses.

Eye Irrigation/vaporizer c1910

A brass eye vaporizer c 1910. It is signed by Collin etc. Heated air was under pressure from the bulb boiler and then water in bulb is sprayed into the eyes as a vapor. The distance was determined by adjustable nose bridge support. It was used for relief of many eye ailments causing itching and burning eyes. The water inside the bulb was heated by a candle or oil burner.

Hardy Optometer

A fine example of an optometer in lacquered and chemically darkened brass, ebonised turned wood handle and steel, made by and marked F A Hardy & Co Opticians Chicago Illanois. Patented 29th April 1902.

The eyepiece is held to one eye and the brass screw on the main stem is turned until the disc comes into clear focus. The single lens in the sighting tube allows focusing on the target which is adjustable by rack and pinion against scales Concave/Convex. (divided every quarter diopter from -9 to +14)

This measures the correction required for reading glasses. Has a rare brass eye shield for the untested eye. Built to a very high standard and in perfect working order 100 years later.

The concept of measuring eyes is basically the same today although machines are much more intricate the readings with the Hardy optometer are still accurate.

Collection of Antique Artificial Eyes

An ocular prosthesis or artificial eye is a type of craniofacial prosthesis that replaces a natural eye.

The earliest known evidence of the use of ocular prosthetic was in Iran dating back to 2900 BC. It was made of bitumen paste with surface of they eye being covered with a fine layer of gold.

Early artificial eyes were made of glass termed "glass eyes" by the Venetians and they were crude and uncomfortable. Modern ocular prosthetics have evolved to spherical and oval shapes made of acrylic, glass or silicone. Fine detail and art work make them appear extremely natural and undetectable.

Pocket Opthalmic Surgery Kit 1880

A complete cased set of ophthalmic surgical cataract knives. They are ebony handles with green silk lined case. Cataract lancets were used for eye operations.

"To do nothing is also a good remedy."

- Hippocrates

ANTIQUE MEDICAL TEXT BOOKS

Two great names - Hippocrates and Galen - stand out in the history of medicine. The influence of ancient medicine is still present in modern treatments. Even today, despite technological, methodological, and experimental advances in medicine, many of the basic foundations in medical teachings date back to ancient times.

Hippocrates and Galen are two of the earliest and most frequently cited influences on the development of medicine.

Hippocrates

Hippocrates dominated the beginning of a period of remarkable scientific creativity, which lasted more than seven hundred years. The Hippocratic corpus is the first to mention the theory that the body is composed of four "humors" or liquids. Blood, phlegm, yellow bile and black bile. The balance of these was

believed to balance the state of health in the body. It reflected the belief that the state of the world was determined by the four elements (earth, air, fire and water).

The Hippocratic Oath

The Hippocratic Oath (Ορκος) is perhaps the most widely known of Greek medical texts. It requires a new physician to swear upon a number of healing gods that he will uphold a number of professional ethical standards. It also strongly binds the student to his teacher and the greater community of physicians with responsibilities similar to that of a family member. In fact, the creation of the Oath may have marked the early stages of medical training to those outside the first families of Hippocratic medicine, the Asclepiads of Kos, by requiring strict loyalty.

Over the centuries, it has been rewritten often in order to suit the values of different cultures influenced by Greek medicine. Contrary to popular belief, the Hippocratic Oath is not required by most modern medical schools, although some have adopted modern versions that suit many in the profession in the 21st century. It also does not explicitly contain the phrase, "First, do no harm," which is commonly attributed to it.

The Hippocratic Oath

I swear by Apollo the physician, and Asclepius, and Hygieia and Panacea and all the gods and goddesses as my witnesses, that, according to my ability and judgement, I will keep this Oath and this contract:

To hold him who taught me this art equally dear to me as my parents, to be a partner in life with him, and to fulfill his needs when required; to look upon his offspring as equals to my own siblings, and to teach them this art, if they shall wish to learn it, without fee or contract; and that by the set rules, lectures, and every other mode of instruction, I will impart a knowledge of the art to my own sons, and those of my teachers, and to students bound by this contract and having sworn this Oath to the law of medicine, but to no others.

I will use those dietary regimens which will benefit my patients according to my greatest ability and judgment, and I will do no harm or injustice to them.

I will not give a lethal drug to anyone if I am asked, nor will I advise such a plan; and similarly I will not give a woman a pessary to cause an abortion.

In purity and according to divine law will I carry out my life and my art.

I will not use the knife, even upon those suffering from stones, but I will leave this to those who are trained in this craft.

Into whatever homes I go, I will enter them for the benefit of the sick, avoiding any voluntary act of impropriety or corruption, including the seduction of women or men, whether they are free men or slaves.

Whatever I see or hear in the lives of my patients, whether in connection with my professional practice or not, which ought not to be spoken of outside, I will keep secret, as considering all such things to be private.

So long as I maintain this Oath faithfully and without corruption, may it be granted to me to partake of life fully and the practice of my art, gaining the respect of all men for all time. However, should I transgress this Oath and violate it, may the opposite be my fate.

Translated by Michael North, National Library of Medicine, 2002.

Galen, both furthered scientific knowledge and documented it in an amazing volume of written works.

Galens Contributions to Medicine

In the beginning there was Galen. Galen of Pergamum (c129 – 216) emerged as the central figure in medicine not only in the Greek but also in the Latin, Syriac and Arabic traditions.

While next to nothing is known of Hippocrates as a person, many facts concerning Galen's life are well documented; and the facets of his personality are interjected repeatedly into his voluminous writings

Galen's writings and teachings were marked by brilliant observation and theoretical application. His experiences dominated medical thinking and practice for fifteen hundred years. More than a few of Galen's astute observations are in accord with modern medical beliefs. His errors were not seriously challenged in medical thought and teaching until the anatomist Vesalius, in 1543, and the physiologist Harvey, in 1628, courageously questioned the infallibility of Galenic authority and effectively substantiated their findings through demonstration.

Galen was born in 129 A.D., in the Greek city of Pergamon in Asia Minor (now Turkey), seat of one of the largest temples of Asclepius and also of one of the "seven churches which are in Asia," addressed by the Christian Saint John (Revelation 2) in the first century. Galen was the only child of the architect, Nikon, a man who took a deep interest in the boy's education.

Named Galenos (meaning calm or serene), the boy's education was supervised by his father on the family farm until he was 14; then he was taken to Pergamon to attend lectures in philosophy and in mathematics. Then, according to Galen's own writings, Nikon had a dream, directing that his son study medicine.

Galen began the study of anatomy in Pergamon at about age 17, continuing there until his father's death; this was followed by study at great centers of learning of the Greek world at Smyrna, Sorinth, and Alexandria, during which he added medical subjects to his growing store of knowledge.

About the year 158, Galen, at age 28, returned to his home town of Pergamon. The head priest at the Asclepieon appointed him physician to the gladiators. This provided him a great opportunity to study not only practical applications of hygiene and medicine, but living anatomy, as revealed by terrible wounds suffered by contestants whom it was his duty to treat.

Four years later, the restless young physician departed for Rome, then capital of the world. There, he soon acquired great fame through spectacular diagnoses and modes of treatment, public lectures, discussions, physiologic demonstrations, and writings. His reputation grew to the point where he was called to examine the Roman emperor was suffering from indigestion, as opposed to the complicated theories of other physicians on the scene, won him an appointment as court physician.

Galen returned to his home town of Pergamon. Presumably he continued to travel and to write until his death at 70, at the dawn of the third century.

The medicine and pathology Galen practiced, and about which he wrote, were based mainly on the speculative Hippocratic theories of the four humors, on critical days, and on fallacious theories regarding pulse and urine. Despite his mixture of rational science with philosophic speculation, Galen was a good observer and shrewd clinician. Galen's theory was a more sophisticated theory of the balance of the four humors.

With pride he tells how he explained a patient's puzzling sensory disturbances in the fourth and fifth fingers as due to infraction of a vertebra in the neck resulting from a fall from a horse, treatment of which cured the condition. He tried to differentiate between blood spitting and blood vomiting, between colic from kidney stone and colic from the intestines. He also understood well the psychosomatic element of illness.

Galen was the first physician to use the pulse as an indicator of illness when compared to the normal pulse. Galen used pulse observations to diagnose diseases and symptoms such as fevers

He greatly advanced medicine in a number of areas. His anatomical experimentation on live animals advanced the understanding of the body. In dissecting animals Galen cleared up a great number of basic anatomic problems; among them was the origin of blood vessels in the heart and of nerves in the central nervous system. His description of anatomy of bones and muscles is excellent, considering that it was gained from monkeys and pigs

He demonstrated the nature of arteries, of ureters, of recurrent nerves, and of the spinal cord; he had ideas concerning function of motor and sensory nerves; and he appreciated states of tonus and of contraction

He also showed that severing nerves at different locations along the spinal cord produced varying levels of paralysis (Temkin 14; Fishbein 25; BBC [a]). These experiments and anatomical examinations led to the discovery of seven of the ten pairs of cranial nerves and the identification of many spinal nerves (Nutton 1998; Galen, 1962).

His works on drugs are milestones in the evolution of pharmacology.

In the fields of therapy and of pharmacy, Galen is remembered mainly for his extremely complex prescriptions, sometimes containing dozens of ingredients. Formulas of the type make up a class of pharmaceuticals still called "Galenicals." He documented compounding elements and increasing amounts relative to the patients illness. Proper medicinal dosing is still a crucial aspect of modern medicine that was started by Galen nearly two thousand years ago.

He followed Hippocratic tradition by treating patients for numerous conditions by using diet and physiotherapy alone. He was extremely interested in hygiene

and prevention of disease, the importance of which he put above treatment, and about which he wrote several books.

Galen was an able surgeon in his youth, but gave up surgery in Rome, since fashion regarded such manual activity as no longer proper for a learned physician.

Arabic Writings/Translation

Galen's accomplishments were so significant and his written works so numerous that they defy cataloguing. His subjects covered dietetics, pathology, therapeutics, pharmacy, anatomy and physiology, hygiene, medical philosophy, and Hippocratic commentaries- indeed a universe of thought.

He wrote more than 440 titles of which we know of. He offered a all encompassing description of medicine that subsequent generations have continued to read in every language.

Written in Greek, this Galenic treasure did not reach the Latin western world except through an Arabic detour. Byzantine physicians built up Galen's glory, and admiration of his teaching was transmitted to Oriental Christians and to Moslems.

His works were translated from Greek into Syriac, and from Syriac into Arabic. Then, in the eleventh and twelfth centuries, Arabic versions and commentaries were translated into Latin. Some of Galen's original treatises are completely lost; and some have been recovered only from these Arabic translations.

The profession of medicine gained a wealth of facts and ideas from Galen. He gave to the world a synthesis of medical thought and knowledge solid enough to last nearly fifteen hundred years.

Galen was a pillar of medicine; the last important pillar in the millennium of Greek domination of the medical world. He was a spectacular scientist in his day.

ANTIQUE BOOKS IN THE DISPLAY INCLUDE

Hippocrate & Anuce Foes. Opera Omnia Quae Extant. C.1596

8vo (7x4,2 inches) of [12] ff., 1188 pp.,

Second edition of the estimated Latin translation given by Anuce Foes of Works of Hippocrates.
Important issue of the works of Hippocrates, in a beautiful antique binding.

The printed editions of Hippocrates'complete works which were published during 16th Century are the first to reveal to the public a corpus of approximately sixty medical textbooks : these are assumingly attributed to Hippocrates of Cos, who was a physician born in 460 B.C. and who died between 375 and 351 B.C.

Before the Renaissance only some textbooks from Hippocrates were known. These had been translated into Latin during the Middle Ages and had spread through the "Articellae", whereas Galenus was considered as the main ancient author conveying Greek medical doctrine.

In 1595, the physician from Metz, Anuce Foes (1528-1595) had a bilingual edition published including numerous notes: its Greek text remains nearly exactly the same as it was in 1538, whereas its Latin translation is often retranslated.

GALEN, Claude (129 AD – 216 AD)

Original 1550 Publication of one of the most important anatomical and physiological works of Galen – USU PARTIUM

Claudius Galen was a second century physiologist, philosopher, and writer who is often considered the most important contributor to medicine following Hippocrates. Born in Pergamun (Bergama) Turkey he made extensive discoveries on the anatomy and physiology of the human body. He furthered scientific knowledge and documented it in an amazing volume of written works transcribed in over 20,000 pages.

Galen's De usu partium (second century A.D.) —On the Usefulness of the Parts of the Body. was one of the most important ancient contributions to physiology and anatomy and this work greatly influenced the development of those subjects in the Renaissance

Considered the founder of pharmacy – the Oath of Galen is still sworn by doctors of pharmacy at the end of their studies. Galen established the model of Islamic medicine which spread throughout the Arab empire. Many of his works were translated into Arabic. One of the Arabic translations, 'Kitab ila Aglooqan fi Shifa al Amraz', which is extant in the Library of Ibn Sina Academy of Medieval Medicine & Sciences, is a master piece of all literary works of Galen.

\Arabic Medical manuscript by David bin Omar Antioch titled "Bogiat Almohtaj Fi Almojarrab Min Al'ilaj Fi Altib

Arabic Medical manuscript by David bin Omar Antioch titled "Bogiat Almohtaj Fi Almojarrab Min Al'ilaj Fi Altib", or in English (Order needy in the tempter of treatment). It is one of the earliest handwritten copy of Al-Intaki original manuscript. He died in 1008 AH (1599 AD); and this copy is dated 1041 AH (1631 AD), which means just 33 years after his death. The book is unbound and precious owner had made a new leather cover. It contains an Index in the beginning. Unfortunately, 2 leaves from the index are thorn and missing almost the half. The first page is illuminated with gold and a beautiful ornament. The second page is also illuminated with gold and a golden frame. The text is plenty with description of diseases and drugs and management procedures like how to:

treat poisons, medicines vehicle, treatment of oral diseases, treatment of diseases of the eye, treatment of diseases of the head, treating ear diseases, treatment of diseases of the nose, treating wounds and fractures, treatment of diseases of the breast tumors, treatment of diseases of breathing and heart.

The text is framed in red – colored frames and shows the beautiful Arabic Calligraphy. The leaves exhibit foxing and are affected by humidity and some dirt. However, the text is not seriously affected. The spine is tight and no damage on the paper's borders. It is formed of 174 leaves with 347 pages. It measures 21.0 cm x 15.0 cm x 2.0.

Arabic manuscript on Medicine: Miftah al-Shifa' (Key to the cure)

48 folios + several inserted leaves.

Dimensions: 19 x 21.6 cm

Undated. The book has been separated from the other manuscript written by the same scribe which wrote it in 1807 A.D.

New rebinding.

Parerga Anatomica et Medica 1736

Parerga Anatomica et Medica Septem, Ratione & Experientia Parentibus Concepta & Edita.

Editio Tertia prioribus Emendatior.

Cui Subjungitur Observatio Circa Urachum In Foetu Humano pervium.

ut & Johannis Jacobi Peyeri,M. St.

Johannis Conradi, Fil.

Observationes quaedam Anatomicae

In homine non minus post mortem

quam in brutis avibusque viventibus ac mortuis

contemplando notatae secando.

Lugduni Batavarum, Apud,1736. Most rare medical volume. Rebound in full leather. 264pp. + index + 115pp. 4 x 6.5 inches. Anatomy, medicine, fetus, surgery, animals and birds, & more.

Johann Conrad Peyer was born into a patrician family, Peyer studied medicine in Basel before becoming the pupil of J. Guichard du Verney at Paris and later of Vieussens at Montpellier. He then returned to his native Schaffhausen, where, with his teacher Johann Jakob Wepfer and the latter's son-in-law Johann Conrad Brunner, he formed the"Schaffhausen trio," whose important contributions to the new methodology of medical research were the explanation of symptoms by connecting them with the lesion in the body, considered as the site of the disease, and experimentation on animals (anatomia animata) to study either the functioning of organs or the effects of medicines on the

Peyer also studied the stomach of ruminants in his Merycologia (1685) and the anatomy of normal and abnormal fetuses. He probably assisted Brunner in his pancreatecdtomies on dogs. These operations resulted in diabetes, but neither Peyer nor Brunner could interpret the results obtained (1683).

In 1681 he succeeded in making the hearts of dead animals—and even of human beings who had been hanged—beat by blowing air into the veins or by utilizing other stimuli. Despite his imperfect technique he achieved an artificial cardiac activity lasting several hours

A System of Surgery by Benjamin Bell First American Edition 1791

Benjamin Bell of Hunthill FRSE FRCS Ed (6 September 1749 – 5 April 1806) is considered to be the first Scottish scientific surgeon. On 17 November 1783 Benjamin Bell was elected a founder Fellow of the Royal Society of Edinburgh.

He is commonly described as the father of the Edinburgh school of surgery, or the first of the Edinburgh scientific surgeons. He published medical works of significance, notably his surgical textbook A System of Surgery which became a best seller throughout Europe and in America. His treatise on venereal disease was the first to suggest that syphilis and gonnorrhea were different diseases, a hypothesis which was not accepted by mainstream medicine until many decades later.

Bell's main contribution to surgical practice was his adage 'save skin', which led to improved rates of wound healing in operations like mastectomy and limb amputation. He was also an early advocate of routine pain relief in surgery.

Bell was the progenitor of one of the great Edinburgh surgical dynasties. His son Joseph, grandson Benjamin and great-grandson Joseph (1837–1911) were all surgeons in Edinburgh, and all became presidents of the Royal College of Surgeons of Edinburgh.

Chapter illustrations include amputation tools and techniques as well as prosthetic devices.

Did You Know??

Bell's great-grandson Dr. Joseph Bell (1837–1911), was known for his diagnostic abilities, which depended on his ability to observe minute details.

Joseph Bell worked as a surgeon at the Royal Infirmary of Edinburgh. A young Edinburgh medical student of Dr Bell was the now famous author - Sir Arthur Conan Doyle (1859–1930).

It is widely known that Doyle based the fictional detective Sherlock Holmes from his book on Dr. Joseph Bell because of his keen observations of the patients.

Dr. Bell could distinguish fine details about a patient just by looking at him such as his job, possible causes for illness and make a rapid diagnosis. He could determine a patient's job or trade by looking at the calluses on his hands or what he was wearing. He could assess through small differences the diagnosis of disease. It was this investigative observation that Doyle learned as Bell's student and he applied to the Sherlock Holmes character as we know him today.

"There is a history in all men's lives"

- William Shakespeare

GENERAL SURGERY

Surgery during the four centuries from 1100 to 1500 A.D. was a very crude business. The barber-surgeon developed during these years. The barbers began to lance veins and abscesses as well as to perform amputations of arms and legs. The red-and-white barber pole designated a barber who did surgery as well as haircutting.

The educated physicians avoided surgery during these years. This was to set the stage for later conflict when surgery became a respectable method of treatment. The Barber-Surgeon Company existed officially in England until 1744. However, barbers and surgeons had a clear separation of function for many years before that. The transition of surgery from disrespect to prominence was led by the French master barber-surgeon Ambroise Paré (1510 to 1590) who is considered the father of surgery.

The Surgeon's Hand

Latin, chirurgia, from the Greek, cheir = hand and rgon = work…anglicized to Surgery.

Surgery is the branch of medicine that deals with the physical manipulation of a bodily structure to diagnose, prevent, or cure an ailment.

Since humans first learned to make and handle tools, they have employed their talents to develop surgical techniques, each time more sophisticated than the last; however, until the industrial revolution, surgeons were incapable of overcoming the three principal obstacles which had plagued the medical profession from its infancy — bleeding, pain and infection. Advances in these fields have transformed surgery from a risky "art" into a scientific discipline capable of treating many diseases and conditions.

Surgeons must have a special skill of artistry and precise handling that allows them to be perfectionists in the most technical field of all medicine. This skill is limited to only a select few of doctors who are welcomed into the field of surgery. They are trusted by their colleagues and their patients with the most intimate and delicate treatment of the human body.

The following is a collection of interesting surgical tools that have been used over the years.

ANTIQUE GENERAL SURGICAL TOOLS

Catgut Sutures in Preserved Phial c 1937

These German catgut surgical sutures were part of a war time emergency kit.

Antique Roman Medical Tools

This is a rare group of seven Ancient Roman Bronze Medical Instruments in very fine condition, green and partially brown patina.

Roman Empire, c.1st-2nd Century A.D.

Including one spatula probe (spathomela) with trapezium-shaped blade (13.7 cm long), -- spathomele consists of a long shaft with an olivary point at one end and a spatula at the other – it was pharmaceutical rather than an strictly surgical instrument. The olive shaped end was used for stirring medicaments and the spatula for spreading them on the effected part.

two ear scoops (oricularium specillum), the larger one with a highly decorated shaft (14.2 cm and 9.8 cm in length)

one medical tweezers (vulsella), still "springy" (5.3 cm long),

Usually used for household epilation or removal of hair

one probe (specillum) with beautifully decorated terminal (11.0 cm long),

one medical needle (acus) (17.1 cm long) and one medical chisel (scalprum)

(Measuring 5.0 cm in length)

Another sample of tweezers from approximately same era (left)

All intact and in very fine condition.

Provenance: Ex. German private collection.

Surgical shears, small, bronze, Roman

Year made: 200-500AD The surgical author Oribasius treated the cutting of hair as a medical procedure. It is frequently referred to as a therapeutic measure.

Depuytrens double bistoury cache by JJ Teufel 1880

Ebony crossed handle, triple blade. A bistoury is a knife with a long cutting edge of uniform breadth- the blade may be straight or curved and it is for cutting the internal organs of the body- there are fistula and hernia bistouries.

A bistoury cache (literally "hidden knife") used in the days before anaesthetic for urology procedures such as opening the bladder to remove stones. They were not the exclusive remit of urologists and some (of varying design) were also used for opening anal fistulae and doing hernia operations.

This is a fine example in pristine condition. The blade and handle spring are made from high quality steel and are secured to the ebony handle with gilt mounts. There is an adjustment screw with graduated markings to control the depth to which the blade can open.

Tonsillotome 1850

A 19th century tonsillotome, or tonsil guillotine made from steel, blued steel and with a crosshatched ivory handle. The handle pivots on a hinge from left to right which allows access to either tonsils from the right or left side of the mouth. With the surgeon holding the instrument, the loop (circular blade) would be placed around the tonsil pushing the pointed steel prong forward would anchor the tonsil. The central shaft would be held with one hand and the handle retracted with the other causing the tonsil to be cut. The guarded blades would cut or "guillotine" the tonsil.

Tracheotomy Ivory Handle 1850

The tracheotomy is one of the oldest surgical procedures. It was portrayed on Egyptian tablets dated back to 3500 BC. Asclepiades of Persia is credited as the first person to perform a tracheotomy in 100 BC. The first successful tracheotomy was performed by Prasovala in the 15th Centrury. Reports of tracheotomies can be found in medical literature sporadically from the 2nd – 8th centuries, however, well documented studies did not appear until early 1900s.

Tracheostomy refers to the opening created by the tracheotomy procedure, usually used for emergency treatment of upper airway obstruction.

Ivory handled tracheotomy set would have been used by a high standard surgeon of the day.

Antique silver tracheostomy tube iner and outer cannulas

This is a silver inner and outer cannula tracheostomy set in a wood box.

Divergent grasping hooks of Chassaignac French c. 1875

Made with polished steel fingers "maillechort" metal guidetubes and ferrules and shaped ebony handles with overall lengths of 11 1/8". His "erigne" here was used to grasp and elevate the area to be treated or excised, especially recommended for ligature of hemorrhoids and removal of tumors. The external snares were used to grasp the target, they are spread by withdrawing an internal rod spread to a separation distance set by the position of the guide tube.

Charles Marie Edouard Chassaignac (1805 - 1879) was surgeon in Paris; various instruments (notably his "ecraseur"), surgical operations, and anatomical parts bear his name.

German Early 20th century Military Surgery Set

This Extremely Rare German early 20th Century (early 1900s) military medical surgical set of the well known and respected medical company Aesculap of Tutlingen Germany. The name Aesculap comes from Asclepius, the Greek God of medicine, who is often depicted with his serpent entwined staff as seen on the marking for the company logo.

This was a portable set for the Lazarett field hospitals, suitable to be used in field conditions, at the battlefield. The set goes into an army metal container ensuring its durability in the rough battlefield conditions. All of the instruments are made of stainless steel except some of them that are made of silver (grade 800). Due to the exceptionally high quality of the instruments, these sets were used throughout WWI since a lot of the instruments inside remain unchanged and in use even today. The set is in perfect mint, museum grade condition for its age of over 100 years. The same set is featured in Aesculap's huge catalog from the late 19th century .

Original Aesculap Made SA(Secret Army) Nazi WWII Dagger

It is fascinating that Aesculap was able to include the production of SA daggers with their factory products, which, involved the production of medical instruments and they continue to be one of the world leaders in medical supply.

The dagger is for the SA who were instrumental in getting Hitler to power. In 1921 Adolf Hitler formed his own private army called Sturm Abteilung (Storm Section). The SA (also known as stormtroopers or brownshirts) were instructed to disrupt the meetings of political opponents and to protect Hitler from revenge attacks. Captain Ernst Roehm of the Bavarian Army played an important role in recruiting these men, and became the SA's first leader.

It has the original top and bottom mounts intact with the single silver ring attached with the leather hanger present as well. The blade is full length with a great look. You can still read the "Alles fur Deutchland" which translates to "All for Germany". On the back of the blade base it has the early style maker marking. This one was made by the Aesculap- Tuttlingen with thier single serpent caduceus trademark.

The grip of this example appears to be a mahogany wood , having grain which runs vertical. The matching nickel grip eagle has all details available to the bird's head, breast feathering, wing feathering, legs, wreath and mobile swastika.

Due to their production of equipment for the Nazis by force during the war, Aesculap was later forced to give retribution of money in large amounts to Jews because of their involvement in the war.

Early 1900s Gold Plated Cautery

A fine gold-plated cautery for use with a battery. Probably French in origin and late 19th century in date.

Chassaignac's Ecraseur 1870

A fine nickel plated Chassaignac's Ecraseur with metal handles. This instrument comes with its original chain and is in good working order. It was used for treatment of haemorrhoids. The chain was looped over the offending pile and tightened using the ratchet mechanism hence stopping the circulation by strangulation. It was also used to removed uterine or ovarian tumours and was preferred in these cases because the process of crushing with a chain produced less bleeding than excisions made with with a scalpel..

Early Development Portable ECG Machine

The first EKG machine introduced to the United States was an Edelmann String Electrocardiograph brought by Alfred Cohn in 1909.

The first EKG machine manufactured in the United States was designed by Professor Horatio Williams and built in 1914 by Charles Hindle. Alfred Cohn received the first Hindle EKG machine in May 1915. On May 20, 1915, the first tracing with this machine showed that the patient was having an acute anterior infarction, although it was not recognized at the time.

Through its development its size also was decreased from 600 lbs in 1909 to 30 lbs in 1928.

Emmett's Needle Holder c. 1880

Unplated steel with checkered ebony handle. Made by Katsch, Munich

Early 1900s "Nose Shaper"

Trilety plays on the timeless worry about beauty leading to success in life - and the lack thereof leading to failure. Since success is "your ultimate destiny" (naturally) you need to purchase one of these nose-shapers The ad above is from 1916, So Mr. Trilety of Binghamton, New York, "Pioneer Nose Shaping Specialist," Created to be worn at night and adjusted over time to slowly reshape the nose.

This Nose-Shaper was patented in 1920's.

Complete set, in the original cardboard case with instructions, this is the Italian version.

Padgett Skin Graft Machine

The instrument was used for cutting a skin-graft. The partially cylindrical holder is mounted to roll over the body of the patient and to lift the the skin by means of its adhesive/cement coating just in advance of the blade. The distance between the blade and the cylinder's surface is adjusted by the gauge to give the desired thickness of graft. It was created in 1939 and is named after its inventors, Earl Padgett (1893-1946), a plastic surgeon, and George Hood, a mechanical engineer

Adenotome

Medium size adenotome with finger and thumb rings, reversed action.

Duck – Bill / crane bullet forceps 1600

Needle clamp with large oval handle

Ebony handled cross hatched mini surgical saw with flat rest for finger

Ivory handled scalpel set 1800

Haslam wire grasp tonsillotome

Tuberculosis

Tuberculosis was the most common and most lethal disease in the 19th century. It primarily effected the lungs and the nature of the disease was not known until 1882 when German bacteriologist Robert Koch(1843 – 1910) described the spread by a bacterium "Mycobacterium Tuberculosis". By control of infection, anti tuberculosis immunization and medical treatment mortality from this dreaded disease has dramatically declined.

"Blauer (Blue) Heinrich" sputum flask

Tuberculosis is known to be a disease that produces copious amounts of sputum that need to be expelled. To avoid the spread of the disease and allow patients to dispose of the waste, this egg shaped vessel,made of cobalt blue glass and a metal lid with a rubber seal was used. The inventor of this practical aid was Peter Dettweiler, the head of the Falkenstein TB sanatorium founded in 1876. The pocket vial for TB patients was used as a trap for the infectious sputum. Under the hinged lid lies a silver funnel for receiving the sputum. The base is detachable so that the vial flushes out easily. The transparent wall allowed the viewing to see if it is full.

Mathieu de Paris Eracaseur Brevete

"A generation which ignores history has no past and no future"

- Robert Heinlein

The Value of Islamic Medicine to Current Civilization

The Legacy of Islamic Medicine to Current Civilization

It would take thousands of pages to document the contribution of Islamic medicine to mankind today. In our pursuit of understanding and appreciating the development of current medical advances, we must touch upon the most important contributor to the science of medicine, the Islamic medical discoveries.

They have had a profound impact on historical medicine as well as current theories and development. The Islamic medical pioneers developed a system of healthcare that was at one time the best in the world. Medicine, through these discoveries, evolved into a highly complex discipline from the 7th to the 21st century.

Medicine transcended countries and physicians shared in the scientific discoveries of the Islamic medical world.

Islamic medicine was key in the development of European medical practice as it developed from the 12th century onward.

We will present a very brief overview of some of the most important contributors to medicine from the Islamic world. We hope it can give you an appreciation of how much Arabic and Islamic physicians have played a role in the development and practice of medicine as we know it today.

Yaqub Ibn Ishaq al Kindi (800-873 AD)

There are more than thirty treatises attributed to al Kindi in the field of medicine, in which he was chiefly influenced by the ideas of Galen. His most important work in this field is probably De Gradibus, in which he demonstrates the application of mathematics to medicine. Particularly in the field of pharmacology he developed a mathematical scale to quantify the strength of drugs and a system based on the phases of the moon that would allow a doctor to determine in advance the most critical days of a patients illness.

Al-Razi - Medical Works Have Stood the Test of Time

One of the greatest physicians in medieval medicine and of the Islamic world was al – Razi.

Abu Bakr Muhammed ibn Zakariya al Razi (c865 – 925) was from the city of Rayy (near Tehran) but practiced in Baghdad. He wrote about medicine and philosophy.

During his lifetime he wrote nearly 200 books on topics ranging from philosophy and alchemy to medicine. He was the author of the first book on pediatrics.

His books include the Book for al – Mansur, an encyclopedia of 10 books, a treatise and medical textbook that eventually became one of the most widely read medieval manuals in Europe.

He gave an extensive study and observation that differentiated between Smallpox and Measles

(Fi l-gudari wa-l-hasba) distinguishing between the two diseases (this book represents an important progress in the medical field regarding differential diagnosis).

He was among the first to study lesions of the nervous system and correlate them with clinical symptoms.

He frequently contradicted previous famous physicians including Galen, he wrote

"The Doubts about Galen", in which he disputes Galen on numerous points.

Throughout his life Al –Razi took excessive notes and read all the medical literature available at the time. After his death, his students gathered his notes and collected them into one massive work (comprising 23 volumes) know and the Comprehensive Book (al-Kitab al-Hawi fi al-tibb)

Clinical studies were documented in his writings, such as an example on "brain fever" in which

al – Razi actually tested a treatment by using what we know today as a "control group", to allow him to come to the conclusion that bloodletting is an effective treatment for "brain fever". Although these diagnoses and treatment would currently not be accepted, these techniques of analysis gave the template for clinical testing and studies that are still in use today.

He refers to statistical data in his passages and studied large number of cases of the same illnesses to draw conclusions for treatments.

The Legacy of Avicenna

Avicenna (Ibn Sina c 980 - 1037) is arguably the most important figure in Islamic medicine. His most major work was the Canon of Medicine (al-Qanun fi l – tibb) which was a massive medical encyclopedia scripted in five books. It was completed in 1025 and provided a basis for medical teaching for more than 700 years.

Book 1 is an outline of the principals of medicine including physiology and anatomy, books 2 and 5 deal with simple and compound drugs and books 3 and 4 list diseases arranged basically from head to toe.

Avicenna owed great debt to Galen for some medical theory as a source of inspiration. Avicenna provided an extensive systemization of medical knowledge and clinical evidence. He combined fragmented literature as well as his own clinical practice experiences.

In the Canon, Avicenna discusses cancer surgery, infectious diseases such as tuberculosis and the use of quarantine.

He discusses psychiatric disorders and conditions rangin from hallucinations and depression to the behaviors of stroke victims.

The Canon of Medicine was a largely theoretical book with actual practice of science as well. There are numerous case studies from testing treatments and drugs as well as treating illnesses. Some notable innovations include the discovery of "inner senses" or instinct as we know it today.

The Canon was used as a medical reference dominating European universities into the 17th century.

Al-Nafis's Pulmonary Circulation

The first person known to have correctly described pulmonary circulation is Muslim physician Ibn al-Nafis, who was born near Damascus, Syria. He was adamant about not relying on the entrenched ideas of past physician in his 1242 treatise Commentary on Anatomy in Avicenna's Canon. He described the pulmonary circulation of blood between the heart and lungs. He also wrote notes for

300 volumes of the medical encyclopedia The Comprehensive Book on Medicine of which 80 volumes discussing surgical and other medical techniques were published.

"We are not the makers of history, we are made by history"

Martin Luther King

Dr. Adel Quttainah has collected numerous antique medical and surgical instruments over the years. He has decided to put them on display for our patients to view. This personal collection has been briefly documented and each piece explained to give our patients a general knowledge of how medicine has progressed over the years . We hope you find the collection interesting and enjoy it!