

HINDSIGHT

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Optometric Historical Society

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OHS Meeting – Get Some History Before You “Go Downunder”:

The Optometric Historical Society will meet at the annual meeting of the American Academy of Optometry just before the “Australia party.” The OHS meeting is set for Saturday, December 6, 2003, from 8:00 to 9:00 pm in the Cherokee Room of the Hyatt Regency. The speaker will be Gregory L. Stephens, O.D., Ph.D., of the University of Houston. He will be talking about “**Leonard Thompson Troland: Vision, Technicolor, and the Photon.**” An abstract of his talk follows:

Leonard Troland (1889-1932) is best known for the unit of retinal illumination that bears his name, but little has been published about either his life or his career. Troland was a well-known and influential psychologist at Harvard University, and he published on topics as diverse as the blue arcs of the retina, origin-of-life theories, flicker photometry, and parapsychology. However, Troland also maintained a second career with the Technicolor Motion Picture Corporation, receiving 32 U.S. patents and contributing significantly to Technicolor’s success. He died an accidental death in 1932 at the age of 43, during the deepest part of the Depression and just months before Technicolor introduced the three-color motion picture process that would make the company famous. My purpose is to review Troland’s short but productive life, particularly as it relates to optometry and vision science.

Jay Enoch’s Column:

Medieval Islamic Achievement in Optics by David Lindberg (2003) and (Artificial) “Eye Making” by Michael O. Hughes (2000)

In the past week I have received two very interesting mailings which I briefly share with our readers. They are two wholly different topics, but they are part of our collective heritage in optometry.

1. Lindberg D. Medieval Islamic achievement in optics. *Optics and Photonics News*. July, 2003; 14(4):30-35. This article is also on the website of the Optical Society of America, publisher of *Optics and Photonics News*. Lindberg has long been one of my heroes in history of vision science. In this paper, he eloquently summarizes in readily understandable terms the research of a number of years in his productive life. He was

trained at the University of Chicago, but spent a good period of his career at the University of Wisconsin. In this brief paper, he fundamentally considers the nature of the process of transmission of visual stimuli in space between eye and object viewed.

Basically he starts with Graeco-Roman debates on the nature of vision (spanning roughly 350 B.C. to 210 A.D.), and he addresses the hotly debated theories espoused by very distinguished philosophical schools including those of Aristotle, Euclid, Ptolemy, and Galen. They were major players in these debates. There were two main theories of vision, the intromission and extramission of light theories – these are somewhat curious terms. “Intromission”, supported by Aristotle and his followers argued for transmission of signal *from the object viewed to the observer’s eye*. Extramission theorists argued that *the signal originated at the eye and traveled to the object viewed*. Euclid and his school led the latter arguments. Lindberg notes that Aristotle argued from the physical realities of light “and its transmission and reception”, Euclid and Ptolemy considered geometric/mathematical arguments, and Galen followed the Stoic tradition in these debates and argued from anatomical and physiological grounds. There were quite a number of added distinguished participants in these debates. (and some part of this debate is embedded in folklore as well, e.g., consider the prevalence of the concept of the “evil eye” in its many manifestations – even to this day [this is not the subject of this paper]).

Enter the collapse of the Graeco-Roman world and the obtaining and transmission of knowledge in optics and vision science by a modest number of Arabic/Islamic scholars. Not only did they translate the works of the Greeks and Romans during the dark days of the European barbarians, but they embellished and built upon the earlier foundations. *In fact, they resolved properly the long-standing intromission and extramission controversy*. Lindberg calls special attention to the efforts of Al-Kindi (ca. 800 A.D.), Hunayn ibn Ishaq (ca. 900 A.D.), and Ibn al-Haytham, known as Alhacen or Alhazen (ca. 1000 A.D.).

Al-Kindi corrected errors in Euclid’s theories. Hunayn clarified the anatomy of Galen and supported the earlier argument that the eye lens was the receptive surface for vision. (This writer often has wondered why the already familiar technique of “couching” for cataract [known to both Indians and Egyptians long before this time period] did not demonstrate that there was an error in logic here, i.e., in this treatment for cataract, the eye lens was displaced from the pupil into the vitreous body by the “surgeon”, therefore re-opening an optical pathway. This helped vision when the surgery was successful, but without refractive correction, it did not resolve the quality of vision issue.) Alhacen performed some key experiments. He utilized after-image phenomena to prove that the extramission theory was not correct, and firmly established the external source of vision as the correct process.

There followed a “re-transfer” of classical knowledge, embellished by the Islamic scholars, back into Europe, some via the Moors and Spain, some by other probably Mediterranean routes. Lindberg discusses the role of Roger Bacon in this transfer, and reaffirms his admiration for Kepler (early 1600s) who finally put it all together and

defined the retina as the location of the image formed by the eye and the site of response to visual stimuli (the retinal site had been suggested some years earlier by anatomists, but this was after the time of Leonardo da Vinci). Kepler combined the optics and anatomy properly in a single "argument". (In turn, Descartes, a bit later, embellished and built upon these arguments)

This brief summary is a jewel!

2. Added to the current issue of Ophthalmic Antiques, #84, July 2003, The Newsletter of the Ophthalmic Antiques International Collector's Club, Frank Barraclough, Chairman (in Great Britain), there was included an interesting *separatum*, first published in July, 2000. Michael Hughes. Eye Making: A Brief History of Artificial Eyes Made in Virginia, Washington, D.C., and Surrounding Areas. 24 non-numbered pages including the cover sheet. Mr. Hughes, an Ocularist, may be reached at 307B Maple Avenue West, Vienna, VA 22180-4307, tel: +(703) 352-3520.

The writer started in the contact lens field fitting Obrig scleral "fluid" contact lenses. Theodore Obrig fitted me with the same lenses (worn for eight years). He was assisted by the Salvatori brothers and one of his women technicians. Later, I came to know a number of others among the more modern pioneers in the contact lens field. Some of this early group also made artificial eyes, painted shells, etc., for various purposes. In this booklet, I recognize the suction cups used to remove the Obrig fluid lenses on the page titled "Tidewater Area". In other words, there was a degree of overlap of skills between contact lens fitters and ocularists. In time, I maintained a lively practice most often given over to complex anterior eye problems. I employed many painted sclera/iris/some pupil contact lenses (hard scleral fluid, "fluidless", corneal, later soft lenses). I became quite familiar with techniques employed by ocularists (a more recent descriptive term for those engaged in making artificial eye prostheses). The author of this booklet seems to have been active or broadly aware of developments in this field over a lengthy period of time. Also, early history of ocular prostheses is treated. A number of individuals mentioned by Hughes in his booklet were known to me.

As a young second Lieutenant in the Army during the Korean War (I was told I was the 7th commissioned optometrist in the U.S. Army), I was assigned to the Ophthalmology Clinic of the Walter Reed Army Hospital for training. The author of this booklet speaks of the fine group of ocularists who served there (on the page titled "Washington area"). Indeed, I can verify his comments. I spent many an hour, *in frank admiration*, watching these specialists match an eye shell to an individual's second eye. I regarded them as true artists! Details such as matches of scleral brightness, hue, and saturation, pigmentation, fine vessels and their distributions, etc., were painted on to the shell of these custom ocular prostheses. Fitting was meticulous. These prostheses apparently lasted only several months or a year, when the process had to be repeated again, often on a new shell. Some of the patients were existing military, others were veterans of World War II, casualties from the Berlin Wall period, as well as those newly-injured during the opening phases of the Korean War.

For those interested in the nature of, or techniques employed in the construction of artificial eyes, or contact lens history in the mid-20th century, and related topics, I would urge them to contact Mr. Hughes and obtain a copy of his fine pamphlet.

J.M.E.

Can anyone help with these inquiries?

I occasionally receive inquiries concerning the history of optometry. Many of them are challenging questions which are not easily answered. In recent weeks, I received the following inquiries. Can any of our readers help these individuals with their questions and research? I have included the email addresses of each of the persons requesting information. If you write to them, please copy me (dgoss@indiana.edu), because I think our readers would be interested in the answers to the questions. If you don't have access to email, you could send your answers to me and I will forward them.

1. Scott Parker of the Department of Psychology at American University in Washington, D.C. (sparker@american.edu) wrote that "A week or so ago I was at Ellis Island and was interested to learn that the immigrants had their vision tested using a test that relied on geometric shapes rather than letters from the alphabet (the Snellen chart). The test was apparently developed especially for Ellis Island's screening procedures. The exhibit there gave no information about either who developed the test, how it worked, how norms were established for it, etc. If you have any information about that test, or if you could tell me where I could read something on it, I'd be grateful."

2. Tim Bowden (timbowden@talk21.com) is researching the history of contact lenses. He has interviewed a number of persons and he is in the process of obtaining copies of the living memory tapes held at ILAMO. He writes that he is "seeking information on some of the 'heroes', Jack Neill, William Feinbloom, Theo Obrig, and Ted Bayshore for starters. I am interested about their CL exploits but also about them as people. The contact lens world is scattered with great characters and I would like to record some of their personality as well."

3. Philip Davis Loring, of the Doctoral Program in the History of Science, Graduate School of Arts & Sciences, Harvard University (ploring@fas.harvard.edu), writes: "I am in the earliest stages of research on the history of legibility...Do you have a sense of when it was that letterforms first began to be associated with diagrams of how the eye works? I recall having seen, for example, diagrams which show an 'A' in front of the pupil and an inverted 'A' projected onto the retina, but it appears that the earliest diagrams of retinal projection – Kepler's – feature not letterforms but cityscapes. Further, do you know when letterforms first began to be associated with eye charts and eye exams? I'm wondering if the two answers aren't linked. In any case, if you can shed any light on either, I'd be most grateful."

D.A.G.

History of the Indiana University Division of Optometry:

Over the last few years I have been studying the history of the optometry program at Indiana University, where I received my Ph.D. in 1980 and where I have been a faculty member since 1992. I recently completed a 47-page document on the history of the school from the beginning of the efforts to found it in 1944 to the time of the elevation of its status on the campus from a Division to a School in 1975. The document was published as a special issue of the Indiana Journal of Optometry (Fall, 2003, volume 6, number 2).

It is organized into five chapters, which are in a chronological sequence, and several appendices. The appendices cover a variety of material, including short overviews of the history of optometric education and of the history of the Indiana Optometric Association to provide some historical context for the founding of the school, along with a timeline and various lists and data. Some of the appendices cover the full history of the IU optometry program as both a Division of Optometry and a School of Optometry; these inclusive appendices include the time line, list of full-time faculty, list of M.S. and Ph.D. graduates, and numbers of O.D. graduates. There are also more than 50 quiz questions over the whole history of the school. The table of contents is as follows:

Chapter 1. Founding (1944-1952)

Chapter 2. Beginnings (1952-1959)

Chapter 3. The Foley House Era (1959-1968)

Chapter 4. A New Building and a New Degree (1968-1970)

Chapter 5. A New Director and Elevation to School Status (1970-1975)

Indiana University School of Optometry Timeline

Appendix 1. A Brief History of the Indiana Optometric Association up to the Time of the Start of the School

Appendix 2. House Bill 199

Appendix 3. A Brief History of Optometric Education up to the Time of the Start of the School

Appendix 4. Foley House Basement Key Award Recipients

Appendix 5. List of Graduates of the Physiological Optics/Vision Science Program

Appendix 6. List of Full-time Faculty

Appendix 7. Number of Graduates in each Class

Appendix 8. Quiz questions on the History of the Optometry School at Indiana University

2003 Wall of Recognition Honorees

Efforts to found the school began in 1944. Fortunately, much of the correspondence of the optometrists involved in the founding effort was preserved. The archival record tells a fascinating story. The founders faced several obstacles, the most challenging of which was the opposition of ophthalmology faculty of the Indiana University School of Medicine. After years of unsuccessful negotiations with the medical school, some overtures to other universities in Indiana, and numerous meetings

with officials of Indiana University (some of whom appeared to be strongly on their side), the school founding committee began an effort to have a bill establishing the school passed by the state legislature. After a carefully orchestrated effort, the Indiana optometrists saw House Bill 199 passed by the Indiana House of Representatives 92-0 and the Indiana Senate 39-3 in 1951.

Pre-optometry classes started in 1951 while a Director for the Division of Optometry was recruited. Henry Hofstetter was successfully recruited for that role and he started on the job in 1952. Here again, much useful material was carefully archived. I am sure it is no surprise to many long-time readers of Hindsight that Hofstetter was a meticulous record keeper. The first professional classes started in the fall of 1953. The first class graduated in 1956, earning a Master of Optometry degree. In 1959, an old wooden frame two story house called Foley House was remodeled for the optometry clinic, and the clinic remained there until the new building was occupied in 1968. In 1965, the professional curriculum was expanded to four years and the first Doctor of Optometry graduates completed their studies in 1968. Henry Hofstetter stepped down as Director of the Division of Optometry in 1970. Gordon Heath became the new Director and later became Dean of the School of Optometry, when the change in status from Division to School occurred in 1975.

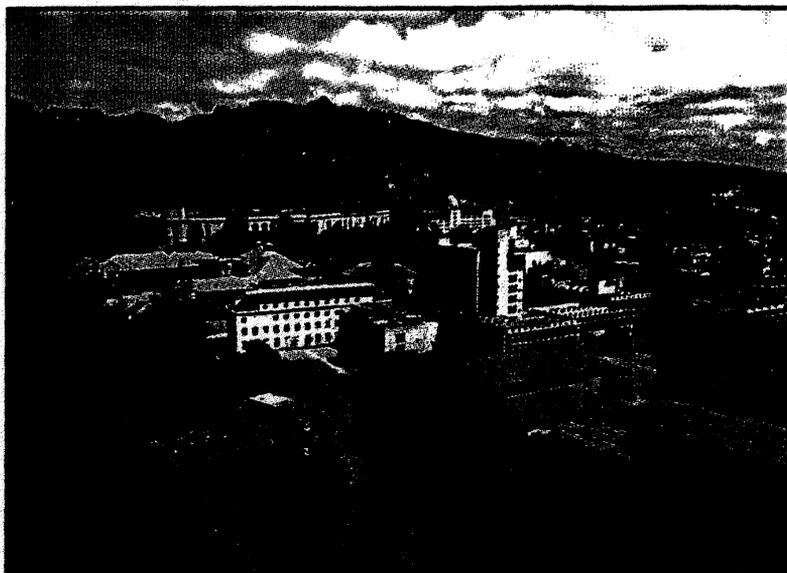
I have a few extra copies of this history, and I would be happy to send a copy to any of our readers as long as supplies last. If you would like a copy, contact me at: David A. Goss, School of Optometry, Indiana University, 800 East Atwater Avenue, Bloomington, IN 47405; phone: 812-855-5379; fax: 812-855-8664; email: dgoss@indiana.edu.

D.A.G.

Meredith Morgan on the history of the U. of California Berkeley School of Optometry:

We are fortunate to have permission again to reproduce one of the articles in the *California Optometry* series on the history of optometry in California. This is the second part of their series which they entitled "Optometry's Screaming Eagles." This part appeared in the September-October, 2003 issue of *California Optometry* (volume 30, number 5, pages 14-16). This article was written by Meredith Morgan and was taken from his Peters Memorial Lecture given to the University of California Berkeley Optometry Alumni Association on October 31, 1971. We again thank the California Optometric Association for permission to reproduce this article verbatim.

Today it is difficult, if not impossible, to find out where the idea of a curriculum in optometry at the University started, but we do know that the concept had sufficient basic support so that a resolution of Charles Wood of Oakland, offered to the 1908 convention of the California Optometric Association to petition the Regents of the University of California to establish "a course in optics," was endorsed by the convention.



Tucked in the Berkeley hills, this California campus has been home to the University's School of Optometry

As a result of this resolution, a committee was appointed to approach president Benjamin I. Wheeler and the regents. The committee apparently had several very discouraging meetings with University

officials, particularly president Wheeler, and in 1910 it reported, "We do, therefore, believe that the time is not yet ripe for a separate Chair of optometry in the University of California."

This report apparently did not kill the idea entirely since in 1914 and 1915 the California Optometric Association had several contacts with the University relative to the establish-

ment of optometry courses in University Extension. This experience resulted in the introduction of a resolution to the 1917 convention "that a Chair of Optometry be established in a University." This was followed in 1918, when President David P. Barrows became president of the University by the appointment of a permanent committee, which was to continue to exist until a program in optometry was approved by the Regents of the University.

This committee consisting of C.D. Mueller, Oakland; R.W. Doig, Oakland; G.L. Schneider, Berkeley; Fred L. Foster, San Jose; C.H. Morrissey, Los Angeles; Glenn Winslow, Los Angeles; Louis Kuttner, San Francisco; Charles Wood, Oakland; and William Kinney, Los Angeles, worked diligently and well. They investigated costs, they worked with faculty and staff at Columbia University, they worked with University Extension and they held many meetings with David P. Barrows, president of the University. During their activities they convinced professors M.W. Haskell and Ralph Minor of the justice of their cause and they succeeded in obtaining the cooperation of these two academic leaders. They inveigled, cajoled, threatened, begged and reasoned with anyone who would listen, including their fellow optometrists as well as university personnel.

In 1918, Professor Minor presented a course, "Optics as Applied in Optometry," under University Extension. In 1920



Ralph Minor, PhD, professor of physics at the University of California, appointed the first director of the division of optometry at the University – shown here, alongside a self portrait.

a faculty committee, headed by professor Haskell, reported to the University Council recommending a curriculum in optometry. Soon thereafter medical opposition became apparent and the University Council, on April 8, 1920, referred the report back to the committee with the request that it confer with the Advisory Committee of the Medical School.

All during the spring and summer of 1920, there was apparent apprehension among the optometric leaders regarding the action of the University Council. It is not possible to reconstruct all that went on behind the scene, but there must have been very effective work, since on November 3, 1920, the University Council and the Academic Senate ordered the Physics Department to take full charge of the development of a curriculum in optometry and "to carry forward a program which will finally result in optometry becoming an independent school, as funds, space and equipment are available."

This matter of funds was a major consideration in the establishment of the program. In order to meet the need for financing optometric education at the University, optometrists raised \$7,500 in money, pledges and notes, and in addition, it was proposed that the license renewal fee be raised from two to ten dollars and that the extra eight dollars be given to the University to support optometric education.

On October 24, 1921 the Academic Senate recommended to the president and the regents that there be published a notice to the effect that the University of California has under consideration the inauguration in August 1923 of a course in optometry. In February 1923, optometrists turned over more than \$9,000 in money and pledges to the regents and in May 1923, the amendment to raise the annual fee from \$2.00 to \$10.00, with the proviso that the extra money be applied to the optometry course at the University, was passed and signed into law.



Pictured here is the 1923 Academic Senate. In August of 1923, the curriculum in optometry was established as a division of the department of physics in the College of Letters and Sciences of the University of California, Berkeley.



George L. Schneider, OD, leading member of the COA, appointed lecturer of optometric courses upon the establishment of the newly formed division of optometry at UC Berkeley.

Thus finally, after fifteen years of concern and five years of continuous effort by a permanent committee of the California Optometric Association, the curriculum in optometry was established in August 1923 as a division of the Department of

Physics in the College of Letters and Science of the University of California. Ralph S. Minor, PhD, professor of physics, became the director of the program and George L. Schneider, a leading member of the COA committee, was appointed lecturer to give the professional optometric courses.

With the opening of the program, extensive gifts were made by individuals and organizations interested in the training of optometrists, and their generosity has continued throughout the years.

The first few years of the program were a pioneering period filled with the struggles common to all new projects. Since these first several years the enrollment has grown steadily from the first class of two students in 1923 to the present enrollment of 235 optometry students.

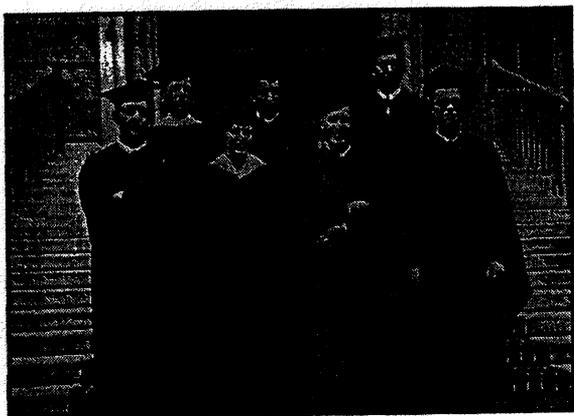
In 1924, Frederick L. Mason, MA, a graduate of Columbia University, was appointed lecturer in optometry and he continued as a faculty member until his retirement on July 1, 1953. Over the years many dedicated men, no longer on the faculty, such as Albert A. Reinke, Harry M. Kamp, TA Brombach, Everett A. Coe, Finley F. Neal, Jack T. Hobson, Kenneth B. Stoddard, Gordon L. Walls and Henry B. Peters, made significant contributions to optometric education at the University of California.

While the curriculum originated in the Department of Physics, a separate Department of Optometry in the College of Letters and Science was established in July 1940. In July 1941, the original mandate concerning the establishment of the curriculum in optometry was carried out by the formation of a separate School of Optometry with its own dean. In January 1948, the curriculum in optometry was expanded by the addition of a graduate year. This expanded program led to

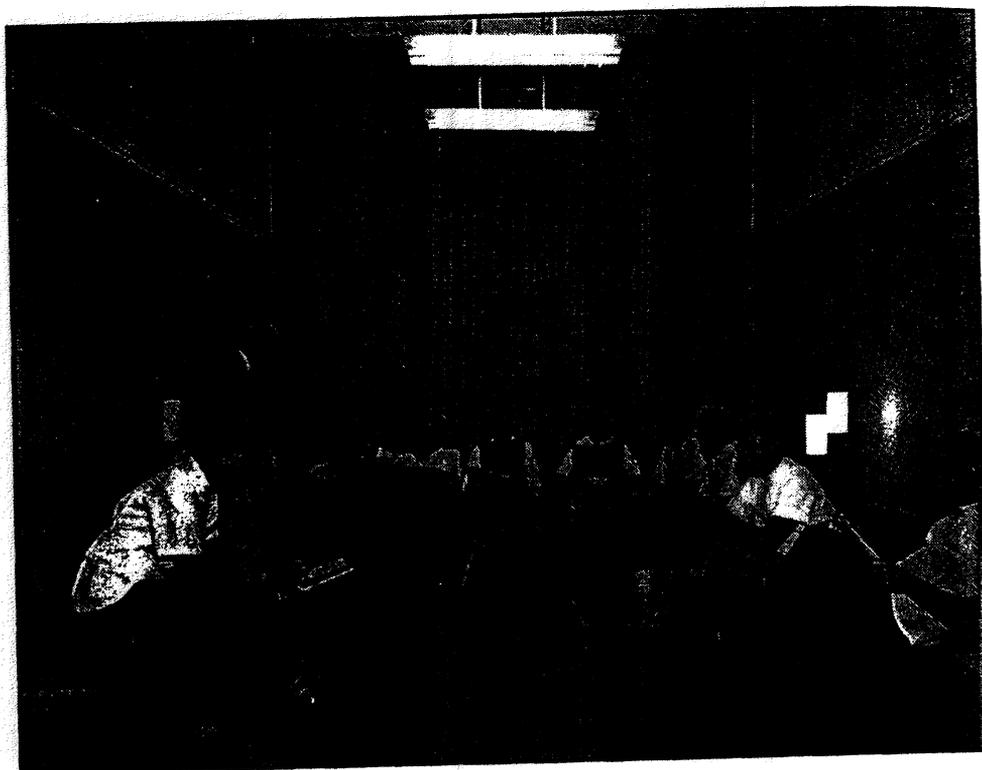
the degree of bachelor of science at the end of the fourth academic year and the certificate in optometry and the degree master of optometry at the end of the fifth academic year. In 1966, the School of Optometry inaugurated a four-year program based on a minimum of two years of pre-professional work.



Frederick L. Mason, MA, appointed lecturer of optometry for UC Berkeley in 1924, pictured here with Kenneth B. Stoddard, dean of optometry for the University from 1946 to 1961.

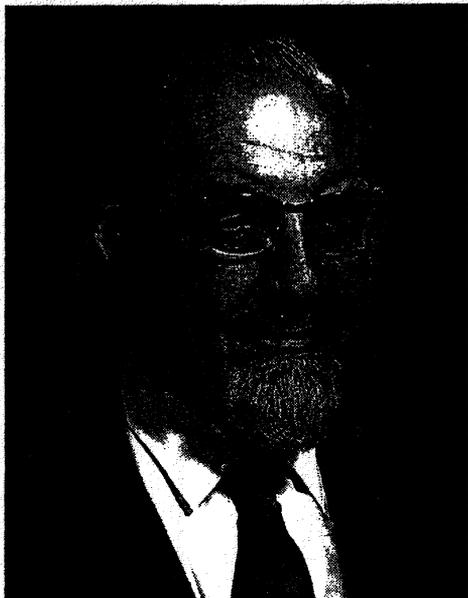


UCBSO Class of 1933.



Students rest, study and ponder their futures in the UCBSO Student Lounge.

This program leads to the degrees of bachelor of science at the end of the fourth academic year and the doctor of optometry at the end of the sixth academic year. In 1946, professor Ralph S. Minor, who had been in charge of the curriculum since its inception and who had been the first dean of the School of Optometry, retired. Kenneth B. Stoddard was appointed dean to succeed professor Minor. Professor Stoddard continued as dean until illness forced his retirement in 1961, at which time Meredith Morgan became dean.



*Meredith Morgan, 1972,
eleven years after becoming
dean of UCBSO.*

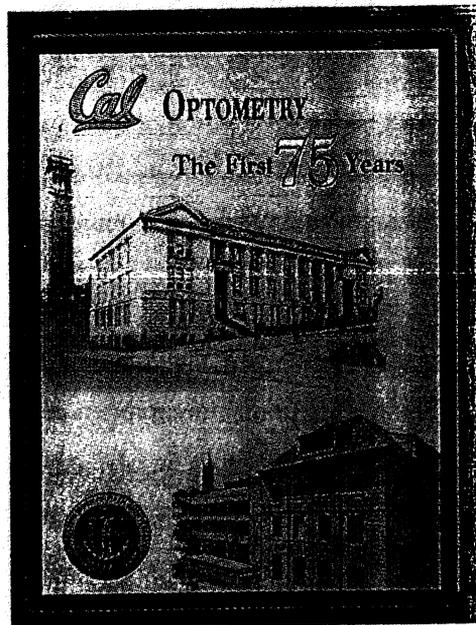
Since its inception, the School of Optometry has been plagued with a serious space problem that was only temporarily solved for a few years in the early fifties. In 1940, the optometrists of the state under the energetic leadership of Drs. Thomas H. Peters, Herman Davis and Ralph S. Minor started a building fund drive, which raised \$85,000 by 1948 for a new optometry building. In 1947, the optometrists were instrumental in obtaining an additional \$300,000 grant

from the state legislature for the same purpose. In 1948, on the hottest June day in twenty years, the present optometry building was dedicated during the Congress of the American Optometric Association, held in San Francisco that year. Within ten years, due to the expansion of clinical activities and research, this new building became too small.

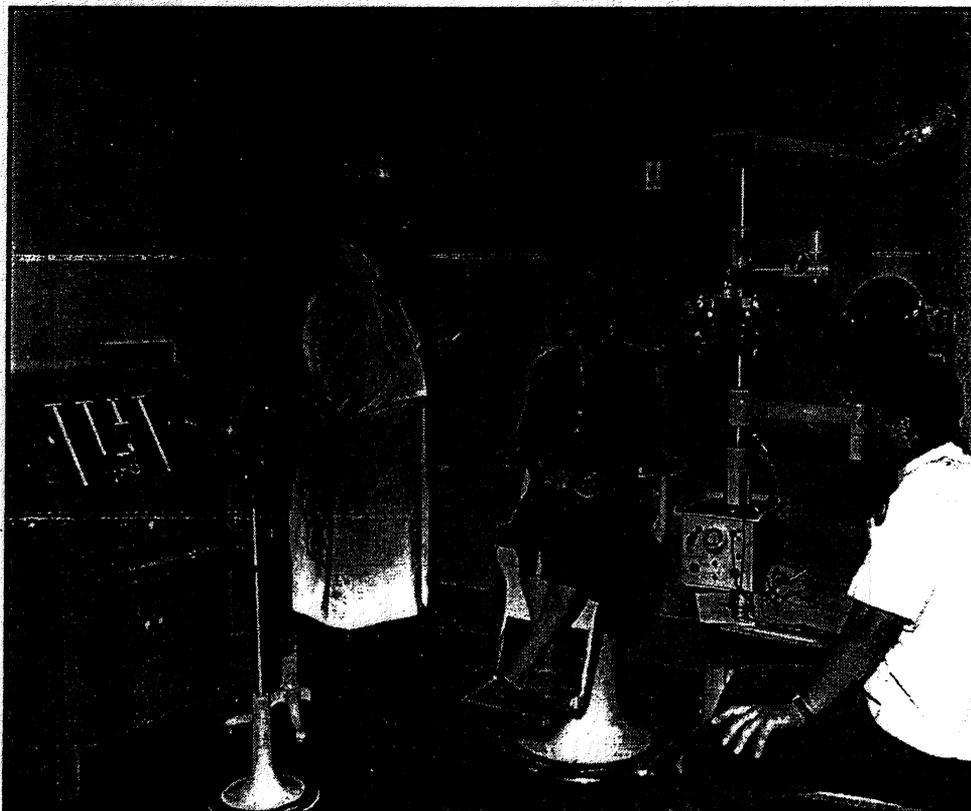
In 1946, the Graduate Council of the University of California approved the establishment of a graduate program in physiological optics leading to the MS and the PhD. As ini-

tially established, this program was administered by a faculty selected from optometry, physiology, psychology, physics and ophthalmology. Except for a period of two years, the chairman of the Group in Physiological Optics has always been the dean of the School of Optometry. During the past several years, the Group in Physiological Optics has been the same as the faculty of the School of Optometry.

The past has been characterized by change and growth; sometimes slow, sometimes rapid, but in general, the change and growth have been in one direction - increased size and excellence.



UCBSO Celebrates 75 years!



A UCBSO student observes the examination of a patient.

Antique ophthalmic instruments and books at the Royal College Museum:

A two part article in the British Journal of Ophthalmology published in 2002 discusses the antique ophthalmic instruments and the antiquarian book collection at the Royal College of Ophthalmologists in London (Keeler R. Antique ophthalmic instruments and books: the Royal College Museum. Brit J Ophthalmol 2002; Part I. Instruments 86(6):602-603; Part II. Antiquarian book collection 86(7):712-714). The author is curator at the Royal College of Ophthalmologists.

The museum has more than 70 ophthalmoscopes from the nineteenth century, including an early model of Helmholtz's ophthalmoscope (1851). The author notes that Helmholtz used a candle as the source of illumination for his ophthalmoscope. Henry Juler is credited as being the first to incorporate an incandescent bulb in an ophthalmoscope. In the various early ophthalmoscopes there were a number of ways of reflecting light into the eye, including glass mirrors and polished steel. John Couper is mentioned as the first to angle the mirror away from the plane of the lenses in the ophthalmoscope. Helmholtz's engineer, Egbert Rekoss, is said to have invented the rotatable disc of lenses to aid in viewing the fundus (1852). The museum has various other instruments, including an 1875 trial lens set and nineteenth century surgical instruments.

The oldest book in the library was published in 1620 and is entitled *Seabrooke's Caveat: Or His warning piece to all his loving Country-men, to beware how they meddle with the Eyes*. The author was Richard Seabrooke, "practitioner in the art of the oculist." Included among the many books in the collection dated before the discovery of the ophthalmoscope is a first edition of Sir William Mackenzie's *A Practical Treatise on the Diseases of the Eye* (1830). The author credits Mackenzie with introducing the term asthenopia and with publishing what may have been the first discussion about intraocular pressure increase in glaucoma. Another book in the collection is the 1787 second edition of *Remarks on the ophthalmia, psorophthalmy and purulent eye; with methods of cure, considerably different from those commonly used; and cases annexed in proof of utility; also the case of a gutta serena cured by electricity*, by James Ware (1756-1815). The author credits Richard Liebreich (1830-1917) with being the first to publish an atlas of ophthalmoscopy, *Atlas des Ophthalmoscopie* (1863). Liebreich was an assistant to von Graefe from 1854 to 1862, and later also worked in England and France. Liebreich was a painter in his later years, and in 1899 he exhibited a portrait of von Graefe.

D.A.G.

The eye and vision problems of Samuel Pepys:

"The big brown eyes of Samuel Pepys" is the title of an article published in the July, 2002 issue of the *Archives of Ophthalmology* (volume 120, number 7, pages 969-975). The authors appear to be an ophthalmologist, an optometrist, and a "literary

lecturer and social historian”, Graham A. Wilson, Amanda P. Field, and Susannah Fullerton. The authors’ abstract states: “Samuel Pepys (1633-1703) is known for writing the finest diary in the English language. He was a man of remarkable accomplishments who transformed the English Navy, was president of the Royal Society, and was a member of the British Parliament. He survived the Great Plague and imprisonment in the Tower of London. During the years when he was writing the diary, Pepys began to experience great pain in his eyes when reading and writing and from photophobia, which caused him to give up writing the diary. Pepys also had an ultimately unjustifiable fear of blindness.”

The authors provide some background on Pepys and the diary. They mention some of the diagnoses suggested in eight previous publications speculating on the nature of Pepys’ eye and vision problems (hyperopia, astigmatism, early presbyopia, esophoria, convergence insufficiency, conjunctivitis, and overeating). They then detail the eye and vision complaints registered by Pepys in his dairy. His primary complaint of visual fatigue on reading and writing began when he was 30 years old. He also complained of photophobia and eye pain, soreness, watering, and redness.

The authors discuss possible diagnoses and finally conclude that “the origin of Pepys’ asthenopia was multifactorial: a low amount of uncorrected hypermetropia and astigmatism, convergence insufficiency with near exophoria, nonspecific low-grade ocular inflammation that was exacerbated by alcohol, paranasal sinus inflammation contiguous with or referred to the eye or orbit, a contributing functional element, and an obsessional personality....With the passing of centuries since the writing of the diary, our diagnosis is at best speculative.”

D.A.G.

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