

OPT

NEWSLETTER
OF THE
OPTOMETRIC HISTORICAL SOCIETY
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OPTOMETRY LIBRARY

Oops

MAY 8 - 1985

Those of you who read with interest the short piece on Russian optical apprentices in the January O.H.S. Newsletter might have wondered what this subject had to do with President Andrew Jackson's spectacles. The answer is absolutely nothing. For the first time, and hopefully the last, an error was made at the printers and I missed it. Specifically pages 3 and 4 were omitted. Presumably all copies are deficient, so these two pages have been printed back to back and are included as a separate sheet inclusion with this issue.

D.K.P.

1985 O.H.S. Officers

The five-member Executive Board has voted among themselves for the 1985 officers. They are as follows:

President -	Jerome Abrams
Vice President -	Pat Carlson
Secretary-Treasurer -	Maria Dablemont
Trustees -	James Leeds
	Andrew Fischer

Indiana University
MAY 3 1985
Library Serials Dept.

Your Vote Counts

You will find a second separate sheet with this issue of the Newsletter. As you will see it requires your vote on two proposed changes of the O.H.S. by-laws. All O.H.S. members are requested to vote and return the sheet to Maria Dablemont as soon as possible.

About our membership

Informed of the addition of 12 new names on our O.H.S. membership roster we again checked our geographic distribution, something we have not done in several years.

As of January 1 we had 250 members, 50 of whom were from 19 countries other than the U.S.A., representing all of the populated continents except South America. The 200 U.S.A. members showed a distribution roughly correlated with the population density, with double digit numbers in the more populated states of California 33, Indiana 21, Pennsylvania 16, Ohio 15, and New York 14. Thirty one states showed from one to nine members each, and 14 states, Alaska, Arkansas, Idaho, Kentucky, Louisiana, Montana, Nevada, New Mexico, North Dakota, Rhode Island, Utah, Vermont, West Virginia, and Wyoming, showed none. Seven members were listed for the Commonwealth of Puerto Rico.

Our above-mentioned 12 new members include four who received gift memberships from Dr. Andrew Fischer, namely, Drs. Robert H. Kraskin, J. Donald Kratz, Earl H. Ridgeway, and John R. Wittekind. Ms. Valda Strawbridge received a gift membership from Dr. Charles Letocha. The following persons joined on their own: Drs. Gibert B. Cohen, Dale D. Freeburg, Billy C. Greene, Frederick T. Heller, Andrew M. Hlusak, Edward C. Johnson, and Richard E. Talcott.

A new museum

The Optical Heritage Museum, formerly called the American Optical Museum, is now a nonprofit organization separate from the American Optical Corporation, reports its Director and Curator, John M. Young. Located on Route 131 in Southbridge, Massachusetts 01550, it has been rated among the top optical museums in the world. Mr. Young promises a brief description of its origin, aims, facilities, etc. as soon as possible.

Special interests

New O.H.S. member Edward C. Johnson, O.D., P.O. Box 1065, Kingstree, South Carolina 29556 expresses a particular interest in antique eyeglasses and their craftsmen.

Obviously other O.H.S. members have special historical interests, which we would be pleased to mention in this Newsletter. Your editor Hofstetter, for example, happens to collect cartoons related to optometry, vision, optics, and the eye. For historical reasons he attempts to date each cartoon, at least by year, if at all possible.

Ophthalmic appraiser responds:

O.H.S. member Alan York, O.D., 1 Main Street, East Hampton, New York 11937 (Telephone 516-324-1024) informs us:

Re your inquiry for appraisers in the field of antique spectacles, as well as ophthalmic instrumentation, appurtenances and memorabilia, please add my name to the list. I have done this before for some of the largest collections extant and I comply with all of the new rules and regulations of the Internal Revenue Service.

Optometer collectors:

Mr. Sheldon Bucher, R.R. 2, Orangeville, Pennsylvania 17859, U.S.A., telephone (717) 784-3237 offers for sale an optometer which he believes is about 100 years old. It consists of a square wooden rod about 25 cm long with scale numbers 1 to 60 ranging from a positive spherical lens in the aperture of a flat plate at one end to a sliding block with a letter fixation target moveable from the other end. The optometer is marked "Made in U.S.A."

Differences vs. similarities

The fact that the refractive error of one eye may be 1.00D when the other is 1.25D is ordinarily regarded by an optometrist as a significant difference. An anthropometrist on the other hand may well regard it as a remarkable similarity.

In an analogous way in a recent article the historical professionalization of optometry as it occurred separately in Britain and in Australia is viewed by two sociologists as contrastingly different, whereas many of us, such as I, have been impressed by the remarkable similarities of professional development in those two countries, especially as compared for example to developments in optometry on the the Continent and in the Orient. The two sociologists are Alan Fielding and Evan Willis of Monash University, Clayton, Victoria, Australia. Their paper is titled, "From Optician to Optometrist: The Professionalization of the British and Australian Sight-testing Occupations" in the September 1984 issue of the Australian Journal of Optometry, Vol. 67, No. 5, pp. 157-170.

Their analysis compares and contrasts the historical development of ophthalmic optics in Britain and optometry in Australia from their earliest occupational identities to their present status as accredited professions. Included in their comprehensive review are the professions' relationships with government, with other competing or otherwise concerned occupational groups, and with public and private welfare insuring agencies, as well as their educational and qualification provisions, their vocationally related literature, their institution of ethics codes, the formation of membership organizations, the variously emerging concepts of professional roles and identities, and the concurrent technological advances. Much credit for the differences of development patterns is attributed to the fact that Britain has a unitary political system of government while Australia's is a federal one.

In spite of the conclusion that in the two countries "professionalization was negotiated in different ways...within the context of different political systems and ideologies" the authors point out certain similarities in the professionalization of each. "Both can be described as value-rational organizations committed to the service ideal of eye-care" and "both can be described as members of a bureaucratic profession."

Altogether, the article is a well formulated document with perhaps only one historical flaw, the repeated mention of optometry's "conflict with medicine" instead of careful identification of its conflict with only one small segment of the very complex medical profession. In the same view the reader is not prevented from harboring the popular notion that the British ophthalmic opticianry and Australian optometry historically invaded a previously undisturbed field of medicine when in fact the inverse is true.

One aspect that the authors do not attempt to evaluate is the role of leadership in the professionalization process, though they do occasionally identify an individual by name. Is this not sociology, too?

A decade of history:

The Vision Educational Foundation began operating in November of 1973 as a tax exempt, not-for-profit organization chartered by the State of Tennessee and until June of 1976 was under the auspices of the Southern College of Optometry. During fiscal year 1983-84 the V.E.F. received contributions ranging between \$25 and \$1,000 from 473 optometrists and 31 optical firms. It has undertaken a variety of projects, all in support of excellence in optometric educational programs and student aid. A copy of the 1984 report, "Our First Decade of Service" is available from V.E.F., 11 North Montgomery, Memphis, Tennessee 38104.

Curious ocular expressions:

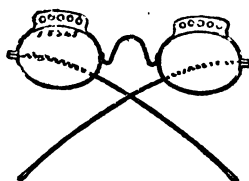
"A HOG ON ICE And Other Curious Expressions" is the title of a book by Charles Earle Funk originally published by Harper & Row in 1948 and later as a paperback by Warner Books, Inc. in September, 1972. Dr. Funk, a noted lexicographer, attempted to trace and describe the origins of more than four hundred picturesque phrases that have added pungency and color to our language.

At least five are eye-related, as follows: "the apple of one's eye," "to cast sheep's eyes at," "to pull the wool over one's eyes," "a peeping Tom," and "to cut one's eye teeth." Some are believed to date back to the ninth century.

Not included is "seeing eye to eye," and perhaps many other eye-related phrases that readers might well bring to our attention for mentioning in future issues of this newsletter. The five above listed expressions can be said all too succinctly and less pungently to mean a precious possession, to gaze upon amorously, to hoodwink, a pruriently prying person, and to acquire wisdom.

A passing fancy:

According to an item on page 89 of the May 31, 1905, issue of The Jeweler's Circular-Weekly an invention called a micro-photoscope "was recently described in Miatt's Quarterly Review." It consisted of a pair of spectacles with one or a number of minute photographs arranged along the upper rim or rims, as illustrated in the here reproduced sketch.



AN INGENIOUSLY MADE MICRO-PHOTOSCOPE.

"The minute photographs are placed behind suitable magnifying glasses, and are so arranged that the eyes of the wearer may see either one or all of the photographs without moving the spectacles. They may be photographs of written or printed matter, maps, views, landscapes, or any group of objects from which a photograph may be taken." It is suggested that the micro-photoscope would be useful to lecturers, lawyers, clergymen, tourists, shopkeepers, doctors, musicians, detectives, and students.

The cited journal, Miatt's Quarterly Review, was started in 1901, apparently in New York City, and presumably short lived, possibly terminating in 1902, as no later issues are listed in the Union List of Serials.

The Jewel Young Award:

Technically not an optometrist, but for 59 years in the service of optometry and optometrists, Jewel Young has been memorialized by an annual award in her name to be made to an "optometric assistant/therapist who best exemplifies the role of assisting the optometrist in the in-office practice of behavioral optometry." She started her career in Dr. E.B. Alexander's office in 1923, helped organize the Optometric Extension Program in 1928 and headed its office staff until she retired in 1982. The Award was established by Marie and Homer Hendrickson, O.D., in 1984 and is administered by the Optometric Extension Program Foundation, Inc.

The Benjamin Pikes:

Shortly after his arrival from England in 1804 Benjamin Pike (1777-1863) opened an optical shop at 147 Pearl Street in New York City. Meyrowitz, Aitchison, and many others who became noted American opticians received their early training under Pike. Eventually he was joined by his sons Benjamin Jr. (1809-1864) and Daniel (1815-1893) under the name of Benjamin Pike and Sons, but in 1839 Benjamin Pike Jr. established his own business at 166 Broadway and later at 294 Broadway to specialize in "optical, mathematical, and philosophical instruments."

Benjamin Jr.'s. catalog of 1848, issued in two volumes, was regarded as a set of veritable text-books containing detailed descriptions and "upwards of 750 engravings of apparatus for many sciences." In spite of his broad range of products and services Pike seems never to have neglected his primary vocation--optics. Modestly referring to himself in the third person he assures the reader of the catalog "that in regard to spectacles, eye glasses, and lenses for optical purposes of every description, his assortment is most authentic and complete. To this branch of his business he devotes special attention, furnishing glasses or pebbles that are truly ground and properly fitted to the eye."

The above and other glowing details of the optical and optometric contributions of the Pikes are described in a 1940 book entitled "The Tools of the Chemist; their Ancestry and American Evolution" by Ernest Child, Reinhold Publishing Co., New York, and in the September 1, 1941, issue of the Optical Journal and Review of Optometry, Vol. 78, No. 17, pp. 23-24, under the title "Benjamin Pike, Jr., Pioneer in American Optics" by Otto L. Bettmann, Ph.D.

For itinerant spectacle peddler:

Item number 20R375 in the 1902 Sears-Roebuck mail order catalog was an optician's spectacle fitting outfit reports O.H.S. member John M. Young, Director and Curator of the Optical Heritage Museum in Southbridge, Massachusetts. The following is the catalog description:

It is a well known fact that opticians make very large profits and it is perfectly right that they should do so, as the customer who buys a pair of spectacles not only pays for the goods that he actually receives, but he also pays for the labor and skill required in fitting the spectacles.

With our outfit and special information we furnish, spectacle fitting becomes a simple and easy matter. We include with our Big Opticians' Outfit a complete book of instructions, giving special inside information on the testing of eyes and the fitting of spectacles. With our outfit and our special book of instructions the correct fitting of spectacles is an easy business to learn. No long and difficult study is required, everything is perfectly simple and easy. Within forty-eight hours after receiving one of these outfits you will know more about the spectacle business than your local optician or jeweler, and you can start right into a pleasant and profitable profession.

Our opticians' outfit contains everything necessary for starting in the spectacle business. All the apparatus for testing eyes, including a set of extra quality trial lenses contained in a fine folding pocket case, a high grade optometer for testing the eyes, an assortment of test types and charts. In addition to the apparatus for testing the eyes we include a complete line of spectacle goods, such as spectacle frames, eyeglass hooks, spectacle cases, etc. In short, everything you will need.

The optical business is pleasant because you are independent. You are not subject to any individual company, corporation or community. You have no boss or bosses; you conduct business to suit yourself. You travel in good style, stop in good hotels. Everywhere you are respected and looked up to by the communities you visit, and are placed in an assured position, commercially and socially, with the best people with whom you come in contact.

The price was \$27.85.

Emmetropic robots:

The beginning of another historical evolvement has been that of MACHINE VISION, the title of a report on pages 81-82 of the January 1985 issue of Photonics Spectra, Vol. 19, No. 1. Some of us have been familiar with it only in the form of automatic money changers in a few public places. The machine vision business however is currently enjoying an annual growth rate of 50 per cent. The number of manufacturers of machine vision systems has grown from 30 to more than 150 over the past

four years alone, estimates one leading authority.

Examples of their specific visual tasks include monitoring of snack-food products for discoloration, shape, and breakage; inspection of fish fillets for bones and contaminants, and inspection of printed circuit boards for flaws. Two German firms have even developed a three-dimensional vision machine which can locate and identify the object in view and position an arm to grasp it.

More about Schwimmer:

We were prompted by advice from OHS member Duane Polzien that James J. Gardner, O.D. of Chicago might recall some facts about optometrist Reinhardt H. Schwimmer who was gunned down in the St. Valentine's Day massacre of 1929. A few details had been given in the April 1975 issue of the N.O.H.S., Vol. 6, No. 2, p. 26.

Replying to our inquiry, Dr. Gardner added,

"Sorry I cannot add much about Dr. Reinholdt Schwimmer. The only facts I can gather was that he was a bachelor with a small but selective practice on the near north side of Chicago. He was a compulsive poker player and did not choose his company wisely. His demise came from associating with gamblers of the underworld and was about to begin an all day session with the card sharks when the Massacre took place. Sorry but information about more details seems too elusive."

Vision, personality, and behavior:

My attention was called to an interesting and informative but undoubtedly out-of-print book that may nevertheless be available in your local library. It is by the noted ophthalmologist Patrick Trevor-Roper and entitled "The world through blunted sight," published in 1970 and 1971 by Thames and Hudson, London.

Dr. Trevor-Roper undertook to describe the influence of various alterations, anomalies, and impairments of vision on personalities and performances, and especially of historical notables. Most accurately he states in his preface, "It is always rash for a scientist to venture from the solid shores of his exact science into such speculative waters; and, if I have seemed to flounder among too many unrelated disciplines, let me plead that, by constantly retreating behind the theories and experiments of others, I have tried to let these speak for themselves, and only rarely presumed myself to arbitrate."

Approximately a third of his 196 cited references are primarily history oriented. Almost all of the 29 color plates and 78 monochrome plates are illustrations of portraits and other classic pieces of art in which the visual conditions of the artists may have played roles. The text deals categorically and intelligently with the influences of such conditions as ametropia, presbyopia, color vision, squint, eye dominance, aniseikonia, media opacities, visual field losses, total blindness, and even recovery from total blindness. Discussed incidentally are the

vision related phenomena of synesthesia, behavioral responses to color, color artistry in birds and mammals, color in dreams, and psychedelic art.

Though reference is made to spectacles as a personality factor, no mention is made of the impact of contact lenses.

H.W.H.

Eponyms, preservatives of history:

The Dictionary of Visual Science includes hundreds of eponyms ranging alphabetically from Abadie's sign to Zuber effect, but it offers no biographical information about them. Steps are being taken, however, to do so in the fourth edition. The undertaking was recently volunteered by our own O.H.S. co-editor Douglas Penisten, who is now setting up a file and a resource searching procedure to track down the vital data of the eponymous donors.

Hardly had he begun when we received the following most welcome letter from O.H.S. member Charles B. Margach, Editor of the serial Curriculum II published by the Optometric Extension Program Foundation:

As you well know, much of the history of the the health care fields is encapsulated in the eponyms which stud our technical dictionaries and literature. It may be of interest to the Optometric Historical Society that Homer Hendrickson, O.D., is writing, for eventual publication in the Curriculum II papers of the Optometric Extension Program Foundation, a series of 12 chapters listing and discussing eponyms that are found in the literature of behavioral optometry.

These papers will by no means be all-inclusive of optometric eponyms. Rather, they will deal with a limited group of names, many of whom were instrumental in developing procedures and instruments still in use in visual training regimens.

This memo is provided for your information only. It may be that the Hendrickson series will contain information which you deem to be of historical significance that O.H.S. might wish to be involved in disseminating it more widely than it would otherwise be, or at least making certain that it is included in the historical documents which I am sure O.H.S. is collecting.

The exact dates for the publication of the Hendrickson material are not yet established. We had hoped that they would be the year from October 1985 through September 1986. However, it appears that this is too optimistic, but that it will rather be the O.E.P.F. 1986/1987 year.

Your comments, at your convenience will be appreciated.

It happens that OHS member Henry Knoll also has undertaken to pull together some vital data about several of the eponymous dictionary entries. Needless to say, Dr. Penisten and the dictionary editors welcome all the help they can get.

H.W H.

21 years more of 21 points:

OHS member and Professor of Physiology Gerald Westheimer of University of California, Berkely, writes:

I would like to add a footnote to your January 1985 item, "OEP in Australia" in which you report that final year optometry students at the University of New South Wales received class notes on the 21 point technique in 1964. In our final year (that was in 1943) at the precursor institution, the Sydney Technical College, we pooled resources and hired a typist to copy several hundred pages of notes on the 21 point technique made available to us by an instructor, who himself was skeptical but felt that we might want to know other points of view. On the other hand, we had to learn essentially everything in Emsley's "Visual Optics". I don't believe that the intervening decades have outmoded that approach to optometric education.

Ocular prosthesis history:

The following is a brief note of interest from Indiana University Librarian Emeritus Elizabeth Egan:

William Fitzhugh, 1741-1809, was a wealthy Virginia planter. A portrait of him hangs in the Robert E. Lee Boyhood Home, a national museum, in Alexandria, Virginia. In the portrait one eye looks strange, supposedly because it was a glass eye. Recently a visitor--an oculist or an optometrist-- told the docent in charge that Mr. Fitzhugh could not have had a glass eye at the time, presumably because none was manufactured as yet.

The visitor, however, was wrong, as glass eyes had been made in Europe since the early 1700's. Perhaps he was thinking of the U.S.; glass eyes were not manufactured in this country until 1851, when Pierre (or Peter) Gougelman, a pupil of Boissonneau in Paris, started the manufacture of artificial eyes in New York. Before that glass eyes would have to be imported, as were many other manufactured goods.

For the historical record, William Fitzhugh's daughter married George Washington Parke Custis, the grandson of Martha Washington (and adopted grandson of George Washington). The daughter of this couple married Robert E. Lee.

Boissonneau was considered the outstanding eye-maker of France and of the Continent. His understudy Gougelman, a Swiss, became interested in America through some Americans who had come to Paris to have eyes made. He opened his business on Van Dam Street in New York City.

An excellent review entitled "Artificial Eyes, The Early History of Ocular Prostheses" by Carey P. McCord is in the February 1965 issue of the Journal of Occupational Medicine, Vol. 7, No. 2, pp. 61-68. It includes ten references.

More artificial eye history:

A brief historical commentary on artificial eyes appeared anonymously in the Century of Progress Issue of the Optical Journal and Review of Optometry, Vol 70, No. 12, June 15, 1933, pages 99 & 141. No references were cited. Following are some of the interesting but undocumented assertions:

"Artificial eyes were first made of enameled metal. This method, however, was unsatisfactory and the metal eyes were replaced by china ones. When advanced methods of glass making were introduced, clear glass was substituted for china."

"The first artificial eyes were brought to this country about 75 years ago."

"In 1898 Snellen invented what is known as 'double-shell' eyes."

"Golf presents one of the heaviest casualty lists for eyesight losses."

The Wills Hospital and Optometry:

James Wills, Jr., a bachelor and member of the Society of Friends and the heir and grocery business associate of his father James Wills, Sr., died January 22, 1825, and bequeathed the bulk of his estate of over \$116,00 "to the Mayor and Corporation of the City of Philadelphia... to erect ... suitable buildings and accommodations for a hospital or asylum, to be denominated -- 'The Wills Hospital for the Relief of the Indigent Blind and Lame'." Contestants of the validity of the will delayed its implementation until a court decision on March 21, 1831, favorable to the city, thereby assuring the founding of the Wills Hospital.

A hundred years later, 1931, the J.B. Lippincott Company published a 350 page book by William Campbell Posey, M.D., and Samuel Horton Brown, M.D., entitled, "The Wills Hospital of Philadelphia." In the preface the authors inform us that, "This Hospital witnessed the birth of ophthalmology . . ." and that "as a school for ophthalmology, no other institution in America, perhaps, has been of so great influence in the education of physicians in that branch of medicine."

Because this book was written in the wake of the long and intense conflict between ophthalmology and optometry during the two decades of enactment of optometry licensing laws and during the final phases of dichotomization of opticianry into optometric and dispensing categories, one could expect a biased treatment of the historical facts. This is not exactly true. Only once in the book does the word optometrist occur, but in that era even among those licensed as optometrists the term was not utilized very persistently. The public then knew all of us more

familiarly by our earlier traditional identity as opticians. Quite unexpectedly, therefore, we find Chapter XIII, 29 pages in length, dealing with "Refraction, the Development of the Correction of Ametropia. Optical Department. Opticians."

In this chapter, and occasionally in other chapters, the various roles of numerous opticians (optometrists) are described. Names included all of the five generations of McAllisters, James Matthews, James W. Queen, Walter B. Dick, Christopher Huber, W. Reed Williams, Henry Huber, Joseph Zentmayer, Samuel L. Fox, John G. Gray, Ivan Fox, John L. Borsch, Charles F. Wall, R. and J. Beck, John W. Sidle, John Ochs, William L. Wall, J. Harry Bowers, H.C. Boden, William S. Yarnall, Herman Bonschur, Arthur Holmes, Joseph C. Ferguson, Jr., Daniel E. Weston, P.E. Limeburner, Joseph Haines, Frank Muller, William F. Reimold, Charles Meistu, Thomas E. Lander, John W. Cleary, and others, all of the Philadelphia area. In the later dichotomous evolution some of these elected to pursue ophthalmic dispensing or optical fabrication careers instead of optometry.

The inclusion of refraction by ophthalmologists in the Hospital did not occur until 1865 with a subsequently very slow annual increase of numbers of refractive cases to 185 in 1872 and a rapid climb beginning in the '80s reaching 10,054 in 1930. In 1924 the hospital established its own optical dispensing department for the sale of glasses.

The following are excerpted paragraphs concerning the second optometric generation of the McAllister line, John McAllister, Jr.:

John McAllister, Jr., the son of John McAllister, Sr., was born in Philadelphia in 1786, while his father was still residing at the northeast corner of Second and Market Streets. He received a good education being graduated in Arts from the University of Pennsylvania with honors in 1803. He always manifested great interest in his alma mater and made an eloquent address to the Alumni in 1876, when ninety years of age.

The records of this firm are interesting reading, showing that J. McAllister, Jr., had a deep interest in all kinds of research of a physical nature. Tradition has it that George Washington obtained his glasses of John McAllister, Sr., while among the customers of the son were such notables as Thomas Jefferson (1806), Chief Justice Tilghman (1815), Count Joseph Bonaparte (1818), Henry Clay (1828), President Andrew Jackson (1841), et. al.

John McAllister, Jr., was of scholarly habits and very fond of collecting historical data. He was made a member of the Historical Society of Pennsylvania in 1828, and read a number of papers before that body. He was elected Manager of the Wills Hospital in 1848 and acted in that capacity until 1854, when he resigned, but served a second time from 1857 to 1859. His interest in optics, as well as his standing in the city, must have made him a most acceptable member of that body.

It is probable in the early years of the life of the Hospital that all patients needing glasses were sent to McAllister for them, the surgeons relying upon him to test the eyes of the patients as well as to grind the lenses. Note has already been made of his

detecting and correcting the first case of astigmatism in America.

The business was conducted at 48 Chestnut Street for thirty years, when removal was made to 728 Chestnut Street. The firm partnership was dissolved in this year, and its name changed to McAllister and Brother. This partnership was also dissolved and in 1865 William Y. McAllister continued the business alone until 1882, when he retired, his sons William M. and J.C. McAllister succeeding him. A third son, F.W. McAllister, had started an optical house in Baltimore some years prior to his father's retirement. This business is still being carried on, by his son -- an optometrist -- a great-great-grandson of John McAllister.

Altogether, although the book deals almost entirely with ophthalmology and ophthalmologists, it may well be the best available published account of the status of optometry in nineteenth century U.S.A.

Abbe and Schott:

"The collaboration between Ernst Abbe (1840-1905) and Otto Schott (1851-1935) and its effects on optical glass development and optical instrument design in Jena at the end of the 19th century" is the translated title of an article by C. Hofmann in the November/December 1984 issue of *Augenoptik*, Vol. 101, No. 6, pp. 162-168. Part I is a review of the image-forming quality of optical systems prior to the formation of JENA^{er} GLASWERK in September 1884.

JENA^{er} GLASWERK was a familiar short name for an enterprise entitled "Glastechnisches Laboratorium von Schott und Genossen " (The Schott and Associates Glass Technology Laboratory) incorporated by Ernst Abbe, Otto Schott, Carl Zeiss, and Roderich Zeiss with starting capital of 60,000 German Marks. With the cooperation of several other German scientists, including Helmholtz, and several industrial and governmental agencies another 60,000 Marks were forthcoming in support of the project in 1884 and 1885.

Part II describes the efforts by Abbe to improve the color correction of microscope objectives prior to 1880. Part III is a review of the development of phosphate, borax, and barium glass by Schott and Abbe between 1880 and 1883. Part IV provides an account of the founding of JENA^{er} GLASWERK and the resultant improvements of optical glass between 1884 and 1886. Part V is a summary of the effects of the newly developed Jena optical glasses in the improvement of microscopic, telescopic, and photographic optics of the 19th century.

Included are five graphic charts of the optical properties of various types of glass and 30 bibliographic references.

Leonardo on the eye:

This is the title of a 1979 book by Donald Sanderson Strong published by Garland Publishing, Inc., New York and London, as one of their OUTSTANDING DISSERTATIONS IN THE FINE ARTS. It is in fact Dr. Strong's 1967 dissertation for the Ph.D. degree in Art History at the University of California, Los Angeles.

This book includes a reproduction of Leonardo's manuscript D, abbreviated MS.D, also called Codex D, the original of which is in Bibliothèque Nationale, Paris. It was acquired by the Institut de France in 1796 as a prize of the Napoleonic wars. Believed to have been written between 1505 and 1510, it apparently was in the possession of a succession of family heirs until sold circa 1620 and donated by the purchaser to the Ambrosian library where it remained until Napoleon removed it to France. It is the briefest of Leonardo's known codexes, 20 pages, 10 recto and 10 verso, 25 x 16 cm. in size, with 61 drawings, an orderly compilation of notes on optics, sometimes referred to as a treatise on the eye.

A translation into English had been made by Nino Ferrero years earlier and published in the April 1952 issue of the American Journal of Ophthalmology, Vol. 35, No.4, pp. 507-521, but, according to the journal editor's footnote, for the sake of clarity a few passages that were redundant or too obscure had been deleted. This may explain the omission of Ferrero's translation of the marginal notes concerning contact lenses on verso 7 which were later reported by Hofstetter and Graham in the January 1953 issue of the American Journal of Optometry and Archives of American Academy of Optometry, Vol. 30, No. 1, pp. 41-44 and again very recently by Hofstetter in the December 1984 issue of Contact Lens Forum, Vol. 9, No. 12, pp. 15-17. Without the little drawings of the contact lens the legend would indeed have seemed obscure.

Strong's translation is not only complete in every detail, but he provides copious commentary on Leonardo's method of scientific investigation, the formal tradition of optics at the time, Leonardo's accompanying artistry, and the chronology of his manuscripts. Strong points out that "Leonardo's apparent lack of precision in his use of technical language has created some awkward problems for scholars in the translation of Leonardo's notes on optics." The term "luce," for example, means light but sometimes seems to be synonymous with "pupilla," meaning pupil. "Leonardo's almost indiscriminate use of the terms spetie, similitudine, simulcra, and eidola for images has long been a problem for Leonardo scholars."

Strong's translation of the marginal contact lens notations on page 7 verso is almost identical to that of Ferrero.

On diligence, accuracy, and history:

In a two volume set of books entitled "Contact Lenses, The CLAO Guide to Basic Science and Clinical Practice" edited by Oliver H. Dabiezies and published by Grune and Stratton, 1984, \$199.00, the first chapter of 18 pages is entitled "History of Contact Lenses" by Robert F. Heitz. An interesting editor's footnote credits Dr. Heitz for having "painstakingly researched this topic" and states that "There is every reason to believe that it is a correct interpretation of this topic. The chapter, however, does not represent an official position of the Contact Lens Association of Ophthalmologists."

An historical position indeed!

Dr. Heitz opens his chapter with, "The history of contact lenses is widely misconstrued, even by physicians who frequently fit contact lens." The remainder of the paragraph is in the nature of a reprimand of past authors for lack of thorough study of original material, relying instead on the writings of their predecessors.

The tirade does not end there.

The next section is boldly titled THE ALLEGED DISCOVERIES. In the first paragraph the author gives his own definition of "cosmetic" and "therapeutic" contact lenses and then adds "Any historical reference to an optical system that does not conform to these definitions should not be considered part of the history of contact lenses."

Next he undertakes to discredit the interpretations of Hofstetter and Graham (American Journal of Optometry and Archives of American Academy of Optometry, Vol. 30, No. 1, January 1953, pp. 41-44) by declaring that they based their conclusions on Leonardo's sketch of a face "plunged into a suspended spherical bowl filled with water." Then, without providing direct translation of Leonardo's notes he concludes, "These sketches thus concerned only image reversal and in no way suggested the concept of a contact lens." His accompanying illustration consists of a reproduction of parts of two pages from Leonardo Folios but with a portion of the legend missing. The missing legend was that which included the three actual sketches of contact lenses.

Other readers, like Dr. Heitz, have essentially ignored, so to speak, the small print, the brief notes in the margin of Leonardo's Folio 7V. For that reason, I recently isolated the original marginal script and, with a translation by a competent reader of old Italian, published the script and the translation as a separate article in the December 1984 issue of Contact Lens Forum, Vol. 9, No. 12, pp. 15-17 under the title "Leonardo's Contact Concept."

I mailed a reprint of my article to Dr. Heitz. In a very prompt and courteous four-page reply he assures me that our contact lens interpretation is incorrect. I disagree.

H.W H.

Two more Hirschberg volumes:

Comments on Volume I of the eleven volume series of Frederick C. Blodi's translations of Julius Hirschberg's "History of Ophthalmology" appeared on page 15 of the July 1984 issue of this newsletter, Vol. 15, No. 3. Volumes III and IV of the Hirschberg series have now arrived, subtitled Part I and Part II of the Renaissance of Ophthalmology in the 18th Century.

Except for an occasional identifying reference to optical attributes of the eye as known variously by Descarte, Kepler, Scheiner, Helmholtz, Javal, Huygens, Robert Smith, Porterfield, et al, Volume III is almost entirely concerned with surgery and medical treatment. The only specifically optometric commentary seems to be a reference on pages 67-68 to Daza de Valdes, who "wrote in 1623 the first book about the use of

spectacles and he was also the first to mention that all those patients who had their cataracts couched would need far distance vision convex lenses in a strength of 11-12. For near vision they need glasses of 20. These lenses will be necessary forever, but they hardly ever need to be changed."

Daza de Valdes is identified as a "lawyer and notary" rather than as an ophthalmic optician or optometrist. His contributions are mentioned to support Hirschberg's interesting assertion that, "We see here that the practical aspects preceded the theoretical explanations. Before anybody knew what a cataract really was and what a cataract operation meant the correct cataract glasses had been invented."

Volume IV similarly deals almost exclusively with surgery and medical treatment with some emphasis on biographical notes concerning early ophthalmologists and their clinical methods. However, pages 29-37, including several early references, relate the history and literature of the artificial eye. Also, pages 264-340 deal with the optical and visual science contributions of Newton, Huygens, Bouguer, Lambert, Locke, de la Hire, Ott, Pemberton, Jurin, Porterfield, Haller, et al. In this connection Hirschberg states that the great progress of physiological optics of the 18th century "were at first made not by practicing ophthalmologists but by mathematicians and physicists, . . . similar to that in the 17th century . . ."

A distorted historical perspective:

In a review of the book "Rings: Discoveries from Galileo to Voyager," by James Elliot and Richard Kerr, The MIT Press, 1985, in the February 1985 issue of Scientific American, Vol. 252, No. 2, p. 30, reviewer Philip Morrison makes the following analogy:

"It was Elliot who led the discovery of the rings of Uranus. That find was made possible by the flowering of contemporary technology. Just as Galileo's first half-recognition rested on a powerful new development that was paramedical (spectaclemaking), so is our astronomy often paramilitary."

Reviewer Morrison is indeed correct in identifying the early telescope with spectaclemaking but at least two and a half centuries off in presuming 16th and 17th century spectaclemaking to be "paramedical" by any criterion.

Gregg in Russian

Executive Board member Jim Leeds, O.D. has sent me two jewels from his vast book collection. The first book entitled Colored Glass by E.E. Shreiner (McCoy & Stilwell, 1919) has been mentioned in this newsletter (April, 1978 - Vol. 9 No.2 p. 17). The second book is a Russian translation of "Experiments in Visual Sciences" by O.H.S. member James Gregg O.D. printed in Moscow in 1970. Although I do not read Russian it was interesting to make a page-by-page comparison of the two books. All thirty-nine experiments in the original English edition have been reproduced in the paperback Russian copy but several of the photographs have been altered or omitted. Alterations include changes in the letters

illustrating visual acuity charts. One particular omission from the Russian copy is the American flag shown in Fig. 18-1, p.65, in the original English edition. The flag was one of several targets to be used in demonstrating after-images.

Dr. Gregg presented the Russian copy to Dr. Leeds for his collection and stated, "I knew nothing about it until the ophthalmologist who interpreted it into Russian sent me two copies . . . I imagine they are the only two copies that exist in America."

D.K.P.

An anecdotal Heatherism:

OHS member Dan Hummel recalls Dr. W.J. Heather's advice, "When addressing a group and telling stories, stick to old ones. You will start a story and note in the audience people smiling and assuring others it's a good one. This helps the response!"

Dan also adds that, "Jere used up the last of my applejack."

With his note he enclosed a gift membership in O.H.S. for A. John Rose, O.D., Chardon, Ohio, and a request for Dr. Galen Kintner's address.

History of color standards:

"Call to the Colors: Progress Toward a Chromaticity Standard" is the title of an article by Ken Miller of Photo Research, a division of Kollmorgen Corporation, in the February 1985 issue of Photonics Spectra, Vol. 19, No. 2, pp. 75-76, 78-80, and 82.

Included in the Metric Conversion Act of 1975 is the recommendation of adoption of standards which should bring some timely and highly practical benefits to the measurement of light and color. Author Miller traces the measurement of color to Newton but he credits the first adoption of chromaticity and colorimetry standards to the CIE (Commission International de l'Eclairage) in 1931. Subsequent adaptations were recommended by K.L. Kelly of the National Bureau of Standards in 1943 and 1955. Proposals by D. MacAdam led to the 1960 CIE Uniform Chromaticity Space (CIE-USC) diagram. Further refinements were variously proposed in 1976 with increasing numbers of disciplines becoming involved. The CIE's task is not yet complete.

Proprioceptive visual synesthesia:

When I wrote my paper on "Some observations of Phantom Visual Imagery," which I presented at the December 1969 meeting of the American Academy of Optometry and published in the May 1970 issue of the American Journal of Optometry and Archives of American Academy of Optometry, Vol. 47, No. 5, pp. 361-366, I was unable to find any prior mention of the phenomenon which I described. The phenomenon is that of perceiving shadowy images of parts of one's body under conditions for which there is no visual stimulus correlate, namely, in absolute darkness. I suggested that such phantom visual images were initiated by proprioceptive or

kinesthetic impulses not traversing the retinal pathways.

In a recent perusal of an article entitled "Oddities of Vision" by Sidney A. Field in the April 27, 1899 issue of The Optician and Photographic Trades Review, Vol. 17, pp. 280, 282, & 284 I came across the following statement, "Helmholtz . . . was able to see the movement of his arm, in total darkness, by the light of his own eye." Field did not cite a specific reference except to say that this statement was made by "Professor Tesla in a recent lecture."

My co-editor Doug Penisten then tracked down a book edited by Leland I. Anderson entitled NIKOLA TESLA, 1856-1943: LECTURES, PATENTS, ARTICLES, and published by the Nikola Tesla Museum, Beograd, Yugoslavia in 1956. We found Field's very same words in a lecture delivered by Tesla on two occasions, in February and March, 1893. Tesla added, "This is one of the most remarkable experiments recorded in the history of science, and probably only few men could satisfactorily repeat it, for it is very likely, that the luminosity of the eyes is associated with uncommon activity of the brain and great imaginative power."

But how did the famous Tesla learn this from the even more famous Helmholtz? It seems very likely that they had met, for in 1893 Helmholtz visited the United States as an official representative of the German Government at the Chicago Electrical Congress, and during his three months stay he was feted and feasted everywhere. In this same year the power and lighting equipment using Tesla's alternating current system was installed at the Chicago World's Fair.

But did Tesla, an electrical engineer of phenomenal talent, cite Helmholtz correctly? Or, precisely what did Helmholtz say, or write, or mean?

A search of the Southall translation of Helmholtz's three-volume Physiological Optics elicited only a single conceivably relevant reference to the "appearance of familiar external objects . . . due apparently to a . . . transference of the state of excitation from the part of the brain that is active in the formation of ideas to the visual apparatus," on page 12 of Vol. II. He added, "Certain individuals, for example, Goethe and J. Mueller, could indeed see similar phenomena at any time by simply closing their eyes and remaining for a long time in darkness." This translation is as valid as any I could make from the original German publication. A teasing footnote on the same page gives reference to J. Mueller, "Über phantastische Gesichterscheinungen," (Concerning fantastic visual appearances), Koblenz 1826, p. 20.

The 1826 Mueller book does not deal with the very easily induced phantom imagery which I described in 1969. It deals instead with dreams, hallucination, delirium, clairvoyance, and comparable phantasies in hearing and other senses, with citations of some perceptual fantasy experiences of Goethe, Darwin, and others plus a German translation of a 10 page paper on the physiology of dreams by Aristotle.

Dr. Penisten and I searched through three other books of selected writings and popular lectures by Helmholtz without success. I am still puzzled by Tesla's statement that Helmholtz was "able to see the movement of his arm in total darkness," but I have found nothing else to convince me that Helmholtz and I were observing the same phenomenon. Visual

synesthesia may well be a legitimate common classification of the various above mentioned phenomena, but the initiating nonvisual stimuli are quite evidently different.

H. W H.

Henry W Hofstetter
Douglas K. Penisten, Editors

WHY BELONG TO THE OPTOMETRIC HISTORICAL SOCIETY?

Well!!

The plainest reason, of course, is that this is a way to get involved in optometry's history.

There are other reasons, of course, like getting the quarterly O.H.S. Newsletter, names and addresses of other optometric history buffs, frequent bits of historical information hard to come by otherwise, and - - -, hang it, if you need more reasons, just forget it, just like the 99% who really don't care. The Society offers no rewards, prestige, or easily displayed status symbols, - just simple membership at the nominal price of \$10.00 per year. Perhaps it should be less, or more. The members can vote to change this, almost the only special privilege offered.

SO, WHY NOT BELONG TO THE OPTOMETRIC HISTORICAL SOCIETY!

If you are not already enjoying membership just send your name and address and a ten dollar check, or amend your will to provide for a \$1,000 legacy to the Society and get free membership for the rest of your life. Contributions to the Society are tax deductible in the U.S.A.

THE OPTOMETRIC HISTORICAL SOCIETY

243 NORTH LINDBERGH BOULEVARD

SAINT LOUIS, MISSOURI 63141

April 1, 1985

Dear Member:

This is a request for your vote on two proposed changes of our by-laws. The first would accommodate the various institutional and agency memberships by identifying each with its principal corresponding person. The second would ratify the 1985 increase of dues from \$5.00 to \$10.00 adopted by the Executive Board.

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."

FOR _____ AGAINST _____

2. In Article III, Section 4, substitute "\$10.00" for "\$5.00".

FOR _____ AGAINST _____

Please return this ballot to me at the above address.

Maria Dablemont, Secretary-Treasurer

P.S. The By-laws appeared in the January 1970 issue of the Newsletter. A copy is available on request.