

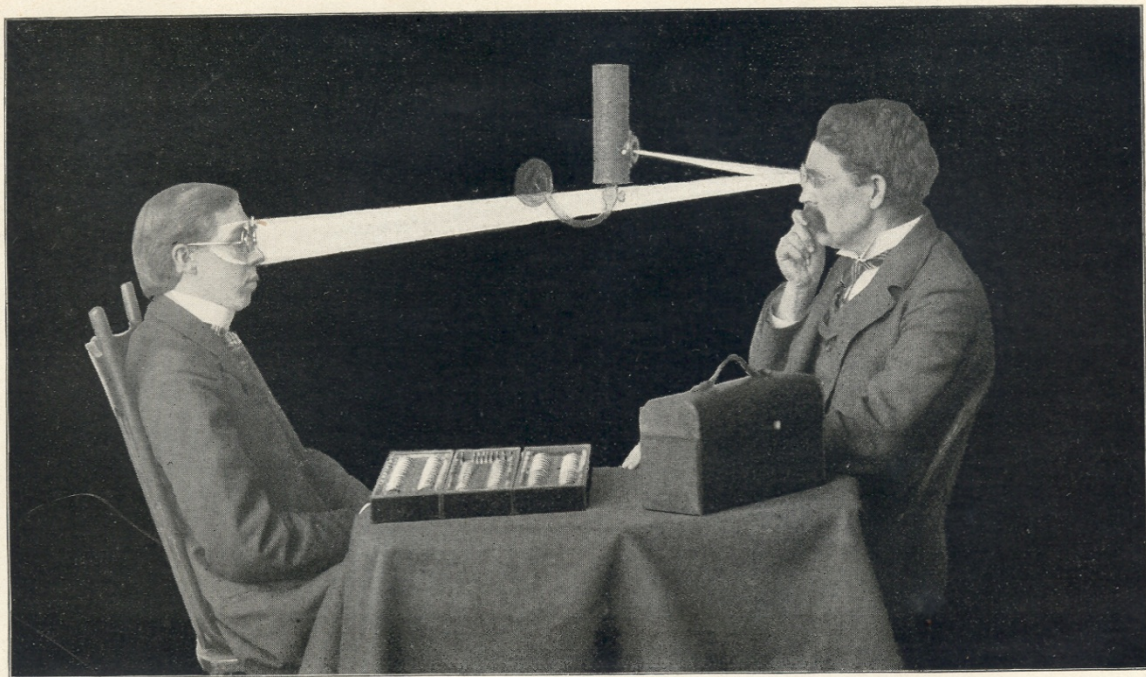
HINDSIGHT

Journal of Optometry History

July, 2013

Volume 44, Number 3

Official Publication of the Optometric Historical Society



SKIASCOPIC EXAMINATION AT ONE METER.
Light, by way of mirror, at $1\frac{1}{2}$ meters. Testing the horizontal meridian.

Hindsight: Journal of Optometry History publishes material on the history of optometry and related topics. As the official publication of the Optometric Historical Society, Hindsight: Journal of Optometry History supports the purposes and functions of the Optometric Historical Society.

The purposes of the Optometric Historical Society, according to its by-laws, are:

- to encourage the collection and preservation of materials relating to the history of optometry,
- to assist in securing and documenting the recollections of those who participated in the development of optometry,
- to encourage and assist in the care of archives of optometric interest,
- to identify and mark sites, landmarks, monuments, and structures of significance in optometric development, and
- to shed honor and recognition on persons, groups, and agencies making notable contributions toward the goals of the society.

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The official publication of the Optometric Historical Society, published quarterly since its beginning, was previously titled:

Newsletter of the Optometric Historical Society, 1970-1991 (volumes 1-22), and

Hindsight: Newsletter of the Optometric Historical Society, 1992-2006 (volumes 23-37).

Use of the current title, Hindsight: Journal of Optometry History, began in 2007 with volume 38, number 1.

On the cover: Illustration of the performance of retinoscopy from a 1899 book, A Treatise on the Shadow Test in its Practical Application to the Work of Refraction, by George A. Rogers, page 12. This picture illustrates how light from a lamp on the wall was reflected from the retinoscope and directed toward the patient. This issue contains a short article on the history of retinoscopy.

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July, 2013

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Editor:

David A. Goss, School of Optometry, Indiana University, Bloomington, IN 47405,
dgoss@indiana.edu

Contributing Editors:

Jay M. Enoch, 5537 106th Avenue NE, Kirkland, WA 98033-7413,
jmenoch@berkeley.edu

Irving Bennett, 5551 Dunrobin Drive, #4208, Sarasota, FL 34231, or 3307 Seventh
Avenue, Beaver Falls, PA 15010, irvbennett23@gmail.com

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Journal subscriptions are registered by joining the Optometric Historical Society. The cost of an institutional or library subscription is the same as for personal membership.

Manuscripts submitted for publication should be sent to the Editor at the email or postal address above. A Word document attached to an email message is the preferred means of submission. Paper copy submissions sent by postal service will also be considered.

OHS News

OPTOMETRIC HISTORICAL SOCIETY

Affiliated with Optometry Cares – The AOA Foundation
243 North Lindbergh Boulevard
St. Louis, MO 63141

2012-2013 ANNUAL REPORT

Submitted by John F. Amos, OHS President

In 2009 the Optometric Historical Society (OHS) signed a Memorandum of Understanding (MOU) with Optometry Cares – The AOA Foundation that established a trial merger between OHS and The AOA Foundation. Since its inception this merger has been successful and in 2012 the OHS became an official part of Optometry Cares – The AOA Foundation. The OHS is staffed by Mr. Dennis Holter, Chief Advancement Officer for the AOA and Optometry Cares – The AOA Foundation, who assists the OHS with communications to the profession and the media and also arrangements for meetings. Ms. Emily Stenberg, a former staff member of the AOA Archives and Museum, assisted the OHS with matters related to membership and the collection of dues. Ms. Stenberg is leaving the AOA for another position. Her responsibilities have temporarily been assumed by Rebecca Hildebrand, Development Officer for Optometry Cares – The AOA Foundation. Currently the membership of the OHS is 93, 78 individuals and 15 organizations/libraries. The financial status of OHS continues to be stable and the cash flow is positive.

For the past four years, Dr. Irving Bennett has served as President of the OHS. Dr. Bennett deserves our gratitude for providing stability to the OHS. It is the result of his efforts that visibility of the OHS has increased through the publication of “Historical Gems” that have appeared in the AOA’s online daily update “First Look”. Articles of a historical nature have also been featured periodically in the AOA News. This increased visibility has resulted in an increase in membership as well. Dr. Bennett’s dedication to the OHS, Optometry Cares – The AOA Foundation and the profession of optometry over his distinguished career is both noteworthy and remarkable. He has agreed to continue to serve the OHS as a member of the Board of Trustees. The OHS is fortunate to have had such dedicated leadership this past four years.

This past October the OHS met in Phoenix, Arizona in conjunction with the American Academy of Optometry. This was the first “Blast from the Past” presentation after many years of the OHS holding a “Reminisce-In”. The featured speaker for this newly named event was Dr. Morton Greenspoon. His presentation was the “History of contact Lenses in the Movies”. Dr. Greenspoon and his late father, Dr. Reuben Greenspoon, are well-known within the profession for their work with the movie and television industry in providing specialty contact lenses. It was a fascinating history of this unique aspect of clinical optometry from their first efforts in 1939 until the

present. The attendance at this meeting was excellent with over 50 optometrists, residents and students present. The OHS is reaching out to the AOSA in an effort to attract students and young optometrists to learn more about the important history of the profession.

An updated version of this topic will be presented at the OHS meeting, which for the first time will be co-sponsored with the Contact Lens and Cornea Section, at AOA's Optometry's Meeting this June in San Diego, CA. Dr. Morton Greenspoon will share the history and associated anecdotes of working with the movie and television industry, including the highlights of his first presentation, in addition to additional history not previously covered.

Dr. David Goss continues to serve as Editor of HINDSIGHT: Journal of Optometry History. This journal is published quarterly and is now in its 43rd year. Dr. Goss has recently implemented a change in the cover of this publication so there is a color photograph of historical interest or importance. OHS is indebted to Dr. Goss for his editorial leadership and excellent writing of papers for publication in this journal. All optometrists are encouraged to submit papers of historical interest to Dr. Goss. We also continue to urge members of the AOA to join the Optometric Historical Society. The annual dues are \$25.00 and the membership requirements are few.

There is a need to update Dr. James Gregg's book on the "History of the AOA" or commission an author to write a history of optometry covering the past 60 years. The OHS would also like to encourage the development of a one-hour power-point presentation for presentation to incoming students of optometry or perhaps local society meetings. Likewise, there is the need for the design of a banner for the organization.

The OHS held elections for members of the Board of Trustees in December 2012 for terms beginning January 2013 through December 2016. The elected Board members then voted among themselves, as outlined in the OHS by-laws, for officer positions. The duly elected Officers and Board Members for 2013 are the following optometrists.

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Letters to the Editor: World War II Experiences

Jack Runninger, O.D.
runningerj@comcast.net

I am writing in response to the summary in the April, 2013 issue of *Hindsight* of an article in *ICO Matters* about involvement of some Illinois College of Optometry alumni in World War II.^{1,2} You asked for recollections of the World War II era of any of us who were involved back then. Despite the interruption to my college education and life in general, World War II turned out in one way to be a blessing for me. I was the Combat Information Center officer aboard an attack transport, participating in the invasion of Iwo Jima in 1945. The night before D-Day as we were steaming into position, sleep was hard to come by, even though we were scheduled to arise at 2:00 a.m. The noise of bombardment, plus the nervous apprehension made sleep impossible. Thus another officer, Arthur Chalmers, and I spent the bedtime hours instead in conversation. It turned out he was an optometrist. This conversation was what got me interested in studying optometry, so despite the fear and experience of the invasion, I always remember how it was responsible for my becoming an optometrist, a career I have so thoroughly enjoyed!!!!

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Lester Caplan, O.D., M.Ed.
lcacc@comcast.net

Whenever I tell the story of my Optometric Education, it begins with, "I completed optometry school in two years". That statement always raises some eyebrows, so I go on to tell the story of my two-year journey to obtain my Doctor of Optometry Degree at Northern Illinois College of Optometry (NICO), a story that I refer to as the "The Two-Year Wonder".

I was drafted in March 1943, just shy of 19 years of age. I was a Private in the Army for 3 years and 3 days and was in Okinawa when WW II ended with the dropping of the atomic bomb. I was then deployed to Korea and, as a member of the Army Signal Corps, was assigned to set-up communications between the cities of Seoul and Pusan, while stationed on a mountaintop in the middle of "no-where". Upon my discharge in March 1946, I decided that I would like to pursue a career in a health profession. Since I had gotten married six months after returning to civilian life, I felt it was imperative that the length of my undergraduate and post-graduate studies determine my eventual choice. Medicine was out of the question, as I did not want to wait 10 years before being in a position to support my family. I knew nothing about optometry, but when a close friend mentioned that he was thinking about applying to a

school of optometry in Chicago, I thought it was worth looking into. My investigation revealed that the profession of optometry would meet my goal of becoming a health professional within a relatively short period of time. I applied to Northern Illinois College of Optometry, which awarded a Doctor of Optometry degree after four years of study. The first year consisted of pre-optometry courses, while the last three years were the professional didactic and laboratory courses, along with clinical training. I was informed that all classes were filled. However, since there was an exceedingly high attrition rate in the freshman classes, I would be able to enter their program as a second year student if I had college credits in courses equal to the pre-optometry courses that were taught in their first year. Fortunately, during the war, I had acquired some of the required credits in the Army Specialized Training Program (ASTP) at Wheaton College in Illinois. However, I was lacking some courses, so I enrolled at the University of Maryland in September 1946 and earned the additional needed credits. I began my studies at NICO as a second year student in September 1947.

In the Immediate post-WW II era, almost all higher education institutions had dramatically increased their enrollment and modified their programs in order to meet the challenge of the influx of thousands upon thousands of veterans seeking a college education under the G.I. Bill. Accordingly, at NICO, three distinct classes started each calendar year (February, June, September). In addition to the three classes a year, the program had been modified so that the 2nd through the 4th year of training was accelerated, with no summer or long holiday breaks, thereby enabling the three year program to be completed in two years. I don't know how many students started in the freshman year of my class, but there were 243 in my graduating class in September 1949, exactly two years after I had matriculated. New applications rapidly decreased over the following years and I believe that by 1949 or 1950, enrollment had dropped to the point where it was no longer necessary to have more than one freshman class a year.

And that's my NICO, Two-Year Wonder story. Sixty-four years later, after 30 years of private practice in Baltimore, Maryland and 34 years in academia at the UAB School of Optometry, I am thinking about retiring next year. As my friends and colleagues have repeated time and time again over the past 34 years, "not again".

Hindsight Classic Article: The OHS Mission

Henry W Hofstetter, O.D., Ph.D. (1914-2002)

Editor's Note: Henry Hofstetter was one of the founders of the Optometric Historical Society, its first president, and the first editor of its publication. He published this article in the July, 1996 issue of Hindsight (volume 27, number 3, pages 17-18). It could rightfully be considered a classic statement of the importance of Hindsight and of the Optometric Historical Society. It is with that in mind that it is reprinted here.

"It is depressingly clear that we Americans are largely ignorant of our history," says Robert McC. Adams, Secretary of the Smithsonian Institution, in the lead editorial of the February 1994 issue of *Smithsonian*, vol. 24, no. 11, p. 8.

Similarly, I find the circumstances at least as depressing in American optometry. What is more depressing than merely the lack of clear images of optometry's past is the prevailing unawareness of the ignorance itself. Many an erroneous assertion in prominent published optometric papers and reports is made as though the author has some historical insight when in fact it is a cold presumption, if not merely a popular misconception. Much of this circumstance may well be a Freudian desire to envisage current concepts, trends, and technologies as "new" developments, the interpretation that any change is a sign of progress.

My own career experiences enable me to appreciate the significance of this commentary. In high school and in my first two college years I ranked history as my academic subject of least interest. During my next three years as an elementary school teacher of eight grades in a rural one-room school, I taught the history lessons coldly from a textbook.

On weekends I worked part-time for a retail hardware firm and was at the same time exploring other more promising fields of endeavor, including the suggestion of optometry. This was the Great Depression era. From the college catalogs I received, the strolls down retail business streets, and the newspaper advertisements of eyewear, I gained the impression that optometry was a relatively "new" field, an interesting retail business involving a technology which seemed to be of fairly recent development. There was no hint that spectacles had been invented more than 600 years earlier!

Quite naively, in September of 1936, without even submitting a letter of application for admission, I rode the train 150 miles to Columbus, Ohio, and enrolled in the curriculum of beginning courses outlined in the Bulletin of Applied Optics of The Ohio State University, having been told by someone that this was in fact optometry.

In the ensuing three years of professional courses I slowly began to realize that the underlying sciences pertaining to optometry, the visual sciences, were of classic origin, that early optics and philosophy were intermingled, that the visual arts and laws of perception preceded the birth of Christ, etc. Nevertheless I continued to harbor the misconception that optometry itself was “new,” that it was created in the early twentieth century by statutory registration, and that the change of academic identity from Applied Optics to Optometry confirmed it. By way of contrast, nary a hint was dropped to alert me to the fact that by the beginning of the fourteenth century spectaclemakers were already widely consulted by the innumerable presbyopic scribes whose vision was crucial to the preservation and dissemination of science and literature throughout the civilized world.

Three more years of post-professional graduate study in physiological optics with haploscopic research in the accommodation and convergence relationships gradually impressed me with the illustrious contributions of vision scientists early in the Renaissance period. It was beginning to dawn on me that I was in a discipline with as noble and pervasive a heritage as any that I had learned about in my preoptometric cultural studies. Mine was a discipline relatively free of the quackery, charlatanism, fakery, etc., that plagued especially the various components of the healing arts.

Still not a historian at heart I had, right up to that point in my career, failed to realize that I was still mentally excluding clinical optometry from any historical perspective. Then suddenly came my awakening.

In the fall of 1942 I was appointed to The Ohio State University Optometry faculty and was assigned, among other duties, the teaching of a new course in Optometric History and Orientation. Lacking a syllabus or textbook I truly had to scrape and scurry for tidbits of optometric history from journals, newsletters, commercial documents, and various other library references. Fortunately the university library and the optometry school files had accumulated a variety of resources, even old correspondence. What I discovered, especially from British and German periodicals and books, was that clinical optometry did indeed have an honorable heritage, albeit under the rubrics of ophthalmic optician, sight-testing, spectaclemaker, and other identities. The history of spectaclemakers guilds, the role of spectacle styling, the appearance of spectacles in classic oil paintings, reference to spectacles in early literature, the long-prevailing opposition to optical correction by medical authorities, the involvement of religious scruples, ophthalmic instrument inventions, apprenticeships, optical schools, and dozens of other bits of optometricana clearly document optometry's centuries-long existence and emergence from a prestigious and sophisticated handicraft to its present academic stature, a truly proud history which includes many prominent and accomplished personalities.

That very few of us recognized this was the concern of the late Maria Dablemont, Archivist for the American Optometric Association. She was the prime mover to create the Optometric Historical Society in 1969. Like the *Smithsonian*, *Hindsight's* role is to try to dispel our depressing ignorance of optometric history.

James R. Gregg: Practicing Optometrist, Professor, and Writer

David A. Goss, O.D., Ph.D.

School of Optometry, Indiana University, Bloomington, IN 47405, dgoss@indiana.edu

Abstract

James R. Gregg (1914-2009) had long careers in optometry practice and optometric education, but he is probably best known for his extensive writing. He wrote newspaper columns, articles for practicing optometrists, magazine articles about outdoor life, and 15 books. This paper gives a brief biographical sketch and discusses his books.

Key words: *optometric education, optometry books, optometry history.*

James R. Gregg (1914-2009) probably committed more words to print than any other optometrist in history. He wrote extensively for optometric audiences and for the general public. In his autobiography, he wrote about having three occupations – practicing optometrist, professor, and writer.¹

Gregg was born and raised in Napoleon, Ohio, a town of about 2,500 people.² He attended Bluefield Junior College in Bluefield, West Virginia, and Wooster College in Wooster, Ohio, before transferring to The Ohio State University. He graduated from Ohio State with a B.S. in Business Administration in 1937. He had completed most of the work toward a Masters degree in Public Administration at Ohio State before starting optometry school there in 1939. He finished optometry school in 1942, receiving the B.S. in Optometry degree, which was the optometry degree that Ohio State awarded at that time. He completed a post-graduate Doctor of Optometry degree from Los Angeles School of Optometry in 1948.³

After working as an optometrist in Cincinnati, Ohio, Gregg was an Army optometrist from 1943 to 1946. After discharge from the Army, he worked for a few months in an optometry practice in Pasadena, California. In late 1946, he purchased a practice in Los Angeles. In 1947, he started teaching part-time at Los Angeles School of Optometry, beginning a long career at the school now known as the Southern California College of Optometry.

In 1962, Gregg started phasing out of optometry practice to become a full-time faculty member at Los Angeles College of Optometry, but he continued in part-time practice until 1973. Before retiring from Southern California College of Optometry in 1984, Gregg served in various administrative roles, including a year as Interim Dean, and taught courses in physiological optics, clinical optometry, practice management, perimetry, industrial vision, and optometry history.⁴

Gregg was on the California Optometric Association Board of Directors from 1952 to 1959 and was President in 1958. He was also active in numerous community organizations. His work was recognized by two honorary degrees from Los Angeles College of Optometry, Doctor of Ocular Science in 1956 and Doctor of Optometric Letters in 1965.

Among Gregg's writings were about a thousand newspaper items, part of a "Your Vision" column written over a ten year period. He wrote more than one hundred articles for optometric serial publications, about half of which were for *Optometric Management* magazine. He authored more than one hundred papers for the Optometric Extension Program in its monthly professional counseling series and monthly optometric assistants series. One of his non-optometric interests was outdoor life, and he published over one hundred articles on that topic in about sixty different magazines. By my count, Gregg also wrote fifteen books, some of which will be discussed below.

Gregg was a co-author on *Guide to Occupational and Other Visual Needs*, published in 1958 (477 pages).⁵ That book sought to describe how spectacle prescribing should be influenced by occupational and avocational needs. Most of the book consisted of analyses of the visual tasks of various jobs. One to three pages was devoted to each occupation with black and white photographs of persons at work, description of the job, analysis of visual tasks, and factors affecting lens prescriptions.

In 1960, Gregg published *Your Future in Optometry* (160 pages), written for young persons considering optometry as a career. It covered what optometry was, what optometrists do, the required education, how licensure is obtained, school costs, getting a start in practice, earning potential, optometric careers other than private practice, finding a position, military optometry, women in optometry, optometric research, teaching opportunities, characteristics of the successful optometrist, some thoughts about the future, and sources for information. The book was reprinted in 1963 and 1971. In 1978, Gregg revised the book and retitled it *Your Future in New Optometric Careers*. Information added reflected changes in the profession since the original publication in 1960. Topics of the added material included optometric specialties (contact lenses, vision therapy, and low vision), paraoptometric personnel, and trends toward automation.

Gregg co-authored *The Eye and Sight* with Gordon Heath in 1964. It was a small (136 pages) paperback book on vision science written for high school students. It provided a readable basic introduction to ocular structure, visual pathways, ocular optics, refractive conditions, and vision science.

The next year Gregg published *The Story of Optometry*, an account of the history of optometry. In its 305 pages there is a broad overview of early glass and lenses, knowledge of vision in ancient history, invention of spectacles, optometry's background sciences, optometry in America, professional developments, optometric education, beginnings of visual training, contact lens history, and contributions of optometry.

Although it did not give in depth coverage of any one topic, it was easily readable and informative, as illustrated by a contemporary review which said not only that it was “intended for the lay reader,” but also that “optometrists should enjoy reading and owning this book.”⁶

Experiments in Visual Science (1966, 158 pages) described 39 vision science experiments that young people around high school age could perform at home or at school. The experiments were designed to demonstrate principles of reflection, refraction, apertures, chromatic aberration, entoptic phenomena, visual fields, retinal blind spot, visual acuity, dark adaptation, afterimages, color phenomena, eye dominance, eye movements, depth perception, size constancy, optical illusions, and others.

Gregg's next book was *How to Communicate in Optometric Practice* (1969, 250 pages). He presented insights gained through experience on general principles of communication, public education materials, letter writing, explaining test procedures, demonstration aids, educational material for patients, making public presentations, communicating with colleagues, writing for the popular press, and tips on organization leadership. Gregg noted the importance of image building for individual optometrists and for the profession collectively.

In 1971, *The Sportsman's Eye: How to Make Better Use of Your Eyes in the Outdoors* (210 pages) appeared. It was written in three parts for the general public. The first part explained some aspects of vision. The second part discussed spectacle lenses and frames, contact lenses, sunglasses, and optical aids such as binoculars and gunsights. And in the third part there were specific recommendations for better visual performance during outdoor activities.

Gregg's *American Optometric Association – A History* (399 pages), beginning with the formation of its predecessor organization in 1898, was published in 1972. Details of conventions, committees, resolutions, and other organizational matters were included. An appendix has lists of officers, meeting sites, charter members, etc. A review of the book observed that one should not expect “to understand the sociology of the optometric profession” or to find “an in-depth study of optometry” from a reading of the book, but rather it was “an official record of an organization and the people who made the organization...”⁷

The Business of Optometric Practice (226 pages) is James Gregg's compilation of 29 updated articles from the periodical *Optometric Management* from its beginning in 1965 to the publication of this book in 1975. The wide range of practice management topics included practice location, group practice, office design, office policies, personnel, fees, telephone communications, records, recall, collections, insurance, incorporation, retirement, among others. In the foreword, the editor of *Optometric Management* magazine Irving Bennett observed: “The time interval covered by the book has witnessed a remarkable change in the profession. It has seen optometrists consider leaving solo practice for associateships and partnerships. Some have incorporated.

Assistants, technicians and technologists have arrived to relieve optometrists of many sub-professional duties. Multi-aide offices are rapidly becoming the example rather than the exception.” (p. i) The articles are in an easily readable style presented as advice for the practitioner.

In 1984, Gregg published *Origin and Development of the Southern California College of Optometry, 1904-1984* (564 pages), a detailed history of that school from its origins. It is well illustrated and has an extensive appendix with a chronology and lists of trustees, administrators, faculty, graduates, alumni association presidents, and honorary degree recipients.

James Gregg published two books in 1987, *Vision and Sports: An Introduction* (188 pages) and *History of the American Academy of Optometry, 1922-1986* (207 pages). In *Vision and Sports*, Gregg explained how the optometrist could get involved in sports vision. He discussed the relation of visual skills to sports performance, as well as the application of vision screening, contact lenses, eye protection, spectacles, and vision enhancement to sports.

Gregg’s history of the American Academy of Optometry starts with events leading up to its founding in the 1920s and extends into the 1980s. Details of its meetings and its activities are presented. The book also contains photographs of Academy presidents, a chronology, a history of the Academy’s journal, and lists of officers, award winners, and charter members.

Other books that Gregg wrote were *Visual Science as Applied to Law Enforcement* (1968, 168 pages), *Wanted: Optometric Writers* (1986, 72 pages), and his 1997 autobiography, *The Life and Times of James R. Gregg*.

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A Short History of Retinoscopy

David A. Goss, O.D., Ph.D.

School of Optometry, Indiana University, Bloomington, IN 47405, dgoss@indiana.edu

Abstract

Retinoscopy as an objective method of estimating refractive error was developed in the late nineteenth century. Its application to assessment of accommodation in dynamic retinoscopy followed soon thereafter. This paper provides an overview of the history of retinoscopy.

Key words: *optometry history, retinoscopy, refraction methods*

The introduction of retinoscopy was a significant step in the history of clinical refraction in that it provided a relatively accurate objective method for estimating refractive error. Bennett¹ described retinoscopy as “an offshoot from ophthalmoscopy,” because British ophthalmologist Sir William Bowman (1816-1892) reported in 1859 being able to detect slight degrees of keratoconus by observing shadow movements obtained by rotating his ophthalmoscope mirror. Donders² stated that Bowman also was able to use the technique to detect astigmatism and identify the principal meridians.

Credit for the development of retinoscopy is generally given to the French ophthalmologist Ferdinand Cuignet.^{1,3,4} He described the shadows he saw when rotating his ophthalmoscope mirror in a series of papers published from 1873 to 1887 in the journal *Recueil d'Ophthalmologie*.³

Ferdinand Cuignet (1823-1890) was a military physician who served in Algeria, being decorated in 1870. He later taught ophthalmology at the medical school in Lille in France.⁴ He was coeditor of the journal *Recueil d'Ophthalmologie*. According to Hirschberg,⁴ he published only a few papers in addition to his work on retinoscopy and a 271 page book, *Ophthalmie d'Algerie* (1872).

Cuignet used the term *keratoscopie* for the technique that we know today as retinoscopy because he thought the phenomenon was due to the cornea. Other terms suggested for retinoscopy included *dioptriscopie*, *optometrie scotoscopique*, *shadow test*, *pupillokopie*, and *koreskopie*.^{3,5} *Skiascopy* and *skiametry* were commonly used terms for retinoscopy extending well into the twentieth century.

Popularization of retinoscopy in the late nineteenth century came through the efforts of European ophthalmologists Mengin, Chibret, Parent, and Landolt.^{1,3} By the turn of the twentieth century, retinoscopy was popular enough that books were being devoted to the topic. Early books on retinoscopy by ophthalmologists were *Skiascopy and its Practical Application to the Study of Refraction*, by Edward Jackson, 1895 (112

pages) and *Retinoscopy (or Shadow Test) in the Determination of Refraction*, by James Thorington, 1897 (66 pages). Some of the first books on retinoscopy by optometrists were *Skiascopy, A Treatise on the Shadow Test in its Practical Application to the Work of Refraction*, by George A. Rogers, 1899 (221 pages); *Skiametry, Static and Dynamic*, by William B. Needles, 1900 (56 pages); *A System of Ocular Skiametry*, by Andrew Jay Cross, 1903 (181 pages); and *Skiascopy Without the Use of Drugs*, by Robert M. Lockwood, 1906 (112 pages).

The first retinoscopes were perforated mirrors on a handle, with illumination from a candle or from a lamp separate from the retinoscope mirror. The figure on the cover of this issue is an illustration from G.A. Rogers' 1899 book showing retinoscopy being performed.⁶ The examiner holds the retinoscope mirror and reflects light from a lamp to the patient's eye. The lamp appears to be mounted on a wall. A trial lens set can be seen on the table between the examiner and the patient. The first retinoscope with an electric light source incorporated into the retinoscope itself was made in 1901 by Wolff.⁷ An early prominent electric self-luminous retinoscope was the De Zeng retinoscope.⁸

The first electric retinoscopes projected a spot of light. The streak retinoscope, which facilitated the observation of astigmatism, was patented by Jack C. Copeland (1900-1973) in 1927.⁹ Copeland graduated from Northern Illinois College of Optometry in 1922. He started work at Bausch & Lomb as a technical consultant in optics in 1927. He held more than 35 patents.¹⁰ From 1931 to 1956 he was editor of the monthly periodical *Optical Developments*. From 1965 until his death, Copeland taught in the Department of Ophthalmology at the Marquette University School of Medicine, which is now the Medical College of Wisconsin. Copeland did much to popularize streak retinoscopy through his publications, lectures, and demonstrations.¹¹

The initial application of retinoscopy was in the measurement of refractive error, which has come to be known as static retinoscopy. The early development of the use of retinoscopy to assess accommodative function, known as dynamic retinoscopy, is usually credited to American optometrist Andrew Jay Cross (1855-1925). Sheard made a statement that Cross devised his system of dynamic retinoscopy "in the early '80s."¹² Cross devoted a significant portion of his 1903 book on retinoscopy, *A System of Ocular Skiametry*, to dynamic retinoscopy. In 1911, Cross published a tome on dynamic retinoscopy, *Dynamic Retinoscopy in Theory and Practice*.

Pascal¹³ mentioned an early use of dynamic retinoscopy in 1895 by R. Greef to show that accommodation in the blind eye of a young boy occurred when accommodation was stimulated in the other eye. Retinoscopy was mentioned by Edward Jackson in 1895 as a potential objective method of determining amplitude of accommodation.¹⁴

Cross devised an attachment for retinoscopy with letters and dots. He asked the patient to read letters or count dots as retinoscopy was performed. Cross advocated adding plus lenses to reversal. In today's dynamic retinoscopy, this most resembles low neutral retinoscopy in which when a lag of accommodation is observed, plus is added to

the first observed neutral. Canadian optometrist Ivan Nott (1892-1969) described a dynamic retinoscopy procedure in which the nearpoint target remained at a fixed distance while the retinoscope was moved separately back behind the target until neutral was observed.¹⁵ This procedure, in which the distance of the retinoscope from the patient yields an accommodative response measurement, is known as Nott retinoscopy.

Probably the most commonly used dynamic retinoscopy procedure today is the monocular estimation method (MEM). In 1960, Pacific University College of Optometry faculty member Harold Haynes (1926-1997) detailed a method of finding lag of accommodation by estimating in diopters how far the retinoscopic reflex was from neutral and using lenses "interposed only momentarily to check the examiner's estimates."¹⁶ Various authors have thus credited Haynes with devising MEM retinoscopy.¹⁷⁻¹⁹ Several other dynamic retinoscopy procedures, such as bell retinoscopy, book retinoscopy, and stresspoint retinoscopy, have also been described.¹⁸

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Book Review: Ophtha-Philately: A Journey to Ophthalmology Through Postage Stamps of the World

Ophtha-Philately: A Journey to Ophthalmology Through Postage Stamps of the World. Samar K. Basak. New Delhi, India: Jaypee Brothers, 2007. 206 pages. ISBN: 81-8448-035-0. Softcover, \$30.

David A. Goss, O.D., Ph.D.

School of Optometry, Indiana University, Bloomington, IN 47405, dgoss@indiana.edu

The author, an ophthalmologist, defines “ophtha-philately” as “the collection and study of postage stamps and other related materials that pertain to the subject ‘ophthalmology’ in some way.” (p. xi) This book contains color reproductions of over 300 postage stamps. Images of the stamps in the book depict the eye in ancient history, anatomy and physiology, diseases and their treatment, optical instruments and studies, spectacles, blindness and rehabilitation, medical and non-medical persons involved in the study of the eye and optics, and ophthalmology conferences and organizations.

The non-medical personalities represented on stamps in this book are Alhazen, Nicholas of Cusa, Leonardo da Vinci, Galileo, Johannes Kepler, Daza de Valdes, Rene Descartes, Christiaan Huygens, Isaac Newton, Benjamin Franklin, Empress Maria Theresa (who in 1773 in Vienna established the first university chair in ophthalmology in Europe), Goethe, Helmholtz, Carl Zeiss, Ernst Abbe, and Percy Julian (who was the first to synthesize physostigmine).

The stamps illustrated are from numerous countries all around the world. I counted seven stamps from the United States. Some of the images are a little out of focus. Twelve items, some of which are websites, are listed on a bibliography page.

This small (18 x 12 cm, 206 pages) softcover book can be compared to Blodi's large (31 x 22 cm, 296 pages) hardcover treatise, *The Eye, Vision and Ophthalmology on Postage Stamps*, published in 1986. Blodi's book is Part Two of Volume 11 in the *History of Ophthalmology* series from the Wayenborgh publishing company. The figures in Barak's book are in color, whereas in Blodi's book they are mostly black-and-white. Glancing through Blodi's book, it appears to have somewhat more comprehensive coverage in numbers of stamps and in explanatory material. The Barak book, being 20 years newer, covers recent stamps that the Blodi book does not. The cost advantage definitely goes to the Barak book at \$30, in contrast to \$3,132 for the *History of Ophthalmology* series which is sold only as a multiple volume set.