

HINDSIGHT

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Optometric Historical Society
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2003 OHS Board Members and Officers:

Listed below are the year 2003 OHS Executive Board members and officers, and the year of expiration of each member's term:

President.....	Doug Penisten (2003)
Vice President.....	Jay Enoch (2006)
Secretary-Treasurer.....	Bridget Kowalczyk (2004)
Trustees.....	Jerry Abrams (2005)
	Walter Chase (2006)
	Chuck Haine (2004)
	Melvin Wolfberg (2005)

Call for nominations:

The term of Board member Doug Penisten will expire at the end of this year. Please submit your nominations for that Board position by April 15, 2003, to : David A. Goss, Hindsight Editor, School of Optometry, Indiana University, Bloomington, IN 47405 USA; fax: 812-855-8664; email: dgoss@indiana.edu. The OHS members who receive at least three nominations and agree to serve on the Board will have their names placed on an election ballot to be mailed later this year with a copy of Hindsight.

Jay Enoch's column:

Nicholas de Cusa (1401-1464): A description of fine grained and polished wooden spoons employed as mirrors; concave, convex, flat and cylindrical (1450 AD)

A few years ago, I was invited to discuss *the use of concave mirrors for refractive corrections prior to the introduction of spectacles* at a meeting of the Renaissance Society of America in Florence, Italy. My good friend, Vincent Ilardi of the U. Massachusetts, kindly pointed me to a modest number of citations on the topic and asked me to work out the details of the described optical devices - an interesting

challenge. Subsequently, a paper was presented in Firenze, and later published in the *Atti della Fond Giorgio Ronchi*.¹

The first quite extensive mention of concave mirrors being used as magnifiers and refractive corrections is attributed to the distinguished Roman of Spanish birth (in Cordoba), Seneca the Younger (4 BC - ca 65 AD).² There had been many early applications of concave mirrors (for cosmetic uses and related purposes, as well as for starting fires). Seneca did not invent the described applications of concave mirrors for magnifiers and/or refractive corrections. Rather he describes these mirrors as being broadly used in Rome for a variety of applications. From Seneca's commentaries, and later papers by G. Della Porta and G. Albertotti, it is apparent that pairs of mirrors were employed for magnification and visual corrections. In such constructs, dual concave, or paired concave and plano mirrors were used in order to avoid well known left-right image reversals.^{1,3} For certain applications, no doubt single concave mirrors were employed for magnification, such as we use today for shaving and make-up mirrors. In these instances, image reversals could be tolerated.

Following paper presentations in Florence, I had lunch with Professors Ilardi and Mark Smith (U. Missouri), and we discussed mirror applications. In the course of discussion, Mark picked up a polished soup spoon from the table and demonstrated to us that one could use the bowl of a spoon as a magnifier or presbyopic correction and readily read text without image reversals. One simply tilted the front of the concave surface upward (above the object to be read), and an upright non-reversed image of text was seen when looking in the direction of the mirror. In this application, the image of the material to be read by looking into the spoon mirror was, in fact, inverted relative to the bowl of the mirror, and, thus, the optical display and principle used was not the same as in the dual mirror systems described in the cited articles.

We know polished silver spoons existed a thousand years ago, as is periodically demonstrated on the popular BBC Antiques Roadshow television program. One would guess some such items may be on display at either Somerset House or the Victoria and Albert Museum in London.

Recently, Vince Ilardi surprised me by sending me an unusual document attributed to Nicholas de Cusa (1401 - 1464).⁴ Mark Smith's serendipitous remark about the concave bowl of a spoon apparently had substance in the real world! De Cusa (in 1450) described spoons used as mirrors! But they were not, as one might think, made using polished metal, but rather were constructed from "...close grained wood, finer than any other wood." And these were carefully designed and very highly polished. He then states, "(on a single spoon) ...you will find every sort of mirror - concave, convex, flat, and cylindrical. The flat reflecting surface is on the bottom of the handle, the cylindrical mirror is the handle itself. The hollow of the spoon forms the concave mirror, its back the convex mirror." Earlier, referring to mirrors, he states, "...for the sharper and finer the angle, the more clearly everything is reflected in it." But he does not talk about reading with the device. And it is not clear if this was a set of discoveries made by that writer.

In 1450, it is very interesting to find a discussion of cylindrical mirrors. Similarly, one is surprised by use of wood for making mirrors. Once again, our ancestors prove to know more than we might have expected. Of course, 1450 is after the initial discovery of spectacles, but this is still a remarkable document!

It is interesting that the de Cusa document was written at about the time the well-known Jan Van Eyck painting, *The Arnolfini Portrait*, was executed (1434). Today, this painting is located at the National Gallery, London. In that painting, a young couple is portrayed with the husband wearing an ample hat and cloak and delicately holding the hand of his rather pregnant wife. There is a fine round convex mirror set between them in the background. The mirror, exhibiting some distortion, captures the scene in exquisite miniature.⁵

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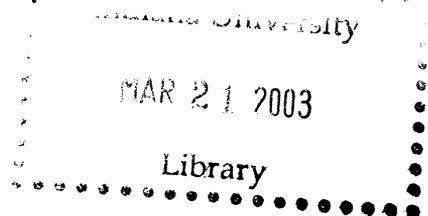
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J.M.E.

Report on Deceased Past Presidents of the American Optometric Association:

At the American Optometric Association (AOA) House of Delegates meeting on June 27, 2002, OHS member Melvin Wolfberg reported that four former presidents of the AOA had passed away in the previous year. These four persons and the years that they were elected to the presidency of the AOA are: Richard C. Schiller (1960), W. Judd Chapman (1963), Henry W Hofstetter (1968), and Charles W. McQuarrie (1977). The text of Wolfberg's remarks follows:

It is with regret and sadness that I call the attention of this House of Delegates to the four past residents of the Association on the list of deceased members. Each of these Distinguished Members was an integral part of the remarkable legacy of our Association and our profession. Let us take a few



moments to commemorate their dedication and achievements. In order for seniority of their presidencies, they are:

Richard C. Schiller practiced in Marshalltown, Iowa. He was associated with the Wolfe Clinic and was one of the pioneer optometrists who practiced in a multi-disciplinary setting. Notable successes during his AOA administration included a conference to introduce and stimulate leadership training (remember this was over 40 years ago), and achieving authorization to establish AOA's Washington office. Certainly time has proven the wisdom of these actions.

Dick Schiller continued to serve his profession in another capacity when he became a faculty member of the Pennsylvania College of Optometry, attaining the position of Director of Clinics. This soft spoken gentleman was greatly admired and respected by the students who he taught for his engaging personality, brilliant intellect and his sharing of his clinical expertise.

Optometry has lost one of its most dynamic speakers with the passing of W. Judd Chapman of Tallahassee, Florida. Gregg's History of the American Optometric Association reports on Judd's inaugural address as follows: "Eloquence was not confined to politicians nor presidential telegrams [referring to one received from President John F. Kennedy]. Incoming AOA President Judd Chapman ... had no trouble expressing himself and motivating audiences, Chapman was one of the best optometric orators."

It was my personal good fortune to enjoy both a professional and personal friendship with Judd which commenced in the 1950s and endured until his death this past February (we spoke just days before his passing). A gentleman with enormous charm, he was beloved by his colleagues, patients, and friends. When he concluded his term as AOA President, one reporter wrote, "Chapman was accorded one of the greatest ovations ever tendered an AOA President – a justly deserved spontaneous moment of recognition that should remain with him for a lifetime."

Henry W Hofstetter and I were initially elected to the AOA Board of Trustees in 1962. It was my privilege to work with Hank over many years and to serve as President-Elect during his presidency. He recorded a number of firsts in our profession, for example: recipient of the first Ph.D. in physiological optics granted in the United States, charter member of the National Board of Examiners in Optometry (NBEO), founding Director of the Indiana University optometry program, and first educator to assume AOA's highest office.

As a result of his interest in, and commitment to, international optometry, Henry and his wife, Jane, traveled abroad throughout his career. He is known and admired throughout the world for his promulgation of excellence in optometric practice and education. He contributed extensively to the literature (four textbooks, over 500 papers, and co-author of the Dictionary of Visual

Science and Related Clinical Terms), was the recipient of five honorary degrees, the AOA Apollo Award and the AOA Distinguished Service Award and the Prentice Medal of the American Academy of Optometry. In 1974, he received one of his most cherished awards in his appointment to the distinguished rank of Rudy Professor, an honor accorded to very few at Indiana University.

Charles W. McQuarrie succumbed to a twenty-five year battle with cancer in February of this year. His wife, Linda, described Chuck as a quiet, humble, and even shy man, an impression shared by many of his friends and colleagues. Upon meeting him, one would never suspect the full and rewarding career he fashioned nor the enormous impact he had on his community, his profession, his patients and his family.

Dr. McQuarrie entered optometry after serving in the United States Navy during World War II. He took part in some of the bloodiest battles in the Pacific Theater including the conquest of the Gilbert Islands and the invasion of the Philippines. In 1954 he went into practice with Dr. George Crowe in downtown Los Angeles. In this setting he treated severely visually impaired patients, such as author Aldous Huxley, with innovative therapies designed to enhance visual perception and acuity.

Charles McQuarrie was noted for his publications on perceptual vision. He served as a Trustee of the Southern California College of Optometry and as President of the International Library, Archives, and Museum of Optometry.

Along with all of our departed colleagues we remember today, we mourn our loss but celebrate their service to our profession and to humanity.

Advice on period spectacles:

An article in the English journal *Optometry Today* provides information on the proper spectacles for historical theater or historical event re-enactment. (Walsh G. Spectacles through the ages and period inaccuracies. *Optom Today* (London) December 14, 2001; 41(24): 32-37). The author, Glyn Walsh, reports that "every spectacle-wearing re-enactor I have ever met has asked whether an appropriate pair can be made for them." Walsh discussed what frame materials were used at different times in history. He also mentions some of his personal experiences in working with materials such as wood, horn, leather, bone, iron/steel, copper alloys, and plastics. He also talks about lens designs at different periods of time and what may be acceptable alternatives today to have spectacles appear like those from different periods in history.

D.A.G.

Some early OEP activities of Alexander and Skeffington:

Albert A. Sutton, OD, MS, FCVOD, has a regular column entitled "Our Optometric Heritage" in *Visions – Newsletter of the College of Optometrists in Vision Development*. In the December, 2002 issue he talks about some of the activities of Drs. E. B. Alexander and A.M. Skeffington (volume 33, number 1, pages 5-6). Sutton knew Alexander and Skeffington personally and heard them talk about the origins and activities of the Optometric Extension Program.

He relates that Alexander was the developer and administrator of OEP and served as the President of the Board. In the early 1920s he started organizing study groups in his home state of Oklahoma and then in surrounding states. He also started organizing regional educational meetings of optometrists.

Skeffington's role was lecturer and synthesizer of information from many disciplines such as psychology, neurology, education, and child development. Sutton credits Skeffington with expanding "optometry's horizons by building two way bridges to the scientific thinking of Harmon, Renshaw, Gesell, Halstead, Strauss, Kephart, Pronko, Walter, Bartlett, Shipman and numerous others." Manifestations and effects of these "two way bridges" included having scientists from other disciplines participating in optometric meetings and speaking favorably about optometry to persons in other fields, having optometrists included in inter-professional organizations and invited to work in schools and educational institutions. Sutton feels that these various effects of the two way bridges led to improvements in the popularity and public opinion of optometry.

Sutton lamented that "two way bridges" of that nature waned in the 1970s. He attributed that to the introduction of "medical teaching of eye care" to optometrists and the decrease in emphasis on "functional, developmental and behavioral teaching" and also to the reduced activity of Alexander and Skeffington in the 1970s due to age and health.

D.A.G.

History of American Optical Company on the internet:

• There is a remarkable website on the history of the American Optical Company (<http://web.meganet.net/dickwhitney/RBWAHistoryIndex.html>). The author and compiler is Dick Whitney, a long-time employee of AO, whose father was also employed by AO for many years. There are many pictures of AO buildings, employee reunions, etc., extending from the 19th century to the present. The texts of a variety of publications have been assembled here, including 1909 speeches by George Wells on the history of AO, historical articles from the 1933 centennial, and a 1962 brochure explaining the history and contemporary work of the company.

Recollections of several former AO employees from different departments in the company are included. The website states that there are hopes that the AO Museum, which is currently closed and its contents in storage, will be reopened. The space that the museum previously occupied is now part of the Southbridge Hotel and Conference Center. Among the other material on this website is information about demolition of the former AO main plant and the construction of structures taking its place. This website is good place to start if you want research the history of AO or if you want to just spend a few hours reading about AO.

D.A.G.

Three generations of eye care practitioners - the Ridgways:

I recently met a retired ophthalmologist who practiced for many years in California and who now resides in Evansville, Indiana, Dr. William L. Ridgway. I learned that Dr. Ridgway is a third generation eye care practitioner. At my urging, Dr. Ridgway sent me a couple letters and some newspaper clippings concerning his forbears. In one letter, he noted that his grandfather, George C. Ridgway, was an "...interesting character...somewhat of a 'gadgeteer.' He developed and sold to the Elgin Watch Company a watch movement. He also did early work on what became known as the Risley prism. His work was published, but in optometry journals of the day, and thus escaped recognition of the medical profession. He had an M.D. degree from the University of Cincinnati but never practiced medicine, being much more interested in optics."

In a subsequent letter, Dr. Ridgway also said this about his grandfather: "My impression is that he had the idea that refraction could be done using only chromatic aberration...But I think that the work on the Risley prism was his most useful contribution. He, of course, ground all of his own lenses."

The following is excerpted from an obituary of George C. Ridgway, who worked most of his life in Evansville, Indiana:

George C. Ridgway, Sr., of the Ridgway optical firm, 313 Main Street, died at his home, 519 Washington Avenue, last night after an illness of 10 days.

His death came as a shock to professional and business associates and friends.

Death occurred at about 5:30 o'clock. Pneumonia was given as the cause.

Dr. Ridgway, during the course of his practice as an oculist, attracted national recognition. This was due to the perfection of a number of instruments

for testing sight, some of which are used all over this country, and one of which is used in every civilized country of the world. These instruments were never commercialized by Dr. Ridgway, who chose to give them to his profession.

Born nearly 76 years ago in Calhoun, Illinois, Dr. Ridgway at an early age left that place with his parents, Dr. and Mrs. Edmond Ridgway, and went to Olney, Illinois. His father was a practicing physician. He soon took up the study of the profession that his father had studied and was practicing. Later he attended the Ophthalmic college at Chicago and graduated from that school in 1891.

Dr. Ridgway married Miss Marie O’Kean, daughter of Col. Mortemore O’Kean at Olney, Ill. She preceded him in death, Dec. 22, 1913. To them were born three children. Two of them are now living and were at his bedside when he passed away. They are his daughter, Lillian, and his son, George, Jr., who for many years has been a partner with his father in the optical business conducted at 313 Main Street. There was another child, Donald, who has passed on.

Despite his age – He would have been 76 years old on January 5 – Dr. Ridgway remained active all through his later years....

Of some historical interest is the following letter which George C. Ridgway wrote to the Olney Times newspaper (Olney, Illinois) in 1912. The headlines above the letter were “Fake Opticians – Law Should be Passed Governing Same – Illinois Free Territory – Interesting Letter from an Evansville, Indiana Subscriber.”

Evansville, Indiana
July 24, 1912

Olney Times:

I noted an article in your issue of July 19th entitled “Have the dog ready” and referring to some traveling spectacle vendors in your vicinity, and I want to make some comment on the same. I am not surprised that you have such gentry with you as at the present time Illinois is considered free territory for those who have been driven out of other states by the enactment of optical laws governing the fitting of spectacles. Twenty-eight states have such laws at the present time, including Indiana, Michigan, Wisconsin, Iowa, so that Illinois is pretty well hemmed in and makes a convenient dumping ground for those not competent to comply with the laws of these states. A law was passed I think by the last legislature, but your Governor in his wisdom, vetoes the same, evidently not thinking that competency in measuring defective condition of eyes was a proper subject for legislation. To the contrary, the Governor of Massachusetts but a few weeks ago signed a similar law passed in that state and commented favorably on the same, while chief justice Hughes was Governor of New York said that he considered it a proper subject of legislation and heartily approved of the bill and

signed it. In the same article referred to you say, "Go to your doctor. Any doctor can fit you with spectacles and do it properly." In that statement you are in error, and it is an error that is very common. There are physicians who have made a study and taken special courses in refraction and the fitting of spectacles, and no doubt you have them in your city, but it is a study that is not taught in any medical college, and the average physician while he will know and treat diseases of the eye will tell you that he knows absolutely nothing about refraction and the measuring of defects in the focusing apparatus of the eye.

In fact when needing glasses they will themselves go to some one skilled in that particular line. It was to bring in more men competent in this practice, and to weed out the fakers and incompetents that optometry laws have been passed in the twenty-eight states as well as in the provinces of Canada.

The requirements in New York state and which are similar in all the states are: The applicant shall have a high school education, shall have spent two years in the office of a qualified practitioner, shall have attended at least one term in a recognized college devoted to such instruction and then shall pass an examination before a board appointed by the governor, and if successful will receive a certificate to practice in the state as an Optometrist. The state recognition of specialism in Optometry in the various states has caused the scientific faculty of Columbia University to establish a two year course [in] Optometry, in order that the collegiately accredited practitioners shall be the only eye specialists legally and scientifically qualified to determine the choice of spectacles.

Other state universities are considering and no doubt will put in similar courses. Aside from Columbia, your own state has what is recognized as the best school of Optics, "The Northern Illinois College of Ophthalmology." Illinois people are entitled to, and will no doubt have optical laws in the near future, and then you can chain up your dog, as there will be no spectacle fakers to deal with.

Very truly
G. C. Ridgway

George C. Ridgway's son, George V. Ridgway, trained in optometry, and joined his father in practice. The following, taken from an undated newspaper clipping, talks about their practice and George C. Ridgway's work on a chromatic test:

The Ridgway Optical company was being moved Saturday from the quarters at 403 Main St to the new location at 313 Main. Business will open at the new place Monday.

"In moving into the new place, we are undertaking quite an expansion," George V. Ridgway said. "We will have tripled the space we now have, and one of the most up-to-date shops in the country.

“The first floor will be taken up with fitting rooms, display tables, etc.

“An office and public rest room is located on the balcony. The second floor will be used for the display of engineering and architectural instruments.

“Our manufacturing department is located on the third floor.

George C. Ridgway is famous among optometrists all over the world for his invention and discovery of the principles of the Chromatic Test, which is universally used today.

By this test, imperfect focusing of the light in the eye, resulting in distorted images is detected, enabling the proper corrective measures to be taken.

Ridgway discovered this principle in 1890 while in St. Louis. He was a hotel verandah and down in the railroad yards saw a red and blue cross. Calling another man's attention to it the man declared it was a red light with a blue mist. Another party declared he saw blue light surrounded by red.

These replies led Ridgway to make investigations which resulted in one of the greatest discoveries of the time in the realm of optometry.

The following are excerpts from George V. Ridgway's obituary, which is dated September 5, 1968:

Dr. George V. Ridgway, retired Evansville optometrist and civic figure, died today.

For many years the 80-year-old doctor operated from Ridgway's at 313 Main, the optometry firm founded nearly a century ago by his father, Dr. George C. Ridgway. The father died in 1926.

Today the downtown business has an antique flavor with some original furnishings such as the mahogany fitting counter, stools, drawers and other items still in use.

It still also features a wide variety of optometry and other merchandise besides eye glass articles, including industrial thermometers, other meteorology-related equipment, binoculars, and clocks.

Dr. Ridgway, a Mansfield, O., native, “retired” from the business 15 years ago but frequently returned to “putter around.” He had been inactive in the last few years, however.

He was graduated from the Illinois College of Optometry in Chicago and did post graduate work at Ohio State University before setting out in his Evansville career in his father's footsteps.

William R. Ridgway recalls seeing some old reprints of optometric publications of his grandfather's, but he doesn't have any of them in his possession at present. After looking through indexes of several volumes of The Optical Journal, I ran across an article by G. C. Ridgway in the January 21, 1915 issue (volume 35, number 4) entitled, "The Chromatic Test, Its Value and Limitations." It was read at the annual convention of the Indiana State Optometrical Society, at Indianapolis, on January 12.

In the article, G. C. Ridgway relates the story mentioned above of seeing a red and blue cross along a railroad track when he was not wearing his correction. He was able to duplicate this effect by using a cobalt blue glass which transmitted red and blue spectral bands. In the early 1890s, he gave "...rights to the Geneva Optical Co., who immediately placed it upon the market without restriction, advertising it by circular, and the Spencer Optical Co. was the first to put it into the trial case. Unfortunately many of the early ones were poorly suited in shade for obtaining the better results. The Standard Optical Co. and the American Optical Co. followed later with well selected lenses of double glass, the form that I had selected, and since that time no trial case is considered complete without its chromatic test..." (p. 223)

He noted that several authors had written about using the chromatic test to distinguish between hyperopia, myopia, and emmetropia, but they had not observed as he had that it could also be used to distinguish astigmatism. He noted that "In astigmatism one or both colors will be elongated and frequently will form a perfect cross of the two colors and the amount and colors of the elongations will be indicative of the amount and character of the astigmatism." (pp.223-224)

He then talked about using the test "to differentiate between a pseudo and a true heterophoria": "The prism necessary to re-establish symmetry of the circle and colors will need be considered in your correcting lens, for with such a prism you will find the acuity of vision enhanced, and a careful examination will show an apparent heterophoria corresponding to the prism called for. This then is a pseudo heterophoria not due to any abnormality of the extrinsic muscles. Yet, comfortable vision may be obtained by the use of the correcting prism." (p. 224) At the close of the paper he gave two case examples, one of "pseudo esophoria" and one with a "true heterophoria."

D.A.G.

Brewster Society website:

According to its website, www.brewstersociety.com, "The Brewster Society is an international organization for kaleidoscope enthusiasts. Named after the inventor of the

kaleidoscope, Sir David Brewster, its purpose is to share and promote the beauty, creativity, and joy of these mirrored tubes of magic. It serves as a network linking kaleidoscope artists, collectors, and retailers.”

Some of the pages at the website include a selected bibliography of books on kaleidoscopes, a glossary, and biographical sketches of Sir David Brewster (1781-1868) and Charles G. Bush (1825-1900).

Brewster was born in the Scottish lowlands in 1781. He built a telescope at the age of 10 and was sent to the University of Edinburgh at 12 years of age. He was licensed at an early age as a minister of the Scottish Established Church, but he spent his life largely in the study of optics and scientific instruments. He wrote numerous scientific papers and many books, including *A Treatise Upon New Philosophical Instruments; Martyrs of Science: or the Laws of Galileo, Tycho Brahe, and Kepler; Letters on Natural Magic Addressed to Sir Walter Scott; A Treatise on Optics; and More Worlds Than One*. He was editor of the *Edinburgh Encyclopedia* for over twenty years.

Brewster published two books on kaleidoscopes: *A Treatise on the Kaleidoscope* (1819) and *The Kaleidoscope – Its History, Theory, and Construction with its Application to the Fine and Useful Arts* (1858). Although Brewster patented his invention of the kaleidoscope, a problem with the registration of the patent was responsible for him not receiving remuneration for his invention.

Charles G. Bush was born in Prussia in 1825 and came to the United States in 1847. Bush was the most significant nineteenth century kaleidoscope maker in the United States. In the early 1870s he started making kaleidoscopes and patenting various aspects of kaleidoscope making. He is thought to have manufactured thousands of kaleidoscopes.

D.A.G.

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