

OPTOMETRIC LIBRARY

OPT

NEWSLETTER
OF THE

AUG 23 1985

INDIANA UNIVERSITY

OPTOMETRIC HISTORICAL SOCIETY

(243 North Lindbergh Boulevard, St. Louis, Missouri 63141, U.S.A.)

Vol 16

July, 1985

Number 3

Indiana University

AUG 16 1985

Annual call for nominations:

The executive board member whose five-year term will expire at the end of this year is Maria Dablemont. The other members of the executive board and the expiration dates of their five-year terms are as follows: Jerome J. Abrams - 1986, James P. Leeds - 1987, Patricia Carlsen - 1988, and Andrew F. Fischer - 1989.

Nominations, or renominations, for the 1986-90 term are hereby requested for placement on the ballot which will be sent out with the October issue of this Newsletter. Submissions should be sent to Douglas Penisten, School of Optometry, 800 East Atwater, Bloomington, IN 47405.

By all means do not hesitate to include yourself as a candidate if such responsibility interests you. Remember, self-nominated volunteers founded the O.H.S., and unpaid volunteers have kept it going.

Ordinarily, merely the name of the person you are nominating will suffice, especially if he or she is already well known to O.H.S. members, but if you feel that a brief "pitch" should be made in your nominee's behalf it will be most favorably considered for inclusion in the October issue of N.O.H.S.

By-law changes approved:

Seventy-six O.H.S. members responded by sending in the ballot included with the April Newsletter. Both of the proposed O.H.S. by-law changes were approved by a vote of 73 to 1 with 2 abstentions. For the record, the two by-law changes are:

- 1) In Article III, Section 1, add "Whenever the dues are paid in the name of an agency, organization, or institution, a personal designee of the paying entity shall be identified as a member of the society."
- 2) In Article III, Section 4, substitute "\$10.00" for "\$5.00."

Grace Weiner (1907-1984):

A beautiful and informative obituary of our past Executive Board member, frequent contributor, and maker of much optometric history, the late Grace Weiner, was prepared by our present O.H.S. Vice President Patricia Carlson and published in the Spring 1985 issue of the Southern California College of Optometry Alumniscope, page 17.

An itinerant oculist's journal:

Recently the Indiana Historical Society received the journal and account book of Dr. J. A. Newton, oculist, for the period 1864-1881. Dr. Newton was an itinerant oculist who practiced along the Ohio River valley after the Civil War. His door-to-door, town-to-town circuit included small towns like Madisonville, Nebo, and Ramsey in Kentucky, and Boonville, Evansville, Spring Station, and Folsumville in Indiana. He finally settled his practice in Boonville, Indiana.

Dr. Newton "was probably typical of the oculists of the early nineteenth century. He undoubtedly had received some formal education in ophthalmology, if only an apprenticeship,..." He never mentioned an ophthalmoscope, or an internal ocular problem, and he still used leeches to bleed patients.

His advertised services as a "Surgeon Oculist" in his Boonville practice included "ARTIFICIAL EYES inserted without pain - corresponding with the natural in size, shape, and color - defying detection." Eyeglasses were not mentioned. His broadside advertisement stated "Dr. NEWTON treats nothing but diseases of the EYE." In his journal he had scribbled the addresses of manufacturers who supplied artificial eyes, as well as references to lens grinders and opticians, but he did not appear to dispense eyeglasses.

It is unusual to find the records of any type of itinerant practitioner, especially those of an oculist. The donor of this archival treasure apparently acquired it at an auction in Boonville. The acquisition was reported in the April, 1985 issue of Snakeroot Extract, No. 4, medical history newsletter of the Indiana Historical Society.

Another ILAMO gift:

OHS member Dan Hummel reports owning two pair of double lens spectacle frames such as those of President Jackson described on pages 4-5 of the January NOHS, and that these will be donated to the International Library, Archives, and Museum of Optometry, Inc.

Dorothy Nickerson (1900-1985):

One of the most glowing tributes to a visual scientist is the obituary and memorial account of the career-long contribution of Dorothy Nickerson to the science of color. Beautifully and authoritatively written by C. James Bartleson and Joy Turner Luke it appeared simultaneously in at least two serial publications, one, the June 1985 issue of Optics News, Vol. 11, No. 6, pp.5, 7, and 8, and the other, the June 1985 issue of USNC-CIE Newsletter, No. 14, pp. 1-4.

Her "colorful" career began with employment as a secretary and laboratory assistant at the Munsell Color Company in 1921 followed by a research post in the U.S. Department of Agriculture from 1927 until retirement, and a series of organizational involvements with the Commission Internationale de l'Eclairage, the Optical Society of America, the Inter Society Color Council, the

Illuminating Engineering Society of North America, and other color-related groups, with honors bestowed on her from every direction. Anyone who has done even a few hours of serious study of color science or technology can hardly fail to have become aware of her name.

The account of her career is in truth a history of the development of color as we know it today.

New light on Edison's light:

This is the title of an article by Robert Friedel in the first issue of a new magazine, American Heritage of Invention and Technology, Vol. 1, No. 1, Summer 1985, pages 22-27. The article is a new account of the inventor and his invention of the incandescent lamp. The author is an associate professor of history at the University of Maryland. He and Paul B. Israel are co-authoring Edison's Electric Light: Biography of an Invention, a book to be published later this year by Rutgers University Press.

The present article and book are based on searches through the voluminous Menlo Park records, notebooks, drawings, letters, patents, and other documents which few scholars have attempted to explore. Most prior accounts have been based on newspaper reports and the romantic recollections of old men who knew the Wizard of Menlo Park. These gave two extreme pictures of Edison's involvement in pursuit of a successful electric incandescent light. One was that of the rough-and-ready inventor in a dogged hunt for the right filament. The other was of a scientific-laboratory chief who drew up the design and left the technical details to a skilled, educated staff. The now evident facts are that the development was considerably more complex and involved than either of the long popular notions.

Accompanying the article is a full page artist's drawing on the cover page of the New Year's issue of Puck in 1880 heralding the arrival of Edison's lamp as an event of truly cosmic significance ranking with a solar eclipse, the Northern Lights, the luminous role of the moon, and the efforts of Father Time.

From the Greeks to the Renaissance:

This is the subtitle of "Perspective on Optics" by John M. Hoods, Jr., in the March 1985 issue of Optics News, Vol. 11, No. 3, pp. 16-21. The author points out that the greek philosophers regarded optics and vision as the same thing, and that it was then, and continued to be, the central thread and bound natural philosophy together. Interestingly he reminds us that lenses of various form, including glass globes filled with water for magnification and focussing the sun's rays, had been around for centuries, but "the Greeks, however, did not include these prosaic matters as key points of interest in their philosophies. These devices were simply representative of the skills of artisians - people who were held in low regard by such as Aristotle."

The article leads us delightfully and understandingly through centuries of analytical struggle as to how we see and how lenses function. Featured on the front cover of this magazine is a picture of Christian Huygens, "a superb crafter of lenses," about whom and whose forebears the article is concerned.

An oolitic tear-jerker:

OHS member Jim Leeds sent us another of the fascinating letters he receives so often in the mail, this one dated March 26, 1985, and signed by Mary Brougham of "M.T. Dairy Bottles, P.O. Box 373, Readfield, Maine 04355," as follows:

We have two Eye Stones in the original drug store box. The box is 1 1/4" square and reads "Ham's Drug Store, 24 Main Street., Livermore Falls, ME." and EYE STONE is written in pen on the label.

This store has been a family business for over 100 years and is still in Livermore Falls. The eye stone was not used, I am told, after the turn of the century. the stone measures about 1/4" across and was put under the lid near the nose and rolled to the outer edge to remove any foreign object.

We are offering one eye stone and the box for \$60.00 or the two stones and box for \$75.00.

If interested, please write to the above address or call us at 207-685-9544 and ask for Mary. If you wish to check on us before mailing check, our Maine sales tax number is 201688.

Dr. Leeds forwarded the letter to us on April 1st with the assurance that it was not an April Fool's joke. With it he recalled once examining the painful eye of a female patient with a Burton magnifying lamp and seeing what looked like a boulder pop out from under the eyelid when he applied a little pressure. It was a mustard seed which she had put under her lid to "draw out the pain."

Early state board doings:

Of slender spine with black lettering on a rich brown soft paper jacket, this 1930 book of just over 100 pages is quite unnoticeable on the book shelf. Entitled "A Manual of OPTOMETRIC JURISPRUDENCE and suggested uniform standards" it was copyrighted and published as a first edition by The International Association of Boards of Examiners in Optometry at a price of one dollar. Its only illustration is a full page group photograph of 22 of the men attending the 1927 meeting of the "I.B.B." at Hotel Willard in Washington D.C., plus a lady identified merely as "The Reporter". Each of the "Drs." is identified by full name and state.

The first sentence of the introduction by the editor, Dr. Laurence P. Folsom, states, "To all who have tried in diverse ways to hinder and prevent the progress of optometry we owe much." Then ten variously authored chapters provide statements of the aims and definitions of the professional; the history and role of the Association; optometry's status in Canada; visual standards in schools, industry, aviation, and the highway; educational standards; the function of optometry laws; a model optometry law; enforcement; reciprocity; the "glazed goods" issue; state board examinations; relations with other state agencies; advice to state board secretaries and to newly appointed board members; and a list of the 38 member state boards and their

members plus the members of the All Canada Advisory Board representing eight provincial licensing boards.

The here reviewed copy was donated by OHS member James Leeds, O.D., to be forwarded to ILAMO.

Included with the book was a copy of a form letter from Dr. George J. Erskine, Secretary of the I.A.B.E.O., dated August 12, 1930, to its members. In it he mentions the then customary abbreviations of the Association's title to I.B.B. for "international board of boards," and describes its role as a "clearing house for the interchange of ideas between Boards." Two rulings adopted by the Missouri State Board in 1930 were cited as examples. One related to changing the examination subjects to conform to the I.B.B. syllabus. The other was a recommendation that Board members include their abbreviated doctor titles as part of their signatures on official documents and certificates.

Also, State Board secretaries were reminded to submit names of all optometrists in their states who had "had their licenses revoked for unethical conduct of any kind or character" to be added to the I.B.B. "Disqualified Practitioners File."

An incident in Churchill's life:

Dean emeritus E.J. Fisher of Waterloo, Ontario, Canada, writes as follows:

"I was just doing some lighter reading recently and came across the following which may be of some interest for the OHS Newsletter. The source is a paperback book called "Churchill the Great - The Best Stories." It was published by the Daily Mirror Newspapers in 1962 and printed by Fleetway Publications Ltd., London. The book contains a number of anecdotes about Churchill dating from his early days as a schoolboy at Harrow, his time as a Boer War correspondent, on through the World War, reporting many of his escapades and quirks. One article follows verbatim."

Saved - by his specs

Scattered at strategic points throughout Churchill's two homes, Chartwell, in Kent, and Hyde Park Gate, in London, you could find enough pairs of spectacles to equip six men.

Pairs for browsing through the morning papers. Pairs for scanning in the evening papers. Pairs for card-playing. Pairs for speech-reading - and endless spare sets of lenses.

Each pair would be kept within easy reach so that Churchill was never at a loss without his glasses in an emergency.

But panic reigned the day he was due to deliver an important speech on election tour in the Midlands.

Churchill's chauffeur driven car was speeding north from London, with a police escort following.

The Old Man fumbled for his case containing his reading specs - but it was empty!

His car squealed to a halt, and as the car behind screeched to a standstill, police tumbled from it and came rushing over.

"I've left my spectacles behind, and I need them for a speech at three fifteen p.m.," Churchill apologized. "Can I have them in time?"

They were more than 30 miles from London - and there were barely 90 minutes to go before Churchill took to the platform.

The police swung into action - and Churchill's car drove on to where crowds had begun to gather to hear the speeches.

Patiently, the audience listened to the long winded introductions of the first speakers - unaware of the drama being played out behind the scenes.

Word had been whispered along the line of speakers on the platform that Winston Churchill needed a little time before he was ready to rise and speak.

Meanwhile, the police had rushed to a phone box, and located the speech-reading spectacles after a hurried search.

A dispatch rider, with the specs in his bag, was eating up the miles at frantic speed to deliver them.

At 3:14 p.m. there was still no sign of the rider, and anxious officials, who had all been briefed to play their part when he arrived, were biting their nails.

The suddenly, there was a flurry of movement in the wings. A small object was passed from hand to hand among the line of speakers until it reached Churchill.

He snapped open his precious spectacle case and before he began yet another fine speech, turned to one side and beamed his appreciation to the people who saved the day for him.

"This event occurred sometime in the 1930's, and when one recalls the general problems in communication, the way British roads were at that time, the lines of traffic around London, the importance of personal appearances at election rallies before TV, the top hat worn on the election hustings, the cane and the 9" cigars, and black rimmed glasses near the end of Churchill's nose, it is easy to imagine a lot of the drama of such an event."

"Hope you are all keeping well and as busy as you want to be. We manage to fill up the days and seem to have more ahead than we can possibly handle. Working at further development of our museum, having just redone all the displays. Several visiting groups have come through, including the Rolls Royce Owners Club - Upper Canada Division. It looked impressive to see a line-up of those cars, some of early vintage, arranged in our parking lot!"

The museum to which Dr. Fisher refers is the optometry collection on display at the University of Waterloo.

Swedish optometry history:

The 50th anniversary of the Sveriges legitimerade Optikers Riksförbund is featured in the Jubilee issue of its journal, Aktuell Optik och Optometri (May, 1985). Included are a history of the S.O.R. (pages 6-10), and the development of 50 years of education, (pages 24-25 & 28) both by Robert Sandor. Per Söderberg gives a brief history of optometry in Sweden on page 9, and an account of the development of the Institute of Optometry, a very successful school for continuing optometric education founded in 1973, on pages 32-33, both in English. Also in English are three short historical notes, one on Syninformation (the Vision Information Council) founded in 1967, (p.33), one on the optical museum established in 1939 (p. 36-37), and a third on the Saint Lucia Guild, an invitational honor society organized in 1939 (p. 37).

On page 21 is a brief review of the meetings of the International Optical League meeting in Stockholm on September 9-10, 1933, at which representatives from France, Germany, Great Britain, the Netherlands, Sweden, and Switzerland were present. Among other topics was a discussion of a universal title for their constituent practitioners of various designations. "Almost every delegate preferred the title optometrist and this was the recommendation."

Stockholm museum feted:

On the evening of May 8th, during the week of annual meetings of the International Optometric and Optical League, the I.O.O.L. delegates and their accompanying personnel were guests of the Sveriges legitimerade Optikers Riksförbund (Swedish National Association of Registered Optometrists) in celebration of the S.O.R.'s 50th anniversary. The highlight of the event was a tour of the museum mentioned in the July 1975 issue of the N.O.H.S., Vol. 6, No. 3, page 45.

The museum was inaugurated on October 16, 1939, by the Stockholm Associated Specialopticians in a building known as the house of the leather-merchant Seyfridt, at 18-20 Stortorgat in the Old Town. The walls of the home date back to the middle ages, with other structural details and renovations dating to the 17th century. Credit for initiating the museum and its facilities for course work and receptions is given to two Stockholm opticians, Otto Ahlström and Albert "Abben" Lundqvist.

One of the many rare items is a gold lorgnette graphically reproduced in the S.O.R. logo shown below



A replica of the lorgnette also is used at the nadir link of the symbolic chain worn as a neckpiece by the president of S.O.R. during official and ceremonial functions.

In charge of the museum is optometrist Barbro Lundqvist, whose address is Drottninggatan 29, 11151 Stockholm, Sweden.

On blindness to the blind:

Eleanor Gertrude Brown did her Ph.D. research at Columbia University on the cause and effects of the blindness of John Milton, 1608-1674. Her thesis was published by Columbia University Press in 1934 and reprinted by Octagon Books, Inc., New York, in 1968. There may also be a more recent reprint.

In her preface she wrote, "Blindness came upon Milton in adult life (totally blind in 1652, at age 44), but it has been a part of my life as far back as I can remember. Yet for me, the memory of the red-gold of the sun, the blue of the sky, the green of the grass, and the light of the firefly is still vivid. In the interpretation of Milton's life and writings after the loss of sight, I add my knowledge of blindness."

In her first chapter she described grimly the state of medicine and hygiene in Milton's century. "The apothecary was consulted in preference to the doctor. He supplied the drugs and the advice as to what drugs to use. Surgery was performed by barbers while doctors looked on. In view of superstitions, morbidic modes of living, and medical treatment, it is not surprising that Milton went blind."

Pointing out that before the nineteenth century practically nothing was done to lift the blind from enforced helplessness, idleness, and ignorance, she added that "...only a few sightless men, in ancient and modern times,...were held in reverence as prophets, as soothsayers, or as minstrels, or because their deeds previous to their loss of sight had given luster to their names. Homer and Tiresias, Isaac, Jacob, Samson, the Talmudist Rabbi Sheshet, and the 'father of the cabals' Isaac Sagi Nahor-ben David, Appius Claudius, Dandolo, and Ziska are among the well-known blind characters of history."

Of special optometric interest, and almost the only relief from her description of the horrors of 17th century medical services, is a brief paragraph on the much earlier advent of spectacles and their increasing utilization, the optical contributions of Roger Bacon and Johannes Kepler, and the chartering of the Spectacle Makers' Guild of 1629.

In other chapters the author reviewed the evidence relating to the cause of Milton's blindness and the sometimes almost rampant speculation of its etiology, including punishment by God, excessive reading, albinism, congenital syphilis, glaucoma, and myopic retinal detachment. She had enlisted the cooperation of numerous of her well known American and English ophthalmological contemporaries in the interpretation of symptomatic evidence, most of whom believed glaucoma the most likely culprit.

Most of the book deals with Dr. Brown's interpretations of citations from Milton which can be related to his blindness and to its effects on his perceptions, concepts, and attitudes. He had written more prose and poetry

after his loss of sight than before. These included Sonnets XIX, XXII, and XXIII, Paradise Lost and three Defences, Samson Agonistes, Familiar Letters, and Psalms which he translated into verse in 1653, and numerous pamphlets. He had a reading knowledge of eight languages, and he dictated in most.

Leaving no stone unturned, Dr. Brown even devoted a scientific chapter to the question of authenticity of existing Milton signatures. She concluded that "the Milton autographs belonging to the period of blindness may be his."

Citations and references total over 300. James Leeds, O.D., who prompted this review, has a 1934 edition of Brown's book in which the title is included in Braille. The Indiana University Library copy of the same edition does not have this feature, so Dr. Leeds may indeed have a rare collectible in his possession.

Either edition is a treasure to read, for in addition to its historical merits it provides revealing insight into a blind person's sense of values, such as, for example, "I know of no blind person who would prefer deafness," and there are many more.

There is a good possibility that your local community library has a copy.

More on progressive add lenses:

Apparently a bit concerned that the report on the history of progressive addition lenses which appeared on page 85 of the October 1984 issue of N.O.H.S. lacked comprehensiveness, OHS member Irving Bennett called it to the attention of Bernard Maitenez, President of Essilor International, Créteil Cedex, France, for comment.

The following is photocopied directly from Mr. Maitenez's response:

In accordance with your request, my reply will concentrate on the history of the progressive lens. To begin, it is true that patents were filed before the first Varilux lens appeared in 1959. But none of these was exploited because the lenses made on the basis of these patents could not be manufactured or could not be used. The problem was one of obtaining "a workable progressive lens", as you indicate, and the Varilux 1 was undeniably the first progressive lens to be commercialised.

If we consider only the progressive lenses actually launched on the market, events occurred in this order:

1956 - First Varilux 1 patented.

1959 - Beginning of commercialisation in France of Varilux 1, a mineral lens made progressive by surfacing.

1965 - Omnifocal released in the United States; it was distributed for only a short while because its manufacturing process left serious astigmatism on the lens.

1968 - In France, the Zoom, a mineral lens obtained by depression methods is commercialised by Benoist-Berthiot.

1972 - First Varilux 2 patents filed. These lenses' principal originality lies in the aspherical surfaces for distance and near vision.

- 1973 - Commercialisation of the Varilux 2, a polished mineral lens, is begun in France.
- 1975 - Commercialisation of an organic Varilux 2 is begun in France.
- 1976 - The first Varilux 1 patents enter the public domain. From this point on, the American progressive lenses began to appear but were sold only in Europe. The first was the AO 7 or Ultravue 25. Its sales were very limited after a small initial success due to curiosity. The AO 7 was an organic lens.
- 1978 - Younger commercialises the 10/30 as an organic lens. Its structure is even harder than that of the AO 7. The 10/30 is in fact a bifocal with a very short passage from near vision to distance vision surfaces.
- 1979 - AO, faced with the AO 7's failure, commercialises the AO 40, or Ultravue 28 as an organic lens with a harder structure than that of the AO 7. The Varilux 2 had at that time been known and appreciated for 6 years but AO continued to believe that the solution lay in the largest possible distance and near vision spherical zones.
- 1979 - (Benoist-Berthiot and Guilbert-Routit had merged under the name BB-GR and become a subsidiary of Essilor.)
- Essilor brought its subsidiary the surfacing technique used to make progressive lenses but the Varilux 2 patents remained its exclusive property. The NZ thus did not infringe upon Varilux 2 patent rights.
- 1980 - Univis commercialised the organic Unison lens. For the first time, American manufacturers began to develop a softer-structured lens though continuing to accept an astigmatism along the meridian. A mineral version of the Unison was commercialised soon thereafter.
- 1980 - Hattori commercialised the organic PI "regular". The lens structure continued to soften but because of the Varilux 2 patents, the surfaces for near vision and distance vision remained spherical.
- 1981 - Younger commercialised the CPS as an organic lens. The softening of surface structures continued.
- 1981 - Rodenstock commercialised the Progressiv R and AO the M3 or Truvision, both mineral lenses. Their lens structures were softer but the near vision and distance vision zones remained spherical. The Varilux 2 patents played a restrictive role.
- 1982 - A large number of progressive lenses continued to appear, among which were the Polycore progressive from Polycore and the P1 "mild" from Hattori.
- 1983 - Zeiss launches the Gradal HS in Germany.

This chronology clearly shows that in a first stage, progressive lens manufacturers, with the exception of Essilor, were oriented towards lenses with hard structures. But, recognising the better acceptance of the Varilux 2, they chose at a second stage to try to develop softer lens structures.

But softening of the structure must obey certain rules and in this the Varilux 2 is fundamentally different from the other progressive lenses. In the Varilux 2, the surface is determined on the basis of physiological laws that we have grouped under the name "visual fidelity". Proceeding by this method necessarily leads to development of aspherical surfaces in the near and distance zones. We refer to this as "optical modulation".

Since the other manufacturers were prohibited from using this approach by the Varilux 2 patents, they were obliged to find surface polishing solutions based on physical or geometrical laws, which evidently have nothing to do with the physiological factors.

The Mundorff Mechanical Eye:

Professor Walter Chase, O.D., of the Southern California College of Optometry has published an appeal to readers of the Spring 1985 issue of the S.C.C.O. Alumniscope, page 25, for any information on the identity of a Mr. or Dr. Mundorff, the inventor, designer, or manufacturer of the "Mundorff Mechanical Eye," which has been used for over 30 years in the visual science laboratory of the college as a teaching aid.

Should he receive any informative responses, we will be apprised of the details.

From Pepys' diary:

An article about Samuel Pepys (1633-1703) of diary fame and his encounters with severe asthenopia, progressive blindness, an optometrist, and an eye physician appears in the May 1985 issue of the Journal of the American Optometric Association, Vol. 56, No. 5, pages 370-372. Entitled "The sore eyes of Samuel Pepys" it is authored by Sidney Groffman, O.D., and includes about twenty eye-related excerpts from the diary ranging from January 19, 1664, to May 31, 1669. Four references are cited.

A voice from South America:

Noting that we lack O.H.S. membership in South America, Dr. D.G. Hummel of Ohio promptly sent us a check for ten dollars for the gift membership of his Bogota, Colombia, friend Hernando Henao R., O.D., an Apollo awardee and well known to many of us.

Dr. Henao should be able to contribute a bit of historical information on a personal basis as well, for not only was his father an optometrist but he himself has long been very active in professional optometric affairs.

Early history of modern lighting:

Should you ever have occasion to become thoroughly informed on the early history of artificial lighting, whether by electricity, gas, oil, or other illuminants, you could hardly do better than to avail yourself of a copy of "Modern Methods of Artificial Illumination," a course in six parts in the 1909 Journal of the Royal Society of Arts (London) by Leon Gaster, one copy of which may be found at the University of Illinois Library at Urbana-Champaign.

The series appeared in six successive weekly issues, Nos. 2959 to 2964, Vol. 57, August 6, 13, 20, and 27 and September 3 and 10, pages 757-772, 775-778, 795-810, 815-837, 842-861, and 867-889, with 93 figures. The author originally had presented the articles as a course of four "Cantor Lectures" on February 15 and 22 and March 1 and 8, 1909.

In the annual report of the Society it is stated that "Perhaps no course ever given before the Society was so fully and elaborately illustrated. Mr. Gaster was able to secure typical examples of all of the various methods of lighting which he described, and in fact each lecture was a concentrated exhibition of the best and most recent apparatus used for lighting by electricity, gas, and petroleum."

Reprints of the series were made available in pamphlet form at two shillings each. The lectures were extensively abstracted in the October 21, 1909 issue of Nature, No. 2086, Vol. 81, pages 500-503.

By way of an amusing illustration of the phenomenal changes in lighting that had taken place in only a few prior decades the author mentions the experience of a friend who had the curiosity to look up the word "illumination" in an encyclopedia. He was rewarded by the cryptic reference, "Illumination - see fireworks." Mr. Gaster covers not only the design and technology of every type and brand of lighting invention but also their costs, efficiency, spectral quality, maneuverability, appearance, and their utilization in industry, home, office, highways, playgrounds, schools, libraries, and elsewhere.

The Cantor Lectures originated in 1983 with a bequest by Dr. Cantor. There were several Cantor Courses every session, and each course consisted generally of from two to six evening lectures. The 1908-1909 session ranged from mid-November through the following June with a total of 17 "Cantor Lectures," of which Mr. Gaster's were four.

Optics and social history:

It is good to be occasionally reminded how scientific and technological advances have drastically altered everyday life and author Peter Mason has done just that. In his book The Light Fantastic (Pelican Books, 1982) Mason discusses topics ranging from electrification to x-rays. Although the title might have more appropriately been "The Electromagnetic Spectrum Fantastic," six of the twelve chapters concern optics and light specifically.

"The Light Fantastic is a patchwork story of the wonder and magic, the science and the technology of these brilliant optical inventions. They have changed the whole pattern of human life, and their influence upon the lives of ordinary people is indeed the thread that weaves the story together. As just one example, the introduction of gas and electric lighting brought in its train a social liberation. Cities sprang into life when darkness fell. People who could afford this illumination in their homes found that new dimension had been added to their lives. The coal miners and the workers in the gas and electricity supply companies, on the other hand, found their lot becoming intolerable and they joined the growing swell of industrial unrest."

Chapter 8 titled "The Phoenix from the Ashes" chronicles the fascinating history of the Zeiss Optical works in Jena, Germany.

"In the late nineteenth century the microscope was brought close to perfection by a group of craftsman and scientists in the small German town of Jena. Out of this group came the great optical company of Carl Zeiss. Its greatness lay not simply in the quality of its optical products but equally in the care it took of its workers at a time when exploitation and grinding poverty were the rule. The Carl Zeiss Foundation survived the two World Wars before it divided like an amoeba. There are now two quite independent and first-class optical companies, one in each of the East and West divisions of Germany. Both are called Carl Zeiss, and both are still operating essentially under the enlightened charter set up by the Foundation in the nineteenth century."

The group Mason refers to in this introductory paragraph consists of Carl Zeiss, Ernest Abbe, and Otto Schott.

Iridial history:

Anyone who has taken the time to observe the human iris will be entranced by its beauty and delicate movements. It is not surprising then to find that many past physiologists have written extensively on this subject. A book published by Hans Huber Publishers (1980) entitled The Iris in Eighteenth-Century Physiology is a must for understanding the history of this remarkable tissue. Author Renato G. Mazzolini explains the purpose of his book in the preface.

"The eighteenth century was a period of great expansion and growth in science. In recent years, several historical works have been published dealing with the relations between the republic of science and the changing demands of society, both before and after the French Revolution. These studies have been mainly concerned with the integration of science in the ancien régime and its influence upon the Industrial Revolution. Relatively little work has been done on the growth of science itself, the logical and empirical reasons for scientific change and the patterns of scientific diffusion during the eighteenth century. My book is mainly concerned with these same problems, not viewed generally, but approached through the analysis of a very limited and specific topic, i.e. the explanation given during the eighteenth century for the reactions of the iris to light. Though limited, this topic was, and is, a very complex one, showing at one and the same time the difficulties and achievements of more general eighteenth-century anatomical and physiological research. The widespread interest in this topic is testified by Johann Gottfried Zinn's remark that no one who passed for a physiologist had ever managed to avoid tackling it.

The first aim of this book is to provide a historical analysis of the following statement by Albrecht von Haller: <<All the muscles are irritable... The iris, which you will be surprized at, has no Irritability, when the cause of the irritation applied to it is mechanical, viz. a knife or the like...>>.

There were three main questions to be tackled: 1) Was Haller's statement original? 2) To what extent did it change previous conceptions of the iris? and 3) To what extent did it influence subsequent students of the subject? In order to answer these questions, I have studied all the specialized literature that I could trace, written 50 years before and 50 years after Haller's statement. Thus, the original sources I have studied are eighteenth- and early nineteenth-century anatomical and physiological books and papers. Because of the relevance of first editions in the study of the history of science, my research has had to be extended to many European libraries.

The second aim of the book is to provide a case study of the diffusion (by which I mean the circulation and reception) of scientific theories among the scientific community of anatomists and physiologists during the eighteenth century. I have thus had to extend my research also to reviews, unpublished sources and still extant anatomical collections.

Even if you don't have the time to read the 200 page book it would be worth your time to view the 37 illustrations, many of which are taken from

original eighteenth-century works. The book is extremely well referenced and indexed. In fact, scanning the name index one literally sees a who's who of eighteenth century visual scientists: Troxler, Porterfield, Petit, Zinn and many more.

Henry W Hofstetter
Douglas K. Penisten, Editors