

Cogan Ophthalmic History Society
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Abstracts of Papers

The Badianus Manuscript

Andrew P. Ferry

The Badianus Manuscript is an herbal and deals with the pharmacological treatment of disease. It is not concerned with surgery.

The book, which was finished in 1552, is the work of two Aztec Indians, Martinus de la Cruz, a native physician who composed the work in Aztec, and another Indian, Juannes Badianus, who translated the text into Latin. Both of these men were on the faculty at the College of Santa Cruz in Tlaltilulco, one of the great cultural centers in the early period of Spanish colonization.

Because the translator (Badianus) had no Latin equivalents for most plant names, he had no other choice than to keep the original Aztec names. And because the manuscript is illustrated with colored pictures that in many cases are helpful in identifying the plants, the manuscript is a most remarkable source of Aztec lexicography. The illustrations are the earliest known plant pictures of American botany.

Seven of the 118 plates are concerned with treatment of ocular disease and the plants that were used for that purpose.

The Badianus Manuscript must surely be one of the first (perhaps the first) books written in North America to include a description of the treatment of ocular diseases, together with color illustrations of the plants from which the therapeutic agents were derived.

Dating of Spectacles by Daguerreotypes

John W. Tull

Some artists in the 15th and 16th centuries took certain liberties with their work in which they placed spectacles on one or more figures in a scene portraying a time 1300 years before spectacles were invented (e.g. "The Adoration of the Magi", "The Circumcision of Christ", "Jesus Among the Scholars", and "The Death of Mary"). Later, portrait artists who painted people who were actually wearing spectacles were not always accurate in their representation.

The Daguerreotype was the first useful photographic process developed, but was in use for only a short period of time (1839-1860), before being replaced by the Ambrotype and Tintype photographic processes. Additionally, the mat style of the individual Daguerreotype allows one to date many photographs to within a five year time frame. Close-up slides will be shown illustrating the details still visible in these 150 year old photographs, and the wide array of lens shapes, bridge and temple styles available in that time period.

Babbage the Unfortunate

Richard C. Keeler

Charles Babbage will be remembered as the father of the computer and yet his work on his analytical engine was never completed. Less well known is his near invention of the ophthalmoscope in 1847 and work on color vision applied to reading materials.

New information has come to light on his eye defect, bilateral monocular diplopia, explained in some detail in his own words.

This paper will explore how near he came to inventing the ophthalmoscope and how he came to be known as Babbage the Unfortunate.

When Your Eyes Are a Wet Nose: The Evolution of the Use of Guide Dogs

Gerald Fishman

While in America the use of guide dogs with any relative frequency has occurred only within the past few generations, they have been part of European culture for many centuries. The presentation will highlight the historical evolution of the use of guide dogs from evidence obtained in excavations of Pompeii, a 15th century European wood cut, the engravings, drawing and painting of, among others, Tintoretto, Rembrandt, Gainsborough and Callot, to the 20th century creation of The Seeing Eye Foundation. The roles played by Father Johann Klein, Dorothy Harrison Eustis, Morris Frank, Jack Humphrey, William Ebeling, and Buddy will be discussed.

Professor Ishihara and his Test for Color Vision

H. Stanley Thompson

Shinobu Ishihara (1879-1964) made a major impact on the quality of Japanese ophthalmology in the years between the world wars. He used German textbooks during his ophthalmology training, and then he spent 2 years in Jena with Prof. Stock. Ishihara's name is known throughout the world chiefly because of his color vision test, but at age 43 he succeeded his teacher Professor Komoto as chairman of Ophthalmology at the Tokyo Imperial University, and he trained ophthalmologists for the next 15 years. Ishihara's textbook was used throughout Japan; his visual acuity chart, his accommodometer and his interpupillary distance measure were used every day in every Japanese ophthalmologist's office. His term as President of the Japanese Ophthalmological Society lasted 14 years, and during the war years he was Dean of a Medical College. His brains, energy and industry, together with his respect for visual physiology, gave a major boost to his chosen profession.

Edward S. Harkness

Max Forbes

Through the success of his father, a silent partner of John D. Rockefeller Sr., and

his older brother, Edward S. Harkness (1874 to 1940) inherited a great fortune in the early 20th Century. With limitless opportunities for pursuit of power, fame, and even greater wealth, he instead chose a philanthropic career dedicated to projects designed to yield long-term benefits to society. His major areas of interest were education, medicine, and assistance to Britain in the aftermath of World War I. In 1910 Edward S. Harkness proposed an affiliation of Presbyterian Hospital with the medical school of Columbia University in order to advance teaching and research in addition to patient care. By means of unstinting determination and boundless generosity, he paved the way to the final agreement between the institutions in 1921 and subsequent opening of the Columbia Presbyterian Medical Center in 1928.

After a substantial contribution to founding of the Wilmer Institute in 1925, Edward S. Harkness decided that a similar eye hospital was needed at Columbia Presbyterian. He pledged five million dollars for its construction and endowment in 1931, and later added an additional one million dollars. Because of his modesty and insistence on anonymity, the Eye Institute could not be named after him until long after his death.

Early 18th century Debates on Cataract and Glaucoma by the French Royal Academy of Sciences

Robert F. Heitz

Until the beginning of the 18th century, the term "cataract" referred to a membrane in front of the crystalline lens, formed by deposits of the aqueous humor and the term "glaucoma" referred to an opacification of the crystalline lens. The operation for cataract was assumed to break the supposed cataract-membrane and to push it into the lower part of the eye. Glaucoma was supposedly incurable, for the crystalline lens was regarded as an essential organ of the sight.

The report-register of the proceedings of the French Royal Academy of Sciences of the years 1705 to 1708 allows us to see how the "new theories" (that couching the cataract is, in reality, couching the crystalline lens), spread by Brisseau and Antoine Maitre-Jan, influenced the academicians. The debates of the Academy, in which took part, among others, Jean Mèry, Philippe and Gabriel-Philippe de La Hire and Litrè, show an intelligent adaptation to the new ideas by the Academy, when they were presented with anatomical and clinical evidence.

Bashar Assad and the Syrian Succession.

Is the Characterization, "Mild-Mannered Ophthalmologist," Accurate?

David Riefler

This biographically oriented presentation reviews the succession of Bashar Assad as the leader of Syria following the death of his father and predecessor, Hafez Assad. The Assad family and the nature of the Assad political dynasty are examined in some detail. The initial media characterization of Bashar Assad as a "mild-mannered ophthalmologist" is shown to be inaccurate on both counts. This opinion is supported by a review of Bashar Assad's abbreviated medical career, the methods used in consolidation of political power, and examples of his anti-

semitic rhetoric.

Rembrandt's "The Eye Operation"

Daniel M. Albert

Rembrandt van Rijn (1606-1669) produced a prodigious number of drawings which were executed as exploratory exercises in preparation for etchings and paintings. These drawings are extraordinary for capturing complex ideas with the utmost sureness and simplicity. An outstanding example of the drawings is the series devoted to Tobit and Tobias. When Rembrandt decided to portray the curing of Tobit's blindness, he took the license of representing the cure as an eye operation with Tobias manipulating a couching needle to treat the opacity. The preparatory drawing known as "The Eye Operation" depicted an actual couching operation which Rembrandt attended, and served as the starting point for his Tobias series. Rembrandt's subsequent "The Healing of the Blind Tobit" was drawn around 1645. This drawing conforms with "The Eye Operation" in its essentials. Most art historians believe that Rembrandt attended and sketched a couching procedure. Comparison of Rembrandt's early and late works reveals a reduction in detail together with a loss of violet, blue, and green hues. This suggests that Rembrandt developed cataracts in later life. Having already observed and drawn a couching procedure, Rembrandt may have wanted to avoid similar treatment for himself.

What Did Dr. Kevorkian Do Wrong?

Bruce Jennings

During the 1990s, Dr. Jack Kevorkian, a pathologist living in Michigan, assisted the suicides of over 100 critically, terminally ill and disabled persons. He is now serving a prison sentence, but three prior attempts to prosecute him by Michigan authorities ended in hung juries. He became the symbol of a world-wide movement to legalize physician assisted suicide. The legalization of euthanasia in the Netherlands has given this movement credibility and visibility. The movement is also strong in the United States and has so far resulted in the passage of law legalizing PAS under certain conditions in the state of Oregon. Attempts to pass similar laws by popular referendum in Washington, California, Michigan, and Maine have not succeeded.

Where did the PAS movement come from? This talk will place the debate over PAS in the context of the shifting ethics and politics concerning end-of-life care during the past 25 years. I will show how the movement grows out of a rising concern with the nature of end-of-life care in mainstream medicine, the fears of an aging society, and an extension of the atmosphere of personal autonomy and liberty that has been gathering strength in the culture at large, and in medical ethics and law, in particular.

I will review the arguments for and against legalizing PAS both from the point of view of ethics and public policy. I shall argue that it is not the most desirable solution to the very real problems of end-of-life care, but that it might in fact hinder

the development of better hospice and palliative care systems that would meet the needs of most dying persons. I also believe that the safeguards built into the Oregon law are inherently unstable, and that PAS, if made legal and morally legitimate as a part of accepted medical practice, will be extended to methods and populations that are now ruled out of bounds on ethical grounds. For example, from PAS to lethal injection; euthanasia by advance directive; extension to pediatric cases; extension to psychiatric cases, and the like.

These extensions will move us toward, and even beyond, the situation in the Netherlands, where a substantial number of cases of non-voluntary active euthanasia occur each year. But we will find ourselves facing this prospect with a health care system that is substantially less just and humane than the Dutch system. Dutch euthanasia and American commercial medicine would give us a morally dangerous world indeed. This is not the reform and the relief that elderly and dying consumers are searching for.

Reminiscences of my three professors; Cogan, Adler, and Scheie

Melvin G. Alper

Most Ophthalmologists remember my professors by their remarkable contributions to Ophthalmology; and for their text books; Cogan for "Neurology of the Ocular Muscles", Adler for "Physiology of the Eye", and Scheie for "Surgery of the Eye". My remembrance is a very personal one which I share with my wife and for which we are so very grateful. This paper relates some of these very special memories.

Ophthalmology at Mount Sinai Hospital; A Brief History

Ira Eliasoph

The Mount Sinai Hospital was founded in 1852 and this year marks its 150th Anniversary. The Ophthalmology Service was started by Emil Gruening in 1879. Eye care was provided prior to that year. The discoverer of cocaine for local anesthesia was there. The author of the most widely used Manual of Diseases of the Eye and designer of a direct electric ophthalmoscope used widely for many years was there. Transplant of a rabbit eye to a man was done there (with young William Wilmer). A mentor of Albert Einstein was there. The designer of the original logo of the Academy and predictor of refractive surgery was there. A method of identifying people by their unique eyes originated there. The service has had colorful and productive members throughout its history.

Escher and the Ophthalmologist

Michael F. Marmor, MD

The Dutch printmaker, M. C. Escher (1898-1972) is famous for intricate designs that divide the plane into interlocking figures, thus blurring the distinction between object and background.

Although he made such designs by intuition for many years, correspondence in the

1950s with an ophthalmologist, J. W. Wagenaar, gave Escher new insight into the perceptual implications of these designs. Escher was sufficiently impressed to quote Wagenaar in a book, and the story of these exchanges is an interesting footnote to his career.

Edwardian Snowblindness – Ophthalmic Travails in the Arctic and Antarctic David C. Bisno

At the turn of the 20th Century, the north and South Poles were coveted prizes in the fiercely nationalistic age of exploration. Driving ambitions involved uncommon courage by unusual personalities including Robert E. Peary, Ernest Shackleton, Roald Amundsen and Robert Falcon Scott.

Relentless quest for glory and fortune went parka and parcel with piercing frigid temperatures and penetrating ocular trauma. Twenty-four hour nights competed with white-outs and the pain and disability of glaring snowblindness. If learning one's position at 40 degrees below zero by sighting through a sextant with the sun barely above the horizon when surrounded by 360 degrees of whiteness was a challenge, perhaps no less frustrating was the need to know the science of polar optics in order to cope with visual illusions of time and space – the Novaya Zemlya Effect.

These were inspirational and implacable men with unrelenting wills to reach intangible goals. We will learn of the ophthalmic travails of Britain's beloved failure, Norway's forgotten hero and America's consummate fraud. We will unravel their ocular history while they played by Edwardian rules.

Ridley and Other IOL's in Philadelphia Charles Letocha

The first intraocular lens implantations in the United States were performed by Drs. Warren Reese and Turgut Hamdi at Wills Eye Hospital. These pioneers persisted in their work for many years and produced some remarkably good results for the period in which they worked.

A Short Guided Tour Through Sir Harold Ridley's Attic: Some Revisions of Ophthalmic History

David J. Apple, M.D.

I first met and established a personal and professional friendship with Harold Ridley in 1985. Realizing that 1) the value of his innovations were not widely understood and appreciated, and 2) he had moved to retirement after years of misunderstandings regarding his value to society and not having received an appropriate legacy, I elected to combine this friendship with an attempt to

champion his cause. This all came to a very positive fruition, culminating in his Knighthood on February 9, 2001, alas only one year prior to his death on March 25, 2001 at the age of 94. I will present a small photographic journey through a small sample of significant documents and memorabilia that had been stored in his cabinets in his study at his retirement home near Salisbury, England. They are now and will be even more interesting as time passes. I am convinced that some minor revisions of ophthalmic history are in order regarding Sir Harold Ridley and some of his proteges.

The Snyder Lecture: Early American Spectacle Makers

J. William Rosenthal

In colonial times, spectacles were imported from Europe, as were most articles. It was cheaper to import the finished article than to pay for expensive labor in America. (Sound familiar?) One of the Pilgrims, Peter Brown (1620), brought glasses with him on the Mayflower. In 1799, John McAllister, Sr. started an opticianry store in Philadelphia ñ the first in the United States. He had to manufacture his own spectacles starting in 1808 due to the British embargo prior to the war of 1812. Between these dates (1620-1808), individual jewelers, watchmakers, hardware providers and the like produced spectacles as a custom made article. We find names such as Adams, Beecher, Schnaitman, Rittenhouse, and many other makers' names on the temple pieces of spectacles made of gold and brass but mostly silver. Some of these are discussed in detail.

Landmarks in the Development of Fluorescein Angiography

Patrick J. Saine

It is axiomatic to state that in its short 150 year history, photography has changed our world.

We see history differently before and after the advent of photographic documentation. The first published photograph of a human retina appeared in the Philadelphia Photographer in 1888.

Fundus photography's initial impact on ophthalmology was to replace tedious drawings and paintings of the retina. Then in 1961, the introduction of the photographic dye test fluorescein angiography revolutionized the way retinal disease was diagnosed and treated. Novotny and Alvis, two Indiana University medical students, were the authors of that seminal description of retinal angiography. Most of the techniques they described are still in use today. Ocular angiography has since become an essential tool in the field of ophthalmology. But the real story behind the development of this procedure is one of synthesis rather than invention. This presentation will describe the evolution of ocular angiography as the combination of two different ophthalmic traditions: retinal imaging and the use of ophthalmic dyes.

Clinical Trials in Medicine and Surgery During the Civil War

Richard W. Hertle

We are intimately familiar with the design, implementation and reporting characteristics of clinical trials and their means of discovering evidence for and against medical and surgical treatments. Some of the fundamental principles, concepts and thought processes that have evolved into the “modern” clinical trial have roots in ancient Hindu, Greek and Roman medicine. During the American Civil War (1861-1865), physicians and surgeons struggled with infectious diseases and new types of trauma. In response to these challenges, many physicians used new knowledge and technology in comparative ways. This presentation will briefly describe and review over 20 medical reports by physicians during that time. The author will argue that we would, today, consider these reports as representing clinical trials in medicine and surgery. The reports from this period include those that could be categorized as interventional, epidemiological, natural history, pilot, multicenter trials, basic science, prospective clinical trials, and treatment reviews. Topics studied include malarial illnesses, sexually transmitted diseases, opium addiction, nerve injuries, amputation methods and hospital gangrene.

Did Theodore Roosevelt Have a Detached Retina?

William Tasman

At the age of 42 Teddy Roosevelt was the youngest President to ever occupy the White House. He had been a scrawny youngster and it was not until his family took him west at the age of 13 that his nearsightedness was discovered. As an adult, Roosevelt became committed to physical fitness. This led to loss of vision in the left eye after a session of boxing with an army captain in the White House. A vitreous hemorrhage was diagnosed by William Holland Wilmer who was then practicing in Washington, D.C., but the vision never returned. Only six people were aware of the fact that Roosevelt’s left eye had become blind. While a detached retina seemed a likely possibility, a visit by Wilmer to Roosevelt in 1918 established that the former President had a mature cataract in the left eye. If a detachment was present, it could not be diagnosed.

Ancient Egyptian Lenses Assessed at the Louvre: II The Statue of “Le Scribe Accroupi”

Jay M. Enoch, Robert Heitz, et al.

Last year we presented measurements obtained on a remarkable reserve “eye” at the Louvre in Paris. This year we provide data on the two eyes in the statue “Le Scribe Accroupi” (the squatting scribe). This is one of two statues that contain unusual “schematic eyes” that exhibit a built-in “eye-following illusion”. The reserve eye and the eyes of the statue are dimensionally different, but “corneal” front curvatures are surprisingly similar and a common grinding technique may have been used. The statue’s two eyes are well proportioned to the statue and differ

only slightly in measured properties, suggesting a common rock crystal source and common grinding technique. Measurements of the eye-following illusion differ somewhat from those of the reserve eye, which may have been constructed at a different time and by different hands. These eyes are remarkable structures of high quality, and are among the earliest known lens structures.

The Sympathetic Ophthalmia of James Thurber

James G. Ravin

The writer and cartoonist James Thurber (1894-1961) brought humor to a generation or more of Americans. He lost one eye in a childhood accident, and became vitually blind in the other from the complications of sympathetic ophthalmia. He was treated at Columbia-Presbyterian Medical Center in New York City by Gordon Bruce, with the assistance of John Dunnington and Arnold Knapp.

Observations on the Language of Medicine

V.K.Raju

We may trace the developmental history of the language of Medicine, which like the language of a nation has a story and dictionary of its own. The art of medicine was born with the Aryan race. But the language of the Aryans, like that of the Celts, has had only an indirect influence upon the subsequent vocabularies. Sanskrit, the sacred language of the Hindus is the elder brother of the Indo-European linguistic family. We possess some very ancient books on medicine and other sciences in this language. Lack of knowledge of Sanskrit among the medical historians has lead to neglect of the ancient Hindu medicine.

A careful study of the etymology of medical terms would enable us to reconstruct, to some degree, the history of our art.

Historical Notes on Concepts of Normal Ocular Kinematics

Robert S. Jampel

The study of the ocular motor system is a logical and relatively easy means for studying the neurophysiology of eye movement and its integration with the brain's sensory and memory systems. This is because ocular movements are confined to the dimensions of the orbit, allowing measurement by many techniques and devices, and because controls can be exercised over the inputs to the oculomotor system from the visual and vestibular sensory systems. Accurate data from these measurements is of enormous clinical and basic scientific value.

There is a huge and complex literature on this subject that dates from the ancient Greek, Arabic, and Roman cultures to the present. In 1963 Robinson introduced the method for measuring eye movements by means of a scleral search coil in a magnetic field. This new method led to a renewed interest and a proliferation of investigations in ocular motor kinematics and dynamics with an emphasis on cybernetic modeling. Recently the use of high-resolution magnetic imaging of the extraocular muscles reintroduced the idea that connective tissue pulleys exist on

all the extraocular muscles and determine their functional insertions. Displacement of these pulleys is said to be responsible for incomitant strabismus that mainly affects the oblique muscles. Despite these investigative efforts, there are still many controversial issues and considerable confusion concerning both normal and abnormal ocular movements. Most of the illustrious names in the history of ophthalmology had ideas concerning this subject. My presentation is limited to providing a brief historical review of the theories of normal ocular motor function.

Homage to Dr. Albert von Pfluck and His Collection of Coins, Tokens and Medals Depicting Spectacles. Part Two.

Jay Galst

Albert von Pfluck was an ophthalmologist, historian, collector, and patron of the Zeiss Museum in Jena, Germany. He was also a numismatist, and this presentation will discuss the coins, tokens, and medals he collected which depict spectacles as a symbol. (Part One, presented at the 2001 Cogan Society meeting, discussed the coins, tokens, and medals where spectacles are depicted as an optical instrument).

Head Tilts and Face Turns: The Life and Times of Alfred Bielschowsky (1871-1940)

Norman B. Medow

Every ophthalmology resident has been taught the Bielschowsky Head Tilt Test; few really understand it and fewer ever remember it! Alfred Bielschowsky was born into an educated family and received his M.D. degree from the University of Berlin in 1894. While working at the University of Leipzig, Germany, he came under the influence of Ewald Hering (1834-1918) whose interest in the physiology of vision and ocular motility stimulated his research interests. Bielschowsky's early papers 1900–1910 won him great acclaim and led to his becoming a Professor of Ophthalmology first at Marburg and then at Breslau. In 1934 Dr. Bielschowsky visited the United States on a lecture tour. He spoke about his favorite subject, Motor Abnormalities of the Eyes. The Nazis overran Germany at this time and this led to Bielschowsky's immigration. From 1934 until his death in 1940 he taught and lectured from his base at the Dartmouth Eye Institute. Here he associated and collaborated with many of this century's greatest minds in the field of ocular physiology and strabismus. This paper will deal with the accomplishments and achievements of this most gifted physician.

Von Siebold: The Father of Western Medicine and Ophthalmology in Japan

Danny H.-Kauffmann Jokl

Phillip Franz von Siebold (1796-1866) was born in Wuerzburg, Bavaria, where following a family medical academic tradition, he trained in medicine. Two years later he was posted by the Dutch East India Company to Deshina at Nagasaki,

Japan. There he introduced Hippocratic traditions of bedside clinical observation and medical management based on scientific Western concepts of medicine, surgery, and ophthalmology. He also founded the first European-run medical school in Japan. A botanist and anthropologist as well, he to this day is upheld in Japan as the most influential European physician responsible for restructuring Japanese medicine.

Thus Spoke Zarathustra: The Eyes and Brain of Friedrich Nietzsche

Ronald S. Fishman

The iconoclastic philosopher Friedrich Nietzsche had poor vision throughout his life, well before becoming mentally deranged in 1889 at the age of 45. The admitting physician of the sanitarium to which Nietzsche was committed noted pupillary abnormalities and diagnosed “general paresis of the insane” or tertiary syphilis. Biographies of Nietzsche in the century since his death often refer to his alleged neurosyphilis, although the diagnosis is problematical: no Wasserman test was yet available, no autopsy was performed, and clinical grounds alone argue against the diagnosis.