

HINDSIGHT

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OHS meeting at the American Academy of Optometry meeting:

The Optometric Historical Society will meet on Friday, December 10, 1999, at 5:00 pm in the Cedar Room of the Sheraton Hotel in Seattle during the American Academy of Optometry meetings. (When you arrive at the AAO meeting, check the schedule to confirm the room location for the OHS meeting)

OHS member Jay Enoch will make a presentation entitled "New Findings on Ancient Egyptian Lenses Dating from 4600 Years Ago, including a demonstration of the 'eye following illusion' model." Dr. Enoch is, of course, well known for his contributions to optometric education and administration, his contributions to ophthalmic science in areas such as photoreceptor orientation, low vision, perimetry, and hyperacuity, as well as his work on the history of visual and optical science. Dr. Enoch is currently Professor of the Graduate School at University of California at Berkeley and Professor of Physiological Optics in Ophthalmology at the University of California at San Francisco.

Goldmann's perimeter:

In the August, 1999, issue of Optometry and Vision Science (volume 76, number 8, pages 599-604), OHS member T. David Williams published a translation of "Fundamentals of Exact Perimetry" by Hans Goldmann. The article was originally published in German in the journal Ophthalmologica (1945; 109: 57-70). At the time Goldmann was at the University Eye Clinic of Bern, Bern, Germany. The paper was originally going to be delivered at the Swiss Ophthalmological Conference in 1944, but the meeting was postponed indefinitely due to the circumstances of the war. The paper deals largely with the variables that affect visual fields and sensitivity of individual retinal points in testing with perimetry, as well as with the requirements for a useful perimeter. When David Williams was asked for his thoughts on the historical significance of Goldmann's paper, this is what he had to say:

I have always admired Goldmann for his many contributions to the ophthalmic field: the Goldmann-Weekers dark adaptometer, the Goldmann perimeter, the Goldmann tonometer, and the three-mirror contact lens which also carries his name, to mention a few.

I think that the perimeter that he described in his 1945 article is remarkable because it is still in use today, with only minor modifications. His efforts to find the equivalence between increased target area and increased target intensity bore fruit later on in what he called the 'stimulus value'. This is obtained by adding together the Roman and Arabic numerals for the test target: if these produce the same sum, the targets should yield the same isopter. To make this work, he arranged the intensity steps in 0.5 log intensity units and the target area steps in 0.6 log area units.

One thing I wish I'd had a chance to ask Goldmann about (he died in 1991) was his decision to have a target size designated '0' -- zero. This was in sequence with his target sizes identified with Roman numerals from I to V: the Romans didn't use the numeral zero.

Another excellent feature of the Goldmann perimeter: it was designed in the middle 1930s, is still in use today, and is FULLY Y2K COMPLIANT!

National Optometry Hall of Fame selects four for this year's induction ceremony:

The National Optometry Hall of Fame held its induction ceremony on Friday, October 15, 1999, at the Cleveland, Ohio, Convention Center in conjunction with the annual EastWest Eye Conference. The EastWest Eye Conference is organized by the Ohio Optometric Association. This year's four inductees joined Glenn Fry and Irvin Borish in the Hall of Fame. The following excerpts the press release provided to Hindsight by Dr. Robert Newcomb:

Four outstanding visionary leaders in the profession of optometry were chosen for the National Optometry Hall of Fame this year; they are Charles F. Prentice (posthumously), Charles Sheard (posthumously), Meredith W. Morgan (posthumously), and Henry W Hofstetter.

Charles F. Prentice is the originator of the method now used to specify the power of prisms in ophthalmic prisms ("Prentice's Rule"). The first model to demonstrate static and dynamic refraction in the eye was produced by Prentice, as well as an astigmatic eye model and optical principles which relate to spherocylindrical lens prescriptions. But perhaps his greatest

contribution to the profession was the leadership he showed in the early part of the 20th century for legalizing the profession of optometry, and for differentiating the value of professional optometric services from the value of the ophthalmic materials used to treat refractive errors.

Charles Sheard, who was a contemporary of Prentice in the early 1900s, was the first person in optometry to publish a list of tests needed to examine the human eye at both distance and near. In 1917, his *Dynamic Ocular Tests* included eighteen objective and subjective testing procedures that he considered essential for a thorough visual examination. Before this, there was no such standardization of optometric testing. In addition, he founded and edited the original "American Journal of Optometry," which published some of the initial major scientific contributions in vision science. The famous "Sheard's Criterion" for determining a patient's binocular "zone of comfort" is familiar to every optometrist.

Meredith W. Morgan helped to guide the School of Optometry at the University of California, Berkeley, through 67 of its 75 years. His research into the elements of binocular vision resulted in many scientific papers which established a scientific understanding of how the two eyes work in synchrony to focus and converge on near-point objects. In 1944, he published his now-famous mathematical analysis of expecteds for accommodative and convergence testing (referred to as "Morgan's norms"). He was also a major contributor to landmark optometric textbooks dealing with the visual needs of children and the elderly. In 1967, he received the prestigious Prentice Medal from the American Academy of Optometry; and in 1998, he was honored by the UC Berkeley School of Optometry when it named the school's teaching and research clinic after him.

Henry W Hofstetter, Rudy Professor Emeritus in the School of Optometry at Indiana University, has served with distinction at three optometric educational institutions (The Ohio State University, Los Angeles College of Optometry-now the Southern California College of Optometry, and Indiana University) during his career of over fifty years. He is the author of over

500 scientific papers and four textbooks on the subject of eye care and the optometric profession. He has received five honorary degrees, the Prentice Medal from the American Academy of Optometry, the Apollo Award from the American Optometric Association, and the International Optometrist of the Year award from the International Optometric and Optical League. In April of 1999, he received the first Distinguished Service Award from the World Council of Optometry.

The selection committee that chose this year's four honorees was composed of representatives from six major national organizations, which represent optometric practice, education, and research. The members were Drs. Richard Hopping (AOA), Bradford Wild (AAO), Alan Lewis (ASCO), Clayton Hicks (NOA), W.C. Maples (COVD), and Karla Zadnik (ARVO). Other members included last year's recipient, Dr. Irv Borish, as well as Dr. Robert D. Newcomb, who chaired the group and is a member of the EastWest Eye Conference Executive Planning Committee.

Carol Brown accepted the medal on behalf of Charles Prentice. His medal will be displayed in the Ohio Optometric Association office in Columbus. John Schoessler, Dean of the College of Optometry at The Ohio State University accepted on behalf of Charles Sheard. Sheard's medal will be displayed in The Ohio State University College of Optometry. James Sheedy, faculty member at University of California Berkeley accepted on behalf of Meredith Morgan. His medal will be presented to Dr. Morgan's daughter, Linda, who lives in the San Francisco area. David Goss accepted the medal for Henry Hofstetter and presented it to Dr. Hofstetter in Bloomington, Indiana a few days after the induction ceremony.

Dr. Newcomb emphasized that the readers of Hindsight should feel free to nominate persons for next year's induction. Next year's selection committee will be chaired by Dr. Richard Hill. Nominations can be sent to Dr. Hill at: College of Optometry, The Ohio State University, 338 West Tenth Avenue, Columbus, OH 43210.

Early Middle Age lenses:

In the September, 1999, issue of Optometry and Vision Science (volume 76, number 9, pages 624-630), Olaf Schmidt, Karl-Heinz Wilms, and Bernd Lingelbach of Aalen University of Applied Science and Ophthalmic Instruments Rodenstock of Germany discuss "The Visby Lenses." These lenses were found with Viking

treasures placed in Gotland in about the 11th or 12th centuries. Some of the lenses had a silver mounting with a silver plate on the back side and were likely to have been used as jewelry. Some of the lenses were unmounted and did not show any signs of being used as jewelry. Most of the lenses had aspheric surfaces. The place of origin of these lenses is unknown.

The authors studied the optics of the unmounted lenses by determining the ellipsoids which best fitted the surfaces of the lenses. They then computed the spherical aberration produced. They found that in some of the lenses spherical aberration was less than that of later spherical reading stones and was almost as good as spherical lenses produced today.

Schmidt et al. suggested that the Middle Age craftsmen who made the lenses "most certainly had an empiric knowledge about how a piece of rock crystal must be shaped to achieve a certain effect," even though they didn't have knowledge of the laws of refraction and reflection. The authors note that the optimization of the lenses may have been intended to improve the optical performance for nearpoint tasks or it could have been an unintended consequence of a nice design.

D.A.G.

History of DPA and TPA legislation efforts:

In the March, 1999, issue of the Journal of the American Optometric Association (volume 70, number 3, pages 145-170), OHS member Melvin Wolfberg recounts optometry's efforts to expand scope of practice to include diagnostic pharmaceutical agents (DPA) and therapeutic pharmaceutical agents (TPA). Wolfberg used personal correspondence and other sources to describe the work of various individuals. He also highlighted the role of Pennsylvania College of Optometry from which he graduated in 1951 and for which he later served as president.

Wolfberg identifies Albert Fitch, founder and longtime president of Pennsylvania (State) College of Optometry, as the individual who first worked significantly for expansion of scope of practice in the first half of the twentieth century. Although Fitch was unsuccessful in attempts to expand the scope of practice in Pennsylvania, he did make certain that the Pennsylvania College of Optometry curriculum was strong in the biomedical areas of anatomy, pathology, and pharmacology. The strong background in these areas led Pennsylvania optometrists in 1961 to have a bill introduced into the state legislature.

This bill was opposed by the American Optometric Association. The AOA position at that time was that such legislation would damage already tenuous relations with ophthalmology. The 1961 Pennsylvania bill did not pass.

The first optometric DPA law in the United States was passed in Rhode Island in 1971. The article contains lists of the dates of enactment of DPA and TPA laws in the fifty states, the District of Columbia, and Guam. The article discusses a number of optometric conferences on scope of practice and quotes letters and recollections of several individuals. Having been Pennsylvania Optometric Association president in 1961 and AOA president in 1969-70, Wolfberg personally observed much debate and activity regarding optometric scope of practice, which he summarizes in this article.

D.A.G.

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