**Ludwig van Beethoven**

At the age of twenty-seven, classical composer Ludwig van Beethoven (1770-1827) suffered an unthinkable fate: he began to lose his ability to hear high-pitched sounds. This suggested the onset of nerve deafness, but it was another three years before he began to admit his hearing problems. To compound his difficulties, he later developed tinnitus – a ringing in the ears – and hyperacusis – sensitivity to noise.

Despite this, Beethoven continued to compose prolifically, and scholars have speculated that his hearing problems aided his abilities as a composer, enabling him to ‘hear’ his music without distraction. However, his ability to perform in public was impacted, and so his focus shifted almost entirely to composition.

His hearing gradually worsened and by the age of fifty, Beethoven was almost completely deaf. Nevertheless, he continued to compose until shortly before his death in 1827.

**Johannes Brahms**

German composer Johannes Brahms was born in Hamburg in 1833. One of the most well known classical composers, Brahms is notable for his combination of the romantic and classical styles.

It is believed that in his later life, Brahms developed sleep apnea. This disorder occurs during sleep when the soft palate at the back of the throat prevents enough oxygen from getting to the brain. One of the major symptoms is loud snoring, and the disorder often prevents the afflicted individual from sleeping well. Accounts reveal that Brahms did indeed snore heavily, and given his physical attributes, including a heavy-set frame and a thick neck, it is likely that he experienced sleep apnea.

**Pete Browning**

Pete Browning, also known as “Old Pete” or “The Gladiator”, was a major league baseball player from 1882 to 1894. Browning spent much of his career with the Louisville team and became known for his superstitions. Considered to be a natural hitter, Browning compiled the tenth highest batting average in major league baseball history.

Browning suffered from mastoiditis, which left him almost completely deaf. Mastoiditis, the bacterial infection of the skull’s mastoid bone, is often a complication of acute otitis media, or middle ear infection. The infection spreads from the ear to the mastoid bone, which is located just behind the ear, and may cause the bone to deteriorate. Once a leading cause of death in children, mastoiditis is now treated with antibiotics. It is likely that this painful affliction influenced Browning’s heavy drinking habits.

**Eng & Chang**

Born as conjoint twins in Thailand, Siamese twins Eng and Chang gained worldwide recognition for their anatomical deformity. After immigrating to the United States, Eng
and Chang eventually became naturalized citizens and married the Yates sisters in 1843. They lived on farms in North Carolina where they maintained separate households, and utilized their land by hunting wild game.

Little by little both twins developed a hearing loss — Chang's was in both ears while Eng's was greater in his left ear. It was proposed that these hearing losses might have been caused by muzzle-blast injury from hunting as the twins always placed their shotguns on their right shoulders. Since Chang was located on the left side and Eng to the right side, Eng only experienced a one-sided hearing loss due to the protective effect of head shadow.

**Grover Cleveland**

Our 22nd and 24th President of the United States, Grover Cleveland, is remembered as one of the few truly honest and principled politicians of the Gilded Age. Cleveland became the first man to serve as the President of the United States in two nonconsecutive terms.

Almost immediately upon the commencement of his second term, Grover Cleveland had a clandestine operation for the removal of a sarcoma in the left upper jaw. A sarcoma refers to cancer of connective or supportive tissue, usually highly malignant, formed by the proliferation of mesodermal cells. Sarcomas can be commonly found in bone, cartilage, fat, muscle, blood vessels, and other relative tissues.

However, modern day researchers disagree with the diagnosis given in 1893 of a sarcoma. Instead they conclude that Cleveland suffered from a verrucous carcinoma. A verrucous carcinoma refers to a well-differentiated papillary squamous cell carcinoma that may invade the area locally but rarely metastasizes. Carcinomas are usually identified on the basis of invasiveness and the changes that indicate anaplasia (i.e. loss of orderly maturation of cells).

During the operation, the entire upper left jaw was removed, from the first bicuspid to just beyond the last molar, and nearly up to the middle line of the palate. The hole left in the President's mouth was filled with a vulcanized rubber prosthesis to restore normal speech. The operation successfully remained a secret until 1917. After the death of Cleveland in 1908, W. W. Keen, assistant to surgeon Joseph Bryant, documented the famous case in *The Surgical Operation on President Cleveland in 1893*.

**Thomas Edison**

Inventor Thomas Edison (1847-1931) is known for his development of the incandescent electric light and the design of an economical, practical lighting system. It is less well known that he was almost completely deaf. A bout with scarlet fever at the age of fourteen left him completely deaf in the left ear and 80% deaf in the right ear.

**Sigmund Freud**
Psychoanalysis, Oedipus complex, and the human psyche are all concepts commonly associated with the Austrian psychologist Sigmund Freud. His theories have heavily impacted child rearing, education, and sociology by introducing new approaches to these fields.

Freud's passion for psychology was matched by his passion for cigars and smoking. His unsuccessful attempts to kick the habit led to multiple health disorders, including cancer of the jaw, which was diagnosed at the age of 67. For the last sixteen years of his life, he received constant treatment and extensive operations to attempt to control the malignant ulcer's growth in the hard palate.

Despite treatment, the cancer metastasized to neighboring tissues including the upper part of the lower jaw, the base of Freud's orbits, and eventually his cheek. In his second operation, after slitting the lip on the affected side, a very extensive operation transformed the nasal cavity and mouth into one. None of the operations were very successful and Freud's sufferings were ended in 1939 by a combination of heart failure, cancer of the jaw, and a morphine overdose.

Ulysses S. Grant

Ulysses S. Grant was a man most commonly known for his victorious leadership in the Civil War, which was only comparable to his efforts to help mend a divided Union as the 18th President. However, many do not know that Ulysses S. Grant was the only U.S. president to die of cancer. He was a popular general who enjoyed smoking cigars. He had begun this chronic habit at an early age, and once admitted to smoking as many as 12 cigars in one day.

This bad habit finally took its toll when Grant was diagnosed with a carcinoma of the right tonsillar pillar in early June 1884. The cancer was at the base of the tongue and was described as a malignant squamous epithelioma, which was a scaly, invasive, metastasizing growth. At the onset of his cancer, surgical and technological movements were not advanced enough to effectively control the carcinoma. Only meager topical applications of cocaine hydrochlorate solution or iodoform powder could be used to help suppress the pain.

Despite devoted care from his personal physician John H. Douglas, who tried desperately to keep Grant alive to finish his memoirs, he suffered a slow and painful illness until his death in 1885. Today, Grant's carcinoma could be treated in several fashions with the inventions of the aspiration pump, radiotherapy, tracheotomy, and surgery.

Franz Haydn
Joseph Haydn is one of the most neglected composers of the classical era of music, despite his mentorship to fellow composer Ludwig van Beethoven. His most well known pieces include the "Surprise Symphony" and "The Seasons."

Haydn suffered from chronic, recurrent nasal polyps that spanned over three decades. He experienced painful episodes where he was unable to compose for lengths at a time. The fear of complications and painful surgical procedures made him skeptical of treatment.

A nasal polyp is a bulging, inflamed, mound-like projection from one of the paranasal sinuses, alongside the nose. The irregular structure holds focal accumulations of an excessively large amount of fluid, which projects into the mucous membrane lining of the nasal cavity. Haydn's persistent polyposis led to four operations where ligature of the polyps, extraction, and excision were among the techniques practiced.

Today, a nasal polyp is a common cause for nasal airway obstruction in patients who suffer from allergic sinusitis, children with cystic fibrosis, or vasomotor. The cause of this disease is still unknown, but treatments are available to alleviate symptoms and shrink the size of polyps. Another alternative is surgery that may be curative, but recurrence is possible.

William Ellsworth Hoy

William Ellsworth Hoy, also known as "Dummy", was a major league center fielder. A native of Ohio, Hoy played with a number of teams between 1886 and 1902, including Cincinnati. He was a consistent hitter and a great base runner, with a career total of 594 stolen bases.

As a child, Hoy suffered from meningitis, the inflammation of the tissues covering the brain and spinal cord. This disease left him deaf and mute. Hoy became the first deaf outfielder to play in the major leagues. He is also credited with creating the system of hand signals that umpires use to call balls, strikes, and outs.

Morell Mackenzie

Morell Mackenzie was born in 1837, the eldest child of Dr. Stephen Mackenzie, a general practitioner. At the age of 21, Mackenzie took an examination to qualify from the London Hospital College. He had earned his diploma of membership in the Royal College of Surgeons and the Licentiate of the Society of Apothecaries.

Morell Mackenzie decided to spend the next year studying medicine on the Continent, including stays in Paris, Vienna, Budapest, Berlin, and several cities in Italy. While in Budapest, his interest in laryngoscopy was piqued by Johann Czermak. Czermak showed
the young man how to use a new invention, the laryngoscope, which was only five years old at the time.

Morell Mackenzie returned to England and began to study medicine and write about laryngology in earnest. In 1861 he graduated from London University with his Bachelor of Medicine. A year later, he earned his Medicinae Doctor and opened his private practice as a physician laryngologist.

Soon Mackenzie's reputation began to grow, allowing him to open a new office in 1863. This office he called the Metropolitan Free Dispensary for Diseases of the Throat and Loss of Voice. The year 1863 also brought Mackenzie's first brush with fame in physician's circles. He earned the Jacksonian Prize of the Royal College of Surgeons for his three volume essay entitled *On the Pathology and Treatment of Diseases of the Larynx: The Diagnostic Indications to include the Appearance as Seen in the Living Person*. His presentation to the British Medical Association in the same year coined the terms "abductors" and "adductors" to describe two sets of muscles which open and close the glottis.

The year 1865 was another big one for Dr. Mackenzie. He moved his offices once again, opening a larger and more prominent space at 32 Golden Square, London. This new office was named the Hospital for Diseases of the Throat and was the first laryngological hospital in the world.

By 1873 Dr. Mackenzie was a member of the Royal College of Physicians and was appointed as a Physician at London Hospital. This latter appointment he resigned soon afterward due to his "total devotion to laryngology" and the demands of the Hospital for Diseases of the Throat. Indeed, Dr. Mackenzie's practice was so large that Lady Duff Gordon recalled that "his waiting room was always crowded, and it was impossible to see him without waiting for an hour or two, unless one tipped the butler heavily or — like herself — possessed one of Mackenzie's visiting cards with "Admit at once" written upon it in his own handwriting."

Dr. Mackenzie's reputation was firmly established with his colleagues when he published his text books. The first was *The Use of the Laryngoscope in Diseases of the Throat*, published in 1865. This text was eventually translated into three languages and ran to three editions. *Growthd in the Larynx* was published next, in 1871. This text documents one hundred cases Dr. Mackenzie treated using the laryngoscope. In it he describes his methods for numbing his patients. In a time before anesthesia he "relied solely on the patient sucking ice immediately before the operation and taking the occasional inhalation of chloroform or bromides."

In 1880 and 1884 Dr. Mackenzie published his most celebrated works, *Diseases of the Nose and Throat*, volumes 1 and 2. These two books were so important that thirty-seven years later, they were still referred to as the "laryngologist's Bible" by Sir St. Clair Thomson. In 1887 Dr. Mackenzie also helped found the *Journal of Laryngology and*
By 1887, at the age of 50, Morell Mackenzie had been practicing laryngology for twenty-five years. His reputation as a throat specialist was firmly established in England and abroad. It was at this time that Dr. Mackenzie was called to treat his most controversial patient, Crown Prince Frederick of Prussia and Germany. Sir D'Arcy Power was moved to write of Dr. Mackenzie: "[e]ndowed by nature with great manipulative skill, constant practice had rendered him a master in the use of the laryngoscope and of the laryngeal forceps; but he was also by nature somewhat indiscreet, and his mind was essentially polemical...If it had not been for this episode in his career (the illness of Crown Prince Frederick), Mackenzie would have been remembered as an able practitioner in a special department of medicine, endowed with great mechanical skill and power of invention."

The story of Crown Prince Frederick begins several months before Dr. Mackenzie had been called from London. In 1887 Dr. Gerhardt, Professor of Clinical Medicine at the University of Berlin, attempted to remove what he diagnosed as a polyp from the throat of the 56 year old Prince. Dr. Gerhardt first employed a snare and finally used galvano-electric cautery to remove the "polyp". After thirteen of these procedures, Crown Prince Frederick felt better but his symptoms of hoarseness and vocal cord sluggishness soon returned.

Frederick's physicians suspected that he was suffering from laryngeal cancer and were preparing to perform a thyrotomy when the powerful Chancellor Otto von Bismark and Frederick's father, Emperor William I, discovered their plans. Both men asked that a specialist in throat medicine be sought. Meanwhile, Crown Princess Victoria, wife to Frederick, was increasingly alarmed at his condition. Victoria, the daughter of Queen Victoria of England, wrote to her mother regarding Frederick's illness. While it is not clear which party actually sought him out, Mackenzie was requested to examine Crown Prince Frederick's throat. Morell Mackenzie, therefore, went to Berlin and performed two biopsies on the Prince. Both were examined by Dr. Rudolph Virchow, who proclaimed them to be cancer free. Mackenzie therefore counseled all those involved against surgery.

In the summer of 1887, Queen Victoria held her Jubilee in London to celebrate her ascendancy to the throne of England. Her daughter and son-in-law, the Crown Prince and Princess, were there. Dr. Mackenzie took this opportunity to perform a third biopsy which was again examined by Dr. Virchow and, again, revealed no cancer. Dr. Mackenzie noted a swelling of the mucous membrane in the back of the larynx which he diagnosed as a chondritis of the arytenoid. Dr. Mackenzie applied galvano cautery to remove the growth. Crown Prince Frederick seemed to recover well from the operation and even regained much of his voice. The Crown Prince and his family returned to the Continent with high hopes for the Prince's full recovery.

In November of 1887, Mackenzie was called to San Remo, Italy, where Crown Prince Frederick was spending his winter. Upon arrival Dr. Mackenzie discovered that Frederick's condition had worsened. In particular he found a new growth in the Prince's
throat: "its appearance was altogether unlike that of the one which I had destroyed...it had in fact a distinctly malignant look." Mackenzie informed his patient that the diagnosis was most likely laryngeal cancer and told Crown Prince Frederick that he must decide how he wished his illness to be treated.

The Crown Prince was presented with two treatment options: excision of the larynx or tracheotomy. Frederick decided that when it became necessary, a tracheotomy would be performed. Mackenzie and the other consulting physicians issued an official report to Chancellor Bismark and Emperor William I on the Crown Prince's condition. The German press got ahold of the letter and broke the story of the Crown Prince's illness in all the national newspapers. Mackenzie was the leading physician treating Frederick at this time, but he was able to offer the ailing prince little more than constant checking of his condition and attempts to make him more comfortable. As the news of the Prince's condition spread, the press began to criticize Dr. Mackenzie's treatment of the patient and accused him of mismanaging the case.

In January of 1888 Frederick's condition worsened still and he required the palliative tracheotomy which he had approved as treatment for himself. The procedure was performed by a German physician, Dr. Bramann. Morell Mackenzie was retained as a member of the team of physicians monitoring the Crown Prince's health, but was no longer the leading physician in the case. Dr. Bramann and a colleague, Professor Geheimrath von Bergmann, were now in charge, monitoring the Prince's health and managing the tracheotomy tube. Of these two Dr. Mackenzie wrote: "[i]t certainly appeared to me that neither Professor von Bergmann nor Dr. Bramann, well-informed surgeons though they doubtless are in many matters, had had much experience in the sort of work they had now taken upon themselves to do."

Interestingly, in February of 1888 Morell Mackenzie published a report in the *Lancet* in which he stated that cancer had still not been officially diagnosed. Due to the lack of pathological evidence, which he felt crucial to such a diagnosis, he instead referred to the disease as a "chronic interstitial inflammation of the larynx combined with perichondritis." This public acknowledgment of his patient's condition is even more unusual if one considers his later reproach of German physicians in making the health of their patient so public. Although he would later lament the lack of patient confidentiality afforded to the Prince, Dr. Mackenzie apparently felt the need in early 1888 to try to clear his name which was being so tarnished in the press at the time.

It would be nearly a year before Mackenzie would publish his private feelings about the case in his book, *The Fatal Illness of Frederick the Noble*. Complaints regarding the suitableness of his fellow physicians was just one aspect of the book. Dr. Mackenzie further made a much more serious charge of malpractice. It was Mackenzie's belief that the incision made by Dr. Bramann when performing the tracheotomy was not centered properly. Combined with his accusation that the trachea tube inserted by Dr. Bramann was too large, Dr. Mackenzie states that the Crown Prince suffered irritation of the trachea and eventual complications in his condition that lead to his death.
Between January and March of 1888 the physicians surrounding the Crown Prince bickered regarding the Bramman tachea tube. The result was that Frederick was constantly being fitted with new trachea tubes and canulae. Seven trachea tubes and canulae of five different designs were used in all. One was designed by Dr. Mackenzie himself and named the San Remo canula after the city it was manufactured in. The results of these tubes were universal discomfort for the Crown Prince, coughing, and bleeding. Dr. Mackenzie noted that because the tracheotomy had been off-center, "a moderate-sized tube would have been likely to have wounded the walls of the trachea under the circumstances, but an enormous tube such as that (first) used by Bramann, would have been sure to have done so."

Two months after the operation, in March, Crown Prince Frederick's father, William I, died. This prompted Frederick to return from San Remo to Berlin. While he felt too ill to be present at the funeral he was crowned Emperor Frederick III of Prussia and Germany soon after. Emperor Frederick III was ill during his entire reign and Morell Mackenzie never left his side. On March 6th the Emperor restored Mackenzie as leading physician in the case, but as Mackenzie himself noted, "[the Emperor] was now a complete invalid."

On March 12th Morell Mackenzie felt that the tracheotomy tube needed, once again, to be replaced. As a matter of courtesy, Mackenzie agreed to allow Professor von Bergmann to replace the tube. Bergmann's attempt, however, was unsuccessful. Bergmann missed the tracheotomy hole and plunged the tube, instead, into the front of the Prince's neck creating what Mackenzie named "a false opening". This injury to the Emperor caused him much pain and quickly became infected. According to Mackenzie the infection drained the last of the Emperor's strength.

On June 15, 1888, Emperor Frederick III died, he had reigned only 99 days. Prior to his death, the 57 year old monarch felt so indebted to the care of Morell Mackenzie that he honored him with the Cross and Star of the Holenzollern Order. An honor that Frederick's son, Wilhelm II, implied was coerced in his memoirs written in 1926. He wrote, "[it is questionable] whether the Englishman really pronounced his diagnosis in good faith. I am convinced that this was not the case....he was out not only after the money, but also after the English aristocracy."

After Emperor Frederick III's death, the German press denounced Morell Mackenzie and the Empress Victoria for their parts in the management of the Emperor's disease. Empress Victoria was blamed by German press for asking a British physician to attend her husband. Emil Ludwig wrote, "She stands indicted for serious indiscretion. She summoned from her native land an undistinguished physician, simply because she attributed a shortcoming of Nature to the physicians of the land she had adopted." Mackenzie felt the added scrutiny of world press and fellow physicians who criticized Mackenzie's handling of the case. Lady Duff Gordon recalled that "it was impossible to imagine the furor created by the case of the German Crown Prince; nothing else was talked of for months, and Mackenzie's name was on everybody's lips every hour of the day". She had even "known people to stand on chairs in a hotel restaurant to watch Mackenzie at dinner."
As noted earlier, Dr. Mackenzie sought to protect himself by publishing an angry book, *The Fatal Illness of Frederick the Noble*, which discusses his diagnosis and treatment of the Emperor as well as his feelings toward the German doctors he worked with. The book was received with unfavorable criticism and led to his censure by the Royal College of Surgeons and the British Medical Association. Mackenzie resigned from the Royal College of Physicians. During this period Mackenzie also sued *The Times* of London for reporting that his treatment of the Emperor was inadequate. The court awarded him substantial damages and costs, but the criticism did not abate. Morell Mackenzie's return to London was also marked by a decline in his practice which, in his absence from England, appears to have been usurped by the physician he left in charge. Morell Mackenzie died four years after Emperor Frederick from influenzal pneumonia.

It has been felt by many that had Emperor Frederick III lived, his son Wilhelm II, aka Kaiser Wilhelm, would not have come to power so young. Wilhelm II led Germany into World War I and many felt that the tragic deaths associated with the Great War could have been averted by the marked diplomacy of Frederick III. It seems unlikely, however, that the Crown Prince Frederick could have survived removal of his larynx had the correct diagnosis been made early enough. Deaths on the operating table or shortly after surgery were common and it is doubtful that Frederick could have averted his death longer than his delayed diagnosis had already afforded him. Irwin Morre wrote in 1926, "Sir Morell Mackenzie's greatness was demonstrated, and may be estimated, in the case of the Crown Prince, by his superior knowledge and experience of contemporary surgery, for whatever can be said for or against his diagnosis and treatment the fact remains that, by his opposition to operation, he saved for the German nation the Crown Prince's life for a considerable time."

**Adam Politzer**

It is incredible that so little biographical information is known about Adam Politzer. Other than the fact that he was born near Budapest in Albertirsa, Hungary on October 1, 1835, little more is known of his personal life. It is reported that Politzer's father was a well-to-do Jewish merchant and that one of his grandfathers was a physician. It is known that he always had a love of art and had a great deal of artistic talent. Art is usually associated with qualities such as dexterity and a broad vision. These attributes would be useful in the years ahead as Politzer progressed from being a student to a teacher.

Politzer's ascendancy as the authority on the organ of hearing was spearheaded by his own original contributions in the field of otology and his graduation from the New Vienna School of Medicine.

The New Vienna School of Medicine had a faculty that emphasized applied clinical symptomatology, pathohistological research, and mastery of modern trends in surgery. Johann von Oppolzer was a professor who took special interest in Politzer. Oppolzer was an internist who made sickbed teaching, for which the Vienna School was known, so
popular. Politzer was trained to recognize the importance of empirical facts and the value of examination in an age when the ear was regarded as medically obscure and surgically unapproachable.

Politzer finished medical school in 1859. He was then encouraged to train as a postgraduate under several notable physicians. Politzer's first thrust in research was in experimental physiological methods. This was done while he worked in the Vienna laboratory of the physiologist Carl Ludwig and was under the added influence of Hermann von Helmholtz in Heidelberg, Claude Bernard in Paris, and Karl Rudolf Konig. Later, under the tutelage of Rudolf Albert von Kolliker and Joseph Toynbee in Wurzburg, Politzer learned microscopy. Here Politzer realized that morphological research was as necessary as physiological knowledge and he began to combine the two.

While working in Carl Ludwig's laboratory Politzer undertook two experiments. The first was in animals to show physiologically that the innervation of the tensor tympani muscle was the result of the trigeminal nerve and that the innervation of the stapedial muscle was by the facial nerve. Such evidence was never previously given and this was important information for the scientific world.

The second experiment placed Politzer in the elite of society, for it introduced politzerization. During this experiment, Politzer connected one manometer with the external auditory canal meatus and another manometer in the pharynx. Thus he was able to study air movements through the eustachian tube. Politzer published his findings in 1861. Due to this experiment, practitioners were now able to treat ear diseases through his innovation of politzerization rather than trying to do the difficult procedure of passing a catheter into the torus of the eustachian tube. Worldwide use of the politzerization technique thus made Politzer very well known, even prior to the examination of his first otological patient.

Politzer's postgraduate training took about two years. During Politzer's travels, his colleague, Joseph Gruber (1827-1900), had been appointed "Aural Surgeon" of the Imperial Royal General Hospital. Out of one room, Gruber had set up the first outpatient department for the treatment of aural diseases. Politzer was recognized as having a far superior knowledge of morphology and pathology, as noted by the historian Erna Lesky: "If (The University of Vienna) was to be able to compete in (the field of otology) then it needed an otologist who had mastered contemporary methods. Who was more suitable to meet these requirements than Adam Politzer." Therefore, upon his return to Vienna in 1863, Politzer took up his post as dozent (lecturer) in otology at the University of Vienna. In a move that, today, seems more political than practical, Gruber was promoted to the same position within the University.

There was obvious friction and rivalry between Politzer and Gruber. This was particularly conveyed in Gruber's 1870 book, entitled Lehrbuch der Ohrenheilkunde, in which he stated that he had discovered and introduced the procedure of aeration of the middle ear by swallowing and that Politzer had only added the swallowing of water to the
procedure. There were other incidences of their rivalry, but the results of this competition prove that it was probably a healthy one, especially for otology.

In 1871, some twelve years after the initial start of the department, a new and more formal department of otology was introduced. The University had no choice but to promote these two rivals to the position of associate professor. When, two years later, The University of Vienna Aural Clinic (Allgemeine Krankenhaus) was established, Adam Politzer and Josef Gruber were again promoted and appointed joint directors.

At the time of their appointment as Joint Directors of the Allgemeine Krankenhaus, the department of otology consisted of one room that served as outpatient clinic, operating room, and lecture room. The clinic was divided into two — Gruber was in charge of the half dedicated as the men's ward and Politzer's half was the women's ward. "In this arrangement, Gruber was the one who suffered most. He had been the exclusive head of his one-room otological clinic outpatient department since 1862, where now he has to share this room with Politzer."

One can better understand the reason for putting these two rivals into such a cramped space when one considers the position of otology in the world of medicine at that time. In 1874 Professor Theodor Billroth (1829-1894) described otologists this way: "It calls for a certain amount of heroism in a man to sacrifice himself to this, therapeutically the most thankless and limited phase of surgery."

Mention has been made that politzerization put Politzer in an elite society already, even before the specialty started. A second thrust utilized by Politzer that further matured into specialty stardom was the publication of medical texts. *Die Beleuchtungsbilder des Trommelfells* was published in 1865 and was probably the greatest contribution to medical literature of its era. This work laid the foundation for the classification and clinical diagnosis of aural diseases on a modern basis. Inspection of the tympanic membrane was a new diagnostic concept endorsed by Politzer, whose intent was to create a teaching tool for the general practitioner in the diagnosis of ear disease. Politzer made the sketches himself, being a master of the brush and ink. The artist Carl Heitzmann then drew the chromolithographs. The book showed Politzer to be a complete clinician who made contemporary morphological as well as experimental methods subservient to the goals of otology. That is, Politzer sought to aid the practitioner in recognizing otitic anomalies in the early stages. Politzer thought that a thorough examination of the membrane, either alone or with a consideration of other otitic symptoms, would lead to a satisfactory diagnosis.

Another teaching tool created by Politzer that established a correlation between the findings of his dissections and the living human being was ten wall charts on the anatomy of the auditory organ. This second atlas, produced in 1873, was a fulfillment of the Vienna mission in morphology and disease. Politzer's popularity and reputation made the
set of ten posters an obvious marketing bonanza and editions appeared on the walls of nearly every ear clinic up to the turn of the century.

By 1878 Politzer stood in the mainstream of the specialty. At the Vienna General Hospital, Oppolzer allowed Politzer to treat otological cases from his department of medicine. The Mayor of Vienna had already appointed Politzer aurist to the poor in 1864 and now Politzer was encouraged to treat patients in the city's nursing homes. These opportunities gave Politzer the ability to study and treat thousands of patients. Vienna became a Mecca of sorts for those with otological diseases and Politzer was able to synthesize this knowledge into one of his most famous books.

_Lehrbuch der Ohrenheilkunde_, published in 1878, became the most outstanding textbook of the ear in the 19th and 20th centuries. Its scope and content made it a historical document even in its own time. Today we note that basic material in anatomy and physiology are still relevant and useful. At the time of publication it was praised for its uniformity, conciseness, and harmonious treatment of the subject. It contained numerous illustrations along with an excellent bibliography. In order to keep current with new findings, it underwent a series of five revisions between 1878 and 1908.

To define a new syndrome is a creative task. Politzer described the morphology and morphogenesis of otosclerosis as it evolved from that of stapedial-ankylosis and catarrhal sclerosis. In 1889, resulting from an autopsy of a patient he had observed for years, he noticed no pathological change in the middle ear but instead, new bone formation anterior to the oval window. By 1893 he had collected eight more cases and he presented his findings, a beginning of the theory of otosclerosis, at the Pan-American Medical Congress in Washington. Besides the introduction of otosclerosis as a disease entity, "Politzer is best known for his contributions to the knowledge of aural anatomy, the pathology of cholesteatoma, [sic] serous otitis media, labyrinthitis, congenital deafness and intracranial complications of otitis media."

By Politzer's middle-age, otology had claimed academic independence, not only in Vienna, but all over the world. Politzer was an able lecturer and passed on his knowledge to thousands of students and assistants. "Politzer was regarded as a model teacher. Not only did he have profound knowledge and could he encourage others to work, but he was able to instruct in at least 6 languages." In fact, 500 physicians from around the world attended his retirement celebration.

One American student was Burton Alexander Randall (1858-1932), who studied in Vienna in 1883 at the age of 25. Dr. Randall described Politzer's teaching technique as follows: "Politzer would examine each patient, then create a small sketch of what he found and attach this to the patient's shoulder. He would then provide an impromptu lecture on the condition, its diagnosis and treatment, and made reference to the pictures mounted on the walls of the clinic or the specimens in his collection." Students like Dr. Randall incorporated Politzer's diagnostic and teaching skills into their own lives.
However, some students wished to obtain something more tangible from their studies. Roy Philip Scholz (1878-1954) studied with Adam Politzer in 1907. Scholz, like many American students, purchased commercially available photographs of the great Viennese physicians as souvenirs of his studies. Much like baseball cards, Dr. Scholz collected the photos and then had his teachers autograph them.

Politzer's popularity did not extend only to his students. Politzer was the source of at least one magazine's caricature. Published prior to WWI, three diplomats known as the "Peace Triplets" are pictured who were unable to negotiate peace. They are portrayed as visiting Politzer. The translation of the text reads "Help us professor, we cannot hear anything." Politzer's contributions to medicine were also noticed by Viennese politicians. Austria issued its first set of famous physicians on stamps in the 1930s. Politzer, along with other notable doctors such as Barany, was recognized by this distinction in the 1980s when the Vienna School of Physicians series was produced.

In 1907 Politzer retired from teaching and published his seminal work entitled *Geschichte der Ohrenheilkunde*, a two volume history of otology. Politzer felt that it was important for a physician to know not only his trade, but also the history of his field.

Politzer had an interest in art, as well as personal artistic talent. It was this interest that led him to fraternize with some of the great masters of his day. He was able through these associations to assemble an enviable art collection. The waiting room of his office contained a gallery of fine paintings, and it is said that he never tired of recounting the incidents and stories associated with their acquisition. Vienna brought Politzer, happily, into contact with an entire succession of outstanding creative artists. Politzer thoroughly enjoyed and was stimulated by visiting galleries and it was this joy that prompted him to become a collector. He had little time for his fascination with art collection because of the demands brought upon him by his patients, research, and the university. Only after his retirement in 1907 did he apply himself directly to collecting. He himself engaged in etching and took enjoyment in attending exhibitions and meetings with other art connoisseurs.

Politzer's methodical collection of drawings, engravings, etchings, and lithographs showed deep comprehension of these mediums. In particular, Politzer's collection represented the uninterrupted historical development of lithography. This particular branch of art was very plentiful in the market at the time and Politzer was able to effortlessly acquire a large collection without excessive expenditure. Politzer's painting collection was not as historically minded. While he did acquire items at auction, he more frequently sought modern works and brought pieces from the artists directly. Politzer enjoyed tracking old masters, but also seemed to delight in discovering a new one.

Despite his publications, Politzer died in poverty, leaving his wife destitute in 1920. Personal financial problems and the devaluation of Austrian currency after WWI caused this unhappy state of affairs. Politzer's collection of paintings housed in his town residence and in his villa in Cottage, were sacrificed by his family. The bulk of Politzer's art collection went to auction in 1922.
What made Politzer the greatest of otologists was a combination of two things. First, he was at the right place at the right time. Politzer was in Vienna, the center of medical culture, where he had the opportunity to treat thousands of patients. Second, Politzer had the ability to create pertinent, basic, and informative medical writings that brought together and disseminated the knowledge needed to give shape to his specialty. Both of these established Politzer as one of the founders of otology. His writings dealt with such topics as anatomy, physiology of the sound conducting and sound perceiving apparatus, diseases of these apparati, and other writings that enveloped every aspect of otology.

Special thanks to Dr. Dennis G. Pappas, Sr. for editing and revising his original speech entitled *Adam Politzer: The Making of A Specialty*.

Review the papers and illustrations available in the Adam Politzer Collection.

**Babe Ruth**

The great all-American slugger George Herman "Babe" Ruth was born in Baltimore, Maryland in 1895. He entered the National Baseball League at the young age of nineteen and grew to become one of its greatest stars by hitting a long defended 60 home runs in one season.

In 1946, just before retiring from baseball, Ruth was diagnosed with nasopharyngeal carcinoma. Nasopharyngeal carcinoma refers to a malignant growth that arises from epithelium, which tends to infiltrate and metastasize to other organs. The location of the carcinoma was in the nasopharynx, or the upper part of the throat behind the nose. Doctors tried their best to control Ruth's cancer with surgery and radiation treatments, but were not successful and so they eventually released him from the hospital in 1947.

Even though his cancer was thought to be a result of his frivolous use of smokeless tobacco, cigars, and alcohol, studies have now shown that other risk factors are associated with this particular type of cancer. Among these factors are geographic location, genetic inheritance, and certain environmental carcinogens. Nasopharyngeal carcinoma is one of the most common malignancies found in Taiwan and southern China, but is rarely found in North America.

**Frank Sinatra**

Singer Frank Sinatra (1915-1998), one of the renowned ‘Rat Pack’ and known the world over for his crooning voice, suffered a vocal cord hemorrhage in 1952. Vocal cord hemorrhage is a complication of laryngitis and usually stems from strenuous use of the voice at the height of infection.

Fortunately, the physical damage was temporary, but by then he had been dropped from his talent agency. Determined to resume his career, Sinatra won the role of Maggio in "From Here to Eternity" (1953) at a huge pay cut. He earned an Academy Award for Best
Supporting Actor for that role, and went on to star in a number of other movies. In the mid-1950s, Ol’ Blue Eyes resumed his singing, both on stage and in the recording studio, and gained his status as a musical legend.

**George Sisler**

A first baseman for the St. Louis Browns, George Sisler had a reputation for being an all-around great player with solid fielding, throwing, base running, and hitting abilities.

At the age of 28, seven years after joining the major league, Sisler suffered from a severe sinus infection that permanently affected his eyes and forced him to sit out the 1923 baseball season. Sinus infections, also known as sinusitis, are frequently preceded by a cold, allergy attack, or irritation by environmental pollutants. Normally, mucus collecting in the sinuses drains into the nasal passages. However, a cold or allergy attack causes sinuses to become inflamed and unable to drain, causing congestion and potentially infection.

Sisler never played baseball quite the same after his infection. He eventually became a manager and then a scout for various teams. He was elected to the Baseball Hall of Fame in 1939.

**Jonathan Swift**

The author of *Gulliver’s Travels* and *The Modest Proposal*, Jonathan Swift was a renowned satirist. Born in Dublin in 1667, Swift attended Trinity College and Oxford University. Although best known for his writings, Swift spent much of his life in the service of the church, including as dean of St. Patrick’s Cathedral in Dublin.

Beginning in his youth, Swift suffered from periodic bouts of deafness, sometimes combined with illness or ‘giddiness’. It is thought that these bouts were caused by Ménière’s disease, also known as idiopathic endolymphatic hydrops, which is an inner ear disorder. In Swift’s case, the Ménière’s disease was likely caused by Eustachian obstruction. The Eustachian tube connects the middle ear with the nasopharynx, the area of the upper throat close to the nose. It is thought that this obstruction was the result of a badly deflected septum. The septum is a dividing wall located in the nose; a deflected septum can cause the airway to be blocked.

**George Washington**

George Washington was undoubtedly one of the most influential and well-known presidents of U.S. history. Washington proved to be a dynamic factor in all of the major events that helped shape the United States, from the Revolutionary War to the Constitutional Convention. His possibly untimely death led to a controversy surrounding his diagnosis and the medical procedures practiced at the time.

In December 1799 Washington took his daily ride in heavy, wintry weather. He developed a sore throat and a malarial type of fever during the following days. Amongst the several physicians called to Washington's bedside was his personal friend, Dr. James
Craik and his colleagues diagnosed Washington with an "inflammatory quinsy", an inflammation of the throat accompanied by fever, swelling, and painful swallowing. Elisha Cullen Dick, one of the physicians present, proposed a **tracheotomy** to help relieve the inflammation of the throat, but his suggestion was rejected.

Instead, the doctors prescribed bleeding, which was undertaken approximately four separate times, equaling to a total loss of five pints of blood. Modern day doctors now believe that Washington died from either a streptococcal infection of the throat, or a combination of shock from the loss of blood, asphyxia, and dehydration. A streptococcal infection relates to any organism of the genus *Streptococcus*, or a genus of bacteria that is responsible for numerous infections such as tonsillitis or scarlet fever. One historian has stated that "whatever was the direct cause of General Washington's death, there can be little doubt that excessive bleeding reduced him to a low state and very much aggravated his disease."

**Oscar Wilde**

Renowned Irish writer Oscar Wilde was born in 1854. He was the son of a prominent and pioneering otologist. Having a father who specialized in diseases of the ear was convenient for Wilde when he was growing up, as he suffered from recurring ear infections as a child. These recurring ear infections were aggravated decades later while Wilde was serving a two-year term in jail.

In 1900, just three years after he was released from prison, Wilde died. Some reports state that Wilde died of cholesteotoma. A severe form of ear infection, a cholesteatoma is a skin growth that occurs in the middle ear behind the eardrum. Typically due to repeated infection and poor Eustachian tube function, over time cholesteatomas can destroy the surrounding delicate bones of the middle ear and cause the infection to spread into the surrounding areas, including the inner ear and brain. Other reports indicate that Wilde died of meningitis, the inflammation of the tissues covering the brain and spinal cord. A controversial man, Wilde is best known for his plays, including *An Ideal Husband* and *The Importance of Being Earnest*. 